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**FEATURES OF IMPLEMENTATION OF THE  
INFORMATION SECURITY POLICY IN THE CREATION  
OF THE RATIONAL SYSTEM OF ELECTRONIC  
DOCUMENTARY COOPERATION FOR PUBLIC AND  
COMMERCIAL STRUCTURES OF UKRAINE**

***Annotation.** The article presents an algorithm for a reasonable choice of a rational electronic document management system from an existing set of analogues. The main selection criteria are due to the functionality of the software and hardware architectures of the system, as well as the limited number of financial resources. The article substantiates that the information security policy of such a system: first, it will guarantee the adequacy of the level of information protection to the level of its criticality and profitability of implementing information protection measures; secondly, it will allow to evaluate and check the security of information; thirdly, it will ensure the personification of the provisions of the security policy (in relation to the subjects of the EDS) and the reporting (registration, audit) for all critical resources from the security point of view; Fourthly, it will provide visibility of measures to protect information, continuity of the operation of such a system and its restoration in case of unforeseen situations, and so on. Models of threats and the infringer of the chosen CSA will allow to determine the necessary levels of the functioning of the information security subsystem, namely the level of organizational and technical measures, the level of current control and the level of elimination of the consequences of the realized threats.*

***Keywords:** algorithm, analog, security, choice, document, threat, protection, information, criterion, model, policy, intruder.*

**Introduction**

Under the conditions of modern market economy an important component of the development of high-tech industries is their comprehensive information support [1, 2]. Some information requirements are put forward to the information supply, namely: in quality (shortness and precision of formulations, timeliness of receipt); on purposefulness (satisfaction of specific needs); accuracy and probability (correct selection of source materials and information, continuity of their collection, accumulation and processing, optimality of systematization of information and its proofing / transmission). In the activity of state and commercial structures such as the Kyiv City State Administration (KSDA) and, for example, the State Enterprise "Antonov" of Ukraine, which are complexes with a large number of everyday

connected and interacting units, preciseness and reliability of information support are primary and indispensable factors of their reliable and efficient functioning.

These requirements can be met by introducing modern electronic computers and technical means of telecommunications in the process of recording material media - documents that pass through the stages of their creation, issuing (approval), signing (approving), registering, reviewing, executing, writing off into the archives, storage and destruction. Taking into account that today's documents today, unfortunately, are not subject to the ever-increasing vital needs and strict rules of life rhythm, which accelerates significantly from year to year, one of the obvious ways to make them "go the right direction", while minimizing the human factor, is the automation of motion and processes of document processing by creating such systems as electronic document flow systems (EDS).

#### **Analysis of recent research and publications**

The mentioned problem is highlighted in many publications of foreign and domestic authors. The most famous among them is the work of G.Yu. Maximovich, SL Kuznetsova, A.K. Rogova, O.A. Efimova, V.P. Berestova M.Yu. Krukovsky and other scholars. Nevertheless, the analysis of publications in the subject area under consideration suggests that a comprehensive study of the problem of creating a promising EER, their implementation in the main phases of the life cycle of paper documents and the formation by their participation of authentic electronic images of the latter to date is absent. Therefore, it requires additional and more in-depth study.

#### **The purpose of the article**

Proceeding from this, the relevance of the article is due to the actual increase in the requirements for prospective EADs due to the continuous growth of volumes of information that has recently been processed in information systems, as well as the need to ensure the authenticity of the electronic image of the document to its paper original. One possible solution to this problem is the introduction of some unified one within an organization, for example, KSCA SED, which will facilitate such processes as: creation, management of access, use and distribution of electronic documents in computer networks with the use of electronic

communications; control over the flow of documents in the institution. Therefore, the purpose of the paper and its main content is precisely the introduction of a valid choice algorithm among the set of existing rational EED, the software and hardware architecture of which is conditioned by the requirements of functionality, and the actual selection procedure is objectively limited to available financial resources.

### **Main part**

In providing modern document circulation, the SED plays, as a rule, a decisive role. To the extent of their functional tasks, for the most part, are: maintenance of office functions functions (creation and registration of documents, collective work with documents, work with libraries); conducting electronic storage of documents (archival storage of documents; entering them into a repository; organization of attributive and full-text search of documents, as well as access to them via the web); automation of business processes (description of workflow-processes and their implementation); Providing administration and security measures (defining access rights and user roles, implementing cryptography and data integrity tools). According to experts from the international expert company GartnerGroup [3], due to the rapid development of the ERA market, the main suppliers of which are IBM (Lotus) - 49.0%, Microsoft - 39.4%, Nowell - 6.2%, and a number of other companies - 5.4%, the most common today are the following systems: systems that are oriented on business processes or otherwise flow of work (business-process EDM or otherwise EDMS-systems); corporate systems (enterprise-centric EDM); content management systems; information management systems; image / imaging systems (imaging systems).

In the post-Soviet market, the most well-known among them is recognized:

a) Western Development SED:

Russified: DocsOpen (Hummingbird), PC DOCS (Hummingbird), LinkWorks (DEC), Staffware (Workware PLS), Lotus Notes (Lotus-IBM); non-corrosive: Directum (EMC), Documentum, DocuLive;

b) SET of Russian development:

based on Western systems: Office Media company InterTrust Moscow (Lotus Notes), Irida company IBS Moscow (Lotus Notes), Clerical work of the firm InTorKon, Chelyabinsk (Lotus Notes), Optima-WorkFlow of the Optimo company (MS Exchange, MS SQL), Lotus Notes Bios Reporter;

own: LanDocs, Effect Office, Document 2000 (TelcomService), Eutrophication Documentation (Sognitive Technologies), DILO (EOS), N.System (Computer Technology Center), LS Flow Software), ESCADO (Interprocomloman), 1C: Documentation and 1C: Archive (1C), Document 2000 (TelcomService), DocsVision (Digital Design) and others;

c) ERA of the Ukrainian development: DOKA PROF.STEEP 2.0 (Kvazar-Micro), ISoperator (System Plus), InTEAM-Workflow (pool.kiev.ua), etc.

Western software development tools are mainly aimed at maximizing the full use of electronic documents and tools for collective work of users, as well as the absence of intermediate links. This, in turn, determines the change of existing processes in the office and the need for its optimization, as well as regulates the development of new technologies for working with documents. The main feature of these EDSs is the simulation of specific actual workflow processes and settings for these models of other software systems.

Traditional Russian technology of the processes of record keeping from the west is different, first, with a clearly defined vertical character of the document movement (leader - executor - leader) in the middle of the institution; and secondly, the registration, control and reporting forms and magazines; thirdly, tracking the whole complex of work with documents in registration journals or typewriters, where all information about documents, their movement, resolutions, control over the timing, etc. are entered. In this case, this technology is regulated both by state standards, as well as sectoral instructions and guidelines for office work.

Software tools that implement the Russian ERAs are primarily aimed at using in public institutions and preserve all the traditions and standards of office work adopted in each particular of them. The task of such systems is to provide support for paper workflow, reduce the complexity of routine operations on document processing. In addition, they are able to significantly expand the boundaries of traditional processes of record keeping and document circulation through the processing of documents using computer networks. Systems in this direction are a kind of "overpass" for the gradual transition from paper to paperless documents. Unlike the Russian systems known today, the SED of Ukrainian development, unfortunately, performs purely specialized functions.

Given the above and over-saturation of the domestic market alternatives, differing from each other in terms of functional capabilities and technological solutions, the choice of the most efficient EER, that is, that satisfies the needs of a particular institution (enterprise) - the problem is quite relevant. His solution is considered in the works SL Kuznetsova, OA Efimova, G.Yu. Maximovich and other authors [4-8]. At the initial stage, they propose to do some preparatory work, namely:

to formulate a list of tasks that should help to solve this problem;  
to develop a detailed organizational plan for the implementation of the SED;

take into account the reliability of the supplier company of the EER and its proposed terms of delivery, implementation and support;

to determine eligibility for the price at delivery, introduction and maintenance;

take into account the possibility of updating the EDS in a reasonable time (with reasonable price conditions) under the specifics of the establishment (enterprise).

In the process of further work on the comparison of different systems, these authors suggest to focus on the model shown in Figure 1.

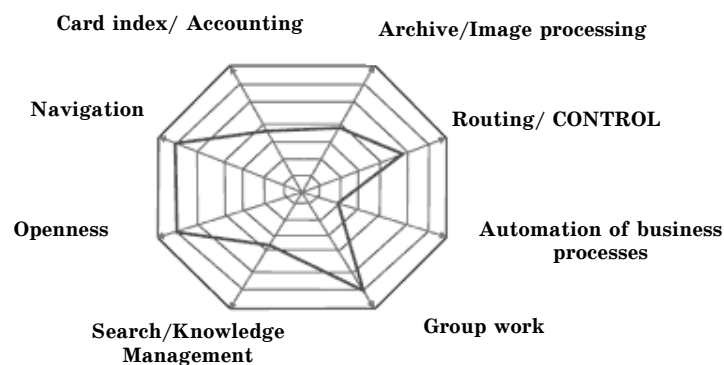


Fig. 1. Model of analysis of functionality of automation systems

At the same time, they believe that the chosen SET must support the Russian-speaking interface, be simple and flexible when installing and configuring, be reliable in operation, and, in addition, meet the criteria of scalability, distribution, openness, modularity, controllability, processability, security, efficiency, etc. Taking into account the above, and considering that the organization and maintenance of document circulation in Ukraine are fundamentally different from Russian - the basis for choosing the EER, which would satisfy the requirements, for

example, KSCA will choose the most popular in our country, the system of both Russian and western production (Table 1) [4-13].

Table 1

List of SADs to be surveyed and their brief description

SED	Company	Brief description
Foreign systems		
Directum	Directum <a href="http://www.directum.ru">www.directum.ru</a>	A complete ECM system that ensures the transparency of management of the organization and improves the efficiency of all its employees. It maintains a complete lifecycle of document management, with the traditional "paper" clerical work logically integrates into electronic document management.
Russian systems created with the use of foreign products		
Boss-referent	IT, <a href="http://www.it.ru">www.it.ru</a>	Electronic document management and office automation system for large geographically distributed enterprises and for medium-sized businesses. The main results of the implementation of the system are increasing the manageability of the organization and the speed of decision-making, the formation of a fundamentally new level of performance discipline, the creation of conditions for the exchange of knowledge and information.
Russian systems created without the use of foreign products		
DocsVision	Digital Design, <a href="http://www.digdes.ru">www.digdes.ru</a> , <a href="http://www.docsvision.com">www.docsvision.com</a>	A system for automating office and office work, creating electronic archives, managing design and project documentation. Provides synchronization of business processes and workflow, supports modern methods of managing quality, processes and knowledge.
LanDocs	LANIT, <a href="http://www.landocs.ru">www.landocs.ru</a>	A program for complex automation of processes of record keeping and creation of electronic archives in organizations of different sizes. Maximizes the accumulated staff skills and the existing



SED	Company	Brief description
		communication and network infrastructure of the organization.
OPTiMA-WorkFlow	OPTIMA, www.optima.ru	Software platform for creation of complex automated control systems of documents used for automation: document management support; control of executive discipline; management of processes of processing and transformation of paper documents into electronic form; archival storage and exchange of paper and electronic documents; formation of regulatory reporting and support of processes of making managerial decisions; protecting information from unauthorized access, etc.
Dilo	Electronic office systems, www.eos.ru	A comprehensive solution that implements mixed, paper-electronic document flow and automates all aspects of documentary provision of management activities of enterprises and organizations. Easily deployed to the existing IT infrastructure of the organization. Has a simple and intuitive interface.
Euphrates-document circulation	Cognitive Technologies, www.cognitive.ru	A universal system for organizing storage, accounting and maintenance of any type of electronic and paper documents, designed for work in a small department, and in general in an organization with a complex scheme of information flows. Provides the entire lifecycle of electronic documents within key business processes of the organization: introduction and registration of documents; work with electronic documents; control of execution, movement, distribution and storage of documents; preparation of reports, etc.

In order to obtain information about the possibilities of the systems selected for comparison, we will compile a table with the functions which are characteristic of it (Table 2), using the following factors: the opportunity is realized; incomplete realization of the opportunity (improvement is possible due to the use of third-party or additional software, defined in the notes); the opportunity is not realized. The next step, which will somehow affect the choice of a rational EDS, will analyze the relevance of the selected functional for comparing systems to the technical requirements (TB) to them. To do this, considering that the EDS is a software that supports multistage document processing under the scheme "input - check - execution - generation (and possibly print) the report," TV will split into groups, firstly, the so - called business - requirements and, secondly, software requirements. Under business requirements, in this case, we will understand: requirements for the identification of users (authorization, authentication and delineation of user access rights to documents); Requirements for document repositories (data warehouse performance, database resilience, document search and archiving, replication of data, etc.); requirements for the so-called business logic (document flow paths, tasks for users, work with user scripts), etc.

In solving this problem, it is advisable to pay attention to the so-called "pitfalls" that may arise during the introduction and subsequent industrial exploitation of the selected EED and which:

- can be related, for example, with the lack of standard or additional tools necessary to set up the system for the needs of the institution on its own;
- can lead to the recognition of the system unreliable, dangerous or generally unproductive;
- can significantly affect the total cost of the system.

Table 2.

## Functions of electronic document management systems

System ----- Function	Boss-referent	Dilo	Euphrates-document circulation	Directum	DocsVision	LanDocs	Optima-Workflow
<b>АВТОМАТИЗАЦІЯ РОБОТИ КАНЦЕЛЯРІЇ</b>							
Create documents	1	1	1	1	1	1	1
Maintaining a registration card	1	1	1	1	1	1	1
Conducting the nomenclature of cases	1	1	1	1	1	1	1
Scanning documents	0,5 <sup>1,2</sup>	0,5 <sup>1,5</sup>	1	0,5	0,5	1	0,5 <sup>1</sup>
Compatibility with software that provides recognition of document images	0,5 <sup>1,2</sup>	0,5 <sup>1,5</sup>	0,5	0,5	0,5 <sup>1</sup>	0,5 <sup>1</sup>	0,5 <sup>1</sup>
Registration of documents from e-mail	1	1	1	1	1	1	1
Registration based on an existing document	0	0,5	1	0	0	0	0
Supporting paper and electronic documents	1	1	1	1	0,5	1	0,5
Control over filling required fields	1	1	1	1	1	1	1
Check for duplication at registration	0	1	1	0	0	0	0
Using directories	1	1	1	1	1	1	1
Adding new directories	1	0,5	1	1	1	1	1
Support for hierarchical directories	1	1	1	1	1	1	1
Processing documents with cross references	1	1	1	1	1	1	1
Presence of templates of created documents	1	1	1	1	1	1	1
Maintaining the history of working with documents	1	1	1	1	1	1	1
The presence of replication means	1	0	0	1	0	0	1
<b>GPA</b>	<b>0,74</b>	<b>0,74</b>	<b>0,82</b>	<b>0,74</b>	<b>0,66</b>	<b>0,71</b>	<b>0,71</b>
<b>AUTOMATION OF ROUTE PROCESSES AND CONTROL OF EXECUTION</b>							
Support for sequential and parallel routing of documents and tasks	1	1	1	1	1	1	1
Work with typical routes	1	1	1	1	1	1	1
Work with free routes	1	0,5	1	1	1	1	1
Ability to change routes	1	0,5	1	1	1	1	1
Auto-lock document for editing	0,5	1	1	1	1	0	1
Notification of employees about the receipt of documents and tasks at their addresses	1	1	1	1	1	1	1
Automation of the process of acceptance / refusal of orders for execution	0	1	0,5	0	1	0	0
Control over examination of documents	1	1	1	1	1	1	1
Control over the execution of documents	1	1	1	1	1	0	1
<b>GPA</b>	<b>0,83</b>	<b>0,88</b>	<b>0,94</b>	<b>0,88</b>	<b>1,00</b>	<b>0,66</b>	<b>0,88</b>
<b>AUTOMATIZATION OF ANALYST AND MANAGEMENT ACTIONS</b>							
Search by attributes	1	1	1	1	1	1	1

Logical search	1	0,5	1	1	1	0	1
Full-text search	1	1	1	1	1	0,5	1
Support for the morphology of the Russian language	0	1	1	1	0,5	1	0,5
Availability of hierarchical search templates	1	1	0,5	1	0,5	0,5	0,5
Operational modification of search templates	1	1	1	1	1	1	1
Availability in the system of the report generator	0,5 <sup>3</sup>	0,5	1	1	0,5	1	0,5 <sup>4</sup>
Obtaining certificates of executive discipline	1	1	1	1	1	1	1
<b>GPA</b>	<b>0,81</b>	<b>0,88</b>	<b>0,94</b>	<b>1,00</b>	<b>0,81</b>	<b>0,75</b>	<b>0,81</b>
<b>AUTOMATIZATION OF THE ARCHIVAL PROCEDURE</b>							
Write-off to archive	1	1	1	1	1	1	1
Maintaining archives of electronic documents	0,5	0,5 <sup>6</sup>	0,5 <sup>7</sup>	0,5	0,5	0,5 <sup>8</sup>	0,5
Search by archive	1	1	1	1	1	1	1
Maintenance of archival repositories of electronic documents of documents	1	1	0,5	0,5	1	1	1
Maintaining a separate archival base of documents	0	1	1	0,5	0,5	0,5	0,5
Providing accounting and traffic control and timing for keeping files and documents in the archive	0	1	1	0,5	0	0	0
Ensuring optimization of data storage	1	1	0,5	1	1	1	1
<b>GPA</b>	<b>0,64</b>	<b>0,93</b>	<b>0,79</b>	<b>0,71</b>	<b>0,71</b>	<b>0,71</b>	<b>0,71</b>
<b>IN GENERAL</b>	<b>3,02</b>	<b>3,43</b>	<b>3,49</b>	<b>3,33</b>	<b>3,18</b>	<b>2,83</b>	<b>3,11</b>

Note:

- |                                   |  |
|-----------------------------------|--|
| 1 - with the use of external OCR  | 2 - integration with CuneForm          |
| 3 - by using <i>Report'sMen</i>   | 4 - by using <i>Crystal Reports</i>    |
| 5 - optional "streaming scan"     | 6 - Optional subsystem "Archive Case"  |
| 7 - Optional module "Archivarius" | 8 - optionally LanDocs system: Archive |

Another, not less important step in choosing a rational EDS in the aggregate of alternatives existing on the world market is to determine their cost component in which, besides the actual cost of licensed software, should be laid down (Table 3), firstly, the cost of measures from a permanent operational- technical support of the system (introduction, training of personnel, updating and ordered deliveries); and secondly, the cost of additional system modules and third-party software, such as the DBMS used, etc.

Table 3.

## The cost of the used DBMS and the EDS as a whole

Name of the SED	Cost, \$							Competitiveness of licenses		DBMS
	Licenses for simultaneous work of 50 users	Introduction, \$/год	Teaching, \$/год	Technical support for 1 year, \$ (вид)	System updates, \$	Ordered work, \$/год.	Total, \$		Version	Cost, \$
Boss-referent	42 000,00 <sup>1</sup>	0,00	0,00	8 400,00	0,00	0,00	50 400,00	ні	Lotus Notes / Domino	Від 3964
Dilo	10 245,16	37,06	26,48	2 049,03	0,00	50,00	12 407,73	ні	MS SQL Server	Від 900 <sup>3</sup>
Euphrates-document circulation	27 400,00	0,00	15,00	5 480,00	0,00	0,00	32 895,00	так	MS SQL Server <sup>4</sup> , Oracle <sup>4</sup>	0 <sup>5</sup>
Directum	38 885,00	20,00	12,00	7 771,00	0,00	20,00	46 678,00	так	MS SQL Server,	Від 900 <sup>2</sup>
Docs Vision	9 200,00	30,00	20,00	1 800,00	2 800,00	40,00	13 890,00	так	MS SQL Server	Від 900 <sup>2</sup>
LanDocs	33 735,00 <sup>6</sup>	50,00	0,00	6 675,00	0,00	40,00	40 500,00	так	MS SQL Server, Oracle	Від 900 <sup>2</sup>
Optima-Workflow	18 200,00	0,00	15,00	2 400,00	5 460,00	30,00	26 105,00	так	MS SQL Server, Oracle, IBM DB2, DataBase	Від 900 <sup>2</sup>

Note:

1 - without discount

3 - under MS SQL Server

5 - Built-in database "NIKA". As part of the project decision

2 - SQL Server Standart Edition 2005 Win32 English OLP NL

4 - design solution

6 - LanDocs: Workflow + LanDocs: Document Server + can be implemented by Oracle Database or Microsoft SQL Server + LanDocs: Routing

Taking into account the outcomes of the final evaluation of the EER functionality that were to be investigated, is defined as the average of all the above-mentioned components (Table 4).

Table 4.

## Final evaluation of functionality

System		Boss-referent	DILO	Euphrates-document circulation	Directum	DocsVision	LanDocs	Optima-Workflow
Average rating point	functionality of the document circulation system	3,02	3,43	3,49	3,33	3,18	2,83	3,11
	quality standard tools for setting up a document management system	0,88	0,25	1,00	0,50	0,88	0,88	0,75
	quality additional tools for customizing the document flow system	1,00	0,60	0,92	0,75	0,83	0,67	1,00
	reliability, security and productivity of the document management system	0,81	0,88	0,94	0,94	0,94	0,94	1,00
In general		5,71	5,16	6,35	5,52	5,83	5,32	5,86
Interest, %		81,6	73,7	90,7	78,9	83,8	76,0	83,7

The closer the result of the evaluation of each of the systems will be close to 100%, the more balanced it will be considered functional, and the more likely this system can be attributed to the so-called "rational" EDS in this approach to comparison (Figure 2).

Based on the results of the example given in the article (Table 2, 3 and 4, Figure 3), it can be argued that practically all systems that were selected for comparison:

have almost identical functionality. At the same time, the typical tasks of electronic document circulation among them are still carried out by the system DILO, Euphrates-document circulation, DocsVision and Optima-Workflow;

can be adapted to meet the needs of their institutions by means of availability without the participation of the developer or his partners and without incurring additional costs. At the same time, the owners of the

Euphrates-Document Management systems and DocsVision will handle this task best;

have more or less full complementary functionality due to flexible user interface configurations. In this case, the best positions in this aspect are the Boss-Referent and Optima-Workflow systems. By other parameters, the positions taken are Directum, DocsVision and Euphrates documents;

provide the necessary level of reliability and security of electronic document circulation in the institution. At the same time, Directum, DocsVision, LanDocs, Optima-Workflow and Eutrophication are the best suited for these tasks. The BOS-Referral system, implemented on the Lotus Notes / Domino platform, offers, in contrast, the most advanced administration tools for distributed work due to the specific capabilities of the platform mentioned above;

are in different price categories. With the total cost of server and user licenses, as well as the cost of the DBMS used, the Dilo and DocsVision systems are the most acceptable ones for the results obtained.

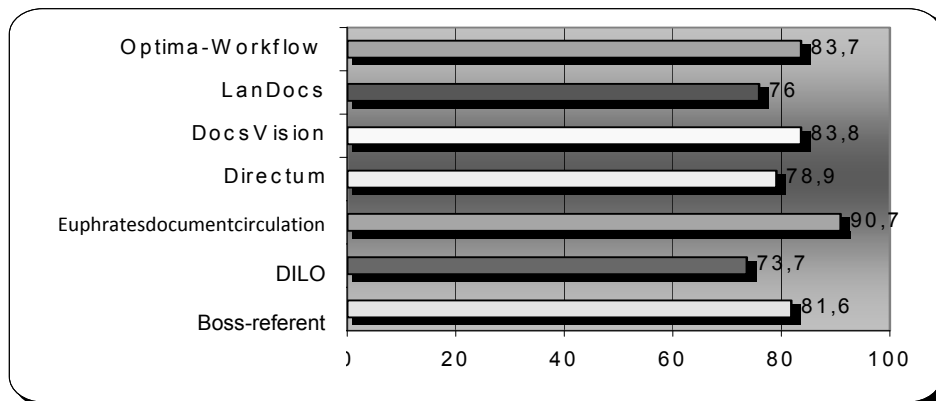


Fig. 2. EDS comparison results

These conclusions provide the opportunity, in turn, to combine the selected systems to be compared in a group of highly functional EDS, to which experts include Euphrates-Documentation, Directum, DocsVision and Optima-Workflow, as well as SEDs of average functionality, to which experts refer to DILO systems, Boss-Referent and LanDocs. The most developed functionality among them, as evidenced by the results of the research, has been shown by the Euphrates-Documentation System of the Cognitive Technologies company. Unlike other systems, it consistently gained a large number of points in each of the areas of work with documents. The leading positions of the Euphrates-Documentation system

are also confirmed by an assessment of the number of its implementation (Fig. 3). Thus, according to experts from the international expert company GartnerGroup [2], today it occupies about 34% of the world market for the implementation of these systems. This is explained by: the flexible pricing policy of the company-developer; the universality of this EDS - the presence in it of its own NIKA database, built-in scanning and text recognition tools, a simple and intuitive interface; the ability to configure and modify the system when implementing it as a developer and / or its partners, and directly by customers. These facts, as a result, in turn, increase the possibilities of this EDS in terms of maintenance and scalability, as well as the ease of its integration into the corporate IT infrastructure of any institution in Ukraine.

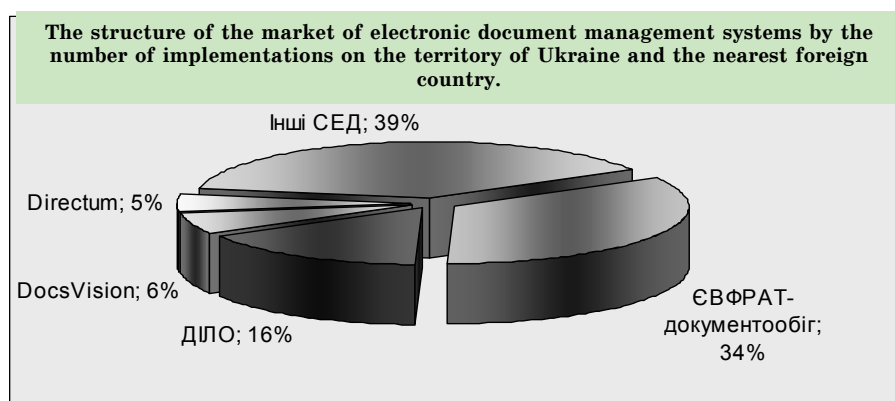


Fig. 3. Percentage of implementation of electronic document management systems

In addition, other high-and mid-range EDSs, including DILO, Directum and DocsVision, are also significant in the market. For example, today, according to the available estimates, the DIAL system occupies about 16% of the world market of implementation. It is most popular in public institutions. This is primarily due to the orientation of this system to automate the procedures of traditional office work. The exception is the Optima-Workflow system, which developers did not initially consider it as a mass solution for small and medium-sized businesses.

After the choice of the state / commercial structure of the rational EHS, the question arises as to the definition of such a set of requirements, rules, restrictions, recommendations, etc., which would contribute to the regulation of the order of information processing in the organization and were aimed at protecting information from threats primarily anthropogenic - that is, the formation information security policy (Fig.



4). When designing a security policy, information processing technology, offender patterns and threats, operating system features, physical environment, and other factors must be taken into account. As part of a common security policy, there may be policies to ensure the confidentiality, integrity, availability of processed information, etc. Security policy should relate to: information (level of criticality of resources of the EER); interaction of objects (rules, responsibility for the protection of information, guarantees of protection); areas of application (which components of the LOM security policy apply, and which ones are not).

Security policy should be designed in such a way that it does not require frequent modifications (the need for frequent changes indicates excessive specification, for example, it is not always appropriate to specify a specific name or version of a software product). The security policy should include the use of all possible measures for the protection of information: legal and moral and ethical norms, organizational (administrative) measures, physical, technical (hardware and software) measures, and determine the rules and procedures for the use of each of these types in the LOM.

Security policy should be based on the following basic principles of system integrity, integrity, continuity of protection, adequacy of mechanisms and measures of protection and their adequacy to threats, flexibility of management of the system of protection, simplicity and convenience of its use, openness of algorithms and mechanisms of protection, unless otherwise provided separately. Security policy should provide guarantees that the SED provides:

- 1) the adequacy of the level of information security to its critical level;
- 2) profitability of measures to protect information;
- 3) assessment and verification of information security;
- 4) personalization of the provisions of the security policy (regarding the subjects of the EER), reporting (registration, audit) for all critical resources from the point of view of safety;
- 5) visibility about the procedure for providing information security;
- 6) continuous work and its restoration in case of unforeseen situations, etc.

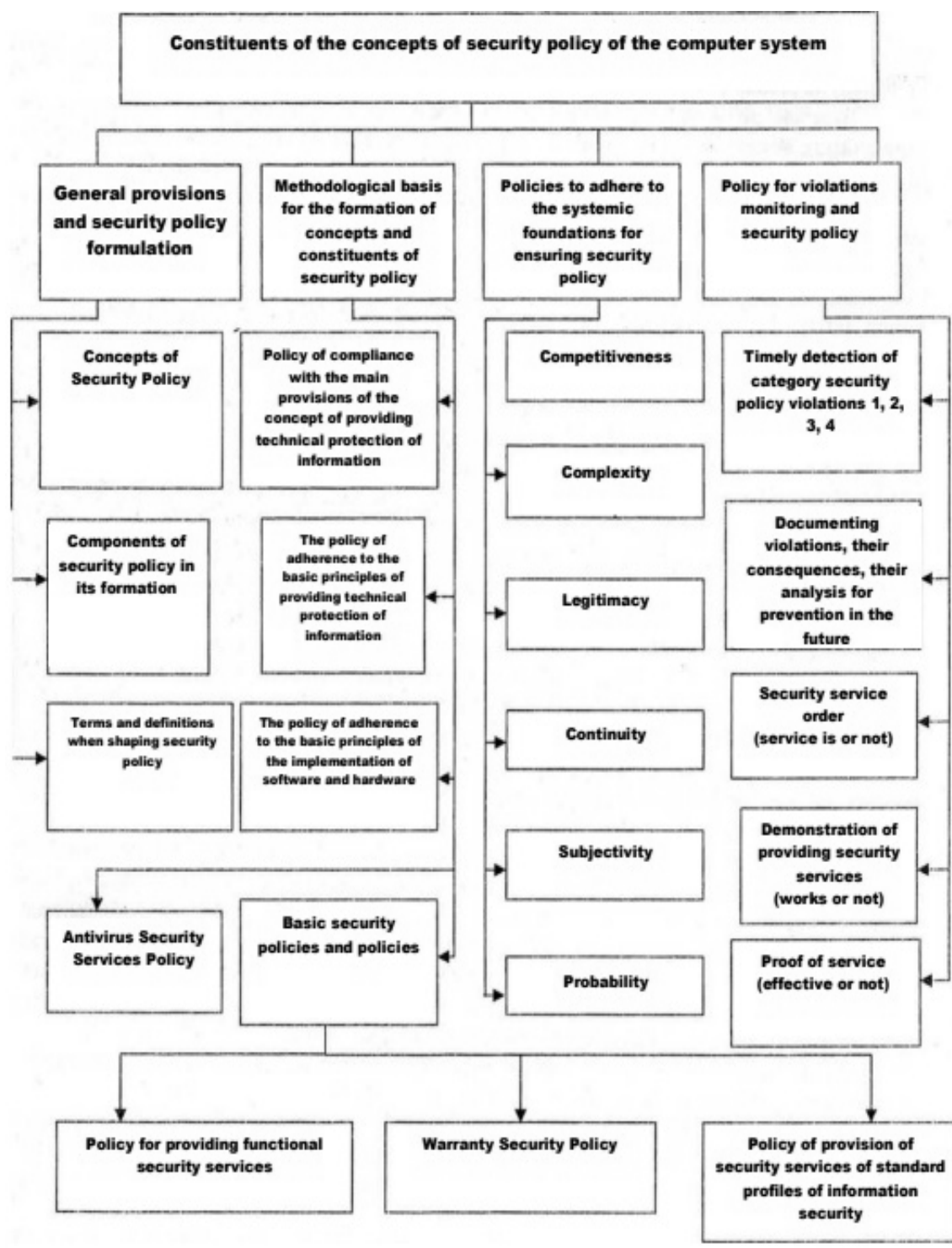


Fig.4. Basic EMS Security Policy Model

Security policy is being developed at the preparatory stage (SD TZI 3.7-001-99) for the creation of a CSCI. This should take into account the requirements of all documents that regulate the protection of information in the LAN and ensure their strict observance. The methodology for developing a security policy should include the following: development of the concept of information security in the LOM (outlining the system of

views, the main principles, revealing the main areas of information security); risk analysis (allows us to formulate general security provisions related to the technology of information processing in the EDS); definition of requirements for measures, methods and means of protection; selection of basic decisions on security of information; the organization of the renovation work and ensuring the continuous functioning of the EHEA; documenting security policy.

### **Conclusions and perspectives for further research**

Recently traditional paper workflow is giving way to a more modern electronic device. Which not only significantly reduces the time to work with documents, but also helps to optimize management processes in the organization (institution).

The Ukrainian SET market, represented by software solutions from both domestic and Russian and several transnational suppliers, remains, unfortunately, still as informally closed and little-learned as before. This is explained by the fact that: until now, the segmentation of the Ukrainian EER market has not been carried out; volumes and capacity of the market are determined fairly roughly, mainly on the basis of assessments of market participants themselves; the systematization of both the actual systems and the companies working in this area in general is absent. However, the positive factor in the development of ERA in Ukraine is the existence of a fairly clear regulatory framework in the area of electronic document management and electronic digital signature (EDS), as well as guidance documents that require and regulate the implementation of EHS in government institutions. Negative - the lack of state technical specifications regulating, for example, the formats of secure exchange of such documents, etc.

The decision to solve the problem of choosing among the selected systems a rational variant of the EDS and avoiding a number of hidden problems should contribute to the use of the analytical material provided in the article. According to his results, it is also possible to conclude that the complex automation of processes of information activity of state and commercial structures of Ukraine will provide a combination of methods and tools of office automation, database management systems (input, storage and search of structured information), workflow systems (management, routing and coordination of travel documents, control over the timeliness of their processing) and electronic document management

systems (input, storage and retrieval), as well as integration of software productive that implement these techniques.

The main prerequisite for a positive solution to this problem is, according to the authors' opinion, a substantiated choice of the base platform, on the basis of which certain solutions will be implemented for integrated automation of information activities, as well as a system integrator - that is, a company that will provide the full range of necessary services and offer the client a comprehensive solution that will satisfy as much as possible. all its needs. The most qualified representatives in the field of development and introduction of advanced IT technologies that operate in the Ukrainian market and can act as a system integrator for the implementation of a comprehensive program for automating the processes of information activities of state and commercial structures of Ukraine, in our opinion, are Incom, Quasar-Micro, Soft -Laine and a number of others. At the same time, for the base platform, the client can be selected software applications from corporations IBM, OpenText and EMC (Enterprise Content Management), which according to reports of the International expert company GartnerGroup [2] are among the three leaders of the world market ECM systems or companies Oracle and Microsoft, which steadily hold the line following the leaders.

The main objective of the implementation of the EDS protection system is to create an advanced system for managing flow of work, control over executive discipline, in particular mechanisms for performing technological processes for processing documents and organizing control over these processes. The key requirement put forward to modern EDS is to provide legitimate users with access to legally significant electronic documents and their processing facilities. The models of threats and the infringer of the protected EDS should determine the necessary levels of functioning of the subsystem of information security, namely the level of organizational and technical measures, the level of current control and the level of elimination of the consequences of realized threats.

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