# General Architecture of Cenes

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**Abstract**

This paper presents the general architecture of Cenes (Centralized Network Economic System), a proposed centralized network economy conceived as an organizational and technical implementation of Plan III. The concept seeks to combine centralized strategic goal-setting with operational autonomy of economic enterprises, distributed information processing, and incentive-based economic coordination.

The organizational foundation of Cenes is Stafford Beer's recursive Viable System Model (VSM). The paper outlines the architecture of political and economic governance, the distinction between direct strategic control and autonomous economic management, antimonetary mechanisms for production and consumption allocation, a system for evaluating and incentivizing internal capital, and an offer-based mechanism through which participants can propose revisions to planned decisions using locally available knowledge. It also addresses legally structured economic obligations, independent verification, digital representations of production, systemic resilience, and the gradual implementation of the proposed architecture.

Cenes is presented as an integrated institutional and cybernetic framework aimed at economic reproduction and the maximization of development. The paper is conceptual and architectural in scope, providing a foundation for subsequent formalization, technical implementation, and evaluation rather than an empirical demonstration of the system's performance.

**Keywords:** Cenes; Plan III; network economy; planned economy; economic cybernetics; Viable System Model; recursive governance; antimonetary system; economic incentives; internal capital; offer system; distributed knowledge; economic planning
**JEL Codes:** P21, P41, D82, D85, D47, J24

## Introduction

The problem of organizing economic governance lies in the need to coordinate numerous interdependent economic processes under conditions of limited information, resources, and managerial capacity. Production and allocation require continuous decision-making that takes into account both the general directions of social development and the specific circumstances of individual enterprises. At the same time, a substantial part of economically relevant information arises directly at the level of economic participants and cannot be fully known in advance to central governing bodies.

Historically, different economic systems have offered their own methods of addressing this problem. A market economy provides decentralized coordination through prices, competition, and individual economic incentives. Centralized planning, by contrast, makes it possible to establish economy-wide priorities directly and organize resource allocation in accordance with defined objectives. Each of these forms has its own capabilities and limitations, associated with the structure of information flows, the distribution of authority, and the nature of the incentives in operation.

The development of computing technologies, digital modeling, and communication networks creates the conditions for investigating alternative forms of economic organization. It becomes possible to construct a system in which a substantial part of the market's coordinating functions is performed through deliberately organized informational, managerial, and motivational mechanisms. This involves not only increasing computational capacity but also developing institutions capable of utilizing participants' local knowledge, correcting managerial errors in a timely manner, and maintaining the coordination of economic activity.

This paper examines **Cenes (Centralized Network Economic System)**, a proposed centralized network economic system representing one possible architecture of Plan III. Within the conceptual classification adopted here, Plan III denotes a form of planned organization in which the economic network possesses sufficient informational and managerial capabilities to coordinate economic activity directly, without retaining the market as its principal coordinating mechanism.

**The primary objective of Cenes is to maximize the development of the economy and society through the deliberate coordination of productive capacities, social needs, and individual economic incentives.** To this end, the system is intended to reproduce the essential coordinating advantages of market organization within a unified planned system, eliminating the dependence of the overall economic outcome on the independent pursuit of profit maximization by individual economic units.

A fundamental feature of the proposed approach is the combination of **centralized determination of economic objectives and autonomy in their execution**. Economic enterprises receive established obligations and the necessary resource capacities while retaining independence in choosing how to organize their activities. At the same time, the overall system possesses mechanisms for coordinating interdependent processes, modifying resource allocation, and revising initial decisions.

The organizational structure of Cenes is based on Stafford Beer's **Viable System Model (VSM)**. Its recursive principle is used to construct a multilevel economy in which each relevant level possesses the functions of strategic leadership, coordination, regulation, and prospective development. This makes it possible to distribute managerial tasks among different components of the system while preserving the unity of economic governance.

Of particular importance is the question of how decisions made by planning bodies are translated into the behavior of individual economic participants. To address this question, Cenes provides antimonetary mechanisms for production and personal allocation, a system of professional and motivational orientation, and instruments of reward and accountability. Through the resulting economic conditions, the system is intended to generate incentives for actions consistent with the requirements of the overall Plan.

A central position within this arrangement is occupied by the **offer system**, which is designed to utilize the local knowledge and initiative of participants. It allows individuals and economic organizations to propose modifications to established economic decisions, substantiate more efficient uses of resources, initiate the creation or restructuring of enterprises, and seek responsibility for particular managerial functions. The intention is thereby to establish an institutional mechanism through which information about potential improvements can flow from direct economic activity into the general planning system.

Such an organization requires legal certainty regarding economic obligations, reliable digital representations of economic processes, and independent verification mechanisms. Cenes is therefore con-

ceived as an interconnected set of political-managerial, economic, legal, and information-computational subsystems. Their coordination is intended to enable the economy not only to execute the established Plan but also to modify it continuously in response to new information and emerging possibilities.

**The objective of the present work is to present the general architecture of Cenes as an integrated economic system and to define the functional purpose, organizational position, and fundamental principles of interaction of its constituent mechanisms.** The subject of the study is the institutional and cybernetic organization of a planned economy, including the distribution of managerial authority, the formation of obligations, economic incentives, informational feedback, and the maintenance of systemic viability.

The methodological foundation of the work consists of systemic and cybernetic approaches, particularly the principles of VSM, together with a conceptual analysis of economic coordination, planning, incentives, and organizational autonomy. The proposed construction is based on treating the economic system as a multilevel network of interdependent economic units whose operation requires the coordination of material processes and informational-managerial mechanisms.

The work is **conceptual and architectural in character**. It does not undertake the mathematical formalization of every mechanism, the construction of definitive software algorithms, or the empirical verification of the comparative efficiency of Cenes as its immediate objective. These matters require separate subsequent development. The present study is primarily concerned with defining the general system of concepts, institutions, and functional relationships necessary for further design.

The discussion proceeds through the organizational foundations of Cenes, recursive economic governance, contractual and antimonetary mechanisms, individual incentive systems, offer-based activity, technical arbitration, digital infrastructure, verification, and resilience. Separate attention is given to the direct strategic control contour, the interaction of the economy with other state systems, the initial operating regime, and the architecture of subsequent development. The concluding sections bring these elements together into a conception of Cenes as a unified, self-reproducing economic system.

## 1 The Concept and General Logic of Cenes

**Cenes (Centralized Network Economic System)** is a centralized network economic system representing a specific architecture of Plan III. Its foundation is the organization of the economy as a unified economic organism consisting of interconnected and relatively autonomous economic units—**Nodes**.

In this sense, Cenes can be defined as an **economy of nodes**. A Node is an independent organizational unit incorporated into the overall Plan, supplied with the system's resources, and endowed with the authority to conduct its own economic activity. At the lowest level, such a node is an individual enterprise performing particular productive or other economic functions.

The distinctive feature of a Node lies in its organizational and property-related position. In Cenes, the means of production and other economic resources belong to the common resource system. An individual Node receives these resources at its disposal for the performance of its functions. At the same time, the Node possesses its own managerial organization, makes economic decisions, and bears responsibility for the results of its activity.

Its legal position presupposes a distinction between **ownership of resources** and **authority to manage them**. Those managing a Node dispose of the resources provided to it within the limits of their authority, but they do not acquire private ownership rights over those resources. Thus, the enterprise is organizationally associated with those who manage it, while in property terms it remains connected to the economic system as a whole. The precise legal form of such an entity, including the possibility of recognizing the Node as a separate legal person, remains to be determined.

Of fundamental importance is the possibility of creating new Nodes on the initiative of individuals. For example, a specialist or a group of specialists may propose the establishment of a new enterprise, submit a production project, and obtain the necessary resources once the system has approved it. The result is a new economic unit managed by its own organization and incorporated into the general economic network. The possibility of its creation is determined by the economic feasibility of the project and the established procedures, while its subsequent existence depends on its capacity to fulfill the obligations it has undertaken.

This construction establishes a distinctive form of enterprise within a planned economy. Soviet enterprises, Chinese economic organizations, and Cenes Nodes differ in their structures and in the extent of their economic authority. In Cenes, the organizational position of an enterprise is specifically built around independent management, systemic resource provision, and participation in the unified Plan.

The economy of Cenes also includes larger formations. Several enterprises may form a production complex, complexes may form a regional Link, and regional Links may constitute part of an economic system at a higher level. Each such formation has its own managerial functions and operates as a relatively autonomous component of the superior system. Consequently, the principles governing the organization of Nodes extend across different levels of the economic structure, although their authority and legal position may differ.

The political unity of this economy is ensured by the **command contour**. Its highest element is the Command Core (CC), the political-strategic nucleus of Cenes, which determines the general objectives and direction of development of the economic system. The political organization of this governance draws upon the Marxist-Leninist tradition, including the principle of a leading party of the Leninist type. The Party exercises strategic leadership through a system of political and state institutions. The specific structure of the CC and the distribution of its authority are examined in a separate section.

The economic organization also presupposes two contours of economic governance.

**Contour A (A-Contour)** is the non-autonomous contour of the Cenes economy, encompassing resources, assets, and economic structures under direct state ownership and management. It includes the strategic foundations of the economic system: land, natural resources, key infrastructure elements, major production complexes, and other assets of decisive importance for the functioning of the economy. Its precise composition is established in accordance with the requirements of centralized governance.

The purpose of Contour A is to provide the material foundation of state power over the economy. By maintaining direct control over key resources and strategic assets, the state possesses the necessary means to preserve the unity of the economic system and implement the overall Plan. The non-autonomous character of this contour means that the relevant assets are directly subordinated to state governing bodies.

**Contour B (B-Contour)** is the autonomous contour of Cenes, constituting the main part of the economy. Its foundation consists of Nodes—independent economic units that obtain access to the system's resources, organize productive activity, and fulfill obligations within the overall Plan.

The defining characteristic of Contour B is **autonomy**. It is expressed in the particular organizational and property-related position of Nodes. Nodes are not privately owned by individuals, including their founders and managers. Nevertheless, they possess an independent economic organization, their own management, and established authority to dispose of the resources placed at their disposal. Thus, the resources remain part of the common economic system, while their management is carried out by autonomous economic units. The degree of legal separation of Nodes and the specific form in which their rights are established are determined by the institutional structure of Cenes.

Most economic activity takes place within Contour B. Enterprises independently organize production, use their allocated budgets, improve technologies, and make decisions within the limits of their assigned obligations. The state ensures their incorporation into the unified Plan through general economic and managerial mechanisms.

The relationship between the two contours is determined by their different functions. **Contour A provides direct state control over the material foundation of the economy, while Contour B provides the autonomous organization of its principal economic activity.** Through control over strategic resources, the state retains the capacity to secure the execution of the overall Plan, while the autonomy of Nodes makes it possible to utilize initiative and independent decision-making at the level of direct production.

Centralization in Cenes is expressed through the establishment of common objectives, planning obligations, and conditions of resource allocation. **Autonomy is expressed through the independent choice of methods for fulfilling those obligations.** For example, an enterprise may receive an assignment to produce a specified quantity of a product within an established period and with an allocated budget. Its management independently determines the organization of labor, technological decisions, and methods for improving efficiency. Any change to the assigned result itself, however, requires a separate procedure of approval.

This distinction makes it possible to utilize people's knowledge and initiative directly where economic activity takes place. At the same time, the decisions of individual Nodes remain coordinated with the needs of other enterprises and the economy as a whole.

To organize this system, Cenes uses Stafford Beer's **Viable System Model (VSM)**. The model defines the necessary functions of management, coordination, regulation, forecasting, and strategic goal-setting. Its recursive character is of particular importance: every major economic Link may possess its own management structure while simultaneously constituting part of a system at a higher level.

The objective of such an organization is to ensure **economic reproduction**, meaning the continuous maintenance of productive capacities, economic relationships, and managerial mechanisms. A viable system must retain the ability to function under changing conditions, detect disturbances, and reorganize its own activity.

Cenes is therefore developed as an integrated engineering project. Its operation requires the coordinated construction of an organizational structure, a planning system, mechanisms for resource allocation, individual economic incentives, and an information-computational infrastructure. It is

these mechanisms that are intended to ensure the economic autonomy of Nodes, the coordination of their activities, and the capacity of the entire economy for continuous development.

## 2 The Fundamental Logic of Economic Governance

The principal task of Cenes is to create a planned economy capable of reproducing the advantages of market organization and surpassing it in efficiency. This represents the highest stage of development of the **antimarket**: the construction of a system that performs the economic functions of the market through consciously organized governance.

The market is a complex mechanism for coordinating economic activity. Millions of participants independently make decisions concerning production, consumption, resource utilization, and enterprise development. Their actions are coordinated primarily through prices, competition, and economic incentives.

One of the most important characteristics of the market is its ability to utilize information distributed among individual participants. An enterprise manager knows the capabilities of the enterprise's own production, a supplier knows the conditions under which resources can be provided, and a consumer knows their own needs. Coordinating their actions does not require every participant to possess complete information about the economy.

For example, an increase in the price of a particular material encourages producers to reduce its consumption, search for substitutes, and improve technologies. To respond in this way, an enterprise needs only to take the changed economic conditions into account. The coordination of numerous decisions occurs through the participants' own economic interests.

Market coordination, however, has certain limitations. Individual enterprises pursue their own economic advantage, which may diverge from the interests of the economic system as a whole. Their decisions depend on the information available to them, current profitability, and effective demand. The usefulness of an outcome to society and its commercial attractiveness may therefore differ substantially.

These limitations have long been examined within Western economics itself. **Market failures, information asymmetries, externalities, monopolization, and transaction costs** demonstrate that market allocation does not always produce socially efficient outcomes. Such phenomena create economic frictions—resource losses, additional costs, and divergences between private advantage and the interests of society.

Cenes is designed with the objective of reducing these frictions to the lowest possible level through the conscious organization of the economic system. Unlike market relations that emerge spontaneously, the parameters of a network economy can be deliberately established and modified in accordance with common objectives. This creates the conditions for a severalfold improvement in the efficiency of economic coordination. **The highest objective of Cenes is the maximization of economic and social development, rather than the maximization of profit.** The allocation of resources, organization of production, and improvement of economic mechanisms must all be subordinated to this objective.

Cenes presupposes the possibility of overcoming these limitations by integrating the economy into a single governable network. **Its task is to create a market without a market, substantially more efficient, flexible, and advanced in its outcomes.** To achieve this, the advantages of independent

economic activity must be preserved while ensuring their coordination with common economic objectives.

This understanding is connected with the successive development of planned economic organization. The classification adopted here distinguishes three types of the Plan, differing primarily in the structure of their economic networks and their managerial capabilities.

**Plan I**, characteristic of the Soviet economic model, represents a relatively crude form of network organization. Centralized leadership is combined with a degree of enterprise autonomy, but the possibilities for acquiring and processing information, together with the available instruments of economic regulation, substantially limit the flexibility of the system.

**Plan II**, exemplified by the Chinese model, represents a more developed organization. Centralized strategic leadership uses market relations as one of the principal mechanisms for coordinating economic activity. As a result, a substantial share of decisions is made independently by economic participants on the basis of market signals.

**Plan III** presupposes the construction of a network capable of providing economic coordination directly, without the need to retain the market as its principal mechanism. In Cenes, the corresponding functions are intended to be performed through a unified system of economic information, planning, and governance.

The development of these types is associated primarily with an increase in **informational and managerial bandwidth**. This refers to the capacity of an economic system to obtain necessary information, process it, and transform it into coordinated decisions in a timely manner. The greater this capacity, the more complex the economic interdependencies that can be taken into account in governance, and the broader the possibilities for independent activity among individual economic units.

An important principle of Cenes follows from this: **the centralization of economic objectives must be combined with maximum autonomy in their execution**.

Two questions must be distinguished in governance: **“What must be done?”** and **“How must it be done?”** The first concerns the determination of economic tasks, while the second concerns the choice of methods for fulfilling them.

For example, an enterprise receives an obligation to produce a specified quantity of goods of an established quality. Within this assignment, it independently organizes production, selects technologies, allocates working time, and seeks ways to reduce costs. These decisions constitute the ordinary activity of its management and do not require a separate instruction from the center. **This example serves only as a simplified illustration of the distinction between an assigned task and the method of fulfilling it, rather than as a literal description of how the elements of Cenes will interact.**

At the same time, autonomy must include the ability to question the rationality of the assignment itself. An enterprise may discover that a different allocation of resources would allow it to produce more output, improve quality, or achieve the same result with lower costs. Such information is relevant to the overall Plan because it allows the initial decision to be reconsidered.

The fundamental importance of local initiative becomes apparent here. Economic units possess knowledge that is difficult to obtain through centralized calculations. Their autonomy makes it possible to use this information in the search for improvements, while the general system of governance evaluates the consequences of proposed changes for the economy as a whole.

**Economic incentives** are no less important. The efficiency of an economic system depends on which actions are advantageous to its participants. If an enterprise has an incentive to conserve resources, improve product quality, and disclose its actual productive capabilities, its independent activity contributes to the improvement of the overall Plan.

Consequently, Cenes must deliberately establish economic conditions under which behavior beneficial to the system as a whole becomes advantageous to individual participants. In this respect, it reproduces one of the market's most important functions: directing independent economic activity through incentives.

The advantage of a unified network lies in its ability to take into account the consequences of decisions beyond the boundaries of an individual enterprise. For example, reducing the consumption of a material at one production facility may make it possible to expand output at another. For the first enterprise, the significance of such savings is determined by the conditions of its own activity, while the general system can evaluate the outcome in light of interconnected production processes.

Such an organization creates opportunities for more rational resource utilization, coordination of production processes, and deliberate economic development. It also makes it possible to assess new technologies and products in terms of their expected social and productive usefulness, including outcomes that do not provide an immediate commercial return.

Thus, the proposed superiority of Cenes is associated with the possibility of combining **the autonomy and initiative of individual economic units with the informational and managerial capabilities of a unified economic system**. Realizing this principle requires an organization of governance in which the center can coordinate the activity of the whole, while every component possesses sufficient authority to perform its tasks efficiently.

## 3 The Viable System Model

The organizational foundation of Cenes is the **Viable System Model (VSM)**, developed by the British cybernetician Stafford Beer. It is used to construct the managerial structure of the economy, determine the necessary functions of governance, and organize their interaction.

According to VSM, every viable organization contains five interconnected functional systems, designated S1–S5. Each performs a particular task, and their combined operation enables the organization to be governed as a unified whole.

**System 1 (S1)** encompasses the organization's direct operational activity. In Cenes, it consists of economic Links engaged in production, transportation, service provision, and other economic operations. These Links possess their own organization and an established degree of economic autonomy.

At the same time, S1 is defined relative to the level of governance under consideration. At the level of the entire economy, these units may be major regions or economic complexes, while at the level of an individual complex they may be enterprises. The organization of this multilevel structure is examined in the following section.

**System 2 (S2)** coordinates the activities of S1 units. It aligns interdependent economic processes, prevents conflicts between units, and maintains the stability of their interaction.

For example, if several enterprises use shared transportation infrastructure, their activities must be coordinated so that the independent decisions of individual participants do not cause congestion or disruptions in deliveries.

**System 3 (S3)** performs current internal management. It assesses the condition of subordinate units, their productive capabilities, resource constraints, and operational results. On this basis, S3 regulates the economic system in accordance with its general objectives.

In particular, S3 is responsible for coordinating the current resource requirements and capabilities of different parts of the economy. Its decisions are directed toward maintaining the operational capacity of the organization as a whole.

**System 4 (S4)** is responsible for forecasting and prospective development. It investigates changes in external conditions, new technologies, possible directions of economic growth, and alternative ways of transforming the economic structure.

For Cenes, this function is of particular importance because of the objective of maximizing development. S4 must provide leadership with information about the economy's future possibilities and the consequences of different strategic decisions.

**System 5 (S5)** exercises supreme strategic leadership. It determines the organization's general objectives, priorities, and fundamental operating principles. In addition, S5 reconciles the requirements of current operations, represented by S3, with the prospects for development examined by S4.

In Cenes, S5 has a primarily political character. It is at this level that the direction of economic development is determined, and the economy's productive and managerial processes must correspond to that direction.

The interaction of the five systems presupposes continuous information exchange. Information on the condition of economic units reaches the relevant levels of governance, where it is used for coordination, regulation, and forecasting. The decisions adopted, in turn, determine the conditions under which the units continue their activities.

This distribution of functions makes it possible to organize the governance of a complex economy without concentrating all decisions in a single center. Each level addresses matters corresponding to its authority, while superior structures receive the information necessary to govern a larger system.

In Cenes, the functions of VSM acquire a specific organizational expression.

The **Command Core (CC)** represents S5—the political-strategic nucleus of the economy, exercising supreme leadership and goal-setting.

The **Central Economic Planning Orchestrator (CEPO)** combines the functions of S2, S3, and S4. It consists of three specialized systems:

- **INCO (Inter-Node Coordination Orchestrator)**—the system of coordination between economic units, corresponding to S2.
- **ERO (Economic Regulation Orchestrator)**—the system of economic regulation, corresponding to S3.
- **EFO (Economic Foresight Orchestrator)**—the system of economic forecasting and prospective development, corresponding to S4.

Direct economic activity is carried out by **S1 Links**, which constitute the operational part of the economic system.

The most important organizational characteristic of VSM is **recursion**. Every unit that operates as S1 of a superior organization may itself constitute an independent viable system possessing its own S1–S5.

For example, a regional economic Link may have its own strategic leadership, economic planning system, and subordinate enterprises. At the same time, the region itself operates as one of the operational units of the economy at a higher level.

Through recursion, a unified architecture of governance is applied at different levels of Cenes. The specific authority and functions of the governing bodies are determined by the position of the corresponding unit within the overall economic structure.

## 4 The Recursive Organization of the Economy

The organizational structure of Cenes is built upon the principle of **VSM recursion**. This means that the economic system consists of several levels of governance, each organized according to a common model while simultaneously constituting part of a superior system.

Recursion makes it possible to apply a unified organizational logic to economies of different scales: from the economic system as a whole down to individual enterprises. At the same time, Cenes establishes a definite boundary for this organization: **the terminal unit of the nationwide economic network is the Node, meaning an individual enterprise or an equivalent independent economic unit**.

At the highest level is Cenes as a unified economic system. Its **S5** is the supreme Command Core, connected with the political leadership of the Party and the state. It determines strategic development objectives and the general conditions under which the economy operates. Its immediately subordinate **S1** units are the largest economic formations, such as countries within a larger union, major economic regions, or other structures of comparable scale.

Each such formation, in turn, constitutes a separate VSM. It possesses its own bodies of strategic leadership, planning, and regulation. Its S5 governs the corresponding territory or economic structure within the authority established by the superior system. Its S1 consists of the next, smaller economic units.

For example, a large economic region may consist of several smaller regions. Each has its own managerial structure and comprises subordinate economic formations. Below these may be subregions, production complexes, associations of enterprises, and other intermediate Links.

The specific number of levels and their composition are determined by the structure of the economy. Territorial divisions also need not coincide completely with administrative boundaries. The economic structure is formed with regard to productive relationships, infrastructure, and managerial tasks.

Thus, **S1 is always defined relative to a superior VSM**. At the level of the entire economy, S1 may be a large region; at the regional level, an economic complex; and at the level of a complex, an individual enterprise. Accordingly, every intermediate Link performs two functions simultaneously: it is a subordinate unit of a larger system and independently governs the economic units within it.

The concept of a **Link** is used to designate these intermediate formations. A Link is a governed component of a superior economic system that brings together the activities of several subordinate economic units. It may possess its own S1–S5 and function as a distinct level of planning.

At the lowest boundary of this structure are **Nodes**—the terminal economic units of Cenes. A Node directly conducts economic activity and belongs to the lowest superior Link. It possesses established autonomy and fulfills its obligations within the overall system.

Of fundamental importance is the distinction between **the Node as an element of Cenes** and **the internal organization of the enterprise itself**.

An individual firm may have a complex structure comprising departments, production lines, research teams, and its own governing bodies. For example, an electronics enterprise may simultaneously develop several smartphone models, organize their production, and undertake other projects.

However, within the general architecture of Cenes, such departments and projects do not form additional levels of **system-wide Cenes recursion**. For the superior system, the object of governance remains the enterprise as a single Node. Its internal processes belong to the sphere of its independent economic organization.

This means that an enterprise may use VSM to construct its own managerial system. It may also employ other organizational models, provided they enable it to satisfy the established requirements. **The enterprise's internal recursion is not a mandatory continuation of Cenes recursion.** The firm's organizational methods are determined by its own management within the limits of the autonomy granted to it.

For example, an enterprise may establish separate managerial structures for product development, production, and servicing. These structures remain subordinate to the enterprise's own management. The superior economic Link interacts with the Node as an integrated unit, evaluating its capabilities, obligations, and operational results.

Consequently, the supreme Command Core of Cenes does not directly manage individual projects inside enterprises. Economic governance is distributed among the levels of recursion, while the internal organization of terminal Nodes remains within their own competence. At the same time, every Node must comply with the established conditions for inclusion in the general economic system.

Recursive organization also determines the distribution of managerial responsibility. Each intermediate Link is responsible for the activity of the subordinate part of the economy and fulfills obligations toward the superior level. Matters that can be resolved within its authority are addressed directly by that Link. Tasks exceeding the corresponding limits are passed upward.

As a result, the supreme leadership governs the economy through a system of large interconnected Links. Regional and intermediate bodies govern their respective parts of the economy, while terminal Nodes independently organize direct economic activity.

The principal economic network of Contour B is organized according to this recursive logic. At the same time, Contour A allows certain strategic assets to be subordinated directly to the highest level of governance. Such subordination is determined by the special position of the corresponding resources and economic structures and does not alter the principle governing the organization of the autonomous economy of Nodes.

## 5 Command Core: The Political-Strategic Nucleus

**Command Core (CC)** is the command nucleus of Cenes, performing the functions of System 5 in the Viable System Model. It exercises political and strategic leadership over the economy, determines its development objectives, establishes major priorities, and defines the general principles of its operation.

In Cenes, the supreme Command Core is a political organization founded upon Marxism-Leninism and the principles of a Leninist-type party. Its institutional structure draws upon the organizational experience of the Communist Party of the Soviet Union and the Communist Party of China, **refined and adapted to the characteristics of the network economy in accordance with the theory of Polar Marxism and its political-organizational elaborations**.

The leading Party determines the political course and exercises strategic governance through the relevant Party and state institutions. Direct economic planning, however, is carried out by the specialized bodies of Cenes. **The Command Core determines the objectives of the economic system, while the planning bodies develop the methods for achieving them.**

The supreme Command Core, designated **CC-Cenes**, comprises several interconnected governing bodies.

**Congress** is the highest periodically convened body of the Command Core. It determines the fundamental political principles of Cenes, approves the principal directions of the system's development, considers changes to its political organization, and forms the Central Committee.

**Central Committee** exercises supreme collective leadership between congresses. It determines the long-term political line, considers major changes in strategic direction, establishes permanent governing bodies, and supervises their activities.

**Politburo** is the principal permanent body of strategic leadership. It adopts the most important political-economic decisions within the authority delegated by the Central Committee, establishes development priorities, and determines the directions of activity of the planning bodies.

**Standing Committee of the Politburo** constitutes the most restricted governing body within CC-Cenes. It ensures the continuity of strategic governance and adopts decisions requiring prompt consideration at the highest political level.

**General Secretary** coordinates the work of the supreme leadership. The General Secretary organizes the activities of the Politburo, its Standing Committee, and the Secretariat, ensures the coordination of their work, and acts within established powers. The position presupposes leadership of collective bodies rather than the replacement of their authority by personal rule.

**Secretariat** is the permanent organizational-executive apparatus of the Command Core. It provides for the preparation of meetings and decisions, organizes the work of the governing bodies, implements adopted decisions, and monitors the execution of relevant instructions.

The structure of CC-Cenes also includes specialized **Departments and Commissions**. They support the leadership in particular political and organizational areas, including cadre policy, organizational development, ideological work, and other matters falling within the competence of the Command Core.

Thus, CC-Cenes contains a division of authority between bodies defining the fundamental political course, the permanent strategic leadership, and the organizational apparatus. Congress and the Central Committee consider the most general and long-term matters, while the Politburo and its Standing Committee provide continuous political governance.

One of the most important characteristics of CC-Cenes is its position relative to the economic planning system. The Command Core possesses supreme political authority, but the adoption of well-founded strategic decisions requires information about the state of the economy, its productive capabilities, and its prospects for development.

This information is provided by the **Central Economic Planning Orchestrator (CEPO)**, which performs the functions of S2–S4. It analyzes the state of the economy, investigates possible alternatives for its development, and presents the results of the corresponding calculations to the Command Core.

For example, the political leadership may establish the objective of accelerating development in a particular technological field. The economic planning bodies must determine the available resources, productive constraints, possible time frames, and consequences of alternative approaches to achieving this objective. On the basis of the information presented, the Command Core adopts a strategic decision, after which the planning bodies ensure its transformation into coordinated economic actions.

This interaction is reciprocal. The Command Core determines objectives and constraints, while CEPO provides information about their feasibility. If the initial objectives prove incompatible with the economy's existing capabilities, the relevant information is transmitted to the leadership for a further decision.

**Political decision-making and economic calculation belong to distinct functions of governance.** This distinction allows the Command Core to concentrate on strategic leadership while leaving responsibility for economic justification and the organization of execution to specialized structures.

Adopted decisions are formalized according to established procedures and transmitted to the relevant bodies and units of the system. The procedures for their formalization, the distribution of obligations, and the monitoring of execution are determined by the general contractual architecture of Cenes.

The principle of recursion presupposes the existence of **separate Command Cores at different levels of the economic system**. Their organizational structure, however, depends on the scale and characteristics of the unit being governed.

CC-Cenes is the supreme Command Core and determines the strategic objectives of the entire economic system. The Command Core of a country, region, or other intermediate Link performs an analogous managerial function within its own competence, receiving general tasks and constraints from the superior level.

For example, a regional Command Core may determine development priorities for subordinate territories and economic complexes, distribute managerial tasks, and adopt strategic decisions of regional significance. Its activities must nevertheless remain consistent with the region's obligations toward the superior system.

The organizational form of such leadership may differ substantially from that of CC-Cenes. A large region may employ a collective governing body with its own apparatus, whereas a smaller economic Link may possess a considerably simpler structure.

Consequently, **Command Core denotes a general function of strategic leadership rather than an organizational form that must be reproduced identically at every level**. The structure of CC-Cenes is determined by the requirements of supreme political governance, while the Command Cores of subordinate Links are formed according to their position within the recursive economic system.

## 6 CEPO: The Economic Planning System

**Central Economic Planning Orchestrator (CEPO)** is the central economic planning orchestrator of Cenes, combining the functions of Systems 2, 3, and 4 of the Viable System Model. Its purpose is

to coordinate economic activity, regulate the current state of the economy, and develop prospective alternatives for its further development.

CEPO constitutes the economic-managerial foundation of Cenes. It ensures the transformation of the Command Core's political objectives into economically justified decisions, taking into account productive capabilities, available resources, and interdependencies among economic Links.

Organizationally, CEPO consists of three specialized systems: **INCO, ERO, and EFO**. Their functions correspond to different aspects of economic governance.

**INCO (Inter-Node Coordination Orchestrator)** is the inter-node coordination orchestrator corresponding to S2. It ensures coordination among subordinate economic Links and organizes their interaction within the overall Plan.

Every Link in the economy is connected to others through deliveries, transportation, energy infrastructure, and the use of shared productive capabilities. Independent decisions by individual participants may change the operating conditions of an entire production chain. INCO provides the necessary coordination of these dependencies, prevents emerging conflicts, and maintains the stability of joint economic activity.

For example, an increase in output at one enterprise may require additional deliveries from several other producers. INCO coordinates the relevant economic processes so that a change in the activity of one Link does not disrupt the work of the others.

**ERO (Economic Regulation Orchestrator)** is the economic regulation orchestrator corresponding to S3. It is responsible for managing the current state of the economy, coordinating its resource capacities with established tasks, and maintaining the stability of the economic system.

ERO uses information about production capacities, inventories, requirements, constraints, and the actual performance of economic Links. On this basis, it determines the necessary changes in current resource allocation, the conditions of economic activity, and the organization of economic processes.

For example, when a shortage of a particular material arises, ERO examines its significance for different production processes, existing reserves, and possibilities of substitution. This makes it possible to determine economically justified conditions for using the scarce resource while taking into account the needs of the entire system.

Thus, INCO ensures the coordination of interactions among economic Links, while ERO performs their general economic regulation.

**EFO (Economic Foresight Orchestrator)** is the economic forecasting orchestrator corresponding to S4. It investigates future states of the economy, technological possibilities, and alternative directions of development.

EFO analyzes existing production trends, scientific and technological changes, prospective needs, and conditions in the external environment. On the basis of these data, it develops forecasts and alternative scenarios for transforming the economic structure.

For example, EFO may investigate the prospects for introducing a new technology into industry. This requires evaluating the necessary investments, the expected increase in productivity, the demand for new production capacities, and the consequences for related industries. The result is an economic justification of possible directions of development.

Of particular importance is the interaction between **ERO and EFO**. The current state of the economy determines the initial possibilities for further development, while prospective objectives require corresponding changes in its present organization.

If EFO develops an alternative involving the substantial expansion of a particular industry, ERO must assess which existing resources and production capacities can be used to implement it. The constraints identified are then taken into account when refining the prospective alternative.

INCO ensures the coordination of the economic interactions necessary to implement the decisions under consideration. In this way, coordination, current regulation, and prospective planning are carried out within a unified managerial complex.

CEPO interacts directly with the **Command Core (CC)**. The Command Core determines the political objectives and priorities of economic development, while CEPO investigates the conditions for achieving them and formulates the corresponding economic decisions.

For example, CC may establish accelerated development of the energy sector as a priority. EFO examines possible directions of technological and infrastructural development, ERO evaluates existing economic capabilities, and INCO coordinates the interdependent economic processes.

On the basis of these investigations, the Command Core receives information about available alternatives, their consequences, and the resources they require. Once the strategic direction has been determined, CEPO carries out the further economic elaboration of the adopted decision.

When substantial constraints are identified, CEPO transmits the relevant information to the Command Core. This makes it possible to adjust objectives in accordance with the economy's actual capabilities and the results of economic activity.

**CEPO is also organized recursively.** At every level of Cenes, there is a corresponding complex of S2–S4 functions responsible for governing the economic Links at that level.

The CEPO of the entire economy works with its largest economic formations. A regional CEPO performs planning and regulation within the corresponding region, while the CEPO of an intermediate economic complex operates within the Links subordinate to it.

Every subordinate CEPO acts within the objectives, obligations, and constraints established by the superior system. At the same time, it possesses the authority necessary to resolve matters at its own level. Information about the state of the economy is transmitted between levels of recursion to the extent required for coordinated governance.

As a result, the unified Plan is formulated and implemented through an interconnected system of economic governance encompassing the entire economic network of Cenes.

The operation of CEPO presupposes the use of economic models, optimization methods, forecasting techniques, and information processing. Their purpose is to evaluate available alternatives, identify constraints, and prepare decisions on the basis of information about the state of the real economy.

Specific mathematical methods and computational instruments may nevertheless differ depending on the nature of the processes being governed. **CEPO defines the organizational structure and functions of economic planning within which the corresponding technical instruments are employed.**

## 7 From Strategic Goal-Setting to an Executable Plan

The formulation of the economic Plan of Cenes begins with the determination of strategic objectives by the Command Core (CC). These objectives express the principal directions of economic development and establish the results that must be achieved through the activity of the economic system.

A political objective, however, does not in itself constitute a complete economic decision. For example, accelerating the development of the energy sector requires determining the necessary production capacities, resources, infrastructure, and sequence of corresponding transformations. Strategic objectives must therefore be converted into a system of coordinated economic tasks.

This work is performed by **CEPO**, which investigates the economy's capabilities and develops alternatives for achieving the established objectives. The planning process takes into account existing production capacities, available resources, technological constraints, interdependencies among economic processes, and prospects for further development.

The result is an economically justified Plan defining the necessary directions of activity and the conditions for their implementation. If an established objective can be achieved in several ways, CEPO examines their consequences and presents the corresponding information to the Command Core. Strategic choice remains the responsibility of CC, while its subsequent economic implementation falls within the competence of the planning bodies.

**The Plan of Cenes constitutes a unified system of economic decisions and obligations distributed across different levels of economic organization.** Its content may include the development of production capacities, the satisfaction of the population's needs, resource utilization, infrastructural transformations, and other tasks associated with the functioning and development of the economy.

To implement the overall Plan, the relevant tasks must be distributed among the Links of Cenes. This process is carried out recursively, in accordance with the organizational structure examined earlier.

At the highest level, tasks are established for the largest economic formations. Having received its assigned objectives and constraints, each formation organizes their fulfillment through its own governing bodies and subordinate Links. In this way, the overall Plan is progressively transformed into economic decisions of different scales.

For example, if the decision to develop a particular industrial field is adopted at the level of the entire economy, the corresponding tasks may be distributed among several major regions. Regional leadership examines its own productive capabilities and determines which economic complexes will participate in implementing the adopted decision. At subsequent levels, the operating conditions of individual enterprises are established.

This example illustrates the general principle of distributing economic tasks and does not imply that precisely this sequence of decisions must be used in every case.

A fundamental requirement of recursive planning is **the distinction between an assigned result and the method of achieving it**.

The superior system determines what must be accomplished by a subordinate Link, while the Link itself organizes the fulfillment of the task within the limits of its authority. The assigned result may be expressed through different economic requirements, depending on the nature of the activity and the characteristics of the relevant level of governance.

For example, a region may be assigned the task of expanding particular productive capabilities. Its leadership independently determines the necessary organizational transformations, examines alternatives for resource utilization, and establishes tasks for subordinate economic formations. This activity belongs to the ordinary functions of regional governance.

Thus, **every intermediate Link simultaneously fulfills the tasks assigned by the superior system and plans the activities of its own subordinate Links**. It transforms the objectives it receives into more specific economic decisions, taking local conditions into account.

The freedom to choose methods of execution nevertheless has established limits. A subordinate Link must comply with assigned results, resource constraints, and other conditions established within the overall Plan. Decisions affecting the authority of a superior system or the obligations of other Links require the appropriate coordination.

The interdependence of economic tasks is of particular importance. The productive capabilities of one Link may depend on deliveries, infrastructure, and the performance of others. Consequently, distributing obligations requires prior coordination of the relevant economic conditions.

For example, expanding the production of equipment presupposes the availability of necessary materials, components, energy, and transportation capacities. If these conditions depend on several economic Links, their tasks must be formulated in a coordinated manner.

Responsibility for such coordination is distributed among the relevant levels of governance. Matters concerning a single region may be resolved by its own bodies. Interdependencies between several regions require the participation of the superior system, which possesses the necessary authority and comprehensive information.

As a result, the Plan acquires a **hierarchically coordinated structure**. Every level is responsible for its own part of the economic system while maintaining its connection to common objectives and the obligations of other Links.

The Plan is nevertheless executed under changing conditions. Actual productive capabilities may differ from initial calculations, new technologies emerge, needs change, and more efficient methods of organizing economic activity are discovered.

Planning therefore presupposes the continuous receipt of information about execution results and the possibility of revising earlier decisions. Changes must take account of their consequences for interconnected Links and maintain the coordination of their subsequent activities.

Subordinate Links may also identify deficiencies in assigned tasks or propose more efficient results. The corresponding proposals are considered at the level possessing the authority to modify the original decision. This makes it possible to utilize local knowledge to improve the overall Plan while preserving the established order of governance.

For practical execution, economic decisions must take a definite form that makes it possible to establish the content of obligations, the authority of participants, the conditions of fulfillment, and responsibility for results. In Cenes, this function is performed by the system for formalizing economic obligations, examined in the following section.

## 8 Cenes Contract Layer: The Contractual System

**Cenes Contract Layer (CCL)** is the legal-technical system for formalizing and recording economic obligations in Cenes. It ensures the formal establishment of managerial decisions, their legal validity, authenticity, and the possibility of verifying their execution.

In Cenes, binding decisions of superior bodies are formalized through specialized digital contracts. Such a contract is a legally significant machine-readable document establishing the duties of the

relevant economic Link or official. Its content is determined by the nature of the decision and the authority of the body adopting it.

The contractual system extends to every level of economic recursion. Decisions of the Command Core, instructions issued by planning bodies, and obligations of economic Links acquire an established legal form. At the same time, **a contract in Cenes does not necessarily presuppose a voluntary agreement between parties**. It may formalize a binding instruction issued by a superior system that the subordinate Link is obliged to execute.

The principal object of CCL is the **Plan Contract**. Depending on its purpose, it may contain established economic tasks, allocated resources, constraints, deadlines, performance indicators, and information about responsible persons. The composition of obligations is determined by the specific conditions of economic activity.

Each contract is linked to the corresponding managerial decision and contains information about its origin. This makes it possible to establish which body assigned an obligation, to whom it was addressed, on what grounds it was adopted, and which conditions apply at a particular moment.

Of particular importance is the **Contract Pool**—a unified, coordinated package of obligations formulated by a superior system for the economic Links directly subordinate to it.

For example, the economic leadership of a major region may simultaneously establish interdependent tasks for several subordinate territories. In such a case, a common pool is created, containing individual contracts for each territory and, where necessary, for the corresponding managers.

All contracts within a single pool are formulated in accordance with the common economic task. This makes it possible to coordinate their content before transmitting them to subordinate Links and to take account of dependencies among the results of their activities.

**Legal responsibility nevertheless retains a vertical character.** Each Link is accountable for the fulfillment of its own obligations to the immediately superior system. If the activity of one region depends on the results of another, this dependency is taken into account in the general planning process, but it does not create an independent relationship of subordination between the regions.

For example, if one region fails to receive a necessary delivery from another, it transmits information about the resulting obstacle to its superior leadership. It is this superior level that examines the circumstances, establishes the responsibility of the relevant Links, and adopts the necessary decisions. Economic dependencies may be horizontal, whereas contractual responsibility is organized vertically.

A Contract Pool also makes it possible to coordinate the obligations of different participants involved in a single managerial decision. In addition to contracts concerning economic Links, it may include individual obligations of managers and other responsible persons. The duties of an organization and the personal responsibility of its managers are recorded according to their respective powers.

Every CCL object possesses **a unique identifier, timestamp, version number, and digital signatures of authorized persons or bodies**. Cryptographic instruments make it possible to verify the authenticity of a document and detect modifications to its contents.

An obligation is modified by issuing a new version of the corresponding document. The previous version is retained in a protected history of decisions, while the new version contains a reference to it. This makes it possible to establish not only the currently applicable conditions but also the sequence of their modification.

Cryptographic hashes, electronic signatures, authority certification, and protected record logs may be employed to support this structure. The specific storage technology is determined by the technical

architecture of Cenes. Blockchain technology is not a mandatory requirement for the operation of CCL.

The contractual system also encompasses documents arising from the revision of economic decisions. **Offers, appeals, arbitration rulings, and other legally significant actions** are formalized as linked digital objects. They contain references to the corresponding contracts and decisions, thereby preserving the complete history of the consideration of each matter.

For example, if an economic Link proposes an improvement to its assigned economic result, the proposal is linked to the existing obligation. Once the proposal is accepted, the changes are formalized according to the established procedure. The original decision and the grounds for its revision remain available for subsequent verification.

An important feature of CCL is **the distinction between an obligation and liability for its execution**. The assigned obligation establishes the result that an economic Link must seek to achieve. Liability determines the consequences of actual performance, taking account of the established circumstances. Consequently, the consideration of a dispute concerning liability does not itself cancel the obligation in force.

Contracts may also establish specific duties to inform superior bodies about critical circumstances, violations, and the inability to continue normal execution. Such provisions establish a legal connection between ordinary economic governance and the mechanisms of emergency escalation.

The operation of CCL requires a unified system for defining authority. The legal validity of each document depends on whether it was adopted by a competent body in accordance with the established procedure. For example, a decision falling within the authority of the supreme Command Core cannot be independently formalized by a subordinate manager.

The verification of authority, signatures, valid versions, and related obligations is performed through the contractual infrastructure itself. As a result, governing bodies, economic Links, and control systems operate with coordinated legal data that make it possible to establish the content and origin of every binding decision.

## 9 Execution and the Legal Structure of Obligations

The economic Plan of Cenes is executed through a system of obligations established within the Cenes Contract Layer (CCL). Each economic Link receives specified tasks, resources, and operating conditions, while its management bears responsibility for fulfilling the corresponding obligations.

The legal organization of this system is based on the distinction between two concepts: **Obligation** and **Liability**.

An obligation establishes **what an economic Link must accomplish**. It arises from a decision of the superior system and remains in force until it is officially modified or terminated. The subordinate Link is required to organize its activities toward achieving the assigned result within the established conditions.

Liability determines **which legal and economic consequences arise from the actual execution of an obligation**. In establishing liability, the results achieved, the circumstances of execution, the actions of responsible persons, and the presence of objective constraints are taken into account.

This distinction is necessary because a factual deviation from an assigned result does not in itself determine the degree of fault or liability of the executor. An economic Link may encounter

circumstances that substantially restrict its capabilities despite its management having properly fulfilled its duties.

Consider a simplified example. An enterprise is assigned an obligation to produce 100,000 units of output during a specified period. During execution, an objective constraint arises, as a result of which the enterprise is capable of producing only 90,000 units.

The original obligation remains 100,000 units. The enterprise's management must continue striving to fulfill it, using available means and complying with established requirements. However, a subsequent evaluation of the results may establish that, under the prevailing circumstances, the enterprise could objectively be held accountable only for achieving 90,000 units.

If 90,000 units were actually produced, this performance may be recognized as satisfactory from the standpoint of liability. The original obligation, however, is not automatically modified. A decision concerning liability and a decision to amend the Plan are distinct managerial actions.

This example illustrates the legal principle of distinguishing obligation from liability. The specific methods for establishing indicators, evaluating execution, and revising economic decisions are determined by the corresponding mechanisms of Cenes.

The **Obligation Layer** encompasses the requirements currently applicable to economic Links and responsible persons. It defines the content of assigned tasks, the conditions of their execution, the authority granted, and the applicable constraints.

The **Responsibility Layer** determines the grounds for evaluating participants' actions, the permissible consequences of execution, and the procedure for reviewing the corresponding decisions. It connects established obligations with actual results and the circumstances under which they were achieved.

Both layers belong to the general contractual system but perform different functions. For example, the grounds for determining the liability of a manager may be modified without revising the production obligations of the enterprise.

This distinction becomes particularly important when economic Links are interdependent.

Suppose the fulfillment of one region's obligation depends on deliveries from another. If the required deliveries are not made, the first region may face an objective inability to achieve its assigned result.

Legal responsibility nevertheless retains its vertical organization. The affected Link informs its superior leadership of the circumstances and provides supporting information. The superior system itself examines the actions of participants directly subordinate to it and determines the necessary consequences.

Thus, the liability of one Link toward another does not arise automatically from the existence of economic interdependence between them. Each Link is accountable to the corresponding superior system on the basis of its own obligations.

Establishing liability requires consideration not only of the final result but also of the executor's actions. For example, failure to fulfill an assignment may result from an objective shortage of resources, poor organization of production, concealment of information, or violation of established rules. These circumstances have different implications for determining the consequences of execution.

Liability may apply both to an economic organization and to individual managers. The obligations of an enterprise and the personal duties of its managers must be distinguished according to their respective powers. A deviation from an assigned production result does not in itself mean that every participant in management bears equal responsibility.

Cenes provides for the possibility of **challenging an established determination of liability through an appeal**. The relevant matters are considered within the Technical Arbitration system, which establishes whether the requirements and consequences imposed were justified.

Filing an appeal does not itself suspend the obligation in force. Until the assigned result is modified by the competent body, the economic Link continues to pursue its fulfillment. The appeal primarily concerns the extent to which it is justified to impose liability for the result actually achieved.

For example, a manager may challenge a sanction by demonstrating that the assigned result was unattainable because of circumstances outside the manager's control. If the evidence presented is found sufficient, the decision concerning liability is revised.

Such a revision may also take place after the initial sanction has been applied. If the appeal is upheld, the system must provide for the restoration of the relevant rights and the correction of the consequences of the erroneous decision. The necessity of such restoration does not mean that execution of the obligation could have been suspended while the dispute was being considered.

Situations in which emerging circumstances render the original obligation physically impossible or economically unreasonable require a separate decision. In such cases, information is transmitted to the competent level of governance to assess whether the Plan itself must be modified. The corresponding change is formalized according to the established procedure and takes into account the consequences for other economic Links.

The legal structure of Cenes also presupposes a defined **life cycle of an obligation**. Once assigned, it acquires legal force, is executed within the established conditions, and is accompanied by the recording of necessary information about the course of execution. At the end of the relevant period, the results are verified, after which decisions concerning performance and liability are adopted.

If an obligation is modified during execution, the new version must be linked to the previous one. This makes it possible to determine which requirements were in force during a particular period, which circumstances provided the grounds for their modification, and which persons were responsible for the corresponding actions.

Monitoring execution includes verification of actual results and compliance with established information-reporting duties. The management of an economic Link is required to report material circumstances affecting execution in the cases and manner specified by the applicable conditions. Concealment of significant information or violation of the duty to provide timely notice may constitute an independent breach, regardless of the final economic result.

The information obtained is used to evaluate execution, resolve disputes over liability, and adopt subsequent economic decisions. The direct consequences of satisfactory performance, exceeding established results, and different types of violations are determined by the specialized reward and sanction system of Cenes.

## 10 AMO: Antimoney Orchestrator

**Antimoney Orchestrator (AMO)** is the antimonetary system of Cenes, providing economic valuation of resources, budget allocation, and the formation of material incentives. It constitutes one of the principal mechanisms for implementing the Plan, making it possible to regulate autonomous economic activity through economic conditions.

In Cenes, it remains necessary to compare the costs of different resources, evaluate economic decisions, and determine the possibilities for their utilization. Even within a unified Plan, economic Links continuously choose between alternative technologies, suppliers, and methods of organizing production. Such decisions require a common system of economic valuations.

AMO provides the corresponding infrastructure through **antimoney**—special units of account used within the planned economy. They make it possible to express economic valuations, establish budgets, and account for the results of participants' activities.

The term "antimoney" reflects the fundamental difference between its economic function and that of money in a market system. In Cenes, antimonetary magnitudes are established in accordance with the objectives of the overall Plan. Their purpose is to regulate resource allocation and the behavior of economic participants rather than to facilitate the independent accumulation of private capital.

The principal instruments of AMO are **antiprices and antimonetary budgets**.

An antiprice is an economic valuation assigned by the system to a particular good, resource, or service. It is used to compare alternative decisions and determine the conditions under which the corresponding economic object may be utilized.

An antimonetary budget establishes the accounting capacity available to a participant. For an enterprise, it determines the limits of resource utilization within its economic activity; for an individual, it determines the possibilities for personal consumption.

These instruments make it possible to influence the decisions of Cenes participants while preserving their autonomy. For example, if a particular material becomes scarce, a change in its antiprice may encourage enterprises to reduce their consumption of that material, seek substitutes, or improve their technologies. Each enterprise independently chooses the most appropriate course of action in light of its own productive capabilities.

Antiprices are established deliberately. Changes in their values must reflect economic objectives, resource constraints, and the consequences of using the corresponding objects for the economic system. In this way, economic signals can direct local decisions toward the general objectives of the Plan.

To perform these functions, AMO is divided into two interconnected subsystems.

**P-AMO (Production Antimoney Orchestrator)** is the production antimonetary subsystem. It provides economic valuations of productive resources and allocates budgets among economic Links. Enterprises use their assigned budgets to conduct their activities, choosing permissible alternatives for resource expenditure and the organization of production.

Receiving a production budget grants a Node the corresponding economic capabilities within the established conditions. It does not constitute the acquisition of private ownership over the system's resources. An enterprise independently disposes of the resources provided to it within its own competence.

**C-AMO (Consumer Antimoney Orchestrator)** is the consumer antimonetary subsystem. It provides economic valuations of goods intended for personal consumption and maintains records of individual antimonetary balances. Through this subsystem, citizens' material incomes and their ability to acquire goods and services are realized.

The separation between P-AMO and C-AMO is necessary because production and consumption are different forms of economic activity. A production budget is assigned to an economic Link to enable it to perform its economic functions. A personal balance expresses an individual's consumption capacity and is connected with that person's material circumstances.

Consequently, the same physical good may have different antimonetary valuations in the production and consumer subsystems. For example, a particular material may be valued by P-AMO according to its significance for production, whereas a consumer good manufactured from that material receives its own valuation in C-AMO. These valuations concern different economic relationships and are established within a unified antimonetary system.

AMO interacts with **CEPO**, which performs economic planning and regulation. CEPO possesses information concerning economic objectives, productive capabilities, and resource constraints. AMO uses the corresponding economic decisions to establish antiprices, budgets, and other conditions of economic activity.

In other words, CEPO provides the planning and managerial dimension of economic decisions, while AMO provides their antimonetary expression and application in the activities of Cenes participants. Interaction between these systems makes it possible to take the general requirements of the economy into account when forming local economic incentives.

At the same time, antimonetary calculations must correspond to the system's actual material capabilities. The existence of a budget does not in itself create production capacities or physical inventories. The economic capabilities granted to participants must be coordinated with available resources, production conditions, and the obligations of other Links.

Of particular importance is the relationship between AMO and individual motivation. Personal antimonetary balances make it possible to express the results of labor, rewards, and other material advantages. As a result, Cenes can establish conditions under which professional activity, higher productivity, and useful initiative are directly reflected in an individual's economic capabilities.

Thus, the antimonetary system is employed as an instrument for the deliberate formation of economic incentives. Participants make independent decisions by taking account of antiprices, available budgets, and their own interests, while the parameters of these conditions are determined in accordance with the objectives of the overall Plan.

## 11 P-AMO: Production Antiprices

**Production antiprices (P-Antiprices)** are economic valuations of resources, goods, and services established by P-AMO to regulate the economic activity of Cenes. They make it possible to compare different methods of resource utilization and direct the independent decisions of enterprises in accordance with the overall Plan.

In a market economy, prices perform an important coordinating function. They reflect the conditions of exchange and influence producers' decisions concerning procurement, production, and resource utilization. Enterprises take prices into account when choosing technologies, suppliers, and directions of activity.

In Cenes, the corresponding function is performed by production antiprices. Their values are determined within the planning system in light of available resources, productive capabilities, and economic objectives. As a result, **Cenes acquires the capacity to deliberately establish the price conditions under which autonomous economic Links operate**.

A production antiprice is the valuation of a particular economic object expressed in common antimonetary units. Such valuations may be established for raw materials, manufactured materials,

equipment, energy, components, production services, and other resources involved in economic activity.

An antiprice makes it possible to express the economic significance of using a particular resource under the existing Plan. Its determination must take into account resource availability, the needs of different production processes, possibilities for substitution, and the consequences of utilization for the economy.

For example, two enterprises may use different materials to manufacture the same product. If one of these materials is also required for the production of critically important equipment, its utilization has additional consequences for other parts of the economic system. The corresponding antiprices make it possible to reflect these circumstances when evaluating production alternatives.

An antiprice is therefore a **managerial economic signal**. Its purpose is not merely to account for resources but also to influence the decisions of economic participants.

Suppose that a particular metal becomes scarce because several industries increase their demand for it. P-AMO may raise its antiprice, thereby changing the economic conditions under which the material is used. Technologies that reduce its consumption or replace it with another resource become more attractive to enterprises.

An enterprise does not need a separate instruction specifying which technology to select. Its management independently evaluates the available alternatives within its established budget and productive capabilities. Thus, changing an antiprice makes it possible to direct economic behavior through material incentives.

The reverse effect is also possible. If the system possesses substantial reserves of a particular material or seeks to expand its utilization, an appropriate change in its antiprice may make that material more attractive.

However, antiprices must take account of the entire range of economic consequences. A low antiprice for a particular material does not mean that every technology using it is preferable. The quality of the final product, consumption of other resources, labor requirements, productivity, and consequences for interconnected economic processes are also important.

The determination of production antiprices therefore forms part of the general task of economic optimization. **They must direct local economic choices toward outcomes consistent with the interests of the economic system as a whole**, insofar as available information and calculation methods permit.

A significant feature of P-AMO is its recursive organization. Because Cenes consists of several levels of governance, antiprices are also established and refined within the corresponding levels of the economic system.

The highest level possesses information about the economy's general requirements, strategic constraints, and the distribution of resources among its largest economic formations. On the basis of these data, system-wide economic valuations and the conditions for their subsequent refinement are established.

Subordinate levels possess more detailed information about their own productive capabilities, local constraints, and economic interdependencies. This information enables them to refine antiprices for the corresponding part of the economy within their established authority.

For example, the system-wide valuation of a particular material may take into account its strategic significance and total availability. The regional level additionally considers local production conditions, existing inventories, supply characteristics, and the needs of subordinate enterprises.

Importantly, **the same economic objects are evaluated at every level**. Recursion does not mean that the highest system establishes valuations only for interactions between regions, the regional system only for interactions between enterprises, and the enterprise only for its own internal operations. The objects of valuation remain the specific resources, goods, and services used throughout the economy.

The distinction lies in the scope of available information, the degree of detail, and the authority of the corresponding level.

Such an organization requires consistency among antiprices. Subordinate valuations must take account of the binding constraints established by superior systems, while local modifications must remain comparable with system-wide magnitudes. Otherwise, different parts of the economy could make decisions based on contradictory economic signals.

For this purpose, production antiprices are expressed in a common accounting denomination. This makes it possible to compare economic valuations of different goods and resources regardless of the level at which the corresponding calculation is performed.

The comparability of antiprices over time is also of particular importance. Changes in the scale of accounting magnitudes must not arbitrarily alter the economic meaning of previously allocated budgets and other existing obligations. The specific rules for ensuring such comparability belong to the general organization of the antimonetary system.

**Production antiprices must be accessible to economic participants**, since their regulatory function depends on the ability of enterprises to take the corresponding values into account when making decisions.

An enterprise must have access to information about the antiprices of resources that it uses or may use in its activities. This enables it to compare production alternatives independently, evaluate opportunities for savings, and develop proposals for improving production.

Changes in antiprices must also be coordinated with existing economic conditions. Excessively frequent and unpredictable changes can complicate production planning, particularly where an enterprise has already undertaken obligations calculated for a particular period. The system must therefore consider the need for stability in economic decisions alongside the possibility of prompt regulation.

Information about actual resource utilization, productive constraints, and the results of economic activity, in turn, enters the planning system. It may provide grounds for revising existing antiprices and refining economic valuations.

Thus, P-AMO must combine system-wide calculations with information obtained from autonomous economic Links. Specific methods for determining antiprices—including mathematical models, criteria for resource valuation, and revision procedures—require separate technical development. The general architecture establishes their principal function: **creating a managed system of production price signals that makes it possible to coordinate independent economic decisions with the objectives of the Plan**.

## 12 P-AMO: Production Budgets

**Production budgets (P-Budgets)** are antimonetary funds provided to the economic Links of Cenes for conducting economic activity. They determine the resource-utilization capabilities available to a Link within the overall Plan and constitute one of the principal forms through which its economic autonomy is realized.

A production budget is expressed in antimonetary units and used in conjunction with production antiprices. Antiprices establish economic valuations of resources, while the budget determines the ability of a particular economic Link to utilize them.

In a market economy, an enterprise acquires the resources it needs using its own or borrowed monetary funds. In Cenes, the corresponding economic capabilities are provided through the system of production budgets. An enterprise receives antimonetary funds to perform its economic functions and independently determines permissible methods of utilizing them.

Importantly, **a production budget is not the private property of the enterprise or its managers**. It establishes the right to dispose of certain resource capabilities within the limits of the authority granted. The resources themselves remain part of the common economic system.

For example, an enterprise may possess a budget that allows it to utilize a certain quantity of materials, energy, equipment, and production services. Its management compares the antiprices of available resources and chooses the most appropriate method of organizing production. If one technological process requires lower antimonetary expenditure for a comparable result, the enterprise has economic grounds for preferring it.

This example illustrates the principle of using budgets and antiprices; specific rules governing access to resources may depend on their characteristics and the conditions of the existing Plan.

**Production budgets are allocated recursively**, in accordance with the organizational structure of Cenes. At the highest level, the resource capabilities of the largest economic Links are determined. The corresponding budgets are then distributed among subordinate formations, down to individual enterprises.

Each intermediate Link receives certain economic capabilities and distributes them within its competence. In doing so, it takes account of its obligations toward the superior system, the needs of subordinate Links, and the constraints of the overall Plan.

For example, a major region may receive a production budget to support its economic activity and fulfill assigned tasks. The regional planning system determines which resources are required by the economic complexes within the region. At subsequent levels, the corresponding capabilities are distributed among terminal Nodes.

This structure makes it possible to combine system-wide resource allocation with the use of information available to subordinate governing bodies. The highest level establishes general constraints, while intermediate Links take account of the specific characteristics of their own economies when distributing the funds provided.

Budget allocation must be coordinated with economic obligations. **An economic Link must possess resource capabilities corresponding to the tasks assigned to it.** However, the budget and the obligation perform different functions: the former determines the economic means provided, while the latter determines the required results of activity.

The relationship between them is taken into account when establishing the overall Plan. If the fulfillment of a particular task requires additional resources, the corresponding need must be considered within the economic planning process. Changes in obligations may be accompanied by revisions to the budgets provided.

Nevertheless, a production budget does not necessarily have to be allocated in advance among every specific expense of an enterprise. A portion of the funds may be placed at the discretion of its management for the independent selection of technologies, suppliers, and methods of organizing activity.

This possibility is one of the most important conditions of Node autonomy. An enterprise possesses an economic space for making its own decisions and has an incentive to use the resources provided rationally.

At the same time, economic autonomy operates within existing antiprices and established constraints. Certain resources may have special strategic significance, limited availability, or specific conditions of utilization. Possessing a sufficient antimonetary budget does not in itself guarantee access to any physical resource.

Consequently, **an antimonetary budget must be coordinated with the actual material capabilities of the economy**. Providing budgetary funds does not create new inventories, production capacities, or transportation capabilities. The corresponding constraints are taken into account when planning and regulating resource allocation.

The possibility of modifying budgets during economic activity is important. Production conditions may change, enterprises may discover more efficient technologies, and the overall Plan may be revised in light of new information.

If an enterprise proposes to expand its activities and can substantiate its additional resource requirements, it may seek a budget increase through the procedures provided by the system. Similarly, the redistribution of productive functions among several Nodes may be accompanied by changes in their budgetary capabilities.

**Production budget reserves** may perform a separate role. Their availability makes it possible to account for unforeseen circumstances, maintain the stability of economic activity, and satisfy additional resource needs without completely revising the initial allocation.

The system may also provide special opportunities for financing experimental activity. Developing new technologies, testing production solutions, and establishing promising enterprises require resources whose results cannot be determined in advance with complete certainty.

The conditions for providing such funds must take into account the nature of the project, its expected economic benefits, and the acceptable level of risk. The specific organization of reserves and experimental financing, however, remains a matter for the further development of Cenes' economic mechanisms.

The use of production budgets is accompanied by the accounting of expenditures and economic results. This information is necessary for evaluating the efficiency of resource utilization, refining production antiprices, and conducting subsequent planning.

If an enterprise achieves its assigned result with lower antimonetary expenditures, the resulting savings are of interest to the entire system. However, the rules governing the subsequent use of saved funds depend on the applicable budget allocation arrangements. Savings do not automatically transform unused production funds into the personal income of managers or employees.

Production budgets may be revised in light of the operational results of Nodes, changes in their functions, and the requirements of the overall Plan. Existing obligations and the resource capabilities provided must remain coordinated, and modifications must be formalized according to established procedures.

The P-AMO system thereby provides the economic foundation for the autonomous activity of Nodes: an enterprise obtains access to resource capabilities, independently makes economic decisions, and uses antiprices to compare available production alternatives.

## 13 C-AMO: Personal Income and Consumption

**Consumer Antimoney Orchestrator (C-AMO)** is the consumer subsystem of the Cenes antimonetary system, providing economic regulation of personal consumption. It is responsible for establishing consumer antiprices, maintaining records of individual antimonetary balances, and administering the material incomes of the population.

In Cenes, every individual possesses a **Personal Balance**, expressing their individual ability to acquire goods and services. Funds credited to this balance may originate from labor remuneration, rewards, and other receipts provided for by the system.

The personal balance allows an individual to dispose independently of the consumption capabilities available to them. It determines which goods and services a person can acquire at existing antiprices but does not prescribe how the funds received must be spent.

For example, a person may use part of their income to purchase household appliances, another part to pay for certain services, and retain the remaining funds for future consumption. Thus, individual economic decisions are made by the consumer within the limits of their balance and the established conditions.

**Consumer antiprices (C-Antiprices)** are economic valuations of goods and services intended for personal consumption. They are expressed in antimonetary units and determine the amount of a personal balance required to acquire the corresponding good or service.

Consumer antiprices are established in accordance with the objectives of the overall Plan. Their determination may take account of the availability of goods, resource constraints, productive capabilities, the needs of the population, and economic development priorities.

As a result, Cenes has the ability to regulate consumption conditions deliberately. For example, an expansion in the production of a particular good may be accompanied by a reduction in its consumer antiprice, making it accessible to more people. Conversely, the limited availability of resource-intensive products may be reflected in a higher antimonetary valuation.

A change in an antiprice influences consumer decisions through consumers' own interests. Each individual independently determines whether acquiring a particular good corresponds to their needs and available funds.

Consumer preferences are also an important source of economic information. Information about purchases, changing needs, and patterns of consumption may be taken into account in production planning. Nevertheless, Cenes retains the ability to determine development priorities on the basis of broader social and productive objectives.

**P-AMO and C-AMO perform different economic functions.** The production subsystem regulates resource utilization by economic Links, while the consumer subsystem provides for the individual allocation of material goods.

Production budgets and personal balances therefore serve different purposes. An enterprise receives a budget to conduct economic activity and perform its functions within the overall economy. An individual receives personal antimonetary funds that they may dispose of within the sphere of personal consumption.

This distinction also concerns the nature of the rights granted. An enterprise manager may make decisions involving a substantial production budget, but the corresponding funds do not constitute the manager's personal income. Conversely, an individual's personal balance does not confer authority to dispose of the enterprise's productive resources.

An important feature of AMO is the possibility of **different economic valuations for the same physical good** within the production and consumer subsystems.

For example, an enterprise may use a particular electronic device as production equipment, while an individual purchases an equivalent device for personal use. In the former case, its utilization is valued through P-AMO; in the latter, through C-AMO.

The difference between production and consumer antiprices is determined by the different economic objectives of the corresponding subsystems. A production valuation must take account of a resource's significance for economic activity, while a consumer valuation concerns the conditions under which the good is distributed among the population. These valuations may therefore differ while remaining coordinated within the overall antimonetary system.

The connection between C-AMO and the production economy is established through the overall Plan. Consumption capabilities must correspond to the actual availability of goods and services and to prospects for their production. An increase in personal antimonetary balances does not in itself create additional material goods.

Consequently, the formation of incomes and consumer antiprices must take account of the economy's real capabilities. The system must coordinate the purchasing power of the population with available output, the conditions of its distribution, and the objectives of further development.

Individual balances may also be retained and used in subsequent periods. The organization of C-AMO therefore requires comparability of antimonetary magnitudes over time: changes in the system's accounting parameters must not arbitrarily distort the economic meaning of personal funds accumulated previously.

The **formation of individual incomes** is of separate importance. In Cenes, a person's material remuneration must be connected with the nature of their activity, the social necessity of the work performed, and the actual results of labor.

For this purpose, C-AMO interacts with the mechanisms of individual motivation and reward. These mechanisms determine the grounds for changes in personal incomes, while the consumer antimonetary subsystem provides for their accounting and utilization.

Thus, the amount of a personal balance may change depending on a person's labor activity, rewards received, and other established circumstances. The specific principles governing the formation of these incentives are examined in the following chapters devoted to the motivational system of Cenes.

## 14 The General Logic of Economic Allocation

Economic allocation in Cenes is carried out through a unified antimonetary system encompassing production and consumer relations. Its purpose is to coordinate the utilization of scarce resources with the needs of economic Links, individual consumption, and the general objectives of development.

The foundation of this allocation consists of **antiprices and antimonetary budgets**. Antiprices express economic valuations of goods, resources, and services, while budgets determine the capabilities available to participants for utilizing them. Together, these instruments make it possible to regulate the activities of enterprises and consumers while preserving their autonomy in decision-making.

The system requires a **common accounting denomination**, conventionally designated as **X**. It constitutes a common unit for expressing antimonetary magnitudes, making quantitative comparisons of resources, budget accounting, and the calculation of economic consequences of different decisions possible.

For example, if the use of one material is valued at 100 X and another at 150 X, an enterprise can take this difference into account when selecting a production technology. The final decision, however, also depends on the quantities of materials required, the quality of the result, and other production conditions.

**X provides a common denomination for calculations but does not itself determine the economic value of objects.** Specific antiprices are established by the system in light of the existing Plan, available resources, and the corresponding economic tasks.

The common denomination is used in both P-AMO and C-AMO. However, a common accounting unit does not mean that production and consumer antiprices must be equal. These subsystems evaluate economic objects in different relationships and may assign different magnitudes to them.

For example, a particular electronic device may be used by an enterprise in production and simultaneously offered to the population for personal consumption. Its production and consumer antiprices may differ because the conditions under which the device is used and the objectives of the respective subsystems are not identical.

The distinction also extends to budgets. **A production budget is not personal income, and a personal balance does not confer the right to dispose of productive resources.** The common unit X makes it possible to account for magnitudes within a single denomination while preserving the distinction between the economic authority of an enterprise and an individual's consumption rights.

Of particular importance is the **comparability of antimonetary magnitudes over time**. In Cenes, individuals may retain part of their personal income for future consumption, while economic Links may make decisions whose consequences extend across several planning periods.

Changes in the system's accounting parameters must therefore not arbitrarily change the significance of funds recorded previously. For example, if a person has accumulated a particular personal balance, the transition to the next planning period cannot involve simply changing the scale of all antimonetary magnitudes without appropriately accounting for existing obligations and accumulated balances.

This requires rules for preserving the accounting denomination or consistently recalculating magnitudes when it changes. The specific method of ensuring intertemporal comparability remains a subject for the technical development of AMO.

At the same time, **stability of the accounting unit does not imply that antiprices remain unchanged**. Economic valuations must change along with productive capabilities, needs, and resource constraints. For example, the introduction of a new technology may reduce the antiprice of a particular good, reflecting changed conditions of production.

The most important foundation of economic allocation is the **scarcity of physical resources**. Every production process requires certain quantities of materials, energy, equipment, labor, and time. Using these resources for one task may reduce the possibilities for employing them elsewhere.

The economic system must therefore take account of alternative uses of available resources. If a particular material is required by several industries, its allocation requires comparison of the consequences of the corresponding production decisions.

Antiprices make it possible to express such constraints in the form of economic signals. The greater the importance of preserving a particular resource for other tasks of the Plan, the more significantly that circumstance must be reflected in the conditions governing its utilization.

For example, two enterprises may be capable of manufacturing the same product, but the first uses a scarce material while the second uses a more readily available substitute. Even if both methods provide comparable quality and productivity, the overall economic valuation may favor the second alternative. This preserves the scarce resource for activities in which substitution is impossible or less efficient.

However, **antimonetary calculations do not replace verification of the physical feasibility of decisions**. Possessing a sufficient budget does not mean that the necessary materials or production capacities exist. Economic allocation must be based on information about the actual condition of the economic system.

Consequently, the determination of antiprices and budgets is connected with the planning of physical resource flows, productive capabilities, and interdependent economic processes. Economic calculations enable choices among feasible alternatives, while material constraints establish the limits of their realization.

This relationship is also important for consumption. Personal balances express the purchasing capabilities of the population, but their utilization must correspond to the availability of goods and services. If demand for a particular good exceeds the available volume of production, the system must take the resulting shortage into account when regulating consumer conditions and conducting further planning.

Information about actual consumption also makes it possible to identify changes in the needs of the population. Such information is used when assessing whether to expand production, modify product ranges, or develop the corresponding industries.

Resource allocation in Cenes is determined by the **objective of maximizing development**, which includes expanding productive capabilities, improving technologies, and increasing society's material well-being. The system may therefore direct resources toward prospective tasks whose results will become apparent only in the future.

For example, developing a new production technology may require substantial resources during the current period while providing significant reductions in costs in subsequent years. The evaluation of such a project must take account of both its immediate expenditures and the expected results of its implementation.

Coordinating current consumption with long-term development belongs to the tasks of general economic planning. AMO provides the antimonetary expression of the corresponding decisions, while economic Links utilize the capabilities made available to them within the limits of their own autonomy.

Within the recursive structure of Cenes, economic allocation takes place at several levels. Superior bodies determine general resource constraints and economic conditions, while subordinate Links account for their own productive characteristics and allocate available capabilities within their established authority.

The calculations performed at different levels must remain compatible. They all concern the same economy, employ a common denomination, and take account of the interdependence of economic decisions.

Changes in allocation conditions may become necessary when new resources are discovered, technologies improve, needs change, or errors in initial calculations are identified. The corresponding information is received from economic Links and used to refine antiprices, budgets, and related decisions of the Plan.

The accuracy of such valuations depends on the completeness of information and the quality of the methods employed. Cenes therefore provides for the continuous improvement of economic calculations on the basis of actual operational results. This makes it possible to refine the conditions of resource allocation progressively and expand the scope for autonomous economic decision-making.

## 15 MOS: Motivational Orientation System

**Motivational Orientation System (MOS)** is the motivational orientation system of Cenes, designed to coordinate individuals' professional and labor decisions with the needs of the economy. Its principal function is to establish material incentives that direct people toward socially necessary activities while taking account of their individual abilities and capabilities.

MOS is based on the understanding that individuals independently choose the direction of their professional development by evaluating expected income, the difficulty of training, working conditions, and their own interests. These decisions determine the allocation of labor resources among different professions and economic sectors.

To describe this behavior, the concept of **internal capital** is employed. It refers to the totality of knowledge, skills, experience, and other qualities acquired by a person that determine their professional capabilities. Internal capital is formed through education, practical activity, and personal effort. Its development requires time and resources, and individuals therefore have an incentive to choose directions that offer them the most attractive outcomes.

MOS uses this regularity to regulate the allocation of labor. Instead of assigning people directly to necessary positions, the system establishes conditions under which an individual's professional choice becomes consistent with the requirements of the overall Plan.

For this purpose, two kinds of economic inequality must be taken into account.

**The first is inequality in the social necessity of different professions.** The economy requires specialists in different fields, but the degree of this need varies. It is determined by the state of production, the availability of workers, strategic tasks, and the consequences of shortages of the corresponding specialists.

For example, if the system experiences a shortage of engineers with a particular specialization, it may establish higher material remuneration for the corresponding activity. This increases the attractiveness of the profession and encourages people to acquire the necessary knowledge.

**The second is inequality in individual professional capabilities.** People differ in their abilities, training, and effectiveness in particular activities. One individual may have pronounced abilities for engineering work, another for teaching or organizing production. The same profession therefore does not necessarily represent an equally suitable opportunity for everyone.

The interaction between these two inequalities determines professional motivation. A person compares their own capabilities with the conditions offered by the economic system and chooses the direction of activity that they consider most advantageous.

Importantly, **individual suitability for a profession and its social necessity are different characteristics**. Greater personal effectiveness in one profession does not mean that this profession should necessarily provide the individual with the highest income.

Suppose an individual can successfully work both as a teacher and as a cleaner, with relatively higher productivity in the latter activity. However, the economy has a significantly greater need for teachers and establishes higher remuneration for them. In this case, teaching may be materially preferable for the individual despite their comparative advantage in the other type of work.

This simplified example illustrates the principle of MOS: **remuneration must take account of the social necessity of an activity, while professional choice must also reflect the individual's capabilities**. The system directs people toward the most useful activities while preserving their ability to make independent decisions.

Such regulation is also important for the long-term development of labor resources. If the economy plans a large-scale expansion of a particular industry, the need for the corresponding specialists arises long before new production capacities are commissioned. MOS makes it possible to change the attractiveness of professional fields in advance, encouraging people to obtain the necessary education and qualifications.

Economic planning thereby acquires the ability to influence the future formation of labor resources. By responding to expected working conditions and incomes, individuals independently invest effort in developing their internal capital.

Motivational orientation also extends to changes in the professional activities of people who are already employed. Technological development may reduce the need for certain specializations while increasing demand for others. Corresponding changes in incentives create an interest in retraining, acquiring additional qualifications, and moving into new forms of work.

Professional incentives must also take account of the costs involved in acquiring the corresponding skills. If a new profession requires prolonged preparation, its attractiveness depends on expected remuneration, the difficulty of training, and the opportunities available to the individual.

The most important characteristic of MOS is the **deliberate formation of the structure of personal incentives**. In a market economy, the relative attractiveness of professions emerges under the influence of labor demand, competitive conditions, and other market factors. In Cenes, it can be regulated in light of the prospective needs of the entire economic system.

The material expression of these incentives is provided through C-AMO, since professional activity affects personal antimonetary income. MOS, however, primarily determines the directions of motiva-

tional influence, while the specific rules for rewarding the performance of duties, achieved results, and violations belong to other mechanisms of Cenes.

The effective operation of MOS requires information about the current and expected condition of the labor market in the broad economic sense: the number of specialists, their qualifications, the needs of industries, and opportunities for professional training. These data make it possible to modify motivational conditions in accordance with the economy's actual and prospective demand for labor resources.

The system must nevertheless take account of the fact that a person's professional motivation does not depend exclusively on material income. Personal interests, working conditions, social recognition, and opportunities for development are also important. MOS therefore treats material incentives as a principal manageable instrument of professional orientation while preserving room for individual preferences and independent choice.

## 16 BRSS: Basic Reward and Sanction System

**Basic Reward and Sanction System (BRSS)** is the basic reward and sanction system of Cenes, designed to evaluate the fulfillment of economic obligations and establish the corresponding material consequences for responsible individuals.

Whereas MOS determines the material attractiveness of different professions and directions of labor activity, BRSS regulates an individual's rewards and responsibility according to the results of fulfilling obligations already undertaken. It connects personal economic incentives with the quality of performance of assigned duties.

The foundation of BRSS is the **standard fulfillment of an obligation**. An individual who performs the established work properly receives the remuneration prescribed for that activity. Such performance constitutes the norm against which additional achievements and violations are evaluated.

The system provides for three principal categories of evaluation: proper performance, the achievement of results deserving additional remuneration, and breaches of obligations giving rise to liability.

**Proper performance** means fulfilling established duties while taking account of circumstances for which the executor is responsible. In this case, the individual receives ordinary remuneration without additional rewards or sanctions.

**Additional remuneration** is applied when results are achieved that provide economic benefits beyond the level required by standard duties. Grounds for such remuneration may include increased productivity, substantial resource savings, improved quality of work, and other useful achievements.

Additional remuneration must correspond to an actual result. For example, an increase in the number of goods produced does not in itself demonstrate economic improvement. If the additional output is not required by the system or its production involves excessive resource consumption, formally exceeding a quantitative target may not represent a useful achievement.

BRSS must therefore take account of the **economic significance of the result**, rather than merely the extent to which a particular indicator has been exceeded. The specific criteria and conditions for remuneration are determined by the nature of the obligation and the system's applicable rules.

**Sanctions** are applied when liability for improper performance of duties has been established. Grounds for sanctions may include violations of established requirements, unjustified failure to fulfill

obligations, the infliction of economic damage, and other actions for which the corresponding individual bears responsibility.

In applying sanctions, BRSS relies on the legal distinction between obligation and liability examined earlier. Actual failure to achieve an assigned result does not necessarily constitute a violation by the executor.

For example, an enterprise manager may take the necessary measures to fulfill an obligation but encounter objective constraints beyond their control. In such a case, the circumstances of execution must be considered when determining liability. If the assigned result was not achieved for reasons for which the manager is not responsible, the corresponding deviation must not automatically result in a sanction.

A different situation arises when an unsatisfactory result is caused by the manager's own improper actions. If an enterprise possesses the necessary capabilities but fails to fulfill its obligation because of a proven breach of the manager's duties, BRSS provides for the corresponding consequences.

Thus, the system must distinguish between **an unfavorable economic outcome and a culpable breach of duty**. The magnitude and nature of a sanction are determined in light of the established circumstances, the consequences of the violation, and the personal responsibility of the individual concerned.

The distinction between the responsibility of an economic Link and that of its managers is particularly important. An enterprise constitutes an independent organizational unit of Cenes, while its managers and other workers possess their own official duties. A negative outcome in the activities of a Node therefore does not imply equal responsibility for all participants in its management.

The legal grounds for evaluation are established within **CCL**. The corresponding contracts specify duties, performance conditions, and applicable rules of liability. Actual results and the circumstances in which they were achieved are used to determine the consequences prescribed by BRSS.

Responsibility retains its vertical organization. A manager or economic Link is accountable to the corresponding superior system within the limits of the established obligations. If a violation arises because of the actions of another Link, the relevant circumstances are considered by the competent superior level.

BRSS requires reliable information about operational results. The evaluation of performance must therefore take account of economic accounting data, inspections, and other sources provided for by the system. This is particularly important in situations where an executor has an incentive to present their own results more favorably or conceal violations.

At the same time, the reward system must maintain people's interest in identifying and correcting economic errors. If reporting an existing problem automatically leads to punishment of the person reporting it, an incentive to conceal information arises. It is therefore necessary to distinguish responsibility for a violation, good-faith reporting of it, and independent actions taken to correct the situation.

BRSS interacts with the **offer system**, which is examined in detail in subsequent sections. BRSS nevertheless performs an independent function. The ordinary improvement of methods for fulfilling assigned duties belongs to the executor's current activity and may be considered when evaluating its results. An offer, by contrast, constitutes a separate proposal to change the assigned economic result. The procedures governing its consideration and remuneration are determined by the corresponding mechanism.

The material consequences of BRSS decisions are implemented through **C-AMO**. Additional rewards increase an individual's personal antimonetary capabilities, while prescribed economic sanctions may modify them according to the established procedure.

BRSS does not replace the **Priority System (PS)**, whose organization is examined in the following section. Basic rewards and sanctions concern the evaluation of performance of specific duties, whereas the Priority System regulates an individual's special status and its associated consequences. These mechanisms may interact, but they serve different purposes.

An essential safeguard for the proper application of BRSS is the possibility of reviewing liability decisions through **Technical Arbitration**. An executor has the right to challenge the grounds for an imposed sanction and present evidence of circumstances affecting the evaluation of their actions.

If a liability decision is subsequently found to be erroneous, its consequences must be corrected. This includes the cancellation of unjustified sanctions and the restoration of violated material rights. Consideration of a dispute does not in itself release the executor from existing economic obligations.

The specific amounts of rewards, types of sanctions, and methods for calculating economic consequences are determined by the specialized rules of BRSS. The general architecture establishes its principal function: **providing material incentives for proper and effective performance of duties by establishing consequences based on actual achievements and proven responsibility**.

## 17 PS: Priority System

**Priority System (PS)** is the priority system of Cenes, establishing an individual's special economic and social status according to their contribution to the system's development, achievements, and established violations. It supplements ordinary reward and liability mechanisms, allowing circumstances whose significance extends beyond the performance of individual labor obligations to be taken into account.

PS is based on the distinction between **material income and priority status**. Income determines an individual's current consumption capabilities, whereas priority reflects their particular position within the system and may influence additional economic rights, advantages, and restrictions.

For example, an outstanding scientific achievement may provide substantial benefits to the entire economy, with consequences that persist for many years. Ordinary monetary remuneration makes it possible to reward the specific result, but PS allows the individual to be granted a special status corresponding to the scale of their contribution.

The system provides for three principal categories: **Base Priority (BP), High Priority (HP), and Low Priority (LP)**.

**Base Priority (BP)** is the basic priority, representing an individual's standard status within Cenes. It applies when no grounds exist for assigning elevated or reduced priority.

Base Priority presupposes the ordinary conditions of participation in the economic and social life of the system. The individual's material capabilities are determined primarily by their personal antimonetary balance, professional activity, and the applicable rules of allocation.

**High Priority (HP)** is an elevated priority granted for an exceptional contribution to the development of Cenes. Grounds for assigning it may include outstanding scientific discoveries, major technological achievements, particularly valuable managerial decisions, and other results of substantial significance to society.

An increase in priority must be determined by the actual usefulness of the achievement. For example, developing a technology that substantially increases productivity in a key industry may affect a large number of enterprises and provide long-term reductions in resource expenditure. Such an achievement may deserve special recognition independently of its author's ordinary remuneration.

High Priority may grant additional economic advantages, special conditions of access to certain opportunities, and other forms of reward. Their specific content is established by the rules of PS.

**Low Priority (LP)** is a reduced priority applied as a special status sanction for established violations that have significant consequences for the system. Its purpose is to create additional consequences for actions whose liability is not exhausted by ordinary material penalties.

Grounds for reducing priority may include proven serious breaches of duty, intentional infliction of substantial damage, and other actions specifically provided for by the relevant rules. At the same time, unlawful conduct that has been established must be distinguished from a good-faith error, an objective failure, or disagreement with an adopted decision. A negative result or the expression of disagreement does not in itself prove that damage has been caused.

Low Priority may involve restrictions on certain additional advantages and other consequences provided for by the system. The content of these restrictions, their duration, and the grounds for removing them require separate legal specification.

Of fundamental importance is the **distinction between BRSS and PS**. The basic reward and sanction system evaluates the performance of specific obligations. The Priority System establishes an individual's special status, which may remain significant beyond a particular work period or individual violation.

For example, an enterprise manager may receive additional material remuneration for successfully completing a particular task. Such an achievement, however, does not necessarily constitute grounds for High Priority. Elevated status presupposes a result of exceptional significance, exceeding the ordinary requirements of professional activity.

Similarly, a standard sanction for breaching an obligation must not automatically result in Low Priority. A reduction in status constitutes a separate decision adopted on specifically established grounds.

PS interacts with **C-AMO**, since different priority categories may modify an individual's material capabilities. However, priority is not a form of personal antimonetary balance: a person may possess substantial income while retaining Base Priority, or may have High Priority independently of the amount of their current savings.

The Priority System is also connected with the offer system, which is examined in the following sections. Successful proposals that produce exceptional improvements in economic results may potentially provide grounds for increasing priority. However, ordinary remuneration for an accepted offer and the granting of special status remain distinct decisions.

The operation of PS requires procedures for assigning, modifying, and removing statuses. The corresponding decisions must be based on verifiable circumstances, adopted by competent bodies, and formalized within the general legal infrastructure of Cenes.

The possibility of **reviewing Low Priority status** is especially important. If the grounds for its assignment are found to be erroneous, the status and its associated consequences must be corrected. The system may also provide for the restoration of Base Priority after established conditions have been met, a specified period has elapsed, or the consequences of the violation have been remedied.

High Priority also requires rules governing its preservation and review. Its assignment must be connected with particular achievements and established criteria that exclude arbitrary changes in status.

The specific advantages of High Priority, restrictions associated with Low Priority, criteria for transitions between categories, and procedures for restoring status remain subjects for the further development of PS. Within the general architecture, the Priority System constitutes an **independent mechanism of status-based reward and accountability**, supplementing the material incentives of Cenes.

## 18 The Problem of Local Knowledge and the Purpose of the Offer System

One of the most important tasks of Cenes is to utilize information possessed by individual participants in the economy. Even with an advanced computational infrastructure, the planning system cannot take account in advance of every productive capability, technological solution, and circumstance of economic activity.

A substantial part of economic information arises directly during the operation of enterprises. Managers and specialists discover new methods of organizing production, opportunities for saving resources, deficiencies in existing decisions, and prospects for developing particular areas of activity. Some of this knowledge is relevant only to a particular Node, while other information may substantially improve the overall Plan.

Cenes therefore requires a mechanism that makes it possible to use local initiative to improve decisions adopted by superior bodies. This function is performed by the **Offer System**.

An **offer** is a formalized proposal to change an assigned economic task in order to achieve a result that is more beneficial to the system. Its purpose is to allow economic participants to propose improvements to the Plan itself, drawing on their own knowledge and identified economic opportunities.

Understanding this mechanism requires returning to the distinction established earlier between **an assigned result** and **the method of achieving it**.

When an economic Link receives a particular task, its management is required to organize its execution independently. The selection of technologies, improvements in productivity, changes to the enterprise's internal structure, and the search for more efficient solutions belong to ordinary managerial functions. Such activity takes place within the autonomy granted and does not in itself require submitting an offer.

An offer arises when a participant proposes to change **the assigned result itself**.

Consider a simplified example. Regional leadership is assigned the task of increasing certain productive capacities by 10%. Regional managers independently determine how to achieve this result: they develop the necessary measures, organize resource utilization, and coordinate the activities of subordinate economic Links.

Suppose that, during this work, they discover an opportunity to increase capacity by 15% under economically acceptable conditions. In this case, the region may submit an offer to its superior leadership proposing that the original target be changed from 10% to 15%.

The substance of the offer lies precisely in revising the assigned result. Developing measures to achieve the original 10% remains an ordinary duty of the regional leadership. This example illustrates

the principle of the Offer System and does not represent a literal scheme for establishing economic obligations in Cenes.

Thus, **an offer enables a subordinate Link to initiate a change to a decision adopted by the superior system**. The authority to make the final change to the corresponding task nevertheless remains with the competent governing body.

The ability to submit offers extends across different levels of economic recursion. A proposal may originate from an enterprise, a production complex, a region, or another economic Link. An individual possessing a useful economic solution may also act as a potential offeror.

An **offeror** is a participant who submits an offer according to the established procedure. The concept is not restricted to entrepreneurs or enterprise managers. Its defining characteristic is the initiative to improve an assigned economic decision.

The Offer System also applies to the governing bodies of intermediate levels. Regional leadership receiving obligations from the superior system may propose improvements to them just as an enterprise may propose changing a task assigned by its immediate superior.

The supreme Command Core of Cenes constitutes an exception. It independently determines the system's highest strategic objectives and has no superior body whose decisions it could challenge through an offer. Changes to its own political objectives fall within the ordinary authority of the supreme leadership.

Of particular importance are the **economic incentives for submitting offers**. Discovering a more efficient solution often requires additional research, calculations, and organizational effort. If a participant receives no advantage from disclosing such information, they may lack sufficient motivation to propose improvements to superior leadership.

The Offer System must therefore connect useful initiative with corresponding remuneration. A participant who proposes an economically justified improvement gains the opportunity to obtain a personal benefit from a result that is useful to the entire system.

This creates conditions for **competition between economic proposals**. Different participants may discover alternative ways to improve the Plan and submit their own solutions. Their proposals must be evaluated according to their expected consequences for the economy, including resource requirements, technological possibilities, and effects on other economic Links.

The success of an offer is determined by its **system-wide economic usefulness**. A proposal may involve increasing output, improving product quality, reducing resource expenditure, creating new productive capabilities, or achieving other improvements. The specific outcome is considered in light of the objectives of the overall Plan.

For example, developing a new product may possess substantial productive or social value even if its initial commercial attractiveness would be insufficient under market conditions. In Cenes, a decision to implement such a proposal may be based on the product's expected usefulness for the further development of the economy.

An offer does not acquire binding force merely upon submission. Its acceptance requires an evaluation of the arguments presented and the consequences of the proposed change. Existing obligations remain in force until the task is officially revised.

This principle distinguishes the Offer System from **Technical Arbitration**, which is examined separately. An offer is directed toward improving an economic decision, whereas an appeal primarily concerns the justification of liability for fulfilling an obligation already assigned.

The specific procedures for submitting, verifying, accepting, and rewarding offers are determined by specialized rules examined in the following sections.

## 19 The Organization of the Offer System

The Offer System of Cenes constitutes an established procedure for submitting, considering, and accepting proposals to improve the economic Plan. It operates at every level of economic recursion and makes it possible to use the initiative of individuals and economic Links to modify previously assigned decisions.

**Every participant in Cenes has the right to submit an offer** if they possess a proposal capable of improving an economic result. An offeror may be an individual, an enterprise manager, or the manager of a larger economic Link. Acceptance of the offer, however, falls within the competence of the body authorized to modify the corresponding decision.

Under the ordinary procedure, an offer is considered by the superior system that assigned the original task. For example, a regional Link may propose modifying its obligations to the leadership of the entire economy, while an enterprise may submit its proposal to the immediately superior economic Link. This organization corresponds to the vertical structure of governance in Cenes.

An offer must contain **a specific proposed change** and a justification of its economic usefulness. It may concern an increase in useful output, an improvement in qualitative characteristics, a reduction in resource requirements, or another modification capable of producing a result preferable for the system.

The substance of an offer is determined by the assigned task. If the proposed improvement can be achieved through ordinary managerial decisions within existing obligations, a separate offer is unnecessary. An offer is submitted when implementing the proposal requires revision of a decision made by the superior system.

To consider an offer, it is necessary to establish which obligations are proposed for modification, what the expected improvement consists of, and which conditions are necessary to achieve it. Accordingly, the proposal is accompanied by relevant calculations, a description of the expected result, and information about possible resource requirements.

For example, an enterprise manager may discover an opportunity to manufacture a more advanced product whose production requires modifying previously established operating conditions. The manager submits an offer specifying the proposed result, the necessary resources, and the expected advantages of the new decision. This example illustrates the general procedure for submitting a proposal; the specific content of economic obligations in Cenes may take another form.

The legal formalization of offers is provided by the **Cenes Contract Layer (CCL)**. Every offer constitutes a separate digital object linked to the corresponding contract or managerial decision. It records the author of the proposal, its content, the submission time, the supporting arguments presented, and subsequent decisions.

Such formalization makes it possible to establish the origin of an offer, verify its content, and preserve the history of its consideration. If the proposal is accepted, the corresponding changes are formalized within the contractual system, preserving the relationship between the original decision and its new version.

An important organizational element is the **Offer Window**—an established period during which participants may submit proposals to modify a particular decision.

The purpose of this mechanism is to coordinate participants' initiative with the stability of the existing Plan. Economic Links must have the opportunity to propose improvements, while the governing system must have a defined period for considering alternatives before finally establishing the related decisions.

The duration of an Offer Window depends on the nature of the corresponding task. A relatively short period may be appropriate for some decisions, while others may require a longer period allowing the necessary research and calculations to be conducted. The specific deadlines and conditions for modifying them are established by the rules of the Offer System.

**Submitting an offer does not in itself modify existing obligations.** Until a new decision is adopted, the corresponding economic Link continues to perform its assigned task. This preserves the stability of economic activity while the proposal is under consideration.

After registration, the offer undergoes verification. First, it is necessary to establish its compliance with the applicable requirements, the presence of sufficient justification, and the feasibility of the proposed change.

Substantive evaluation is carried out with the participation of the relevant economic planning bodies. They examine the proposal's consequences for resource utilization, productive capabilities, and the fulfillment of other obligations.

**Interdependencies among economic Links** are particularly important. Improving the result of one enterprise may require additional deliveries, changes in resource allocation, or revisions to the tasks of other participants. A proposal must therefore be evaluated from the standpoint of the entire affected part of the economy.

If a regional offer involves modifying the obligations of several subordinate economic complexes, the corresponding decision is considered at the level possessing the authority to coordinate these changes. Where necessary, related contracts are revised within the common pool of obligations.

Offers may be **competing**. Several participants may independently propose different ways to improve the same economic decision. In such cases, the system considers the alternatives presented, comparing their expected results, resource requirements, constraints, and risks.

Preference should be given to the proposal that provides the most useful result for the overall Plan, taking account of its aggregate economic consequences. If several proposals are compatible, they may be implemented together, provided that the corresponding decisions are coordinated.

The evaluation of an offer is not limited to comparing individual quantitative indicators. For example, a proposal to increase output substantially may be less preferable than a moderate expansion of production accompanied by a significant improvement in quality or a reduction in the consumption of a critically important resource.

**The final decision on accepting an offer is made by the competent superior body.** It may accept the proposal, reject it, or determine that additional verification and refinement of the proposed conditions are necessary.

Once an offer is accepted, the corresponding change is incorporated into the Plan. Where necessary, obligations, budgets, and other related economic conditions are revised. The new decisions acquire legal force through CCL according to the established procedure.

Preserving the coordination of the overall Plan is an essential condition. If a change affects several economic Links, the new obligations must be formalized as parts of a single coordinated decision. Each Link continues to remain accountable to its superior level.

The results of implementing an accepted offer are subject to subsequent verification. The actual improvement may differ from the initial forecast, and the system must therefore compare the achieved results with the justification originally presented. This information is used to evaluate the success of the proposal and refine subsequent economic decisions.

The establishment of remuneration for the offeror is of separate importance. Its grounds must take account of the actual economic benefit of the accepted proposal and the nature of the result obtained. The economic consequences of offers, competition among participants, and the associated incentives are examined in the following sections.

## 20 The Economic Consequences of Offers

The acceptance of an offer means changing the original economic decision in favor of the proposed outcome. If the proposal affects existing obligations, its implementation is accompanied by a corresponding revision of the Plan. Such changes may extend to an individual enterprise or to several interconnected economic Links.

**The main criterion for the success of an offer is an improvement in the economic outcome from the standpoint of the entire system.** Such an improvement may consist of increasing the production of necessary goods, improving their quality, reducing resource requirements, developing new productive capabilities, or making other beneficial changes.

When evaluating a proposal, its aggregate consequences must be taken into account. Increasing output at one enterprise may require additional materials, energy, and production capacity that could be used for other purposes. The usefulness of an offer is therefore determined by considering both the result obtained and the resources necessary to achieve it.

Consider a simplified example. Two enterprises have each been assigned the production of 100,000 identical components. The management of the first enterprise discovers an opportunity to increase its own output to 150,000 units while maintaining high production efficiency. At the same time, reducing the output of the second enterprise to 50,000 units makes it possible to reduce total resource expenditures.

The first enterprise may submit an offer proposing a corresponding change in the distribution of production. If calculations confirm its economic feasibility, the superior system accepts the proposal and modifies the obligations of both enterprises.

As a result, total output remains unchanged, but its production requires fewer resources. The capabilities thereby released can be used to fulfill other tasks of the Plan.

The fundamental point here is that the enterprise proposes **to change the distribution of assigned results**. If it had simply found a more economical way to manufacture its own 100,000 components, that improvement would belong to its ordinary economic activity.

An accepted offer may require changes not only to obligations but also to production budgets. In the example above, the first enterprise may need additional materials and productive capabilities, while the requirements of the second decrease. The corresponding changes must be coordinated with the new distribution of tasks.

Production antiprices may also be revised. Changes in output volumes, resource constraints, or available technologies may affect the economic valuation of particular goods and resources. Such revisions are nevertheless carried out according to the general rules of P-AMO: accepting an offer does not automatically entail changes to all related valuations.

**The economic benefit of an offer belongs to the entire system**, because productive resources form part of the common economy. However, the individual who proposes a beneficial change must have a personal incentive to see it implemented.

For this purpose, the Offer System provides for **remuneration of the offeror**. This remuneration is expressed through the consumer antimonetary subsystem, C-AMO, and increases the corresponding individual's economic capabilities.

Thus, two results of accepting an offer must be distinguished: a change in the economic Plan and the personal remuneration of the proposal's author. An enterprise may receive additional productive resources to implement the new decision, while the offeror receives a material reward for discovering the improvement. The production budget does not thereby become the manager's personal property or income.

The amount of remuneration should depend on the economic value of the proposal and the established conditions of its implementation. An especially beneficial change may deserve significantly greater remuneration than a comparatively minor improvement. The specific methods for calculating rewards require separate determination.

The Offer System also creates the possibility of **competition among proposals**. Several participants may independently discover different ways to improve the same economic decision. Their proposals are considered and compared according to their expected usefulness for the entire system.

For example, one enterprise may propose expanding its own production, while another proposes introducing a new technology capable of achieving the same result at a lower cost. The system can select the preferable decision or combine the proposals if they are compatible.

Such competition encourages economic participants to search for new opportunities and disclose information unavailable to superior governing bodies. It makes it possible to utilize entrepreneurial initiative within a planned economy, directing that initiative toward improving the overall Plan.

At the same time, a successful offer may result in **a change in the structure of the economic network itself**. If producing a particular good proves more efficient at another enterprise, the corresponding tasks and resources may be redistributed. In larger cases, proposals may provide grounds for expanding existing Nodes, establishing new enterprises, or transforming economic complexes.

Offers are particularly important for technological development. A participant may propose creating a new product, introducing a more advanced technology, or organizing production not previously included in the Plan. In such a case, the economic system evaluates the expected usefulness of the new outcome and the conditions necessary to achieve it.

**Acceptance of such a proposal does not necessarily depend on the existence of initial effective demand.** For example, a new technology may possess considerable prospective value for industry even though most potential users are not yet aware of its advantages. Cenes can take account of the expected productive and social consequences of introducing such a technology when making its decision.

After an offer has been implemented, its results must be compared with the original justification. Actual changes in production, resource consumption, product quality, and other significant indicators make it possible to establish the extent to which the proposed improvement met expectations.

This verification is necessary to evaluate the economic benefit obtained, determine the offeror's remuneration, and further improve the Plan. At the same time, uncertainty in forecasts must be taken into account, and a good-faith proposal that failed to meet expectations must be distinguished from a knowingly unreliable justification.

Questions concerning the precise determination of remuneration, competition in discovering errors, possible concealment of information, and the risks of dishonest proposals belong to the system of incentives for offer-based activity and are examined in the following section.

## 21 Incentives, Risks, and Stability of the Offer System

The effectiveness of the Offer System depends on the extent to which its participants are interested in discovering and disclosing opportunities to improve the Plan. For this purpose, the economic benefit of a useful proposal must be connected with the offeror's personal interest, while the conditions of its consideration must ensure a reliable assessment of the expected result.

One of the main problems of a planned economy is **the concealment of productive capabilities**. The management of an enterprise may possess information about additional reserves that are absent from the calculations of the superior system. However, disclosing this information is not always advantageous to the enterprise itself.

This is connected with the **ratchet problem**. If the discovery of additional capabilities merely leads to higher future requirements, an enterprise has an incentive to conceal reserves or deliberately limit its achieved results. For example, upon discovering an opportunity to increase output by 20%, management may prefer to preserve the previous indicators, fearing that the new capabilities will be taken into account when subsequent obligations are assigned without any additional remuneration.

The Offer System must change this motivation. **The disclosure of useful information becomes an independent source of material remuneration.** A participant gains the opportunity to benefit from a discovered improvement even if the principal economic benefit accrues to the entire system.

At the same time, remuneration must take account not only of the immediate result of the proposal but also of its possible consequences for the offeror's subsequent activity. If revealing a reserve is accompanied by a disproportionate increase in future obligations, the initial reward may prove insufficient. Accordingly, the rules for evaluating offers must preserve the incentive to disclose capabilities in subsequent periods as well.

An additional incentive is provided by **competition to discover errors and improvements in the Plan**. Because the right to submit offers is not limited to those directly responsible for execution, a useful proposal may originate from another enterprise, a specialist, or a managerial Link.

Suppose an enterprise discovers that the established Plan does not account for a particular opportunity to conserve resources. Its management may submit the corresponding offer and receive remuneration. However, the same circumstance may be discovered by other participants or by the planning system itself. If the improvement is identified independently, the original holder of the information may lose the opportunity to receive remuneration for discovering it.

An incentive thus emerges **to disclose useful information promptly rather than keep it secret**. Competition extends to the quality of economic proposals and participants' ability to discover more advanced solutions.

At the same time, discovering a deficiency must be distinguished from submitting a complete offer. Merely asserting that a particular decision is erroneous does not yet prove the existence of a more efficient alternative. An offer must contain a specific proposal and sufficient justification for the expected improvement. Otherwise, the system could encourage large numbers of unsubstantiated claims with no practical economic value.

An important question concerns **the distribution of remuneration among several offerors**. The same improvement may be discovered independently by several participants, while different proposals may complement one another. Rules are therefore needed to determine authorship, account for independent contributions, and resolve disputes concerning remuneration.

Simply granting priority to the first registered proposal does not always correspond to the actual usefulness of its author's work. For example, one participant may be the first to identify the existence of a problem, while another presents a complete solution with the necessary calculations. Economic evaluation must take account of the nature of their contributions and the degree of justification of the corresponding proposals.

The Offer System also creates certain **risks of dishonest behavior**. Participants may overstate the expected usefulness of their own proposals, conceal additional costs, or provide incomplete information about the possible consequences of implementing a project.

Such behavior is especially dangerous when the initial result appears attractive but achieving it requires additional resources from other economic Links. For example, a proposal to increase output may appear beneficial for an individual enterprise while being accompanied by a disproportionate increase in the burden on transportation infrastructure or a related industry.

The usefulness of an offer must therefore be determined **with regard to its consequences for the entire economic system affected**. Considering proposals entails the use of calculations, verification of significant initial data, and comparison of several possible alternatives.

A separate problem is **uncertainty of outcomes**. Even an offer prepared in good faith may fail to meet expectations because of unforeseen circumstances, limitations in the initial data, or forecasting errors. If every such deviation automatically results in punishment of the offeror, the system creates an incentive to avoid promising but risky proposals.

It is therefore necessary to distinguish a good-faith mistake, the acceptance of justified economic risk, and the deliberate deception of the system. Liability for knowingly false information or a proven violation of established duties must be determined separately from the evaluation of a proposal that proved unsuccessful for objective reasons.

This distinction is particularly important for innovation. Fundamentally new technologies and production solutions often cannot be evaluated in advance with a high degree of precision. Their verification may require experimental production, additional research, and limited utilization of resources.

In such cases, an offer may provide for **testing the proposed improvement on a limited scale**. The results of the experiment make it possible to refine the initial calculations and determine whether further implementation is advisable. The conditions of the experiment, permissible risks, and participants' responsibilities must be established in advance.

Another important question concerns **the timing of remuneration**. If a reward depends entirely on the final result, the offeror may receive no benefit from a useful proposal for a prolonged period. If, conversely, a substantial reward is provided immediately after an offer is accepted, an incentive for excessively optimistic forecasts emerges.

The system may therefore combine preliminary recognition of a proposal's justification with a subsequent evaluation of its actual results. The specific relationship between these conditions must be determined by the nature of the offer, the availability of verification, and the magnitude of economic risk.

A positive result also cannot always be attributed directly to the actions of a single participant. Technological changes, decisions made by other economic Links, and external circumstances may influence it. Consequently, determining remuneration requires evaluating **the actual contribution of the offer to the improvement obtained**, rather than simply comparing initial and final indicators.

The stability of the Offer System also depends on the quality of its own rules. Poorly chosen criteria may encourage formal increases in indicators, excessive risk-taking, or the constant submission of insignificant proposals. In such cases, the system must be able to revise requirements for offers, methods of evaluation, and conditions of remuneration on the basis of accumulated results.

Such changes require the preservation of predictability for participants. An offeror must understand the rules under which a proposal is considered and the consequences arising after its acceptance. Changing rules during the implementation of an already approved project must take account of previously established obligations and grounds for liability.

Finally, the Offer System presupposes a distinction between **the right to propose a change to the Plan and the duty to execute an existing decision**. An offeror may be convinced that a proposal is substantially superior to the original alternative, but until the change is officially adopted, the corresponding obligations remain in force.

This is precisely what makes it possible to combine continuous improvement of the Plan with the stability of economic activity: participants have an incentive to seek and disclose improvements, while their implementation takes place after verification and coordination with the rest of the economic system.

## 22 Technical Arbitration and Appeals

**Technical Arbitration (TA)** is the technical arbitration system of Cenes, designed to examine disputes concerning the execution of economic obligations and to establish justified liability for economic Links and their managers.

The principal instrument for applying to Technical Arbitration is an **Appeal**—a formalized request to reconsider the grounds of liability associated with an assigned obligation. It allows a participant to demonstrate that the initial conditions used to evaluate their activity do not correspond to actual economic circumstances.

The need for such a mechanism arises from the inevitable limitations of economic planning. Even when advanced information systems are employed, superior bodies may incorrectly assess the productive capabilities of a subordinate Link, the availability of resources, or the consequences of interdependencies among economic processes.

For example, a region may be assigned the obligation to increase a particular production indicator by 10%. Its leadership may possess information indicating that, under existing objective constraints, an increase of only 8% is attainable. In such a case, the region has the right to challenge the grounds for liability arising from failure to achieve the originally assigned result.

The **distinction between obligation and liability** is of fundamental importance. An assigned obligation remains in force regardless of whether an appeal has been filed. The region must continue to perform the assigned task using the capabilities available to it. Technical Arbitration determines which result its leadership may be held responsible for and under which circumstances.

Consider another simplified example. An enterprise is assigned the production of 100,000 units. During arbitration proceedings, it is established that, because of objective constraints, the enterprise's management could have ensured the production of only 90,000 units despite properly performing its duties.

In this case, arbitration may recognize that failure to achieve the original target of 100,000 units does not constitute grounds for a sanction if 90,000 units were actually produced and management took the necessary actions. The assigned obligation itself nevertheless remains equal to 100,000 units until it is officially modified by the competent body.

**An appeal does not grant permission to cease executing the Plan.** It serves as a means of protection against unjustified liability.

This distinction also determines the difference between Technical Arbitration and the Offer System. An offer is directed toward improving an economic decision and provides the possibility of remuneration for a useful proposal. An appeal is directed primarily toward reconsidering liability. A successful appeal releases the participant from unjustified consequences but does not in itself entail additional remuneration.

TA is organized **recursively**, in accordance with the levels of governance in Cenes. Arbitration mechanisms operate at the boundaries between superior and subordinate economic systems, making it possible to consider disputes arising during the assignment and execution of obligations.

For example, an enterprise may challenge the grounds for liability before its superior economic Link, while a region may do so before the corresponding system at a higher level. Arbitration examines the circumstances of the relationship between these levels, verifying the content of the obligation and the justification of the requirements imposed.

At the same time, **TA constitutes a separate arbitration function**, organizationally distinguished from the bodies directly responsible for economic planning. Otherwise, the body that assigned a disputed obligation would effectively become the sole judge when evaluating its own decision.

A distinctive feature of Cenes is the vertical organization of liability. Productive dependencies may exist between economic Links at the same level, but each is responsible for its own obligations to the immediately superior system.

Suppose Region A fails to complete a particular task because Region B has failed to deliver the required supplies. Region A then informs its superior leadership of the circumstances and provides the corresponding evidence. It is not required to bring claims against Region B independently or compel that region to fulfill its obligations.

The superior system examines the actions of each subordinate region within the relevant contracts. If Region B's failure constituted the objective cause of Region A's deviation from its assigned results, that circumstance is taken into account when establishing the liability of the latter.

Thus, Technical Arbitration examines **vertical relationships of obligation and liability**, even when the factual cause of a dispute is connected with the actions of several economic Links.

The procedure for applying to TA provides for an **Appeal Window**—an established period during which a participant may challenge the corresponding grounds for liability.

The duration of this period depends on the nature of the obligation, the complexity of its verification, and the conditions of economic activity. A short period may suffice for certain decisions, while others require more time to prepare the necessary evidence.

The purpose of the Appeal Window is to ensure the timely consideration of disputes. If a participant discovers circumstances preventing normal execution, they must report those circumstances and use the prescribed procedure within the established period. Filing an appeal after the relevant deadline is ordinarily not permitted; possible exceptions must be determined by separate rules.

**The deadline for filing an appeal and the period required to consider it are different quantities.** An appeal filed on time may continue to be considered after the relevant execution period has ended. The obligation remains in force, while initial liability decisions may subsequently be revised.

If a sanction has already been applied but arbitration subsequently finds it unjustified, the system must ensure the restoration of violated rights and correction of the corresponding material consequences. A TA decision may therefore have retroactive effect with respect to previously established liability.

Every appeal is formalized through **CCL** and linked to a specific obligation. It must contain the grounds for the challenge, a description of the circumstances, and evidence allowing the claims presented to be verified.

Information about actual productive capabilities, available resources, actions performed, delivery failures, and other circumstances relevant to establishing liability may be used during consideration.

Arbitration evaluates the information presented and issues a formalized decision. It may confirm the original liability, modify its grounds, or cancel unjustified consequences. The corresponding ruling is recorded in the contractual system and taken into account when applying rewards and sanctions.

To prevent abuse, requirements concerning the justification of applications must exist. Knowingly false information, deliberate falsification of evidence, and systematic use of appeals to obstruct the execution of obligations may entail established liability. However, a good-faith application must not be punished merely because the applicant was unable to prove their position.

Technical Arbitration may also reveal errors requiring a change to the Plan itself. If proceedings establish that the original task is objectively infeasible, the relevant information is transmitted to the competent economic governing body. The decision to modify the economic obligation, however, is made according to the established procedure, separately from the decision concerning liability.

TA thereby makes it possible to challenge erroneous requirements imposed by superior bodies while preserving the binding force of the existing Plan and the established structure of economic governance.

## 23 Digital Representation of the Physical Economy

The operation of Cenes requires an information system that allows planning bodies to obtain reliable information about the condition of economic Links, their productive capabilities, and re-

source constraints. This task is performed by **Twinization**—the creation and maintenance of digital representations of physical economic objects and processes.

Within the architecture of Cenes, the principal instrument of twinization is the **Digital Twin (DT)**. A Digital Twin is a dynamic digital model of a real economic object containing information about its structure, condition, capabilities, and significant operating circumstances.

Unlike an ordinary information register, a Digital Twin is intended for analyzing the activity of the corresponding object. It makes it possible to evaluate available productive capabilities, identify constraints, and investigate the consequences of changes in operating conditions.

For example, the Digital Twin of a machine-building enterprise may contain information about production equipment, its productivity, available materials, technological processes, and actual capacity utilization. These data can be used to assess the volume of output the enterprise is capable of producing under particular conditions, the resources it requires, and the circumstances limiting its activity.

In Cenes, **every terminal economic Node must possess a Digital Twin**. This constitutes one of the basic technical conditions for its inclusion in the general economic network. Because Nodes are the direct executors of economic processes, information about their condition is necessary for planning the economy as a whole.

At the same time, a Digital Twin represents the enterprise as an economic unit. It must reflect the characteristics significant for the Node's interaction with the general system: productive capabilities, resource requirements, actual results, constraints, and other necessary data.

The degree of detail is determined by the nature of the economic activity. For one enterprise, the parameters of production equipment may be essential; for another, warehouse capacity, transportation capabilities, or the availability of specialists may be more significant. The specific structure of the Digital Twin must correspond to the functions of the Node it represents.

**Twinization does not require transferring direct control over all internal processes of an enterprise to superior bodies.** A Digital Twin provides the necessary observability of an economic Link while preserving the established autonomy of its management.

For example, the planning system may possess information about an enterprise's available production capacities without independently determining the operating sequence of every machine. Choosing the specific organization of production remains an internal responsibility of the Node.

Digital Twins must be kept up to date. This requires data from production accounting, measurement systems, equipment, and other information sources. The frequency of updates depends on the nature of the relevant process and the significance of its changes for economic governance.

A digital representation does not necessarily coincide with the actual condition of an object with absolute precision. Every model contains certain assumptions, while incoming data may be incomplete or erroneous. The reliability of Digital Twins is therefore ensured through verification of source information, refinement of models, and comparison of calculated indicators with actual results.

Data from individual Nodes are also used to construct digital representations of larger economic formations. A regional planning system must possess information about the condition of its subordinate enterprises and complexes, while the superior level must possess information about the capabilities of the corresponding regions.

Such representations are constructed **in accordance with the recursive structure of Cenes**. Each level receives the information necessary to perform its own managerial functions. A larger Link

is considered as an integrated economic system whose characteristics are determined by the condition and interaction of its constituent parts.

For example, the capabilities of an industrial region depend on the productive capacities of enterprises, energy availability, transportation infrastructure, and other conditions. A digital representation of the region makes it possible to account for these dependencies when evaluating its overall capabilities.

This organization permits planning at different levels of detail. Information about the productive capabilities of several regions may be sufficient for making a system-wide decision, whereas regional management requires more detailed information about the condition of individual enterprises.

In addition to observing the current state of the economy, Digital Twins are used for **modeling possible changes**. They make it possible to investigate the consequences of expanding production, introducing a new technology, reallocating resources, or encountering particular constraints.

For example, before increasing an enterprise's production budget, the system may evaluate whether additional resource provision will actually increase output. If the principal constraint is insufficient equipment capacity, simply increasing material deliveries may not produce the expected result.

Such calculations make it possible to make economic decisions with regard to the physical capabilities of production. They also provide information for evaluating proposals from economic Links and verifying the feasibility of changes to the Plan.

Another technology associated with twinization is **Cyber-Physical Systems (CPS)**. They integrate physical equipment, measurement instruments, and computational control, providing automatic regulation of particular processes.

The simplest example of such regulation is a system for maintaining a specified temperature. A sensor measures the actual condition of the environment, a controller compares it with the assigned value, and the equipment's operation is automatically adjusted.

At an enterprise, a similar principle may be used to regulate production lines, energy installations, warehouse equipment, and other technological processes.

**Digital Twins and CPS perform different functions.** A DT represents and models the condition of an object, while a CPS automatically acts upon a physical process. They may interact: the Digital Twin receives equipment data, while the automatic control system uses the corresponding information in its operation.

In Cenes, Cyber-Physical Systems may be employed primarily at the level of enterprises and individual infrastructure facilities. Their use is determined by the technical requirements of the corresponding economic Link and does not imply mandatory centralized control over its equipment.

Thus, the mandatory component of the system-wide architecture is the digital representation of terminal Nodes, while the particular means used to automate their internal processes may differ.

To integrate Digital Twins, transmit data between levels of recursion, and support the work of planning bodies, Cenes requires a common communication and computing infrastructure. Its structure is examined in the following section.

## 24 CenesNet: The Communication and Computing Network

**CenesNet** is the unified communication and computing infrastructure of Cenes, providing the transmission, storage, and processing of economic information between economic Links and governing

bodies. It integrates the digital systems of different economic levels and creates the technical conditions necessary for the operation of the overall Plan.

The need for CenesNet is determined by the scale and complexity of the network economy. Economic decision-making requires information about productive capabilities, resource utilization, the condition of infrastructure, and the results of economic activity. This information originates in different parts of the economy and must be available to the relevant planning bodies.

**The principal task of CenesNet is to provide the informational and computational bandwidth required by the economic system.** This means the capacity to transmit and process, in a timely manner, the quantities of information necessary for governing economic processes.

CenesNet develops within the tradition of nationwide automated economic management systems, including the Soviet OGAS project and Chilean Cybersyn. Its architecture, however, is determined by the requirements of Cenes as an integrated recursive system rather than by the organization of these historical projects.

The network connects the Digital Twins of economic Nodes, the computing complexes of planning bodies, and other information systems of Cenes. Consequently, information originating at the level of direct production can be used for economic calculations and decision-making at different levels of governance.

For example, an enterprise possesses information about equipment utilization, available materials, and its own productive capabilities. The corresponding data are reflected in its Digital Twin and become available to the authorized planning system through CenesNet. This allows the actual condition of the enterprise to be taken into account when evaluating the capabilities of a larger economic Link.

At the same time, **CenesNet is not a single computing center that directly processes all economic information**. Its organization presupposes the distribution of computational tasks among different levels of Cenes.

A substantial part of the information may be processed directly at an enterprise. Regional computing systems perform calculations concerning their subordinate economic Links. The highest level uses the results necessary for system-wide planning and strategic governance.

This distribution corresponds to the principle of VSM recursion. Every economic system possesses its own information and computing capabilities sufficient to perform the corresponding managerial functions.

Of particular importance is **the distinction between primary data and the information required by a superior level**. For example, detailed information about the operation of every production department may be necessary for managing an individual enterprise. For regional planning, the enterprise's aggregate productive capabilities, resource requirements, and constraints are more important.

Information transmission must correspond to the nature of the decisions being made. Different degrees of detail are therefore used at different levels, while the superior system may access more detailed information when necessary.

The recursive organization of information exchange does not require every message to pass technically through every intermediate level of governance. Economic Links may exchange necessary data directly where their authority and coordination tasks permit. The procedure for transmitting information does not, however, change the established structure of managerial subordination and responsibility.

CenesNet also provides for interaction among economic planning bodies. INCO, ERO, and EFO use the common information infrastructure to obtain the data required for coordinating economic processes, conducting current regulation, and developing prospective decisions.

In particular, INCO requires information about interdependent production processes and their coordination. ERO uses data about resources, constraints, and the actual condition of the economy. EFO relies on corresponding information when modeling future development alternatives.

The computing infrastructure must support these tasks at different levels of recursion. Particular calculations may be performed by separate computing complexes or in distributed form using the resources of several interconnected systems.

**The speed of information transmission and processing is determined by the requirements of the corresponding economic process.** Some tasks require frequent data updates, while periodic information is sufficient for others.

For example, a change in the condition of energy infrastructure may require almost immediate information transmission. Long-term forecasting of the demand for particular production capacities allows for a different schedule of data updates.

Consequently, high CenesNet bandwidth is necessary for timely economic governance, but it does not imply the continuous recalculation of every indicator or the immediate modification of every economic decision.

In addition to speed, **the reliability of transmitted information** is of substantial importance. The system must make it possible to establish the origin of data, the time at which they were obtained, and their correspondence with the version of the digital model being used.

This requires consistent rules for identifying economic objects, representing economic indicators, and exchanging information. For example, information about a particular material must have the same meaning for different systems using those data. Otherwise, incompatible designations and measurement units may cause errors in calculations.

Consistency among distributed information systems is equally important. If regional management uses updated information about an enterprise's productive capabilities while the superior level continues to rely on outdated data, their economic calculations may diverge.

CenesNet must therefore make it possible to establish how current particular information is, coordinate changes, and determine which data were used when a specific decision was adopted.

Access to economic information is distributed according to participants' authority. Node management receives the information necessary to govern its enterprise, while superior bodies receive data corresponding to their functions. Restricted information must be transmitted and used in accordance with established access rules.

Technical requirements for CenesNet also include information security, communication resilience, and the capacity to continue operating when individual infrastructure components are damaged. These properties have direct significance for the continuity of economic governance. Their system-wide provision belongs to the resilience architecture of Cenes, which is examined separately.

CenesNet must support the development of the economic structure. Connecting a new enterprise presupposes incorporating its Digital Twin and necessary information systems into the common network. When regions or production complexes are transformed, the corresponding information connections and computing authority must change along with the organizational structure of the economy.

Connecting a Node requires compliance with common technical conditions: compatibility of the data represented, established procedures for information exchange, identification of the corresponding economic unit, and provision of the necessary information to authorized systems.

CenesNet also provides the informational basis for human-machine interaction with the economic system. Managers and specialists must be able to obtain processed information, examine calculation results, and make decisions within their competence. The specialized environment for this work—**Cenes Decision Environment (CDE)**—is examined in the following section.

## 25 CDE: Cenes Decision Environment

**Cenes Decision Environment (CDE)** is the unified digital environment for economic decision-making, intended for the work of managers, specialists, and governing bodies within Cenes. It provides system participants with access to the necessary information, analytical instruments, and procedures for performing their managerial functions.

While CenesNet provides for the transmission and processing of information, CDE organizes its practical use. Through this environment, economic participants obtain information about the condition of subordinate economic Links, examine the results of calculations, consider proposals, and formalize decisions within the limits of their authority.

The fundamental principle of CDE is **that the digital working environment must correspond to the participant's position within the organizational structure of Cenes**. An enterprise manager, a regional economic planner, and a representative of the supreme Command Core perform different functions. They therefore require different information, instruments, and powers.

For this purpose, **CDE Cabinets** are provided—specialized digital workspaces representing the working environments of the corresponding managerial roles.

A Cabinet brings together the necessary information, analytical instruments, and actions available to its user. Its content is determined by the official duties, position within economic recursion, and authority of the corresponding individual or body.

For example, through a Cabinet, an enterprise manager may examine current production obligations, the condition of the allocated P-Budget, resource availability, and actual performance indicators of the Node. The same environment provides instruments for preparing reports and submitting offers and appeals.

The Cabinet does not, however, determine the enterprise's internal organization. It provides for interaction between Node management and the general Cenes system while preserving the enterprise's independence in choosing how to fulfill assigned tasks.

**The Cabinets of CEPO bodies** are structured in accordance with their functions within the Viable System Model.

The **INCO Cabinet** is intended for working with information about interconnected economic processes. Through it, specialists can identify inconsistencies among production tasks, evaluate dependencies between subordinate Links, and prepare coordination decisions.

For example, if increasing the output of one enterprise requires additional deliveries from another, the relevant dependency must be visible to the coordinating body. This makes it possible to account for the consequences of changing individual obligations for the operation of the entire subordinate system.

The **ERO Cabinet** is oriented toward current economic regulation. It provides information about available resources, the condition of production budgets, the execution of obligations, and deviations of actual results from planned results.

ERO specialists can compare alternative methods of allocating resources and evaluate the consequences of proposed changes. The corresponding calculations may use data from Digital Twins, P-AMO information, and the results of other CEPO components.

The **EFO Cabinet** is intended for prospective analysis. It provides access to models of economic development, forecasts of resource requirements, and instruments for investigating possible future states of the economic system.

For example, EFO specialists may compare several alternatives for expanding industrial production, taking into account requirements for equipment, energy, materials, and qualified workers. The results obtained are used when preparing proposals for further economic development.

Separate Cabinets are provided for the **Command Core (CC)**. They must provide political leadership with the information necessary for setting strategic objectives, evaluating their execution, and making decisions within the corresponding authority.

The content of a Cabinet depends on the level of the Command Core. The supreme leadership of Cenes works primarily with strategic indicators and alternatives for system-wide development. The command bodies of subordinate recursions receive information and instruments corresponding to their functions.

**CDE does not alter the distribution of authority between CC and CEPO.** Political leadership determines strategic directions, while economic bodies perform the analytical support and implementation prescribed by the architecture. The digital environment must reflect this distinction.

One of the most important functions of CDE is **presenting the state of the economy in a form suitable for decision-making**. A user must be able not only to obtain individual indicators but also to understand their interrelationships, the causes of deviations, and the expected consequences of available actions.

For this purpose, tables, charts, diagrams of economic dependencies, digital models, and other methods of presenting information may be used. The specific interface is determined by the substance of the corresponding managerial task.

For example, a regional ERO body discovers that one enterprise is not achieving its assigned output volume. Through CDE, specialists may examine the actual condition of its productive capacities, verify the availability of necessary resources, and establish which other obligations depend on its operation.

If the deviation is caused by a shortage of a particular material, the environment allows possible alternatives for allocating additional quantities of that material to be investigated. The decision must nevertheless take account of the consequences for other enterprises using the same resource.

Such analysis relies on common economic models, but **CDE does not replace the planning bodies or make all decisions independently**. Its purpose is to provide participants with the instruments necessary to perform their established functions.

Of separate importance is **modeling the consequences of managerial decisions before they are adopted**. A user may investigate several alternatives for changing economic conditions, compare expected results, and identify associated constraints.

For example, increasing the production assignment of one Node may be examined together with changes to its P-Budget and the obligations of related enterprises. This makes it possible to identify potential inconsistencies before the new decision is officially approved.

Modeling results must be distinguished from the Plan in force. A preliminary calculation or scenario under consideration does not acquire binding force merely because it appears in the digital environment.

CDE also supports work with **the legal objects of CCL**. Authorized participants can examine current contracts, prepare prescribed amendments, coordinate decisions, and access the history of their formalization.

Every legally significant action must be performed in accordance with the established authority and rules of the contractual system. CDE provides the working instruments for this purpose, while the legal force of the corresponding decisions is determined by CCL.

Participation in the **Offer System** is also organized through CDE. An offeror may prepare a proposal, attach the necessary calculations, and submit it for consideration. Competent bodies gain access to the relevant materials, verification results, and possible alternative decisions.

Similarly, the digital environment provides instruments for filing appeals and examining Technical Arbitration decisions. The arbitration proceedings themselves, however, are conducted according to the separate TA procedure.

To ensure coordination among different bodies, CDE must support **different representations of the same economic data**. For example, an enterprise's production information may be used by its manager, regional ERO specialists, and superior planning bodies.

Each participant receives information in the necessary volume and with the appropriate degree of detail. This helps prevent the creation of independent and contradictory descriptions of the same economic reality.

An important role is played by **the differentiation of access rights and authority**. A user must be able to view, modify, and approve only those objects for which their official functions provide authorization.

For example, a specialist may have the right to prepare calculations for a budget amendment but not to approve the corresponding decision independently. A manager at another level may possess the authority to consider a proposal and accept it within an established competence.

CDE must preserve a history of significant actions: who prepared a proposal, which data were used in a calculation, who made the decision, and which changes were introduced. This makes it possible to analyze managerial activity subsequently and verify the grounds for decisions already adopted.

At the same time, recording actions in a digital environment does not in itself establish the reliability of the original production information. That requires independent verification of whether information models and reports correspond to the actual condition of economic objects. Such a mechanism is examined in the following section.

CDE constitutes **the principal human-machine environment for the economic governance of Cenes**. Through it, information originating in the physical economy becomes available for analysis, while decisions made by authorized participants receive the prescribed organizational and legal formalization.

## 26 Independent Verification of Economic Reality

The operation of Cenes presupposes the continuous acquisition of reliable information about the state of the economy. Digital Twins, production reports, and information systems make it possible to observe economic processes, but they do not in themselves guarantee that the information obtained corresponds to reality.

An enterprise may provide incomplete information about its productive capabilities, incorrectly account for resource consumption, or conceal deviations from established obligations. Similar problems may arise at the level of regions and other economic Links. Economic governance therefore requires **an independent mechanism for verifying the actual condition of subordinate systems**.

Within the Viable System Model, this function is performed by **System 3* (S3*)**—a special channel for directly verifying the activity of System 1. It supplements ordinary managerial reporting by allowing the superior level to obtain information that does not depend exclusively on reports submitted by the management of the Link being examined.

In Cenes, S3* forms part of the economic verification architecture at every level of recursion. Its purpose is to establish consistency between actual economic activity, its digital representation, and the information used when making economic decisions.

**The principal subject of verification is economic reality**: the existence and condition of productive resources, actual performance results, compliance with significant conditions governing the execution of obligations, and the reliability of the corresponding information models.

For example, an enterprise's Digital Twin may indicate that a particular production line has a capacity of 10,000 items per month. The actual condition of the equipment, the duration of its downtime, or technological constraints may nevertheless indicate substantially lower productivity.

If planning bodies use the erroneous indicator, they may assign the enterprise an infeasible obligation or allocate resources incorrectly. Independent verification makes it possible to discover the discrepancy and ensure that the underlying information is corrected.

The opposite situation arises when an enterprise possesses greater capabilities than those reflected in its reports. The cause may be an accounting error or deliberate concealment of productive reserves. In either case, the discrepancy is relevant to economic planning.

S3* must therefore be able **to compare information from digital systems with directly observable facts**. For this purpose, enterprise inspections, examination of equipment and material inventories, analysis of primary documents, control measurements, and other methods of establishing the actual condition of an economic object may be used.

The specific methods depend on the nature of the activity being examined. Establishing the reliability of data about electricity generation, the operation of a transportation network, and industrial output requires different technical instruments.

The independence of information sources is particularly important. If an inspection body obtains all its information exclusively from the management of the enterprise being inspected, it may fail to detect distortions present in the original reports. Inspections must therefore provide for direct access to the necessary information and physical objects.

**S3* is organized recursively.** Every level of Cenes must possess instruments for verifying its subordinate economic systems. A regional system conducts inspections of the relevant enterprises

and complexes, while the superior level has the capacity to verify the activities of subordinate regional systems.

Inspections must nevertheless correspond to the distribution of authority. Verifying the reliability of an enterprise's production information does not mean transferring control over its internal processes to the inspection body. Node management retains its established economic autonomy and responsibility for fulfilling its duties.

Of fundamental importance is **the distinction between ordinary economic regulation and independent verification**. ERO, as System 3, uses information for the current management of resources and obligations. S3* establishes how closely that information corresponds to the actual condition of the system being examined.

For example, ERO may decide to redistribute a production budget on the basis of information about the available capacities of several enterprises. S3* verifies the reliability of that information and, upon discovering discrepancies, provides the information necessary to revise the calculations.

The verification mechanism thereby provides an additional feedback channel between the physical economy and the governance system. It makes it possible to identify errors that are not detected through ordinary reporting.

**The organizational independence of inspection structures** is necessary to prevent inspection results from becoming dependent on interested managers. An inspection body must possess established authority to obtain necessary information and record discovered violations independently of the position taken by the management of the Link under inspection.

This independence is combined with accountability to the competent superior level. Inspection bodies must also act according to established rules, substantiate their findings, and bear responsibility for abuses of authority.

An additional element of independent oversight consists of **commissars appointed by superior Command Cores**. Their function concerns political-organizational supervision of subordinate systems and verification of compliance with decisions made by the corresponding command leadership.

Commissar oversight differs from the ordinary economic verification performed by S3*. Specialized S3* structures establish the factual circumstances of economic activity, while representatives of a superior Command Core provide an additional channel for observing compliance with established managerial and political requirements.

These functions may use common verification information, but the distinction between their powers must be preserved. The presence of a commissar does not automatically grant that person the right to modify economic obligations independently or directly manage production.

The results of independent verification are formalized according to established procedures and transmitted to competent bodies. They may provide grounds for correcting digital models, refining economic calculations, revising managerial decisions, and conducting additional inspections.

For example, if an inspection discovers an error in information about available material inventories, the corresponding data must be corrected in the enterprise's Digital Twin. Where necessary, planning bodies revise calculations that used the erroneous information.

If signs of a breach of duty are discovered, the inspection materials may be used when establishing liability under BRSS. However, **a discrepancy discovered during verification does not in itself prove the guilt of any particular individual**. It is necessary to establish the causes of the discrepancy, the relevant duties, and the circumstances of the actions of responsible participants.

S3* results may also be significant for **Technical Arbitration**. A participant challenging the grounds for liability must have the opportunity to use verified information about the actual conditions under which an obligation was executed. Independent establishment of the circumstances allows such disputes to be considered on a more reliable informational basis.

S3* and TA nevertheless perform different functions. The inspection body establishes factual circumstances, whereas Technical Arbitration considers a dispute over liability and adopts the corresponding decision within its competence.

It is also necessary to prevent independent oversight from becoming a source of unreliable accusations. An economic Link under inspection must be able to examine the significant findings, provide explanations, and identify errors that have been discovered. Information about inspections and their results is preserved in the established informational and legal infrastructure of Cenes.

For effective operation, S3* inspections may be conducted both on a scheduled basis and when circumstances requiring additional investigation arise. Grounds for an unscheduled inspection may include significant discrepancies between reports and observed results, unusual changes in economic indicators, or the receipt of reliable information about possible violations.

Not every economic process requires constant direct monitoring. The scope and frequency of inspections must correspond to the importance of the relevant data, the possible consequences of their distortion, and the available inspection resources.

**Independent verification is an essential complement to the digital representation of the economy.** It helps maintain consistency between physical economic processes and the information on which Cenes calculates and executes the Plan. The reliability of this connection determines the practical value of Digital Twins, economic models, and managerial decisions.

## 27 CRS: Cenes Resilience System

**Cenes Resilience System (CRS)** is the resilience system of Cenes, designed to maintain the operational capacity of the economy during disruptions of economic processes, failures of technical infrastructure, and other emergencies.

The need for CRS arises from the high degree of interdependence among the elements of the network economy. Enterprises use the products of other enterprises, regions depend on shared infrastructure, and governing bodies rely on information and computing systems. A disruption affecting one element may influence many other economic Links.

Advanced coordination makes it possible to utilize resources more efficiently, but it simultaneously imposes greater requirements on the reliability of connections between participants. If production is organized around precise delivery schedules and the availability of particular capacities, an unforeseen failure may disrupt the fulfillment of several interdependent obligations at once.

**Economic efficiency must therefore be evaluated with regard to resilience against disruptions.** Minimizing current expenditures does not always correspond to the best long-term use of resources if the savings achieved are accompanied by a high probability of serious losses in the event of failure.

CRS treats resilience as an independent requirement of economic planning. It must provide for the identification of critical dependencies, preparation of reserve capabilities, containment of disruptions, and restoration of normal system operations.

Within the architecture of Cenes, **economic resilience and information-technical resilience** must be distinguished. These areas are closely connected but require different measures.

**Economic resilience** means the economy's ability to continue performing its most important functions when individual production processes or resource relationships are disrupted.

For example, if a major enterprise temporarily ceases to produce a necessary material, the system must possess information about the capabilities of other producers, available inventories, and permissible alternatives for modifying production tasks. The existence of such options makes it possible to limit the consequences of the initial disruption.

One instrument for ensuring economic resilience is **the reservation of productive capabilities**. For critically important products and infrastructure, additional capacities, alternative suppliers, or inventories of necessary resources may be provided.

A reserve does not necessarily consist of equipment that permanently remains idle. Resilience may be ensured by the ability to change a production program temporarily, use interchangeable materials, or redistribute capacities among enterprises.

The specific method depends on the characteristics of the product, the production technology, and the time necessary to restore the disrupted process.

For example, the shutdown of one producer of standardized components may be compensated for by increasing output at other enterprises. However, such an alternative may be unavailable for specialized equipment whose manufacture requires lengthy preparation. In these cases, the corresponding dependency must be considered in advance.

Of particular importance is **the prevention of cascading disruptions**. The failure of one economic Link may cause several consumers of its products to cease operating, which may in turn affect other industries.

Information from Digital Twins and the results of economic modeling are used to evaluate such risks. They make it possible to identify objects upon which the fulfillment of numerous obligations depends and to determine the possible consequences of their temporary unavailability.

CRS must take account not only of individual enterprises but also of shared infrastructural constraints. For example, several production complexes may formally possess independent capacities while using the same energy or transportation system. Their resilience then depends on a common critical element.

**Information-technical resilience** concerns the continued operation of CenesNet, computing complexes, Digital Twins, and other systems necessary for economic governance.

Disruptions may arise from technical failures, equipment damage, communication interruptions, software errors, or deliberate cyberattacks.

Limiting these risks requires redundancy of critical components, data protection, differentiation of access rights, and the ability to restore information systems after damage.

The most important requirement is that **the failure of an individual computing Node or communication channel must not automatically bring the entire economic system to a halt**.

The distributed organization of CenesNet makes it possible to locate computing capacity at different levels of recursion. If communication with a superior system is disrupted, a subordinate Link must retain the ability to perform those economic functions for which it possesses the necessary resources and authority.

For example, a temporary loss of connection between a regional computing center and the national system must not in itself stop the operation of enterprises in the region. Existing production obligations remain known, and local bodies continue carrying out tasks within the limits of available information and delegated competence.

This principle is connected with **the operational autonomy of recursive Links**. Every level of Cenes must possess sufficient independence to maintain its basic functions during temporary disruptions of particular external connections.

Such autonomy does not, however, permit arbitrary changes to strategic objectives or abandonment of established obligations. It concerns the ability to continue permissible economic activity under conditions of limited communication and incomplete incoming information.

For this purpose, it is necessary to determine in advance which decisions may be made locally, which operations require confirmation from a superior level, and which actions are permitted when such confirmation is temporarily unavailable.

Of particular importance is **the distinction between normal and restricted modes of operation**. Under normal conditions, an economic Link possesses the prescribed information connections, current calculations, and access to the relevant governing bodies.

During a serious disruption, it may temporarily enter a restricted mode in which the most important functions continue to be performed using available data and authority established in advance.

For example, an enterprise may continue executing a previously approved production program even if it temporarily loses the ability to receive new instructions. Operations requiring unavailable verification or approval may be deferred according to established rules.

Continuing operations in restricted mode presupposes preserving information about completed operations and adopted decisions. Once communication is restored, this information is transmitted to the relevant bodies so that the general system can reconcile updated data and establish the actual state of economic processes.

A particular problem is **the consistency of decisions adopted during a communication disruption**. Several Links may possess different information about available resources and independently plan their utilization. Rules for restricted operation must therefore prevent mutually incompatible obligations and unjustified disposition of the same resources.

CCL must provide for the preservation of legal certainty during technical disruptions. Existing obligations and adopted decisions must remain accessible to participants, while actions performed in restricted mode must receive the prescribed documentary formalization.

A technical failure must not automatically constitute culpable nonperformance of an obligation. The actual circumstances of the disruption are taken into account when determining liability under the BRSS and Technical Arbitration mechanisms considered earlier.

**Recovery after a failure** constitutes a separate function of CRS. It entails establishing the actual condition of the affected part of the system, restoring necessary technical connections, and coordinating economic decisions with changed circumstances.

For example, after a prolonged disruption of transportation connections, restoring information transmission between regions is not sufficient. It is necessary to establish the actual presence of cargo, the condition of warehouse inventories, deliveries already completed, and remaining production constraints. Only then can the corresponding calculations be brought into agreement with reality.

The same principle applies to information infrastructure. Restoring a server's operation does not in itself guarantee that its information is current. Data integrity must be verified, and changes accumulated during the disruption must be reconciled.

CRS must provide for **different levels of criticality among economic and technical functions**. Interrupting some processes may be permissible for a certain period, whereas disrupting others may create an immediate threat to the operation of important parts of the economy.

Accordingly, requirements for redundancy, permissible recovery time, and continuity of operation must differ. They are determined by the significance of the relevant object, the nature of its dependencies, and the possible consequences of failure.

Maintaining resilience requires resources. Reserve equipment, additional productive capacity, protected computing complexes, and material inventories have their own economic cost. CRS measures must therefore be incorporated into planning through comparisons of costs and risks.

The economic value of a reserve is not determined solely by the frequency of its use. Productive capacity that remains unused for a long period may still be necessary if its presence prevents severe consequences from an unlikely but critical disruption.

Regular testing of backup mechanisms, simulation of failures, and analysis of actual incidents are necessary to verify the operational capacity of CRS. The formal existence of a reserve is insufficient if it cannot perform its function during an actual disruption.

The system must also distinguish ordinary disruptions, which may be resolved through existing economic mechanisms, from emergencies requiring urgent intervention by superior management.

For the latter, Cenes provides special instruments for emergency notification and modification of the normal pattern of managerial interaction. The corresponding mechanisms, **AEC and BACKDOOR**, are examined in the following section. They complement CRS by enabling the timely transmission of critical information and adoption of necessary decisions when normal system operation is threatened.

## 28 AEC and BACKDOOR

The recursive organization of Cenes presupposes that economic decisions are made at the appropriate levels of governance and that information is transmitted through established channels of interaction. Under normal conditions, this structure ensures the distribution of responsibility and the independence of economic Links. Under emergency circumstances, however, the ordinary pattern of interaction may prove insufficient.

A major accident, disruption of critically important infrastructure, or loss of control over a particular part of the economy may require intervention that cannot be organized in time through standard procedures. Cenes therefore provides special mechanisms for emergency notification and temporary modification of the order of governance.

This function is performed by two interconnected elements: **AEC**, the system of obligations concerning emergency notification and response, and **BACKDOOR**, a special mechanism for emergency access to superior management.

**AEC establishes the obligation to report critical circumstances promptly** when they may substantially affect execution of the Plan, the safety of economic processes, or the operational capacity of the economic system.

Under ordinary circumstances, an enterprise manager independently resolves production problems arising within the limits of their authority. If equipment requires repair, a delivery is delayed, or the internal organization of work must be adjusted, the corresponding actions belong to current management.

A different situation arises when a discovered circumstance threatens the operation of other economic Links or requires an urgent decision beyond the manager's authority. In such a case, simply continuing ordinary activity and waiting for the next reporting period is insufficient.

For example, an enterprise discovers damage to energy equipment that could cause a prolonged interruption in supplies to several production complexes. Even if the enterprise's own management takes the necessary measures, information about the emerging threat must immediately reach bodies capable of organizing action at a higher level.

The fundamental point is that **emergency notification is a legal obligation**, not merely a participant's right. A manager possessing reliable information about a critical threat is required to transmit it according to the established procedure.

The corresponding requirements are established through **CCL**. Every economic contract and applicable official obligation must provide for responsibility concerning emergency notification within the competence of the corresponding participant.

These conditions determine the circumstances under which the duty to report a problem arises, to whom the information must be directed, which details must be provided, and which actions the participant must take before receiving further instructions.

The specific content of these requirements depends on the activities of the economic Link. For an energy facility, threats to continuity of supply may be critical; for a transportation complex, disruptions of major routes; and for computing infrastructure, the loss of operational capacity or reliability of economic data.

The criteria for emergency notification must be sufficiently precise. If every minor deviation requires an emergency appeal to superior leadership, the mechanism becomes overloaded with messages and loses its ability to identify genuinely dangerous circumstances.

**BACKDOOR constitutes a specially provided channel for emergency managerial interaction**, allowing critical information to be transmitted, under established conditions, directly to a higher level of recursion while bypassing the ordinary sequence of intermediate Links.

In normal operation, an enterprise interacts with its immediately superior leadership. That leadership independently resolves matters within its competence and, where necessary, applies to the next level.

Situations may nevertheless arise in which intermediate leadership is unavailable, incapable of responding in time, or itself part of the emerging problem. Sequential transmission of information through every level may then cause a dangerous delay.

BACKDOOR makes it possible to overcome this limitation without permanently modifying the recursive structure of Cenes.

For example, a regional system experiences a serious communication disruption and simultaneously loses the ability to coordinate several critically important facilities. The manager of one subordinate Link discovers circumstances threatening the operation of a substantially larger part of the economy.

If an ordinary appeal to regional leadership is impossible or does not produce the necessary response, the prescribed mechanism allows an emergency message to be directed to a higher governing body.

Thus, **BACKDOOR temporarily bypasses the ordinary managerial sequence while preserving the established system of authority**. The mere transmission of a message to a superior level does not grant the sender additional rights to dispose of resources belonging to other economic Links.

The technical foundation of BACKDOOR consists of a special communication mode within CenesNet. It must provide for priority transmission of emergency messages, confirmation of their receipt, and the possibility of using backup channels if the principal infrastructure is disrupted.

An emergency message is formalized as a **priority information packet** containing the information necessary for an initial assessment of the situation.

It must identify the source of the message, the nature of the discovered threat, the economic objects affected, known consequences, the degree of urgency, and actions already taken. Where possible, corresponding Digital Twin data and other materials confirming the circumstances of the incident are attached.

Reliable identification of the sender is especially important. The system must make it possible to establish which individual or economic Link transmitted the message, when it was created, and what information it contained.

**Message priority is determined by the criticality of the circumstances**, rather than by the official position of the sender. Information about an immediate threat to essential infrastructure may require urgent consideration even when it comes from a relatively small economic Node.

The use of the emergency channel must nevertheless remain subject to established conditions. BACKDOOR is not intended to accelerate ordinary economic requests, obtain additional resources outside the prescribed procedure, or bypass superior management's decisions for reasons unrelated to an emergency.

Upon receiving a message, the competent body evaluates its content and determines the necessary actions. Depending on the nature of the incident, it may be sufficient to issue urgent instructions, provide additional resources, or organize interaction among several subordinate Links.

In more serious cases, BACKDOOR provides for **the temporary transfer of managerial authority to a superior level**.

The need for such a measure arises when a subordinate system has lost the capacity to perform particular functions or when delay threatens consequences of a significantly greater magnitude.

For example, during a large-scale disruption of energy infrastructure, regional management may be unable to coordinate the operation of the affected production and transportation facilities independently. In such a case, the superior body gains the ability to assume certain coordination or directive functions temporarily.

The transfer of authority must have **established grounds, a specific scope of powers, and conditions for its termination**. Emergency intervention must not automatically entail the indefinite removal of subordinate leadership from the governance of the entire corresponding economic system.

Depending on the circumstances, the superior level may limit its intervention to managing an individual process, appointing a responsible body, or temporarily assuming direct leadership over a particular group of economic Links.

The corresponding decisions must be recorded within the legal and information infrastructure of Cenes. Information must be preserved concerning the grounds for intervention, the powers transferred, the responsible persons appointed, and the instructions issued.

**Return to normal operation** takes place once the circumstances causing the emergency intervention have been eliminated and the subordinate system has regained the ability to perform its functions. Decisions adopted during the special regime must then be reconciled with existing economic obligations.

BACKDOOR is closely connected with CRS, examined in the previous section. CRS prepares the economic and technical infrastructure for disruptions, while BACKDOOR provides instruments for emergency managerial response when the ordinary capabilities of the corresponding level are insufficient.

These mechanisms must not be confused with the Offer System and Technical Arbitration. An offer is intended to improve the Plan, while an appeal seeks reconsideration of the grounds for liability. AEC and BACKDOOR are used when critical circumstances require timely notification and, if necessary, immediate managerial intervention.

**Responsibility concerning the application of AEC operates in two directions.**

On the one hand, a participant bears responsibility for unjustified failure to report a critical threat. If a manager possesses the necessary information, understands the significance of the circumstances, and fails to fulfill the established notification obligation, such inaction may be treated as an independent violation.

On the other hand, liability is provided for knowingly false emergency reports and deliberate abuse of BACKDOOR. Unjustified use of the emergency channel may divert managerial resources, disrupt the work of planning bodies, and obstruct responses to actual threats.

At the same time, **a good-faith report of a suspected danger must not be treated as abuse merely because the threat is subsequently not confirmed**. Otherwise, managers acquire an incentive to conceal uncertain but potentially critical circumstances for fear of subsequent punishment.

The assessment of liability must take account of the information available to the participant, the justification of their conclusions, and compliance with prescribed procedures. The corresponding circumstances are established using the general legal and verification mechanisms of Cenes.

The reliable operation of AEC also requires defining the obligations of **the receiving party**. An emergency message must be registered, examined promptly, and transmitted to an authorized body if the initial recipient does not possess the necessary competence.

If no response is received within the prescribed period, the mechanism may provide for further escalation to a higher level. This prevents critical information from being formally delivered but remaining effectively unexamined.

AEC and BACKDOOR must operate **at every level of economic recursion**. An emergency threat may arise at an individual enterprise, within a region, or across the entire economy. Accordingly, the system must provide for the transmission of critical information and the possibility of intervention at the level possessing the necessary authority and resources.

A special governance regime is not necessarily associated exclusively with accidents. It may also be used during a large-scale organizational restructuring when subordinate Links do not yet possess the capabilities required for fully autonomous operation. This use of BACKDOOR is examined later in connection with the initial deployment of Cenes—**Genesis Mode**.

Within the general architecture, AEC establishes the binding duty of timely emergency notification, while BACKDOOR provides the prescribed procedure for emergency communication and temporary modification of managerial subordination. Together they make it possible to preserve economic

governability under circumstances in which ordinary recursive organization does not provide a sufficiently rapid response.

## 29 A-Contour: The Direct Strategic Control Contour

The economic architecture of Cenes provides for a distinction between two principal contours of economic organization: **A-Contour** and **B-Contour**. They differ in the nature of the governance of economic objects, the degree of organizational autonomy, and their relationship to the system's strategic resources.

**A-Contour** is the contour of direct state management, encompassing strategic assets, resources, and economic objects whose direct control is necessary for the functioning and development of the entire economy.

**B-Contour** comprises autonomous economic Nodes that independently organize their activities within the limits of assigned obligations and allocated resources. The majority of enterprises within Cenes belong to this contour.

The fundamental distinction is that **objects within A-Contour are under direct state management, whereas B-Contour Nodes possess established economic autonomy**. At the same time, the autonomy of B-Contour enterprises does not imply private ownership of system-wide productive resources.

The need for A-Contour arises because certain economic objects have significance extending beyond the ordinary activity of a particular enterprise or region. The continued existence and development of a substantial part of the economic system depend on their condition.

Such objects may include major elements of energy and transportation infrastructure, strategic natural resources, critically important production complexes, and other material foundations of the economy.

**Land** occupies a special position. In Cenes, it is regarded as a system-wide resource whose disposition is subordinated to the objectives of economic development. Providing land for economic activity does not mean transferring it into the private ownership of the enterprise using it.

For example, a B-Contour enterprise may receive a plot of land for constructing production facilities. It independently organizes its operations but does not acquire the right to dispose of the land as its own capital independently of the interests of the economic system.

Decisions concerning the utilization of land resources must take account of production requirements, infrastructure development, territorial planning, and other economy-wide tasks. The corresponding strategic authority remains with state bodies.

An analogous principle applies to natural resources. Their utilization may be carried out by different economic organizations, but the right to determine system-wide conditions for their disposition belongs to the competent bodies of Cenes.

At the same time, **a resource's inclusion within the sphere of direct state control does not mean that every operation involving it must be performed exclusively by A-Contour organizations**. An autonomous enterprise may extract, process, or utilize the relevant resource on the basis of rights and obligations granted to it.

For example, the state retains direct control over a strategic mineral deposit and the conditions of its exploitation, while particular production activities may be performed by B-Contour economic

Nodes. The distinction is determined by which managerial powers must be retained directly by the state.

Thus, **strategic disposition of a resource and the economic organization of its utilization** must be distinguished. The former belongs to the authority of the relevant state bodies, whereas the latter may, in prescribed cases, be undertaken by autonomous enterprises.

Objects directly incorporated into A-Contour are governed differently from ordinary B-Contour Nodes.

A B-Contour enterprise independently chooses how to fulfill an assigned result within its competence. It possesses its own economic management, organizes its internal processes, and bears responsibility for established obligations.

An A-Contour object is situated within a system of direct state leadership. Its principal managerial powers are determined by the corresponding state body, while the independence of its administration has an official character and is limited by the competence delegated to it.

**A-Contour does not possess the organizational autonomy constituting the defining characteristic of B-Contour Nodes.** Nevertheless, direct state management does not exclude the delegation of technical and operational decisions to specialists responsible for the operation of a particular object.

For example, operating a large energy system requires continuous engineering decisions. Central leadership should not independently determine every technical action of its workers. It establishes a structure of subordination, authority, and responsibility within which the object is operated.

The most important characteristic of A-Contour is its **direct subordination to the central state leadership of Cenes**. Unlike the ordinary economic recursion of B-Contour, strategic objects may be under the direct management of central bodies through specially organized sectoral structures.

This does not require concentrating all operational work within a single institution. Specialized governing bodies responsible for particular areas of economic activity may operate between central leadership and individual objects.

These bodies nevertheless exercise delegated state authority. Their existence does not transform subordinate strategic assets into autonomous B-Contour Nodes.

Because A-Contour belongs to the economic system of Cenes, the activity of its objects also requires resource planning, accounting for productive capabilities, and coordination with the rest of the economy.

The direct contour therefore interacts with **CEPO, P-AMO, CCL, and other system-wide mechanisms**. Its distinctive characteristics concern primarily the distribution of managerial authority, rather than the rejection of economic calculations or established legal formalization.

For example, the construction of a major infrastructure facility may be carried out directly by A-Contour state organizations. The necessary materials, equipment, and labor resources are nevertheless accounted for within the overall Plan, while supplies from autonomous enterprises are formalized through the contractual system.

The **interaction between A-Contour and B-Contour** is especially important. Autonomous enterprises depend on the use of strategic infrastructure and access to resources under direct state control.

This dependency is not eliminated by granting economic autonomy. On the contrary, the stability of B-Contour depends to a considerable degree on A-Contour's ability to provide the necessary system-wide conditions for its operation.

For example, an industrial enterprise independently organizes production but uses common energy, transportation, and communication infrastructure. The condition of these systems influences the enterprise's capabilities regardless of the quality of its internal management.

The activities of A-Contour objects must therefore be coordinated with the needs of economic Nodes, and decisions concerning the use of strategic resources must take account of the consequences for related production processes.

**A-Contour constitutes the material foundation for the exercise of system-wide governance.** Retaining direct control over key resources and infrastructure allows the state to secure the implementation of strategic decisions without transferring the corresponding authority to autonomous economic organizations.

This is also important for long-term development. For example, a decision to establish a new industrial zone may require changes in land utilization, infrastructure construction, and the direction of substantial resources toward a particular region. The existence of direct state authority over the corresponding objects makes it possible to implement such measures in a coordinated manner.

The development of A-Contour must not, however, entail the continuous extension of direct management to every economic process. The main economic activity of Cenes presupposes the use of B-Contour autonomy, since this allows economic Nodes to organize production independently and utilize local knowledge.

**The criterion for including an object in A-Contour is the necessity of direct state control over its management.** The strategic significance of an object itself requires evaluation, but it does not always mean that every associated economic activity must be removed from B-Contour.

For example, transportation infrastructure of system-wide significance may be under direct state management, while the production of particular types of equipment for it is undertaken by autonomous enterprises.

The boundaries between the contours are determined by the architecture of Cenes and may be revised as economic conditions, technologies, and strategic requirements change. Transferring an object from one contour to another requires corresponding changes in managerial authority and the legal conditions of its activity.

It is also necessary to distinguish **A-Contour from the emergency powers of BACKDOOR**, examined in the previous section.

A-Contour constitutes a permanent organizational structure of direct state management over strategic assets. BACKDOOR is intended for temporary modification of the ordinary order of subordination and governance under emergency circumstances.

Consequently, temporary intervention by a superior body in the activity of an autonomous enterprise does not automatically transfer that enterprise into A-Contour. Its permanent organizational status is determined separately from emergency measures.

The operation of the direct contour requires its own accountability rules. The managers of the corresponding objects must be accountable to state bodies for the preservation of entrusted resources, fulfillment of established tasks, and compliance with delegated authority.

Liability must nevertheless be determined with regard to actual circumstances and the nature of official duties. Direct subordination does not eliminate the need to distinguish objective economic constraints from violations committed by particular officials.

Preserving this distinction makes it possible to organize A-Contour as a system of specialized state management that maintains control over the strategic material conditions of Cenes' existence and ensures their utilization in accordance with the overall Plan.

## 30 ICO: The Political-Communication Contour

**ICO** is the political-communication contour of Cenes, designed to organize interaction between political leadership, state structures, and the population. Its principal function is to maintain the unity of the system's political orientation, disseminate information about strategic objectives, and sustain feedback between society and governing bodies.

The need for ICO arises because the economic system exists within a particular political organization. Production planning, resource allocation, and the development of economic capabilities depend on objectives established by political leadership. Implementing these objectives requires their understanding by participants in social and economic activity.

**Political leadership and economic planning perform different functions.** The Command Core determines the strategic directions of development, while CEPO undertakes their economic elaboration and implementation. ICO provides the corresponding political communication without assuming the powers of economic planning bodies.

For example, the supreme Command Core may define the development of a particular industry as a strategic task. CEPO calculates the necessary production measures, resources, and obligations. ICO disseminates information about the political significance of the adopted direction, its objectives, and its expected social results.

Thus, the same strategic course receives an economic expression through CEPO and political-communication support through ICO.

Organizationally, ICO is connected with the **Command Core**, because political leadership determines the content of the system's general strategic orientation. The communication contour nevertheless possesses its own specialized structures and instruments.

A fundamental principle of its organization is **recursion**. Political-communication functions are required at different levels of Cenes, from the supreme system-wide leadership to regional and local structures.

At the highest level, ICO disseminates general political objectives and principles of state activity. At subordinate levels, the corresponding structures address questions arising under particular social and economic circumstances.

For example, a strategic decision to develop industrial infrastructure may have system-wide significance, but the population of a particular region may be primarily concerned with construction conditions, changes in transportation accessibility, the creation of jobs, and other direct consequences.

The regional ICO structure must make information about these circumstances accessible, explain the content of the corresponding decisions, and transmit incoming questions to competent bodies.

At the same time, **ICO recursion does not mean incorporation into the economic hierarchy of CEPO**. The political-communication contour operates in parallel with economic governance and retains its own organizational subordination.

ICO interacts with enterprises and other economic Links, but does not thereby acquire the right to dispose directly of their production budgets, modify obligations, or make decisions concerning economic allocation.

This distinction is necessary to preserve clarity in the distribution of managerial authority. Economic decisions are formalized and executed through the prescribed bodies and mechanisms of Cenes, while ICO provides political and social communication concerning their content.

One area of ICO activity is **ideological work**. Within the political organization of Cenes, this involves disseminating and explaining the principles on which the system's general development course is based.

The ideological content of this activity is determined by political leadership and the corresponding theoretical foundation. In Cenes, it is connected with Marxism-Leninism and its further elaboration within the theory of Polar Marxism.

However, the political position of the state must be distinguished from factual information about the economy. Ideological justification of a particular course must not replace verification of productive capabilities, the reliability of statistics, or the independent work of economic bodies.

**The reliability of public information has direct managerial significance.** If communication structures present economic results exclusively in a positive light while concealing significant problems, political leadership may lose the ability to evaluate the consequences of its own decisions objectively.

ICO must therefore ensure the transmission of factual information and preserve the distinction between approved objectives, expected results, and the actual condition of the corresponding processes.

For example, if the development of a particular industry is accompanied by construction delays or a shortage of specialists, the communication system must make it possible to report those circumstances and explain the measures being taken. Presenting initial forecasts as already achieved results would obstruct the proper evaluation of the system's activities.

Another fundamental function of ICO is **feedback from the population and participants in social activity**.

Economic information systems provide data about resources, productive capabilities, and economic results. However, the social consequences of managerial decisions are not always fully expressed in such indicators.

For example, constructing a new industrial complex may correspond to the overall Plan but raise questions among the local population concerning living conditions, transportation infrastructure, or the organization of public services.

ICO provides the means to identify such questions, systematize incoming information, and transmit it to bodies possessing the necessary authority.

Public feedback must not automatically be equated with an economic offer or a legal appeal. An offer is a proposal to modify an assigned economic result, while an appeal concerns the grounds for liability associated with an obligation. Submissions from the population may address a substantially wider range of matters.

Accordingly, ICO must provide for **routing information according to competence**. Information about a production problem is directed to the relevant economic bodies, reports of possible violations to authorized inspection structures, and political questions to the corresponding Command Core bodies.

Communication between different levels of political leadership also plays a substantial role. The supreme Command Core must receive information about how political decisions are implemented locally, which problems are identified, and what consequences adopted measures produce.

For this purpose, ICO provides for the transmission of information not only downward but also upward. Subordinate structures must be able to report actual circumstances, including problems encountered when implementing decisions and contradictions between initial expectations and actual results.

**The unity of political leadership requires reliable feedback**, because without it superior bodies lack sufficient information to evaluate their own policy.

ICO does not replace independent economic verification by S3*. The communication contour may receive reports of problems and transmit them to competent bodies, but the factual circumstances of economic activity are established through the corresponding verification mechanisms.

An important direction of ICO's work is **public information about the activities of Cenes**. The population must be able to obtain information about strategic decisions, the principal directions of economic development, and the social results of the system's operation.

Different means of communication may be used for this purpose: information platforms, educational materials, public reports, and direct interaction with corresponding social structures.

The selection of particular instruments depends on organizational capabilities and the nature of the information being transmitted. The content of messages must remain accessible and correspond to actual circumstances.

ICO may also explain the principles governing the operation of the economic system itself. Participants need to understand which bodies make particular decisions, how economic obligations are established, and which procedures exist for submitting proposals or appealing liability.

Such informational work contributes to the proper use of Cenes mechanisms. For example, an enterprise manager must distinguish ordinary economic initiative, the submission of an offer, and an application to Technical Arbitration. The availability of relevant information reduces the likelihood of established procedures being applied incorrectly.

**The organizational interaction of ICO with economic Links must have defined limits.** Representatives of the political-communication contour may conduct informational work and collect information within their competence, but they must not create a parallel system of direct production orders.

If political leadership determines that an economic task must be modified, the corresponding decision must pass through the established system of authority and receive the prescribed legal formalization.

The distinction between ICO and the commissar oversight of superior Command Cores is also significant. The commissar mechanism concerns verification of compliance with political-organizational requirements, while ICO primarily provides informational interaction and political communication. These structures may cooperate, but their functions are not identical.

Evaluating ICO's work requires consideration not only of the number of materials distributed or events conducted, but also of the quality of informational interaction. Significant criteria include the timeliness of information transmission, accessibility of explanations, the ability to obtain feedback, and the accuracy with which actual circumstances are represented.

The specific organizational structure of ICO, the distribution of functions among its departments, and methods of public participation require further development within the political architecture of Cenes. Within the general economic model, its position is defined as **an independent recursive contour connecting political leadership with society and providing communication support for strategic development without replacing economic governing bodies**.

## 31 Genesis Mode: The Initial State of the System

The full operation of Cenes presupposes the existence of developed economic recursion, Digital Twins of economic Nodes, a functioning contractual system, and planning bodies capable of independently performing their functions. During the initial creation of the system, however, not all of these conditions can exist in a completed form.

This creates the problem of **launching Cenes before it has achieved full organizational and technical maturity**. To address it, **Genesis Mode** is provided—a special initial operating regime in which economic governance is conducted under increased centralization, followed by the gradual development of the autonomy prescribed by the architecture.

The need for this regime is determined by the difference between the system as designed and the system as it actually exists. The structure of recursive economic Links, the distribution of authority, and the procedures for economic planning can be established in advance, but the existence of an organizational scheme does not yet mean that all its elements can independently perform their assigned functions.

For example, a regional administration may formally receive authority to allocate production budgets while lacking reliable information about enterprise capabilities, the necessary computing instruments, or trained specialists. Transferring full responsibility to it under such conditions creates the risk of inconsistent decisions and disruption of economic processes.

The initial construction of Cenes therefore presupposes **developing the independence of economic Links as the conditions necessary to exercise it are established**.

In Genesis Mode, central leadership retains expanded capabilities for directly managing economic processes. It may independently make decisions that, in fully developed Cenes, would fall within the competence of subordinate recursive systems.

This arrangement is connected with the **BACKDOOR** mechanism examined earlier. Within the ordinary architecture, BACKDOOR is an instrument of emergency intervention allowing the standard sequence of governance to be bypassed temporarily.

In the initial state of Cenes, its principle is applied much more broadly: **the regime of direct superior management constitutes an initial condition of system operation**, while ordinary recursive autonomy is established gradually.

This means that powers which, in the mature system, will be independently exercised by regions, complexes, and enterprises may initially remain with superior leadership.

Genesis Mode does not require a single central body to make every production decision directly. Governance may be performed through specially organized sectoral and territorial structures operating within delegated authority.

The fundamental point is that **the full autonomy of subordinate Links is initially limited**, while superior bodies retain the ability to intervene directly in a broader range of matters than during the normal operation of Cenes.

Consider a simplified example. A country is establishing a regional recursion of Cenes that will eventually coordinate the activities of several industrial complexes independently.

At the initial stage, the regional system does not yet possess sufficient information about the condition of enterprises and cannot fully calculate interdependent production obligations. A portion of the corresponding decisions therefore continues to be made by central planning bodies.

As Digital Twins are connected, specialists are trained, and computational mechanisms are tested, regional management becomes capable of independently performing an increasing share of its functions. Superior leadership retains the established instruments of control and intervention but gradually reduces its direct participation in current decisions.

This example demonstrates the general logic of Genesis Mode: **organizational independence is granted according to the actual capacity of an economic system to perform the corresponding functions**.

The initial regime does not eliminate the general distinction between A-Contour and B-Contour. Strategic assets within A-Contour retain their established character of direct state management, while B-Contour enterprises are regarded as future autonomous economic Nodes.

The difference lies in the actual extent of authority. In Genesis Mode, enterprises and other B-Contour Links may temporarily operate under more direct leadership than the completed architecture prescribes. This does not mean their permanent incorporation into A-Contour.

**Genesis Mode is a temporary condition of the entire system, whereas A-Contour is a permanent element of its organizational structure.**

The initial regime also presupposes the gradual establishment of digital infrastructure. Full recursion requires reliable information about physical economic objects, but creating Digital Twins and connecting existing enterprises to the general network requires time.

At the beginning of operations, a portion of economic information may therefore be obtained through simpler accounting and reporting instruments. Their use is permissible within the capabilities of initial governance but is not regarded as a sufficient basis for a fully developed Plan III.

As CenesNet and the digital representation of the economy develop, it becomes possible to increase the independence of individual levels of governance and improve the quality of economic calculations.

The CEPO mechanisms are established in a similar manner. Creating the corresponding bodies does not yet guarantee the full operation of INCO, ERO, and EFO. That requires information, computational models, personnel, and practical procedures for interaction.

**The development of economic recursion must be accompanied by the development of its managerial capabilities.** Granting additional authority to a subordinate Link presupposes that it possesses the instruments necessary to perform the corresponding functions and can account for their results.

For example, a regional system may gain autonomy in coordinating particular production processes before receiving powers to undertake more complex resource reallocations. Such differentiation makes it possible to test the operational capacity of individual functions without prematurely transferring the entire range of managerial tasks.

Temporary centralization must nevertheless have defined legal grounds. The powers of superior bodies, the procedure for their intervention, and the responsibility of subordinate participants must be established in the corresponding rules and obligations.

**Cenes Contract Layer** retains particular significance. Even under expanded direct management, economic instructions must receive the prescribed formalization, allowing their content, responsible executors, and grounds for liability to be determined.

Otherwise, initial centralization may produce uncertainty concerning obligations, arbitrary changes to requirements, and the loss of opportunities to verify the results of managerial activity.

At the initial stage, the contractual system may operate within the available technical infrastructure, but its development must be coordinated with the gradual transition toward the fully recursive organization of the Plan.

The same applies to antimonetary mechanisms. Full implementation of P-AMO and C-AMO requires the corresponding rules of calculation, resource accounting, and allocation. Their initial introduction must therefore correspond to the capabilities of the economic system actually in operation.

At the same time, **the absence of completed infrastructure must not cause existing production and consumption to stop**. Genesis Mode presupposes the preservation of necessary economic processes during the establishment of new governance mechanisms.

One of the principal tasks of the initial regime is **preparing the transition from direct management to normal VSM recursion**. This requires identifying which functions subordinate systems are already capable of performing independently and which still require the participation of superior bodies.

The readiness of an economic Link is determined by the practical operational capacity of its managerial mechanisms. Significant factors include the reliability of the information used, the ability to calculate and fulfill obligations, coordinate related processes, and detect emerging disruptions promptly.

The transfer of authority must be accompanied by verification of these capabilities. The formal completion of organizational measures does not by itself guarantee that a system is ready to operate independently.

**The development of autonomy does not necessarily occur simultaneously at every level of the economy**. One region may possess more advanced digital infrastructure and better-prepared managerial personnel than another. Accordingly, the extent of delegated authority may differ at a particular stage.

Such uneven development is permissible provided that the coordination of the overall Plan and the established system of responsibility are maintained.

Genesis Mode also provides for adjusting powers previously granted. If verification demonstrates that a particular economic Link cannot adequately perform the functions transferred to it, superior leadership must have a prescribed procedure for temporarily restoring more direct management.

Such a measure must be based on established circumstances and accompanied by the determination of conditions under which the normal extent of autonomy can be restored.

It is fundamentally important that **Genesis Mode must not become an indefinite regime of expanded central intervention**. Its purpose is to establish the conditions necessary for the mature architecture of Cenes to operate.

The development of subordinate managerial capabilities and the successive transfer of corresponding authority must therefore be regarded as independent tasks in the system's initial construction.

In mature Cenes, direct intervention by superior leadership returns to the grounds prescribed by the ordinary architecture. BACKDOOR remains an emergency response mechanism, while principal economic activity is carried out through recursive systems possessing the necessary autonomy.

The practical launch of Genesis Mode requires defining the minimum set of functioning institutions, technical instruments, and legal mechanisms without which initial governance cannot operate. These requirements constitute the **Genesis Mode Protocol (GMP)**, examined in the following section.

## 32 Genesis Mode Protocol: The Initial Launch Protocol

**Genesis Mode Protocol (GMP)** is the initial launch protocol of Cenes, defining the minimum organizational, legal, and technical conditions necessary for the economic system to begin operating in Genesis Mode.

Whereas Genesis Mode constitutes a special state of Cenes characterized by increased centralization of governance, GMP establishes the requirements for its initial operational capacity. Its task is to determine which elements of the architecture must already exist at launch, which functions may temporarily be performed through simplified procedures, and how their coordinated interaction is ensured.

Fully developed Cenes includes numerous specialized mechanisms: recursive economic planning, Digital Twins, antimonetary subsystems, contractual infrastructure, motivational systems, verification, and emergency governance. However, the necessity of these mechanisms within the completed architecture does not mean that all of them must possess their final form before economic operations begin.

**GMP proceeds from the principle of minimum functional completeness.** The initial system must possess all the necessary functions of economic governance, but the methods used to perform them may be simpler than those prescribed by the mature architecture.

Functional completeness means the capacity to determine economic tasks, establish available resources, assign executors, ensure the fulfillment of obligations, obtain information about results, and make decisions when deviations arise.

For example, the overall Plan cannot be executed if bodies capable of assigning production tasks exist but no procedure has been established for providing the resources necessary to fulfill them. Similarly, production reporting is insufficient if it has not been determined who has the authority to modify erroneous decisions and establish liability for their execution.

Launching Cenes therefore requires establishing **a minimum closed cycle of economic governance**, in which every adopted decision is associated with defined authority, resources, executors, and feedback mechanisms.

The first condition of GMP is **the existence of a functioning political-managerial nucleus**. The Command Core must possess the authority necessary to determine initial strategic objectives and organize the transition toward the new economic architecture.

At this stage, central leadership also establishes the boundaries of Cenes' initial application, the order of subordination among economic Links, and the authority of the bodies exercising direct management in Genesis Mode.

The next condition is the establishment of **an initial CEPO** capable of performing the basic functions of economic planning.

Launching the system does not require the immediate creation of a fully developed recursive network of specialized bodies. Nevertheless, even the initial structure must provide for the coordination of economic processes, regulation of resource utilization, and preparation of decisions concerning further economic development.

The corresponding functions of INCO, ERO, and EFO may initially be performed through a more centralized organizational form. As the system develops, they are distributed among specialized bodies at different levels of recursion.

The temporary organizational combination of functions must not, however, eliminate the distinctions between them. Coordination of execution, current regulation, and prospective planning require different types of information and different decision-making procedures.

**The third condition is determining the initial composition of economic objects within Cenes.** The system must possess a register of enterprises, infrastructure facilities, and other economic units incorporated into its governance.

For every object, it is necessary to establish its organizational status, competent governing body, principal productive capabilities, and significant economic dependencies.

The initial distinction between A-Contour and B-Contour is particularly important. The state must identify strategic assets under direct management and economic Links for which the development of organizational autonomy is intended.

Initial inclusion of an enterprise in B-Contour does not mean that it immediately receives the full extent of independence. In Genesis Mode, the corresponding powers may remain limited until the necessary managerial capabilities have been established.

**The fourth condition is the existence of a minimally sufficient information model of the economy.** Central planning must possess information about existing productive capacities, resources, economic relationships, and actual constraints.

Initially, digital registers, production accounting data, enterprise information systems, and other available sources may be used for this purpose.

Such a representation must nevertheless be distinguished from full twinization. In mature Cenes, every terminal economic Node must possess a Digital Twin providing the observability and modeling of its economic capabilities that the system requires.

GMP permits the use of simpler instruments at the initial stage because their purpose is to enable launch, not permanently replace Digital Twins.

At the same time, **the limitations of the information model must be taken into account when determining the permissible scope of managerial decisions**. The less reliable and detailed the available information, the more cautiously obligations should be established and authority for independently reallocating resources should be granted.

Established reporting by economic Links is provided for obtaining the necessary information, together with the possibility of verifying the data submitted.

**The fifth condition is the establishment of an initial communication and computing infrastructure.** Governing bodies must be able to obtain economic information, perform the necessary calculations, and transmit legally significant decisions to executors.

At the initial stage, existing computing complexes and communication channels integrated through established technical rules may be used for these purposes.

Full deployment of CenesNet is undertaken gradually. However, even the initial infrastructure must provide for participant identification, preservation of significant information, and the possibility of recovering data after technical disruptions.

**The sixth condition is a functioning procedure for the legal formalization of economic obligations.** Economic decisions must possess defined legal force regardless of the degree of development of the digital infrastructure.

For this purpose, GMP provides for a minimally operational implementation of **CCL**, ensuring the registration of obligations, identification of responsible participants, recording of amendments, and preservation of the history of adopted decisions.

Every obligation must make it possible to establish which result has been assigned, who is responsible for its execution, which conditions apply, and how actual results are evaluated.

The initial contractual system may be technically simpler than completed CCL, but it must preserve its fundamental legal principles, including vertical responsibility and the distinction between obligation and liability.

Consistency among interconnected obligations is particularly important. If central leadership assigns tasks to several economic Links, the corresponding decisions must account for common resource constraints and production dependencies.

Thus, even in Genesis Mode, a procedure for forming coordinated Contract Pools is necessary, even if the calculation and formalization of related decisions are initially undertaken mainly by central bodies.

**The seventh condition is the existence of a functioning economic allocation mechanism.** The assignment of production tasks must be accompanied by the provision of resources necessary for their execution.

Within the completed architecture, this function is provided by P-AMO, production antiprices, and P-Budgets. At the initial stage, the corresponding mechanisms may employ simplified calculations and more direct resource allocation.

The system must nevertheless preserve the distinction between physical resources, their economic valuation, and the right granted to an economic Link to utilize particular capabilities.

For example, assigning an enterprise additional output must be accompanied by an assessment of its requirements for materials, energy, and equipment. If the necessary resources are unavailable, the corresponding constraint must be reflected in the initial Plan.

The provision of productive resources must not entail the transfer of private ownership over system-wide capital.

**The organization of personal income and consumption** requires a separate decision. In mature Cenes, these functions are performed by C-AMO, but the initial launch presupposes a transition from previously existing methods of allocation.

GMP must establish how the continuity of personal income, consumer supplies, and accounting for the corresponding rights is ensured during this transition.

If particular C-AMO elements have not yet been introduced, existing methods of allocation must retain their certainty and compatibility with transitional economic decisions. A situation in which

changing the accounting system itself deprives people of the ability to obtain necessary consumer goods is unacceptable.

Launching the economy also requires **a minimum system of execution and liability**. Managers of economic Links must understand their duties, the conditions for receiving prescribed remuneration, and the grounds for imposing sanctions.

The fundamental principles of BRSS must therefore be established at the initial launch. More complex forms of motivational regulation, including the development of MOS and PS, may be introduced as the corresponding information and legal infrastructure is established.

The initial liability system must preserve the possibility of accounting for objective constraints on execution. If an enterprise could not fulfill its assigned task because of circumstances for which its management is not responsible, the mere fact of a deviation must not automatically constitute grounds for punishment.

For this purpose, GMP provides for **an accessible procedure for challenging liability**. The fully recursive organization of Technical Arbitration may develop gradually, but from the moment obligations are established, a competent procedure must exist for considering the corresponding disputes.

Similarly, an initial procedure for submitting and considering offers must be provided. Economic participants must have the opportunity to report more efficient solutions and propose changes to assigned results.

At the initial stage, the consideration of such proposals may be performed mainly by central bodies. As recursion develops, the corresponding powers are transferred to competent levels of governance.

**The eighth condition is independent verification of economic information.** Central leadership cannot rely exclusively on reports from bodies and enterprises that have a direct interest in the results of their own activity.

The initial system must therefore possess instruments for verifying actual productive capabilities, the presence of resources, and the execution of obligations.

The fully recursive organization of S3* is established as Cenes develops, but its verification function is necessary from the outset. Without it, errors in the initial information model may be reproduced in subsequent economic calculations.

**The ninth condition is readiness for emergency governance.** Genesis Mode provides for expanded use of direct superior management, making it particularly important to determine the procedure for transmitting critical information and modifying managerial authority.

For this purpose, initial contracts must contain the necessary AEC obligations, while the technical infrastructure must provide the prescribed means for emergency communication with superior management.

Direct intervention must nevertheless be accompanied by the recording of the corresponding decisions. Increased centralization does not eliminate the need to establish who issued an instruction, on what grounds, and who is responsible for its execution.

A fundamental requirement of GMP is **compatibility of initial mechanisms with the future architecture of Cenes**.

If economic obligations are initially formalized without a defined structure or production data are collected in incompatible formats, the subsequent introduction of complete CCL, Digital Twins, and CenesNet may require recreating a substantial portion of the information system.

Initial decisions must therefore take account of the architectural principles governing the identification of economic objects, the distribution of authority, and the formalization of economic actions.

This does not mean that the final software implementation of every component must be created in advance. It is sufficient that the initial organization does not obstruct their subsequent development and preserves the possibility of transferring the corresponding data and obligations.

GMP must also determine **the verification of readiness for the initial launch**.

Before extending the new system of governance to a particular part of the economy, it must be established that the relevant bodies possess the necessary authority and information and are capable of assigning coordinated obligations and ensuring resource provision.

Procedures for receiving reports, registering decisions, considering significant violations, and restoring governance after technical failures must be tested.

For example, an initial launch within a particular industrial complex may include testing the complete cycle: obtaining production data, calculating a task, assigning an obligation, providing resources, executing the task, recording the result, and adopting a decision when a deviation is discovered.

Such testing makes it possible to identify missing organizational connections before the corresponding mechanisms are applied more broadly.

**Minimum operational capacity is not equivalent to maximum efficiency.** Initial Cenes may be inferior to its mature architecture in calculation accuracy, information-processing speed, and the degree of economic autonomy. These limitations must be taken into account when determining the scope of tasks entrusted to it.

GMP establishes the initial launch requirements. Further expansion of functionality, modification of initial mechanisms, and the successive transition toward the complete architecture are undertaken within the framework of the **Evolution/Transition Architecture (ETA)**, examined in the following section.

## 33 ETA: Evolution/Transition Architecture

**Evolution/Transition Architecture (ETA)** is the development and transition architecture of Cenes, defining the procedure for the successive introduction, modification, and improvement of its organizational, economic, and technical mechanisms.

The need for ETA arises because Cenes constitutes a complex interconnected system. Its elements perform different functions but operate together: economic planning relies on production information, the contractual system formalizes adopted decisions, antimonetary mechanisms provide for resource allocation, and digital infrastructure connects the participants in governance.

A change in one component may therefore affect the operation of others. Introducing a new resource allocation procedure, for example, may require changes to economic calculations, contractual conditions, and the software used by economic Nodes.

**The principal task of ETA is to ensure the development of Cenes while preserving the continuity of economic activity.** It establishes the principles governing the transition from the initial organization to the completed architecture, as well as subsequent improvements to the system already in operation.

Within ETA, two interconnected processes must be distinguished.

**The first is the initial transition to Cenes.** It includes transforming existing economic institutions, creating new governance mechanisms, and successively incorporating enterprises into the general economic network.

**The second is the subsequent evolution of Cenes.** After the initial transition is completed, the system continues to change: planning methods are improved, computing infrastructure is updated, procedures are revised, and new economic capabilities emerge.

Both processes must be carried out according to common requirements for compatibility, verification of changes, and preservation of economic governability.

Genesis Mode, examined earlier, constitutes the initial state of Cenes, while GMP defines the minimum conditions for its launch. ETA establishes the procedure for further system development once these conditions have been met.

**The initial launch does not necessarily encompass the entire economy simultaneously.** Individual regions, industries, and groups of enterprises may be incorporated into the new architecture successively, depending on the readiness of their corresponding organizational and technical mechanisms.

For example, an industrial complex possessing developed digital infrastructure and trained governing bodies may be connected to Cenes before another complex that lacks the necessary instruments for production accounting.

In such cases, the transitional organization must ensure coordinated interaction between economic Links already connected and the remaining participants in the economy. Production deliveries, resource provision, and existing obligations must continue to be fulfilled according to the established procedure.

The **modular character of development** is particularly important. Individual Cenes mechanisms may be introduced and improved in stages, provided that the necessary interconnections remain operational.

For example, an initial system for allocating productive resources may use relatively simple calculations. As reliable data accumulate and computing capabilities develop, more advanced methods for determining production antiprices can be introduced.

Changing the calculation mechanism must nevertheless be accompanied by verification of its compatibility with P-Budgets and existing economic obligations.

The Digital Twin system may develop in a similar manner. At the first stage, an enterprise's digital representation may encompass its principal productive capacities and resource requirements. The model is subsequently supplemented with more detailed information, making it possible to evaluate technological constraints and the consequences of possible decisions more accurately.

**Increasing the complexity of a digital representation must correspond to practical planning requirements.** Additional detail has economic significance when it improves the quality of necessary decisions or increases the reliability of the information used.

Modular development requires identifying dependencies between components. If a new function presupposes the availability of particular data or legal procedures, it must not be introduced before the corresponding conditions have been established.

For example, automated modification of production budgets cannot be reliably organized without established procedures for identifying resources, verifying available capabilities, and formalizing obligations.

ETA must therefore provide **a sequence for introducing interdependent functions** in which every successive stage relies on elements of the system that are already operational.

One of the most important requirements is **compatibility among different versions of the architecture**.

In a large economy, information systems cannot always be updated simultaneously at every enterprise and level of governance. For a certain period, different economic Links may use different versions of software, digital models, and data exchange procedures.

To preserve their interaction, it is necessary to determine in advance which component versions are compatible, which changes require a coordinated transition, and which data conversion instruments must be used.

For example, an updated production accounting system may employ a more detailed classification of materials. If related enterprises continue to use the previous classification, an established method of comparing the corresponding records is necessary.

Without such a mechanism, the same economic obligation may be represented differently in the information systems of its participants.

**Versioning** must extend to significant Cenes elements: digital models, data formats, economic rules, and legal procedures.

It is particularly important for CCL. Changes to the technical structure of a contract must not result in the loss of the legal content of previously established obligations.

The system must therefore retain information about which rules were in force when a particular decision was formalized, which contract version was used, and which subsequent changes acquired legal force.

Updating software and changing an obligation itself are different actions. Technical modernization of the contract storage system does not automatically entail revision of its economic content.

ETA also provides for **data migration**—the transfer of economic information from existing systems into new ones.

Such migration must preserve significant information about economic objects, resources, existing obligations, and operational results.

For example, when an enterprise's information system is replaced, data about material inventories and work in progress must be transferred. If this information is lost or distorted, superior bodies may acquire an erroneous understanding of the Node's capabilities.

Data transfer must therefore be accompanied by verification of completeness and correspondence with the actual condition of the economic object.

A separate problem lies in the difference between previous and new economic categories. Not all information from an existing system can directly correspond to the concepts of Cenes.

For example, information about an enterprise's monetary expenditures may be used for an initial analysis of its activity, but does not always permit direct conversion into production antiprices. This requires establishing physical resource dependencies and applying the corresponding economic valuation methods.

Consequently, **information migration is not merely the transfer of numerical records**. It may require changing classifications, refining original data, and constructing new models of economic processes.

An important instrument of ETA is **preliminary verification of changes**.

Before a new procedure is applied to a substantial part of the economy, its operational capacity, possible consequences, and interaction with existing mechanisms must be investigated.

Modeling, tests using limited datasets, and experimental implementation within individual economic Links may be used for this purpose.

For example, a new methodology for calculating production antiprices may initially be tested using data from several industries. Its results are compared with existing calculations to establish which changes it introduces into resource valuation and the allocation of production budgets.

**Verification must account not only for the correctness of an individual calculation but also for its consequences for other system components.** A methodology that evaluates resource constraints more accurately may simultaneously generate excessive computational load or require data that cannot be collected with the necessary frequency.

The readiness of a new mechanism is therefore determined by the combination of its economic, organizational, and technical characteristics.

**Parallel operation of old and new mechanisms** is especially important where such comparison is possible.

For example, a new economic forecasting system may perform calculations alongside the existing system for a period without determining binding economic decisions. This makes it possible to compare results, identify discrepancies, and verify the quality of the new model using actual data.

The binding order of governance must nevertheless remain clear. If two mechanisms generate different recommendations, it must be established in advance which one has the authority to determine binding decisions.

Once verification is completed, the corresponding component is transferred to its new version. The transition must be accompanied by recording the moment of change, notifying affected participants, and preserving the necessary data from the previous state.

**An update to an economic mechanism must be reversible insofar as this is technically and legally possible.**

If a serious error is discovered after implementation, ETA must provide for the possibility of returning to a previously operational alternative or switching to a reserve mode prepared in advance.

This mechanism is called **Rollback**.

For example, after an update to the production budget calculation system, an error is discovered that causes incorrect allocation of a critically important resource. In such a case, restoring the previous calculation mechanism may be necessary until the deficiency has been eliminated.

A distinction must nevertheless be drawn between rolling back a technical system and canceling economic decisions that have already been executed. If resources have actually been transferred to an enterprise or used in production, restoring the previous software version does not itself return the physical economy to its earlier state.

**Economic rollback may therefore require additional corrective decisions.** It is necessary to establish which obligations have already been fulfilled, which resources have been used, and which consequences remain after the technical restoration of the system.

The corresponding changes are formalized through CCL according to the established procedure.

ETA must also account for **the irreversibility of certain economic processes**. Construction of a major production facility, changes to transportation infrastructure, or enterprise restructuring may entail consequences that cannot be eliminated simply by restoring previous managerial decisions.

Large-scale organizational transformations therefore require particularly careful preliminary evaluation and determination of permissible transitional conditions.

An important direction of ETA is **the development of recursive autonomy**.

In Genesis Mode, superior bodies retain expanded capabilities for direct management. As fully functioning subordinate systems are established, some of the corresponding functions are transferred to them.

This transfer must take place successively, taking account of each level's readiness to perform new duties.

For example, a regional system may initially gain autonomy in coordinating deliveries among subordinate enterprises. Once its performance has been verified, it may receive additional powers to regulate production budgets.

Each such transition is accompanied by changes to organizational authority, reporting procedures, and applicable legal rules.

**Granting autonomy requires not only technical readiness but also the ability of the corresponding leadership to make well-founded decisions.** The development of Cenes therefore presupposes the training of specialists, the acquisition of new planning methods, and the accumulation of experience working with digital instruments.

Training of managerial personnel must be connected with the functions actually being introduced. Enterprise managers, CEPO specialists, and Command Core representatives require different professional knowledge and skills.

Organizational restructuring may also change the allocation of labor resources between existing and new forms of activity. The corresponding changes must be taken into account when planning professional training and systems of material incentives.

Coordinated development of Cenes requires **responsibility for implementing architectural changes**. Every significant update must have a defined subject, justification, competent approving body, and established conditions for verifying its results.

Changes to economic rules are considered by the relevant governing bodies within their authority. Technical updates are undertaken by specialized structures responsible for maintaining the operational capacity of the information infrastructure.

Transitional measures must also be coordinated with the Plan in force. Introducing a new mechanism may require computing capacity, equipment, specialists, and temporary restrictions on particular economic processes.

These costs must be considered alongside the expected benefits of modernization.

**The development of Cenes must itself remain an object of economic planning.** Resources directed toward improving the governance system compete with other possible uses and therefore require corresponding justification.

ETA also provides for accumulating the results of previous changes. Information about successful implementations, discovered errors, costs, and actual consequences must be used when preparing subsequent stages of development.

This makes it possible to improve not only individual Cenes mechanisms but also the process by which they are updated.

**The completion of Genesis Mode does not mean that ETA ceases to operate.** Once a fully recursive economy has been established, the need for change remains because of technological development, the emergence of new types of production, and changing social needs.

In mature Cenes, modernization becomes a permanent managerial function. Its implementation presupposes preserving compatibility, legal certainty, and the continuity of economic Links' operations throughout the successive development of the economic architecture.

## 34 The Boundaries of the Economic Architecture and Other State Systems

Cenes constitutes an architecture for organizing and governing the economy. It defines the procedures for economic planning, resource allocation, the execution of obligations, material motivation, and interaction among economic Links. The state, however, includes numerous functions that cannot be reduced to managing production and consumption.

These include defense, public security, the administration of justice, foreign policy, regulation of social relations, and other areas of state activity. These functions are closely connected with the economy but possess their own objectives, authority, and organizational principles.

It is therefore necessary to establish **the boundaries of Cenes' competence and the procedure for its interaction with other state systems**.

First, **the political organization of the state and the economic architecture of Cenes** must be distinguished. The supreme political leadership determines the strategic objectives according to which the economy develops. Cenes provides for the economic elaboration and implementation of the corresponding decisions.

The powers of political leadership are not, however, restricted to the economic sphere. It may make decisions concerning defense, international relations, state security, and other matters that do not directly belong to CEPO's functions.

Thus, the economic architecture operates within a broader political-state organization whose structure requires separate examination.

**The Command Core occupies a special position at the boundary between these systems.** It constitutes the political-strategic nucleus of Cenes while remaining connected with the general structure of state and Party power.

The present architecture primarily considers those Command Core functions necessary for economic governance: setting strategic objectives, leading the relevant bodies, and supervising the principal directions of development.

Its powers concerning other state systems, the procedures for establishing governing bodies, and the state's general political-legal organization lie outside the economic model as such.

**The distinction between economic law and general state law** is particularly important.

Cenes Contract Layer provides for the legal formalization of economic obligations, decisions, and related procedures. CCL establishes economic tasks, records the corresponding authority, and formalizes changes to obligations.

The Cenes contractual system does not, however, replace the state's entire legal system.

For example, matters of criminal liability, family law, civil status, general administrative regulation, and constitutional organization cannot be fully reduced to economic contracts.

They require their own legal institutions corresponding to the nature of the social relations they regulate.

An analogous distinction applies to **Technical Arbitration**.

Technical Arbitration considers disputes concerning economic obligations and liability for their execution. It establishes circumstances relevant to the application of the corresponding economic sanctions and makes it possible to revise erroneous decisions.

TA is not, however, a universal judicial system of the state. The consideration of criminal cases, general civil disputes, and other matters beyond the economic competence of Technical Arbitration belongs to the corresponding judicial bodies.

In particular cases, the same circumstance may be relevant to several legal procedures.

For example, an enterprise inspection may reveal a failure to fulfill an economic obligation and, at the same time, indications of a criminal offense. The question of liability for executing the Plan is considered under the established economic procedure, while the suspected criminal offense falls within the competence of the relevant law-enforcement and judicial bodies.

**Differences in the subject matter of proceedings must be accompanied by a clear distribution of legal powers.** Procedures for transferring materials, resolving conflicts of competence, and coordinating judicial systems are established by the state's general legislation.

This distinction also applies to **BRSS and the Priority System**. The material consequences and status decisions they provide operate within the competence defined for these mechanisms. They do not replace criminal penalties or other forms of state liability requiring separate legal grounds.

The next area concerns **state security and law-enforcement systems**.

Police, investigative bodies, and other corresponding institutions perform tasks concerning compliance with legislation, protection of public order, and maintenance of security. Their organizational activity is not directly determined by the economic recursion of Cenes.

These institutions nevertheless require buildings, equipment, transportation, communications facilities, and other resources. Meeting these needs is connected with economic planning.

For example, a decision to develop the public security system may involve constructing new facilities, producing specialized equipment, and preparing the necessary infrastructure. Cenes takes account of the economic consequences of such a decision, but direct leadership over law-enforcement activity remains with the competent state bodies.

It is therefore necessary to distinguish **the supply of a state institution from the governance of its special powers**.

An analogous principle applies to **the armed forces and defense system**.

The state's military organization possesses its own command structure, objectives, and procedures for exercising authority. These are determined by the corresponding political and military architecture.

Cenes provides the economic dimension of defense activity: the production of weapons and equipment, development of necessary infrastructure, resource supply, and coordination of defense requirements with other economic tasks.

For example, political and military leadership may determine the need to expand particular defense capabilities. Economic bodies calculate the productive capacities, materials, equipment, and labor resources required.

CEPO does not independently make decisions concerning military operations or the deployment of armed forces. These matters belong to another system of state governance.

**Defense production and military command constitute different functions**, even though they are closely connected through common strategic objectives.

**Foreign policy** requires a separate distinction.

International relations, diplomatic activity, and the conclusion of political agreements fall within the competence of the corresponding state bodies. Their decisions may substantially influence economic planning, but they do not themselves belong to the functions of Cenes' economic Links.

For example, concluding an international agreement for the supply of a particular raw material creates economic conditions that must be taken into account when formulating the Plan. The political decision to conclude the agreement, however, is made by bodies possessing the corresponding foreign-policy authority.

Cenes must possess mechanisms for accounting for external economic relationships, since even a developed internal production network may use imported resources, export products, or participate in international economic projects.

At the same time, **external economic activity requires a separate procedure for interaction between the internal antimonetary system and other economic systems**.

Other states may use money, market prices, and their own legal rules. The internal mechanisms of P-AMO and C-AMO cannot therefore be automatically extended to international relations.

Such operations require special rules for valuing external resources, accounting for obligations, and coordinating international settlements with the internal Plan. Their specific structure constitutes a separate subject of development.

**Education, healthcare, science, and other public systems** also occupy an important position.

On the one hand, their operation has an economic dimension. Educational institutions use premises, equipment, and specialized labor. Medical organizations require medicines, technology, and infrastructure. Scientific research requires material and human resources.

Cenes takes these needs into account alongside other uses of society's economic capabilities.

On the other hand, **the economic provision of a public system does not mean that all its specialized decisions must be determined by CEPO**.

For example, economic planning may establish resource conditions for developing a network of medical institutions. Medical standards, procedures for delivering care, and the professional decisions of physicians, however, belong to the corresponding healthcare system.

Similarly, constructing educational institutions and equipping them have an economic dimension, whereas educational content, pedagogical requirements, and the organization of teaching require their own professional and state institutions.

The connection between education and MOS does not eliminate this distinction. The motivational system of Cenes may take account of the economy's prospective demand for specialists and establish material incentives for professional training. Such incentives do not, however, replace the powers of educational authorities concerning the organization of instruction.

**Scientific activity** requires particular attention. Cenes is interested in technological development and must provide resource capabilities for research. Scientific conclusions, however, are determined through investigation and verification of results, rather than through administrative designation of an economically desirable answer.

Planning scientific infrastructure and allocating research resources must therefore be distinguished from the substantive evaluation of the reliability of scientific knowledge.

Another area of interaction is **environmental and nature-protection regulation**.

The economy utilizes natural resources and affects the environment. The corresponding constraints must be taken into account when assigning economic tasks and evaluating economic decisions.

For example, constructing a new industrial facility may require assessing its impact on water resources, environmental conditions, and the living conditions of the population.

Establishing mandatory environmental requirements and performing the corresponding state inspection functions may nevertheless fall within the competence of specialized institutions.

Cenes must incorporate established constraints into economic calculations and ensure compliance with them during the execution of the Plan. This makes it possible to coordinate productive development with requirements established by competent bodies.

**The existence of common resources does not make every state system part of the same hierarchy of economic governance.**

A military unit, a court, a hospital, and an autonomous industrial enterprise may all use material resources whose allocation is connected with Cenes. Their organizational subordination and principal functions nevertheless differ substantially.

An object's inclusion within state organization does not therefore automatically mean its incorporation into economic recursion as an autonomous B-Contour Node.

The terminal Nodes of system-wide economic recursion remain the corresponding economic organizations. Other state institutions interact with Cenes within defined economic functions while retaining their own organizational affiliation.

In certain cases, a specialized state system may possess subordinate production organizations. Their economic activity must receive a corresponding representation within Cenes, but this does not entail transferring all the specialized powers of the relevant department into the economic architecture.

Practical differentiation requires **an established procedure for interaction between state systems**.

It must determine which decisions are made outside Cenes, how their economic consequences are incorporated into the Plan, and which bodies are responsible for executing the corresponding obligations.

For example, a competent state body may establish a mandatory requirement for a particular type of infrastructure. Cenes takes this requirement into account when calculating the necessary resources and organizing economic measures. The body itself nevertheless retains its legally prescribed authority within the corresponding field.

If fulfillment of an external requirement proves incompatible with existing economic capabilities, the decision must be coordinated at a level possessing the necessary state competence.

**Economic bodies must provide reliable information about the resource consequences of political and administrative decisions.** This allows state leadership to evaluate not only the desirability of a particular objective but also the actual conditions necessary to achieve it.

Feedback also operates in the opposite direction. Specialized state systems provide economic planning bodies with information about their own needs, applicable requirements, and circumstances substantially affecting resource utilization.

Mutual information exchange must not, however, create uncertainty concerning responsibility. Each system is responsible for decisions within its competence, while interdepartmental conflicts are resolved through established state procedures.

General questions concerning constitutional organization, the legal status of citizens, the formation of state bodies, and the relationships among different branches and structures of power require an independent political-legal architecture. Cenes may interact with the corresponding institutions but does not determine their organization exclusively through economic mechanisms.

The boundary of the economic architecture is defined by **the subject matter of governance**: Cenes organizes the utilization of society's economic capabilities and the execution of the economic Plan. Other state systems perform specialized functions, relying on the material conditions created by the economy and providing it with the necessary requirements and information.

## 35 Cenes as a Unified Self-Reproducing Economic Organism

Cenes constitutes a unified economic system in which production, allocation, consumption, and development are integrated through a common mechanism of governance. Its integrity is determined not only by the existence of a central Plan but also by its ability to continuously reproduce the material, labor, and organizational conditions of its own operation.

**Economic reproduction** means the continuous renewal of the processes necessary for the existence and development of the economic system. Enterprises consume resources, produce new goods, use equipment, employ workers, and establish the conditions for subsequent production periods.

The outcome of one economic process becomes a condition for another. Equipment production depends on metallurgy, energy, and transportation. These industries, in turn, use the equipment, materials, and labor produced by the remaining participants in the economy.

An individual enterprise therefore cannot be regarded as a fully independent productive organism. Even when it possesses broad managerial autonomy, it exists within a network of material dependencies connecting it with other economic Links.

**The integrity of Cenes arises from the coordinated reproduction of these interdependencies.** The system must ensure not only the fulfillment of current production tasks but also the preservation of the capabilities necessary for fulfilling them subsequently.

For example, an enterprise may increase output through intensive equipment utilization. However, if the corresponding Plan does not account for equipment wear, the enterprise's future productive capacity may decline.

The economic result must therefore be evaluated with regard to the condition of productive capabilities at the end of the corresponding period. Output achieved at the cost of destroying the necessary conditions for further production does not necessarily constitute a genuine improvement.

Reproduction presupposes **coordination of current resource consumption with the need to restore and develop those resources**.

Material inventories must be replenished, equipment must be maintained and renewed, and infrastructure must be kept operational. At the same time, part of society's resources is directed toward creating new productive capabilities.

These processes form an interconnected system of economic obligations. Producing new equipment depends on the availability of necessary materials and specialists, while the development of the corresponding industries depends on the timely creation of additional energy, transportation, and other capabilities.

The Cenes Plan must therefore encompass not only individual production outcomes but also **the sequence of conditions enabling their achievement over time**.

For example, a decision to construct a major machine-building complex presupposes the production of construction materials, manufacture of equipment, development of infrastructure, and training of workers. These measures must be coordinated in terms of timing and resource availability.

If equipment has been manufactured but the energy infrastructure is not yet ready, part of the productive capacity cannot be utilized. A similar problem arises if an enterprise has been constructed but the necessary number of qualified specialists is unavailable.

In mature Cenes, such interdependencies are taken into account when strategic objectives are transformed into executable economic obligations.

**Temporal coordination of the Plan** has independent significance. The economy depends not only on the availability of particular resources but also on when they become available.

A production process may require specific materials before the next stage of work begins. A resource arriving after the established deadline cannot always compensate for a disruption that has already occurred.

Economic planning must therefore account for production sequences, inventory availability, delivery schedules, and possibilities for modifying related processes.

Individual periods of the Plan do not form isolated economic cycles. The results of previous decisions determine the condition of the economy at the beginning of the next period.

**Every new Plan is formulated on the basis of an economy transformed by the execution of the previous one.** Some resources have been consumed, while others have been reproduced. New productive capacities emerge, workers' qualifications change, and previously unknown capabilities and constraints are discovered.

This means that Cenes must continuously update its representation of its own material structure.

Digital Twins play a special role in this process. They provide information about the actual condition of terminal economic Nodes and make it possible to compare calculated capabilities with actual production results.

Economic reproduction, however, requires more than information. It is necessary that **a discovered change in economic conditions can lead to a corresponding change in an economic decision**.

For example, if the development of a new technology reduces the need for a particular material, this change must be taken into account when resources are subsequently allocated. The capabilities released may be directed toward other production tasks.

If a digital model records a reduction in costs but obligations and budgets continue to be determined exclusively on the basis of previous indicators, the system does not fully utilize the improvement discovered.

Information feedback must therefore be connected with functioning mechanisms of planning, contractual formalization, and resource allocation.

A fundamental characteristic of Cenes is **the unity of physical and economic calculations**. Society's need for a particular outcome must be related to existing material capabilities, while proposed production changes must be related to the resources necessary to implement them.

The antimonetary system provides the economic expression of these relationships. P-AMO regulates production allocation, while C-AMO organizes individuals' material capabilities in the sphere of consumption.

Both subsystems operate within the general economic architecture but perform different functions. Productive resources are provided to economic Links for executing the Plan, while personal antimonetary income determines people's consumption capabilities.

At the same time, **production and personal consumption are interconnected through the reproduction of social capabilities**. Consumer goods must be produced, transported, and provided to the population, and carrying out these tasks requires productive resources and labor.

Conversely, people's needs determine a substantial part of the objectives of economic development. Production and the expansion of economic capabilities must serve a social purpose rather than become an independent process of accumulating material resources without regard to their useful application.

**The reproduction of labor resources** occupies a special position.

The economy depends not only on the number of workers but also on their knowledge, skills, experience, and ability to perform particular kinds of activity. Training specialists requires time, so decisions concerning people's professional development must take account of the prospective structure of production.

If Cenes plans a substantial expansion of a particular industry, the need to train workers arises before the corresponding enterprises begin operating.

MOS makes it possible to establish material conditions under which people's professional decisions are coordinated with the economy's expected needs. Individual choice nevertheless retains importance alongside the social necessity of the corresponding activity.

The reproduction of labor capabilities also presupposes the development of education, maintenance of health, and creation of conditions for normal human life. These tasks extend beyond the direct functions of individual enterprises and require interaction between Cenes and other social and state systems.

**Economic development cannot be defined exclusively by the quantity of material goods produced.** Its conditions include society's capacity to create knowledge, master technologies, and improve the quality of human activity.

Strategic planning must therefore take account of the consequences of economic decisions for future productive and social capabilities.

For example, increasing the current output of consumer goods may require resources that could alternatively be directed toward constructing new equipment. The decision concerning allocation between these uses involves comparing current needs with prospects for development.

Such contradictions are not eliminated by the mere existence of an overall Plan. They constitute matters of economic choice that must be resolved with regard to available resources, social objectives, and the consequences of alternative decisions.

**The maximization of development** is the principal orientation of such choices. It means seeking to expand the system's productive, technological, and social capabilities successively while preserving the conditions for their continued reproduction.

Development does not necessarily mean increasing every indicator. Reducing the production of obsolete goods may accompany an economic improvement if the resources released make it possible to create more useful results.

Similarly, introducing a technology that reduces labor or material requirements may improve economic capabilities even when output remains unchanged.

Cenes must therefore evaluate **changes in the economy's capabilities**, rather than merely the fulfillment of quantitative tasks established in advance.

No governing body, however, possesses complete knowledge of every potentially useful change. New opportunities arise directly in economic activity, and initial calculations may contain errors.

The capacity for reproduction must therefore be complemented by **the capacity for self-correction**.

The Offer System provides for the submission of proposals capable of improving assigned economic results. Enterprises, managers, and individual specialists gain the opportunity to use local knowledge to improve the overall Plan.

Technical Arbitration performs another function: it makes it possible to reconsider unjustified liability arising from erroneous requirements or objective constraints on execution.

Independent verification through S3* provides an additional means of establishing factual circumstances, allowing discrepancies between reports and the actual condition of the economy to be discovered.

These mechanisms interact but possess different foundations. **An offer improves an assigned decision, arbitration examines liability, and S3* establishes the reliability of economic information.**

Their combined operation enables the system to modify its own decisions without undermining the binding force of the Plan in effect.

Correcting an economic error may affect several economic Links. If it is discovered that a particular material can be produced more efficiently at another enterprise, the resulting change must take account of the redistribution of equipment, resources, and related obligations.

Self-correction in Cenes is therefore undertaken through the corresponding levels of recursive governance.

**Recursion makes it possible to combine unity of system-wide objectives with the independence of economic Links.** Every level performs particular planning and regulatory functions while possessing information about the subordinate part of the economy.

Terminal B-Contour Nodes independently organize their internal activity within the limits of assigned obligations. Larger economic Links coordinate interdependent outcomes, while supreme bodies determine the general directions of economic development.

A-Contour meanwhile retains direct state management over the strategic material conditions of the system's operation.

This combination makes it possible to distinguish objects requiring direct central control from activities whose organization can be undertaken by autonomous economic Nodes.

**The unity of Cenes does not require the same method of governance for every economic object.** It presupposes the coordination of their activities within common objectives, resources, and obligations.

Preserving this coordination requires the reproduction of the managerial structure itself.

Economic bodies use specialists, computing infrastructure, information models, and legal procedures. Their operational capacity depends on training new workers, renewing technical instruments, and accumulating organizational experience.

**Economic governance is therefore itself an activity requiring resources and continuous development.**

For example, expanding the network of Digital Twins increases opportunities for economic modeling but simultaneously creates a need for computing equipment, technical maintenance, and qualified specialists.

The corresponding expenditures must be taken into account when evaluating the benefits of further increasing the complexity of the planning system.

If additional detail in economic calculations requires substantially more resources than it allows the system to save or use more efficiently, introducing it requires separate justification.

The development of managerial infrastructure must consequently be subject to the same requirements of economic feasibility applied to other uses of society's resources.

Another necessary characteristic is **the resilience of reproduction under disruptions**.

Production dependencies make the economic system sensitive to accidents, resource constraints, and technical failures. Continued operation therefore requires reserve capabilities and predefined methods of recovery.

CRS provides the corresponding preparation, while AEC and BACKDOOR make it possible to organize emergency managerial responses under critical circumstances.

Resilience nevertheless has an economic cost. Reserve capacity and additional protective instruments require resources that could otherwise be used to increase current production.

Their existence is justified by their capacity to prevent more substantial losses and preserve the conditions for further reproduction.

**The viability of Cenes is determined by its capacity to continue operating and developing as internal and external conditions change.** It cannot be reduced to the absence of deviations from the Plan.

On the contrary, a complex economy inevitably encounters new circumstances. What matters is how quickly the system discovers changes, evaluates their consequences, and formulates feasible decisions.

This requires maintaining the connection between physical reality, the economy's information model, and legally effective managerial decisions.

Physical processes determine the actual possibilities of production. Information systems represent these possibilities in a form suitable for calculation. Governing bodies adopt decisions that are transformed into obligations for the relevant participants through CCL.

Execution changes the material condition of the economy, after which new information enters the planning system.

**This continuously renewed process constitutes the principal cycle of economic governance in Cenes.**

Simply repeating economic operations, however, would ensure only the reproduction of the existing structure. Development requires every subsequent period to be capable of incorporating new knowledge, technologies, productive capacities, and more advanced methods of organizing activity.

Cenes must therefore support not only execution of the established Plan but also changes in its own economic capabilities.

This also applies to its organizational architecture. Genesis Mode provides for the initial launch, GMP establishes minimum operating conditions, and ETA provides for the successive development of governance mechanisms.

In the mature system, changes to technical and organizational instruments remain a continuous process. New solutions undergo verification, are introduced according to established procedures, and become part of the economy's subsequent operation.

**Cenes as a self-reproducing economic organism is a proposed system capable of maintaining its own existence and deliberately transforming the conditions of its subsequent development.** Its anticipated advantage should be demonstrated in its practical capacity to coordinate social objectives, the physical possibilities of production, and the independent initiative of participants.

Realizing this capacity depends on the quality of economic models, the reliability of information, the design of incentives, the organization of authority, and the dependability of the entire infrastructure. Their actual coordination will determine whether Cenes can move from an initially established architecture toward a stable, developing economic system.

## 36 Additional Distinctions and Clarifications of the Cenes Architecture

This section supplements the architecture of Cenes presented above by clarifying particular principles of motivational regulation, offer-based activity, organizational subordination, and interaction among managerial mechanisms. These clarifications reveal additional aspects of the systems already described and do not require changes to the structure of the preceding sections.

### 36.1 Internal Capital and the Two Inequalities of MOS

The concept of **internal capital** encompasses two interconnected aspects: a person's professional qualities and their economic valuation. The first includes knowledge, abilities, skills, experience, and other characteristics determining a person's capabilities in various activities. The second expresses the extent to which these qualities are demanded and valued under the particular conditions of the economic system.

Possessing a particular ability does not in itself establish its economic value. A person may have an exceptional talent whose application produces comparatively little social benefit under existing conditions. Conversely, a relatively widespread ability may become especially valuable because of the economy's high demand for the corresponding activity.

In this respect, internal capital represents not only an individual characteristic of a person but also **a relationship between their capabilities and the conditions of their social utilization**.

MOS constitutes the institutional mechanism for evaluating internal capital within Cenes. It determines the economic attractiveness of different directions of professional activity, taking into account both the needs of the Plan and the characteristics of a particular individual.

For this purpose, **two independent levels of inequality** are used.

**The first inequality is interprofessional.** It determines differences in the basic economic valuation of professions.

For example, under particular conditions, a cleaner may receive 1,000 antimonetary units per month, while a programmer receives 3,000. This difference reflects the relative attractiveness assigned by the system to the corresponding forms of labor, taking account of their social necessity, training requirements, and other significant characteristics.

Such a relationship concerns professions as economic directions and does not depend on which particular individual is considering working in one of them.

**The second inequality is individual-professional.** It determines how economically preferable it is for a particular person to work in a given profession compared with other directions available to them.

For one person, the system may consider programming the most useful activity; for another, teaching; and for a third, a completely different specialization. Such an assessment takes account not only of the general necessity of professions but also of the expected outcome of utilizing the individual's internal capital.

Of fundamental importance is that **personal remuneration depends not only on the profession chosen but also on the correspondence between that choice and the professional orientation established by the system**.

Suppose a person is offered a professional trajectory as a programmer with an income of 3,000 units. However, they independently decide to work as a cleaner, a profession with an established basic income of 1,000 units.

If the system considers this use of their internal capital economically less appropriate, the person's remuneration for working as a cleaner may be lower than the ordinary 1,000 units. They consequently face not only an interprofessional difference in income but also an additional motivational consequence of deviating from their own recommended trajectory.

Another person, for whom working as a cleaner is recognized as corresponding to their professional capabilities and the economy's needs, may receive the ordinary remuneration provided for that profession.

Thus, **the same profession may have different material attractiveness for different people**, even when its basic economic valuation remains unchanged.

A similar situation may arise between closely related professional directions. For example, the system may value a particular person's work as a mathematician more highly than their work as a physicist. At the same time, the basic incomes of mathematicians and physicists may differ.

If the person chooses a direction considered less preferable by MOS, their final remuneration may be reduced further relative to the ordinary level of the corresponding profession.

The numerical examples illustrate the principle of the two inequalities and do not establish a particular MOS calculation formula.

**Professional orientation is implemented through incentives.** Individuals retain the possibility of choosing their own activities, but different choices entail different economic consequences.

MOS may use not only the magnitude of personal antimonetary income but also other material conditions for professional development provided by the system. The specific composition of these incentives is determined by separate rules, while their general purpose remains the same: to coordinate individual choice with the most useful application of internal capital.

Of particular importance is the possibility of **challenging a professional valuation through the Offer System**.

If a person believes that they can produce greater economic benefit in a profession other than the preferred trajectory determined by MOS, they may submit a corresponding proposal and substantiate their position.

For example, a person may be offered a career as a mathematician but believe that their abilities would be substantially more effective in physics. In this case, they may propose reconsidering their individual professional assessment and present the necessary supporting grounds.

If the corresponding offer is accepted, MOS obtains grounds to change its assessment of the person's professional direction. This may affect the individual material conditions of their subsequent activity.

At the same time, **successfully demonstrating individual suitability for another profession does not automatically increase the basic valuation of that profession itself**.

A person may demonstrate that working as a physicist is more appropriate for them personally, while the general level of remuneration for physicists remains below that of mathematicians if the economic grounds for the interprofessional difference persist.

Another type of offer is also possible: **a proposal to change the interprofessional valuation itself**.

For example, a participant may present evidence that the economy's need for physicists is systematically underestimated and that the corresponding material incentives should be increased for the profession as a whole or for a particular specialization.

If such a proposal is accepted, the change affects not only the offeror's individual professional trajectory but also the general conditions governing the motivational allocation of labor.

Consequently, the Offer System makes it possible to reconsider both levels of MOS: the assessment of the social necessity of professions and the assessment of the most useful application of a particular individual's internal capital.

### 36.2 The Universality of Offers and Offer-Based Activity as a Form of Entrepreneurship

The Cenes Offer System has a broader significance than changing individual production indicators. It extends to **any economic decisions whose improvement requires a change in the established system of authority, obligations, or resource allocation**.

An offer may concern not only the quantity of goods produced but also the establishment of a new economic Node, the redistribution of tasks among enterprises, the transformation of an existing organization, a change in professional orientation, or a more efficient method of managing a particular part of the economy.

The distinction between ordinary economic autonomy and an offer nevertheless remains. An enterprise manager independently chooses how to fulfill existing obligations. An offer is necessary when the proposed decision exceeds the manager's authority and requires changes to conditions established by the superior system.

Of particular importance is the possibility of **competition for the right to manage an economic object itself**.

Suppose a person who does not hold a managerial position discovers that a particular enterprise could be organized substantially more efficiently. They develop a proposal involving changes to production outcomes, resource allocation, or the enterprise's organizational structure.

If implementing such a proposal requires transferring the corresponding managerial authority to that person, the offer may include a justification for such an appointment.

The participant thus proposes not only to improve the enterprise's operations but also **to entrust them with organizing the corresponding improvement**.

Acceptance of such an offer may provide grounds for changing the management of an economic Node if the competent superior body establishes that the proposed decision is justified and that the corresponding candidate is capable of implementing it.

Submitting an offer does not, however, automatically entitle its author to a managerial position. The usefulness of the proposal must be distinguished from the ability of a particular person to implement it. The latter may require an additional assessment of professional training, experience, responsibility, and other established conditions.

The fundamental principle is that **the right to propose more efficient management is not restricted to existing managers**. Such initiative may originate from any participant in Cenes.

This creates the possibility of competition between the existing organization of management and alternative proposals. A manager retains authority according to the established procedure, but their position does not exclude the emergence of another participant capable of proposing an economically more useful decision.

An analogous principle applies to the establishment of new economic units. A person may submit an offer proposing to organize an enterprise, obtain the necessary productive resources, and assume the corresponding managerial duties.

Restructuring the existing network is also possible. For example, an offeror may propose merging two enterprises, separating particular production functions, or transferring some obligations to another Node if such a change provides a more useful outcome.

Decisions affecting several economic Links are made by the competent superior body and formalized within the general contractual system.

Within this organization, **offer-based activity acquires the significance of a special form of entrepreneurship**.

In legal terms, an offeror is any person who submits an offer according to the established procedure. A single proposal does not in itself constitute a separate profession or a stable social position.

However, some participants may systematically engage in discovering economic opportunities, developing proposals, establishing new enterprises, and improving the activities of existing Nodes.

Such people effectively perform **entrepreneurial and managerial functions**. They discover opportunities for more efficient resource utilization, take the initiative to implement them, and may receive the corresponding managerial powers.

In this sense, entrepreneurship within Cenes is connected primarily with the capacity to discover and implement useful economic changes.

**Entrepreneurial initiative and managerial activity may be combined in the same person.** A participant may initially act as the author of an offer, subsequently receive authority to implement it, and later manage the enterprise established or transformed through the proposal.

Their economic benefit is nevertheless expressed through prescribed personal remuneration rather than private appropriation of the production budget or resources of the Node they manage.

This structure creates an additional source of economic initiative: the opportunity to advance useful economic decisions remains available outside the existing managerial hierarchy.

### 36.3 A-Contour as the Topology of Direct Strategic Governance

The concept of **A-Contour** also admits an organizational-topological definition that supplements the characteristics of strategic resources and economic objects examined earlier.

Under this interpretation, the defining characteristic of A-Contour is **the direct command subordination of a strategic economic system to the highest level of Cenes**.

Ordinary economic recursion is organized through a sequence of subordinate VSMs. The highest level governs large economic formations, which in turn govern subsequent levels down to terminal autonomous Nodes.

A-Contour constitutes a separate branch of governance through which the most significant economic systems are subordinated directly to the top-level VSM, bypassing the ordinary territorial sequence.

Accordingly, three organizational regimes must be distinguished:

1. **Ordinary B-Contour recursion**—governance through a sequence of autonomous economic Links.
2. **Permanent direct A-Contour governance**—direct command subordination of strategic systems to the top-level Cenes.
3. **Emergency BACKDOOR governance**—temporary bypassing of the ordinary managerial sequence under established circumstances.

Under this interpretation, **the legal form of ownership is not in itself a criterion for an object's inclusion in A-Contour**. What determines its inclusion is its position within the structure of command subordination.

This makes it possible to express the concept of **the commanding heights of the economy** more precisely. It concerns objects and systems whose direct management gives the supreme Cenes the ability to influence key material flows and the operating conditions of the entire economic network.

For example, system-wide energy infrastructure may constitute a strategic VSM directly subordinate to the supreme Command Core of Cenes. The energy system itself may nevertheless possess a complex internal organization comprising regional energy complexes, power stations, and other subordinate objects.

Thus, **direct subordination to the highest level does not exclude internal recursion within the strategic system**.

Its governing bodies perform their own planning, regulatory, and coordination functions but receive their principal command authority directly from the highest level of Cenes rather than from an ordinary regional Link.

This makes it possible to preserve specialized governance of a large strategic system without turning central leadership into a body directly managing each of its technical subdivisions.

The composition of A-Contour is determined by the systemic significance of the corresponding objects and the need to preserve direct control over them. The criterion is therefore not simply the size of an enterprise but its position within the network of material dependencies and its importance for governing the economy as a whole.

### 36.4 Economic Connections Between the Priority System, MOS, and Offers

The **Priority System** may be regarded as an additional status level within the general motivational architecture of Cenes.

MOS determines the economic attractiveness of professional activity, BRSS regulates the consequences of fulfilling specific duties, and PS modifies a person's position within the system on the basis of exceptional achievements or established violations.

Within the concept examined earlier, **High Priority** is associated not only with additional material recognition but also with expanded opportunities for initiative-based activity.

For example, elevated status may be taken into account when considering proposals requiring considerable responsibility or evaluating candidates for especially important managerial functions. However, status itself does not replace verification of an offer's economic usefulness or the suitability of its author for the proposed role.

**Low Priority**, by contrast, presupposes special restrictions on the additional material and status-based advantages provided by the system.

In the original interpretation, this mechanism was closely connected with the restriction of particular motivational opportunities associated with MOS and offer-based activity. The specific character of such restrictions must nevertheless be established separately, including the grounds for application, duration, and conditions for restoring status.

Consequently, PS may modify the conditions under which individual economic incentives are realized without becoming an independent system of production allocation.

It is fundamentally important to distinguish **a person's professional usefulness from their priority status**. High qualifications do not automatically entail the assignment of HP, while possession of a special status does not in itself demonstrate professional suitability for every activity.

### 36.5 AEC as an Algedonic Channel and the Legal Duty of Notification

The term **AEC (Algedonic Escalation Channel)** denotes the algedonic channel for escalating critical signals within the recursive structure of Cenes.

Its cybernetic purpose is to transmit information about disturbances that exceed the normal regulatory capabilities of the corresponding economic level.

Here, **the channel itself and the duty to use it** must be distinguished.

AEC constitutes an informational-managerial mechanism enabling a critical signal to reach the competent level of governance. The participant's legal duty to generate and transmit such a signal promptly is established through CCL.

Consequently, contractual liability for emergency notification constitutes the legal aspect of AEC but does not exhaust its technical and organizational content.

BACKDOOR is connected with this mechanism but performs a broader function. In addition to emergency information transmission, it may provide for temporarily modifying the ordinary order of governance and transferring corresponding powers to a superior system.

Thus, **AEC provides for detecting and escalating a critical condition, while BACKDOOR provides the prescribed instruments for emergency managerial intervention**.

### 36.6 Commissars and Independent Verification Through S3*

Within the structure of Cenes, **the function of independent verification of economic reality (S3*)** must be distinguished from **the political-organizational representation of a superior Command Core**.

S3* provides direct verification of the condition of subordinate economic systems. It establishes the reliability of information about productive capabilities, resources, and actual operational results.

S3* operates recursively: every relevant level of governance possesses instruments for independently verifying its immediately subordinate Links.

**The commissar function is broader than technical auditing**. A commissar represents competent superior command leadership in its relations with a subordinate system.

In this role, a commissar may communicate the corresponding political-organizational requirements, observe compliance with established authority, and transmit information about discovered violations to superior leadership.

Commissar organization may therefore combine two distinct areas of activity: participation in the independent verification of the actual condition of an economic Link and representation of superior political leadership.

These functions must nevertheless remain legally distinct. Verification of economic circumstances does not in itself grant authority to modify the Plan, while political representation does not make the commissar the direct manager of every production process within the system being inspected.

The specific powers of commissars, including possible measures for preventing violations of decisions made by superior Command Cores, must be determined separately and coordinated with the competence of ordinary governing bodies.

### 36.7 CDE Platforms and Cabinets

Within the structure of **Cenes Decision Environment**, two organizational-technical levels must be distinguished: **CDE Platforms** and **CDE Cabinets**.

A **CDE Platform** is a specialized digital environment supporting the performance of a particular set of managerial functions and interaction among the corresponding participants.

Such a platform may serve the work of a Command Core, an individual CEPO body, or several interconnected managerial structures.

A **CDE Cabinet** is an individualized or role-based workspace within the corresponding platform. The Cabinet determines which data, instruments, and actions are available to a particular participant.

Consequently, a platform provides for the shared organization of work, while a Cabinet provides for the exercise of authority by an individual managerial role.

The structure of platforms does not necessarily have to correspond exactly to the number of Cenes bodies. Several managerial functions may use a common platform while retaining separate Cabinets and an established differentiation of access rights.

### 36.8 The Recursive Organization of ICO Political Communication

The recursive character of **ICO** presupposes not only the existence of political-communication structures at different levels of Cenes but also **the distribution of the corresponding work among those levels**.

Supreme command leadership determines general political and ideological directions, which are transmitted to immediately subordinate levels. Subordinate structures organize their further dissemination and application within their own competence.

The highest level of ICO is therefore not required to conduct all communication work directly with every individual participant in the economy.

For example, system-wide leadership may determine the fundamental provisions of a particular political course. The corresponding bodies of major economic formations then organize communication with regional structures, which in turn work with subordinate social and economic levels.

Such a distribution makes it possible to account for the difference between system-wide political objectives and the specific conditions under which they are implemented.

At the same time, recursive transmission of political content must preserve the possibility of feedback. Subordinate levels provide information about how adopted decisions are received, emerging problems, and circumstances relevant to superior leadership.

ICO retains its own organizational function and does not replace the economic recursion of CEPO. Its recursive character concerns political-communication interaction rather than the direct allocation of productive resources.

### 36.9 Dynamic Revaluation of Internal Capital and Incentives for Information Disclosure

One of the most important characteristics of MOS is **the dynamic nature of internal capital valuation**. Professional incomes and individual motivational conditions are not established once and for all. They are subject to regular recalculation as the economy's needs change, new information accumulates, and assessments of people's professional capabilities are refined.

This applies to both inequalities of MOS. The system may reconsider both the relative economic significance of professions and the assessment of the most useful application of a particular person's abilities.

For example, the work of a mathematician may initially be valued at 3,000 antimonetary units, while that of a physicist is valued at 2,500. Subsequently, a change in production requirements or a refinement of economic calculations may lead to a revision of this relationship: physics may become more in demand, increasing the corresponding basic income, while the income of mathematicians remains unchanged or decreases.

Changing the interprofessional relationship, however, represents only one aspect of the process. Even if the basic valuations of professions remain unchanged, MOS may reconsider an individual's professional orientation.

Suppose a person works as a mathematician and receives 3,000 units, although they possess knowledge about their own abilities suggesting that their work as a physicist would be more useful to the economy. At the same time, work as a physicist initially offers a lower income, so the person has no incentive to disclose this circumstance independently.

This creates **a problem of information asymmetry**: the individual may know more about their own capabilities than the system determining their professional trajectory.

If MOS does not revise individual assessments, the person may benefit from an erroneous allocation of incentives for a prolonged period. The economy consequently loses the opportunity to utilize their internal capital more effectively.

To resolve this contradiction, **dynamic revaluation must be combined with incentives for the voluntary disclosure of local knowledge**.

If the system subsequently obtains reliable information that the person would be substantially more useful in physics than in mathematics, it may revise their individual remuneration conditions.

The basic incomes of the professions do not necessarily change. Mathematicians may still receive 3,000 units and physicists 2,500. However, for the particular person whose work as a mathematician is

now assessed as a less appropriate professional trajectory, MOS may establish individual remuneration for that activity below 2,500 units.

This difference represents the operation of **the second inequality of MOS**. The system changes the relative attractiveness of professional alternatives in light of a refined assessment of the individual's internal capital.

In this case, the reduction in income should be understood primarily as a change in motivational weights rather than as an independent punishment for a professional choice made earlier. The new conditions are intended to encourage the person to apply their abilities in the direction that the system now recognizes as more useful.

Consequently, the initial advantage of remaining in the existing profession is not guaranteed. A person possessing significant information about an error in their own professional allocation must take account of the possibility that the error will be discovered later and the corresponding motivational conditions will change.

It is precisely here that an additional function of the Offer System emerges.

**An offer allows a person to disclose their own information before it is independently discovered and taken into account by the system.** A participant may submit a substantiated proposal to change their individual professional orientation, even if an immediate transition would involve a lower income.

The proposal must nevertheless contain verifiable grounds. A person's mere assertion that they are better suited to another profession does not constitute sufficient evidence.

Depending on the nature of the activity, the corresponding grounds may include the results of qualification examinations, professional achievements, completed research, practical demonstrations of skills, and other information enabling the expected usefulness of an alternative professional application to be evaluated.

For example, a person may propose taking a special examination, demonstrating their knowledge of physics, or presenting results of previous work that confirm their ability to perform the corresponding activity at a higher level.

The competent system examines this information and determines whether grounds exist for reconsidering the professional assessment.

**The distinction between the success of an offer and the good faith demonstrated in submitting it is of fundamental importance.**

A proposal may be rejected because of insufficient evidence, limitations in the available information, or other circumstances. Nevertheless, the very fact that a properly submitted and substantiated offer exists records that the person attempted to inform the system of a suspected error.

If MOS subsequently reaches a similar conclusion and revises the professional allocation, the earlier offer must be taken into account when evaluating its author's conduct.

Such a person must not be treated as a participant who consciously preserved an error known to them in order to obtain an unjustified advantage. They provided the relevant information, but its initial evaluation depended on the competent bodies.

At the same time, **submitting an offer does not protect a person from ordinary future recalculations by MOS**. If the economic significance of a profession changes or an individual's abilities are reassessed, the corresponding material conditions may be revised regardless of whether the person previously submitted an offer.

The protection concerns a different circumstance: the good-faith disclosure of information must not expose a participant to additional adverse consequences associated with the alleged deliberate preservation of a system error.

It is therefore necessary to distinguish between **ordinary dynamic revaluation** and **the evaluation of the conduct of a person possessing significant information about an error**.

A subsequent change in professional assessment does not itself prove that the person previously concealed the relevant information knowingly. Such a conclusion requires independent grounds sufficient to establish the existence of significant information and the nature of the person's actions.

Nevertheless, the possibility of future reassessment creates an additional incentive to use the Offer System promptly. It becomes more rational for a participant to present verifiable information about their own capabilities than to rely on the permanent preservation of an advantageous but potentially erroneous assessment.

This principle is not limited to individual professional orientation. A person may possess information about an erroneous assessment of the economy's demand for an entire profession and propose reconsidering the first inequality of MOS.

For example, a participant may discover that the prospective demand for particular specialists is substantially greater than existing calculations suggest. The offer they submit may provide grounds for revising the general material incentives directing people toward the corresponding field of activity.

For this mechanism to operate in practice, the Offer System must ensure **accessibility of proposal submission, the ability to present evidence, and preservation of the history of consideration**. A person must be able to record a timely report of a suspected error regardless of whether their proposal is immediately accepted.

The result is an additional motivational circuit: MOS evaluates professional usefulness, the Offer System makes it possible to correct errors in that evaluation, and continuous recalculation creates an incentive not to withhold local information solely to preserve a temporary individual advantage.

**The economic incentive to disclose knowledge thus becomes part of the mechanism for allocating internal capital itself.**

## 37 Innovation and Diffusion of Knowledge in Cenes

One of the fundamental properties of Cenes is its ability to continuously create, discover, and disseminate new economic knowledge. **Innovation is an internal function of the system**, ensuring improvements in production, greater efficiency in resource utilization, and the expansion of opportunities for economic development.

**Innovation in Cenes is understood in a broad economic sense.** It encompasses the creation of new technologies, the improvement of production processes, increased efficiency in existing enterprises, and changes in the organization of economic activity. Any discovered improvement that expands the economic possibilities known to the system constitutes new economically significant knowledge.

The principal mechanism for identifying such opportunities is the **Offer System**. Participants in Cenes have an incentive to discover errors in economic calculations, productive reserves, and more efficient methods of operation. By submitting an Offer, an individual discloses the relevant knowledge, substantiates the proposed result, and gains an opportunity to receive a reward for achieving it.

Thus, the Offer System ensures a continuous flow of innovations arising from direct economic activity. Additional sources of knowledge include scientific research, engineering development, and purposeful technological advancement carried out within the general Plan.

**A key property of the innovation structure of Cenes is the system-wide diffusion of knowledge.** Once an economically beneficial improvement has been verified, the relevant information enters the management system and becomes available to other economic units through CenesNet.

Diffusion takes place recursively. Knowledge discovered at the level of an individual Node is transmitted to the competent higher-level system, which determines its applicability to other subordinate enterprises. If the innovation has broader significance, the information moves to subsequent levels of recursion and spreads among the relevant economic organizations.

**CenesNet enables the virtually instantaneous transmission of verified knowledge among the relevant participants in the economy.** As a result, an innovation originating in one enterprise can be used simultaneously by numerous other Nodes possessing the necessary production conditions.

The economic processing of innovations is carried out by **CEPO**. EFO evaluates the prospective possibilities of new technologies, ERO determines the conditions for providing the necessary resources, and INCO coordinates implementation among interconnected economic units. Digital twins make it possible to compare new technological solutions with the actual productive capabilities of enterprises.

The dissemination of knowledge is accompanied by its practical implementation. Enterprises receive information about new methods and independently organize their application within the limits of their granted autonomy. Where changes to production obligations, budgets, or resource allocations are necessary, the relevant decisions are formalized through CCL.

**Every verified innovation provides a basis for updating the economic model and recalculating the Plan.** Increases in productivity, reductions in resource consumption, the emergence of new technologies, and changes in organizational capabilities are incorporated by CEPO into subsequent planning. Through P-AMO, production antiprices and budgets reflecting the new conditions of resource utilization may be revised.

For example, if one enterprise develops a technology that reduces the consumption of a particular material, information about it spreads to other applicable production facilities. Following implementation, the system accounts for the aggregate savings of that material, making the corresponding resources available for other tasks. In this way, a local improvement becomes a change in the productive possibilities of the entire economy.

Innovation acquires a **continuous and cumulative character**. Disseminated technologies become the foundation for subsequent improvements discovered by other participants. New Offers enter the system again, undergo verification, spread through the network, and are incorporated into the next recalculation of the Plan.

This process corresponds to the logic of **endogenous economic growth** examined in Paul Romer's model. The production and accumulation of knowledge become internal sources of productivity growth, while the ability of numerous economic units to use the same idea simultaneously gives it a multiplied economic effect.

In Cenes, this logic is realized through the interaction of the Offer System, CEPO, CenesNet, and the recursive organization of economic units. **Local initiative ensures the continuous discovery of new possibilities, the centralized network ensures their dissemination, and economic planning transforms the resulting knowledge into system-wide development.**

Thus, **the creation, accumulation, and diffusion of innovations constitute a unified, self-reproducing process within Cenes**, through which each new piece of economically useful knowledge can become available to the entire economic network and continuously expand its opportunities for further development.

## 38 Special Economic Regime

Cenes provides for a **Special Economic Regime** intended for promising innovative, scientific research, and creative economic activities. Its purpose is to grant participants greater freedom in the use of resources for developing new technologies, products, and production solutions.

Access to this regime may be granted on two grounds.

The first is a **substantiated innovative Offer** involving the creation of a fundamentally new product, the development of a prototype, the conduct of promising research, or another project with substantial potential economic significance. Following verification of the proposal's validity, the participant may be granted special conditions for its implementation.

The second is **high Priority status within Cenes**. Participants holding the relevant status may gain access to the Special Economic Regime on the basis of verified professional capabilities, the results of previous activities, and the level of trust established by the system.

**The central feature of the Special Economic Regime is expanded autonomy in the use of allocated economic resources.** Participants can independently determine the direction of experiments, revise research decisions, test different technological approaches, and organize creative activities within the scope of their granted authority.

The relevant conditions are taken into account when forming production budgets through P-AMO and are formalized through CCL. The volume of allocated resources, permitted areas of use, time frames, and reporting requirements are established according to the nature of the project and the participant's position within the system.

The regime is particularly important for activities whose outcomes involve substantial uncertainty in advance. The creation of new technologies and the conduct of research involve the gradual acquisition of knowledge, the testing of hypotheses, and changes to initial technical decisions. Accordingly, **the assessment of compliance with the relevant obligations takes into account the nature of research activity, the justified use of resources, and the results actually achieved**, including acquired knowledge and intermediate developments.

The Special Economic Regime forms part of the general planning architecture of Cenes. CEPO accounts for the resources allocated and the prospective results of the relevant projects, while new knowledge, technologies, and production solutions, once verified, are disseminated through CenesNet and incorporated into the recalculation of the general Plan.

Thus, **the Special Economic Regime provides favorable conditions for the creation of promising innovations**, combining individual research initiative, expanded economic autonomy, and the resource capabilities of a unified economic system.

## 39 Economic Work-Off under Low Priority

**Low Priority (LP)** in Cenes entails a mandatory economic work-off obligation, establishing material accountability for confirmed violations and compensating the costs incurred when the system intervenes to prevent or stop them.

**Work-off obligations are based on verified economic consequences.** Where actual damage has occurred, its extent and the corresponding compensation obligation are determined. Where damage has been prevented in time, the actual costs of detecting and stopping the violation are taken into account. Economic responsibility therefore covers both damage incurred and the resources spent by the system to prevent it.

The justified assignment of Low Priority itself entails **a minimum obligation expressed in basic work-off units**. Additional obligations are determined in proportion to verified consequences. Their amount, duration, and conditions of fulfillment are established by PS rules and the relevant BRSS procedures.

During Low Priority, additional incentive opportunities under MOS, participation in the Offer System, and economic privileges associated with priority status are restricted. Work-off obligations are fulfilled through prescribed economically useful activity, with the corresponding obligations formalized under CCL.

**Completion of the work-off obligation and compliance with the established conditions provide grounds for restoring Base Priority (BP).** Decisions concerning the assignment of status, the extent of obligations, and their termination are subject to verification and review under the established procedures.

Thus, **Low Priority combines restrictions on economic privileges with an obligation to compensate for the consequences of violations and the costs of preventing them**, giving status-based accountability a material economic expression within Cenes.

## Conclusion

This paper has presented the general architecture of Cenes (Centralized Network Economic System), a proposed centralized network economic system that organizes planned economic activity through recursive governance, digital infrastructure, and deliberately structured economic incentives. The mechanisms examined are integrated into a conceptual model of Plan III, oriented toward the conscious coordination of economic activity while preserving the independence of individual economic participants.

**The principal result of the work is the definition of an integrated institutional-cybernetic architecture of Cenes**, encompassing political leadership, economic planning, resource allocation, the execution of obligations, participant motivation, the utilization of local information, and the maintenance of the economic system's viability.

The first fundamental conclusion is that centralized economic governance and economic autonomy can be regarded as complementary elements of a unified organizational construction. Centralization determines common objectives, obligations, and resource constraints, while autonomy allows economic Links to choose independently how to achieve assigned results. Their coordination is ensured through a recursive structure of governance based on Stafford Beer's Viable System Model.

Within this structure, every relevant economic Link constitutes part of a superior system while simultaneously possessing its own managerial functions. The distinction between S1–S5 makes it possible to distribute the tasks of direct economic activity, coordination, regulation, forecasting, and strategic leadership among competent levels. These functions receive their organizational expression in the Command Core and CEPO, which includes INCO, ERO, and EFO. The terminal unit of system-wide economic recursion is the autonomous economic Node, whose internal organization is determined by its own management.

The second conclusion concerns the necessity of combining economic planning with a formalized system of obligations. The Plan in Cenes constitutes a set of interconnected decisions with defined content, executors, resource provision, and legal consequences. Cenes Contract Layer formalizes these relationships and establishes a common foundation for executing, revising, and verifying economic obligations. Economic coordination is therefore treated simultaneously as a computational, organizational, and legal activity.

The third conclusion concerns the distinction between production and personal economic allocation. The antimonetary system of Cenes provides separate mechanisms in the form of P-AMO and C-AMO. The former regulates resource utilization in production through production antiprices and budgets, while the latter determines the conditions of personal income and consumption. This distinction makes it possible to separate the resource capabilities of an economic organization from the material interests of those managing it. Economic incentives are thereby directed toward increasing the usefulness of actual production results rather than independently accumulating production budgets.

The fourth conclusion is that **economic governance requires the deliberate formation of individual incentives**. MOS, BRSS, and PS address different but interconnected tasks. MOS orients professional behavior with regard to a person's internal capital and the economy's needs; BRSS regulates the consequences of fulfilling particular duties; and PS establishes special status conditions associated with exceptional achievements or prescribed violations.

Of particular importance is the distinction proposed in MOS between two levels of inequality: inequality among the economic valuations of professions and inequality among the individual professional trajectories available to a particular person. Internal capital is understood as the combination of abilities and their valuation under specific socioeconomic conditions. Since these conditions and the available information change, the system must provide for the revision of both general professional incentives and individual assessments.

The fifth conclusion concerns the fundamental role of **the Offer System as a mechanism for utilizing distributed knowledge**. No planning body can possess exhaustive information in advance about every productive capability, individual ability, or potential improvement. The architecture of Cenes therefore provides an institutional method for transmitting such information from direct participants in economic activity to competent governing bodies.

An offer makes it possible to initiate changes to production obligations, the redistribution of resources, the establishment and restructuring of enterprises, the revision of professional assessments, and the improvement of managerial organization. The opportunity to submit offers is not limited to existing managers, allowing competition for the right to organize economic activity more efficiently. Within this construction, offer-based activity may constitute a distinctive form of entrepreneurial initiative inside a planned economy.

The connection between the Offer System and the dynamic revaluation of internal capital has additional significance. Continuous refinement of economic and professional assessments creates conditions under which participants have an incentive to disclose information about errors in existing allocations promptly. At the same time, the system must distinguish ordinary changes in assessment from liability for the deliberate concealment of significant information. Offer-based activity is thereby regarded not only as an instrument for correcting individual decisions but also as a continuous source of updated information for the overall Plan.

The sixth conclusion concerns the necessity of independent verification and the procedural differentiation of powers. Digital representations of the economy and regular reporting do not in themselves guarantee the reliability of information. For this purpose, the recursive S3* function is provided, ensuring verification of the actual condition of economic Links. Technical Arbitration, in turn, makes it possible to examine liability for executing obligations and revise the corresponding decisions. Commissar representation, political communication, and ordinary economic governance perform independent functions that must interact without compromising clarity in the distribution of competence.

The seventh conclusion is that the viability of Cenes requires the coordinated development of its digital and organizational infrastructure. Digital Twins, CenesNet, and CDE provide the informational foundation of managerial activity. CRS, AEC, and BACKDOOR are intended to maintain resilience and provide for emergency response. Their combined purpose is to ensure continuous interaction between the actual condition of the economy, the information models employed, and the managerial decisions adopted.

The distinction between the two contours of economic governance also has separate significance. B-Contour forms the principal recursive network of autonomous economic units, while A-Contour provides direct strategic management of systemically important objects and economic structures. The organizational distinction between these contours makes it possible to combine the independent activity of enterprises with direct control over the key conditions of economic operation.

The eighth conclusion concerns the initial creation and subsequent development of Cenes. The proposed architecture does not presuppose that all necessary institutions and technical mechanisms can be established simultaneously. Genesis Mode defines the initial condition of increased managerial centralization, GMP establishes the minimum requirements for its operation, and ETA provides for the successive introduction and improvement of the system. The transition toward a mature recursive organization is thus regarded as a managed process in which the expansion of economic autonomy is accompanied by the development of the necessary informational and organizational capabilities.

Taken together, these propositions make it possible to define Cenes as **a proposed unified, self-reproducing economic organism** in which production, allocation, consumption, governance, and development form an interconnected system. Its anticipated capacity for reproduction is based on the continuous coordination of material processes, resource constraints, social objectives, and participants' independent actions.

The present work nevertheless establishes primarily a general architecture. The organizational and economic principles described do not by themselves demonstrate the practical superiority of Cenes over existing economic systems. Assessing the feasibility of the project requires further formalization of the relevant mechanisms, development of technical solutions, investigation of their resilience, and verification of results under simulated or limited experimental conditions.

**The central theoretical proposition of this work is that a planned economy can be designed as a recursive information-management system capable of utilizing individual initiative and economic incentives as internal mechanisms of its own improvement.** Cenes provides a specific architectural elaboration of this proposition, combining centralized strategic leadership, the autonomy of economic Links, antimonetary allocation, and institutionalized feedback within a unified model of economic organization.