ReSPA

Regional School
of Public Administration

ReSPA regional comparative eGovernment study

Annex II - Specific thematic inputs

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1 *This designation is without prejudice to positions on status, and it is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence

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Annex II - Specific thematic inputs to ReSPA eGovernment study

1 Introduction

This annex presents the results of specific country inputs to the analysis presented in the 'ReSPA regional comparative eGovernment study' main report. The inputs in this annex are grouped by the very specific themes we set out to investigate especially for the ReSPA regional comparative eGovernment study. Within each theme individual country inputs, as provided by national respondents from each country are presented.

The themes are:

- eGovernment benchmarking measures
- eGovernment policy and strategy
- eGovernment interoperability
- eGovernment user interface
- User empowerment and centricity

2 Country specific eGovernment benchmarking measurements

This theme covers specific eGovernment benchmarking measurements, including at the sub-national level.

Albania

There are some institutions that monitor the use of electronic services, but they are mainly financial service institutions that identify businesses and citizens, time of use, the number of access to their services, the number of transactions performed.

Bosnia and Herzegovina

The various levels of government in BiH haven't adopted any eGovernment benchmarking methodology yet, and no periodic measurements are being conducted. As part of the on-going project of devising the Interoperability Framework of Bosnia and Herzegovina (IFBiH) and other supportive measure, it is stated that the BiH governments (state and entity levels) will conduct eGovernment benchmarking through indicators harmonized and comparable with the EU in accordance with 'Benchmarking Digital Europe 2011-2015' conceptual framework. It is expected that IFBiH will be adopted in the first quarter of 2013 by the state and entity level governments, which sets 2013 as a possible year in which benchmarking bodies will be designated, a benchmarking method developed and actual measurement performed.

Croatia

The Croatian Bureau of Statistics (www.dzs.hr) and the Croatian Post and Electronic Communications Agency (http://www.hakom.hr/default.aspx?id=60) offers specific eGovernment benchmarking measures.

Kosovo*

There are no specific eGovernment benchmarking measures for Kosovo*.

Macedonia

There are no specific eGovernment benchmarking measures for Macedonia.

Montenegro

The Ministry for Information Society and Telecommunications performs an annual analysis of eGovernment development using the methodology developed by European Commission and CapGemmini.

Serbia

The last benchmarking related to e-Government was prepared by the NITIA in 2009[2].

At the sub-national level the Vojvodina ICT Cluster (VOICT) in cooperation with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) perform benchmarking on yearly basis[3]. This is a key Serbian reference and the only Serbian publication that comprises all relevant data.

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2 www.digitalnaagenda.gov.rs/wp-content/uploads/2011/07/Stanje-razvoja-eUprave-u-RS-2009.pdf

*This designation is without prejudice to positions on status, and it is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

3 www.daad.rs/imperia/md/content/informationszentren/belgrad/ict_in_serbia_at_a_glance_2011.pdf
www.vojvodinaictcluster.org/Images/ICT_in_Serbia_At_a_Glance_2012.pdf

3 eGovernment policy and strategy

In the eGovernment policy and strategy theme, we are looking at the impact of eGovernment policies and strategies, including what institutional benefits and barriers are perceived in the individual countries. On this basis we are then asking for what capacity building measures, in both a narrow and a broad sense, and institutional and organisational changes the national respondents think are needed in the further development of eServices in their respective countries.

3.1 Albania

Impact of eGovernment policies and strategies

There is awareness in Albania, that in order to utilise government eServices computers and internet connections within the home of citizens are needed. Most young people already have a smart phone with internet, a single portal for all services, which is under construction, will facilitate citizens' contact with the government.

Using feedback through government websites has facilitated dialogue between government and citizens as they can report problems in a particular government office, and the time spent getting a service. Student enrolment in the faculties, using only one email is considered an innovation by the citizens. Tracking the entire judicial process on the Internet is also considered an innovation by citizens, and the same is true for the registration of property application.
The introduction of online services is increasing the number of users for these services; citizens do not have to spend time at the physical service window, but can get services at their own convenience.

Institutional benefits

eGovernance offers many benefits and advantages for the government and society. eGovernment facilitates better service delivery of to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more efficient government management.

It simplifies internal operations and improves performance of government departments while helping all sections of society get government services at lower cost with maximum ease of use. Use of eGovernment has meant cost reductions for institutions. The centrality of the Internet, of email, reconstruction of the procedures for the forms online, the use of services in a single office, one-stop-shop, just using the electronic ID, is reducing costs for citizens, business and for institutions.

The online tax declaration has reduced costs and time for business paying and declaring taxes. Registration of business is done now electronically, and getting a license is now done in one office. Some of the most popular services used by that citizens and businesses are:

- E-Procurement. All public procurements are run electronically.
- E-Customs.
- E-Cabinet Meetings.
- E-Licensing. One-stop-shop for Permits and Licenses.
- E-Treasure
- National registration centre
- E-tax

These services has meant in time services for businesses and citizens and improved service quality. There are still many things to improve, and the government is planning the single portal for all G2C, G2B, and G2G services. Centralising services have reduced the costs of services.

Benefits of using electronic services, can be summarised in :

- Increased efficiency, fast response;
- Improved quality of service and comfort;
- Closer cooperation between institutions;
- Reducing administrative barriers;
- Elimination of bureaucracy;
- Increased competition;
- Higher responsibility;
- Greater transparency;
- Avoidance of corruption;
- Reducing costs;

Institutional barriers

Identified institutional barriers are associated with problems of:

- Leadership
- Financial restrictions
- Poor coordination
- Workplace and organisational inflexibility
- Lack of trust
- Poor technical design
- The Administrative Law
- Authentication and identification
- Relationships between public administrations, citizens and other ICT actors

eGovernment Leadership in Albania is ensured by the minister with specific responsibility for implementing ICT. The prime minister gives his support too and is driven by a digital agenda. Hardware and software costs do put financial restrictions on Albanian institutions.

There is a lack of cooperation and coordination between institutions results in data duplication, when primary data from other institutions is not used. The NAIS is now collecting data to create a registry of the databases. There are organisational problems, as electronic workflows are implemented, substituting manual paper-based processes. Another barrier is lack of trust in services, not trusting that financial data will not be disclosed and that personal data will not be revealed, identity and authentication of users. This implies a lower uptake of eServices. There is also a technical barrier from lack of interoperability between services, which is also due to licensing problems.

The main barrier however is the administrative laws. Changing work processes will require legal changes. For example, to establish electronic documents many legal changes are required, starting with the law on archives. Identification and authenticity are barriers encountered in creating electronic services. The use of certificates is becoming very necessary for the electronic services, and NAIS has built a PKI infrastructure and will use the government eServices as the main Root for the Digital Certificates.

Finally there are problems with service response times, resulting in non-use of electronic services. A non-return email to a particular problem results in citizens' in lack of confidence in that particular service.

Capacity building measures needed for developing eServices

Institutional and organisational changes, including change management

Institutions need to change their organisational structures within the IT area. Different ministries with the same number of users have different a number of IT specialists with totally different roles and responsibilities. MITIK and NAIS are working to define new structural standards, drafting a proposal for the Council of Ministers to define roles standards and salaries level for IT departments. The role of MITIK and NAIS needs to be harmonised and regulated by law, instead of the present decision by Council of Ministers. Responsibilities needs to be addressed clearly and specifically and followed up with the appropriate human resources and budget, to ensure the implementation of the national strategy action plan.

For staff

Generally institutions do not invest in IT training skills. Employment in the government IT structure is ensured by having a university degree. The career cycle does not include any necessary certification or exam to maintain a professional level. Some institutions have invested in training and will continue to do so, but IT specialists are seeping to the private sector which offers better salaries. There is now awareness that IT salaries in government must match the private sector. New sublegal acts to increase the IT specialist payments has been drafted and will be implemented from January to of the 2013. After the implementation of the pay rise MITIK and NAIS will draft regulations about training and career in the government institutions IT departments.

For citizens and businesses

In 2009 NAIS drafted two important projects for the entire central government. The first was to connect the entire central government in one GOV-Network, and the second to centralise services by building a data centre for government infrastructure. In 2013 Albania will have a good GovNet infrastructure and a new data centre. This infrastructure will enable offering centralised services and reduce operational costs. Presently the number of eServices is still too low, but the infrastructure for a eServices helpdesk service is ready.

3.2 Bosnia and Herzegovina

Impact of eGovernment policies and strategies

Bosnia and Herzegovina started introducing eGovernment with the adoption of the Information Society Development Policy and Strategy by the Council of Ministers (CoM) of BiH in November 2004. The documents were complemented with the action plan consisting of a number of precise projects and goals and, at that time, it seemed that the preconditions to approach a more serious development of information society in general and specifically eGovernment were set. The Policy, Strategy and Action plan were devised by the Bosnian UNDP team, but although adopted and declaratively supported, the vast majority of envisioned policies and actions has never been implemented, because state institutions lacked internal capacities to implement them. The project targeting the 2004-2010 timeframe was ultimately a failure.

The ongoing Public Administration Reform (PAR) project incorporated some of the policies and actions stated in previously mentioned documents and when the Strategy and Action plan for PAR by the CoM BiH, was adopted in 2006 the aim was to reform the Bosnian public administration and substantially improve it by 2016. This reform project is very much devoted to paving the way for the integration of BiH into the European Union (EU). The PAR project is grounded in a vision to develop a public administration that is more effective, efficient, and accountable; that will serve the citizens better for less money; and that will operate with transparent and open procedures. The PAR strategy and revised action plan

(2011) has been founded on 6 pillars: one of them is eGovernment. However, by the late 2012 we are still waiting to see more practical results of those efforts as only one project (Bosnia and Herzegovina's Interoperability Framework) is in implementation phase.
Since there's a little progress in implementing the above mentioned policies and strategies it is not possible to report on their impact. However, it doesn't mean that eGovernment projects are not being implemented; on contrary they are, but their implementation is highly decentralised in terms of strategic eGovernment management, and driven by ad-hoc established, and usually donors-driven projects, which are not being implemented under some specific eGovernment strategy and action plan.

Institutional benefits

Implementation of eServices has direct impact on time and financial savings which directly depend on the final product of the eService, such as issuance of a permit or a license which enable a user to initiate a new interaction with the public administration based on those two documents.

The biggest benefit for institutions introducing eGovernment services is improving the efficiency of the current system. This is reflected in the improved information exchange between institutions, with the goal of providing quality of services for citizens and businesses. The development of eGovernment enables savings in human resources (staff working on receiving the request), paper and time processing applications.

Institutional barriers

The main barrier for implementing eGovernment services in BiH is a lack of understanding and political will of management in government institutions. Another problem is the lack of a shared vision and strategy for the development of eGovernment in BiH. Specifically, each level of government develops its eGovernment solutions without coordination with other levels of government, thus, we have a case of data duplication and waste of resources.

Capacity building measures needed for developing eServices

Institutional and organisational changes, including change management

Some of the BiH government levels should realise that eGovernment is not just about implementing individual IT projects; it is an overall public administration reform process which has to be adequately supported by regulative and organisational measures. There is a need for the now missing strategic eGovernment decision-making, and a necessity for government-wide eGovernment management and development capacity.

For staff

BiH government institutions should first work hard on building their internal capacities for eGovernment. Some of the measures that should be implemented are:

1. Building mechanisms for continuous capacity building of public managers by organising courses/ workshops to understand the potentials and benefits of eGovernment; provide examples of "good practices" and present the potential e-Government solutions for their institutions. It is the leaders' understanding of IT as enabling technology that empowers them to set and manage eGovernment properly and perceive eGovernment as a path towards successful management of both internal and external government processes.
2. In the training agenda for all civil servants at all government levels, introduction courses on eGovernment should be included. Courses for IT managers and IT personnel should cover topics like change management, business process reengineering, service-oriented culture and eGovernment. IT leaders need knowledge to evaluate different technologies and understand product life cycles, key players and the various risks involved in eGovernment projects.

For citizens

Within the priority of increasing general ICT literacy, government should integrate ECDL or similar programs in the education system. As a first phase all teachers should get equipped with the necessary ICT competences for successful work in the courses they teach. This program should be integrated in education content so that elementary and high school graduates have necessary ICT skills.

For businesses

Business chambers in BiH should provide appropriate training programs to business sector in order to build their capacities for using B2B and G2B services and tools.

3.3 Croatia

Impact of eGovernment policies and strategies

The ICT industry is very satisfied with standards imposed by eCroatia like the Standard Project on Electronic Business Proceedings and on the Croatian Interoperability Framework. No information on this topic is publicised.

Institutional benefits

The benefits for institutions are business process definition and standardisation, transparency, faster problem and requests solving, easier, faster and better decision making process.

Institutional barriers

Croatia reports institutional barriers such as lack of staff eSkills, and lack of awareness in civil service.

Capacity building measures needed for developing eServices

Institutional and organisational changes, including change management

Politicians must have basic knowledge (or at least a basic idea) of eServices and an understanding of eGovernment, and illustrations of what happens if eGovernment is implemented. An example is case studies.

Management must have a general overview of the current eGovernment landscape, organizational and legal wise, as well as a general idea of the technical aspects.

- Education on HR principles (personal development plan with roles and responsibilities)
- Management level: management, leadership, change management, time management
- Professional skills: economy, ICT, project management, legal environment
- Human skills: language education, presentation education, communication skills, problem solving
- Policy development, education on implementation of quality management systems as basis for reengineering and preparing basis for ICT implementation, project management education, privacy implementation, information security

For staff

1. Employees - basic knowledge about eGovernment, its environment and benefits for different target groups
2. Project managers - focus on the integral implementation of eGovernment; take into account the cultural, socio-political, legal, process-oriented, organisational, usability, know-how and technical perspective

3. IT Engineers - develop eGovernment solutions and services based on well defined and published technical standards and policies; the legal background to be considered. The developers will be enabled to incorporate the multidimensional aspects into the application and services development of eGovernment.

For citizens

ICT literacy, e-signature/e-ID, internet usage, help desk for e-government services is needed.

For businesses

Capacity building on e-Business, e-invoice with control facilities, e-Procurement, e-signature and e-ID is needed.

3.4 Kosovo*[4]

Impact of eGovernment policies and strategies

The greatest impact has been in the development of the infrastructure which is one of the main prerequisites to create eGovernance. The ICT infrastructure will provide qualitative public eServices.

The Action Plan best describes the necessary steps to achieve the desired infrastructure. According to the Ministry of Public Administration, Department for Electronic Governance and Administrative Processes (MPA – DEGAP) (2009), the development of the ICT infrastructure will include the following: Information Technology System Center, Data Center, Infrastructure of Communication Network (ICN), construction of terminals, of-ID, creation of infrastructure for electronic transactions, increase of human capacities, etc. The implementation of the necessary ICT infrastructure will greatly reduce budget cost.

Institutional benefits

Kosovo* is saving costs by using eGovernment services such as its internal network, VoIP, e-assets, document management system, etc. The sharing of common resources is one of the key success factors and institutional benefits of e-Government in Kosovo*.

Institutional barriers

The obstacles for eGovernment in Kosovo* are many and mainly include the following:

- lack of awareness to use e-Governance services
- financial issues
- leadership failures
- interoperability issues
- political unwillingness.

Capacity building measures needed for developing eServices

Institutional and organisational changes, including change management

Kosovo* needs trainings in ICT, eGovernance awareness and expertise in ICT

For staff

The European Computer Driving Licence (ECDL), Web 2.0 training, CISCO, Microsoft licence trainings, Open source – not really in community

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For citizens

Video tutorials, online Language training,

- Module of FirstVoices
- Video conferencing
- Support
- Load up with software, keyboards – customized to community's language
- Remote access to assist online

For businesses

Help desks, online chat, how-to videos, etc., to build ICT literacy

3.5 Macedonia

Impact of eGovernment policies and strategies

No relevant information could be provided.

Institutional benefits

The only official evidence, but only available in internal documents, of institutional benefits comes from the Health Insurance Fund. After performing an "*administrative guillotine*" with electronic exchange, they are now requiring 20 documents less for 11 administrative procedures, hence, instead of previously required 54 documents, only 34 are now necessary. The biggest reductions are witnessed in administrative process for approving amount of maternity leave compensation, where instead 10 now only 3 (in some cases 4) documents are needed, while all other are being exchanged electronically or eliminated. The result is that the process is being delivered in 25% of the time previously required.

Institutional barriers

Legislative and regulatory barriers

The main objective of eGovernment is to integrate information sharing vertically within and horizontally across all state institutions (owners of data). To this end a whole legal foundation need to be created and adapted (new ones, if the case so requires), or adjusted and adapted to fit the requirements of the eGovernment environment and international/national directives. Apart from changing legislation being a time consuming activity, it has political implications, as any change in one law influence or imply changes in other laws.

There are few barriers from this aspect:

- Poor capabilities for anticipating what laws need to be changed, to which extend (pointing precisely to the specific parts of the laws), and when they are to be changed
- Time for legislations and regulations adaptation is often longer then time needed for eGovernment solution implementation,
- Lack of experience and capacities in how to do the changes,
- IT and legal experts don't speak the same language
- Lack of bylaws that offer solid guides and instruments for supporting the legal implementation of laws in the eGovernment area
- Lack of capacities for performing Regulatory Impact Assessment (RIA) regularly and comprehensively which results in poor implementation of regulations, especially when offered a transition period or more than one option for solutions,
- Law for public procurement treats procurement of eGovernment and IT solutions the same as other procurement subjects, which is often a barrier for choosing the appropriate solution (e.g.

does not enable few institutions to be contracting authority),
- The digital signature code was adopted among the first ones, and preceded some project implementations and other activities; but at the same time created/produced substantial/advanced requirements that are not followed with adaptation of related laws,

Resource barriers in HR and finance

- Lack of knowledge / experience in good budget planning of eGovernment and IT projects, especially bearing in mind the short and long term impacts on the local and national level, with special considerations to financial needs for training the IT staff, IT security staff and maintenance costs,
- Lack of finances for all planned activities and allocating for some of them, which sometimes makes disturbance in the "chained/linked activities", and provoking new prompt evaluation of the expenses needed for adapted plans,
- Despite the existence of universities and training courses, Macedonia still lack human resources in administration that can coordinate inter-agency eGovernment projects. eGovernment related knowledge is constantly changing, and requires interdisciplinary knowledge (eGovernment content, IT content, effective communication with people, project management methodologies, etc),
- The salary system for administration does not attract (in fact discourages) experts to apply for positions in the administration (lowest salaries) while the prescribed responsibilities and expected results for such an important systems are very high,
- Lack of solid business analyst experts in the service providers, that could do efficient, effective and quality analysis,
- Suppliers don't invest in expertise for eGovernment solutions because there is no national policy for technology used for e-government, so they don't know what kind of expertise to invest in.

Security and privacy barriers

- Besides provisions for information security from the Law for Electronic Management, fear from attacks on system security is evident, fear from cybercrime, fear from data misuse which will eventually result in finance discrepancies (in Macedonia each information sharing is preconditioned with covered administrative taxes and other fees),
- There is still lack of trust between institutions – created by employees,
- Non-existence of "non-speaking" unique ID on a national level which is not protected by the Law of personal data protection, which implies that even if that condition is changed, some time is still needed for harmonization/matching-up the existing data-bases so they can "understand" and find unique records and subjects/entities.

Cultural and change resistance by management and staff barriers

- Lack of change management which results in resistance for different reasons:
    - Management's and staff resistance to change as they feel comfortable with the existing practises and fear of unknown practises,
    - Perceiving changes as a treat to their job positions
    - Fear of losing power to decide and prioritize, especially in cases of corruption
    - Fear of being controlled and measured constantly,
    - A specific mind-set that foster resistance to any kind of change, innovations of any type, and changes to working conditions, processes, tools etc.
    - The belief that what is new does not work properly
    - Lack of timely and proper information about changes, usually due to the fact that most lower level employees only receive information about changes when the implementation phase starts and are not included in design and planning. Accordingly they feel that new solutions are imposed from above, and resistance is way to express opinion.

    - Those who want to introduce changes do not involve representatives from other groups, believing they will slow them down or impede them,
- Lack of communication, discussion and agreement between traditional and innovative groups, that could ease the implementation and share the responsibility and ownership of the solution and results
- Administration staff often thinks that the best way of change is doing nothing ("do not rock the boat" principle), and very often "outtalk" others and prevent changes.

Despite the general opinion that older employees are more resistant, there is no official information or evident indicators in Macedonia that could support this statement. Moreover, neither gender nor the level of education is criteria that support it. Simply, there are advanced employees who are highly aware that traditional administration should be replaced with customer-centric and customer-oriented administration. They are the leaders and driving force of changes.

Coordination barriers

- Not including all relevant parties (departments and users) when designing eGovernment solutions, results in not appropriately defined needs and requirements
- IT staff, legal staff and other experts do not speak the same language when discussing eGovernment
- IT experts have no or little idea how administration functions in the back office
- Resistance to or lack of respect of coordination authority when it does not origin within the beneficiary institution.

Technical difference and legacy systems barriers

In this time, when we are overwhelmed with innovations, new concepts and creative solutions, the truth is that barriers are often broken down. Not having a strategic document (strategy or policies) for cloud computing, implies at least the following barriers:

- Lack of capacity in how to dimension new solutions when designing them (especially hardware and software functionalities, precise requirements for maintenance and defining ownership of the code (if applicable), and to prevent over-equipping.
- There is poor or no technical documentation written for legacy systems to be integrated
- No policies and standards, no semantic standards on the national level has been developed and adopted for integration of different systems, different data structures
- Further integration depends on the knowledge of employees that once built the systems, people who may not may have left the institutions or moved on to new positions
- Systems (including registers) are not maintained and upgraded regularly which makes their migration or connecting very difficult (requires finances and is time consuming).

Organizational barriers

- The public administration organisational structure is hierarchical, with function-oriented departments, which means that most employees to know only specific part of the entire process. One of the biggest barriers for introducing eGovernment efficiently is that there are no defined official polices and expressed will for project structures consisting of employees from different departments and with different expertise (horizontal structure), something that is crucial for developing eGovernment
- Lack of anticipation for the need for organisational change in the front-office and mostly in back-office, and willingness to start working on that
- Lack of awareness that eGovernment is more about government than about "e", which means that reorganisation is a "must" and is something that should be done together with the first steps, that it is "most painful" and needs preparations.

Multilingualism

There are more than one official language used in governmental bodies in Macedonia, an additional burden to implementation of eGovernment projects, as it requires more time, financial resources, means a more complex solution structure (in some cases), requires more human resources etc.

Capacity building measures needed for developing eServices

Institutional and organisational changes, including change management

IT departments: Almost all developments of eServices as an IT solution are outsourced in Macedonia. Most frequently the outsourcing finishes with the system implementation, so the maintenance and upgrading remains as the internal responsibility of the institutions. Although all institutions have their own IT departments, most of them (especially those in the ministries and central government institutions) are lacking IT specialists and appropriately trained people for development and/or maintaining/upgrading eServices systems.

Departments for administrative procedures: The analysis and design phase during a planning face of eServices implementation are very often an ad-hoc and not a systematic activity. One of the reasons is the lack of institutional (organisational units) responsible for defining the formal procedures for service delivery workflows. This may result in bad planning and non-effective workflows for eServices. Another is the missing capacity in the existing departments for administrative procedures in the not advanced "e" institutions, who are still working by the "old" non e-practises and who are lacking vision and knowledge of how to transform services into eServices. Often this will result in conclusions such as: "This service is applicable for transformation into an eservice". There is no change management established as a procedure in the state institutions, yet again resulting in a bad analysis and design phase, but also the reason for bad implementation and acceptance of the e-solutions by the staff.

Top management: The current Government in the Republic of Macedonia shows the political will to develop the information society. Along the same lines, most of the top managements have recognised that eGovernment development is a central instrument in increasing effectiveness and efficiency. But there is a need for them to become skilled in change management (how eGovernment will influence the organisation and what they could and should do to ensure changes); scope of resources (human, time, funds) necessary to commit when implementing an eGovernment solution; competence of the staff needed for implementation etc.

HR departments: The implementation of eSolutions includes the training and engagement of the staff, changes of work positions, changes of work responsibilities etc. The HR departments must have capacities for aligning HR practices, plans and policies for defining work positions/responsibilities/responsibilities, training, performance measurements and the monitoring processes. Many institutions does not have this capacity, so inconsistencies occur when connecting the new work practices with the existing old HR management practices.

Record management and archive department: Implementing eSolutions incorporates new practices and needs for records management and archiving work. The central institutions do not have separate organisational units for records management and archiving, but are outsourcing the service to the Office for General and Common Issues. This practice is not enabling the institution to build their own organisational units which will have the capacity for records management and archiving specific to the institution needs.

In general, and as a conclusion, on an institutional level there is a need of capacity building for:

- Establishing and implementing change management as an official procedure during: 1) the service delivery process transformation and 2) during the institutional reorganisation for e-service delivery
- A systematic alignment of work positions/responsibilities/competences with as new needs arises
- Establishing a PIA (privacy impact assessment) instrument as an mandatory phase in the eService implementation
- Practical implementation of the Law for Personal Data Protection and EU Directive 95/46 and the importance of PIA (Privacy Impact Assessment)
- Value and usage of Terms of Use and Privacy Policy when implementing an e-solution
- Adopt and practice an appropriate attitude and behaviour in e-communication, with focus on: some controls from ISO 2700x; netiquette rules; "code of ethic conduct" when communicating via e-mail, on social media, on web, on forums, on interface, etc,

For staff

Capacity building measures considered as necessary for staff, for e-services effective implementation:

- Knowledge and skills for process transformation and change management
- Raising awareness on the real benefits from eGovernment solutions (from institutional users perspective – what will their new roles be)
- IT help desk for staff during the eService implementation and operation
- Adopt and practice an appropriate attitude and behaviour in e-communication, with focus on: some controls from ISO 2700x; netiquette rules; "code of ethic conduct" when communicating via e-mail, on social media, on web, on forums, on interface, etc,

For citizens

Measures for citizens capacity building for e-services implementation:

- Training/promotion/awareness raising – a multi-channel approach for:
    - eGovernment services in general (practical examples from government and business; opportunities and benefits)
    - How to use existing eGovernment services
    - Rights and obligations of services in general and eGovernment in particular (including Terms of use)
    - Data protection
    - Cybercrime. The means can be promotional materials such as flyers, short videos on TV etc
    - Help desk for eGovernment service
- Introducing basic eGovernment knowledge courses in primary and secondary schools, as part of the class-mate-classes (regularly held once a week) aiming to systematically build an eGovernment culture within youth

For businesses

Measures for business capacity building for eServices implementation:

- Training/promotion/awareness raising – a multi-channel approach for:
    - How to use existing eGovernment services
    - Rights and obligations for services in general and eGov in particular (including terms of use)
    - Privacy
    - Data protection
    - Cybercrime
- Help desk for e-gov service

3.6 Montenegro

Impact of eGovernment policies and strategies

The objectives of the previous strategy for information society development (2009-2013) have been defined in line with the objectives the eSEE Agenda+ and the EU i2010 Agenda.

The regulatory framework was improved. The institutional framework changed so that electronic communications, radio spectrum and postal services are now under the same authority that is responsible for information society development. Broadband internet access is much better compared to 2009. The PKI infrastructure has been built and CA has been established. The implementation of the electronic document management system (eDMS) in public administration, which started in 2009 finished in 2010. The eGovernment portal which started in April 2010 with 10 eServices now has 30 eServices. However there are important building blocks still under development, such as interoperability and eProcurement.

Institutional benefits

The normal common benefits perceived in eGovernment projects are also applicable for Montenegro, in line with the notion that a more effective and efficient public administration is relevant in all countries. In Montenegro the most important benefits comes from where eGovernment addresses a weakness. The improvement of administrational procedures is one of the priorities of the public administration reform, and eGovernment is the means. This implies **re-engineering business processes** or implementing new business processes where such processes are not established well. Such a change has already started, is in progress and will be emphasized particularly in the process of establishing interoperability. The benefit of **effective services** means not only business process simplification, but also higher quality of administration services for citizens and business. The G2G (E-)services already created (e.g. eDMS, eGov portal, government electronic sessions) already have had an impact on **cost savings, time reductions and money**.

The following aspects should be mentioned:

- **Influence on strengthening administrative capacities.** Civil servants, well informed about the content of administrative process and procedures, don't have enough ICT skills. There are a lot of civil servants who started to improve their ICT skills especially when faced with G2G (E)services, even to the extent of learning English too. Civil servants with a lot of experience and knowledge in using internet and G2G(E)services has had an influence on the quality and performance of their institutions activities.
- **Influence on more accountability of the government institutions.** By the implementation of the electronic document management (DMS) system, roles and responsibilities inside the institutions become clear and tasks performed is recorded. Second, the institutions are aware that their activities becomes more transparent when public eServices are introduced, which forces them to become responsible and effective.

Institutional barriers

Montenegro reports that digital literacy, resistance to changing business processes and the financial crisis are institutional barriers.

Capacity building measures needed for developing eServices

For staff

Contractors are responsible for providing user training and 'training the trainers' when implementing software solutions. Such training is very specific and concerns only the software solution.

The Human Resources Management Authority continuously organise courses for computer skills for the civil servants.

Based on the applications submitted by state authorities, HRMA form groups, whose maximum number of participants may be 15.

HRMA organise two different courses - basic and advanced level.

Topics for the basic level are:

- Bases of IT
- Using the Computer and Managing Files (Windows XP)
- Text processing (WORD)
- Information and communication (Internet)

Topics for the advanced level are:

- Advanced WORD
- Spreadsheets (EXCEL)
- Presentations (POWER POINT)

3.7 Serbia

Impact of eGovernment policies and strategies

Serbian eGovernment policies and strategies has until now had very limited impact on the Serbian society. A single long-term strategy document making Serbian government focus on eGovernment does not exist! The result is that the 20 eGovernment G2C and G2B priority services are were rated poorly in the latest eGovernment project conducted by the Delegation of the EU to the Republic of Serbia. Most of them got the grade 2 and some of them grade 3 on the scale from 1 to 5. Policies and strategies regarding G2G and internal business eGovernment services does not exist either.

The Delegation of the EU to the Republic of Serbia conducted the project “Support to the eGovernment development”, in order to help eGovernment in Serbia get in line with the overall Serbian government and EC political goals (creation of the new jobs, cost reduction, battle against the crime and corruption, accession to the EU).

A plethora of divided and separate information systems in all levels of government and public enterprises makes data security, access, exchange and reuse expensive or difficult to implement. ICT consolidation, creation of new jobs, access to public information etc. is very different to realise in the present situation, which also endangers and complicates Serbia’s accession to the EU.

Some of the Serbian successes in implementing central registration or solutions are:

- The adoption of the Law on Registry Books producing a centralised system for birth, death and marriage records. In the first four month of the central system 3171 certificates were issued, which presents significant saving for citizens of Serbia, since they did not have to spend money for transportation to the place of birth (estimated savings are approx. 6.500.000 RSD).
- The company register, begun in 2005, was a transition to a centralised registration system with a unique, centralised, electronic database of companies, containing all data subject to registration in accordance with the law and pursuant to EU directives. It is available on the internet, and all interested parties can quickly and easily retrieve information, without the need to prove their legal entitlement. It is now indispensible for companies legal and businesses transactions.

- Registration renewal in one site.
- eTaxes. In 2010 the dynamic budget plan for Serbia was realised with the index 99.7% meaning that 99.7% of the projected taxes was collected. In first eleven months of 2010 1833 criminal charges were filed against 2459 for avoided taxes in the amount of 14.8 billion RSD and unlawfully obtained proceeds of 3.8 billion RSD. In comparison with the same period of last year, the number of filed criminal charges in 2010 is higher by 2.75 percent , and amount of avoided tax is higher by 14.05 percent
- The Real Estate Cadastre. Enabling citizens and legal entities access to data on real estate and reducing the pressure on counter services for the real estate cadastre.

Institutional benefits

Modification of regulations, organization, processes and operating methods. This modification enable a more effective, efficient and transparent delivery of public services, citizen participation in the work of public administration, and faster problem and requests solving, easier, faster and a better decision making process.

Institutional barriers

In Serbia Governments approach to citizens is a problem as public services are not regarded as services. The approach to eGovernment is that it has only to do with hardware and software, not with government itself, such as the way work is organised etc. Further there a lack of appropriate governance of eGovernment related activities. As senior management attention is a scarce resource, IT projects are often regarded as a low-priority technical issue, rather than essential to the success of the activities of the public administration.

Some Serbian examples of institutional barriers both on the administrative and political level:

- Lack of political will for eGovernment
- Low priority of eGovernment in public policies and resource allocation
- Cycles of attention and inattention that lead to patchy, stop-go progress of eGovernment development
- Poor senior management understanding of eGovernment
- Poor strategic vision and planning
- Difficulty in demonstrating the cost benefits of eGovernment initiatives
- High direct costs of developing eGovernment services
- Cost of providing services through multiple channels
- Higher costs when meeting laws and regulations relating to eGovernment (e.g. freedom of information or data protection)
- Short-term costs are more politically relevant than long-term benefits
- Government departments failing to agree on and implement common procedures and standards to provide shared networked eGovernment services
- Differences in administrative traditions and processes by the different agencies - especially within local self-governments
- A lack of co-ordination across central, regional and local levels of government (the technology is not a question of autonomy).
- A departmental approach involves competition over who is responsible for what in a networked service
- Inadequate skills training and capacity building for public management and staff
- Inadequate ICT skills among government officials
- Failure to learn from good practice
- A government-centric or institution-centric approach as opposed to a citizen/business-centric

focus, when developing and implementing e-Government services
- Resistance to change by government officials
- Public administration anxieties over liability for online content
- Lack of interoperability between IT systems
- Government technologies lagging behind societal use of the Internet and related technologies.

Capacity building measures needed for developing eServices

Institutional and organisational changes, including change management

Successful implementation and delivery of e-services is not just a matter of changing procedures, creating e-friendly legislation and proper IT infrastructure, but even more it's about change process, a shift in mentality, the capacities and skills required, the need to have a shared vision and an integrated approach of all major players and stakeholders involved in making the shift towards e-services. In order to be able to speak a "common language" all stakeholders need to constantly develop their capacities related to eGovernment and as specialists in this field, they are the ones expected to promote e-Government in their organisations.

Organisation of study visits for managers and advisers to e-Government developed countries which have similar cultural background in PA and similar problems regarding legal, technical, social, and cultural changes that are needed in developing eGovernment.

Capacity development in the field of e-Government. Capacity development does not mean just training. Capacity may be defined as an organization's (i.e. Serbia's Government) ability to achieve its mission (implement eGovernment) and to sustain itself in the long term. **Institutional Capacity Building** refers to the creation of the appropriate working groups and inter-institutional arrangements to enable a common approach to e-Governance

- **Government Capacity Building.** In e-Governance - Government is central to all functions and therefore the internal capacity building of departments where e-Governance is getting implemented is very important. When these departments are talking about the capacity building of the whole Government (at central and local level) they also need to internalize the capacity building efforts.
- **Project Management Capacity Building.** Managing a national wide strategy and its projects (which should be complementary and not overlapping) is an extremely difficult task, therefore it is important that such a program be managed with professional competencies.
- **Legal Capacity Building.** The ability to draft E-friendly legislation, discussed and ultimately adopted and enforced in order to allow the provision of e-services.
- **Change management.** All of the above and many more could be embedded in the national strategy for Public Administration Reform under the part dedicated to eGovernment.

For staff

- A place to share knowledge and experience such as an online forum, offline events, a yearly government ICT conference
- Acquiring knowledge about best practices, e.g. in the form of national or international internships

For citizens

- Awareness about eGovernment eServices, e.g. in the form of media campaigns
- Better computer literacy
- Tools such as eCounsellors and easy to remember helpdesk telephone number (e.g. a unified telephone support public administration related issues) to decrease people's insecurity about how eServices actually work and foster uptake of eServices

Narrowing the digital divide and offering equal opportunities with tools such as:

- Intense local promotion and awareness-raising about e-Government services and e-Knowledge,
- Guidance and personalised assistance for the usage of eServices with eCounsellors
- Providing quality-ensured eServices in all small settlements of the country

For businesses

- Access and improve the existing legislative situation with respect to G2B and eCommerce services
- Setting standards for using eInvoicing and eOrdering both for private and public procurement. Public procurement was a part of the project "Strengthening Public Procurement in Serbia" covered by EU and in cooperation with the Serbian Chamber of Commerce. The project has prepared and implemented a training program for bidders. The training is designed in accordance with the Strategy for the development of public procurement system in Serbia, in 2011. In the training seminar bidders are trained how to easily and quickly obtain information on public procurement procedures initiated through the Public Procurement Portal. Bidders, further, gain knowledge on how to avoid errors in preparing and submitting tenders. Also, bidders are trained how to effectively monitor the proceedings in which the contracting authority negotiates with the seller and how to act in cases where irregularities are detected, better protection of their rights before the competent institutions.

According to various reports a number of skills necessary in businesses when it comes to G2C, B2B, G2G services, are underdeveloped. It implies poor e-communication between all parties and thus poor service delivery. Skills that need to be enhanced are:

- Analysis and interpretation skills,
- Information management skills (content, quality, format, storage, transmission, accessibility, usability, security, preservation),
- Higher order technical skills (implementation of solutions),
- Communication skills (in order to plan, organize, allocate resources, negotiate, track progress and measure results)

Measures are:

- Intense local promotion and awareness-raising about eGovernment services and eKnowledge
- Guidance and personalised assistance for the usage of eServices with eCounsellors,

4 eGovernment interoperability

As a very specific theme of our comparative study, we are investigating eGovernment interoperability in the West Balkan countries. Interoperability is one of the fundamental building blocks for the development of eGovernment and eServices, not just locally and nationally, but also in the broader within the EU and internationally.

Interoperability is the term used to describe the ability of diverse systems and organizations to work together (inter-operate). National and regional interoperability frameworks are needed as they can help make huge savings because different ministries or countries do not waste money duplicating the work of others. Interoperability is also needed to ensure that the systems of different ministries and countries can work together and as such interoperability is a prerequisite for developing sophisticated transactional eServices. A fundamental aspect of interoperability is the exchange of base registries and data between the different administrational units of government. However, interoperability can also risk mis-using user data and make it more likely that it can be accessed in an unauthorised manner.

In this chapter we investigate the interoperability policy and framework for each country. We will also look at the provisions for protecting user data and the technical, semantic, organisaitonal, and legal barriers to data exchange there may exist. We then look at the basic electronic registers and what exchange of data there are within government, as well as future plans.

4.1 Albania

Interoperability policy and framework

Intersectorial Strategy for Information Society 2008-2013. Albania has reaffirmed its commitment to create a knowledge based economy and an information society, by signing in October 2007 eSEE Agenda+ together with other Eastern European countries. The Regional Common Agenda was signed under spirit of European Union action plan i2010 for creation of the information society. Commitments made in these documents constitute a major challenge for Albania if we take the current state of development of the ICT sector in Albania into account.
The European Interoperability Framework (EIF) was referenced in the following documents:

- Memorandum bSEE (Broadband South Eastern Europe);
- Action Plan and the Declaration of the World Summit of Information Society WSIS 2003;
- eEurope Action Plan and initiative EU i2010;
- National Strategy for Development and Integration 2007-2013 (NSDI);
- The e-SEE plus, signed in October 2007;

To support Albania in its development of interoperable eGovernment services, the Ministry for Innovation and ICT and to the National Agency for Information Society has received support from the EuropeAid (project no. EuropeAid/131431/C/SER/AL).

Provisions for protecting user data

Each institution, business or individual that collects and processes data is required to notify and be registered in the database of the Data Protection Commissioner. Registration is done online at the official website of the commissioner. The Commissioner assigns inspectors and checks how subjects process the sensitive data. The inspectors advise or take administrative actions in case of violation of the law. Any new system and every new law related to the ICT must have a final approval by the

Commissioner's office. The Commissioner's office currently is part of a cooperation between the IPA 2009 Project "Consolidating Data Protection Commissioner in Albania according to EU standards" (Europe Aid/129606/C/SER/AL) and the Commissioner for the Protection of Personal Data is currently working on drafting personal data protection laws.

Barriers to data exchange

Technical barriers

The Albanian government has established the government GOVNET network based on optical fibre, and all the institutions that are connected through GovNet exchange information in real time. The major technical barriers are with institutions not connected through the GovNet. Lack of communication for various reasons, brings a lack of a services to citizens and businesses. Through a CoM Decision the government has defined the SLA with companies that develop applications for government institutions. This implies a four year maintenance plan for new and two year maintenance for existing applications.

Semantic barriers

As system development has been decentralised and realised by individual institutions, Albania experience problems due to lack of semantic interoperability between institutions and applications. NAIS is therefore collecting data on semantics used in all databases that will be used for interoperability. The creation of registry for all databases and their semantic definitions will serve to solve the semantic interoperability problem.

Organisational barriers

Staff resistance towards introduction of new technologies are natural, but training of employees in using new systems has meant a more favourable attitude. Displaying help information by 'a click on a button', has meant increased confidence in the use and maintenance of systems.

Legal barriers

The introduction of electronic communications in public administration has required changes of the Albanian laws and by laws to enable interoperability. Some of the central legal changes in Albania are:

2008 - Law 9918 on 'Electronic Communications' reflecting the 2009 EU Regulatory Framework.
2008 – Law on Digital Signature.
2008 – Legal framework for Cyber Crime.
2008 – Law on Protection of Personal Data.
2009 – Law on Electronic Commerce.
2010 – Policy paper for Electronic Communications associated with anAction Plan.
2010 – Law on e-Document.
2010 – Law on State Databases.
2011 – New Action Plan approved for Information Society.

Currently, in the context of constructing the electronic document and records management system (EDRMS, the laws on archives and documentation protocol are being modified.

4.1.1 Basic key electronic registers

Table 1 Basic key electronic registers in Albania

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
1 Population				x	x	x	
2 Businesses/ legal entities				x	x		x
3 Land/geospatial data			x				
4 Real estate				x	x		
5 Cars			x	x		x	

Future plans for digitising basic key registers

According to the strategy adopted by the government, each institution is required to build and to exchange data with other institutions that will need the collected data. Institutions, which have basic primary data necessary for other institutions' work, are required to make these available within 2013. Further and in the context of interoperability, these databases will be regarded as primary systems and have the status of basic systems. The System of Civil Registry database, database of businesses, state employees database, the students database, social insurance database, database of laws are amongst the databases that have been completed in 2012.

4.1.2 Exchange of data within government

From 2008 the Albanian government has been building a fibre optic core network (GovNet). All institutions in Tirana, the capital of Albania, are connected in this network. Further, the two cities Durres and Elbasan have finish construction of GovNet. Some institutions has built their own network connecting their agencies throughout the country. Institutions with their own networks includes: the police, the Civil Registry Agency, Ministry of Health, and the Ministry of Finance. Finally the Ministry of Education has established its own network connecting schools and other educational institutions.

Future plans

The Government of the Republic of Albania has decided to award a concession to install, develop and manage the infrastructure of the National Broadband Network (REKAB) through a private - public partnership. To this end the Ministry of Innovation and Information Communication Technology has announced a competitive bidding procedure of the above mentioned concession, in order to select a company or "consortium of companies" that will provide establishment, development, provision, instalment, management and maintenance of REKAB, which is considered to be a new national infrastructure for data transmission.

REKAB should provide a new business model for the ICT industry in Albania, bringing a major development in the telecommunications market and increasing competition. REKAB will be owned and used commercially and will strengthen the macro-economic development of the country. At the same time, it will give Albania a 21st century broadband infrastructure and push forward Albanian development.

Electronic exchange of citizens' data between governmental institutions

Some institutions have begun exchanging data. The civil system registry exchanges data with the car registration system, with Interpol, and the UN ASYCUDA customs system. Using only one electronic ID citizen can register a vehicle. The businesses registry system exchanges data with the registry of licenses. The customs system exchanges data with the tax system.

4.2 Bosnia and Herzegovina

Interoperability policy and framework

Currently there is no specific policy document regarding interoperability in Bosnia and Herzegovina. Some of the deliverables of the project establishing the interoperability framework in BiH does contain policy elements, but will still have to be adopted by the governments on all administrative levels in BiH.

Through the project of establishing an interoperability framework in BiH, the document "**Strategy for mobilization of public registers**" has been developed and it has been drafted in compliance with the EIF 2.0. The same is true for the "**Interoperability framework for BiH**".

Provisions for protecting user data

Protection of personal data is defined by the Law on Personal Data Protection and the Agency responsible for monitoring implementation of that Law has been established. Provisions of the Law on Personal Data Protection are mandatory for all public authorities.

Barriers to data exchange

Technical

It is necessary to establish a standardized data exchange infrastructure based on Web Services (WS) that support a Service Oriented Architecture and use XML and to describe its functionality and data exchange. WS actually is a web application intended to provide specific functionalities of the applications which are at the disposal of public administration, and located on the remote servers. A basic technical precondition is the adoption of the Interoperability Framework for BiH by the governments at all administrative levels, which is to be completely in compliance with EIF 2.0.

Semantic

The potential problems in establishing semantic interoperability are reflected in the fact that each level of government establishes its own data dictionary and XML schema catalogues. The question is therefore is how much it will really achieve interoperability at the semantic level across the country when each level of government defines its own semantic standards.

Organisational

There are no organisational barriers for data exchange, as the public administration in BiH is required by law to exchange data contained in the electronic registers with the citizens and business community in compliance with the provisions of the Law on personal Data Protection.

Legal

Due to the complex administrative structure of BiH, there are certain legal barriers to data exchange. This is mainly reflected in lack of uniformity of regulations at all levels of government. In order to achieve a comprehensive legal interoperability, it will be necessary to harmonise legal acts at all levels of government.

4.2.1 Basic key electronic registers

Table 2 Basic key electronic registers in Bosnia and Herzegovina

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
1 Population	• Register of personal identification numbers (JMB); (IDDEEA) • Register of permanent and temporary residence of BiH nationals; (IDDEEA) • Register of identity cards of BiH nationals; (IDDEEA) • Register of civil, service and diplomatic passports; (IDDEEA) • Register of identity cards for foreigners; (IDDEEA)			x			No

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
2 Businesses/ legal entities	• Register of representations of foreign legal entities in BiH (Ministry of Foreign Trade and Economic Relations of BiH) • Register of foreign investments (Ministry of Foreign Trade and Economic Relations of BiH) • Register of concession agreements (Concession Commission of BiH) • Register of associations, foundations, offices and representations of foreign and international associations and foundations (Ministry of Justice of BiH) • Register of securities (Ministry of Finance and Treasury of BiH) • Register of legal entities established by the institutions of BiH (Ministry of Justice of BiH) • Register of physical and legal entities (Ministry of Justice of BiH) • Register of churches and religious communities (Ministry of Justice of BiH) • Pledge register (Ministry of Justice of BiH) • Register of non-governmental organizations – (Ministry of Civil Affairs of BiH)			x			
3 Land/ geospatial data							
4 Real estate							

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
5 Cars	• Register of driving licences; (IDDEEA) • Register of motor vehicles registration and registration documents; (IDDEEA)			x			No

Future plans for digitising basic key registers

In BiH, almost all key registers have already been established, and future plans foresee implementation of electronic services to citizens and business community based on these key registers. However, coordination between administrative levels in BiH is required if eServices provision Services throughout the territory of BiH in equal time intervals is to be achieved.

4.2.2 Exchange of data within government

Government wide data network

In January 2010, the Council of Ministers has adopted the "Information", which defines all activities for establishment of the data transfer network to each municipality in Bosnia and Herzegovina by 2014. The key conclusions of the Information were:

1. Establish data transfer network in each municipality in BiH and for each location of the competent authorities;
2. Provide services which refers to a higher level of data transfer protection;
3. In each municipality there is an access point on licensed frequency for network users;
4. Provide each body authorized to use the network with technical service of higher level data protection.

Pursuant to the Law on IDDEEA, Article 8, paragraph (1), item h), IDDEEA is responsible for the data transfer network for security agencies and IDDEEA. The data transfer network is established in accordance with the legislation related to the field of telecommunications and major users of the network are public security authorities and authorities related to the competence of IDDEEA. The network is established in accordance with the Law on Telecommunications on frequencies assigned by the Regulator for communications in Bosnia and Herzegovina.

The current status is that all 144 municipalities in B&H are now connected to a single network. 92 municipalities are connected to a SDH (Synchronous Digital Hierarchy) network, while another 50 municipalities are connected to the network the state owned wireless unlicensed frequency band or over rented ducts of one of the three telecom operators in BiH.

Apart from the SDH network, an eGovernment network connecting state-level institutions under the Council of Ministers of BiH and provides basic G2G services for. Currently, 21 BiH Council of Ministers institutions are connected at five different locations. The resources and services provided by the network are currently at the disposal of 1500 employees. Further, it by the end of 2012 a BiH Council of Ministers data center should be completed and will provide private cloud service for and define the Council of Ministers of BiH as a service provider for the involved institutions.

Future plans

By the end 2012, 23 municipalities will be connected to the SDH network, and by the end of 2014, another 27 municipalities will have joined. This strategy will mean cost reductions, as rent for telecom operators are currently being paid.
Another plan for the Council of Ministers of BiH Network is to connect all its 74 institutions into a single information system and to develop necessary common services for the Government and its ministries from a single central point.

Electronic exchange of citizens' data between governmental institutions

The main specific electronic registers used for exchanging citizens' data between governmental institutions are:

A. Personal identification numbers
B. Permanent and temporary residence of Bosnia and Herzegovina
C. Identity cards of Bosnia and Herzegovina nationals
D. Civil, service and diplomatic passports
E. Driving licenses
F. Registration of motor vehicles and registration documents
G. Identity cards for foreign nationals
H. Fines and infringements registers

Permanent data access to citizens' key registries by government institutions means meeting of the rules and regulations:

A. There is a permanent communication link between the IDDEEA and the applicant, enabling applicants' access the data he/she is entitled to access at any moment.
B. The technical infrastructure is based on web services. Exceptionally, the IDDEEA may enable access through applications on IDDEEA servers.
C. A communication link is realised through the network, subject to the law or by use of rented resources. Both cases require establishing a secure VPN tunnel, subject to rules defined by the IDDEEA.
D. As far as the use of a permanent connection over the individual network is concerned, the IDDEEA is in charge of operating the network to the access point at the location of the receiving authority. Beyond the access point, which is to be specified by the IDDEEA for each location individually, the responsibility of passive, active and computer equipment lays upon the authorised officers of the receiving authority.
E. At the locations where it is not technically feasibility to use the IDDEEA network, use of rented resources shall be enabled in order to establish connection with the IDDEEA network. All required equipment and renting of necessary resources to the access point of the IDDEEA shall be provided by receiving authorities.

Registers within the responsibility of IDDEEA ought to be used for almost every service that should be provided by public authorities to citizens or business in the future for development of e-Services:

Exchange of data between services:

1. Personal documents - direct support of IDDEEA to competent authorities
2. Motor vehicle registration - direct support of IDDEEA to competent authorities
3. Announcement of moving - direct support of IDDEEA to competent authorities

4. Citizen's taxes (income taxes: declaration, notification of assessment) . Competent authorities may use data from the registers of JMB, ID cards, driving licenses, permanent and temporary residence, vehicles, fines and infringements
5. Labor market (job search services by labor offices)
6. Social security contributions of citizens. Competent authorities may use data from the registers of JMB (Register of personal identification numbers), ID cards, permanent and temporary residence
7. Issuance of building permissions. Competent authorities may use data from the registers of JMB, ID cards, temporary and permanent residence
8. Notification of incidents to the police. Competent authorities may use data from the registers of JMB, ID cards, passports, driving licenses, permanent and temporary residence, vehicles, fines and infringements
9. Certificates (request and delivery). Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence, vehicles, fines and infringements:
    a. Birth - Birth Certificate
    b. Marriage - Marriage Certificate
    c. Death
10. Enrolment in higher education/university
11. Health care related services. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence
12. Public libraries: Availability of catalogues, search tools
13. Social security contributions for employees. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence
14. Taxes for commercial subjects/companies (corporate tax: declaration, notification). Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence
15. VAT: declaration, notification. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence
16. Customs declarations. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence
17. Registration of a new company. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence
18. Submission of data to statistical offices. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence, driving licenses, passports, vehicles, fines and infringements.
19. Public procurement. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence.
20. Issuance of environment-related permits. Competent authorities may use data from the registers of JMB, ID cards, permanent and temporary residence

Main institutions involved:

Authorities at the state level of BiH

Council of Ministers of Bosnia and Herzegovina, Ministry of Civil Affairs, Ministry of Foreign Affairs, Ministry of Security, Ministry of Communications and Transport, Ministry for Human Rights and Refugees, Personal Data Protection Agency, Border Police, State Investigation and Protection Agency, Service for Foreigners' Affairs, Intelligence-Security Agency, Central Election Commission, High Judicial and Prosecutorial Council, Indirect Taxation Authority, Civil Service Agency

Authorities at the level of entities, Brcko District and FBiH cantons

Ministry of Interior of Republic of Srpska, Ministry of Interior of Federation BiH, MoI of 10 cantons in Federation BiH, Police Bodies, Ministry of Administration and Local Self-Government of RS, Ministry of Justice of Federation BiH, Cantonal/District Courts, Inspections in FBiH and Cantons, Inspectorate of RS, Tax Administration of BiH, Tax Administration of RS, Public Register of Brcko District, Police of Brcko District, Judicial authorities of Brcko District, Inspectorate of Brcko District, Tax Administration of Brcko District

Authorities at the municipal level

Municipal Registry Offices, Municipal Election Commissions, Municipal/Basic Courts, Communal police, Inspections at the municipal level

4.3 Croatia

Interoperability policy and framework

On 20 October 2011, the Croatian Government adopted a decision establishing eGovernment development goals in the State Administration for 2011-2015, thereby laying the current policy framework for interoperability.

Croatia joined the in the Interoperability Solutions for European Public Administrations (ISA) on 15 April 2011 through the Croatian parliaments ratification the MoU with the EU on ISA. Croatia will become familiar with EU policies in the field of interoperability, which is one of the key elements identified in the flagship initiative Digital Agenda for Europe (DAE). By joining ISA, Croatia is effectively committing to the ISA strategy.

The EU Competitiveness and Innovation Framework Programme: "The Information and Communication Technologies Policy Support Programme - CIP ICT PSP work programme 2012"[5] act as the interoperability framework for Croatia.

Provisions for protecting user data

The Croatian Personal Data Protection Agency (AZOP) carries out administrative and professional tasks regarding personal data protection[6]. The Law on Personal Data Protection was adopted in June 2003, implementing the relevant EU Directive (95/46/EC). It foresees that personal data may be transferred cross-border and processed in another jurisdiction, to the extent that this jurisdiction can ensure an adequate level of protection.

AZOP has created a Central Register filing system with records on personal data.

Barriers to data exchange

There are no technical, semantic or legal barriers to data exchange in Croatia. However, there is an example of an organisational barrier regarding the business process of updating the spatial units register, which is presently divided between different administrative units.

5 http://ec.europa.eu/information_society/activities/ict_psp/documents/cip_ict_psp_wp2012_adopted_01022012.pdf

6 http://www.azop.hr/cpage.aspx?page=default.aspx&PageID=47

4.3.1 Basic key electronic registers

Table 3 Basic key electronic registers in Croatia

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government interoperability system?	Citizens can check their data
1 Population	OIB system Central Database Registry on Personal Data Birth, marriage and death certificates (Ministry of Public Administration)			Yes	Yes	Yes	Yes
1 Population	Residence registration (Ministry of the Interior)			Yes	No	No	No
1 Population	Personal documents: ID, passport and driver's licence (Ministry of the Interior)			Yes	No	No	No
1 Population	Social benefits: Unemployment (Croatian Employment Service) Child supplement (Croatian Institute for Pension Insurance) Health care payments (Health Insurance's District Office)			Yes	No	No	No
1 Population	The state graduation exam (The Ministry of Science, Education and Sports)			Yes	Yes	No	Yes
2 Businesses/ legal entities	ECourt - Business registry (Commercial court)			Yes	Yes	Yes	Yes
2 Businesses/ legal entities	Taxpayers - tax system, company income, VAT refund (Ministry of finance)			Yes	Yes	Yes	Yes
2 Businesses/ legal entities	Healthcare contributions (Croatian Institute for Healthcare Insurance)			Yes	Yes	Yes	Yes

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government interoperability system?	Citizens can check their data
2 Businesses/ legal entities	Pension contributions (Croatian Institute for Pension Insurance)			Yes	Yes	Yes	Yes
2 Businesses/ legal entities	Public procurement (Ministry of Economy, Labour and Entrepreneurship, Electronic Public Procurement Classifieds)			Yes	Yes	Yes	Yes
2 Businesses/ legal entities	The Unique Register of Accounts of Business Entities http://jrr.fina.hr The Register of Annual Financial Reports http://rgfi.fina.hr Register Of Digital Certificates http://rdc.fina.hr. The Register of Concessions Registry of mortgages of legal persons Payment Transactions In The Name And On Behalf Of Banks (Fina)			Yes	Yes	Yes	Yes
3 Land/ geospatial data	Multipurpose Spatial Information System Cadastral data (Croatian State Geodetic Directorate)			Yes	Yes	No	Yes
3 Land/ geospatial data	Arkod - system of records of land parcels (Paying Agency for Agriculture, Fisheries and Rural Development)			Yes	Yes	No	Yes
4 Real estate	Land registry (Municipal court)			Yes	Yes	No	Yes
5 Cars	Registry of vehicles (Ministry of interior)			Yes	Yes	Yes	No

Future plans for digitising basic key registers

To connect the basic key registers, define the necessary business processes and ensure timely data updating and refreshing.

4.3.2 Exchange of data within government

Government wide data network

The Personal identification number (OIB) system offers safe infrastructural and functional services for all central and public institutions in charge of physical and legal entity registration. The information-communication network for the state administration (HITRONet), currently connects 46 central locations and over 400 remote locations).

In Croatia, the state-owned Financial Agency (Fina) is the only issuer of qualified certificates. By the end of 2011 37,700 valid qualified certificates has been created.

Future plans include establishing a meta-registry which will provide an overview of access to data in different registries and enable data exchange between key registry systems.

Electronic exchange of citizens' data between governmental institutions

Electronic exchange of citizens' data is done through the OIB system by exchanging data from the Ministry of Public Administration, Ministry of Interior, Ministry of Justice, Croatian Bureau of Statistics, and Ministry of Finance (Tax Administration)

Access to the database is given to the ministries, government offices, government agencies, the Croatian Institute for Health Insurance, the Croatian Pension Insurance, the Croatian Employment Service, the Central Registry of Insured Persons (REGOS) Finance Agency, Central Depository and Clearing Company and State Election Commission.

Other institutions need the consent of the public administrative body that delivers the requested data in the register.

4.4 Kosovo*

Interoperability policy and framework

The future eGovernment law will establish the policies for interoperability in Kosovo* and it will use the European Interoperability Framework (EIF) of 2010 to set priorities.

The Electronic Governance Strategy 2009-2015 has been adopted and the Kosovo* Interoperability Framework, entirely based on EIF is under development.

Provisions for protecting user data

The Law on Protection of Data and the newly established Agency for the Protection of Personal Data (www.amdp-rks.org) establish provisions for protecting user data.

Barriers to data exchange

Kosovo* reports that there are no technical, semantic, organisational or legal barriers to data exchange.

*This designation is without prejudice to positions on status, and it is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

4.4.1 Basic key electronic registers

Table 4 Basic key electronic registers in Kosovo*

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
1 Population	-			Yes	Yes	Yes	Yes
2 Businesses/ legal entities	-			Yes	Yes	Yes	Yes
3 Land/ geospatial data	-	Yes					
4 Real estate	-	Yes					
5 Cars	-	Yes					

Future plans for digitising basic key registers
Future plans include a full digitising of the population, businesses, addresses, cars and land registers.

4.4.2 Exchange of data within government

Government wide data network

The Kosovo* National Network covers most of the offices in the central and local institutions, and in 35 municipalities. They cover more than 400km with fibre optic network and connect 23 municipalities, while other municipalities uses microwave links (a total of 170 connection), 500 locations in Prishtina and other municipalities are managed from more than 200 servers. In terms of physical ICT infrastructure, a high number of projects have been implemented to strengthen the microwave network by connecting the municipalities with other institutions. The System Centre of IT establishes “electronic highways” through the flat cable ring optical network, and connects the municipal regions with the state network. Institutions connected to the state network are: the Vehicle Registration Centre, courts, the Financial Intelligence Centre, etc.

Future plans include an expansion of the network.

Electronic exchange of citizens’ data between governmental institutions

Exchange of citizens’ data between governmental institutions takes place between the central Civil Registry and the municipalities. Other exchanges are fairly limited.

4.5 Macedonia

Interoperability policy and framework

The policies for interoperability are established by the Law for Electronic Management and its by-laws. The Strategy for e-Gov sets the strategy and the framework for interoperability is derived from the guidelines set in the Law for Electronic Management (and by-laws).

Both the policy and framework reference the European Interoperability Framework (EIF) of 2010 directly, while the Strategy for eGov does not mention the EIF.

Provisions for protecting user data

The Law for personal data protection (http://dzlp.mk/en/Regulation) gives formal provision for protecting user data

Informal provisions are expressed with bilateral agreements between two entities that exchange data, and are being signed before establishing connections.

Barriers to data exchange

Technical barriers

Due to the hardware, databases, and security systems, legacy as well as the non existence of electronic archiving standards for data exchange are not fully met. Although defined within the by-laws of the Law of electronic management, problems implementing standards steams from lack of required financial and human resources.

Semantic barriers

There is no established standards or developed methodology for semantic interoperability.

Organisational barriers

As there is no precise “new” position, and estimates of the scope of work required has not been made, implementation of interoperability relies on flexibility and the ability to change. There may be cases when not only jobs, but also organisational bodies will be eliminated or put online, which naturally produce resistance to change.

Legal barriers

Strategic priorities are integrated in all laws which mean that legal barriers takes time to remove.

Macedonian legal barriers include:

- Non existence of unique ID that is not a “speaking number” is one of the major barriers for data exchange.
- Most of the laws have been adjusted applying principles for electronic data exchange, but there are still some legal acts for inspection that needs to be revised in accordance with the data exchange principles. As some data might be used in the judicial processes, legal remedies have to be introduced in each data exchange process.
- For most of the services and documents, customers are charged with administrative taxes and fees. Switching to electronic data exchange, introduces financial clearing problems among the involved institutions, as the customer pays for the service in total. Cut-offs from the total charge is not possible with the current laws.
- While the most important laws have been aligned with the Law for Electronic Management, there are still few laws that still need to be adjusted.

4.5.1 Basic key electronic registers

Table 5 Basic key electronic registers in Macedonia

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
1 Population	Citizenship register + birth register	Yes	Yes				Yes
2 Businesses/ legal entities				Yes	Yes	Yes	Yes
3 Land/ geospatial data			Yes		Yes	Yes	Yes
4 Real estate			Yes		Yes	Yes	Yes
5 Cars	Cars: Electronic records are kept, but no register has yet been established		(Yes)				
6 Tax register				Yes	Yes	Yes	Yes
7 Health insurance				Yes	Yes		
8 Employment				Yes	Yes		Yes
9 Customs (import/export)				Yes	Yes	Yes	Yes
10 Pension				Yes	Yes		

Future plans for digitising basic key registers

Land register started in 2010 and is 30 % digitised. It is expected to be 100% digital by 2015. The project is financed by the World Bank.

Real estate register is 99.6 % digitised. The process started in 1999. 100% of the digital data are online available for citizens and businesses. The rest (0.4%) is expected to be finalised by the end of 2012.

Population (citizenship + birth register). The Citizenship registers are fully digital, but not available online and not available for interoperability mainly due to technical reasons. The project for migration of the register is in the planning stage. The birth register is being establishing. The agenda follows in the table:

Activity	Start	Deadline
Manual for management of registers of births, marriages and deaths	April 2013	September 2013
Bylaws for electronic register	September, 2013	December, 2013
Establishment of birth register	July, 2012	December 2012
Establishment of marriage and death register	January 2013	December, 2013
Establishment of interoperability for the birth, marriage and death register	January, 2014	December 2014

Business/legal entity register is fully digital, available online and interoperable.

Cars register is not established. Project planning is in progress.

Tax register is fully digital, available online and interoperable.

Health insurance is fully digital and available for intranet users. It is planned to interoperable in the next interoperability upgrading phase of 2012. Currently, it is interoperable with several registries from other institutions and exchanges data based on bilateral agreements between institutions.

Employment. It is planned to interoperable in the next interoperability upgrading phase of 2012. Currently, it is interoperable with several registries from other institutions and exchanges data based on bilateral agreements between institutions.

Customs (import/export) is fully digitalised, available online and interoperable.

Pension is fully digital and available for intranet users. It is planned to interoperable in the next interoperability upgrading phase of 2012. Currently, it is interoperable with several registries from other institutions and exchanges data based on bilateral agreements between institutions.

4.5.2 Exchange of data within government

Government wide data network

There is no national government wide data network. Each institution is responsible for establishing data networks for connecting central and local offices. MISA has taken the initiative to connect several locations in the capital Skopje through an optical fibre network, using existing infrastructure. Such locations include the government building, the Macedonian Parliament, 5 buildings with several ministries and agencies.) as initiative of by using existing infrastructure (not building new one).

Bearing in mind that the Republic of Macedonia has good commercial communication infrastructure, there is no need of building new a government network. Therefore there are no plans for building wide government network as a network owned by the government.
For different projects and needs, there are plans for connecting optically additional state locations, again, using existing networks (state and commercial).

Electronic exchange of citizens' data between governmental institutions

Using a unique interoperability environment, the following services for electronic exchange of citizens data are operational:

- Property certificate (Agency of Cadastre for Central Registry)
- Land certificate (Agency of Cadastre)
- Legal entity number (Central Registry for Agency of Cadastre)
- Legal entity number (Central Registry for Public Revenue Office)
- Legal entity number (Central Registry for Customs Administration)
- Legal entity name (Public Revenue Office)
- Tax number (Public Revenue Office for Customs Administration)

Based on a bilateral agreements, the Agency of cadastre, Central registry of the Republic of Macedonia, Agency of employment of the Republic of Macedonia, Health and insurance fund, Pensions and invalid fund, Customs administration and Public Revenue Office are exchanging citizens data.
Within the framework of the EXIM (system for export, import and transit of goods licences and quotas), the

following institutions are exchanging data: Ministry of Interior, Ministry of Agriculture, Sanitary Directorate, Veterinary Directorate, State inspectorate for agriculture, Seed and seed materials Directorate, Bureau for medicine, Food Directorate, State Sanitary and Health inspectorate, Ministry of economy, Bureau for metrology, Ministry of Environment and Physical Planning, Ministry of Culture, Directorate for Radiation Security, the National Bank.

4.6 Montenegro

Interoperability policy and framework

Policies

There are no specific policies outlining the creation of an interoperability framework. The Strategy for the Development of Information Society just specifies need to create and adopt an Interoperability Framework and to perform activities on provision of a backbone for interoperability (technically, ESB).

Strategy

The initial basic document Montenegro has is the actual Strategy of Information Society Development (2012 -2016) that references interoperability in a more practical way than the previous one. Within the scope of the ICT for Public Administration pillar, there is a goal of establishing an interoperability framework and to enable data and information exchange between public registers and other information systems. The objectives are following:

- Adoption of National Interoperability Framework (NIF),
- Development of technical specifications
- Establish of the system for automatic data exchange (ESB bus) by the end of 2013
- 50% cost reducing for issuing digital certificates
- Accessibility of 100 most used public services by 2014 and 200 services by 2016

Framework

The National Interoperability Framework (NIF) was adopted at the end of 2011.The document contains explanations for the importance of interoperability, principles, key interoperability areas, what state and local authorities that will participate, the key state authority that will coordinate establishing of the interoperability, available IT infrastructure resources and key registers that will be within its scope.
Referenced documents (policies, strategy, standards, specifications, etc) for interoperability have identified and set standards. But the Montenegrin NIF doesn't comply with EIF 2010 with respect to recommendations for the business requirements, open standards, and use of XML data interchange schemas at the NIF level.
In the next version, the document will be more elaborated with better reference to needed documents on interoperability issues, and fully comply with EIF 2010 and have clear recommendations for the following initiatives.

Provisions for protecting user data

The Law on Personal Data Protection provides for protecting user data. The Agency for Personal Data is the responsible body

Barriers to data exchange

There are no technical barriers to data exchange in Montenegro.

Semantic barriers

Some semantic barriers exist as there are different data and information standards used for organisational services. Understanding the semantics of each service is an important issue. The quality of data also poses a problem.

Organisational barriers

Organisational barriers include a lack of horizontal coordination, which could pose a potential risk. Collaboration and coordination between agencies and the changes in business rules or unsatisfactory workflows are also organisational barriers to consider. This may be difficult and may take time.

Legal barriers

Existing laws are used as the legal basis for direct electronic data exchange between the authorities involved. Montenegro plans to have a general law which will regulate all electronic interactions between different authorities and digital registries, as well as regulate the legal aspect of electronic data exchange on a general level. There may be possible barriers from parts of the legislation that was not examined and assessed by the authority responsible for the information society development. This means additional efforts and time have to be spent.

4.6.1 Basic key electronic registers

Table 6 Basic key electronic registers in Montenegro

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
1 Population				Yes	Yes		Yes
2 Businesses/ legal entities				Yes	Yes		
3 Land/ geospatial data			Yes				
4 Real estate				Yes	Yes		Yes
5 Cars				Yes			

Future plans for digitising basic key registers

Data consolidation will be one of the key future activities.

4.6.2 Exchange of data within government

Government wide data network

The WAN - data communication network is linking state authorities and government institutions. The network was built using MIPNe, an acronym for Montenegrian IP/MPLS network, which is a multi-service and very sophisticated telecommunication network based on the MultiProtocol Layer Switching technology. MIPNet is provided by Telecom Montenegro, the only telecommunications operator with capacities to offer such services. MIPNet consists of two segments, the MIPNet core network with data traffic commutation, large transmission capacity and long distance transmission capability, and the MIPNet access network with access points to end users. The access network presently uses cobber to the end users but transits to optical fibre lines (FTTx) gradually.

State authorities locations such as the parliament, Government, President's house, and ministries have been connected directly, over leased optical fibre (FTTH) and Gigabit Ethernet (GE) links. Other locations have been connected over leased cooper twisted pairs to MIPnet access points with 2Mbps links.

Leased MIPNet 2Mbps links and leased optical links are provided through a contract with Telecom Montenegro. The Ministry for Information Society and Telecommunications is responsible for contracting the telecommunication services for all government needs (MPLS twisted pair links, GE fiber optic lines,

Internet links, RAS, VPN's, etc.) and the ministry does so through a unique contract, getting new links with better capacity under lower cost. Currently, used are 32 GE fibre optic links, 220 MPLS (2 Mbps) twisted pair links and 31 Internet link (31 locations) with a total capacity of 265 Mbps for internet connections.

WAN is managed by the Department for ICT infrastructure in the Ministry for Information Society and Telecommunications who are providing development, administration and monitoring network services. The WAN core is located in a data centre and complies with information security standards. The Department has two sections: one for information security management and the other one for information security incident management (CSIRT/CERT).

Future plans

Further investments are planned with a focus on more reliable and more secure WAN network by:

- making redundant links,
- replacing MPLS links with GE optical links,
- fibre optic link provision for Disaster Recovery location,
- use of internal traffic data encryption on the communication equipment that support it,
- use of VPN's with digital certificates for external users,
- use of the IPsec protocol for communication with external entities (hosts, networks).

Although the most of government institutions are linked through the WAN network, there are still important institutions not linked: the Pension and Disability Insurance Fund, Central Bank, Clinical Centre Montenegro. Special focus is on linking them through the WAN, by including these institutions in the next contract for 2013.

Electronic exchange of citizens' data between governmental institutions

There are direct connections to the Central Citizens Registry from the Government institutions. The Central registry of legal entities provides data to relevant institutions.

4.7 Serbia

Interoperability policy and framework

Policies will be established in the Serbian National Interoperability Framework, which is under preparation.

The strategy of the Public Administration Reform with the Action Plan for Implementation of the Public Administration Reform in the Republic of Serbia for the Period from 2009 to 2012 (Official Gazette of the Republic of Serbia, No. 83/09 and 5/10), is currently being reviewed to create a new Public Sector Reform Strategy and a connected action plan for the upcoming years of 2013-2017.

The Serbian National Interoperability Framework contains a set of policies, standards and guidelines, with the aim of increasing public sector efficiency by improving the quality of services provided at local, national and later on, in accordance with the EU regulations, at cross-border level, benefit citizens and businesses, and increase the competitiveness of the country.

The specific objectives of this framework are:

- To facilitate transformation of the institution-centred public administration into a service-centred one, where all citizens, businesses and NGOs can communicate with the Government using the concept of one stop shops;
- To help public administration institutions cooperate more easily together using electronic means;

- To make systems, knowledge and experience reusable from one part of the public administration to another, reducing public sector IT and operational expenses;
- To improve the interoperability of new IT projects through a co-ordinated use of a centrally developed infrastructure, middleware, common basic services and open standards;
- To allow autonomous development of cooperating system-elements within the principles of semantic, organisational and technical interoperability.

The European Interoperability Framework (EIF) of 2010 has been used and referenced in the Serbian policies, strategies and framework.

Provisions for protecting user data

In Serbia there is the following provision for protecting user data:

Law on Personal Data Protection (Official Gazette of the Republic of Serbia, No. 97/08). This Law shall govern the conditions for collection and processing of personal data, the rights of data subjects and the protection of rights of data subjects, limitations to data protection, procedure upon appeal before the authority competent for data protection, data security, data filing system, transfers of data outside the Republic of Serbia, and supervision over the application of the Law. Personal data protection in the Republic of Serbia is provided for each natural person, regardless of his/her nationality, residence, race, age, sex, language, religious, political and other belief, national or social origin, property, birth, education, social status and other personal characteristics. The personal data protection tasks are performed by the Commissioner for Information of Public Importance and Personal Data Protection (hereinafter: the Commissioner) as the autonomous state organ, independent in the execution of his or her competence. The objective of this Law is to ensure realisation and protection of the right to privacy and other rights and freedoms regarding personal data processing to every natural person.

New Law on Identity Cards (Official Gazette of the Republic of Serbia, No. 62/06), is enacted for the purpose of proving the identities of the citizens residing within the territory of the Republic of Serbia and to determines the legal rules of issuance, competence and procedure of issuance of Identity Cards. An identity card is a public document proving identity of the citizens of the Republic of Serbia. In conformity with the law, an identity card is used as evidence of other facts contained in it. If that is subject to an international treaty, an identity card can serve as a travelling document.

The Criminal Code of Serbia from 2005 (Official Gazette of the Republic of Serbia, No. 85/05). The objective of the Criminal Code of the Republic of Serbia is to provide legal protection of the rights and liberties of the human being and citizen, property, public order and public safety, the environment, and to secure peace and safety of mankind, and also to prevent crime.

The Criminal Procedure Code from 2006 (Official Gazette of the Republic of Serbia, No. 46/06), establishes rules with the aim to prevent the conviction of any innocent person, and enabling a perpetrator of a criminal offence to be sanctioned in accordance with conditions envisaged by the Criminal Code, based on lawfully and fairly conducted proceedings. This Code also establishes rules on conditional release, rehabilitation, termination of security measures and legal consequences of conviction, exercise of the rights of persons wrongly deprived of liberty and wrongly convicted confiscation of proceeds from crime, resolution of restitution claims and issuance of wanted circulars and notices.

Decree on the Form for and Manner of Keeping Records of Personal Data Processing (Official Gazette of the Republic of Serbia, No. 50/2009), lays down the form and manner for keeping records of personal data processing. Entry of personal data in the register and other activities in connection with

the register are performed by personal data controller in accordance with the law. Records of personal data can be kept manually or by means of automated data processing, unless provided otherwise by a special law.

Decree on the security and protection of information systems of state authorities (Official Gazette of the Republic of Serbia, No. 41/1990), regulates measures for security and protection of state information systems based on the application of computers, as well as their implementation. Those measures can be technical and organizational in their nature and are taken to prevent accidental mistakes, improper and illegal collection, storage, processing, presenting, use, damage, destruction counterfeiting and misuse of data.

Regulation on the Manner of Prior Verification of Personal data Processing Actions (Official Gazette of the Republic of Serbia, No. 50/2009), provides for the manner in which the Commissioner for Information of Public Importance and Personal Data Protection performs prior verification of personal data processing actions which a data controller intends to undertake, in accordance with the Law on Personal Data Protection. The procedure of prior verification shall be initiated ex officio by the Commissioner on the basis of controller's notification of his/her intention to initiate personal data processing or to establish a data file.

Barriers to data exchange

Technical barriers

Technical interoperability is not only concerned with technologies in the physical connection layer (such as network protocols), but also with technologies that support the organisational and the semantic layers. This approach to technical interoperability has not been followed in Serbia. In a large number of public bodies data does not exist digitally or is not available from a central source (database). Different databases have been developed uncoordinated and separately, and there are no common standards even for databases (e.g. SQL, DB2, Oracle).
Further, many Serbian electronic registries have been developed using web services and they do offer web services to other institutions and customers. Unfortunately, these services are mostly theoretical, due to legal and financial constraints. But neither standardisation nor coordination is taking place. Furthermore, no recommendations or policies exist at the national level.

Semantic barriers

Different institutions use different data description for the same set of data. Lack of semantic interoperability is a huge problem in Serbia. As an example, the register of the territorial entities (addresses) is implemented differently in different state institutions information systems. By law the Republic Geodetic Authority is responsible for its functioning, but data aren't up to date in the system, and the actualisation has not been solved. MIA has a separate Register of the addresses implemented. However, most state institutions (officially or unofficially) use an address register developed and maintained by the Post of Serbia. This register was developed using practical experience and it is based on direct inspection by the postal workers.

Semantics is perceived as the meaning and the use of data. Thus, semantic interoperability becomes particularly important when public authorities need to exchange information. The main semantic conflicts are related to the structure of data and the meaning of data.

There is no evidence in Serbia for:

- Common and global definitions/representations for e-Government semantics

- Modelling perspective and formalism for documenting the common definitions Administrative level of definitions development
- Promotion/dissemination and maturity of common definitions
- Trust, reliability, and the supportive technical IOP layer
- Maintenance and evolution of common definitions

In the summary, there is no evidence that any of the processes and actions recommended on the semantic layer of interoperability is taking place or is performed continuously.

Organisational barriers

Traditionally, cooperation between state bodies in Republic of Serbia is poor. Each institution considers their own data authoritative, as it was collected by themselves, whereas the data collected by other institutions is considered non-reliable.

Most of implemented IT projects have addressed "pressing issues", and development has been been done in isolation, ignoring the need for a broader perspective, intra- and inter-organisational workflows, and the ability to foster data exchange with other organisations having different internal structures and processes. These projects are viewed as a solution to a single problem, and not as a tool for overall government reform, and improvement of the entire government capabilities. Some substantial back-office reorganisations of services, intending to enable access to 'any data, anywhere, anytime', have started (e.g. the Companies and associations registers). Some governmental bodies are even better linked with EU institutions than they are with other institutions in Serbia.

Legal barriers

Solicitors and guidelines predict that the data carried through the paper and changes that allow the electronic exchange of data is going too slow.

Law on personal data protection needs some improvements to ensure the full accordance with European rules. As a revision of European data protection rules is in progress, there will be an increased need for a revision of this law.

The most important necessary needs for improvements include:

- The Republic Geodetic Authority indicated problems in proper understanding of personal data protection rules, which are interpreted as to prevent data from real estate cadastre to be open to general public.
- The personal data protection law does not have provision which would provide that by initiating case one gives consent for processing of personal data
- Personal data processing should only be based on law, not on other regulation (as provided in art. 14, par. 2, point 2)
- Personal data should be collected from a third party just for a given purpose and not just when "necessary, given the nature of the operation" (as provided in art. 14, par. 2, point 3)
- Art. 19 of this law give citizens the right to get information on personal data processing. This provision is good, but nevertheless it is not reflected in the regulation on actual registers, and the technical conditions. There is no adequate logging in place, and such information can't be extracted from electronic registers and electronic data services.

Law on civil registers, **Law on the Business registers agency**, **Law on the state survey and cadastre**. Very positive innovations for the citizens were introduced with the *Law on civil registers*. Birth certificates do not longer have limited validity, and it is now possible to make certificates, regardless of the place where registers are kept. In general, one of the main prerequisite for the effective delivery of

electronic services includes the establishment of high quality registers - databases of national interest. Basically the system of national registries is central registers containing four sets of data:

- *Data on citizens (individuals)* - their conduct is, at present, the responsibility of a large number of authorities;
- *Data on legal entities* - their conduct is, primarily, the responsibility of the Business Registers Agency;
- *Spatial data* - their conduct is under the jurisdiction of the Republic Geodetic Authority.
- Information on individuals' and legal entities' property - their conduct is, at present, the responsibility of a large number of authorities.
- In addition, there is no proper, applicable, maintainable or other regulation on register of addresses, as many institutions have their own internal registers without any legal basis.

Law and Regulation on driving license. The driving license registers are still held locally. The new driving license directive (EU Directive 2006/126/EC) will make it mandatory for EU member states to exchange data electronically from 19 January 2013. This regulation will make it necessary for Serbia to create a central, electronic driving licence register and regulate the data processing and submission of data.

In this area, there is a lot to do. There are needs for some small improvements, but some serious improvements in the legal environment and in the organisation and IT support are necessary too. Most importantly, even crucial, is to accurately determine, which authorities are responsible for the reference data (who creates information, who is responsible for updating it, and under what conditions and security standards will data be made available to other authorities and to the public in general.

4.7.1 Basic key electronic registers

Table 7 Basic key electronic registers in Serbia

	Name	In paper mode	Partly digital	Fully digital	Available online	Connected to government inter-operability system?	Citizens can check their data
1 Population			yes		partly	no	partly
2 Businesses/ legal entities				yes	yes	no	yes
3 Land/geospatial data			yes		partly	no	partly
4 Real estate			yes		partly	no	partly
5 Cars			yes		Under development	no	no

Future plans for digitising basic key registers

Future plans for digitising basic key registers includes:

- The electronic register of birth, marriage and death will be finalised by the end of 2013.
- The register of personal ID cards will be finalised by the end of 2016.
- The alphanumeric data of cadastre is close to finalisation.
- The geospatial data are currently in digitalisation process and the readiness is 30%.
- The register of the social insurance is under construction and it should be operative in first half of 2013.
- The register of tax payers is planned to be operative by the end of 2013.

- The register of driving licences and car registration is in implementation phase.
- Portal of GeoSerbia is under implementation.
- Conceptual model for Citizens Register is adopted and the project is under preparation.
- The register of urban plans is under implementation.
- The central address register is under implementation.

4.7.2 Exchange of data within government

Government wide data network

There is a network of optical channels between state institutions, ministries and the agencies. The owner is the state. Administration for Joint Services of the Republic Bodies manages the network, used primarily as an Internet, web and mail hosting provider. The Administration for Joint Services of the Republic Bodies is also responsible for the gov.rs subdomain.

Data exchange using web services is performed in a secure (safe) zone. Currently, the Ministry of Interior, ePortal, Republic Geodetic authority, Ministry of Justice and Public Administration, Central Registry of compulsory health insurance, tax administration, Pension fund are in this secure (safe) zone.

Some important projects for establishing and improving ICT network and hardware infrastructure elements for e-Government in Serbia have been, or are currently being implemented, while some others are planned:

- An integrated computer network for government institutions – "e-Serbia" and "e-Government infrastructure" projects are in the final stage of implementation, and they will enable all government bodies' seats to have access to the government computer network using high-speed optical fibre computer network.
- The Academic Network of Serbia (AMRES)[8] is the national research and education network of Serbia, offering modern information communisation services and Internet connection for its users, including universities and faculties, high education systems, primary and secondary schools, accredited scientific research organizations, researchers and students of doctor studies, and scholars, Serbian Academy of Sciences and Art, Matica srpska, etc.
- The eGovernment Infrastructure (hardware, system and virtualisation software) was supplied through EU funded Serbian e-Government infrastructure project (Europe Aid/130106/C/SUP/RS)

Development and implementation of strategic eGovernment information systems for secure interconnection of eGovernment services and for access control to eGovernment internet applications are planned. The purpose of these projects is to provide reliable ICT infrastructure for development and utilisation of e-Government services, developed by different government bodies.

Future plans

Future plans include that all institutions exchange data using web services in a secure (safe) zone.

"Serbia National Cloud" The objective of the project is public administrations "recognised for being open, flexible and collaborative in relations with its citizens and businesses". Primary tool is e-Government used for increasing efficiency and effectiveness constantly improving public eServices, acknowledging user's different needs and maximizing public value, thus supporting the transition of Serbia to a knowledge based economy.

8 http://www.amres.ac.rs

EU IPA 2010 project '**Support to e-Government development**' supply component will provide Serbia with a basic "cloud" ICT infrastructure, installed and operational in national Government Service Provider to be used for all activities in the further development and deployment of eGovernment eServices. These eServices are the 20 priority eServices for the Serbia citizens and business, as defined by the relevant EU strategic documents. The project will utilise existing equipment from the EU IPA 2010 supply component project as well as experiences and results from the project service component, but will also employ completely new and the latest technology advances achieving a much broader scope and depth practically reaching the entire Serbian Government in order to make all of the Serbian governments eServices available to all of its users.

Gap assessment. Computing capacity includes approximately 1200 modern, up-to-date processor cores, spread on approximately 200 processors and 100 blade servers. Storage includes Fibre Channel, SATA2 and SSD disks with total capacity of approximately 200TB. 10Gbps networking includes latest data center networking technologies – iSCSI and FCoE. The data centre is virtualised using VMware server virtualisation software installed on VMware vCenter Linux Appliance with NIS user database thus creating "basic cloud" of the IaaS ("Infrastructure as a Service") type, a.k.a. "basic IaaS cloud". A crucial obstacle for the further advancement is in the design of the EU IPA project as it was designed only for the 20 eGovernment eServices which practically represent front-ends of the complex G2G-G2C-G2B systems. This means that the EU IPA 2010 "basic IaaS cloud" will be used only for publishing G2C/G2B front-ends of the 20 eServices, but will not be used for the entire eServices life-cycle G2G-G2C-G2B management.

Electronic exchange of citizens' data between governmental institutions

Data exchange between STA and other public institutions is still using an old registration system, Tax Registration System (TRS) - which is planned to be replaced with the Unified Taxpayer Registry and Integrated Information System, and is using specifically built applications for the old TRS (mostly customised for individuals data exchanges). This is the reason why the old Tax Registration System (TRS) hasn't been yet completely replaced, and in this transition period, data exchanges are performed using the old TRS, which then serves as data source for the new system.

Replacements for these individual applications used in data exchanges are currently being developed. Priority is given to upgrading the communication and data exchange with the Serbian Business Register Agency (SBRA). SBRA is the biggest data provider for the STA, and it is planned to replace using data CDs and FTP servers, which are currently used for data exchange with SBRA, with modern web services. Data exchange through web services is currently in the testing phase, and STA is planning to upgrade communication and data exchange with other institutions in a similar way.

Exchange of data between banks and the tax administration, related to payment of salaries and relevant taxes and contributions, began on 1 July, 2012[9]. This data exchange is performed daily and is implemented in cooperation with the Association of Serbian Banks, which receives data from individual banks, and transfers aggregated data from all banks to the tax administration. The legal framework for this data exchange between banks and the STA are article 30 of Law on tax procedure and tax administration[10] and Clarification of Ministry of Finance no. 011-00-326/2012-04 from 05.06.2012.

9 www.poreskauprava.gov.rs/sr/pdf/ObjasnjenjePPPA30a.pdf

10 Official Gazette of the Republic of Serbia, No. 80/2002, 84/2002, 23/2003, 70/2003, 55/2004, 61/2005, 85/2005, 62/2006, 61/2007, 20/2009, 72/2009, 53/2010, 101/2011 and 02/2012

Overview of currently existing data exchanges between STA and other institutions is presented in the table below in Table 8. Some data exchange presented in the table are on adequate technology level, like the data exchange with SBRA (which is being upgraded into web service), or like the data exchange with Tax Police (which uses a direct connection and where there is no need for introducing a web service). However, most of them ought to be improved, as they are based on outdated methods of data transference (like FTP or CDs). According to its IT strategy, STA is planning to standardize and upgrade communication with other systems, and to use web services for communication with other institutions. It is expected that using web services, will improve communication, so data transfer can be faster and more reliable, provide higher level of data availability to STA systems, taxation eServices, and finally to the taxpayers.

Table 8 Existing data exchange between the Serbian Tax Authority (STA) and other institutions

Data exchange between following institutions		Data	Current status	What needs to be done
e-Uprava portal	MIA	Data regarding e-government services for personal documents	Does not exist for personal ID and passport. A project which includes data exchange of data on drivers licences and vehicle registration is being implemented	Establish data exchange based on planned services implementation and using experiences from project on data exchange of data on drivers licences and vehicle registration
e-Uprava portal	CA	e-signatures validation	Validations of e-signature exist as a standard service provided by all CA. However, regarding the use of e-signature for e-identification purposes, there are issues which needs to be addressed on a state level	The use of e-signatures for identification as a provisory solution, but to make steps for establishment of proper e-identification system and legal environment
MIA	Treasury	Data on payment of fees and taxes	Does not exist for personal ID and passport. A project which includes data exchange of paid fees for drivers licences and for vehicle registration is being implemented, however it does not contain real-time communication, which would be necessary for on-line services	Establish data exchange for planned services implementation and using experiences from the project on drivers licences and vehicle registration
MIA	Central register of births, marriages and deaths (Hosted by Post Office); Register of citizenship (part of Register of Births)	Data from registers	Pilot data exchange exists	Establish data exchange based on planned services implementation and using experiences from pilot project
MIA	MFA (Diplomatic and Consular Missions)	Alfa numeric and biometric data in the scope of requests for new personal ID/passport	Data exchange exist for passports, via secure channel but significant latency	Establish data exchange based on planned services implementation, to replace existing data exchange and to provide more efficient and reliable data exchange

5 eGovernment user interface

An eGovernment user interface refers to the electronic interface between the public administration and the user, for example a web-site or a portal, the use of a mobile phone or tablet for voice, text or graphics, a kiosk display, etc. It also refers to *how* this interface is used by the user, for example how the user finds out what is wanted through navigation on a website, or whether a search engine is provided to enable the user to enter one or more words describing what is wanted and being directed to what is available that fits the description. Other features can also be important for a user interface, including how an individual user is identified using eID (electronic identification), such as using a pincode or electronic signature or eAuthentication (electronic authentication), as well as how payments can be made be electronically through ePayment.

5.1 Albania

The government portal e-albania.al was created as a unique eService gateway for both citizens and business services, and all public eServices will be linked and become here. The portal is not interactive, but contains the entire list of government and eServices links, and provides a clear division of information and services, and the respective roles of institutions. A new version is in development, scheduled to become available in late 2012, and will offer authentication, identification and a division of services available according user profile.

Other portals includes:

- National Registration Center (www.qkr.gov.al)
- National Register of Licenses and Permits (www.qkl.gov.al)
- eProcurement platform (www.app.gov.al)

Albania does not have a single government intranet portal, but there are plans by NAIS to develop a unique intranet portal for all Albanian government in 2013.

Search facilities are implemented in all government portals. In the e-Albania portal, due to the topology of the portal, users will only be given search results for existing eServices. The search result will display the website of the institution that is providing the service.

Albania has identification and authentication schemes in place, to be deployed for the new version of e-abania.al (Table 9) and an E-trust platform for electronic identification document for citizens.

ePayment systems in Albania through banks (Table 10) for paying bills. The tax authorities are creating a tax e-payment platform, to be for business taxes.

Table 9 eIdentification and eAutentication for government in Albania

	Name	Description	What services does it cover
1	user/password & known facts for the new e-albania.al portal	Identification and authentication mechanism for the new government gateway will be username, password and known facts. The interoperability platform will check the users self-declared in different government databases, and if correct, provide access to the user.	The first two services that will be provided will be change of address and applications for driving license renewal in 2013. Later this method will be implemented in categorised services, basically every service that do not need high security id and authorization.
2	E-trust Platform	Albania is producing electronic identification documents for its citizens. Plans are to add more services to the existing platform. One suggestion is to provide an alternative electronic id and authentication for the new government platform under development.	The e-trust platform will cover all the services, and guaranties high security due to the link with the national id card database and PKI system. The national PKI system still needs to be certified from the central authorities.
3	Mobile ID	There are no plans for the near future	A new project idea to be developed after the implantation of the user/password and e-trust platform.

Table 10 ePayment systems in Albania

	Name of ePayment system	Used for…	Details
1	Tax e-payment platform	Tax payments only	The e-payment platform was developed recently and will become operational in November 2012. The scope of this platform is to make it possible for businesses to pay taxes online.
2	E-banking	Used for different operations, such as paying electricity and personal bills.	Mobile payment is not yet introduced.

5.2 Bosnia and Herzegovina

There are two citizen eGovernment portals in Bosnia and Herzegovina (BiH) the **eSrpska** (www.esrpska.org) portal for the entity of the Republic of Srpska and the yet unavailable **eBiH** (website not available yet) for the government of BiH, which is a project still being implemented. The eSrpska portal also provides a list of eGovernment services for businesses. Neither one of these portals will provide special navigation facilities, apart from listing services, nor any segmentation or specialised search facilities to find content and services.

Two government wide networks are in existence in BiH. The **IDDEEA**, an IDDEEA internal portal offering internal access to all authorised users from the responsible authorities (Ministries of the Interior, Ministry of Foreign Affairs, Ministries of Civil Affairs, Central Election Commission etc) and the **MojPortal** Intranet portal for the Council of Ministers giving internal access to all authenticated users from each institution connected to the eGovernment network.

Bosnia and Herzegovina has two different eID schemes, one for the state level and one for entity level (see Table 11)

Options for online payment of application submission for identity card, passport, birth certificates, renewal of driver's license, vehicle registration and other interactions will be developed from March 2013. Citizens are also able to pay fees for the necessary forms, penalties (for traffic and other violations), and fees for various services or taxes by credit or debit cards (Table 12).

Table 11 eIdentification and eAutentication for government in Bosnia and Herzegovina

	Name	Description	What services does it cover
1	State level: IDDEEA	e-ID (in the first quarter of 2013), digital signatures, PKI and single sign-on solutions to be ready and in production	1. Personal documents: ID card, passport or driving licence 2. Car registration: new, used or imported 3. Residence registration: when changing the address
2	Entity level: Ministry of administration and local self-governments of RS	digital signatures, PKI and single sign-on solutions	1.Certificates: birth, death and marriage records

Table 12 ePayment systems in Bosnia and Herzegovina

	Name of ePayment system	Used for…	Details
1	n/a	Options for payment of application submission for identity card, passport, birth certificates, renewal of driver's license, vehicle registration and other interactions, thus enabling citizens to submit their application forms on-line – 24/7. Citizens are also able to pay fees for the necessary forms (TD, ID, DL, certificate of vehicle ownership, certificate of vehicle registration, registration sticker, and license plates), penalties (for traffic and other violations), fees for various services or taxes by credit or debit cards.	From March 2013 a new payment system is envisioned to be developed for IDDEEA e-Services motion in Q3.

5.3 Croatia

The central citizens eGovernment portal in Croatia is the **Mojauprava.hr** (www.mojauprava.hr) portal. Businesses are served through the one-stop-shop **HITRO.HR** (www.hitro.hr) portal.

Mojauprava.hr is organised around life events. With regards user experience, Croatia's results are particularly sound for user focused portal design (where Croatia's score stands at 100%) and the One-Stop-Shop Approach (where Croatia's score reaches 80%)[11].

Mojauprava.hr has integrated a search engine which enables searches specifically for Croatian grammar[12].

There is no national eID system, but there is an ongoing identification and authentication project presently using tree types of credentials (login/password, AAI@EDU credential and soft-certificate) for single-sign-on to eGovernment services (Table 13). Digital signature has been integrated for most

11 Smarter, Faster, Better eGovernment, 8th Benchmark Measurement, November 2009, http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/egov_benchmark_2009.pdf

12 http://baltazar.fesb.hr/drzavnauprava/search

G2B services such as tax, customs, company registration, health insurance, pension insurance and the e-Charter service. The educational sector uses the uses AAI@EDU credentials for electronic services.

ePayment exists only as a means to pay for local paring and public transport in Zargreb through SMS (Table 14).

Table 13 eIdentification and eAutentication for government in Croatia

	Name	Description	What services does it cover
1	eID	National system does not exist, a pilot project for identification and authentication is ongoing and that uses at the moment tree types of credentials (login/ password, AAI@EDU credential and soft-certificate)	Single-sign-on for eGovernment services
2	digital signature	Digital signature has been integrated for identification/ authentication in most eGovernment services for business sector	e-Tax administration services, e-Customs services, e-Company (establishment of a company), e-Health insurance, e-Pension insurance, e-Charter service
3	AAI@EDU	Educational and scientific sector uses AAI@EDU credentials for electronic services	http://www.edu.hr

Table 14 ePayment systems in Croatia

	Name of ePayment system	Used for…	Details
1	SMS	Paying parking rate to local self government	The registration number is sent to the provider via SMS and the SIM card is charged
2	SMS	Paying public transportation ito the City of Zagreb	A code defining the service is sent via SMS and the SIM card is charged

5.4 Kosovo[13]*

Kosovo* has a citizen eGovrnment portal **E- Portal** (www.rks-gov.net), a point of entry for information about institutions for citizens. The **E-Business (**https://e-bizneset.rks-gov.net) portal let's people register a business online. Neither portal provides special navigation facilities or specialised search.
The government intranet (https://intranet.rks-gov.net/) is only accessible from within the government network.

Kosovo* does not have eID or eAuthentication, but a single-sign-on solution is under development for government eServices (Table 15). There is no ePayment systems in Kosovo*.

Table 15 eIdentification and eAutentication for government in Kosovo*

	Name	Description	What services does it cover
1	PKI	Provides identification and authentication for staff	It's used only by a limited number of officials because it's still in a testing phase
2	Single Sign On	Provides possibility to be authenticated in all e-Government services and it's still in development	

13 *This designation is without prejudice to positions on status, and it is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

5.5 Macedonia

The Macedonian government service portal for citizens and businesses, **Uslugi** (uslugi.gov.mk), does not offer any eServices, just information and downloadable forms. Uslugi provides navigation facilities through service lists, segmentation by government function and segmentation by types of users. There is no specialised search facilities.

Various other eGovernment portals offer specific services for citizens such as **NAPSYS** (e-plakanje.gov.mk), a portal for administrative taxes, the **E-democracy** (e-demokratija.gov.mk) portal with forum, blogs, ideas, discussion about documents etc. The **"I want, I know, I can" (**www.sakamznammozam.gov.mk) portal are for people with disabilities, and the **ednevnik.edu.mk** (ednevnik.edu.mk) portal which is an educational e-diary (grade book).

Businesses are also served through **EXIM** (exim.gov.mk) portal by the Customs office of the Republic of Macedonia offering a one-stop-shop portal for licences for import-export and transit of goods. There is also the **One-stop-shop for legal entities** (e-submit.crm.com.mk/efiling) portal for registration of legal entities, changes and deletion, ePayment of registration fees, certificates in electronic or paper format etc. Finally the **E-democracy** portal can also be used by businesses.

Government intranets includes the **e-sessions portal** (http://esession.uslugi.gov.mk) for government sessions used by all ministries, the **DMS** (dms.mioa.gov.mk) document management system for central government, and the still not operational **BPMS** (http://bpms.uslugi.gov.mk) portal for government session materials preparation.

National digital signatures (please see Table 16) are for both citizens, legal entities and systems.

Table 17 shows the ePayment systems in place in Macedonia. The **eNAPSYS** system is used for payments of administrative taxes for all government services by SMS. Fees for registrations in the central registry can be done by credit card.

Table 16 eIdentification and eAutentication for government in Macedonia

	Name	Description	What services does it cover
1	National digital signatures	DSs are issued by two commercial CAs. Commercial CAs established based on the Law on digital signatures and data in electronic form.	Issuing digital certificates for citizens, legal entities and systems.

Table 17 ePayment systems in Macedonia

	Name of ePayment system	Used for…	Details
1	eNAPSYS e-plakanje.gov.mk	Payment of administrative taxes (plans for payments of all kinds of payments of fees and taxes for government services)	Currently it is used for payments of administrative taxes for all government services by SMS and web portal by mobile payments. It is in upgrading process for different kinds of fees payments by different government institutions. Citizens are users as payers. Government entities use the system for checking, monitoring and confirmation of payments. There is a plan to support credit cards payments in the future.
2	http://e-submit.crm.com.mk/efiling/	Payments of fees for registrations in the central registry by credit cards	Legal entities can prepaid for data and information of the Central registry as well as pay for service in the registration system.
3	http://e-submit.crm.com.mk/efiling/	Payments of fees for registrations in the central registry by credit cards	Legal entities can prepaid for data and information of the Central registry as well as pay for service in the registration system.
4	E-tax (Not a payment system, but includes sending of invoices)	Sending invoices to banks	Taxes are still not paid electronically by the e-tax system. The system is integrated with the bank systems for issuing invoices for tax payments.

5.6 Montenegro

The eGovernment citizen and business portal of Montenegro is called euprave.me (www.euprava.me)

The Montenegrin government intranet is called eDMS

Montenegro developed the eGovernment portal **euprave.me** (www.euprava.me) that launched in April 2011. A cooperation of five state institutions provided 12 electronic services for businesses and citizens. Initial services offered were of different complexity and accessibility for various target groups. Information and services on the website are grouped in several ways so that users can easily access the desired service.

The euprave.me offers authentication on the portal using qualified digital certificates, search, generating eServices, filling out electronic forms, digital signature, ePayment system, as well as eParticipation. Citizens can actively participate in the creation of laws and policy documents, and they can express opinions and attitudes in the public debate. There are now 27 eServices from 10 institutions.

Other portals includes:

- Ministry of internal affairs has released a portal for requesting birth certificate, population registry and address. www.dokumenta.me
- Customs administration has a system for electronic submission of customs declarations.
- The real estate agency has electronic cadastre.

National CA (**Pošta CG**) for Digital Certificates issues certificates that may be used for authentication, electronic signing of digital documents and verification of electronic documents. There is also an internal CA solution for public servants (see Table 16).

There is an ePayment solution on eGovernment portal for clients of a specific bank (Table 17). The government portal also has a payment system via normal transactions. The verification is done by a Treasury web service.

Table 18 eIdentification and eAutentication for government in Montenegro

	Name	Description	What services does it cover
1	[Pošta CG] CA	National CA for Digital Certificates Issued certificates may be used for authentication, electronic signing of digital documents and verification of electronic documents	Managing of the certificate repository Issues qualified digital certificates Publishes Certificates Revocation Lists Promotion of digital certificates
2	Internal CA for public servants	Issued certificates can be used for authentication, electronic signing of digital documents and verification of electronic documents	

Table 19 ePayment systems in Montenegro

	Name of ePayment system	Used for…	Details
1	ePayment system for clients of one bank in MNE	Payment on eGovernment portal	System provides direct payments to bank clients.
2	ePayment on eGovernment portal	Payment on eGovernment portal	System provides payment via normal transactions and verification is done by web service with Treasury

5.7 Serbia

The eGovernment portal in Serbia is **eUprava** (www.euprava.gov.rs).The portal includes the generated services and information needed for a certain level of services provided by state institutions. Services on eUprava are divided into life events for citizens and businesses. No specialised search facilities exists.

There are two additional business portals in Serbia. **The Companies Register** (www.apr.gov.rs). The transition to a centralised registration system produced a unique, centralised, electronic database of companies in the Republic of Serbia, containing all data subject to registration in accordance with the law and pursuant to EU directives, available on the internet, which all interested parties can quickly and easily retrieve, without the need to prove their legal entitlement. The other is portal **eTaxation** (eporezi.poreskauprava.gov.rs) which enables electronic submission of VAT returns. In the pilot the electronic submission of VAT returns was allowed only to a certain group of taxpayers. However after April 2012 it is accessible for all entrepreneurs.

Data exchange within government is done using web services a secure (safe) zone. Currently, there are Ministry of Interior, ePortal, Republic Geodetic authority, Ministry of Justice and Public Administration, Central Registry of compulsory health insurance, tax administration, Pension fund are using this environment.

Citizens in Serbia have an identity card with a chip. The card covers eIdentification and eAuthentication, enables digital signatures, PKI and single-sign-on solutions. Additional dignital signature solutions are also available (please see Table 20).

Serbia has an ePayment solution.

Table 20 eIdentification and eAutentication for government in Serbia

	Name	Description	What services does it cover
1	eID	Identity card with a chip, the issuer is MIA	e-Identification e-Authentication digital signatures PKI single sign-on solutions[1]
2	digital signatures	Issuer P. E. Of Ptt Communications “Srbija”	e-Authentication digital signatures single sign-on solutions
3	digital signatures	Issuer Chamber of Commerce and industry of Serbia	e-Authentication digital signatures single sign-on solutions
4	digital signatures	Issuer Halcom	e-Authentication digital signatures single sign-on solutions

6 User empowerment and centricity

The terms user empowerment and user-centricity refer to the ability of users themselves to have some control over the appearance, configuration and functionality of the eGovernment interfaces and services they use. This includes whether or not users can personalise, for example, the eGovernment website they use; the availability of social media and Web 2.0 features which enable users to add their own comments and content; the ability of users to provide feedback on services or policies and participate in discussions, decisions and policy-making; whether the public administration enables users to collaborate with it to co-produce content or services; whether ‘’open data’, i.e. government data published electronically for anyone to use (e.g. on budgets, jobs, health, addresses, legislation, etc.) is available in machine-readable and data linked formats; and issues of transparency and trust. Transparency refers to the extent to which information about the government and what it does is easily available to citizens (apart from types of information legally defined as confidential, secret or subject to personal data protection), and whether or not citizens can freely ask questions about this information. Trust refers to the other features which enable citizens to trust the public administration, such as anti-corruption measures, ease of contacting and questioning government officials and politicians, etc. Also important are definition and promoting user (as opposed to institutional) benefits, as well as the barriers to achieving these and how these might be overcome.

6.1 Albania

eGoverment user benefits

Up until now users benefit from using eGovernment service platforms remains cloudy. No all Albanian government services are fully digital, the exception being public procurement. Setting up information systems and one-stop-shop for the business registering and licensing process has improved the operation time, saved businesses money and increased the operational capability of the government institution.

In the past years the Albanian government has invested more in building national databases and improving back office systems to become ready for deliver eServices in 2012. Statistical data of National Registration Center shows that previously the registration of a new business in the local court office was processed in around 10 days. After government reform NCR was able to register more than 50 businesses per day and offer them any other services from the central business register. Using a centralised service with branch offices in different cities increased the control of the government, and saved people money and time.

The procurement system (https://www.app.gov.al) is another electronic service that has improved the quality and control, and it guarantees transparency in the procurement process. With a central electronic platform, local, national and international companies can now enter the bidding process under the same clear and equal rules

Other electronic services with user benefits offered by the government are:

- http://gjykata.gov.al/portal_SCTR/Civil_Cases.aspx - makes it possible for citizens to check national court cases.
- http://www.asp.gov.al – traffic police 126 where citizens can check fines. In 2013 it is planned to enable online payment of fines. Presently payments are donein the post office or directly from the citizens bank account

- www.qkr.gov.al – citizens can choose the name of the new business and they can check ownership and companies data in the register
- https://www.app.gov.al – the eProcurement platform. Citizens can get information about any public tenders and institutions, and companies can upload documents for the bidding process and collaborate with various government entities.
- https://eservices.zrpp.gov.al/ - is the eService area for the National Registration Office. Citizens can make new applications for their property, can chose notary services and can write complaints online directly to the main registration office.
- www.dogana.govl.al – the General Directorate of Customs under the Ministry of Finance has improved the process time for goods and increased the internal control of procedures with the new upgrade of the core system ASICUDA WORLD. All custom declarations are done electronically and the tariffs are changed in the same way. The customs officers dedicated for the custom control are chosen by the system randomly, increasing the transparency and trust of citizens. The Transit Register of goods is operational and the system generates automatic reports and statistics.
- tatime.gov.al - the central tax office is also providing electronic services. Albania is implementing a new law for personal income declaration for every citizen who has personal income more than 2000 dollars per month. The service allows for filing forms online. For business the tax office is offering different services like downloading declaration forms online, posting declarations or filling directly online. In 2012 the tax office will make online payment for eServices available. All the above mentioned cervices has drastically decreased physical queuing times, saving citizens' time, eliminated the small level of eventual corruption in the front-office, and increased the government capacity to process information.

eGovernment user barriers

When Albania started to implement ICT in government in 2005, it was used as a tool to fight corruption and governance. This late start means that Albania does not have the usual problems with legacy systems. On the other hand lack of sufficient human resources an enough skilled people that can create eServices is a big disadvantage.

In 2005 internet use was very low, and cost of internet access prohibited major take-up. The Albanian government has accordingly taken several initiatives to promote internet use and give universal access throughout the country, such as delivering public access points and internet in schools.

Albania is small country with a population of 4.3 million, almost a quarter of who lives in the capital Tirana. The rest of the population is spread out in rural areas and in other cities. Presently Tirana is the main consumer of electronic service as people have better eSkills here. It might therefore be necessary with separate and additional promotions outside Tirana if citizens ITC competences and eService take-up are to improve. In other cities service delivery is centred on local services and the justice system. In some cases, "outside players" have facilitated eGovernment projects with the aim of improving local government eServies and one-stop-shops for citizens. Improving eService delivery at the local level will require detailed assessment and understanding of local technical skill levels in managing and operating IT systems.

Fear of personal data misuse is very low and has almost no impact on eService take-up and use.

Service personalisation

Existing portals are based on simple platforms and do not support personalisation. The main objective of introducing government eServices has been to cut long queues at the service counter and cut the operation costs of public administration.

Use of Web 2.0 e.g. social media

The Albanian government does not offer any social media tool itself, but public websites do link to social media, and Albanian citizens are becoming more familiar with social media. Even if citizens' eSkills are not advanced, people are becoming more familiar with social media.

Government institutions do participate in social media sites provided by third parties.

The National Agency on Information Society (NAIS) and Ministry of Innovation and ICT (MITIK) are both using LinkedIn in the government CIO secretariat, where a closed group of IT employees are using the LinkedIn platform as a discussion and comment forum.

The internal government network portal does not support wikis, blogs and other social media yet. All government websites have RSS capabilities, but this feature is not used by the institutions public relations departments, although some institutions have started to offer their photo and video galleries through a YouTube channel.

Feedback, participation and user collaboration.

There is no co-production of content between users and government in Albania. There are tools available to get feedback such as websites' quality and other issues, but they are seldom used, and information is not gathered systematically and feed back to institutions. Citizens generally don't make suggestions and complaints in writing. However, if a government entity gets a lot of suggestions to add or provide a specific service or specific content, it is obligated to react positively, although there are no real life examples of this. For the government to understand Albanians common perceptions of a specific topic, visiting external social media sites often provides better information.

Open data

The initiative "Albania in OGP" from August 2011 was taken by the Albanian government after Albania became part of the open government partnership consortium.

The open government partnership memorandum will be followed up by a national action plan, which will include not only the government institutions, but also the civil society and NGOs. The national action plan will produce a national strategy for open data, build a national open data portal, and will push government institutions to publish data such as government budget expenditures in an open format. Based on this political initiative the National Agency on Information Society has drafted new regulation for all public institutions on the delivery and use of open data. NAIS is also planning to build a common platform for publishing open government data.
These initiatives all reflect the governments' will to continue the fight against corruption, to govern with maximum transparency, and to improve participation of citizens in government decisions.

Transparency and trust

As previously mentioned the Albanian Government has made ICT development one of its top priorities, and introduced the "Digital Albania" initiative calling for an acceleration of ICT penetration and use in Albanian government.

Achieving the objectives of the "Digital Albania" will require infrastructure investments, institutional reforms, legislative improvements, capacity building and effective implementation of these policies. A project, signed with UNDP, will support improving the legal and technical foundations for the IT infrastructure. The project will also provide direct support to the institution of the Minister for Innovation and Information and Communications Technologies to better manage the national information society agenda. This includes technical assistance to create a complete legal framework, strengthening the public and private partnerships in this regard, and the application of the most advanced ICT standards.

ICT as a driver in the fight against corruption and for increasing transparency can be exemplified in a most recent case from the General Directorate of Land Transport (GDLT). GDLT is the responsible institution for the national vehicle register and driving licenses. From 2011 the GDLT has started to digitalise the entire work flow starting from the citizen test to get a driving license to the vehicle registration process in a one-stop-shop. There is a similar initiative from the Ministry of Education and Science.

6.2 Bosnia and Herzegovina

eGovernment user benefits

The main advantage for business and citizens is that they can obtain information faster and at their own convenience. The introduction of e-Services also facilitates better communications between governments and businesses, and government and citizens. The biggest benefit of implementing eGovernment services is ability of a service to be accessible to citizens irrespective of location. eGovernment services allowing faster turn-around of information requests, people not having to go to government offices to ask for information, direct access to information on web-sites, and managing information requests is a huge benefit.

eGovernment user barriers

For businesses there are no barriers to using eGovernment services, as they are oriented towards efficiency and money savings. Business is actually a driver for change in government and for development of electronic services.

For citizens there are a few barriers:

- Lack of adequate broadband access to citizens in rural areas
- Lack of eSkills and knowledge on the use of services provided by government
- Lack of trust in the services and information provided by the government.

Service personalisation

There is no service personalisation on government websites in Bosnia and Herzegovina.

Use of Web 2.0 e.g. social media

Web 2.0. tools are used to greater or lesser extent by most institutions. Almost all institutions have their own wiki pages and RSS feeds on their website. Government's use of social media networks is a slightly different story. In BiH using social media to communicate with the public is still in its infancy. Only a few institutions, around 15% at all levels of government, have a Facebook page and are present on Twitter (the Civil Service Agency of BiH, FIPA, Agency for Information Society Development of Republic of Srpska, Federal Ministry of Education and Science, Agency for Identification Documents Registers and Data Exchange of B&H (IDDEEA), and the State Investigation and Protection Agency). Less than 10% of the Institution uses forums, polls, blogs, and other forms for interaction with the public. In conclusion, the Government of BiH has not yet recognised the true power of using social media to promote their work and building trust between the government and its citizens.

Feedback, participation and user collaboration.

In BiH, there are no provisions for receiving and using user feedback.

The most common way of collaborating with users in BiH is done through public discussions about current issues, projects and laws. As an example of this type of collaboration, a public discussion for the project "Design and establishment of an interoperability framework and standards for data exchange in BiH" Will take place in the first quarter of 2013. Academic institutions and companies operating in the ICT sector will introduce the public to initial results of the project and receive comments in order to provide better quality results of the project.

Open data.

All state data exchanged between different institutions at all levels of government are in XML format. These data includes data about citizens, places of residence, government sessions, information on the status of the law etc. All institutions, its laws, legal acts, work reports and other documents and information related to the institutions are presented to the public in an open file formats, usually PDF.

Transparency and trust.

The Law on Freedom of Access to Information in BiH was adopted in 2000 at the state level. Monitoring the implementation of this law is done by Transparency International BiH, and the last report from 28. September 2012 shows persisting legal uncertainty in the process of providing information.

In 2009, the Law on Prevention of Corruption and Anti-Corruption was adopted. Its 'Strategy for the Fight against Corruption' (2009-2014) provides for certain initiatives for developing eGovernment and eGovernance, in order to minimise the possibility for corruption in the relationship between citizens and the public administration. Some of these measures include:

- **E-Transparency** - Access to Information / legislation through the Internet and the web site for all government institutions at all levels in BiH;
- **E-wealth and interests** - an electronic database of decisions on conflicts of interest and accountability of the state;
- **E-decision** - the modernisation of the principles underlying the operation of the public administration in order to fully use modern technology and thus improve the efficiency of administration;
- **E-recruitment** - all jobs in all public services should be publicly advertised and electronic submission of documents for the appointment / selection should be allowed;
- **E-Public Procurement** - Implementation of measures to allow bidders participate in procurement procedures in public procurement through the Internet. This will guarantee equal access for all participants in the market in the tendering procedures, while ensuring the necessary transparency;
- **E-access to information** related to the operation of the courts, including the publication of court decisions on the Internet.

6.3 Croatia

eGovernment user benefits

- Greater transparency
- Time savings as everything can be done from home
- No need to stand in lines
- Money savings i.e. for travel as businesses can be done at the place business without additional employees and the cache flow is faster
- Getting ICT practice and being motivated to learn
- Getting proactive information from government

Doing Business in 2007 and Doing Business in 2008 – top reformer with the eHealth insurance application and eLand register access.
Doing Business in 2010 reported that registering a property in Croatia now takes only 104 days, while it took 399 days in 2007.

eGovernment user barriers

User barriers to eGovernment in Croatia are typically lack of eSkills, of awareness, and no tradition for using new technology and engage with the new.

Croatia also participates in the European Union ISA programme, which has a goal of breaking down eGovernment barriers[14].

Service personalisation

At the moment there is no service personalisation in Croatian government eServices.

Use of Web 2.0 e.g. social media

According to the "Online Communication Strategy of the Government of the Republic of Croatia" social media has been used in communication with citizens. Examples are:

- http://www.facebook.com/wwwvladahr
- @VLADAHR (Twitter) - https://twitter.com/VladaRH

The Facebook page 'Vlada Republike Hrvatske' (http://www.facebook.com/wwwvladahr) has about 75,000 "likes" from Facebook users. The Twitter profile @VLADAHR follows more than 9,800 Twitter profiles and has over 11,000 followers. It is a very active profile having made more than 8,400 tweets[15]

Collaboration with users.

There is a form on the citizen portal Mojauprava.hr where citizens can send submit comments regarding public services. Their comments are handled by the editorial team which discusses comments and proposals with the relevant government bodies.

Open data

In Croatia there is an ongoing project regarding publishing data from cultural heritage, foreign affairs, jobs, and statistics.

Transparency and trust.

Croatia is actively participating in Open Government Partnership and there are a number of measures planned to increase transparency and trust throughout local, regional and national government with the help of eGovernment[16]

6.4 Kosovo[17]*

eGovernment user benefits

Potential benefits are:

- Transparency in government
- Prompt and efficient government performance
- Ensuring participation from all citizens level governance
- Establishing information exchange between institutions and preventing repetition of information
- Simplify life's of citizens
- Improving and accelerating decision making processes by the decision makers.

and if these are realised benefits will be:

- Earnings from time savings
- Costs will be reduced

14 http://ec.europa.eu/isa/

15 Data on tweets, followers etc. reflects the status on 24 November 2012

16 http://www.uzuvrh.hr/userfiles/file/Akcijski%20plan-Partnerstvo%20za%20otvorenu%20vlast-5_4_2012_.pdf

17 *This designation is without prejudice to positions on status, and it is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

- Productivity will grow
- Customer satisfaction will rise
- Economic improvement will be supported
- Better life standard
- Personal participation will grow

eGovernment user barriers

Disabled people have difficulties getting access to information:

- Excessive load information
- Public information for privacy, for the protection of copy rights and uncertainty
- Inequality in access to information

Service personalisation

We have no real information on this subject.

Use of Web 2.0 e.g. social media

Web 2.0 tools such as social media are only available from some municipality websites. Government institutions do not participate in social networking.

Feedback, participation and collaboration with users

There are provisions to receive requests, comments and feedback in the e-Portal, but no collaboration with users is taking place.

Open data, transparency and trust

There is no provisions for offering open data to the public in Kosovo*, and there is no government initiatives to promote transparency and trust through eGovernment.

6.5 Macedonia

eGovernment user benefits

There has been no official measurement of the gains from eGovernment. However, there are few expected benefits:

- Almost half of the entities in the public sector (48.9%) had policies designed to reduce the amount of paper used in printing or copying. 47.7% had policies for using telephone, web or video conferencing instead of physical travel[18].

Also, bearing in mind that there are services that could be consumed only as eServices such as the one-stop-shop system for import/export licenses and quotas – EXIM; a system for electronic registration and termination of employments; the system e-tax for businesses; the system for e-procurement and others) the benefits in place are:

- eServices are available 24/7
- The complete paperless submission of information, therefore saving of money for paper is 100%;
- Not having to bring paper documents to physically to the public administration saves time and money
- etc.

eGovernment user barriers

There is low usage of digital certificates in Macedonia, as the cost of digital is high vs. the numbers of services offered that requires digital certificate for authentication and signing.

18 http://www.stat.gov.mk/pdf/2011/8.1.11.31.pdf

The level of ICT skills level in both the administration and population is good; however there is a lack of knowledge regarding eGovernment. Further, there is not enough awareness about eGovernment, and the perception of eGovernment as only hardware and software still persists.
The government needs use different approaches in promoting eGovernment as a concept to different user groups. The fear of cybercrime, data misuse and abusage of personal data in public service delivery, constitutes major barriers holding back many decisions and postpones or delays crucial projects.

Service personalisation.

Service personalisation in Macedonia only exists to the extent of drawing data from different registers within the same institution, which is not really service personalisation.

Use of Web 2.0 e.g. social media

Most institutions[19] have links to Facebook and Twitter but use it only as an information tool with the public, e.g. the Ministry of Information Society and Administration (MISA) posts all news both on Facebook (http://www.facebook.com/mioarm) and as on the official website (mioa.gov.mk), but there is no big interaction with the public.

Internally, within the institutions, employees are not allowed to use social media with the exception of PR staff. There is no official data available on how much government institutions participate on social media sites.

Feedback, participation and collaboration with users

Citizens can send feedback to government and the public administration through:

- The Citizens diary, a service on uslugi.gov.mk
- On the e-Democracy portal (e-demokratija.gov.mk) there is tool for practicing e-democracy, developed to offer citizens modern means for public debates, to support participation in public life, to strengthen community and to promote democracy.
- The "Traffic light" devices (orig: Semafor) that are deployed in 187 government front offices has the aim of measuring customer satisfaction from the services delivered.

The unique national electronic register of regulations (ENER) is an electronic system which in addition to the existing regulations in Macedonia contains draft laws. It is a tool primarily intended for informing citizens via electronic media, as well as representatives of non-governmental organizations, chambers of commerce, business associations and legal persons, government officials, and individual ministries. Through the Regulatory Impact Assessment (RIA) process, appropriate and timely public consultation is coordinated and engages citizens, who can submit suggestions, opinions and comments when regulation is created.

'Regulatory guillotine phase 4' is an instrument for collecting complains, suggestions, requirements/needs statements for strategic/systematic administrative questions from small businesses. Feedback is analysed and used when making action plans and measures for administrative reform.

Open data

Macedonia signed the Open Government Partnership Initiative[20] in September 2011, and the government has adopted a national action plan for implementing the priorities of this intiative. A portal (opendata.mioa.gov.mk) with access to already published open data (not storage of data), offering a catalogue of links

19 Examples: the official website of the Government of Macedonia (vlada.mk) and Agency for electronic communications (aek.mk); RSS: (mioa.gov.mk); registration of users for newsletters/services: the Public procurement bureau (https://e-nabavki.gov.mk and the Agency of Electronic Communication

20 The World Banks Open Government Partnership

to various institutions sites containing public finished and raw data in computer readable format. Each institution is responsible for publishing and maintain its own data. The catalogue of open data is being extended on a daily bases. The majority of the open data opened is in PDF format, but efforts are made extending it into CSV, HTML, XML and others formats.

Transparency and trust

There are no particular initiatives for promotion of transparency specifically in eGovernment. As part of the reform in the public administration, many initiatives have had transparency as a basic goal. eGovernment is just considered one of the instruments for accomplishing these goals. Several regular initiatives are in place, but it is the institutions themselves who chooses the approach and instruments for their implementation. The regulatory acts are:

- Law for free access to public information,
- Law for personal data protection,
- Law for free access to public data,
- Law for classified information,
- Law for prevention of the corruption,

The most important document for fighting corruption 'National programme for prevention and repression of corruption'[21], with an action or plan 2011-2015 was developed by the State Commission for Corruption Prevention. The fight against and prevention of corruption is incorporated in most ministries strategic documents.

6.6 Montenegro

eGovernment user benefits

Benefits for the users are defined in the 'Strategy for Information Society Development' in a form of goals such as

- Increase the share of ICT sector in GDP by 50%,
- Enhance workforce in ICT sector by 50%,
- Raise the possibility of broadband access that gives high-speed access by providing a symmetrical, guaranteed access to broadband (agnostic approach) of at least:
    - 10Mbps for 50% of the population by 2014
    - 10 Mbps for 100% of the population, and 30Mbps for 50% of the population by 2016
- Achieve mass acceptance of ICT and the Internet and improve digital inclusion and reach the level of:
    - Internet use by 70% by 2014 and 80% by 2016
    - broadband access – of 25% by 2014 and 40% by 2016
- Provide wide access to the most used electronic services of public administration, to ensure access to the hundred most used services from government agencies and local self-governments on the eGovernment portal by 2014, increasing to 200 services in 2016.

eGovernment user barriers

The high price of issuing digital certificates is still an important barrier for eGovernment development in Montenegro.

Service personalisation

The eGovernment portal recognises three types of users: anonymous, users registered by e-mail and users registered by digital certificates.

21 http://www.dksk.org.mk/images/stories/pdf/drzavna%20programa/dprograma%2026.12.11.pdf

Registered users have a separate page within the portal providing personalised content such as news. Further, on this page, a user can preview all submitted requests, status of requests and can communicate with the person responsible concerning his or her request.

Use of Web 2.0 e.g. social media

The Montenegrin government has developed a official discussion forum, but has yet to be launched. The official government portal, as well as other portals from state authorities, offer Web 2.0 tools for users such as RSS and FAQs.

There is a Twitter account @vladacg, a government Facebook page and an official Youtube channel (www.youtube.com/user/MeMontenegro) for Montenegro. The Prime Minister has posts to a blog on the official portal of the government (www.vlada.me). Finally, several Ministries have opened Twitter accounts and Facebook pages.

Feedback, participation and collaboration with users

The **System for electronic public debates – eParticipation** has been developed for the eGovernment portal, and each government institution is obliged to provide material for public debates where users can comment electronically

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The **e-Petitions system** aims to ease public participation in Montenegrin political life. All ePetitions will be accepted and published on the website provided that: They call on the Government to undertake concrete actions within the scope of its authorities; They are not substantially the same as an existing open e-Petition; and that they meet the criteria for submission of e-Petition (to be published on the web site).

Open data

Currently the government publishes materials from Governmental sessions. There is no other readable open data.

Transparency and trust

The Ministry for Information Society and Telecommunications has a department for promotion of the information society. One of the key activities is raising awareness of the importance of information society and implemented key eGovernment projects. In promotional activities transparency is being stressed as being of special importance. The government portal (www.gov.me) provides transparency to some extent. A more valuable transparency initiative will be provided by implementation of the 'budget allocation tools' service for citizens and the 'open budget service' with appropriate information on budgeting and reporting on annual expenses.

6.7 Serbia

eGovernment user benefits

The government, contrary to enterprises, cannot choose its customers, and people are in fact more than just customers. They are connected to the state as taxpayers, users of information and in many other capacities: as citizens, they want to be well-informed, they want to take part in political processes, and they wish to express their opinions concerning certain issues.

- Services which are adapted to the needs of users, services that are more effective and comfortable
- eGovernment as support to the digital single market, with cross-border services and stimulation of citizens and business mobility
- Efficient and effective government service delivery

- Reduction of administrative burdens
- Reduction of the carbon footprint

eGovernment user barriers

Slow and patchy progress of eGovernment in Serbia is mostly the result lacking adequate leadership during all stages of initiating, implementing, promoting and sustaining developments. Advances in wider eGovernment take-up are limited by failures in political and management leadership, such as a lack of clear vision and adequately resourced allocated for planning that could clears blockages before they become barriers. This can significantly restrict the number, scope and impact of e-Government initiatives. Examples from Serbia:

- Inadequate marketing to reach and motivate target audiences among citizens and businesses
- Failure to develop and implement eGovernment services that meet the broad spectrum of citizen needs
- Lack of strong motivation in some groups of citizens, for using eGovernment services
- Low levels of Internet use amongst certain groups
- Not making eGovernment services easily accessible to the visually impaired and others with disabilities.
- The “Big Brother” fear of unwarranted government intrusion into private lives and business operations through the growing use of networked or integrated digital databases
- Insufficient priority to implementing and promoting effective e-Government security
- Intrinsic “cyber trust tensions” as shown in the general desire for both privacy and security even though a degree of disclosure or loss of privacy is typically necessary (e.g. to identify the user of an online tax or welfare service)
- Public concerns over the potential for online theft and fraud
- Public perceptions over the risk to privacy and civil liberties
- eGovernment applications that are difficult to use
- Lack of standards and even rules for electronic identification

Service personalisation

To protect personal data, no attempts have been done towards service personalisation. The technical solutions are not available or have not been implemented in Serbia to adequately protect personal data.

Use of Web 2.0 e.g. social media

The government institutions have a broad offer of Web 2.0 services. Examples are:

Government[22] and members (Prime Minister of Serbia and Minister of Internal Affairs[23]: Minister of Justice and Public administration[24], Minister Defence[25]) of the government have official Facebook pages with actual content. Also, the almost all Local Self Government (City of Belgrade[26], Municipality of Inđija[27], Municipality of Ub[28]) have official Facebook pages with actual content.

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22 http://www.facebook.com/vladasrbije?fref=ts

23 http://www.facebook.com/pages/Ivica-Dacic/112452018780396?fref=ts

24 http://www.facebook.com/nikola.selakovic?fref=ts

25 http://www.facebook.com/aleksandar.vucic.sns.bg?fref=ts

26 http://www.facebook.com/beograd.sg?fref=ts

27 http://www.facebook.com/OpstinaIndjija?fref=ts

28 http://www.facebook.com/opstina.ub?fref=ts

Government[29] and members (Prime Minister of Serbia and Minister of Internal Affairs[30], Minister of Justice and Public Administration[31], Minister Defence[32]) of the government have official Twitter accounts. Also, the almost all Local Self Government (City of Belgrade[33], Municipality of Inđija[34], Municipality of Ub[35]) have official Twitter accounts.

Ministry of Internal Affairs[36], Ministry of Defence[37] and the Portal of eGovernment of Serbia[38] uses YouTube for communication and for education of users. Also, some political parties use YouTube for communication.

The Portal of eGovernment of Serbia (http://eparticipacija.euprava.gov.rs) has different thematic forums.

In Serbia there is no practice of building wikis for Governmental purposes.

In Serbia there is also no practice for using internet polls for Governmental purposes but the governmental polls are published on internet (example is Serbian European Integration Office[39]).

Serbian European Integration Office (www.seio.gov.rs), Ministry of Defence (www.mod.gov.rs) and Digital Agenda of Serbia (www.digitalnaagenda.gov.rs) uses RSS for regular news.

Serbian government institutions only participates in social media sites for communication and information purposes

Feedback, participation and user collaboration

In 2005 the National Information Technology and Internet Agency prepared the first edition of the recommendations and guidelines for development and maintenance of state bodies, local authorities, and public services web sites entitled: "Recommendation for making Web sites of state bodies, local authorities and public use." The Second Edition, "Recommendations for Web site of the state government" created in 2008 in response to the strategic documents that have been accepted by the Government (eSEE + Agenda for the Information Society in South Eastern Europe 2007-2012, the UN Convention on the Rights of Persons with Disabilities and Conclusion on the acceptance of the need to facilitate access to information in electronic form of the state administration to persons with disabilities, adopted by the Government of the Republic of Serbia in late 2007). In this second edition, special attention is paid to eAccessibility of the web sites. One of the key objectives of the eSEE Agenda+ eInclusion which means equality for all in terms of access technologies and active eParticipation and public administration services that are provided by the use of ICT. The second edition of the Recommendations adopted

29 https://twitter.com/srpskavlada

30 https://twitter.com/ivicadacic_sps

31 https://twitter.com/selakovicnikola

32 https://twitter.com/avucic

33 https://twitter.com/GradBeograd

34 http://twitter.com/Indjija_opstina

35 https://twitter.com/OpstinaUb

36 http://www.youtube.com/user/PolicijaSrbije

37 http://www.youtube.com/user/minnovi

38 http://www.youtube.com/user/portaleuprava?feature=results_main

39 http://www.seio.gov.rs/documents/national-documents.223.html

Conclusion on the 12th June 2008. and recommended that agencies and organizations modify their web site in order with mentioned document to the maximum extent possible.

Possibility to contact directly by visitors to the site - contact form, section “Frequently Asked Questions” (FAQ);

- www.drzavnauprava.gov.rs/contact.php
- www.euprava.gov.rs/kontakt

As an eInclusion measure, there a group forums for subscribers (login), where visitors can suggest topics and issues. Further, and to increase the degree of public involvement in the work of government agencies (e-Inclusion), as well as greater transparency in the work, it is recommended to add forums and FAQ sections to all acts of government authority, and they are obliged to go through a public hearing[40].

In order for the debate to run its natural course, the moderators should notify by email all participants of public debates when new material has been added. To become a moderator of the public hearing on the eGovernment portal, one should send a request to via e-mail to euprava@rzii.gov.rs to start a new public debate.

The Local Self Government uses the same approach as Government on the Portal eGovernment.

The eGovernment portal of the Republic of Serbia strongly supports the concept e-Participation, involving all interested citizens in the public hearing process, as well as through an eGovernment forum, where one can discuss all issues of importance to the promotion and improvement of the contact between the government and citizens[41].

Open data

Work bulletin - a systematic approach

Work bulletins are in accordance with Article 39 Law on Free Access to Information of Public Importance (“Official Gazette” no. 120/04, 54/07, 104/09 and 36/10) and Instructions for the preparation and publication of informants for the State authority (“Official Gazette of RS” 65/2010).

Examples:

- www.drzavnauprava.gov.rs/article.php?id=1670
- http://mfp.gov.rs/pages/article.php?id=7096&#txt7096
- www.nsz.gov.rs/download/Informator-mart-2012.pdf
- www.minrzs.gov.rs/cms/index.php?option=com_content&view=article&id=88:informants&catid=87

Query on the voters list data base. Query contains information on voting by place of voters’ residence, but does not contain the information about selected voting places of the voter, nor information about place of residence abroad in the upcoming elections[42].

The Social Insurance[43]. The Social insurance offer statistical data for Pension and Disability Insurance, Health insurance and unemployment insurance.

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40 www.euprava.gov.rs/eParticipacija/javne_rasprave

41 http://eparticipacija.euprava.gov.rs

42 www.drzavnauprava.gov.rs/electoralroll.php

43 www.zso.gov.rs/statistika-pio.htm

Example:

- Pension payments abroad, comparative review 2010th - 2011.
- Number of beneficiaries in Serbia 1997th - 2011.
- Pension beneficiaries of Serbia abroad in 2011.

Tenders[44]**.** Publicly available data on all types of tender procedures.

Example:

- For the allotment of funds for the project for the development of social services
- Competition for the consultant / project 'to the "fight against sexual and gender-based violence"
- The competition for awards in the field of raising public awareness of the unacceptability of sexual and gender-based violence

Users access to datasets

Geoportal geoSrbija. The purpose of the initial geo-portal is to enable access to search and review of a number of metadata, spatial data sets and services over the Internet for professional users and the general public. Data available on geoprtal are subdivisions, statistical units, addresses, cadastral parcels, main state map, orthophoto and some thematic maps for specific areas. Geoportal includes spatial data selected from other state institutions such as the Statistical Office, Republic Hydrometeorological Institute, Municipality of Pancevo, Agency for Environmental Protection and the Ministry of Defence. As a result the of successful cooperation between the public administration bodies users can access current geoinformation related to demographics, type of soil, hydrography, climatology, seismology, and examples of topographic maps at different scales.

- www.geosrbija.rs/rga/default.aspx?gui=1&lang=2
- www.geosrbija.rs/rga/rga_metadatabrowser.aspx?gui=1&lang=2

Jobs. Human Resource Management Service is a service of the Government which was established in December 2005 in accordance with the Law on Civil Servants. Human Resources Management Service announces open competition where the position is filled by the Government, and the jury in each case appointed by the High Civil Service Council[45].

Statistical Office of the Republic of Serbia. Dissemination database contains aggregated data from regular and special statistical studies and is used to obtain various reports, both external and users within the Department. It is possible to download the generated report in the formats: .xls, .xml and pdf[46].

Open formats (e.g. ODT, PDF-A or similar). Instructions for the electronic office operation (Official Gazette of the Republic of Serbia, No. 102/10) states that the file format ISO 26300 - Open Document Format for Office Applications (OpenDocument) v1.0 and ISO 29500 - Office Open XML File Formats can be used for all work version documents and documents in preparation phase. Until 31 December 2012, file formats used by Microsoft Office 2003 can be used.

Transparency and trust

Law On Free Access To Information Of Public Importance ("Official Gazette Of RS" No. 120/04, 54/07, 104/09 and 36/10) - The Law guarantees freedom of access to information of public importance to every person. This means information contained in documents held by any public authority, created during or relating to its operations and which the public has a justified interest to know. (Article 2 of the

44 www.minrzs.gov.rs/cms/sr/konkursi

45 http://suk.gov.rs/sr/zaposljavanje/oglaseni_javni_konkursi.dot

46 http://webrzs.stat.gov.rs/WebSite/public/ReportView.aspx

law). Freedom of access to information is therefore basically the right to access official documents. According to the law, justified interest of the public to know exists with regards to any information held by public authorities. The applicant does not have to provide evidence that he/she has interest in certain information or that his/her interest is justified, as this is assumed under the law. A public authority must not demand that the applicant specify a reason for filing a request. If a public authority denies access to certain information, it must provide evidence that disclosure of such information to an applicant, i.e. to the public, could seriously violate some other overriding interest which is also legitimate, such as the interest of safety of the country or privacy of others. As regards the so-called privileged information concerning threats to or protection of public health and the environment, a public authority does not have the right to try to demonstrate that the public does not have a justified interest to know such information.

National Strategy For Combating Corruption ("Official Gazette Of RS" No. 56 /05) and Action Plan for National Strategy For Combating Corruption ("Official Gazette Of RS" No. 109 /05) - Corruption manifests itself where a) opportunity and b) interest is present. The Strategy focuses on both these factors. Opportunity must be eradicated through systemic reforms, and interests eliminated through measures that increase risk and reduce gain. The Strategy includes three key elements:

- efficient enforcement of anti-corruption legislation,
- prevention, that implies elimination of opportunities for corruption and
- awareness-raising and education of the general public aiming at public support for implementing of anti-corruption Strategy.

All elements of the Strategy have to be applied concurrently and in co-ordination. This would achieve their mutual support and their aggregate effect would be stronger.

Public Procurement Law ("Official Gazette Of RS" No. 116/08) - This Law regulates the conditions, the manner and procedure for the procurement of goods, services, and awarding work assignments when the procuring entity is a government body, organization, institution or other legal person determined by this Law; determines the manner of keeping records of contracts and other data concerning public procurement, determines the activities and organizational form of the Public Procurement Office; establishes the Republic Commission for the Protection of Rights in Public Procurement Procedures; determines the manner of protecting the bidders' rights and public interest in public procurement procedures; regulates other issues of relevance for public procurement.

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