CATALOGUING IN SHIPBUILDING INDUSTRY ISO 8000.
IMPLEMENTATION AT KRYLOVSKIY STATE RESEARCH CENTRE OF KRYLOV SHIPBUILDING RESEARCH INSTITUTE.
OPEN TECHNICAL DICTIONARY OF SHIPBUILDING OTD-S.
PERSPECTIVE AND DEVELOPMENT

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ABSTRACT

“Improvement of legislation in the field of standardization of the Russian Federation ... involves transformation of the national standardization system in line with international agreements and other regulations in the field of standardization of a supranational level in order to improve and optimize the structure of the national system of standardization, refinement kinds of documents in the field of standardization based on the recommendations of the International Organization for Standardization” (The concept of national standards system of the Russian Federation for the period up to 2020. Approved by the RF Government on September 24, 2012 № 1762p.)

The paper focuses on the meaning of cataloguing and its approach in the modern economy. It describes main cataloguing tools and achievable goal applicable to cataloguing development in the shipbuilding industry: entry to a foreign market due to the standardized terminology management tool, which makes it possible to communicate in "common language" and transfer information without losing its meaning.

The concept of cataloging is ambiguous and depends on the problem being solved. In its most general form cataloging is a systemized order of data, convenient for a particular user.

As an activity cataloging appeared in librarianship as a cumulative process of the formation and maintenance of the library catalog. In modern conditions catalogues can be electronic and machine-readable. The terminology of cataloging in libraries is recorded in GOST 7.76-96 SIBID\(^1\) (the system of standards on information, librarianship and publishing) "Acquisition of documents. Librarianship. Cataloging. Terms and definitions”.

In the archives cataloging is related to the distribution of documents on the set values in certain clusters. Popular meaning of "cluster" refers to the number structure of equal parts; such structure must be operational in case of arbitrary components failure.

In the retail and wholesale trade cataloging is linked to the formation and usage of marketable products catalogs.

In present information-based economy cataloging is linked to series of international standards ISO 8000\(^2\) “Data Quality”.

The quality of the data – the main condition for successful business and savings. The effectiveness of the project, the specific advantages of implementation results, money saving depends on the scope of your business and the current state of the data.

Data - a key resource in the enterprise management. Therefore, it must be coded the way to be transferred to other systems without loss the information. Data safety ensures through the using of open technical dictionaries and methodology of the semantic codification according to ISO 22745\(^3\).

ISO 8000 - is the standard, and, as any standard, it allows you to assess the quality of the product descriptions. Open Technical Dictionary - one of the ways to catalogue data in accordance with ISO 8000.

Data analysis and specialized techniques allow determine the costs required for Data Quality improving and benefits of the project.

ISO 8000 helps to identify data problems and to prevent the emergence of new one, determine whether it is possible to transport data from one information system to another without loss of information and copyright infringement.

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\(^1\) A system of general technical and organizational guidance documents, which are fixed for a group of T62 in accordance with the Classification of state standards and the registration number 7;

\(^2\) Standard under development applied to the Quality of Master Data;

\(^3\) Parts of standards establish a system of descriptive technology, consisting of an open technical dictionary (OTD); manual identification (IG); master data identification schemes, methods of service OTD (open technical dictionaries) interfaces for requesting information from the OTD, including terminology related to this concept.
It is important to admit, industry experience shows that a company saves about 15% of costs with duplicate resolution. Previous experience proves that only purchase system optimization returns about 160% investments with an average payback period of about 7-8 months.

In 2012, PiLog in cooperation with Krylov State Research Centre has closed first preparative project phase under the Federal Program “Development of civil marine engineering for 2009-2016.”

One of the project aims was the new level of databases performance for Russian government shipbuilding agencies. Information support of shipbuilding products should regulate relations with suppliers of equipment, operators and customers during design, construction and operation of complex technical products.

The level of technological development in the field of competitive marine engineering is now wide and varied as to be applied to different types of ships, and the level of "maturity" has already proven technical solutions and technologies to meet the growing demands of customers. The main efforts of industry experts, in words of Roman Viktorovich Trocenko, should focus on modern technical solutions and sets of ship systems, methods of their production in the interaction of the participants of the life cycle of marine equipment in the system "CCB - shipbuilding / ship repair company - operating organization - Customer of marine equipment ".

In the first phase of the project PiLog specialists analyzed the naval database of the Sultanate of Oman, as the basis of terminological repository of English shipbuilding content. There was defined the set of terms presented in the eOTD (Open technical dictionary of ECCMA4), on the maritime industry.

Adopted in the world community brand eOTD has received substantial treatment because of its historical roots in the cataloging system of army and navy NATO (North Atlantic Treaty Organization). The subject of information security in this system, are hardware repairs and routine maintenance during the operation supplied arms and military equipment. Compliance with the requirements of ISO 8000 (GOST R ISO 8000) and ISO 22745 (GOST R ISO 22745) allowed to the first version of the OTD-S be a flexible, easily portable terminology dictionary from different information systems. Dictionary is ready to develop the requirements and standard formats for the included terms description, it is a semantic basis for the creation of a common information space of terminology in the field of shipbuilding and, possibly through the introduction of new technological solutions, the subsequent creation of a single unified directory of the shipbuilding industry.

The structure of created terminological dictionary OTD-S covers the levels from the description of activities for products creation to specific production types. Production types - a grouping of products with a similar terminology description of all the names of the concepts, characteristics and key parameters (a standard format for the description is the closest functional analogue of the domestic terms). The terminology module is a set of terms needed for production type description. Thus, terminology module of the production type becomes a concept specific facial features of products. Consequently, the proposed structure, on the one hand, covers all possible volume of data at the Shipbuilding market, on the other hand, makes it possible to form similar complex of consumer properties of products according to the specified customer requirement. This process is fully satisfied the requirements of ISO 8000 "Data Quality" and ISO 22745 «Industrial Automation Systems and Integration», Open technical dictionaries and their application to Master Data.

Developed unified information terminological base OTD-S5 makes possible to integrate products classes created by other methods of description as the components of the current dictionary, and in the future to develop as a full-scale open cataloging system for the shipbuilding industry.

In turn, eOTD is one of the tools for creating dictionaries in accordance with international standards of Data Quality. Series of Standards ISO 8000 “Data Quality” firstly were suggested by Ministry of Defense of USA - namely, the Defense Logistics Agency (DLA). The agency buys goods and services for the armed forces of the United States and is responsible for cost accounting. According to the commercial sector, the competitive supplying and consolidated reserves can save about 12% of all costs.

PiLog technology and methodology are based on rich experience in the global cataloguing sphere and the usage of modern powerful software products. PiLog solution was developed strictly in accordance with series of international standards ISO 8000 (GOST R ISO 8000) - Data Quality and ISO 22745 (GOST R ISO 22745) - Industrial Automation Systems and Integration. Open technical dictionaries and their application to Master Data.

According to the results of the project during the next stages of its realization PiLog Rus cooperating with Krylov State Research Centre is going to create a powerful open technical dictionary, fully ready for implementation to the shipbuilding industry of the Russian Federation.

We should admit that the cataloging is one of the essential parts of the development of modern economy. Thus, data standardization gives a powerful impetus to the synchronization of information systems of all participants in the product life cycle. A new level of technology development provides integration of data flows not only in stand-alone business structure, but also in the environment of its customers and suppliers. The higher level of data standardization, the greater it capacity is available for standard methods of analysis and decision-making. Efficient management in part of the contracts monitoring, rapid response to problems and imbalances arisen in the process of designing, manufacturing, procurement and products supplying requires a new level in these processes standardization.

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4 The Electronic Commerce Code Management Association
5 Open Technical Dictionary of Shipbuilding