

Problems of legal regulations of relations in the sphere of the electronic document flow

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Abstract: Regulation of the electronic document flow stand as allied form of the legal structure. The document flow contains elements of the general law of regulation and reaffirms the necessity of following specific instructions. Its electronic form gives an opportunity for the information interchange between subjects of an economical and legal activity. This defines the possibility of formation of separate branch of legal regulation in the document flow. The possibility of the structuring and correlation of an informational and other branch of the law for the aim of complex usage of an electronic document flow is viewed as separate aspect. The innovation of the research is explained by the reason that the mechanism of the governmental legislation is fully investigated and approved Practical significance is explained, from which the definition of the branch of legislative regulation allows to raise the structure and the regulation of the legislative system.

Keywords: electronic document; electronic document flow; electronic form; informational technologies; electronic signature.

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1 Introduction

Modern stage of development of telecommunication and informational technologies contributes to the formation of a new type of records management – management of electronic documents (Fisher and Harindranath, 2004). We are on the view that the electronic technologies and electronic document flow in relation to the modern records management is necessary to view as a united problem (Ab et al., 2018). Due to this, common among them is legal regulation (Duff et al., 1994).

We will point out, that several years ago for the regulation of the electronic document flow between its users the preliminary contracts were made about the regulation of the document flow and procedures of the conflicts' solutions, the physical keys and certificates interchange took place (Batura, 2016). However, nowadays economics requires the implementation of the legislative significant electronic document flow more effective, without any previous negotiations between parties (Kindt, 2013a, 2013b). It is possible to implement with the presence of not only developed and international infrastructure, but also developed normative legal base (Stasis and Demiri, 2017).

2 Literature review

The advantage of the electronic document flow system has no doubt; it allows optimising the technological processes of the governmental bodies and enterprises of different forms of property (Rüßmann, 2012). In general, in the worldwide practice a situation has arisen, according to which the electronic document flow regulates the civil and legislative aspects, implementing this in the interests of the electronic business development (Inchausti, 2012). However, new tasks which has the document flow in the sphere of public law and governmental management, requires its special law regulation (Lawton and McGuire, 2003). The sphere of legislative regulation of the electronic document flow is rapidly developing and acquires more distinct shapes (Amann et al., 2012). National normative database depends on the experience of the electronic document flow of other countries (Jia, 2012). Lawmaking experience of other countries is especially useful, when the tendencies of the electronic document flow development correlates with the direction of the counties development, the experience of which is used (Rudzajs and Buksa, 2011).

All the countries, in which the document flow is regulated, may be divided into three blocks (Christodoulou-Varotsi and Pentsov, 2008). For each block is the own model peculiar for the electronic document flow regulation (Dumortier and Verhenneman, 2013). The first block is the post soviet model of the electronic document flow's regulation (Mäntysaari, 2010), used in the majority of the CIS-countries. The second block is the American model of the electronic document flow regulation, used in USA, Canada and other countries. The third block is the European model. It is used with the countries-members of CIS.

3 Materials and methods

In this paper, the methods of comparative jurisprudence were used, which are defined with the possibility of an integration of the international norms of regulation of an electronic document flow. In particular, the aspect of the realisation of the contribution

integration of different systems of an electronic document flow in the world is investigated. The analytical method is used for prediction of the of the elements' implementation of the foreign legal regulation in systems of the national legislation.

A method of implementation is also applied, because in many states the regulation of the document flow is based on tradition. Due to this, presentation of diverse forms of documents in different countries may be defined as qualitative different forms of legal environment fulfilment.

4 Results and discussion

4.1 Regulation of electronic document flow in post-Soviet countries

In the first block, the CIS-countries are included, which have similar laws and statutory instruments in the sphere of electronic document flow regulation.

It is necessary to point out that, in the beginning of 21st century, in many CIS countries, laws, regulating the relations in the sphere of the electronic document flow, become more detailed (for example, the Russian Federation, the Republic of Moldova, the Republic of Belarus, the Kyrgyz Republic). In a number of republics there are two independent normative legal acts: the Law on the Electronic Document and the Law on the Electronic Digital Signature (for example, the Republic of Tajikistan). In some republics there is a normative legal act regulating relations in the sphere of electronic document and electronic document circulation (Ukraine).

Adopted for the first time (on the territory of the CIS countries) on 10 January 2000 in the Republic of Belarus the Law 'On Electronic Document' (currently invalid) defined the concept of "electronic document as information recorded on a computer medium and meeting the requirements established by this law."

Subsequently, this Law became invalid in connection with the adoption of the new Law of the Republic of Belarus of 28.12.2009 No113-3 'On Electronic Document and Electronic Digital Signature', according to which the electronic document is defined as an electronic document with details that allow to establish its integrity and authenticity http://kodeksy-by.com/zakon_rb_ob_elektronnom_dokumente_i_elektronnoj_tsifrovoy_podpisi.htm).

On 19 December 2000, the President of Turkmenistan signed the Law of the Republic of Turkmenistan 'On an Electronic Document', according to which an electronic document means "information recorded on a computer medium certified by an electronic digital signature in accordance with the procedure for creating such a signature" (<http://medialaw.asia/node/176>).

In Russia, the relevant law was adopted on 10 January 2002, No. 1-FZ 'On Electronic Digital Signature' (currently invalid). In accordance with Article 3 of this Law, an electronic document is a document in which information is presented in an electronic and digital form. The main distinguishing feature from other documents is the form of presentation of the document. In the legal literature, many began to note that this definition is too wide, and it does not fully reveal the concept in question, which gives the ground for its ambiguous interpretation when solving problems of legal regulation of the use of electronic documents.

On 6 April 2011, a new Federal Law No. 63-FZ 'On Electronic Signatures' was adopted. In accordance with Cl. 6 of this Law "Information in electronic form, signed by

a qualified electronic signature, shall be recognised as an electronic document equivalent to a paper document signed by a handwritten signature, unless the federal laws or regulatory legal acts adopted in accordance with them require that a document on paper” (http://www.consultant.ru/document/cons_doc_LAW_112701/).

In the Republic of Kazakhstan, the law regulating relations in the sphere of electronic document circulation was adopted on 7 January 2003 – the Law of RK ‘On Electronic Document and Electronic Digital Signature’ (https://online.zakon.kz/document/?doc_id=1035484). The definition of the electronic document fixed in this Law is more specific: it is a document in which the information is presented in electronic digital form and certified by means of an electronic digital signature.

In Ukraine, the Law ‘On Electronic Documents and Electronic Document Management’ was adopted on 22 May 2003 (<http://singlewindow.org/docs/67>). In accordance with Article 5 of this Law, an electronic document is a document, the information in which is recorded in the form of electronic data, including mandatory requisites of the document. The composition and procedure for placing obligatory requisites for electronic documents is determined by law. An electronic document can be created, transmitted, stored and transformed by electronic means into a visual form. The visual form of filing an electronic document is the reflection of data that it contains, electronically or on paper in a form suitable for the perception of its content by a person.

On 15 July 2004, the Law of the Republic of Moldova ‘On Electronic Document and Digital Signature’ No. 264-XV (currently invalid) entered into force. The electronic document in it was presented as “information in electronic form, created, structured, processed, stored, transmitted by computer, other electronic devices or software and hardware, signed in accordance with this law by a digital signature.”

Subsequently, in the Republic of Moldova, a new Law ‘On Electronic Signature and Electronic Document’ was adopted on 29 May 2014 (http://base.spininform.ru/show_doc.fwx/doc_to_word.fwx?rgn=71212). The law on electronic signature and electronic document is part of the program for integrating the legislation of the Republic of Moldova into the legislative base of the European Union. The preamble of this Law stipulates, “this law provides the necessary basis for the application of Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on the legal framework for the regulation of electronic signatures published in the Official Journal of the European Communities No. L 13 of 19 January 2000.”

In accordance with Article 2 of the Law of the Republic of Moldova, “an electronic document is information in electronic form created, structured, processed, stored and/or transmitted by computer or other electronic devices signed by an electronic signature in accordance with the law.”

It should be noted that in the Republic of Tajikistan there are two independent normative legal acts regulating relations in the sphere of electronic document circulation. In the adopted law ‘On an Electronic Document’ of the Republic of Tajikistan on 10 May 2002, an electronic document is presented “as information recorded on a computer medium and corresponding to the requirements established by this law” (http://base.spininform.ru/show_doc.fwx?rgn=2183).

To computer mediums belong magnetic disks, magnetic tapes, laser disks and other material carriers used for recording and storing information with the help of electronic computers.

On 30 July 2007, the new Law of the Republic of Tajikistan ‘On Electronic Digital Signature’ was adopted (http://base.spininform.ru/show_doc.fwx?rgn=18412). An

electronic document in accordance with this Law is a document in which information is presented in electronic digital form.

On 9 March 2004, the Law of Azerbaijan Republic No.602-IIG ‘On Electronic Signature and Electronic Document’ came into force. In accordance with this Law, an electronic document is a document for use in an information system, presented in electronic form and confirmed by an electronic signature. Electronic signature is added to other data or logically related data, which allows identifying the signature holder (http://base.spinform.ru/show_doc.fwx?rgn=7428).

The Republic of Uzbekistan also adopted the Law regulating relations in the sphere of electronic document circulation – the Law of the Republic of Uzbekistan ‘On Electronic Document Management’ No. 611-II dated 29 April 2004. In Article 5 of this normative legal act, the following concept of an electronic document is fixed: it is information recorded in electronic form, confirmed by an electronic digital signature and having other requisites for an electronic document that allow it to be identified. An electronic document is equivalent to a document on paper and has the same legal effect.

In 2004, the Legislative Assembly of the Supreme Council of the Kyrgyz Republic adopted the Law ‘On Electronic Document and Electronic Digital Signature’ (currently invalid).

On 19 July 2017, the new Law of the Kyrgyz Republic ‘On Digital Signature’ was adopted (<http://cbd.minjust.gov.kg/act/view/ru-ru/111635?cl=ru-ru>). In accordance with Clause 1, Article 6 of this Law, “Information in electronic form signed by a qualified electronic signature shall be recognised as an electronic document equivalent to a document in hard copy signed by a handwritten signature, unless laws or other regulatory legal acts prohibit the compilation such a document in electronic form”.

On 14 December 2004 the National Assembly of the Republic of Armenia adopted the Law ‘On Electronic Document and Electronic Digital Signature’ (Law of the Republic of http://base.spinform.ru/show_doc.fwx?rgn=29381). In this Law, “the following concept of an electronic document is stated: information or a message submitted in electronic form.”

It should be noted that in Georgia the concept of an ‘electronic document’ was first established in the Georgian Law ‘On Electronic Signature and Electronic Document’ dated 14 March 2008 No. 5927-Ic (currently invalid). According to the norms of this Law, an electronic document was defined as “electronic, optical or written information received, received or stored, which confirms the fact of legal significance or a fact that has no legal value, created using another similar means.”

Subsequently, on 27 April 2017, the new Law of Georgia No. 639-IIc ‘On Electronic Document and Reliable Electronic Service’ was adopted (<https://matsne.gov.ge/ru/document/download/3654557/0/ru/pdf>). In accordance with Article 2 of this Law, an electronic document is a collection of text, audio, visual or audiovisual information or (and) data stored in electronic form.

In Estonia, judicial institutions, as well as archival and other documents, are involved in the system of electronic document circulation. The field of document management is regulated by the law (Digital Signature Act, <https://www.riigiteataja.ee/akt/694375>; Government Decision, <https://www.riigiteataja.ee/akt/130122011062>; Archival Rules, <https://www.riigiteataja.ee/akt/129122011229>), in which rules and principles are established. Document management and registration are mandatory in the public sector,

while the private sector has requirements for particular types of documents – for example, personnel and accounting documents.

The Law on Electronic Communications of the Republic of Lithuania regulates the use of electronic documents in tenders and other procedures that can be carried out on the basis of tenders and other venues (<https://www.e-tar.lt/portal/lt/legalAct/6d0095f07c4611e8ae2bfd1913d66d57>).

Cabinet of Ministers Rules No. 473 of 28 June 2005 (clause No. 33, §§ 5) “The procedure for the development, design, storage and dissemination of electronic documents in state and local authorities and the procedure for the distribution of electronic documents between state and local authorities or between these institutions and individuals and legal entities” is applied in Lithuania. Development and registration, storage and distribution of electronic documents in state and local authorities is carried out in accordance with the requirements established in other regulatory acts for the development, execution, storage and distribution of documents, unless otherwise specified in the Rules. If the parties have agreed to sign an electronic document with an electronic signature, the requirement for a secure electronic signature and timestamp may be revoked. If the documentary information is not prepared electronically, the authority is not obliged to issue it electronically (unless these provisions specify otherwise) (<https://likumi.lv/doc.php?id=111613>).

The Law ‘On Electronic Documents’ that are formed on the basis of certain parameters and determines the possibilities for issuing them to citizens and public organisations was additionally adopted (<https://likumi.lv/ta/id/68521-elektronisko-dokumentu-likums&xid=17259,15700019,15700124,%2015700149,15700168,15700186,15700190,15700201%20&%20usg%20=%20ALkJrhgyQkVo5DNuCEzlf9Qi0A9ajw1wbA>).

4.2 Regulation of the electronic document flow in North America

The peculiarities of this model lie in the traditions of the high level of independence of the territorial constituents (provinces, territories, states) of these countries. The American model simultaneously introduces clear rules for the exchange of electronic documents at the federal level with the presence of various modifications at the level of the subjects of the federation (Richards, 1999). The greatest effectiveness and efficiency of this model of regulation of electronic document circulation is its use in countries with a large territorial area.

Turning to the study of US experience in the field of legal regulation of electronic document management, two levels of this regulation should be distinguished. The first level is represented by laws that are developed and adopted in individual states of America, and whose jurisdiction is limited to the states. The second level is federal. Laws that are adopted at this level extend their jurisdiction throughout the country.

In the US a situation has developed in which from the very beginning lawmaking activity on the regulation of electronic document management was initiated from the bottom (Sinard, 2006; Lackey and Beaton, 2019). Only in a few years at the federal level was developed and adopted common for all ‘Electronic Signatures in the Global and National Commerce Act’. In fact, the ‘Electronic Signatures in the Global and National Commerce Act’, adopted by the US Congress in 2000, outlined the concept and legal status of an electronic document. The law established an equal sign between the

electronic and paper document, which made it possible to conclude interstate contracts with the help of information technology without duplicating all the necessary documents in paper form. The law provides that no one should use or accept electronic documents without their consent. For example, if a message is to be sent to the recipient in writing, he will receive it in this form, unless he agrees to accept this notice electronically (Seiler, 2005).

Note that although many states adopted independent laws that regulate the use of electronic document circulation and electronic signature, the US Congress expressed the opinion that it is necessary to have a federal law that would regulate this sphere, since it lacks the unity of opinions and terminology (Kirillova et al., 2018). For example, in some states, it was allowed to use any type of signature (electronic and digital). In other states, electronic signatures were not used, instead only digital signatures operated. There were also states in which electronic signatures, according to the law, could only be used in treaties to which the state bodies were one side; other states, without limiting the parties to the contract in using EDS, limited the range of commercial transactions, at the conclusion of which it was possible to use electronic or digital signatures.

Thus, the adoption of the 'Electronic Signatures in the Global and National Commerce Act' helped to solve many conflict situations in the field of electronic document circulation and electronic commerce that arose between entities registered in different states of America. It should be noted that the adoption of a general law did not abolish legal acts that already functioned in separate states. Over time, they were amended and supplemented, which adapted the laws 'Electronic Signatures in the Global and National Commerce Act'.

The very first law in the field of electronic document management appeared in 1995 and was adopted in the state of Utah. Moreover, although the 'Utah Digital Signature Act' directly regulated the use of digital signatures in e-commerce, it can be considered the first stone in the foundation of legal regulation of electronic document management in the United States. Despite the fact that many of the provisions of the Utah Digital Signature Act were vague, confusing, or generally inadequate for the proper resolution of many legal and policy issues in the field of electronic document circulation, it provoked interest in this problem not only inside the country, but also beyond its borders (Richards, 1999). 'Utah Digital Signature Act' became an unofficial model law. Based on it, similar laws on electronic documents and electronic signatures were passed in subsequent states in states such as Washington, California, Minnesota, Missouri, New Mexico, and Oring. A common feature for many of these laws is the use of terms such as 'message' or 'document' instead of the term 'electronic document'.

'The Washington Electronic Authentication Act', adopted in Washington State, declared the following as the main goals of its operation:

- Facilitating trade through reliable electronic messages.
- Legal recognition of electronic signatures.
- Simplifying the process of conducting commercial documentation by using electronic documents.
- Providing a mechanism for licensing certification digital signatures for enterprises, consumers, courts, government agencies and other entities.

- Establishment of procedures governing the use of digital signatures for the official public business, to ensure confidence in the integrity, authenticity and reliability of the electronic message.
- Minimising the cases of forgery of digital signatures and electronic documents in electronic commerce; establishment and coordination with the states and other jurisdictions of unified rules regarding the authentication and reliability of electronic messages and the rules for the use of electronic documents.

In the 'Washington Electronic Authentication Act', the electronic message was equal to the value of a regular document on paper. The e-mail was legal only if it contained a digital signature issued by the confirming centre. Thus, the law noted that the digital signature is an integral requisite of the electronic message. Note that this rule was identical for both the 'Washington Electronic Authentication Act' and the 'Utah Digital Signature Act'.

'The California Digital Signature Act', adopted in California, as well as previous laws reviewed by us, regulated the scope of electronic document management and digital signature in its state. The specificity of this Law was that it regulated this sphere only in the public sector, leaving the private sector without attention. Based on the California Digital Signature Act, the California Digital Signature Regulations were developed. The Rules regulated the technology for creating a signature, contained requirements for the creation, operation and licensing of centres authorised to certify signatures. In the California Digital Signature Regulations, instead of the term 'electronic document', the definition 'message' was used, which meant the digital reproduction of information, which is used as a written document when working with government agencies.

It should be noted that the state of Indiana used the experience of the State of California through the adoption in 1997 of the Electronic Digital Signature Act. In the Law, by analogy with the 'California Digital Signature Act', a restriction was defined for the use of digital signatures in the circulation of documents. The digital signature was only allowed for state institutions except for the Supreme Court and the Treasury. As an exception, audit, legislative and other legal organisations were also mentioned.

In 1999, the State of New York adopted the Electronic Signatures and Records Act. This law allowed residents of the State of New York, at their request, to use electronic documents on a par with paper documents. The law gave an explanation of the term 'electronic record', which meant information that recorded any action, agreement, incident, event and other activities stored electronically, and which can be presented in the CNC form.

It should be noted the law of the State of New Mexico 'Electronic Authentication of Documents Act', which allowed the use of electronic documents, not only in e-commerce, but in all areas of activity. The main objectives of the adoption of the 'Electronic Authentication of Documents Act':

- Ensuring the creation of a centralised public electronic register for the authentication of electronic documents.
- Promoting the development of e-commerce.
- Elimination of barriers resulting from the elimination of legal uncertainties regarding the requirements for electronic signatures..

- Promoting the development of legal and business infrastructure necessary for the implementation of secure e-commerce.
- Facilitating the exchange of electronic information when submitting documents to public authorities.
- To promote the effective provision of public services by creating reliable, secure electronic records.
- Create approaches to rules and standards regarding the authenticity and integrity of electronic documents that can serve as a model for use by other states.

The 'Electronic Authentication of Documents Act' implemented a specific approach to the definition of the essence of an electronic document. Based on the norms of this law, the electronic document and the paper document were not considered as types of documents, but were merely a form of presentation of information.

Adopted in 1996 in Florida, the 'Florida Electronic Signature Act' was similar in its standards to the 'Utah Digital Signature Act'. The main objectives of the adoption of the 'Florida Electronic Signature Act' were:

- Recognition by the society of electronic signatures and increase of citizens' confidence in the use of electronic documents.
- Reduction of fraud related to forgery of electronic signatures.
- Promoting the development of e-commerce.
- Assistance in the implementation of electronic documents in the activities of state bodies.

It should be noted that in the 'Florida Electronic Signature Act' along with the terms 'message' and 'document' it is proposed to use the term 'writing'. 'Writing', firstly, means the process of creating an electronic document on any medium with the possibility of submitting it to the CNC form, and secondly, it involves writing something on paper. Thus, at the state level, a single general term for a paper and electronic document was assigned. The key point of the Florida State Law is the provision that an electronic signature is vested with an equal legal force with a handwritten signature and its use for signing documents is authorised.

Within five years of the development and adoption of the Utah Digital Signature Act in Utah, similar laws began to be adopted throughout America. In addition to those already reviewed, the following laws were passed: 'Georgia Electronic Records and Signatures Act' in the state of Georgia; 'Minnesota Electronic Authentication Act' in Minnesota; 'Digital Signature Act' in Mississippi; 'Digital Signature Act' in Missouri; 'Digital Signature Act' in Nebraska; 'Electronic Signature Act' in Oregon; 'Texas House Bill 984' in the state of Texas, etc.

Investigating the legal regulation of electronic document management in the United States, one cannot ignore the attempt to create a general law at the federal level for the development of e-commerce (Barbu and Șomărescu, 2016). In the United States, in 1999, the National Conference of Delegates for the Unification of State Law adopted the Uniform Electronic Transactions Act (UETA). UETA, in its content is a model law adopted to provide uniform rules for regulating e-commerce in the United States. UETA

applies only to those transactions that the parties agreed to carry out electronically. In fact, the Law did not create a new system of legal norms for the electronic market, but only ensured that electronic transactions are equivalent to paper operations and are subject to high-quality execution (Politanskyi, 2018).

To date, out of 50 states, UETA has been adopted in 46, with some changes, and continues to regulate the scope of electronic document management. States such as Georgia, Illinois, New York and Washington did not accept UETA, but developed their own laws instead. UETA was one of the first federal laws that not only allowed state government bodies to create, receive and store records electronically, but also declared the need to replace paper workflow electronically, than continued the idea laid down in the Paper Work Reduction Act, adopted in 1995. Paper Work Reduction Act regulates in detail the main aspects of the introduction of information technology in public authorities. The norms of the Law were aimed at:

- Maximum reduction of the paper load on citizens, small businesses, educational and non-profit organisations when entering into contracts with the Federal Government, state authorities, local authorities and other organisations.
- Ensuring the convenience of obtaining information by society from the Federal Government.
- Improving the quality of federal information systems, aimed at greater transparency of the Federal Government.
- Reducing the costs of the Federal Government in the collection, creation, dissemination and use of information.
- Provision of socially significant information in a timely manner, on an equal footing and in the most convenient form.

Procedures of the electronic document flow in comparison to the traditional its form are considerably restricted and not concertized. 'Paper work Reduction Act' is characterised with that it contains the insufficient certainty of the procedures and definitive apparatus of the electronic document flow. According to the norms of the law, it became clear that under the term in 'electronic format' is understood electronic documents, but separate explanation of the notion given in the paragraph 3502 Definitions 'Paperwork education Act' is not given.

This gap in the legislation leads to the uncertainties in the actions of the subjects of the informational relations that further arises the necessity to improve the legislative base.

We will point out, that great contribution in the improvement of this base was made with the creation of the federal organisation with name National Archive and management of documentation of the USA ('National Archives and Records of the USA' (NARA)). The main requirements in NARA relating to work with documents in the federal institutions are contained in Chapter 44 'United States Code' and in Chapter 36 'Code of Federal Regulations'.

Norms, recorded in part 1234 of Chapter 36 'Code of Federal Regulations', cover creations, savings, using and placing federal electronic documents, as well as those which are created with the help of programmes of electronic post. Strategic plans are accepted as documents, defining the directions of the work NARA. One of the main directions of the activity of NARA is the realisation of the project 'Electronic Records Archives'.

As a basis it has the creation of the archive system for documents, which allows the saving of the electronic documents, without dependence on type of the bearer and software. Within the achievement of project 'Electronic Records Archives' the task to make an electronic documents available for public was also settled. National Archive and management of the USA documentation takes active part in the development and testing of the informational systems and programmes.

For example, in 1993 specialists of NARA took part in the systems development of the document flow management for the United States Department of Defense. Among the standards, developed with specialists from NARA, it is necessary to point out the standard DOD 5015.02-STD.

The standard mentioned expanded its sphere of activity on the military departments of the USA, Joint Chiefs of Staff, Unified Combatant Command, the United States Department of Defense (among which Security Agency and National Reconnaissance Office should be pointed out), structural departments of the Security Agency on their places, also on other organisational departments, which function within Department of Defense. Besides, National Archives and Records Administration of the USA recommend federal institutions use for managing of the electronic documents certificated programmes, corresponding to the standard DOD 5015.02 -STD.

According to the contract from 1997 between National Archives and Records Administration of the USA and Department of Defense, developers of the software can, for the defined pay, give programme products for testing in correspondence to the main functional demands of the standard DoD 5015.02-STD. Programme products, which have successfully passed tests, are assigned a certificate JITC (Joint Interoperability Test Command), which is valid during two years.

It is necessary to point out, that getting a certificate testifies not only the high indexes of the programme product, which was checked with NARA, but also the importance of the functions, which the NARA performs (Khaustova, 2018). It is connected with that programmes with certificate belong to the production of the double meaning and may be used as for civil and for military aims.

The experience of Canada is similar to the experience of the USA in the sphere of electronic document flow regulation. It necessary to point out, that in Canada, norms, which regulate the sphere of electronic document flow consisting in different laws, are adopted on the federal level, and on the level of its subjects (provinces and territories).

In 1999, the 'Uniform Electronic Commerce ACT' (UECA) was adopted in Canada. It is a pattern law, aimed at realisation of principles, putted in the 'Model Law on Electronic Commerce'. Development of UECA took 2 years, after what was the functional model of electronic commerce regulation was offered, which relies on province and territorial bodies of power can develop their own method to the regulation of the electronic commerce. Except of UECA, on federal level, function 'Personal Information Protection and Electronic Documents Act' (PIPEDA), in which actions concerning creation of functional equivalence between electronic and paper documents were realised. PIPEDA is the main law in the sphere of the electronic document flow, common for all the territories, constituting Canada. In PIPEDA as an electronic document is understood as data, which are recorded or saved on any bearer of information, in computer system or analogous device, and may be scanned or perceived with human, computer system of other analogous device.

'Personal Information Protection and Electronic Documents Act' regulates:

- Implementation of the payments of federal government in electronic form.
- Information presentation for federal government in electronic form.
- Using of electronic documents for documents' application in governmental bodies.
- Using of electronic signatures.
- Presentation of electronic documents when the original document is needed.
- Specific characteristic of PIPEDA is that it regulates usage of the electronic documents as a proof on separate trial.

In the typical trial the original document, as a rule, is necessary for the trial persuasion that terms and conditions of the contract were not changed from the moment of the agreement signing. This demand is hard to fulfil, because unconfirmed electronic documents cannot be used as a proof, since modified document will have no differences with its first version. To prevent this, PIPEDA requires to identify electronic documents with save electronic signatures in that cases, when law foresees the usage of data in documents as originals.

With time the processing of the electronic documents in the proceedings of Canada became a separate branch of law with own legislation (Kokorev, 2019). 'Personal Information Protection and Electronic Documents Act' makes essential additions in federal law, regulating usage of 'Uniform Electronic Evidence Act'. Also the legislation changed of the territorial subjects of Canada, such as Alberta, Saskatchewan, Manitoba, Ontario, New Scotland, New Brunswick, Prince Edward Island, Nunavut, Yukon. Corresponding changes were made in the civil Codex of Quebec. In 2008, the range of the model principles was adopted, for example, 'Sedona Canada Principles Addressing Electronic Discovery', regulating the work with the electronic information, which is used in all the courts in country.

Main directions of the legal regulation of an electronic document flow on the level of provinces and territories of Canada lie in the specification of the status of the electronic documents and contracts, concluded in the electronic form. Northwestern territories, British Columbia, Manitoba and other follow the way of recognition of the electronic signatures and documents, building their acts on the basis of the federal 'Uniform Electronic Commerce Act'. They contain the same rules of the electronic document flow maintenance and corresponding exceptions.

For example, according to the legal acts of the British Columbia and Yukon, electronic documents include subscribing witness, constitutive documents, documents about land transmitting, majority of commissions etc. All these documents have legal power, if they are in the electronic form, their role on the electronic document flow is not restricted.

However, laws of some provinces and territories contain norms, differ them from 'Uniform Electronic Commerce Act'. For example, 'Electronic Transactions Act' of Alberta do not empower with legal power electronic documents, containing the right for mines and treasures of the soil. Province Saskatchewan, in addition to the federal law, excludes from the electronic document flow documents, created according to the 'Health Care Directives and Health Care Decision Makers Act'.

New Brunswick adopted 'Exclusion Regulation – Electronic Transactions Act' which mentions, that norms of federal 'Uniform Electronic Commerce Act' are not spread on

spheres, connected with the services of medicine, children adopting, maintenance of the home for elderly people, rehabilitation of invalids, etc.

For each of these spheres, its own statutory instrument is adopted, which also includes norms, regulating flow of the paper and electronic document flow. According to 'Exclusion Regulation – Electronic Transactions Act', the following acts were adopted: Family Income Security Act; Family Services Act; Health Services Act; Intercountry Adoption Act; New Brunswick Housing Act; Nursing Homes Act; Vocational Rehabilitation of Disabled Persons Act.

In some provinces the usage of the electronic documents was expanded even more, than it was foreseen in the reference law. For example, the 'Electronic Commerce and Information Act', adopted in Manitoba, does not contain provisions, directly excluding the electronic flow of subscribing witness, letter of attorney, rights for land and others. According to the law, it may be concluded that operations with documents available in electronic form, must follow the necessary requirements of safety. Analogically legislation of the Prince Edward Island does not contain norms, forbidden usage of documents, holding right for land in the electronic document flow.

It is noteworthy that legislation on the basis of the 'Uniform Electronic Commerce Act' contain range of forms of 'functional equivalence', i.e., norms, containing conditions which allow the use electronic document instead of paper one. For example, when the information or document should be presented in written form, than their electronic equivalent would be an electronic document, available for further usage without having of the paper original.

4.3 Regulation of the electronic document flow in European countries

To view the European model in the sphere of legal regulation of an electronic document flow, it is necessary to point out the main role of the European Council and United Nations Commission on International Trade Law (UNCITRAL).

In 1996 UNCITRAL was developed and adopted the 'Model Law on Electronic Commerce'. This Law, dedicated to the electronic commerce, became standard in the development of the rules of conduction of a document flow. The main aim of this law is overcoming hurdles, which are the result of the differences of legislation of different countries, providing different legal regime of paper and electronic information. To empower the electronic documents, the model law recommends using the so-called 'functional equivalent approach'. The principle of this approach lies in the transition of the new legal notion (electronic document), established as legal constructions of the convenient 'paper' document. According to our point of view, the same relation to different forms of documents has an important meaning for the provision of the usage of paperless connection, contributing to the effectiveness of international trade.

In 2001, this organisation adopted 'Model Law on Electronic Signatures'. The Law is directed on creation of possibilities and alleviation of usage the electronic signatures. Its norms expand the possibilities of electronic usage of documents. Model Law on Electronic Signatures help governments of Europe in the creation of modern, agreed and justice legal base and fasten circulation of documents using electronic signatures. After adoption of both model laws in major governments of Europe, provisions were made to the necessity of the unification of legislation, applied in the sphere of electronic document flow.

By comparing 'Model Law on Electronic Commerce' and 'Model Law on Electronic Signatures', it is possible to find the same common and diverse features in approaches to regulation. On the one hand, they define the notion of the electronic signature in the same way, create the same structure of the legislation of electronic commerce. On the other hand, approach of the Directive is more exact and hard.

Directive determines rights, obligations, responsibility of the parties, defines the criteria of the acknowledgement of the electronic signature, which obtain the character of the continuous list, the accent is made on the signatures certification, although, the latter is not obligatory. This leads to the unification inside the European Council, but complicates the interrelation with other states.

In 2000, European Parliament and Council adopted Directive 2000/31/EC (Directive on electronic commerce). The Directive pays special attention to the issues of the system building issues, using of the services of informational community, and obligated the governments-members of EU to prevent the technical mistake in electronic contracts. Directive 2000/31/EC creates legal frames for regulation of electronic documents usage, entering contracts with the use of electronic means, activity of informational services supplier, settling a dispute in the sphere of the electronic commerce and realisation of norms of directive in the legislation of the states-members EU.

On May 4, 2000, European Parliament approved the Directive 2000/31/EC and adopted the decision, according to which states-members were obliged to implement norms of Directive in their legislation in 18 month, making corrections in the law, which can prevent usage of electronic contracts. Up to 2003, 12 states-members of EU implement norms of Directive 2000/31/EC in their legislation. Starting from 2008, all of the 27 members of EU made this task.

Moreover, two countries, which ask for membership in EU (Turkei and Croatia) and countries-members of EACT (Iceland, Norway, Leichtenstein), also adapted their laws to the requirements of Directive 2000/31/EC. It is necessary to point out the Directive 1999/93/EC (Electronic Signatures Directive) and Directive 2001/115/EC (Electronic Invoicing Directive). These Directives were implemented with the entire countries-members EU.

After five years, the Directive 2001/115/EC, which regulates electronic processing of the accounts with value-added tax, was united in with Directive 2006/112/EC (VAT Directive) about the general system of value-added tax. Preamble is of greatest interest for the viewing in Directive, especially, paragraph 46 and 47. In the given structural parts of VAT Directive, electronic document flow between states-members of EU is regulated. In Europe special requirements were developed, regarding standards, programmes, directed on the work with electronic documents, work training with electronic documents and saving of electronic documents.

In 2001, the project ERPANET was started, directed on the provision of the saving of the digital cultural population and digital scientific objects. In the same year, United European specifications 'Model Requirements for the Management of Electronic Record Specification' (MoReq) were created. They contain requirements to the system of management of electronic documents. These specifications were applied for the evaluation of the quality of program products, using EU bodies. Except for implementation in government institutions, MoReq were used as the standard for formation of function's set and quality of systems of records management in medical sphere, sphere of education, industry etc. Due to the universality and adaptability of MoReq, these specifications were wide spread not only in EU, but all over the world.

Taking into consideration functional effectiveness of MoReq and with the development of the electronic document flow in 2008, United European specifications were considerably improved and published in new version MoReq2. In 2002, on the basis of MoReq, 'Functional requirements for Electronic Records Management Systems' and 'Metadata standard' were developed in Great Britain.

With the participation of the European countries, special standards in the sphere of the electronic document flow were developed, in particular, ISO 15489-1:2001 'Information and documentation. Recordings managing. Part 1 General requirements' and ISO 8601:2004 "Elements of data and formats for the information interchange. Information interchange. Representation of dates and time."

It is noteworthy to point out, that due to the existence of standard laws, many countries EU have their specialised legislation in the sphere of the electronic document flow. Finland adopted 'The Act on Electronic Service in the Administration' in 1999. The decree was adopted for:

- Provision of the safety of electronic data transmission with the help of the technologies of an electronic document flow.
- Increasing of the effectiveness of the governmental services presentation.
- Regulation of rights, obligations and responsibility of the state institutions with usage of the technologies of the electronic interchange of data.

Peculiarities of the law were that it allows to use electronic documents with the mutual interchange of data between state bodies and their clients. If a document requires signature, it should be signed with the electronic signature, accepted with a special certificate. This signature may be accepted with the foreign certificates if they fulfilled the rules, presented in the law. In such a way, the decree regulated the electronic data interchange not only between clients (citizens and organisations) and state bodies inside country, but also on the interstate level (Madsen, 1992).

Some aspects of electronic data interchange (for example, information security of the judiciary) have remained outside the legal regulation. In this regard, in 2003, the 'Act on Electronic Services and Communication in the Public Sector' was adopted, which should improve the quality of service delivery, as well as information security of judicial and other administrative authorities in electronic document management. Also, the Decree promoted the use of electronic means of communication in the transmission of data.

In France, instead of adopting a special law regulating electronic data interchange, a law was adopted that amended the Civil Code. After making changes in 2000, the Civil Code of France gave data in electronic form the same legal force as data on traditional paper carriers. Then 'Décret n 2001-272 du 30 mars 2001 prispourl'applicationdel'article 1316-4 du code civil relatif à lasignatureélectronique' was adopted, which regulated the use of digital signatures and brought the legislation of France in line with the European standards.

In Italy, the first attempts in the field of electronic document management were made in 1997. They are associated with the adoption of the Law 'Delega al Governo per ilconferimento di funzioni e compitialleregioni ed entilocali, per la reformadella pubblica amministrazione e per la semplificazione amministrativa' and the Decree 'Regolamentorecantecriteriemodalita per la formazione, archiviazione e la trasmissione di documenti con strumentiinformatici e telematici'.

The first of these legal acts recognised as legitimate any documents created in public or private organisations with the help of computer technology. This norm was also fixed in a Decree. The Decree became a specialised regulatory act of regulation of matters relating to electronic documents and digital signatures.

It should also be pointed out that Italy is the only country in the EU that has a 'Code of Electronic Government' ('Codicedell'amministrazioneDigitale') in the regulatory framework (adopted in 2005, a new version in 2010). Despite the fact that the Code is aimed at regulating the system of state control, many of its norms are devoted to electronic documents and provide their legal force. For the functioning of the Code, the Italian government developed special regulations, some of which regulate certain parts of electronic document management: the use of electronic invoices, the use of electronic signatures,

It should be noted that the process of creating an integral legal framework has not yet been completed and continues to this day. For example, at the end of 2014, a new technical regulation was adopted on the creation, transfer, copying, replication, reproduction and establishment of the time for the creation/passage of electronic documents, as well as the creation and preservation of electronic documents by state bodies ('Regoletecnicheinmateriadi sistemadiconservazioneaisensidegliarticoli 20, commi 3 e 5- bis, 23-ter, comma 4, 43, commi 1 e 3, 44, 44-bis e 71, comma 1, delCodicedell'amministrazionedigitaledicuialdecretolegislativo n. 82 del 2005'). However, even with its adoption, some issues (related to computer security and the functioning of the State Electronic Identification System) remain open, and some problems of electronic document management are not resolved.

5 Conclusions

Analysing the experience of the CIS-countries in the sphere of the legal regulation of electronic document flow is necessary to point out the one of the ways to overcome the lagging from the leading countries is active usage of the experience gathered, recorded not only in the laws of such countries, but in the sub-legislative normative acts and standards. The experience of the CIS-countries is interesting, especially because all the countries started to develop the sphere of an electronic document flow in equal conditions, which were characterised by soviet traditions on records management and a legislative base of the same type (Kiss et al., 2016).

The system of the managing of documents in USA currently is one of the most effective models of a work with documents organisation. Structure of the system is presented in the form of the departmental archives, federal centres of documentation (perform 'temporary' saving) and archive savings of the system of federal archive and documentary service (constant save is realised with the help of them). In the USA norms, regulating the sphere of an electronic document flow has a clear expressed recommendatory character.

Specifics of the legal regulation of the electronic document flow in the USA are connected with the restrictions on the sphere of application of the analysed decrees. Decrees of the states Indiana, California, New York, Oregon, Texas are restricted to the governmental sector, while Decrees of the states Washington, Minnesota, Utah are restricted to the sector of electronic commerce. Nonetheless, many states (Wisconsin,

Georgia, Mississippi, Missouri, Nebraska and others) decided to spread the legal regulation of interrelations in all the spheres.

All legislation of provinces and territories of Canada states define, that electronic document is the equivalent of the original paper, only if the unity of information of electronic document is proved. As proof, the electronic signature is enough, and considered to be equal to the electronic signature on paper documents. Saving and presentation of documents' copies is also regulated with norms of previously analysed Decrees. They state, when a document should be saved and the period of time it should be saved. This saving may be implemented in electronic form too, if the electronic document can be saved and available for usage just like as paper version.

In general, the main part of the legislations norm in Canada in the sphere of the electronic document flow is devoted to the formation of the rules for contacts creation with electronic means, which:

- Allows to form a contract with the help of electronic methods of connection, pressing the button on the monitor or touching the monitor.
- Allows to form the contract with the help of electronic communication owing to the automation of the process given in one or several parties, taking part in the contract creation.
- Allows to cancel the contract created if someone made a mistake during their interrelation with the electronic device (computer), if there is no possibility to correct the mistake.
- Allows to define when messages were sent in electronic form, and when they, as supposed, were received.

These norms provide the legal acknowledgment of contracts, formatted on the form of electronic documents. On the basis of the analysis conducted, it may be pointed out, that specifics of the American model of an electronic document flow lies in the presence of the pattern decrees, regulating the sphere of an electronic document flow, electronic commerce and electronic (digital) signature. This approach acknowledges that consequent rules, regulating usage of the electronic documents and signatures, are critically important for the following development of the business, which is implemented with the help of the electronic means of the connection. Government gives a right for the participants of the electronic commerce to regulate the inner processes independently, based on the principles of 'business-choice', conception of the freedom of the contact's entering, using any available technologies. Any agreed action between participants of the electronic commerce would be considered to be legal. Nowadays, use of the American model shows the absence of serious legal uncertainties in the electronic document flow and electronic commerce maintenance. It is necessary to point out, that rules of the electronic document flow maintenance according to the American model are truing to correspond to the modern level of the technologies development and electronic communications, in connection to what corrections and additions are added to the normative legal acts in a timely manner.

Regarding the European model in the sphere of the legal regulation of the electronic document flow, it is reasonable to highlight the presence of equal rules in relation to the electronic document flow, which are recorded in the guidelines of the European Parliament. Nonetheless the common features, affirmed in the guidelines and obligatory

to execute with countries-members of the EU, interstate features of the legal regulation of an electronic document flow are very different. For example, in Italy and Finland there is a strong control of the electronic document with the use of electronic signatures, while in France there is a more loose approach to the regulation of the electronic document flow, due to the absence of the special law on the subject. According to our point of view, the sphere of the legal regulation of the document flow on EU countries is very similar to the experience of the USA. In Europe, instead, the 'federal' level and federal decree present a level of supranational structures (European Union), which forms its own vision of problem solution, connected with the electronic document flow in the form of the development and adoption of guidelines. Besides, EU countries, similarly to the US states or provinces and territories of Canada, adhere to the general provisions set forth in the directives, and themselves make decisions on the necessary legislative changes.

References

- Ab, A.A., Mohammad, Y.Z., Mokhtar, U.A. and Jambari, D.I. (2018) 'Electronic document and records management system implementation in Malaysia: a preliminary study of issues embracing the initiative', in Chowdhury, G., McLeod, J., Gillet, V. and Willett, P. (Eds.): *Transforming Digital Worlds*, pp.585–591, Springer International Publishing, Cham.
- Amann, P., Dillon, M.P. and Quirchmayr, G. (2012) 'Challenges to advanced electronic evidence lifecycle management in an international court environment', in Papasratorn, B., Charoenkitkarn, N., Lavangnananda, K., Chutimaskul, W. and Vanijja, V. (Eds.): *Advances in Information Technology*, pp.31–45, Springer Berlin Heidelberg, Berlin, Heidelberg.
- Archival Rules from 22.12.2011 [online] <https://www.riigiteataja.ee/akt/129122011229> (accessed 2 May 2018).
- Barbu, C.M. and Șomăcescu, S.M. (2016) 'Challenges of the organizational communication in the context of the new technologies', *Journal of Advanced Research in Economics and International Business*, Vol. 4, No. 5, pp.4–8.
- Batura, O. (2016) 'Liberalisation of telecommunications services markets and regulation of universal service in the European Union', in *Universal Service in WTO and EU Law: Liberalisation and Social Regulation in Telecommunications*, pp.117–214, T.M.C. Asser Press, Hague, DOI: 10.1007/978-94-6265-081-7_4.
- Christodoulou-Varotsi, I. and Pentsov, D.A. (2008) 'The STCW convention and related instruments', in *Maritime Work Law Fundamentals: Responsible Shipowners, Reliable Seafarers*, pp.422–639, Springer Berlin Heidelberg, Berlin, Heidelberg, DOI: 10.1007/978-3-540-72751-4_4 [online] https://link.springer.com/chapter/10.1007/978-3-540-72751-4_4 (accessed 24 April 2018).
- Digital Signatures Act from 15.12.2000 [online] <https://www.riigiteataja.ee/akt/694375> (accessed 8 May 2018).
- Duff, W., Thomas, D. and Wallace, D. (1994) 'Working meeting on electronic records', *Archives and Museum Informatics*, Vol. 8, No. 4, pp.301–352, DOI: 10.1007/BF02770381.
- Dumortier, J. and Verhenneman, G. (2013) 'Legal regulation of electronic health records: a comparative analysis of Europe and the US', in George, C., Whitehouse, D., Duqueno, P. (Eds.): *EHealth: Legal, Ethical and Governance Challenges*, pp.25–56, Springer Berlin Heidelberg Berlin, Heidelberg, DOI: 10.1007/978-3-642-22474-4_2.
- Federal Law 'On Electronic Signature' from 06.04.2011 No 63-F3 [online] http://www.consultant.ru/document/cons_doc_LAW_112701/ (accessed 20 April 2018).
- Fisher J. and Harindranath G. (2004) 'Regulation as a barrier to electronic commerce in Europe: the case of the European fund management industry', *European Journal of Information Systems*, Vol. 13 No. 4, pp.260–272. DOI: 10.1057/palgrave.ejis.3000510.

- Government Decision 'Uniform Principles of Case Law' from 01.03.2001 [online] <https://www.riigiteataja.ee/akt/130122011062> (accessed date 11 May 2018).
- Inchausti, F.G. (2012) 'Electronic service of documents national and international aspects', in Kengyel, M. and Nemessányi, Z. (Eds.): *Electronic Technology and Civil Procedure: New Paths to Justice from Around the World*, pp.137–180, Springer Netherlands, Dordrecht, DOI: 10.1007/978-94-007-4072-3_8.
- Jia, L. (2012) 'Modeling framework for document flow in office automation system for colleges and universities', in Luo, J. (Ed.): *Affective Computing and Intelligent Interaction*, pp.725–732, Springer Berlin Heidelberg, Berlin, Heidelberg, DOI: 10.1007/978-3-642-27866-2_88.
- Khaustova, M.G. (2018) 'Legal integration: the theoretical aspect', *Journal of the National Academy of Legal Sciences of Ukraine*, Vol. 25, No. 1, pp.192–203.
- Kindt, E.J. (2013a) 'The criteria for the correct 'balancing of rights'', in *Privacy and Data Protection Issues of Biometric Applications: A Comparative Legal Analysis*, pp.631–743, Springer Netherlands, Dordrecht, DOI: 10.1007/978-94-007-7522-0_7.
- Kindt, E.J. (2013b) 'The risks involved upon the use of biometric data and biometric systems', in: *Privacy and Data Protection Issues of Biometric Applications: A Comparative Legal Analysis*, pp.275–401, Springer Netherlands, Dordrecht, DOI: 10.1007/978-94-007-7522-0_4.
- Kirillova, E.A., Bogdan, V.V., Golovatskaya, M.V., Melnichenko, T.A. and, Ognev, V.N. (2018) 'Legal significance of electronic messages and documents', *Journal of Advanced Research in Law and Economics*, Vol. 9, No. 3, pp.997–1003.
- Kiss, P.J., Kiss, J.K. and Klimkó, G. (2016) 'Electronic document certification service: an enabler of e-government uptake in Hungary', in: Kho, A. and Francesconi, E. (Eds.): *Electronic Government and the Information Systems Perspective*, pp.276–286, Springer International Publishing, Cham.
- Kokorev, A.S. (2019) 'Digital economy: changes of values and guidance in business management', *Moscow Economic Journal*, No. 1, p.28, DOI: 10.24411/2413-046X-2019-11028.
- Lackey, D. and Beaton, N. (2019) 'The current state of data protection and privacy compliance in Canada and the USA', *Applied Marketing Analytics*, Vol. 4, No. 4, pp.355–359.
- Law of Georgia 'On Electronic Document and Reliable Electronic Service' from 27 April 2017 year No. 639-II Art [online] <https://matsne.gov.ge/ru/document/download/3654557/0/ru/pdf> (accessed 23 April 2018).
- Law of the Kyrgyz Republic 'On Digital Signature' from 19.07.2017 year No. 128 [online] <http://cbd.minjust.gov.kg/act/view/ru-ru/111635?cl=ru-ru> (accessed 4 May 2018).
- Law of the Republic of Armenia 'On Electronic Document and Electronic Digital Signature' from 15.01.2005 year No. 3R-40 [online] http://base.spinform.ru/show_doc.fwx?rgn=29381 (accessed 18 April 2018).
- Law of the Republic of Azerbaijan 'About Electronic Signature and Electronic Document' from July 30, 2007 No 602-III [online] http://base.spinform.ru/show_doc.fwx?rgn=7428 (accessed 15 April 2018).
- Law of the Republic of Belarus 'On Electronic Document and Electronic Digital Signature' from 28.12.2009 year No. 113-3 [online] http://kodeksy-by.com/zakon_rb_ob_elektronnom_dokumente_i_elektronnoj_tsifrovoj_podpisi.htm (accessed 20 April 2018).
- Law of the Republic of Kazakhstan 'On Electronic Document and Electronic Digital Signature' from 7 January 2003 year No. 370-II [online] https://online.zakon.kz/document/?doc_id=1035484 (accessed 5 May 2018).
- Law of the Republic of Lithuania 'On Electronic Communications' no. IX-2135 from 15.04.2004 [online] <https://www.e-tar.lt/portal/lt/legalAct/6d0095f07c4611e8ae2bfd1913d66d57> (accessed 23 May 2018).
- Law of the Republic of Lithuania 'On Electronic Documents' from 01.01.2003 [online] <https://likumi.lv/ta/id/68521-elektronisko-dokumentu-likums&xid=17259,15700019,15700124,%2015700149,15700168,15700186,15700190,15700201%20&%20usg%20=%20ALkJrhgyQkVo5DNuCEzf9Qi0A9ajw1wbA> (accessed 28 April 2018).

- Law of the Republic of Moldova 'On Electronic Signature and Electronic Document' from 29.05.2014 year No. 91 [online] http://base.spininform.ru/show_doc.fwx/doc_to_word.fwx?rgn=71212 (accessed 2 May 2018).
- Law of the Republic of Tajikistan 'On Electronic Digital Signature' on 30 July 2007 year, No. 320 [online] http://base.spininform.ru/show_doc.fwx?rgn=18412 (accessed 28 May 2018).
- Law of the Republic of Tajikistan 'On Electronic Document' on 10 May 2002 year No 51. [online] http://base.spininform.ru/show_doc.fwx?rgn=2183 (accessed 3 May 2018).
- Law of the Republic of Turkmenistan 'On Electronic Document' from or 19.12.2000 year [online] <http://medialaw.asia/node/176> (accessed 18 April 2018).
- Law of Ukraine 'On Electronic Document and Electronic Document Flow' from 22.05.2003 year No. 851-IV [online] <http://singlewindow.org/docs/67> (accessed 4 May 2018).
- Lawton, T.C. and McGuire, S.M. (2003) 'Governing the electronic market space: appraising the apparent global consensus on e-commerce self-regulation', in Macharzina, K. (Ed.): *MIR: Management International Review*, pp.51–72, Gabler Verlag, Wiesbaden, DOI: 10.1007/978-3-663-01562-8_4.
- Madsen, W. (1992) 'International, national and sub-national data protection laws', in: *Handbook of Personal Data Protection*, pp.231–1012, Palgrave Macmillan UK, London, DOI: 10.1007/978-1-349-12806-8_10.
- Mäntysaari, P. (2010) 'Management of information', in *The Law of Corporate Finance: General Principles and EU Law: Volume I: Cash Flow, Risk, Agency, Information*, pp.335–469, Springer Berlin Heidelberg, Berlin, Heidelberg, DOI: 10.1007/978-3-642-02750-5_10.
- Politanskyi, V.S. (2018) 'Contents of electronic governance', *Journal of the National Academy of Legal Sciences of Ukraine*, Vol. 25, No. 3, pp.196–209.
- Richards, R.J. (1999) 'The Utah digital signature act as 'model' legislation: a critical analysis', *The John Marshall Journal of Information Technology and Privacy Law*, Vol. 17, No. 3, pp.873–908 [online] <https://repository.jmls.edu/cgi/viewcontent.cgi?article=1264&context=jitpl> (accessed 12 May 2018).
- Rudzajs, P. and Buksa, I. (2011) 'Business process and regulations: approach to linkage and change management', in Grabis, J. and Kirikova, M. (Eds.): *Perspectives in Business Informatics Research*, pp.96–109, Springer Berlin Heidelberg, Berlin, Heidelberg.
- Rules of the Cabinet of Ministers of Republic of Lithuania No. 473 from 28.06.2005 [online] <https://likumi.lv/doc.php?id=111613> (accessed 12 May 2018).
- Rüßmann, H. (2012) 'Electronic documents. Security and authenticity', in Kengyel, M. and Nemessányi, Z. (Eds.): *Electronic Technology and Civil Procedure: New Paths to Justice from Around the World*, pp.233–260, Springer Netherlands, Dordrecht, DOI: 10.1007/978-94-007-4072-3_12.
- Seiler, J.P. (2005) 'How is good laboratory practice regulated?', in: *Good Laboratory Practice – the Why and the How*, pp.59–358, Springer Berlin Heidelberg, Berlin, Heidelberg. DOI: 10.1007/3-540-28234-3_2.
- Sinard, J. (2006) 'External regulations pertinent to LIS management', in: *Practical Pathology Informatics: Demystifying Informatics for the Practicing Anatomic Pathologist*, pp.325–353, Springer New York, New York, DOI: 10.1007/0-387-28058-8_12.
- Stasis, A. and Demiri, L. (2017) 'Secure document exchange in the Greek public sector via eDelivery', in Katsikas, S.K. and Zorkadis, V. (Eds.): *E-Democracy – Privacy-Preserving, Secure, Intelligent E-Government Services*, pp.213–227, Springer International Publishing, Cham.