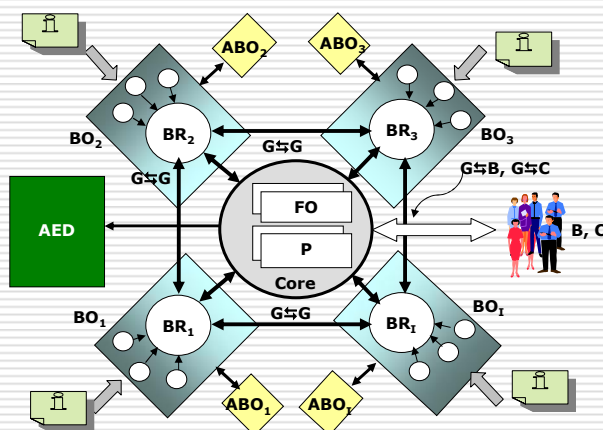




INFOLOGICAL MODEL OF E-GOVERNMENT

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E-government structure



- BR**-base information resources
- BO**-back offices
- FO**-front offices
- ABO**- initial documents digital archives
- AED**-archives of electronic document in exchange
- P**-portals
- B,C**- legal persons and citizens

E-government model

E-GOV:=

F_1	$J_{1,1}$	$J_{1,2}$	$J_{1,3}$	$J_{1,4}$	$J_{1,5}$...	$J_{1,K}$
F_2	$J_{2,1}$	$J_{2,2}$	$J_{2,3}$	$J_{2,4}$	$J_{2,5}$...	$J_{2,K}$
F_3	$J_{3,1}$	$J_{3,2}$	$J_{3,3}$	$J_{3,4}$	$J_{3,5}$...	$J_{3,K}$
...							
F_N	$J_{N,1}$	$J_{N,2}$	$J_{N,3}$	$J_{N,4}$	$J_{N,5}$...	$J_{N,K}$

Elements of the matrix are functions F_i and indices J_{ik} .

Functions $\{F_i\}$

Functions $\{F_i\}$ are administrative procedures nominated by the State. They should be recognized and specified by legislation.

Administrative procedure F_i is identified by two basic attributes: title and legislation due to it appears.

In Belarus $\{F_i\}$ are specifying by President Decrees and Governmental Acts.

Structural properties of each function F_i in the matrix are described by indices J_{ik} .

The author in his work most frequently uses 16 indices as follows.

J1:
Class of administrative procedure

- G2G (Government to Government),*
- G2B (Government to Business),*
- G2C (Government to Citizens).*

Administrative process *G2G* usually is based on agreements between state organizations.

Process *G2B* usually is based on contracts.

Process *G2C* usually is based on laws.

J2: Speed of administrative processes

- The indices accepts two values:
on-line or off-line.

Some people counts that off-line regime is not a E-gov.

J3: Information resources of the E-government

- Not every I-resource can be declared as a E-government resource **BR**. First, it is obliged to have the certain level of integrity. Second, there should be a normative-legal basis for I-resource conducting. Thirdly, the resource should be claimed by administrative procedures. Fourthly, I-systems for **BR** should possess certain reliability and survivability.
- The composition of basic information resources in different countries is approximately identical:
 - «Physical persons Register (register of citizens)»
 - «Legal persons Register (trading register)»,
 - «Cadastre and Land Register» or combined Register,
 - «Address Register»
 - «Administrative-territorial units Registry».

Basic registers are defined by governments as authentic registers with high quality of data. For such registers clear guarantees of their quality have to be given, including guarantees of integrity.

J4:

Integrity of E-government I-resources

- The information distributed by the state should be authentic. Consequences unreliable information distribution is obvious. Government adopts erroneous decisions. As a result, consequences have not only economic, but also political, social, law-enforcement character. Banks distribute unreasonable credits. Citizens accomplish illegal transactions. Tax administration suffers from failures. In Belarus safety of cadastre and land registry system depends of its data integrity. According registration law registration organization is obliged to compensate full losses if issued data contain inadequate information.
- Integrity is a parameter which characterizes databases quality. A level of integrity is reflecting reliability, completeness and consistency of data base. In Belarus the level of integrity of a cadastre and the land register is normalized by number from 0 up to 1. This level is supervised by special rules monthly. To reach high integrity the personal parameter of integrity is given even to Registrars (there are approximately 800 Registrars in Belarus). Integrity may take on a value of 5 levels: excellent (≥ 0.95) - a low class of risk, high (a usual class of risk), average (a satisfactory class of risk), bad (a high class of risk), catastrophic (an unacceptable - high class of risk).
- Integrity of the E-government is determined by integrity of the most unreliable **BR**. State should have a system to monitor the **BR** integrity. **BR** integrity level is the object for standardization. This index should be considered as an element of the E-government security.

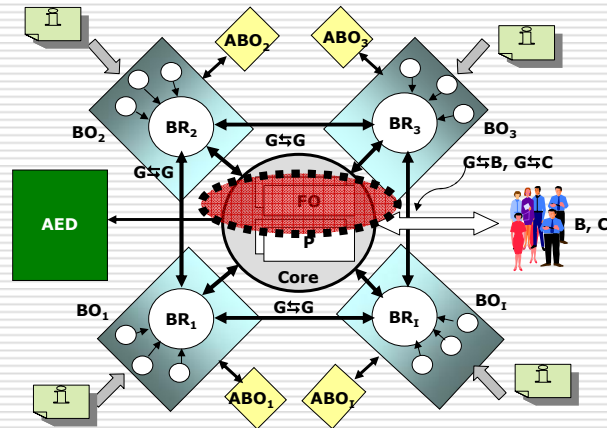
J5:

Legal status of E-government information

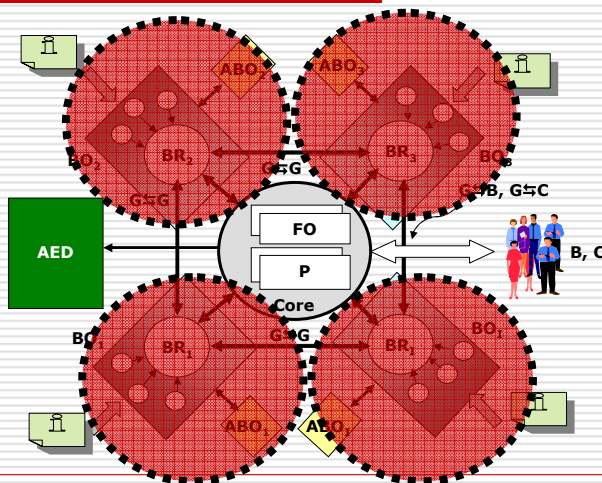
It is rationally to distinguish between two legal statuses of the information: the electronic document and a simple information report.

- The electronic document (ED) has an evidential effect because his authenticity is provided with special attribute. This attribute is a digital signature.
 - A simple information report is a digital object, received from a database without the digital signature.
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J6:
Name of a *front-office* FO or a portal.



J7:
Names of *back-offices* BO participating in services to front-office



J8:
Architecture of information system

The administrative procedure Fi is realized by the certain IT-architecture. E-government architecture can accept various forms and their combinations. Each administrative procedure has specific architecture.

- SOA with its standards (XML, SOAP, WSDL, ...).
 - Client - server architecture
 - Distributed databases architecture
 - Corporate networks
 - Internet – applications
 - and etc.
-

J9:
E-government communications

E-government channels strategy greatly defines not only the quality of delivering services, but also their cost.

- This index can accept following values or their combinations: switched channel, allocated channels, Internet channel, [VPN-channel](#), email etc.
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J10:
Front-office software

This index can accept values:

- DB control system
 - Special applied software
 - Browser
 - etc.
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J11:
Access to data

Safety data distribution is adjusted by strategy of rules and technologies of access to the information.

- The index specifies, whether access to the information is anonymous or authorized, onerous or gratuitous, motivated or unmotivated.
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J12:
Services intervals

- ❑ E-government has the opportunity to work «without the rest»: 24 hours per day, 365 days in one year.
 - ❑ The given index can also accept other values.
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J13:
Payment for E-government services

- ❑ It is possible to allocate some versions of such indices: payment on the contractual basis, payment by cash or by cards through banks, real time electronic payments. There are different payment cases between *front-* and *back-* offices.
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J14:
E-government digital archives

- This index consists of such entities as data producers, data consumers, archive management, content information, Preservation Description Information, metadata. There are different standard for Open Archival Information System. Some of them are as follows: standards for interfaces between OAIS type archives; standards for the submission of digital data sources to the archive; for the delivery of digital sources from the archive; for the submission of digital metadata; about digital or physical data sources to the archive; standards to search and retrieve metadata information about digital and physical data sources; standards for the migration of information across media and formats and so on.
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J15:
Public data re-using rules

- Huge data streams are moving in E-government environment. Some of the data are confidential, for example, personal data. This and other factors make importance to have rules of re-using **BR** data. These rules should be clear from the legislation. These rules may be established by agreements in **G↔G, G↔B, G↔C** cases.
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J16: E-government survivability

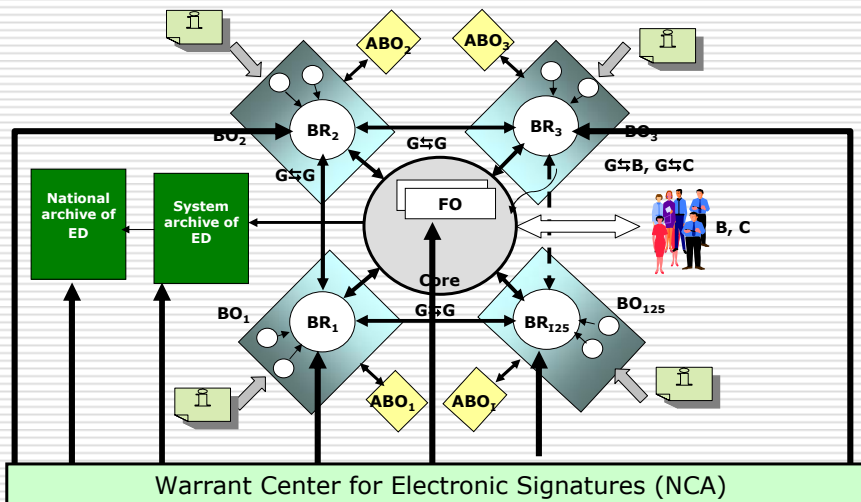
- Survivability is a preservation of capacity for work in the time of equipment failure. Loss of capacity is equivalent to the damage of the state infrastructure. Citizens, legal persons in processes *G2C*, *G2B* do not receive corresponding state services. State in processes *G2G* stops execution of its functions. One of parameters of survivability is the probability of information system refusal or its part.
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E-land administration in Belarus E-government

Fi in the Belarus E-government matrix (1):

- Crediting
 - Excavations administration
 - [E-conveyance \(example below\)](#)
 - Real Estate formation
 - Lease payment establishment for State land parcels
 - Land privatization
 - Tax administration
 - Real property transactions via realtors
 - State property auctions selling
 - and other
-

E-conveyance. Structure



E-conveyance. Indices

J1: G2C
J2: Off-line/on-line
J3: ED (digital documents)
J4: State Cadastre and Land Register
J5: 0.95
J6: Notary
J7: 125 local offices and Central Bank
J8: Internet-application
J9: Internet
J10: Browser

J11: authorized, gratuitous, motivated access
J12: 24 hour per day, 365 days in a year
J13: Digital archive of the system integrated with National digital archive
J14: P=0,06

