

INTERNATIONAL INSTITUTE OF METROLOGY AND STANDARDIZATION ANALYSIS OF THE ACTIVITIES OF ORGANIZATIONS

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ABSTRACT

This article provides information on the activities of the main international organizations (ISO, IEC, ITU) in standardization.

Keywords: international organizations, standardization, metrology, activities, scientific and technical products, technical reporting.

INTRODUCTION

International standardization is a set of standardization organizations and the products of their activities: standards, recommendations, technical reports and other scientific and technical products.

The main goal of international standards is to develop new quality systems at the international level and create a unified methodological basis for improving existing quality systems and their certification.

Objectives of international standardization:

- convergence of product quality levels in different countries;
- ensuring the interchangeability of elements of complex products;
- development of international trade;
- promoting the mutual exchange of scientific and technical information and accelerating scientific and technological progress.

Today there are three international standardization organizations:

International Organization for Standardization - ISO (ISO), International Electrotechnical Commission - IEC (IEC), International Telecommunication Union - ITU (ITU). It is these organizations that are recognized by all countries and have the right to publish international standards, which are also called de jure standards or official standards. Thus, the official standards are the international standards of ISO, IEC and ITU recommendations. The interests of these organizations are closely tied to organizational and technical details, which greatly contributes to the integrity and consistency of the standards they develop. Because de jure standards are developed and maintained on a well-regulated, systematic basis, their totality can be considered a system of international standards. The International Organization for Standardization (ISO) is the largest and most authoritative of the three organizations listed above. ISO was created in 1946 at a meeting of the United Nations Committee for the

Coordination of Standards of the United Nations (UN). That same year, the Jesus Charter was adopted at a meeting of the General Assembly. This Charter defines the status (legal status) of the organization, its structure, main job responsibilities and working methods. According to the resolution of the General Assembly of Jesus, adopted on October 14, 1946, it states that the organization will officially begin its activities after the rules of the Charter and procedures have been ratified by 15 national standards organizations. Ratification 15 came from Denmark on February 23, 1947 - this date is considered the founding day of Jesus. According to the ISO Charter, "The mission of the organization is to promote the development of World Standardization to facilitate the international exchange of goods and mutual assistance, as well as the expansion of cooperation in intellectual, scientific, technical and economic activities." The main activity of ISO is the creation of international standards. There are currently 187 committees, in total working offices: technical committees, 552 subcommittees, 2100 working groups, a total of 2858 offices. ISO international standards are not mandatory. Each country has the right to adopt these standards in their entirety, in certain sections, or not to adopt them at all.

ISO standards, containing the best scientific and technical experience of many countries, are aimed at ensuring uniform requirements for products in international trade, including the interchangeability of components, uniform testing methods and assessment of product quality. Users of ISO international standards include industry and business, governmental and non-governmental organizations, consumers and society at large. ISO pays great attention to trade and economic activities that require the development of specific solutions in the interests of a market economy and schemes that allow full use of the potential of information technologies and communication systems, primarily in the interests of developing countries and the formation of a world market on equal terms. Today, in all countries, pre-sale testing of products for compliance with the requirements of Technical Instructions on the safety of complex products, danger to human health or the environment is a mandatory condition. ISO has made significant contributions to the development of many of the standards by which manufactured products are assessed, as well as standardized testing methods that allow results to be compared, which is critical to the development of international trade. ISO and IEC jointly develop ISO/IEC Guides that cover various aspects of conformity assessment activities. The non-binding criteria presented in this guidance are the result of international consensus on best practices and approaches. Their use ensures continuity and orderliness in conformity assessment throughout the world and, thus, contributes to the development of foreign trade relations.

ISO standards are the most widely used throughout the world, there are more than 10,000 of them, and 500-600 standards are revised and re-adopted each year. ISO's business relationships are very wide: It maintains contacts with about 500 international organizations, including all specialized UN agencies working in related fields. The closest cooperation is between ISO and the European Committee for Standardization (Cen). ISO's largest partner is the International Electrotechnical Commission (IEC). Overall, these three organizations, as an international organization, cover all areas of technology. In addition, they consistently cooperate in the field of information technology and telecommunications. ISO International Standards do not have mandatory status for all participating countries. Any country in the

world has the right to apply or not apply them. About half of the international ISO standards have found their application in the Russian standardization system. In terms of content, ISO standards differ from each other in that only 20% of them contain requirements for specific products. The main part of the regulatory documents concerns safety requirements, interchangeability, technical compatibility, product testing methods, as well as other general and methodological issues.

In the future, ISO plans to expand its technical services, increasingly using the ISO 9000 series of standards and implementing the ISO 9000-2000 project.

The International Electrotechnical Commission (IEC) is one of the oldest international non-governmental organizations, founded in 1906. Its activities are mainly related to the standardization of the physical properties of electrical and electronic equipment, nuclear equipment, laser technology, communications, aviation and space equipment, shipbuilding and maritime navigation, nuclear energy, computer science, acoustics and medical technology. In recent years, special attention has been paid to the development of international standards in the field of safety, reliability and electromagnetic compatibility of the equipment used and its safety for the environment. Although international standards are developed on the basis of consensus and voluntary recognition of the requirements established in them, in practice, product compliance with them is mainly mandatory, since it is a criterion for competitiveness and entry into the international market. As in Jesus, IEC Members are national organizations (Committees) for the standardization of technologies in related industries, representing the interests of their countries in international standardization. The IEC currently has more than 50 such members. Russia has been a member of the IOC since 1911. Currently, all Gek governing bodies include local specialists. More than 100 ministries, departments, government and commercial organizations of Russia take part in the development of international IEC standards. Our country heads the secretariats of two technical committees of the IEC: TK 45 "nuclear devices" (Secretariat based on the TsNIIP Minatom of Russia) and TK 22 "converters for high-voltage direct current power lines" (V.I. Secretariat based on the Lenin EEC). Russian specialists take an active part in the work of TC 14 "electronic cables", TC 18 "electrical installations of ships, mobile and stationary offshore structures", TC 20 "electric cables", TC 65 "measurement and control systems in industrial processes".

The International Telecommunication Union (ITU) is an international intergovernmental organization specializing in telecommunications standardization. It unites more than 500 government and non-governmental organizations. It includes ministries, departments and institutions of telephone, telecommunications and postal services in various countries, as well as organizations that supply equipment for the provision of telecommunications services. The ITU's primary function is to coordinate the development of internationally agreed rules and recommendations for the establishment and use of global television networks and their services. The activities of these leading standardization organizations are closely interconnected and coordinated. Various forms of cooperation are used to create a comprehensive system of international standards.

The ITU structure includes three sectors:

- the radiocommunications network, which includes the general functions of the radiocommunications committee, as well as the tasks performed by the frequency registration board;
- standardization of television and radio broadcasting - a network that assumes the functions of the telegraph and telephony committee, as well as the functions of the radio communication committee related to the transfer of radio communication networks to public use
- development of telecommunications - an industry that determines issues of strategy and policy for the development of telecommunication systems.

The highest level of ITU's organizational management is the General Conference, which determines strategic decisions related to the activities and structure of the organization, and also forms the executive body - the Council, which implements the tasks set at the conference. The highest governing body of each sector is the World Conference of the appropriate (for this sector) thematic focus.

The eurocode standard is a European building standard developed by the European Commission since the mid-70s. For 15 years, the EU Commission, together with a committee of representatives of all EU Member States, led the development of Eurocodes standards. In 1990, the European Commission, by agreement with the European Committee for Standardization (Cen), to subsequently achieve European standard status, EUROCODES transferred the rights to develop and publish Cen standards to EU member states. The Technical Committee CEN/TC 250 was created to develop EUROCODES standards, its secretariat is part of the BSI (British Standards Institution). EU Member States and the European Free Trade Association (EFTA) use this document for the following purposes: to harmonize engineering structures (including high-rise buildings) with the current Directive 89/106 / EEC (Buildings Directive), in particular with the requirements No. 1 "mechanical durability and stability" and No. 2 "fire safety";

- as a basis for the specification of contracts for civil works and the engineering works required therefor;
- as a basic condition for the preparation of agreed technical specifications for construction products;

Since Eurocode standards are related to construction, they are directly related to the main documents specified in Article Twelve of the Construction Products Directive.

The activities of these leading standardization organizations are closely interconnected and coordinated. Various forms of cooperation are used to create a comprehensive system of international standards. The effectiveness of the activities of international standardization organizations is increased by involving an increasing number of professional organizations and experts in the development of standards and the development of cooperation with industry associations. Along with the listed international organizations, a number of metrological issues are also studied by other international organizations. The mutual exchange of experience and information in the field of metrology and measurements is very important. Many technical committees (TCs) of international organizations develop voluntary technical standards in the field of metrology and measurements.

MEC deals with electrical engineering, electronics, radio communications, television, telecommunications, and instrumentation.

Since 1975, the IEC recommendations have received the status of international standards. MEK standards apply to the export of electrical equipment and electronic devices. Currently, 41 National Committees are members of the MEC. These countries are home to 80% of the world's population and consume 95% of the world's electricity. The MEK's highest governing body is the MEK Council. Its highest position is occupied by the President of Mexico, who is elected every 3 years. The working languages of the Mek are Russian, English and French. The International Organization for Legal Metrology (MOZM) has existed since 1956 and currently includes more than 50 countries providing international cooperation in the field of legal metrology. Its main task is to ensure the uniformity of measurements on an international scale, assess measurement errors, develop recommendations on measurement methods, terminology and symbols. Its highest body is the international conference. This conference is BIPM - International Bureau of Weights and Measures on the practice of ensuring the uniformity of measurements at the international level.

The OIML bodies are as follows:

1. International Conference on Legal Metrology
2. International Committee for Legal Metrology
3. International Bureau of Legalized Metrology

In addition, the OIML has working and technical groups. The International Conference on Legal Metrology is convened once a year. The governing body of the Ministry of Health is the International Committee for Legalized Metrology.

The headquarters of MOZM is in Paris, and the secretariats of the ISO and MEC organizations are in Geneva. The President of the ICBL and two vice-presidents are elected for a term of six years. The ICBL meeting is convened every two years. The executive body of the MOZ is the MBZM (International Bureau of Legalized Metrology). The staff of the Bureau is supported by membership fees of the MOZM member states. The Bureau acts as the secretariat of the MOZM, is the center, and also prepares meetings and conferences of the ICBL. The secretariat is the so-called "working group", in addition to the speakers, develops draft recommendations on each topic and coordinates it with group members. To coordinate the activities of national departments and eliminate technical barriers to trade, the Interstate Council for Standardization, Metrology and Certification (ISAC) of the CIS countries (except the Baltic countries) was created in 1992. On March 13, 1992, the heads of government of the CIS countries signed an agreement on the implementation of a coordinated policy in the field of standardization, metrology and certification.

It is designed to combine the capabilities and wealth of national agencies for standardization, metrology and certification of cooperation countries, the joint use of previously accumulated experience and regulations made it possible to implement and improve them, as well as implement a unified technical policy in these areas of activity.

The work as a coordinating body on issues of standardization, metrology and certification in the CIS is aimed at ensuring:

- a unified regulatory framework - application and development of interstate standards, classifiers and other regulatory documents;

formation of interstate services for standard reference information on time and frequencies, composition and properties of substances and materials, including systems for ensuring a unified reference base and uniformity of measurements;

mutual recognition of testing and certification results of products and services.

There are constantly working scientific and technical commissions or working groups on the main areas of activity of the SAC, the Council of Authorized Representatives for the implementation of the intergovernmental agreement on cooperation in ensuring uniform measurement of time and frequency, as well as more than 230 interstate TCs on standardization. Currently, the working office of the Council consists of the Bureau of Standardization, located in Minsk.

The Council is headed on a rotational basis by the heads of national agencies for standardization, metrology and certification of the SAC member countries.

DAK is recognized by the international standardization organizations (ISO, MEC) and the European Union Standardization Organization (Syen), a territorial organization for standardization, and has been given the name "Eurasian Organization for Standardization, Metrology and Certification (Easc)" in accordance with the rules adopted in ISO and MEC.

Long-term agreements on cooperation, exchange of information and regulatory documents and participation in ongoing events have been signed with the above-mentioned organizations. EASC has the right to apply international and European standards through interstate standards on the basis of signed agreement(s), and individual EASC member countries through national standards. This contributes to high harmonization of interstate and national standards with both international and European standards.

This contributes to high harmonization of interstate and national standards with both international and European standards. This right is enjoyed by EAC member states regardless of their membership status in these organizations. Currently, the CIS fund of interstate standards includes more than 19,000 normative documents. Since 1992, more than 3,800 interstate regulations have been developed and adopted. The fund is supported by the DAC Standards Bureau in collaboration with the national agencies of the DAC member states. When developing interstate regulations, their requirements are harmonized with international, territorial and advanced national standards. This creates conditions for maintaining unified regulatory and technical support aimed at eliminating technical barriers in trade, economic and scientific-technical cooperation of the CIS countries. DAK also promotes the promotion of products manufactured in member states to the international and European markets.

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