The Process Of Electronic Document Management In The System Of Railway Automation And Telemechanics

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ABSTRACT

The article describes the processes of electronic document management of technical documentation in the system of railway automation and telemechanics. Electronic document management is important in enterprises, and this process increases efficiency, saves time, and ensures the security of documents. The electronic document management system includes several criteria in terms of storage capacity. Local and international quality regulatory models the level of construction of information storage is in accordance with certain standards. Types of electronic document management are considered, taking into account several features. Allows employees to receive new documents and automatically track deadlines by directing and monitoring document execution.

KEYWORDS

Electronic documents, standards, manual processing, automatic control, updates, database of documents.

INTRODUCTION

Electronic document workflow is the exchange of electronic format through the telecommunication channels (TC) of the EDM engineer.

First, we explain the concept of "electronic file". An electronic format is a file certified by an electronic signature. It is not necessary to print it because it is in electronic form in the original with legal significance.

Why companies need electronic document workflow:

- Reducing the number of paper forms in the office;
- Decrease financial and labor expenses for archiving;
- Minimize price of printing, stationery, sending documents;
- Diminish labor expenses by eliminating manual movements and automating the process;
- Dispose of the need to lose papers and re-display them.
- Functions of electronic file operation system
- Ensuring effective management by automating implementation, ensuring clarity at all standards of all formations.
- Assist a quality control system that meets international standards.
- Support the effective collection, management and use of information and knowledge. Ensuring employee flexibility due to the ability to further formalize each employee's activities and maintain a complete history of his or her activities.
- Eliminate the need to store paper forms through the availability of an effective

computerized files or significantly simplify and cut costs.

Criteria for selecting demands of the electronic file operation system for storage capacity. We must select a workflow that supports hierarchically structured storage (HSM - Hierarchical Storage Management). This mechanism stores the most actively used data in the fastest but most expensive media, while the least used data is automatically transferred to slower and cheaper media.

- The need to automate the administration of the organization. The level of complexity of the organizational structure.
- Availability of geographically distributed units. This factor places certain demands on remote access, data replication.
- Availability of an extensive paper archive. Certain file operation methods are equipped with subsystems already installed for mass report entry.
- Existence of a document management system that does not meet existing needs.
- Demands for the period of memory of files. The formation of a parallel archive in microfilms with a long shelf life (decades) should be seriously considered.
- "Openness" requirements, system expansion. Ability to integrate with existing information systems and use existing equipment.
- The need to save images of documents. Use when organizing certain formats to store documents. The need to support engineering and design tasks, other features of the enterprise.

- The need for improved information retrieval tools. Full support by existing language system when organizing documents.
- Security requirements (encryption, access control, etc.). Capability to use the access mechanisms available in the data infrastructure of the formation in the workflow system.
- Requirements for compliance with certain standards: domestic, industrial, international quality regulate models, the degree of construction of information storage.

Previous electronic document management systems were created and fully authored by companies. It was impossible to change the shape of such systems, and the cost of the program was high. The new system uses document management in companies that can achieve high productivity by eliminating manual labor. Other companies continued to function on paper. Computerized files operation is a firm of electronic processes for processing electronic documents using the concept of "paperless documents". Many organizations are trying to implement computerized files operation methods by improving productivity and minimizing manual labor expenses. The fundamental process of automatic file operation is an automated record created using computer data processing tools and stored in a database as a file of a certain format. There are several forms of computerized files operation, taking into account certain features of the enterprise: EDM production;

- EDM operation;
- archive work;

- EDM accounting;
- EDM warehouse;
- Technological EDM;
- Secret and confidential EDM.

How many computerized files operation methods are available for multiple activities. It is possible to automate all personal work flow when important. An important set of EDM processes is defined by specific tasks for the enterprise in the automation of document flow. The main tasks of EDM can be: creation of an electronic version of the technical document; create an attribute card of the document; ability to format text by changing variables in documents; formation of electronic documents using the system in the databases of the enterprise; save documents in various formats; setting document directions and managing their movement; keeping journals and directories; All electronic document workflow can be classified accordance with several criteria: EDM system with developed systems for storing and retrieving information. Their second name is electronic files. EDM system with developed routing systems that ensure the movement of documents along specified routes. EDM method with a system to assistance the management of the organization and the accumulation of knowledge. Usually these systems combine the properties of the previous two. Moreover, in such a system, it is possible to use both rigid and free routing. Such EDM systems are used in large companies and government agencies. EDM system with promote for teamwork of employees. Such systems are aimed at organizing the collective job of employees, even if they are geographically separated. Routing and control of execution of documents: preparation of

routes of documents, support of actions during routes, notification of employees about the arrival of a new document, automatic control of deadlines. Preparation of analytical reports, such as a report on current employment, on the performance of work on documents and on overdue orders. Information security, including user authentication, support for electronic digital signatures, encryption of documents and letters, audit of work in the system. Some EDM systems have specific functions that allow you to expand the possibilities of use by integrating with other systems. The maturity of the EDM system, including the time of its existence on the market, the number of companies that have successfully applied the system in their work, the availability of updates. In order to finally determine which EDM system to install at the enterprise, it is recommended to take several simple steps: to conduct a relative survey of several EDM method that meet the demands as much as possible; estimate the prize of ownership of a particular program; study licensing schemes and select the best choice; get acquainted with the range of services contributed by the supplier; review demonstration videos; install the demo description of the procedure; examine the functionality of the EDM method and highlight the most important from the position of the organization's activities. After a comprehensive review of the data obtained, you can make the final decision on the installation of a particular program at the project. Application of automated file operation in an organization is not such an easy task. This is not enough just to purchase a procedure, install it on computers and run it. The success of the effective implementation of the process depends on the precise execution

of the work of several positions. Active participation in office automation on the role of the organization's management. A quick solution to organizational issues related to the preliminary of EDM, along with the impact on middle managers and subordinates who resist innovation, assist to successfully achieve this goal. Compliance with the installation steps will allow you to meet the demand deadlines and meet the budget. When automating the workflow, it is important to take into account the interests of those workers who will directly function in the procedure. Competent preparation of project documentation will allow avoiding discrepancies between the contractor and the customer during the process of the method.

In this process, it is essential not to try to adapt the entire document flow process to the system being implemented, as well as to fully process the system for the client's business processes. It is very important to maintain the golden mean by applying the best practices, the current rules of the group and its traditions. The more the principles listed are taken into account in the implementation process, the more successful the enterprise will be in the transition to electronic document management.

REFERENCES

1. Mohr P. et al. Retargeting technical documentation to augmented reality //Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems. – 2015. – C. 3337-3346.

2. Elmurod Astanaliev. Formalization of electronic technical document management of railway automatics and telemechanics. International Journal of Engineering and Information systems (IJEAIS). Volume 4, issue 12., 2020.

3. Gattullo M. et al. Towards Next Generation Technical Documentation in Augmented Reality Using a Context-Aware Information Manager //Applied Sciences. – 2020. – T. 10. – №. 3. – C. 780.

4. Prichard S. J. et al. Fuel characteristic classification system version 3.0: Technical documentation //Gen. Tech. Rep. PNW-GTR-887. Portland, OR: US Department of Agriculture, Forest Service, Pacific Northwest Research Station. 79 p. – 2013. – T. 887.

5. Namestnikov A. M., Filippov A. A., Avvakumova V. S. An Ontology-Based Model of Technical Documentation Fuzzy Structuring //SCAKD@ CLA. – 2016. – C. 63-74.

6. Zakoldaev D. A. et al. Computer-aided design of technical documentation on the digital product models of Industry 4.0 //IOP Conference Series: Materials Science and Engineering. – IOP Publishing, 2019. – T. 483. – №. 1. – C. 012069.

7. Zilberova I. Y., Mailyan V. D., Mailyan A. L. Organizational and technological stages of the forensic construction and technical expert examination when determining the compliance of a building facility with regulatory and technical documentation //IOP Conference Series: Materials Science and Engineering. – IOP Publishing, 2019. – T. 698. – №. 2. – C. 022085.

8. Dilshod Baratov, Elmurod Astanaliev. Minimization of the automatic machine structure process of accounting and control of railway automation and telemechanics devices. E3S Web of Conferences 244, 08024, Published by EDP Sciences, 2021.

9. Dilshod Baratov, Elmurod Astanaliev. Using innovative technologies of electronic technical document management for railway automation and telemechanics. International Journal on Orange Technologies (IJOT). Volume 3 Issue 1, 2021, ISSN: 2615-7071, pp. 7-10.

10. Elmurod Astanaliev. Automatic control of railway automation and telemechanics devices. International Virtual Conference on Innovative Thoughts, Research Ideas and Inventions in Sciences. Newyork, USA, 2021.

11. Baratov Dilshod, Aripov Nazirjon. Formalized scheme of technical documentation based on the accounting Process and Control of Automatic and Telemechanics Devices // International journal of engineering and advanced technology. Volume-8, Issue-3S, February 2019, p. 479-484. ISSN: 2249-8958.

12. Zakoldaev D. A. et al. The life cycle of technical documentation in the smart factory of Industry 4.0 //IOP Conference Series: Materials Science and Engineering. – IOP Publishing, 2019. – T. 665. – №. 1. – C. 012016.