# An Analysis of the Possible Usage of Data Containers both by Entrepreneurs and by Those Working in the Legal Profession

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# ZADÁNÍ BAKALÁŘSKÉ PRÁCE

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u podnikajících fyzických a právnických osob

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Provedte literární a informační rešerši k tématu analýza možností využití datových schránek u podnikajících fyzických a právnických osob.

Analyzujte současné způsoby a možnosti využití datových schránek a provedte vyhodnocení pomocí SWOT analýzy dle vlastních kriterií.

Na základě výsledků SWOT analýzy navrhněte možnosti využití datových schránek.

Vyhodnoťte výsledky své práce a svého návrhu řešení.

Rozsah práce:

Rozsah příloh:

Forma zpracování bakalářské práce:

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HOMBURG, V. Understanding E-government: Information Systems in Public Administration. 1 ed. Oxford: Routledge, 2008. 144p. ISBN 978-0415430944.

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#### **ABSTRAKT**

V této bakalářské práci se snažím přiblížit problematiku datových schránek a analyzovat současné trendy eGovernmentu. Samotný pojem datová schránka se stal pro Českou Republiku neodmyslitelnou součástí modernizace a globalizace, proto se zabývám jak výhodami, tak problémy, které tento novodobý trend přinesl

#### Klíčová slova:

Certifikát, Czech POINT, datová zpráva, Datová schránka, eGon, eGovernment, elektronický podpis, fyzická osoba, konverze dokumentu, Ministerstvo vnitra,podnikající osoba, právnická osoba, referenční údaj, sbírka zákonů, veřejná správa, Základní registr

#### **ABSTRACT**

The purpose of this thesis is to explain system of data containers and to analyze current eGovernment. The term data container became inseparable part of modernization and globalization for the Czech Republic. That is the reason why am I trying to explain pluses of this topic but also issues that brings this modern trend.

# Keywords:

Certificate, Czech POINT, data message, data container, eGon, eGovernment, electronic signature, natural person, document conversion, the Ministry of Interior, entrepreneur, legal entity, referential entry, the legal code, the Public Administration, Basic Register,.

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#### INTRODUCTION

Is the Czech Republic ready to implement data containers? There is well-working system of government dealing with its issue. Data containers are working world-wire already and to make our economy level the same as the rest European ones, we have to make big steps. Data containers are not cheap issues. Millions of Czech crowns were invested already and system is making progress. It is not fully working but within a few months we are going to make our current government working online.

Data containers are specialized to dealing with regional problems. Exactly to deal with issues like infrastructure for public service, public utility, and territorial development, information technology development in public service, making infrastructure social services better and more accessible, raising level of public health, improve employment services and to make security level more secure. Side of these main purposes, there are other main purposes for making this system run: prevention and dealing with risk, travel movement support, cultural heritage support.

To be sure what really is Data container just realize electronic heap which purpose is to delivering documents and to acting with public authority organs. It was said that this system is fast (your messages are delivered directly), safety (your data container is impossible to be lost), and auditable (it is easy to prove who is sender and who is recipient). We can say that this e-government system can make our lives easier and more comfortable. This system helps entrepreneurs and those who are working in public service to communicate with offices and institutions. It is assisted public virtual place where everyone can get extracts from Trades Register, Land Registry, rap sheet or from Commercial Register.

This system is not obligatory for individuals. But who is affected and obliged to create and run this data container? In fact, legal entities are. That means everybody who is working is legal service, and leaders of companies. Everybody can create his own data container for free and become more connected with these branches.

Data container is one of key point of HEXAGON program. HEXAGON program is expression of SmartAdministration in the Czech Republic with roots in technology services (that means in eGovernment) about basic register informational systems and serves as unifier of Czech infrastructure (MVCR, 2010).

# I. THEORY

#### 1 HUMAN BODY CONCEPTION

What tells us the Czech law about data container? In other words, Data container is electronic disposal site created for delivering messages from and to public authority organs. Documents with which is this system dealing with are directed to legal entity, natural person, and natural person working as entrepreneur. All these persons can communicate with public authority organs and vice versa, but in Czech Republic is still not allowed to communicate between them individually. Aim of this thesis is focused on entrepreneurs and those who are working in legal professions, because they have much more rights within the system than natural person if we are talking about jurisdictional rights.

The whole e-government is presented as a human body consisted from four basic organs. Ministry of Interior in the Czech Republic created imaginary human person called eGon who is represented system of eGovernment. These so-called organs of the Public Administration were created to dealing with actual disunity, multiplicity, and non currency of key databases, and became one of Public Administration computerization main pillar.

#### 1.1 The Brain

The brain is consisted from four Basic registers. The elemental registers of public administration. Register of Inhabitants, Register of Persons, Register of Law and Obligations, and Register of Landscape Planning, Addresses and Real Estate. Working of eGovernment would be non-functional without these registers, that's why are these registers represented by the brain. In the beginning of year 2009 some laws (No. 111/2009 Coll. and No. 227/2009 Coll.) came into effect. These laws regulated and made amendments to the system starting on 1st July 2010 in the testing operation and to the live operation two years later (www.mvcr.cz).

The basic purpose of this system is called Reference entry. This entry is information taken from system of Basic registers and it is sure that this entry is right, proved, actual, and certified. The authorities have to use information from this system and do not demand it from the citizens. In fact if some authority changes information about e.g. citizen's address, it will be changed in all others registers. This system will be connected through and through. Beneath this text is basic extract from the Legal Code book. It is only extract because as you can read above, this law will come to effect on 1st July 2010 and many parts of this law are not important to understand the purpose of data containers. These laws

had been already signed by Ing.Miloslav Vlček (the Speaker of the Lower House), Prof. Ing.Václav Klaus, CSc. (president of the Czech Republic), and by Ing.Miroslav Topolánek (the Prime Minister of Czech Republic).

#### 1.1.1 Register of Inhabitans

Register of Inhabitants or so-called ROB(Law No. 111/ 2009 Coll. Heading II). This register is consisted of referential entries such as first name, surname, address, date and place of birth etc. Every referential entry has its own number of electronic ID certificate to citizen identification in case of electronic communication with the Public Administration informational systems. This communication is done in non-public encrypted form. Operational entries are also consisted in the Register of Inhabitants. These entries are information about using of this register, recordings about providing of entries, and dates of last information changes. Organs which can change entries are Ministry of Interior, and Police of the Czech Republic (Kašpárková, 2009).

#### 1.1.2 Register of Persons

Register of persons or so-called ROS (Law No. 111/ 2009 Coll. Heading III). This register is containing information about these subjects: legal entity, organization chart about legal entity, organization chart about the state, natural person working as entrepreneur, foreign person and organization chart about foreign person, and organization with international constituent. This register is dealing with referential entries, referential connections, identifiers, and organizational entries about persons set up by the law. Referential entries are containing name of the company or name of the person in charge, who is written under its company in Business register, datum of creation or entering the evidence of Business register, the form of law, information about accessibility of data container, etc.

Next to referential entries is this register containing also organizational entries. These entries are consisted of agenda codes, last changes of entries in the register, and identifiers. Administration of this register is done by the Czech Statistical Office. This administrator is also responsible for editing and allotting of identifiers. Basic responsibility is to make register safety and certified (Kašpárková, 2009).

#### 1.1.3 Register of Landscape Planning

Register of Landscape Planning or so-called RUIAN (Law No. 111/2009 Coll. Heading IV). There is no need to cite the whole law about landscape planning but in basic sense,

this term means a part of ground which is marked out by the border. There could be a property on this land, but to make it legal by the law, it must be written in Land Registry. This register is also in on-line version and is public. Administrator of this register is The Czech Office of Surveying and Cadastre. Information to be found in this register, are mainly about these basic territorial planning: state territory, region territory, district territory, cadastral unit territory, construction object, address places, etc (Kašpárková, 2009).

Information that can be found in this register are: codes and names of landscape, localization information (such as definitional point, and border in some cases), entries about neighbouring landscapes, etc. There can be also found referential information which was described above. This register is one of the most problematic. Data containers can send messages with only 10MB attachment and in many cases landscape plans are much bigger. This topic will be discussed later (Kašpárková, 2009).

#### 1.1.4 Register of Law and Obligations

Register of Law and Obligations or so-called RPP (Law No. 111/2009 Coll. Heading V). This register is aggregate of operations done in purpose to act in name of the Public Administration in scope of its agenda. Administrator of this register is again the Ministry of Interior. This register contains referential entries about agendas and its ID codes, about law and obligations of natural persons and legal entities, and about their law and obligation to the things, just in case that these entries are consisted in the basic register. There is no secret information or any other entry, which could put the Czech Republic in danger or put in danger other subsidiary services of the state (Kašpárková, 2009).

How are information providing from Register of Inhabitants and Register of Law and Obligations gained? Natural person can ask for information electronically, by paper form or personally. To ask for information electronically natural person need electronic signature, that will be discussed later. To ask for information by paper form natural person need officially certified signature. Both these ways need to include names, surnames, datum and place of birth, electronic ID, birth number, permanent address, range of required information, and way of its delivering. It is similar if legal entity is requiring information. Legal entity must show name of its company, legal entity's ID or similar identification, address of official seat, range of required information, and way of its delivering.

All these four registers will be working within Basic Register Information System, so-called ISZR. Today's administrators of individual registers differs one from each other, but in the future there will be established new administrator for all of them. New state authority will be called the Basic Register's Administration. Really important element of this system will be Natural Person's Identifier Converter, so called ORG. Element created for personal data protection. This element is really important and will be the only one who can convert agendas' identifiers from register to register. Up to now is possible to gain entries about citizens from any informational system of the Public Administration, with only birth number as a confirmation data. Security and protection of this system is comparable with top-class national bank.

#### 1.2 The Hearth

The hearth of e-government is Data container itself. It is the basic for whole system of communication. This system is established by the Law about electronic operations and authorized document conversion, that was declared in the Legal Code book as No.300/2008 Coll. on 19th August 2008, that play the key role for whole data container system. This law was also called "The law about eGovernment" or eGovernment Act and came into effect on 1st July 2009. Purpose of the law was to create optimal conditions for electronic communication between the government and citizens, and between the offices. From this level we can declare that the key institution for electronic operations is data container that is arranging delivering communiqué at electronic level. Second key feature is authorized document conversion. It simply means that written documents will be converted to the electronic documents with authentication and vice versa (www.mvcr.cz).

The first attempt to create data containers was in 2006, when government of the Czech Republic was dealing with abolition of the Ministry of Information. This main impulse led to the government resolution to make growth of eGovernment in the Czech Republic much faster. The whole plan about eGovernment started in 1999 but with really slow progress.

The success of e-Government in the Czech Republic is mainly dependent on level of data container's extension. Data containers will be used just in case, that users know how to use them properly. Because some laws are hard to read, many people are scared of data containers using. Purpose of the data container's hearth is to make clear how to use them.

# 1.3 The Circulatory system

The circulatory system means communication infrastructure of the Public Administration for unified electronic tenure work (so called KIVS). It represents unification of different data lines of the Public Administration subjects to the single data site. The biggest benefit is to make services effective as possible and to maximize savings. The whole KIVS creating and integrating started in year 2007 when many data lines from all departments started to grow. The basic quest of KIVS was to create unifying data site providing safety connections and high-tech standard of providing services. Another very important quest was to eliminate monopole of data service providers. This elimination was done by cooperating during creation with Télefonica O2, GTS Novera, T-Systems, and ČD Telematika compaines. All these companies helped to create unifying system, and soon project bring 250 million Czech crowns in the savings. These savings created very successful system, because savings were used to improve current services and to make it cheaper thanks to the competitive environment (www.mvcr.cz).

This KIVS system let to the effective connection between organs and information systems of the Public Administration. Nowadays are Registers and CzechPOINTs connected by this system. There is a plan, it the near future, to integrate Digital Map of the Public Administration.

I would like to just shortly say what this Digital Map is. The whole eGovernment purpose is to make our connection with the government easier and the Digital Map of the Public Administration is another tool how to fulfil its targets. This tool is performing accessibility of space data for offices and public through Smart Administration strategy. Ministry of Interior is a leading element of information and communication technologies and together with another departments, is trying to make it as comfortable as possible. Memorandum within all departments was signed and this so-called Rescue system of the Czech Republic came into effect. The main aims of the Digital Map are to maximize transparent performance, availability, and continuity of European projects such as INSPIRE, PSI, GMES, and SEIS. Digital Map will be well-used for Register of Landscape Planning, but it is still in progress.

# 1.4 Fingers

Fingers demonstrate symbol for access to information and authorities from your home. It also represents Czech POINT as universal contact place. POINT is Czech abbreviation

stands for Czech Posting Verification and Informational National Terminal. Czech POINTs are physical places where you can obtain confirmed data from central registers such as verified copy of an entry in the Land Register, Commercial Register, Register of Trades, or copy of the Criminal Records. The whole system started on March 2007 with pilot version, and results were really positive. Results showed that this system satisfied citizen's needs and from January 2008 live version started to work. Basic purpose is to connect requires of customers to the one branch. Czech POINTs are all around the Czech Republic. Branches of Czech POINT can be found at local/ municipal authorities, Czech post offices, subdivisions of economic chamber of the Czech Republic, Czech embassies abroad, and on-line. In Czech Republic is more than 5000 offices and till today was given more than 3 million copies of registry entries (www.mvcr.cz).

Czech POINT office is providing many operations for work with data container. In other words, Czech POINT is serving as a data container's service point. The basic service you can gain there is to create your own data container. In a case of natural person you need ID identification. For legal entity is need to hand letter of appointment, decision of shareholders or any other document that ratify you as a statutory body. Of course this document must be officially certified. These documents will be later converted to the electronic forms and requests to creation will be dealt with administrative procedure. Data container will be created within three days and customer will receive access codes by Czech post office in his/her own hands. In this case Czech POINT is not responsible for codes delivering.

More requests are not so important for this thesis but namely we can deal with disabling access of data container, and re-access of data container. In a case of theft or loss of your access codes, you can ask for invalidation of these codes. Request for create Public Administration level of data container and vice versa. After this request you have to communicate with organs only through data container. Request to adding of charged person to access to the data container, so this charged person can work on the same level as owner of data container.

#### 2 MAIN TERMS OF THE PUBLIC ADMINISTRATION

#### Activation

Simply said - start of your data container running. By the law you can activate your data container within 10 days from delivering access codes. In other case data container will be activated automatically (svs.institutpraha.cz).

#### Administrator

In other words he is a caretaker of an information system. Within a data container he has special rights. He can make request to the Ministry of Interior for disable of somebody's data container. Some users can ask for commercial messages delivering but administrator must confirm it. He is giving rights to users or he can also name another administrators or charged persons. The leader/ managing director is naming leading administrator (svs.institutpraha.cz).

#### Authentication

Project of the European Union called Smart Administration guaranteed creation of Basic Register. In this register are entries about citizens which are proved, certified and truthful. Through these entries we can check authentication of any citizen. This register is dealing only with Natural persons (svs.institutpraha.cz).

#### Authorization

In other words is it accessibility and restricting of functions. Because there are many levels of competency, access must be somehow defended. Defences are for example electronic signature or PIN codes in electronic banking. High-tech improvements allows biometrics protections (svs.institutpraha.cz).

#### Authorized person

These are person who has all rights to access. Authorized person can change settings of data containers, can work with delivered and sent messages, and can name an administrator and charged person of data container (svs.institutpraha.cz).

## **Basic Register**

Fundamental element that is spreading eGovernment in the Czech Republic, and that is containing Referential entries. This register will be open for all organs of the Public Administration and other registers will gain information from this basic register. Basic

registers are including: Register of Inhabitants, Register of persons, Register of Landscape Planning, and Register of Law and Obligations (Kašpárková, 2009).

## **Business Register**

Public register containing all information set up by law about entrepreneurs. This register is done electronically and is a part of the Basic register (Kašpárková, 2009).

#### Central place for services (CMS)

It is nothing else than whole eGovernment. The basic communication infrastructure of the Public Administration is not only for effective communication within the state but also with the European Union organs or the states of EU (svs.institutpraha.cz).

#### Certificate

The system of certification is because of safeness. It is a data structure that identifies its owner or guarantee safeness of e.g. some internet page. It is highly connected with electronic signature and is saved mostly on USB token or in user's computer. In the data container system is nowadays standard X.509 used for certification of public documents. This standard is setting up the whole system of public key infrastructure, format of certificates, certificate revocation list, parameters of certificates, and methods of validity checking (sys.institutpraha.cz).

#### Charged person

This person is periodically logging in to the data container and is working with messages. Permission to access to the one's own hand documents has only after permission from authorized person or administrator (svs.institutpraha.cz).

#### Commercial certificate

There could be case that between two subject of safety communication is signed agreement about their communication way. In this case this commercial signature could be used instead of electronic signature. The value of communication will remain the same. This signature is used in agreement where the legislative is forbidding use of qualified certificates. This communication between non legal entities will be able from 1st July 2010 (svs.institutpraha.cz).

#### Criminal Records

Public evidence of lawfully convicted persons by the courts, and information connected to the criminal proceedings. Copy of this record is one of the most requested at the Czech POINT offices (svs.institutpraha.cz).

#### Czech POINT@Office

The Czech POINT is dealt separately later. Czech POINT@Office is non-public office information place, where public authorities can found entries to deal with eGovernment. This place has many purposes, for example to authorized document conversion.

#### Data and information safeness

Defined rules are trying to secure information about employees, strategies of companies, information system, and processes. The biggest attention is focused against misuse of personal data (www.czechpoint.cz).

#### **Data Container**

Data container is basic communicator of the Public Administration with other organs and with the public. Electronic messages sent through this system have the value as the written ones (www.datoveschranky.info).

#### Data Container of Entrepreneur

All entrepreneurs are not forced to create their data containers, with exception of advocates, tax consultants, and insolvency curators. Ministry of Interior is creating data containers to those exceptional entrepreneurs on the first day in first month of third year, after signing under evidence set up by the law. But of course, the possibility of activating data container sooner on the basic of their own request, is also possible (www.datoveschranky.info)..

#### Data Container of Legal entity

Ministry of Interior will create data container automatically to the legal entity under the law, legal entity written in business register and external legal entity for free. Rights to enter data containers have statutory bodies and its members (www.datoveschranky.info)..

#### Data Message

Data Message is electronic document from and to the Public Administration's data container. These messages are able to able to be copied and updated on hardware devices

and media, such as CD/DVD, USB flesh drives. As by the regular post office, within data message is option to deliver message to someone's own hands. Data message can be sent only to the whole office/ government and not to the particular officer/ employee. Till today, it is not possible to communicate with another natural/legal entity. Citizens can communicate only with the Public Administration. Delivery date of messages starts after logging in. In a case that subject will not log in within ten days, it is said that message had been delivered automatically. Senders will, after message sending, receive delivery report (www.datoveschranky.info)..

#### Document conversion

Document conversion together with electronic signature is the crucial issue of data container, **so** it will be discussed in separate chapter. But in a few words, document conversion means that you can convert written physical document to the electronic version and vice versa, with the same validity (www.bezpapiru.cz).

#### **Document Integrity**

After signing document, it is necessary not to change this document. This document integrity ensures the reader that change or breach after document signing wasn't done and security level was not broken (www.datoveschranky.info).

#### Document system archiving

That means professional care for documents within the data container system and its legitimate registering, dividing, circulation, saving, sending, etc. It is including the checking of these operations (www.datoveschranky.info).

#### Editor

Editor is organ of the Public Administration who is responsible and charged with Referential Entries within the Basic Register. Editor is the only one organ, who can change information about e.g. citizens, but also is responsible for authenticity of information (www.datoveschranky.info).

#### eGon

eGon is a symbol of eGovernment projects. Through this symbol are represented four organs: brain, hearth, circulatory system, and fingers which were described above. The

purpose was to explain to the citizens projects of eGovernment and the system of implementation (www.mvcr.cz).

#### eGovernment

It means use of modern informational and communicational technologies to maximize performance of the Public Administration. This system and its basic parts are explained through whole this thesis. Data Containers are basic for whole system of communication, even there are some clues that are still not solved. The whole eGovernment implementation for the Czech Republic is set from 2007 to 2015 and it is believed, that some delays will occur. But after the end of this implementation should be whole communication with the Public Administration electronic (www.mvcr.cz).

#### Electronic ID

This electronic conversion is next step within the European Union. Czech IDs are already valid in the whole EU and the Public Administration is trying to make it electronic. This service is still not available and is not covered by the laws but presumptive testing date is from 1st July 2010. This electronic ID is supposed to be valid travelling ID too. It is vision of the future but within a few years physical Ids should totally disappear (www.datoveschranky.info).

#### Electronic operation

It means communication with legal authority through data container. By this electronic operation is meant e.g. data message sending. This explanation is meant in the sphere of the Public Administration (www.datoveschranky.info).

#### Electronic signature

This topic is very crucial for whole system of data container, so it will be dealing with in separate chapter. But shortly, electronic signature is containing electronic identifier to prove and guarantee author of sent electronic document. Sometimes it could be connected with time stamp. Electronic signature is limited by the time (one year for max) and is fundamental element of electronic communication (www.businessinfo.cz).

#### **GIS**

GIS stands for Geographic Information System. This system had been already mentioned. Digital Map is part of it. Spatial maps are creating in purpose to gaining, saving, analysing, and visualisation of earth surface data. It is believed that this system will be well-used in Register of Landscape Planning in the near future (www.gis.com).

## Hexagon of the Public Administration

Hexagon is complex system that is trying to make the Public Administration effective and quality as much as possible with respects to the six main elements. These elements to, which is Hexagon trying to focus, are: legislation, citizen, funds, technology, office worker, and place. Everybody who is going to touch the Public Administration (the government, legislative body, and local authorities) should respect these elements which is Hexagon including. The point is that, without respect to any element, the Public Administration cannot work properly and effectively and improvement is not guaranteed (www.mvcr.cz).

#### Information system of data containers (ISDS)

System of web services guarantee functions as delivering, collecting, entering, and authentication of messages. This system administrating by the Ministry of Interior is containing information about data containers and its users. ISDS is operating by the Czech postal service (www.datoveschranky.info).

#### Interactive electronic form

There are many templates of electronic forms that make our communication with governments easier. The whole way of dealing is done electronically: fill in a form, send a form, and signing a form. Government created databases where are these forms automatically classified so even officers have easier work (www.bezpapiru.cz).

#### Legal entity

These persons are eligible to own rights and duties. Legal entity is not single human being but association of natural persons or legal entities, or others subjects set up by law. Written agreement or founding charter is needed to create legal entity. There could be some exceptions set up by the law. Existing of these legal entities is starting by the day of writing to the Business Register or another register. Legal entity must have a name, and an address, which is created before the agreement signing. As was written above there are statutory bodies that are dealing in the name of the legal entity. Examples of legal entities are: Public Limited Company, Limited Liability Company, Public Trading Company, Limited Partnership, State-owned enterprise, the university, etc. (svs.institutpraha.cz).

#### Natural person

This subject is called natural because s/he is meant like a single human person if we are talking about law relationships. Legal capacity has natural person from birth to death, but full legal capacity has this subject from 18 years old (or in case of untimely marriage – from 16 years old – must be agreed by the court of law). Only court of law can free or limit somebody from responsibility. Just for information, there could be natural persons working in the Public Administration. Occupations like forest ranger, sanitary inspector, construction inspector etc. (svs.institutpraha.cz).

#### Natural person working as entrepreneur

Entrepreneurship is separate systematic activity with purpose of gaining profit. These persons are working on their own with their own responsibility. Their data containers are not compulsory but voluntary choice (svs.institutpraha.cz).

#### Organ of the Public Administration

Organs of the public-law corporations or subject that has set scope of authority by the law, that means this organ can influence subjects not-primarily subordinated. In this category are organs like state authorities, Czech Radio and Czech Television, notaries, court executors, etc. (svs.institutpraha.cz).

The whole Public Administration is mostly realized with executive power and underthe-law power. It is ruled by the laws but also is using the laws to execute its powers, what is understood as a service to the public. The state is dealing through the Public administration's organs.

#### Qualified certificate

Qualified certificate was created to fulfil the laws and is in connection with electronic signature. Thanks to this certificate you can verify electronic signature and you can create your verified electronic signature. So you are capable to send verified electronic messages (www.certifikaty.com).

#### Referential Entry

Entry in the Basic Register that is proved to be right, so the Public Administration's organs, natural persons, and legal entities can use it without verification. This type of entry is elemental for other registers information gaining and in the future should be the source for any other registers (www.szrcr.cz).

#### Self-employed person

This term is used in the Czech Republic for entrepreneurs and is separated because of law about income taxes, welfare system, and health insurance of the natural persons. Example of this person is sole proprietor, expert witness, etc (svs.institutpraha.cz)..

#### **Smart Administration**

This strategy is Czech equivalent for HEXAGON program. Within the years 2007-2015 is the Czech Republic trying to use European Union structural funds as much as possible to make the Public Administration as high-tech as possible. Basic goals of this strategy are: de-bureaucratisation of the Czech Republic system, computerization of processes, rationalization of administrative proceedings, to upgrading of the regulatory environment, etc (www.mvcr.cz).

#### The Legal Code

It is the main gazette for legal regulation, fundamental law, government regulation, etc. declaration. The whole eGovernment is covered and ruled by the Legal Code (svs.institutpraha.cz)..

#### USB token

USB token is a flash drive containing a part of key to your electronic signature. Written signature can be easily imitated but electronic one is impossible to copy. A part of a key is saved within the operation system in your computer and second part is saved on this token. Today is it well-used by the Public Administration, Natural person and legal entity for communication or for sending documents to the government organs (www.datoveschranky.info).

#### 3 BASIC LAW PRINCIPLES

Ministry of Interior establish one data container (or more after request) to every legal authority. This establishing of first data container will be done by the law, so there is no need of request. After establishing, Česká pošta, a.s. will send access entries to the managing directors (www.mvcr.cz).

Next step is to allow another person to access. Managing directors authorize administrator and charged persons. It gives them legal representative authorities. As was said before, data containers to the legal entities set up by the law or written in business register will be established compulsorily and automatically by the Ministry of Interior. To another legal entity is not establishing compulsory.

Natural person, and natural person working as entrepreneur can ask for establishing, in other case data container will not be created.

Costs spent for delivering data messages is paid centrally by the Ministry of Interior in the Czech Republic. Other case of paying will be for commercial messages that are still not established.

It is possible to connect document services and agenda information systems to information system of data containers for automatic data transfer.

Public administration organs have to communicate with another organ through data container system. It means that after activation is no more paper communication through post offices possible.

This rule is not set up for legal entities. These persons can communicate through data containers but possibility of post office way of communication is also available. On the other hand, legal entities which have set up data container by the law have to communicate through data container. So, the basic difference is in compulsory and optional data container establishing. In these cases are Public administration organs responsible to know, if are legal entities' data containers are activated and then decide which way of communication will be used. The same rule is given to communication with natural persons.

Every executive of Public administration organ will authorize employee (administrator), who is dealing with data container. His responsibility is to depute executive, authorizing charged persons, setting up their access rights, and actually can work with data container on his own.

# 3.1 The most important aspects of the law

§18 par. 2) provide that operation performed by authorized person through data container has the same legal status as operation done in written form with sign on it with exception of more responsible person. That means that if we are talking about one responsible person, electronic message with electronic signature has the same value as written message with manual sign (www.mvcr.cz).

§17 par. 4) provide that if user of data container will not log-in within ten days from sent date, the document is believed to be delivered by the tenth day with exception of another legal regulation with different delivered date. Principle of so-called fiction delivery date is a sign of all-time-compulsion using of data container during employee's working time (www.mvcr.cz).

#### 4 ELECTRONIC SIGNATURE

Electronic signature is one of the key tools of the Public Administration. Internet communication is working world-wire for decades but the last issue that is solving in the 21st century is the security. To make communication secured and verified administrations needed tools. Beside firewalls, antivirus and anti-spam program there was searching for something to prove truthful of electronic documents. In year 2000 president of the United States, Bill Clinton signed the Electronic Signature Act. This act gives electronic document with this signature the same value as the written ones. From this year many countries and the European Union made steps to accept this act too. In the same year, exactly on 29th June 2000, the Czech Republic accepted law No.227/2000 Coll. (Novelized by law No. 227/2009 Coll.) about Electronic signature with the same value and proportion as the Electronic Signature Act in the U.S. Preparation and the government system started to working on this law and on 26th July 2004 law came into an effect novelization about qualified time stamp. Till March 2010, there was problem with certificates. But on 15th April 2010 novelized law (No. 101/2010 Coll.) came into an effect and from this day the Ministry of Interior is obliged to run and publish list of certificates that are valid and must set to the organs of the Public Administration to accept these certificates. The problem was solved (www.businessinfo.cz).

Hand-writing documents could be signed only by the natural person acting by his own name or in the name of legal entity (or its organ) but legal entity itself couldn't be singed under this type of document. This is big advantage of electronic signature because legal entity or organizational constituent of the state can be singed under electronic document with the same value as official stamp.

There are two types: Electronic Signature and Guaranteed Electronic signature. The first one is set by the law to accept a few rules. Electronic signature is attached or logically connected to the data messages, and verified author/ sender of this message is believed to be right (www.businessinfo.cz)..

Guaranteed Electronic signature is the same as electronic signature with added information. This signature is based just on some qualified certificates that are given by the Public Administration and this signature guarantee authenticity and integrity of the document. Authenticity of the signature allows the receiver to verify identity of the author. Thanks to cryptographic methods we can prove integrity of the signature. Integrity guarantees us that after sending of the document, there was no upgrade or manipulation

with this document or signature itself. The big advantage of indisputableness, by these techniques is proved that sender is author and owner of the electronic signature. This will be big step against anonymous letters. This signature can also include time stamp that guarantee datum and time of document signing.

Authorities who can create electronic signature for citizens are: První certifikační autorita, a.s., Česká pošta, s.p., eldentity, a.s. These organisations were set by the Ministry of Interior. There are also numbers of companies who are providing verified certificates but it is not so important to know them.

How is electronically signing document executed? Ordinary user of electronic signature is avoided of these operations but in the background, the whole system of operations is working. First of all is created print copy of your document, so-called hash that is created by the special algorithm of your document. Usually this hash is a hundreds bites long. After this operation your secret authorized key (given usually on USB token) will encrypt this hash. This encrypted file will be attached by the authorized certificate and digitally signed data was created. Verification of digitally signed data is done by independent checking of data hash and decrypted signature hash by the public author key. In a case of hash equality, we can talk about truthful document.

Almost all documents that are sending through data container must be electronically signed to be sure about its validation. But of course there are exceptions. For example on 27th April 2010 on conference led by Petr Stiegler from the Ministry of Interior about electronic forms was said that forms like tax return file will not need electronic signature. But this topic is still disputable and not covered by the law yet (www.businessinfo.cz)..

#### 5 DOCUMENT CONVERSION

Document conversion simply means transfer from electronic type of document to the written type and vice versa. Both these documents after conversion have the same value as the original. Copy or converted version can be used for executing of its purpose. These converted documents are saved to the central disposal site of verification clause. There are some types of documents that mustn't be converted. For example someone's ID, passport, driving licence, gun licence, cheque, bill of exchange, etc. Conversion of these documents is impossible because converted document has the same value as the original, and these Ids could be just one per person. It is impossible to own more than one e.g. driving licence. But idea about electronic identification card is in progress of the Public Administration law dealing. Conversion is impossible in cases of corruption in a way of changes, relief text documents, office stamp imprint documents, documents containing audio-visual records, etc. Impossible in the sense, that these stamps are not valid in the converted documents. But the whole document is still usable in the both forms. It is need to know that by conversion of the document is not proving data containing in the document but conversion itself is proving 100% match of the copy (www.czechpoint.cz).

#### **5.1** Elements of safeness

Elements of safeness in the converted documents should be identified before conversion.

#### Plastic text

Plastic text is three dimensional element added to the document. This text is represented for example by the WordArt it Microsoft Office Word documents. Plastic text is digitally upgraded by some text editor. This plastic text can be found in the written documents too. Documents with spatial imprint of the office stamp (usually mechanically imprinted). By this explanation is understood, that three dimensional texts doesn't have to be spatially created but also can be graphically and digitally created visual text.

#### Watermark

Watermark is unique tool how to guarantee integrity and author's law protection. This graphic technique is adding information to the documents both analogically and digitally. It could be a picture, some text, or even animation. "Visible" watermark is simply added to the document on a place, where is it hard to remove. Examples are degree's diplomas. Or

use of so-called "Invisible" watermark is stenographic application that is invisible to the naked eye and could be noticed only algorithmically (www.czechpoint.cz).

#### Relief printing

Document is graphically upgraded by squeezing paper out by use of heat and pressure. This technique is often used by the notaries to mark legal artefacts. Post stamps also used this technique in the 20th century and for unique stamp decoration (www.czechpoint.cz).

#### **Embossing**

This technique is similar to the relief printing but is mostly used to imprint logos of the companies. This technique often uses colours (www.czechpoint.cz).

#### Dry seal

Dry seal is technique of the relief printing with both-side printing difference against the changing and abusing of the document (www.czechpoint.cz).

# 5.2 Types of conversion

Customer who requires conversion will bring this document saved on electronic data storage, such as CD/DVD or will send this document from his/her data container to the data disposal site. In the second case, customer need to prove his/her document by certificated identification (e.g. by his electronic signature). There are two types of document conversion: Authorized document conversion on request or authorized document conversion by virtue of the office. There are few differences between these two types. Authorized conversion on request is imposed a charge of 30 CZK but the second type is for free. But the second type is aimed only for office needs and only for its purposes and within its authority.

# 5.3 Authorized document conversion on request

Authorized document conversion on request is aimed for the general public. Customer can gain this converted document on the contact places. In the Czech Republic on the Czech POINT contact places. There is user's form interface that is used by the officers to create converted document. This form is leading the officer step by step through the whole system of conversion from scanning of the written document, through verification clause creation, to the saving within the central disposal site of verification clause. This converted document must be electronically signed. But within the law (No. 300/2008 Coll.) is not

said anything about validation of this electronic signatures. In a case of conversion to the written form law says that document must be signed by those persons who document created. In the opposite conversion the law says nothing about the author, so it doesn't care who was signer of the document. This is a big hole in the law and should be covered by law novelization. Law also says that if officer feel that document was corrupted in some way, conversion should not been done (from written to the electronic one). But in opposite case there is nothing about corruption of the electronic signature integrity. Corrupted integrity (explained above) says that signature was broken by somebody else but within conversion system is this protection simply bypassed (www.czechpoint.cz).

Steps to conversion from written to electronic form are these. Officer at the Czech POINT subdivision will download form from the headquarters. These forms are opened by the 602XML software that is necessary for data container communication. This software is guiding executive officer step by step. Technologies are already set up, so officer will simply scan the written document. Document will outcome in PDF file format without electronic signature. Third step is gaining of electronic signature with the time stamp that was explained above. Next step is saving of this converted document to the central disposal site of verification clause. All this processes are automatic and both the time stamp and electronic signature is given by the Czech POINT's agenda. The last step is handing over of converted document. It is done by the CD/DVD way or by the module storage saving. In the second case is given number ticket to the customer, and customer can dispatch this document on-line within 30 days (www.czechpoint.cz).

Steps to convert electronic document to the written one are almost the same. The officer will download the form, fill it in, gain the data from the customer's CD/DVD or from the module storage. Officer will verify electronic signature and time stamp and conversion can begin (www.czechpoint.cz).

Big issue about this topic is certificate revocation. On this system is electronic signature based on and is it comparable with payment card blocking. The most electronic signatures are saved on the USB tokens and these tokens are physical things, so it could be stolen from its owner. In a case of electronic signature verification, the validity of certificate should be checked first but there is 24 hours delay between request of certificate rejection and rejection itself. In this delay anybody who stole user's USB token could use it to the document conversion. In this case of abuse user is in advantage if his electronic signature contains time stamp. Then after certificate rejection conversion of any document

could be later cancelled. But in a case that user's signature doesn't contain time stamp it is really hard to prove user's innocence.

# 5.4 Authorized document conversion by virtue of office

Second type is Authorized document conversion by virtue of office. These documents don't have to be electronically signed, because are serving only for within office needs. The offices should decide if converted document is truthful and then make the conversion. This conversion is dealt at CzechPOINT@Office (explained above) that was created only for the office purposes. There is no need of form filling because every user has his own access codes given from the administrator so there is no need of verification.

II. ANALYSIS

#### 6 BASICS

Just to summarize the whole idea, let's introduce the purpose of eGovernment. Data containers are only a piece of puzzle in the whole system of eGovernment. The whole system is much more complex and difficult but I believe that by theoretical part you are able to understand the basic purpose of this implementation and technical improvements. Improvements from interior processes changes to the bureaucracy administration change of conception. But the whole implementation can be defined by three basic elements: Speed, comfort, and price. These three elements should be improved by the whole system. Well established eGovernment should minimize communication and administrative operations with the offices. On the other hand, comfort in the sense of simple and clear communication with the offices should be maximized. This sense of comfort is focused on bureaucratic burden on the citizen. This burden should be transferred on the offices. The price of implementation is really big in this beginning. The price is not only in the financial sense but also in the sense of time. This price is noticeable by citizens' worries but it should be returned in financial profits from costs savings to the state administration, and also by time savings needed to the many operations done by the offices. These steps will bring motivation to the citizens and to the companies, and global competitiveness.

# 6.1 Three main eGovernment pillars

Concept of well established eGovernment is set by three basic pillars. First one is centralization of the main database. Citizens should be asked to give their personal information just once. There are set up many offices (financial office, local administration office, unemployment office, etc.) that are working with its own information. Basic register was already been introduced and this register should be main for all offices. Citizens and companies are many times asked to give the same information time and time again. These operations are taking citizen's time, but also cost for administration service each state organ (www.mvcr.cz).

This pillar is highly connected with the second one. The Czech POINTs, places of centralization. In a case that citizens need to communicate with more than one state organ it is possible to come only to one place. It is well-known issue that offices are often set distantly one from each other and open hours differs too. So in this case is Czech POINT the big step forward the working administration (www.czechpoint.cz).

Third pillar is dealing with correct proactive access of eGovernment to the bureaucratic system. The basic register should be accessible for all state organs and citizens can be by this system avoided because every organ can gain information without citizen's interaction. Of course, citizen should be somehow informed about information gaining and should be asked for take the initiative. Till today each organs are often asking citizens itself for information and by this pillar time and money could be saved (www.mvcr.cz).

These pillars are not 100% established in the Czech Republic so citizen in the end phase is forced to visit particular office but as soon as Basic register will be established, the quality of eGovernment will raise up. The same issue is with competencies of the Czech POINT offices. It is true that we can gain e.g. copy of criminal record, but still isn't this office so centralized that citizens can visit only this administrative place.

The whole idea of Czech POINT and Data container system was started in the Czech Republic by minister of interior of that time Ivan Langer who without any try to make himself more popular on the field of politics set up laws about making government computerized. Without his activities could these steps never happened or at least happened a few years later. During his tenure (2006 – 2009) was established the whole base for eGovernment. Organizer of his thoughts was Zdeněk Zajíček, deputy in the Public Administration, Informatics, legislatives, and archiving. Because of his large authorities, he was able to realize many projects, including Data containers on 1st November 2009 and after problems in the beginning it seems that he realized these projects successfully. Zdeněk Zajíček is no longer a deputy in the Public Administration, and question about eGovernment future should be asked. The whole development is dependent on two factors. Budget that will be released for the eGovernment realization and political will to this implementation. These factors cannot work one without each other. If these factors will be positive first steps in the future should be realizing three pillars explained above. Nowadays, there are enough Czech POINT contact places but its competences are still open to broadening. In next chapter I will write about issues about Data Container both juridical and technical. Data containers are often called: "revolution in the State Administration", but is it really true? (www.mvcr.cz)

## 7 POSSIBLE ISSUES

The whole start of data containers is dated to the 1st July 2009 but live version was started on 1st November 2009. Within these two months wasn't use of data containers compulsory for those who had set up data containers by the law. On 1st November 2009 were these data containers activated automatically, so we can mark the second date as the beginning of data container start. It is about half a year from the start but during this period many problems occurred. Many technical and juridical issues were found but the most of them were already been solved.

The very first problem was inside the state offices. The state should decide who is organ of the public administration, and who should have data containers set up by the law. Evidence clearing started. Before the first datum, the state informed, that there will be more than 600.000 data containers set up by the law but after the second datum less than 360.000 data containers were actually had been started. In other words, the state decided to cross some commercial subjects from this duty www.bezpapiru.cz).

Another issue caused by the state was distribution of login name and password. This distribution was done by the Česká pošta, a.s. by the system of PIN parcels. The biggest mistake was made because these parcels were delivered to the company addresses but no to the addresses of the statutory organ's deputies. Many deputies were in this time abroad, they weren't willing to come back only because of these parcels. And because these parcels were situated strictly to someone own hands it was quite problem to pick them up.

In the end, companies and users started to log inning in the system but they found certificate used by the data containers invalid. Theirs web browsers warned them that this certificate can be dangerous and it is not recommended to pass it allow it. In fact the problem wasn't caused by some danger but fact that these certificates were not distributed to the public in good time. The Czech post office made another mistake. They recommended ignore these danger messages and simply recommended to click through. Of course, this way of problem solution was noticed by the mass medias and start of the criticizing the whole system begun. Criticizing continued by the wrong access point publication was made. The Czech post office said that www.datoveschranky.info is the ONLY one access point where you can log in into your data container. And they hardly recommended avoid any other access points. But in the fact they became the victim of their own rules. This page was not access to the data container. The correct access portal is from web page www.mojedatovaschanka.cz and hundreds of articles criticized Czech post office

continued. From these mistakes people though, that the whole eGovernment is not well established and started to have doubts. It was really big issue, because when other countries started projects like this, the first step was to buy domains with the similar names. Telefónica CZ (provider of the data containers) did not buy any similar domains before starts so many users were threaten by pirate sites. Nowadays, Telefónica CZ bought more than 120 similar domains so this problem was solved (www.bezpapiru.cz).

Users within the public Administration organs are usually using applications (File services) to data container managing. These applications had to be checked and upgraded to the full working system before the live data container's working. But of course, a few problems occurred after the live start. Incompatibility issues were solved by the administrators by technical problems stayed. Searching for recipients is too long, unspecific, and slow. Members of the parliament decided, a few days before the live start, that data container identifier is non public entry. So, users are not able to create their own contact list and in a case of sending another message to the same person, they are forced to search for the user time and time again. It is unbelievable, that in case of sending message to more than one recipient it is really slow process. Many organs were standing on the crossroad. One way that is slow but set up by the law. Sending messages will be done through the data container but with the risk of many delays and subsequent contradictions with the law. Or use of the second way by classical correspondence in some cases without use of data container but also with subsequent contradictions with the law. This way of classical correspondence caused confusion on the citizen's side. Even those who set up their data containers voluntarily had to pick up some obligations by the classical post office style. Use of fiction delivery date partly covered this issue. In a case that citizen will obtain postal item (in a case that he has activated data container) and will not pick it up within ten days, it is believed that this postal item is not delivered. But message to the data container must be send again (www.datoveschranky.info).

These technical issues are solved one by one in the time but also juridical problems can be found. For example the law is forcing subjects to accept electronic documents instead of current paper documents. But long-term validity of electronic documents is not treated. Electronic signatures are purposely restricted to the one year (at most). So question about electronic documents validity is not solved. Data containers are working for half a year but after six other moths? Will be these documents worthless? The only way in the

law how to save these documents is by the authorized document conversion but idea of hundreds converted documents is terrifying.

Lawyers and counsellors are arguing about proper use of their data containers in personal relationships. In a case that some unspecific organ of the public administration (or another private subject) will make some order for his personal needs, which data container should be use? These subjects can own two or more data containers. His let's say working data container is paid by the state but his personal data container is paid by himself so which one should use? There is no single word about this topic in the law so it could be really exploitable and some novelization should be done.

## 8 SOFTWARE

Information System of Data Containers itself is very simple and for many users limited. In fact the only functions from this default web application are sending and receiving of data messages. But many legal entities could have problem, because this application is saved on the provider's server (messages are not saved in customer's computer). For using default web application is necessary to install special add-on (602 XML Filler) to your web browser. In the final version, this application provide only basic functions and e.g. working with more than one folder or messages sorting, is not possible. These functions could be avoided but the biggest problem is with messages storing. In the basic application is possible to save your messages only for 90 days, after this period, are your messages deleted and you have no more access to them. These deleted messages are still saved on the server but you need to ask for its restoring. Another problem is with users of different operating system than Microsoft's ones. Different look of user's interface can be for somebody really confusing (www.lupa.cz).

The basic 602XML filler necessary for default data container application is in fact tool for easy and comfort form filling. This tool is for free and is necessary not only for data containers but also for many other applications that require electronic form filling, for creating orders, etc. This tool also provides automatic check of entered information, so customer can be sure about authenticity. These filled forms can be saved on your hard drive so you can work with them in offline mode.

With this necessary tool could be problems in the future. Because on 27th May 2010 ends validity of the system certificate that is used by information system of data containers for subscribing the data messages. From this day data containers will use new certificate that by the law will use new system of hashing (function SHA-2). The problem is, that this new system is not compatible with older Microsoft operating system than Windows XP SP2. Users will be forced to upgrade their current operating system.

But business could be found everywhere. Many companies created its own applications that provide you large spectrum of functions and give you much more comfort. These companies created system of applications that fit for whole field of customers. From natural persons, who requires archiving of messages, to the big companies that requires connected communication within their system and integration bigger infrastructure of message's system. Many alternatives were created but I would like to focus just to the most used ones and the best ones in the field of functions providing.

# 8.1 Vault of messages

Vault of messages was the first one. In fact, it is not separated application but some kind of extension for your data container. Provider of this service is Česká pošta, a.s., and it is the simplest commercial service on the market field. This service is giving you, for particular price storage of your messages after 90 days period. So you don't have to be scared about your messages archiving. Prices differ by the space of your storage. For 100 data messages is it 1200CZK, for 500 data messages is it 5400CZK, and for 5000 data messages is it 48000CZK. These prices are by my opinion really high and this service should be provided for free but the state, obviously, need money from customers. But thanks to the alternatives customers are able to choose different and cheaper software that provides storage room and another functions (www.lupa.cz).

# 8.2 Microsoft outlook add-on

Microsoft is providing its add-on for free. Your data container will be simply implemented into your e-mail client. This integration is really positive and can save your time because many users are sending some data through e-mail. Microsoft is guaranteeing stability through actualizations, so customers don't need to be worry about changes of data containers structure. Another improvement is that your data messages are saved to your hard-drive so you can easily archive them to some media disks. Of course, possible use this add-on is only after buying Microsoft Outlook product, and that could be expensive, it depends on the large of customers' companies (www.lupa.cz).

## 8.3 Evolio

This software is focused on Windows operating systems and is suitable for middle and bigger companies with large scale of corresponding operations. There are three types of versions. Standard version for 4.900CZK, Premium version for 9.900CZK, and Corporate version for 25.000CZK. This software provides on the market field biggest scale of functions and is recommended by many companies. Beside the basic functions you have general overview of your sent messages; you can compare your use of software by statistics and many other functions. More expensive versions provide additional data containers for your employees so sorting of messages is available too (www.lupa.cz).

## 8.4 Multi-data container

This application differs from the others, because is not trying to integrate to the existing e-mail client but is using its own interface. Big advantage of this application is core programmed in the Adobe AIR interface, so it is possible to use it in more operating system, e.g. Mac OS or Linux. Very simple and comfort application providing basic functions. Additional function in comparison with default data container applications are e.g. sorting of data messages, filters creating or work with more than one data container. In the time of writing this thesis was this application only in beta version. Creator promised free using for one data container. In a case of multi account work, it should be paid (www.lupa.cz).

## 8.5 Isds2mail

Special Java applications are converting data messages from data container directly to your e-mail client. This way of governing your data container is really simple but functions that are providing are really trivial. This application is suited for natural person who are dealing only with basic functions such as sending and receiving messages (www.lupa.cz).

The only possible problem during these applications using is password changing. Data container requires change of password every 90 days. But you have to change it in default application, additional software is not compatible with this change. Another arguable issue is about safety of your information. In fact, in a case of using additional software, customer is giving his identity to the third company. In fact these applications are trustful but there could be computer pirates who will create their own application and could it provide to the public and require from them personal information. Only protection from this way of corruption is everybody's own carefulness.

Another arguable is about vault of messages. This service is really expensive and because electronic signatures are valid for one year at most is it really necessary to archiving these messages? In a case that these signatures including time stamps it is usable for much longer period but from 1st July 2010 will be used new certificate and all these signatures will be useless. The purpose of this vault was to accumulate a lot of money from trustful citizens.

## 9 POSSIBLE FUNCTIONS OF DATA CONTAINER USERS

Aim of this thesis is to explain possibilities of natural persons and legal entities. Both of these subjects are able to communicate with the Public Administration. Communication between these two subjects is only in purpose of making out invoices. Other types of documents will be able to send from 1st July 2010. So, I had no opportunity to try whole spectrum of communication. Communication between those subjects is called commercial. These commercial messages differ from public-law messages by the delivering system. Message is believed to be delivered after recipient's confirmation. Recipient can confirm delivery but he can also decline delivery. This difference is because recipients awareness. By these commercial messages can be send many fake messages and recipient should have right to verify message and its attachment.

Sending of invoices is able from 1st January 2010. And in the whole first month was sent 17 messages. Probably these messages were just from users who wanted to try this way of sending. This system of making out invoices in only voluntary, and people are still used to pay these obligations by the ordinary ways. The second reason is price. I tested this way and for one data message was calculated 78,05CZK. It is really extremely high price. Why was the price so high? Because this invoices sending system is paid by 50CZK per month. One message costs 15,04CZK plus 20% in value added tax. Of course in a case of sending more than one messages, the price will be calculated smaller but still companies are used to send their invoices through e-mails, and this way is for free. If a customer will send from 10 to 50 messages per month, basic tax will fall to the 35CZK. In a case that customer will send more than 50 messages per month, basic tax will fall to the 20CZK. But price for single message will stay the same in all cases (www.czebox.cz).

Receiving of commercial messages is for free, paid is only its sending. To send commercial message to the natural person or legal person, you need to know identifier of his/her data container. When you type this identifier into the sending form you will receive information about user and his activation. You and recipient must have activated your commercial messages. It is able to activate within the data container system. After this verification you are able to send him commercial message. Other types of messages are still not activated but by this type of message you can send different types of attachment. So I tried this way of sending attachment and I was successful. Because provider of data container cannot control your attachment it is able to send various attachments through this

invoices system. Of course these attachments are not valid by the law but it is possible to send them.

Which attachments are able to send? By the law No. 194/2009 Coll. Are able to send these types of files:

- PDF (Portable Document Format)
- PDF/A (Portable Document Format for the Long-term Archiving)
- XML (Extensible Markup Language Document)
- FO/ZFO (document of Software 602 XML Filler)
- HTML/HTM (Hypertext Markup Language Document)
- ODT (Open Document Text)
- ODS (Open Document Spreadsheet)
- ODP (Open Document Presentation)
- TXT (pure text)
- RTF (Rich Text Format)
- DOC (MS Word Document)
- XLS (MS Excel Spreadsheet)
- PPT (MS PowerPoint Presentation)
- JPG/JPEG/JFIF (Joint Photographic Experts Group File Interchange Format)
- PNG (Portable Network Graphics)
- TIFF (Tagged Image File Format)
- GIF (Graphic Interchange Format)
- MPEG1/MPEG2 (Moving Picture Experts Group Phase1/Phase2)
- WAV (Waveform Audio Format)
- MP2/MP3 /MPEG-1 Audio Layer 2/Layer 3)
- ISDOC/ ISDOCX (Information System Document)

More file types will be able to send from 1st July 2010. For example file types of new Microsoft Office 2007 (docx, xlsx, pptx). Other types are not allowed, and even some types are forbidden(exe, zip, etc.).

# 9.1 Testing interface

Even that default engine is not the best on the field of application it is good to introduce the basic purpose of it. For now, are functions really limited but I would like to introduce the basic ones. The whole system will be introduced by the testing interface that is almost the same as the live system with exception of final message sending. I was able to write the concept of message, input attachments but in the final phase was not allowed to send the message.

## 9.2 Possible use of data container

I would like to show how data messages are sent. The process of creating data container was described above. After registering at some Czech POINT office you will gain three basic items: ID of your data container, your login name and password. ID of your data container will not be used by you, but by subjects who wants to send you data message. Your login name and password are crucial for login into your data container. If you are login into e.g. your e-mail address, it is obvious that your name will show up in your browser after a few letters are signed. It is not case of data containers. You have to remember your whole name and password. Beside your name and password entering you have to enter security code that provides safety against phishing (automatically repeated login) as you can see on the picture [1].

After your first login you are asked to change your password. Your password has to be from 8 letters to 32 letters and must contain one capital, one lower letter, and one numeral at least. At was written above your password has to be changed every 90 days and must be different every time of your change. By research, people are just adding the same numeral or letter in the end of this password. It is strictly forbidden to use the same password as your login name. You can use special signs, e.g. asterisk. There is graphical keyboard <sup>[2]</sup> if you wish. In a case of login on some unsecured computer, there could be installed spysoftware that is saving every key you pressed. So by using this graphical keyboard no-one can get your password.

Next picture <sup>[3]</sup> is the screen of your first look inside your data container. After every login you will receive basic message about how many messages were delivered. After you click from this message you will be in the main menu of the data container <sup>[4]</sup>. In the main windows you can see datum of your last login, your password validation (90 days at most) and notification about deleting your messages after 90 days. Datum of your last login is

important because if you think that your last login time was different it is highly recommended to change your password. As you can see the whole design is really simple and in fact only 4 main buttons are here to manipulate with: Received messages, Sent messages, New Message, and Settings. In the upper part you see your login name and your possibilities that you can do within the data container. The bottom part show us who is administrator and provider of data containers. In a case that owner of data container is using Vault of messages, or Commercial messages, there will be buttons for these applications.

The first button will transfer you to the received messages <sup>[5]</sup>. These messages basically differ in bold/non-bold type of name text. If the message name is written bold that means this message was not read yet. There are also types of messages described by the picture. There could be commercial messages, messages to someone's own hands, messages with the fiction delivery date, etc. There is also available information like when was message delivered, sender of the message, topic of message, etc. By clinking on the name of the message you will gain detail information. User should be aware of fact that 90 days after delivery date will be these messages deleted and be prepared for it. Detail of your received message will be showed by 602XML filler that must be integrated in a form of add-on inside your web browser <sup>[6]</sup>. This form application is used not only for reading your received messages but also for writing messages and saving your messages on your hard drive for later administration with it. Menu about sent messages is not so important. Rule about 90 days safeness is the same as for received messages.

Next button is for sending messages. First step to do is to find recipients <sup>[7]</sup>. You can find recipient by his data container ID, identification number, or by organisation name. One of these entries is compulsory. Other entries can help you specify your recipient. There could be more companies with the same name, so e.g. by the specific city you can narrow your list of recipients. In the left bottom window are showed looked up recipients. You can add them to the list by button add. After adding them you can make your searching again for another recipient. Nowadays is able to send these messages only to the Public Administration organs. After 1st July 2010 you will be able to communicate with natural persons and legal entities. After this date you can find next columns about which type of person you are looking as a recipient and you can find them by their name or by name of their companies. When you are done with your recipient list, you can click on prepare the message button.

Now you can work with form <sup>[8]</sup>. There is already written your and recipients' names and addresses. You can add general information. Only subject of the message is compulsory, other information are obligatory. There you can choose possibility of delivery into recipient's own hands and if you want to use fiction delivery date (only with messages from the Public Administration organs).

Allowed attachments were already been discussed. I'd tried to send bigger message than 10MB, but with zero result <sup>[9]</sup>. The whole column is really well arranged and you cannot overlook something <sup>[10]</sup>. There is showed the name of attachment and even the exact size in bytes.

The same sending options are for commercial messages that are still not fully functional and users can sent only invoices. The whole issue was discussed before but just to imagine how is it working you can check the picture [15].

The only issue I found was in options menu. I was passing through the settings and found that certificate (even it is confirmed) was declared as unreliable <sup>[11]</sup>. Details of this certificate <sup>[12]</sup> showed that it will expire on 27th May 2010 and from this time will be used certificate with different structure that is not supported for older versions of Microsoft Windows XP (exactly older than Service Pack 3). But this issue was discussed in theoretical part. The whole message can be saved on your hard drive for conversion or just for archiving.

In the settings are provides some changes. For example you can change your password sooner than after 90 days period. Allowed signs had been already showed. There are also possibilities of notification. First one is for free. You can be noticed that you received new data message by mail [13]. You just have to put your email address within the system. You can be noticed if you receive message to your owns hand or any other type of message or even if your sent message was not able to send. For example if your attachment contain virus. Another notification is paid and is in form of text message on your cell-phone [14]. Possibilities about messages are the same as with the email. You can also check certificates that are governing in this settings too. You can register user's certificate, system certificate or hosting record service certificate. These certificates are elemental for secure login. For communication with the natural persons and legal entities by your data messages [15] you have to allow this option and accept the terms in the settings. These messages are not for free and prices were also discussed before. In the bottom of the settings is a list of users. There is you as a main user but you can add more users who can work with your data

container. This adding is also done by the 602XML Filler form. These added users can have different rights than you, it is your choice if these users will be able just to read messages or will have the same rights as you have.

## **CONCLUSION**

Purpose of this thesis was to explain the whole complex system of data containers. It is said that 21st century is a time of modernization and computerization. People learn how to computerize almost everything. The Public Administration is not the exception. It is a long way to make it perfect but in the end I believe that whole eGovernment will be successful. The Czech Republic cannot be compared with some other western countries that are on a higher level in technology and financial wealth. But sooner or later we must adapt. We are part of the European Union and we are still closer and closer to that level. The only healer is patience, diligence and time.

It is true that all this eGovernment modernization is not perfect. I found many holes in juridical or technical spheres but I believe that by time many (or maybe all of them) will disappear of will be overworked. Data Containers are working for live more than six months. But by comparing these six months with years of technical preparation we can realize its insignificance.

I believe that by this thesis is much more understandable the whole complex of data containers and its purpose, and the reader can now explain what is going on and why.

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  <a href="http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%E1nky&kde=vsude>">http://www.podnikatel.cz/vyhledavani/?qs=datov%E9+schr%

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# **APPENDICES**

P I Captured screens of data container interface

# APPENDIX P I: CAPTURED SCREENS OF DATA CONTAINER INTERFACE

Screen ad [1]

datové



Správce: Ministerstvo vnitra České republiky; Provozovatel: Česká pošta s. p.

Ochrana osobních údajů | Prohlášení o přístupnosti

INFOLINKA: 270 005 200

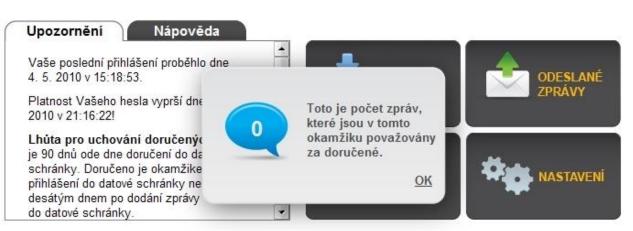
https://login.czebox.cz/nidp/idff/sso?id=FORM.CPT&sid=0&option=credential&sid=0



https://login.czebox.cz/nidp/idff/sso?id=FORM.CPT&sid=0&option=credential&sid=0

# Screen ad [3]





Správoe: Ministerstvo vnitra České republiky, Provozovatel: Česká pošta, s. p.

Ochrana osobních údajů | Prohlášení o přístupnosti

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# Screen ad [4]



| <u>Odhlásit</u> Máte právo: číst zprávy, psát zprávy, číst zprávy do vlastních rukou, zobrazit seznam zpráv, vyhledávat uživatele, měnit nastavení



Správoe: Ministerstvo vnitra České republiky, Provozovatel: Česká pošta, s. p.

Ochrana osobních údajů | Prohlášení o přístupnosti

https://login.czebox.cz/nidp/idff/sso?id=FORM.CPT&sid=0&option=credential&sid=0

## Screen ad [5]

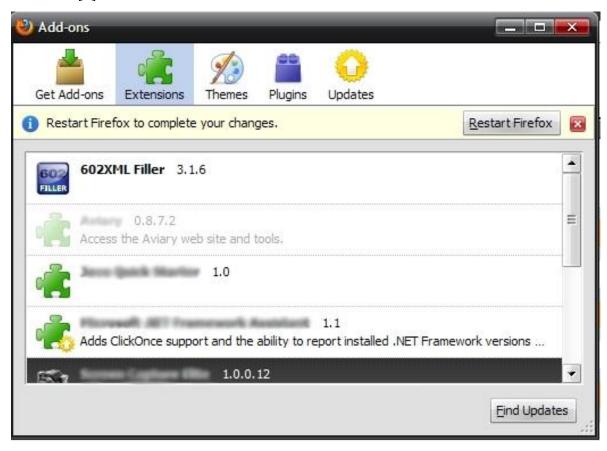


Stav	Doručeno	Odesílatel	Věc	Naše spisová zn. a č.j.	Vaše spisová zn. a č.j
\$		, s.r.o. , 13080 Praha 3, Česká republika	<u>Faktura</u>		
•	<u>5. 1. 2010</u> <u>22:16:04</u>	Česká pošta, s.p. Politických vězňů 909/4, 22599 Praha 1, Česká republika	Registrace služby: Poštovní datová zpráva		
	18. 12. 2009 12:06:29	<u>Krajský soud v Praze</u> nám.Kinských 5, 15075 Praha 5, Česká Republika	99Co 999/1990- test z KS Praha	SZ: 99Co 999/1990 ČJ: 99Co 999/1990-	

Správoe: Ministerstvo vnitra České republiky, Provozovatel: Česká pošta, s. p.

Ochrana osobních údajů | Prohlášení o přístupnosti

# Screen ad [6]



http://www.mozilla.cz/doplnky/rozsireni/

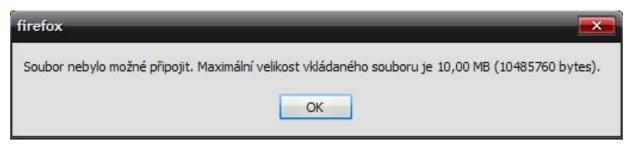
# Screen ad [7]

/ýběr adresáta						
/yberte typ schránky. Poté vypl tteré chcete odeslat datovou zp 'yp schránky Orgán veřejné moci dentifikační číslo (IČ)  Jlice		tlačítko Přidat. Tak ID schránky  Název organizac  ministerstvo obra  Číslo popisné	to můžete přid	*  *  tatvíce adresá  *  tatvíce adresá	nec klikněte na tľačítko ec	
leznáte-li IČ hledaného subjektu, klikná /yplňte pole označená hvězdičkou. Mo přesnění dotazu.	ite na jeden z odka	azů: Vyhledávání orgáni	ů veřejné moci   \	/yhledávání práv		
leznáte-li IČ hledaného subjektu, klikná /yplňte pole označená hvězdičkou. M	ete na jeden z odki odře označené pol 1, 16000 Praha,	szű: <u>Vyhledávání orgáni</u> e může být vyplněno sa	ů veřejné moci   \	/yhledávání práv	vyplněna současně. Neozna	ačená pole slouží pouze k I Štolou 3, 17034 Praha, 17000 Praha 7, CZ

# Nová datová zpráva

Odesílatel						
Název:	, Neznámá 1/1, 11000 Neznámé					
Příjemce	Počet příjemců: 3					
Název:	Ministerstvo vnitra, Nad Štolou 3, 17034 Praha, CZ	•				
Obecné info	ormace					
Věc:	TEST					
Zmocnění:	/ § odstavec písmeno					
Naše č. j.:	Pokud nevíte, nevyplňujte.					
Naše sp. zn.:	Pokud nevíte, nevyplňujte.					
Vaše č. j.:	Pokud nevíte, nevyplňujte.					
Vaše sp. zn.:	Pokud nevíte, nevyplňujte.					
K rukám:	Pokud nevíte, nevyplňujte.					
Do vl. rukou:	□ Zakázat doručení fikcí: □					
Přílohy						
Pro práci s př	ílohami použijte tlačítko Možnosti / bajtů	Možnosti 🕇 -				
	ODESLAT DATOVOU ZPRÁVU					
	ODESLAT DATOVOU ZPRAVU					
	Uložit koncept datové zprávy na disk					
	Zavřít datovou zprávu					

# Screen ad [9]



# Screen ad [10]

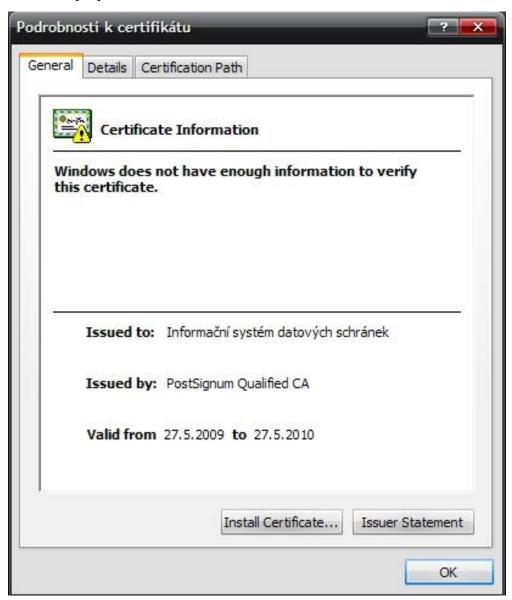
Přílohy			
01 prihlasovani.jpg /153 399 bajtů	Možnosti	+	-
businessresult_advanced_wordlist.pdf /153 306 bajtů	Možnosti	+	_
Vojtášek Bakalářská práce.doc /117 762 bajtů	Možnosti	+	-
Dude descending a staircase.mp3 /7 352 448 bajtů	Možnosti	+	-
BACKUP EMAIL.txt /24 bajtů	Možnosti	+	-
Koza filmy (DVD).xls /137 730 bajtů	Možnosti	+	-
ag10b[1].htm /3 585 bajtů	Možnosti	+	-
02_NAAM_lecture_2_S.ppt /2 780 160 bajtů	Možnosti	+	-
NDZ_koncept.zfo /13 887 bajtů	Možnosti	+	-

# Screen ad [11]



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# Screen ad [12]



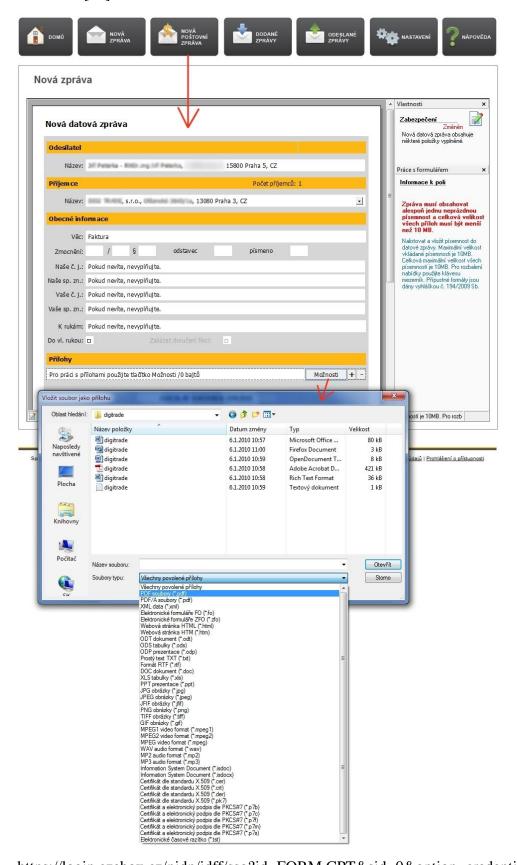
# Screen ad [13]

Upozornění na nové zprávy e-mailem
Adresa elektronické pošty:
<ul> <li>posílat e-mail při přijetí nové zprávy, která není do vlastních rukou</li> <li>posílat e-mail při přijetí nové zprávy do vlastních rukou</li> <li>posílat e-mail, nebylo-li možné zprávu odeslat (např. virus v zásilce)</li> </ul>
Po uložení změn Vám bude během několika minut zaslán potvrzující e-mail.
E-maily s upozorněním na nové zprávy jsou posílány z adresy notifikace@mojedatovaschranka.cz. Jejich zasílání je bezplatné.
ULOŽIT ZMĚNY

# Screen ad [14]

Upozornění na nové zprávy pomocí SMS
Číslo pro zasílání SMS:
Telefonní číslo zapisujte ve tvaru +420603123456.
Upozornění na nové datové zprávy, které nejsou do vlastních rukou:
OPosílat jednou denně jako sumární výpis
OPosílat ihned pro každou zprávu
Upozornění na nové datové zprávy do vlastních rukou:  Neposílat
OPosílat jednou denně jako sumární výpis OPosílat ihned pro každou zprávu
☐ Posílat SMS, nebylo-li možné zprávu odeslat (např. virus v zásilce)
Toto je zpoplatněná služba. Poplatek za došlé SMS vám bude účtovat váš mobilní operátor. Cena jedné přijaté zprávy je 3 Kč.
Pro využití této služby je nutné mít na daném mobilním čísle povolenou službu Premium SMS.
Poskytovatelem služby je Česká pošta s.p., technickým provozovatelem je DATASYS s.r.o. Více informací na www.datoveschranky.info nebo na infolince 270 005 200.
Pro zrušení služby zašlete SMS ve tvaru STOP SCHRANKY na číslo 90201.
Pro více informací zašlete SMS ve tvaru HELP na číslo 90201.
ULOŽIT ZMĚNY

# Screen ad [15]



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