



KOSOVO
JUDICIAL COUNCIL



2012-2017

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JUDICIAL COUNCIL



FOR THE PERIOD 2012 - 2017



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Introduction

The rule of law and the protection of basic human rights are critical to a free, democratic society. An independent judiciary, transparent in its decision-making processes and accountable for its operations, is essential to ensure the rule of law and protection of human rights.

Accurate, timely and precise information that is properly applied in court proceedings is a precondition for timely and lawful court decisions, which are guarantees of fairness and justice.

Introduction of Information and Communication Technologies (ICT) in judiciaries provides better than ever availability of information for all judicial structures and court employees.

The Kosovo Judicial Council's (KJC) Strategic Plan for the period 2007 – 2012 marked introduction of ICT in the Kosovo Judiciary as one of critical preconditions for fulfillment of KJC's duties and responsibilities.

In order to proceed in an organized and systematic way with its ICT efforts in the future, KJC requested technical assistance of the EC TAIEX program and the Government of Norway in preparation of the ICT Strategy for the period 2012 – 2017. As a preparatory activity for development of the ICT Strategy, the past efforts and the current situation in regard of introduction of ICT in the Kosovo judiciary were summarized in the Assessment report.

The ICT Strategy is a final output of a strategic planning process in which participated a KJC Work Group, representatives of EULEX and USAID projects.

This ICT Strategy represents KJC's plan how to approach introduction of ICT in the Kosovo judiciary for the period of the next five years.

¹ Strategic Plan for the Kosovo Judiciary 2007 – 2012, Preface - page i

1. VISION

Fully introduced and usable Information and Communication Technologies in support of the Kosovo Judicial Council vision to create a judicial system that is efficient, transparent, accountable for its performances and accessible to all.

2. MISSION

Significantly improve availability of information on court cases and court performances through full introduction of ICT and increase possibilities for KJC, court presidents, judges and support staff to perform their tasks effectively and efficiently, thus contributing to overall increase of efficiency and transparency of the judicial system.

3. SPECIFIC OBJECTIVES OF THE ICT STRATEGY:

Through implementation of the ICT Strategy, KJC will stream towards the following specific objectives:

Specific objective(s):	Indicator(s) of success:
a. Transformation of Kosovo courts into e-courts which will use a central database environment, adequate ICT infrastructure and be exchanging data and documents in e-form inside Kosovo judicial system, as well as with all other relevant ICT systems in Kosovo and abroad;	<ol style="list-style-type: none"> 1. Central database environment established 2. CMIS 2013 functional and implemented in all courts 3. Ensured reliability of hardware infrastructure and components at 99% level 4. Existent real time exchange of data with other registries
b. Proactive court management based on real-time data and reports;	<ol style="list-style-type: none"> 1. KJC reviews comprehensive reports on court performances on a monthly basis, performs analysis and makes appropriate decisions or issue instructions 2. Court presidents review court and employee performances on a weekly basis, performs analysis and makes appropriate decisions or issue instructions
c. Availability of on-line services for citizens through creation of a judicial web portal.	<ol style="list-style-type: none"> 1. Web portal which includes web pages for each court up-to-date and available 24/7 2. Number of unique web page "hits" 3. Surveys on quality and availability of data and services to the public
d. Creation of KJC in-house human resources which will possess knowledge and skills necessary for execution of this ICT strategy, as well as providing court staff with adequate training and hardware equipment for everyday and uninterrupted usage of KJC's applications, e-mail and internet;	<ol style="list-style-type: none"> 1. KJC's human resources able to develop software applications, maintain computer system and provide support which fit needs of the end users 2. Hardware infrastructure installed and maintained to ensure uninterrupted operations of courts and court employees 3. Access level to e-mail, internet, judicial applications, access to web portal and documentation centre, ensured at 99% level 4. Basic and advanced ICT training provided to all end users in field and in a prolonged time period, which results in regular and clean data entries



e. Extensive cooperation with other judicial systems on application of ICT in judiciary on both regional and international level;

1. Number of international/regional ICT related events in which KJC contributed
2. Number of regional/bilateral ICT related agreements which KJC reached

f. Significant effort to secure financing for execution of the ICT strategy through both Kosovo government and donor financing

1. Increased KJC's budget for ICT investments
2. International donors assisting in financing the ICT Strategy through "expansion" phases
3. Ensured stable financing of KJC's ICT operations in the "maintenance" phase

4. ICT STRATEGY

The ICT Strategy will achieve its purpose and enable KJC to reach its strategic goals through eight principal groups of related activities.

In this ICT Strategy, these groups of related activities are imagined and presented as Pillars.

To support KJC's ICT Strategy, the following eight Pillars are determined:

Achievement of the ICT Strategy's overall results will require simultaneous and synchronized build up of all Pillars.

Build up of individual Pillars and achievement of the Strategic Goal(s) for each Pillar, KJC will achieve through implementation of specific Strategic Programs.



PILLAR 1: Legal and Policy Framework

STRATEGIC GOAL 1:

Improved legal and regulatory framework which enables effective and efficient use of ICT in the Kosovo judiciary

Full introduction of ICT in the Kosovo court system will represent a major change of a way how the works in our courts get done. Currently, all legislative and regulatory solutions in Kosovo are created to support old manual (“paper and pen” based) systems.

In order to enable full introduction of ICT solutions in to the Kosovo judiciary, it will be needed during the execution of this ICT strategy to undertake activities on changing laws, sub-laws, policies and procedures.

KJC will initiate and work together with the Government and other relevant State institutions on necessary legislative changes. Within its responsibilities, KJC will undertake technical activities and pass needed sub-laws, policies and procedures.

KJC will ensure synchronized and timely promulgation of amendments and/or regulation, in order to enable implementation of ICT in line with legislative and regulatory frameworks in power.

To build this Pillar and to achieve the Strategic Goal 1, KJC will initiate and perform the following Strategic Programs:

- 1.1. Initiate legislative changes needed for successful introduction of ICT in Kosovo Judiciary**
- 1.2. Undertake regulatory changes within KJC’s responsibility**

- 1.3. Create regulatory framework and procedures for secure conduct of pilot initiatives**

STRATEGIC PROGRAM 1.1: Initiate legislative changes needed for successful introduction of ICT in Kosovo Judiciary

KJC shall initiate and propose, through appropriate legislative procedure, amendments to the laws currently in force in order to enable: appropriate institutional framework, adaptation of the procedural laws and creation of adequate human resources for conduct of ICT operations.

In order to ensure clear authority and responsibility of KJC for implementation, coordination and supervision of the uniform introduction of ICT technologies in Kosovo judiciary, KJC shall submit amendments to the Law on the Kosovo Judicial Council. In addition, KJC shall request an authorization to receive and manage direct donor financing for ICT projects in judiciary.

To accommodate effective and efficient usage of ICT in court proceedings, KJC shall initiate legislative changes to the procedural laws. Electronic service of process, usage of electronic documents, their receiving and sending, usage of digital signatures and similar will be just some of

issues which should be addressed, and accordingly supported by laws in order to be implemented in the court procedures. It will be a constant activity of KJC to monitor possible improvements which the ICT can bring to courts and citizens, and to timely start with initiatives for amending respective legislation.

In order to ensure proper human resources which can provide adequate operational support to the ICT Strategy and its future achievements, KJC shall work collaboratively with the Government to find ways of attracting and maintaining specialists who should be employed in accordance with laws which regulate employment of civil servants.

STRATEGIC PROGRAM 1.2: Undertake regulatory changes within KJC's responsibility

KJC expects that full introduction of the ICT in the Kosovo courts will lead to a new organization of court work processes. Processes like: records keeping and records management, case flow, assignment of tasks, monitoring of performances, timeliness in achieving of planned or by law prescribed activities and similar will be just some of those which will be performed in significantly different way than in the current manual system.

Introduction of ICT, supported by related business process redesign, shall make that work burdening activities in courts become faster and easier, while repetitive actions are speeded up. KJC will use these improvements to shift and reallocate resources within the current court organization, in order to provide better services to the public and to increase efficiency of courts.

KJC will examine current sub-laws, rules and procedures which regulate work of courts, operations and systematization of work posts and make appropriate

amendments. KJC will also pass new sub-laws, rules and procedures which were not existent before in order to regulate application and usage of ICT equipment, ICT security, Internet, e-mail and others.

As most of these regulatory issues come within responsibility of Judicial Councils in the European states, KJC will invest efforts in international and regional cooperation with other Judicial Councils at regional and international level.

STRATEGIC PROGRAM 1.3: Create regulatory framework and procedures for secure conduct of pilot initiatives

Although this ICT Strategy is very enthusiastic and should have far reaching positive outcomes for the Kosovo judiciary, KJC will ensure that all new ICT solutions or changes in work processes are well and thoroughly tested before full implementation in all courts.

In order to enable, but also to foster experimenting with the new ideas, as indispensable part of new achievements, KJC will pass regulation for conduct of pilot concepts. Under an established procedure a selected pilot court will be exempt from application of a sub-set of rules in order to verify behavior and applicability of new ideas in the real life, real court environment.

A procedure which shall be established for applying, approving and implementation of pilot concepts and their implementation in pilot courts, will have to be fast and simple, but at the same time it will have to have strong monitoring and validation mechanisms included.

PILLAR 2: Sponsorship and Supportive Decision Making

STRATEGIC GOAL 2:

KJC actively involved in ICT financial aspects, monitoring of ICT results and timely ensuring support for the operational level within its responsibility and authority

By adoption of the ICT Strategy, KJC sets up clear goals, as well as expectations of what improvements and increases in transparency and efficiency are to be expected.

Achievement of this Strategy and KJC's Vision will not be possible without significant financing. KJC will have to put a significant effort in getting funding for execution of this Strategy and throughout its implementation to demonstrate that results are achieved.

In order to achieve the ambitious goals, KJC will have to ensure support and cooperation of court staff, which in the end, should benefit the most from the introduction of ICT. KJC will promote its Strategy and its goals through creation of a User Group which will represent interest of court presidents, judges and court employees. This User Group will validate every software solution before implementation in the courts. KJC will seek that members of this Group be active promoters of KJC's ICT efforts among colleagues in the judiciary.

KJC will be constantly open for future end user suggestions and improvements of the implementation process, but at the same time KJC will communicate its strong intention to achieve its goals and that any unreasonable effort to jeopardize goals of this Strategy will not be tolerated.

Specific Strategic Programs which will be initiated within this Pillar are:

- 2.1. Provide continuous, timely and full support for operations through monitoring of implementation of the ICT Strategy
- 2.2. Ensure adequate financing for execution of the ICT strategy through increments in KJC budget and donor assistance
- 2.3. Ensure donor projects coordination
- 2.4. Engage in international and regional cooperation
- 2.5. Create and give a mandate to a user group

STRATEGIC PROGRAM 2.1: Provide continuous, timely and full support for operations through monitoring of implementation of the ICT Strategy

The support of KJC for the implementation of the ICT Strategy will not be declarative. This strategy, representing the real needs of the Kosovo judiciary and achievement of its goals, is of major importance for both the citizens and the Republic of Kosovo. Due to its importance, KJC will provide continuous, timely and full support for execution of the ICT Strategy.

By passing this Strategy, KJC clearly shows its determination to change and modernize the judiciary of Kosovo.

KJC will establish a mechanism to govern the execution of the ICT Strategy. This mechanism should enable KJC to periodically assess the progress in implementation of the ICT strategy, expenses, missing finances and any other issues which might represent both challenges and opportunities for the implementation of the Strategy. KJC will at minimum review implementation results on a quarterly basis. Within its competences KJC will promptly issue decisions necessary to mitigate risks or remove obstacles. Council members will also do field visits in order to demonstrate determination of the Council, understand issues and hear proposals from end users in the courts.

KJC will seek to ensure that it utilizes best practice when configuring programme governance. This means that immediately after the formal adoption of the Strategy by the KJC, a Programme Steering Board (PSB) will be appointed by KJC decision.

The PSB will consist of a KJC member, delegates of KJC-Secretariat senior management, representatives of sections of donors and of interested parties, including EULEX.

The mandate of the PSB will be to review progress of the implementation of the strategy on a regular basis and ensure coordination; inter alia, to review programme activities against plan, programme budgets vs. actual spending (in order to identify and resolve any significant variances), discuss progress reports and resolve any other significant issues arising affecting the execution of the strategy.

Meetings of the PSB should be held every quarter of a year (or more regularly, should it be requested), and the meetings should be supported by a standing agenda that should be agreed in advance by the participants. The inaugural meeting will be held as soon as practicable following the adoption of the Strategy by the KJC.

The PSB will report to the KJC at least twice a year. Reports will include progress reports from each single project, reports from the

User Group, budgetary reports, ad hoc reports.

The Director of KJC-Secretariat will ensure the appropriate administrative support to the PSB and will appoint a KJC Programme Manager responsible for ensuring liaison with all relevant actors and technical expertise to the PSB.

STRATEGIC PROGRAM 2.2: Ensure adequate financing for execution of the ICT strategy through increments in KJC budget and donor assistance

KJC is aware that for achievement of overall objectives of the ICT strategy significant financing will be needed, but at the same time increase of efficiency in work of courts, improved transparency of court activities and achievement of European standards is impossible without investing in ICT.

The ICT strategy has an ultimate goal not only to modernize work in Kosovo courts, but to strengthen rule of law and in that way increase trust of citizens and investors.

KJC will present the ICT strategy to the Government of Kosovo and will seek its support. A positive response from the Government is expected in form of an increased budget for KJC's capital investments and human resources in ICT, continuously throughout next several years.

At the same time, KJC is realistic about the level of financing which the Government of Kosovo can ensure for this purpose and is aware that financing will have to be sought through other sources as well.

Missing financing could be covered by international donors, which for years have been helping both the State and the Judiciary of Kosovo. For execution of the ICT strategy, KJC will prepare projections of total costs for implementation of ICT in Kosovo judiciary. These projections will be presented to the Government and the donor community. KJC expects that both the Government and the donor community

will contribute by selecting activities or groups of activities which they can provide financing for. Overall co-financed budget will be developed at the end of this process, and presented to all contributors.

To the extent possible, KJC will be in charge of execution of the co-financed budget and KJC will be in charge of reporting to each contributor on both overall progress of the ICT Strategy implementation and detailed expenditures for particular donor in the area of its contribution.

A joint co-financed budget, together with this Strategy, will be a basis for identifying new donors and an opportunity for them to join in. KJC will actively seek for additional sources of financing throughout implementation period for this Strategy.

STRATEGIC PROGRAM 2.3: Ensure donor projects coordination

In Republic of Kosovo, there is a strong presence of the international organizations and donors. In many cases they are in charge of implementation of specific projects in the Kosovo judiciary. KJC highly appreciates these efforts and expresses its intention to continue to collaborate with all possible donors. KJC declares that donor's financing of this Strategy, will be indispensable for its execution

In order to maximize effects of these projects and their impact on the Kosovo judiciary, KJC will take a more active role in synchronization of these projects and seek to maximize return on investments for both donors and the Kosovo judiciary.

As this ICT Strategy was developed with the help of ECLO/TAIEX and the Government of Norway, while representatives of EULEX and the USAID and its projects were involved in its development, KJC is of a firm opinion that this Strategy should serve as a common platform for action, both for donors and KJC. Any new donor should

align its efforts in ICT related issues to the goals and activities which will be performed in accordance with this Strategy.

Throughout implementation of the ICT Strategy, KJC will seek to organize, through the PSB, regular coordination's meetings for execution of this Strategy with donor organizations. Within those meetings, sharing of activities as well as common planning for undertaking of synchronized activities should take place.

STRATEGIC PROGRAM 2.4: Engage in international and regional cooperation

KJC is fully aware that at the beginning of execution of this Strategy it lacks a lot of experience in regard of introduction of ICT in comparison with some other advanced judicial systems.

KJC will seek for, initiate and support every kind of international and regional cooperation which can help exchange of knowledge, ideas and experiences. In order to achieve ambitious goals given in this Strategy, KJC recognizes that education of its staff and their exposure to international conferences and seminars will be indispensable.

The KJC-Secretariat and the project(s) in charge of implementation of this Strategy will be tasked with identification of advanced judicial systems in terms of ICT usage, and possible establishment of bilateral collaboration and cooperation with them.

KJC is also committed to share its experiences and best practices with other judicial systems.



STRATEGIC PROGRAM 2.5: Create and give a mandate to a user group

In order to ensure that:

- this Strategy is meeting its objectives at the operational level;
- it enables end users to have influence on development and implementation of ICT solutions in the Kosovo judiciary; and
- it creates a communication bridge between end users and KJC staff in charge of operational execution of this Strategy,

KJC will establish an User Group. The User Group will be in charge of providing users' expertise, approve changes / modifications / enhancements of proposed ICT solutions, before their implementations in courts. The User Group will formally report to the KJC through the PSB and will provide a formal update of their work to the PBS at their regular meetings or on an ad hoc basis, if requested.

The number and level of representation in the User Group will be established by KJC's decision. All User Group members will have to be willing and strongly interested in helping implementation of the ICT Strategy and should possess credibility and enjoy trust among colleagues in the Kosovo judiciary. Extensive ICT knowledge will not be a decisive criterion for selection. The Director of KJC-Secretariat and the KJC Programme Manager will be members of the User Group, as will a representative of EULEX. Other international stakeholders may be invited to appoint a representative to the User Group.

The Director of KJC-Secretariat will ensure appropriate administrative support to the User Group.

The User Group will work in close cooperation with the project managers of each single project established to

implement the Strategy. The relevant project manager will involve the User Group in each step of the implementation of the project and inform the User Group about plans, execution and relevant issues at the operational level through User Group meetings which will be held at minimum once a month.

KJC will ensure that the work of the User Group is known to all staff in the Kosovo judiciary. A procedure for forwarding complaints, suggestions and proposals from end users to the User Group will be established.

PILLAR 3: Reliable Hardware Infrastructure

STRATEGIC GOAL 3:

Create and Maintain Reliable Hardware Infrastructure as Precondition for Introduction of Software Solutions in the Kosovo Judiciary

In the previous ICT efforts in Kosovo judiciary, significant investment was directed towards purchase of hardware. Currently, some of that hardware is fully functional like Wide Area Network (WAN) and Local Area Networks (LANs), while some other pieces of equipment have become obsolete.

In the future period, KJC will have to ensure that all missing equipment be purchased and delivered in a synchronized way in parallel with other ICT efforts.

In order to ensure stability of the system infrastructure, KJC will have to plan to renew existing equipment in time periods prescribed by technical standards or good practice.

To achieve the Strategic Goal 3, the KJC will engage in the following Strategic Programs:

- 3.1. Establish Adequate Central Server Room**
- 3.2. Provide adequate connectivity between all judiciary locations**
- 3.3. Provide adequate Server infrastructure**
- 3.4. Create Disaster Recovery Capacities**
- 3.5. Ensure adequate desktop computers**
- 3.6. Migrate from WIN XP to WIN 7 operating system**
- 3.7. Implement central UPS and electricity generators on judicial location**

3.8. Implement Audio Recording Systems

3.9. Implement Witness Protection Systems

STRATEGIC PROGRAM 3.1: Establish Adequate Central Server Room

KJC's first priority for creation of adequate conditions for ICT equipment is to establish a secure and efficient server room.

The server room will be designed to function as a carefully controlled environment. Throughout works on design, establishment and maintenance of the server room, all valid technical and security standards as well as good engineering practice have to be applied. Choice of location, the amount of space required and the related power requirements are important factors which will be observed.

KJC will locate and build its principal server room in the Palace of Justice. Until the Palace of Justice is in the construction phase, KJC will temporarily seek to establish its server room within the Kosovo Government's server room.



STRATEGIC PROGRAM 3.2: Provide adequate connectivity between all judiciary locations

As the result of the previous ICT efforts, KJC has working and functional Local Area Networks (LANs) and Wide Area Network (WAN). All judicial locations are connected to the network.

KJC's goal is to connect all judicial locations by the optical network built by Ministry of Public Administration and to establish backup connections with leased lines provided by commercial companies.

As in case of the other ICT equipment, the active network equipment (like routers, switches etc.) has a limited life time. KJC will have to make scheduled (every piece to be replaced after three years) and synchronized (one third of the equipment replaced each year) replacements of this equipment.

Network enclosure/cabinet

KJC needs to have network enclosures/cabinets which manage, protect, and showcase network by combining the aesthetics and security of a cabinet with the accessibility of an open rack.

KJC will establish at least one network enclosure/cabinet for each location with LAN. All enclosures/cabinets will be installed and located in accordance with valid technical standards and protected against unauthorized access. Network cables will be arranged and labeled accordingly.

KJC will provide for each network enclosure/cabinet adequate UPS or connection to a central UPS system.

STRATEGIC PROGRAM 3.3: Provide adequate Server infrastructure

Hardware infrastructure of servers will be located in one main server room.

Blade technology with virtualization will be used for building computer platform of KJC. All services that are to be provided by separate server computers will be provided by blade platform. KJC will build blade platform with enough capacity to provide all services for all end users. Capacities of the blade will be for around 2000 users.

Blade platform through virtualization will provide all necessary services for operation of the ICT in Kosovo judiciary. Main servers that will be hosted in blade are:

- Domain Controller 1 (DC, DHCP, DNS, AD,...)
- File/Print server
- Application server
- Virtual center (management tools for virtual environment)
- System Center (Configuration Manager, Operational Manager)
- Security / Antivirus (Forefront Endpoint Protection, Forefront for Exchange, etc.), WSUS
- Mail server
- Database
- Internet Information Services
- Backup

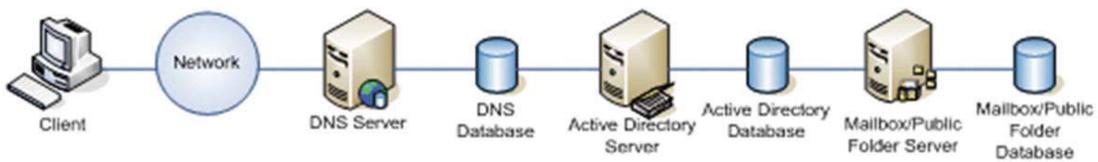
With virtualization of IT infrastructure, IT costs will be reduced. At the same time, it will increase efficiency, utilization and flexibility of existing assets.

Mail service

KJC will establish its mail service by using Microsoft Exchange Server 2010. In a virtual environment, there will be created two virtual servers; the first for mailboxes and the second for mail transport. Mail

client will be Microsoft Outlook which is part of Microsoft Office.

MS Exchange depends on AD and it is dependant on the DNS. For this purpose Domain Controller and AD are redundant. Dependency is visible in the picture below.



Web services

All applications which will provide data to internet users shall run on a server which is separated from other KJC servers. The server will be in DMZ. The purpose of a DMZ is to add an additional layer of security to KJC's local area network.

The backup device (virtual server with backup software) on the Primary location (main server room) will make a backup of all data from all servers to its disks (storage system) and automatically copy its content to the secondary location via WAN. The secondary location should be at least 40 km away from the primary site.

Initially, KJC will build a disaster recovery center with limited capacity. As available budgets increase, the capacities of disaster recovery center will be improved and reinforced.

STRATEGIC PROGRAM 3.4: Create Disaster Recovery Capacities

KJC will establish a disaster recovery framework consisting of processes, policies and procedures in order to prepare for recovery or continuation of critical technology infrastructure in case of a natural or human-induced disaster.

KJC's principal focus will be on disaster recovery planning in relation to data protection.

KJC will implement the data protection strategy: "Backups made to disk on-site and automatically copied to off-site disk, or made directly to off-site disk".

STRATEGIC PROGRAM 3.5: Ensure adequate desktop computers

The ICT Strategy will achieve its purpose only if all end users have functional and undisrupted access to the ICT systems in use in the Kosovo judiciary.

Every end user shall have his/her own desktop computer connected to KJC's network. A suitable desktop computer configuration is one that normally operates WIN 7, and has adequate monitor,



keyboard, mouse and printer or access to the network printer.

Currently, KJC has only 818 adequate desktop computers for this purpose. KJC will have to find funding for purchase of at least 600 additional computers for implementation of the ICT Strategy.

KJC will attempt to follow on good practice in desktop computer management which is to renew all desktop computers in a five year cycle. It implies that every year 1/5 of computers will have to be renewed.

STRATEGIC PROGRAM 3.6: Migrate from WIN XP to WIN 7 operating system

The cycle of Win XP is coming to the end. For all editions Windows XP Service Pack 3 “Mainstream support” is no longer available. “Extended support” will be available only until April 2014. On “Patch Tuesday” (April 8, 2014), all editions of Windows XP will be retired.

Microsoft Windows XP SP3 is installed on majority of KJC’s desktop computers.

As the “Mainstream Support” phase for Windows XP SP3 is no longer available, while necessary agreements for the “Extended support” were not signed, KJC shall migrate to Windows 7 operating system. WIN 7 licenses for KJC will be provided through the Government of Kosovo, in the same way as it was the case for Win XP.

STRATEGIC PROGRAM 3.7: Implement central UPS and electricity generators on judicial location

Power supply in Kosovo is highly unreliable. Variations in power supply represent a significant danger for ICT equipment such as computers, monitors, servers etc. At the

same time, lack of power supply is a cause of significant frustration for the end users when the core business is dependant on software applications.

In order to prevent and mitigate this risk, within the previous ICT efforts, KJC was provided generators for buildings and Uninterruptible Power Supply (UPS) Units for all desktop computers.

Generators with low capacities and not automatic, as well UPS per computer is not an optimal solution for preventing computers against this risk. This solution is relatively expensive and not so efficient. Maintenance of all desktop UPS’s is practically impossible.

As these devices will have to be replaced over period of time, KJC will consider supply with adequate generators and switching to a Central UPS system in each judiciary building. That step will ensure proper electricity for all desktop equipment (computers, monitors and printers).

STRATEGIC PROGRAM 3.8: Implement Audio Recording Systems

Through implementation of the ICT Strategy, KJC will continue and complete installation of audio recording systems in all courts in Kosovo.

KJC is determined to further modernize the courts of Kosovo by providing full digital preservation of identical records of the criminal hearings through provision of audio recording equipment, transcription and translation, operationalization of the system and training of staff .

In the previous ICT efforts, the Kosovo judiciary was equipped with audio recording equipment for nine courts.

In the future efforts, KJC will need to purchase audio recording equipment which will fit the size of the court rooms where it will be installed. In principle, three different

technical configurations will be needed: 12 for large, 53 for medium and 145 for small trial court rooms.

**STRATEGIC PROGRAM 3.9: Implement
Witness Protection Systems**

In order to ensure adequate protection for witnesses, but at the same time to create lawful trial environments, KJC will invest significant efforts to design and implement Witness Protection Systems.

In terms of reorganization of courts in Kosovo, seven newly established Basic courts, within departments for serious crimes, will be equipped with audio and video multimedia technology.

The goal for introduction of these ICT technologies will be to enable remote testimony for witnesses. Audio and video distortions will be used to further prevent unauthorized identity identification of protected witnesses.

Also, KJC will have to provide adequate video conferencing lines between courts and other institutions dealing with security, as well as with similar institutions abroad.



PILLAR 4: Adequate Software Platforms and Tools

STRATEGIC GOAL 4:

Chose Adequate Software Platforms and Tools in Accordance with Needs of the Kosovo Judiciary

KJC will have to select software platforms and tools which will fit the needs of the Kosovo judiciary, taking in consideration all pros and cons among a variety of solutions which are available on the market.

Due to importance and complexity of the Kosovo judiciary's information system, KJC's strong preference will be to select platforms and tools which are proved as reliable and for which a strong technical support is available.

In great part, KJC will use experiences of other judicial systems in selecting its own software platforms and tools.

Two major strategic programs will be pursued in achievement of this Strategic Goal:

1.1. Choose adequate software development environment

1.2. Choose adequate database system

STRATEGIC PROGRAM 4.1: Chose adequate software development environment

New generation of software applications in the Kosovo judiciary will be created on software development platforms which will create and run agile, intelligent business applications.

Efficiency of these applications will be maximized through proper matching of these applications with full utilization of modern hardware and software architectures.

Technology engaged as a platform for development of the current version of CMIS has numerous limitations (such as: "client-server" orientation, decentralized database organization, replication of data at central level for reporting purposes, database administration of 72 databases, need for re-installation of any modification on CMIS on all computers manually) and as such can not support achievement of the vision and specific goals of the ICT Strategy.

The vision and specific goals of the ICT strategy require a change of technology engaged for development and running of CMIS.

KJC will select technology which supports development of "web based" and Service Oriented Applications.

In addition, through the change of the technology, new version of CMIS will have to be adapted to support new court organization, hierarchy and jurisdictions which will be established as of 2013.

CMIS version developed on the new technology will be named CMIS 2013 and it will work on central environment, and as such referred in the rest of the ICT Strategy.

STRATEGIC PROGRAM 4.2: Chose adequate database system

The term “database system” implies that the data is managed to certain levels of quality (measured in terms of accuracy, availability, usability, and resilience) and this in turn often implies the use of a general-purpose database management system (DBMS).

A general-purpose DBMS is typically a complex software system that meets many usage requirements. The most common, databases that DBMS maintain are often large and complex.

KJC’s will be in need of robust, scalable and reliable DBMS.

KJC, depending on available budgets, will select DBMS in accordance with the market share of the world largest vendors, as well as based on experience of the other judicial systems which successfully implemented their DBMS.

PILLAR 5: Security of ICT Systems

STRATEGIC GOAL 5.1:

Information assurance capabilities for KJC established

STRATEGIC GOAL 5.2:

Secure web service capabilities established

KJC must enhance, maintain and optimize secure IT services and recourses. It is imperative that KJC achieve the following:

- Establish a secure, unified and comprehensive network architecture for sharing information throughout KJC,
- Implement capabilities for preparedness and emergency response.
- Strengthen IT agility and resiliency to support emergencies, disaster recovery, and nonstop performance of IT and communications,
- Improve communication and IT capabilities for KJC personnel working in remote locations
- Establish cyber defense capabilities for KJC web services.

Strategic Programs which will enable achievement of these goals are:

- 5.1. Implement Security risk management process
- 5.2. Implement vulnerability assessment
- 5.3. Implement system hardening
- 5.4. Implement log management
- 5.5. Develop Policies
- 5.6. Conduct personnel security / awareness training

5.7. Implement Network Access Control (NAC)

5.8. Ensure physical security of server rooms

5.9. Keep updated inventory of installed equipment and services

5.10. Create system documentation

STRATEGIC PROGRAM 5.1: Implement Security risk management process

Security risk management shall be an integral part of defining, developing, operating and maintaining Communication and Information System (CIS). Risk management (assessment, treatment, acceptance and communication) shall be conducted as an iterative process jointly by representatives of the system owners and developers using a proven, transparent and fully understandable risk assessment process. The scope of the CIS and its assets shall be clearly defined at the outset of the risk management process.

Risk shall be managed as a process. This process shall be aimed at determining known security risks, defining security measures to reduce such risks to an

acceptable level. The effectiveness of such measures shall be continuously evaluated.

Without proper Security Risk Management the applied security measures will not be in balance between user requirements, cost and residual security risk. Because of this, the implementation of security management process should be among the first things to be achieved by KJC.

IT Office in KJC shall be aware of the potential threats to CIS and shall maintain up-to-date and accurate threat assessments which reflect the current operational environment. They shall also maintain up-to-date vulnerability knowledge and periodically review the vulnerability assessment to meet the changing IT environment.

STRATEGIC PROGRAM 5.2: Implement vulnerability assessment

Vulnerability assessment is a several-phase process. First, the systems should be assessed, and vulnerabilities or security gaps identified. The assessment results should be collected in a detailed report, that contains an action plan with short-, medium-, and long-term security measures to take.

Most vulnerability scanners available on the market are looking for common and known vulnerabilities and patterns relating to web application security. However, these vulnerability scanners do not detect unknown or less-known vulnerabilities in specific web applications.

In case of manual discovery, it is up to the expert performing the assessment to analyze data returned by the server, and to input and manage data sent to the server.

In order to sustain the best of both versions, a hybrid discovery method is the most casual in web application vulnerability assessment at present.

STRATEGIC PROGRAM 5.3: Implement system hardening

The main purpose of the system hardening is to reduce the security risks as much as possible.

Based on the result of the implementation of security risk management process and vulnerability assessment, system hardening is the process of securely configuring the system against the unauthorized access, intruders, hackers and other security vulnerabilities. System hardening makes the computer system more reliable, secure, efficient and gives the optimized performance. Computer systems are often vulnerable to the outside threats.

STRATEGIC PROGRAM 5.4: Implement log management

With implementing a properly built log management in the system, system anomalies become detectable and those can be handled in the proper way.

Log management is a long-time project. It should cover the whole life cycle of the information handling or processing system, a powerful tool of maintaining system and information security.

The first step is to implement a log collecting system that is able to provide and process logs real-time. In modern log management applications these real-time logs are correlated with each other to show those „log islands” that signify anomalies within the system. From logs, with further, more thorough analysis trends of system behavior are possible to set up, statistics can be provided to be able to analyze system behavior from certain particular aspects which for example may form the basis of future security and system design



projects as log statistics provide a clear picture on short- or even long-term system behavior. System patterns can also be analyzed.

With all these together the system administrators can be given a true picture about how their information technology system behaves in case of any cyber incidents.

STRATEGIC PROGRAM 5.5: Develop Policies

A set of policies and guidelines that regulate the implementation, maintenance and the utilization of IT resources should be developed and adopted by KJC. These policies have to be worked out to make users behave in a secure way, but also have to be realistic and match sustainable information processing workflow.

The security measures applied in KJC ICT should be harmonized with the national law 03/L-172 on the Protection of Personal Data.

STRATEGIC PROGRAM 5.6: Conduct personnel security / awareness trainings

Personnel security is the application of measures to ensure that access to ICT KJC is granted only to individuals who have:

- a need-to-know;
- been briefed on the security rules and procedures and has acknowledged their responsibilities.

Responsibility has to be shared among all people who take part in information handling or processing. Obviously, this shared responsibility has different measures, and still there is a need for leaders who take high level responsibility, but all people who take part in information

handling or processing have to be aware of necessary security measures and proper countermeasures in case information or the information processing system becomes compromised. For that, people taking part in information handling or procession should have information security awareness.

Users of a system have to be educated about both how to use their devices properly and how to use their devices in a secure way.

All individuals who have been granted access to ICT KJC shall acknowledge in writing that they have understood their obligations in respect of protecting the ICT and the consequences if ICT is compromised. A record of such a written acknowledgement shall be kept by the IT Office.

All individuals who are authorized to have access to KJC ICT shall initially be made aware, and periodically briefed on the threats to security and must report immediately to the IT Office any approach or activity that they consider suspicious or unusual.

Awareness of the risks and available security measures is the first line of defense for the

security of CIS. In particular all personnel involved in the life-cycle of CIS, including users, shall understand:

- a. that security failures may significantly harm the CIS;
- b. the potential harm to others which may arise from interconnectivity and interdependency; and
- c. their individual responsibility and accountability for the security of CIS according to their roles within the systems and processes.

To ensure that security responsibilities are understood, IA education and awareness training shall be mandatory for all personnel involved, including senior management and CIS users.

STRATEGIC PROGRAM 5.7: Implement Network Access Control (NAC)

In the ICT Network Access Control is implemented for controlling access to the network with policies, including pre-admission endpoint security policy checks and post-admission controls over where users and devices can go on a network and what they can do.

Without implemented NAC there is no automatic remediation process (fixing non-compliant nodes before allowing access) into the network systems, allowing the network infrastructure such as routers, switches and firewalls to work together with back office servers and end user computing equipment to ensure the information system is operating securely before interoperability is allowed.

With a proper NAC implemented the computer which connects to a computer network, is not permitted to access anything unless it complies with a business defined policy, including anti-virus protection level, system update level and configuration. While the computer is being checked by a pre-installed software agent, it can only access resources that can remediate (resolve or update) any issues. Once the policy is met, the computer is able to access network resources and the Internet, within the policies defined within the NAC system. NAC is mainly for Role based Access. Access to the network will be given according to profile of the person. For example, in an enterprise, HR department could access only HR department file.

STRATEGIC PROGRAM 5.8: Ensure physical security of server rooms

Physical security is the application of physical and technical protective measures to prevent unauthorized access to the server rooms of ICT.

Physical security measures shall be designed to:

- deny surreptitious or forced entry by an intruder,
- to deter, impede and detect unauthorized actions and
- to allow for segregation of personnel in their access to the server rooms on a need-to-know basis.

Such measures shall be determined based on a risk management process.

Servers shall be established as Secured Areas and approved by the IT Office.

For Secured Areas a visibly defined and protected perimeter shall be established through which all entry and exit are controlled by means of a pass or personal recognition system.;

The IT office, applying the concept of defense in depth, shall determine the appropriate combination of physical security measures to be implemented. These can include one or more of the following: a perimeter barrier, intrusion detection systems (IDS), access control, CCTV.



STRATEGIC PROGRAM 5.9: Keep updated inventory of installed equipment and services

For the detection of any unapproved equipment in KJC ICT a regular check should be implemented by the IT Office. The same control should be applied to all the services that are installed for KJC ICT.

Principle of minimality and least privilege:

Only the essential functionalities, devices and services to meet operational requirements shall be implemented in order to avoid unnecessary risk.

CIS users and automated processes shall be given only the access, privileges or authorizations they require to perform their tasks in order to limit any damage resulting from accidents, errors, or unauthorized use of CIS resources.

Unapproved equipments like wireless routers could cause a great security vulnerability to the system. The IT Office should create a list of all equipments installed in the system as a base for later tests. The regular check could be done by automated search tools where the actual active component list could be compared to the approved list. The approved list shall be updated every time that a modification is implemented in the system.

To effectively manage dynamic endpoint configurations, IT organizations need to look beyond traditional delivery and protection suites to gain total visibility, knowledge and control. Gaining an understanding of what is on your endpoints - all the time - is the first step in regaining control.

A typical Windows computer has 15,000 executable files. Validating the integrity and trustworthiness of those files is difficult on a single system and exponentially more difficult on a network of thousands of computers.

The resulting challenge of unmanaged and unknown software can cause a computer to

become corrupted or infected with malware. Undiscovered keyloggers can lead to data leakage. Every piece of software that cannot be positively identified carries with it the potential for damage.

Automated software solutions could look up files using a unique hash of the file through the secure web services or by leverage a local snapshot of the database that is periodically updated. The hash lookup results include a comprehensive set of forensics metadata for the file, such as product, publisher, malware scanning results, threat level, prevalence, age, category, and more.

The implemented automated tool should be able to deliver the following services:

- a. Identify all software on all systems at all times
- b. Be able to identify the absence or presence of any software on any endpoint
- c. Track software and configuration changes as they happen
- d. Compare configurations to approved baselines

STRATEGIC PROGRAM 5.10: Create system documentation

Security documentation for the ICT shall evolve over its life-cycle as an integral part of the process of change and configuration management.

The system security requirement statement (SSRS) defines what it means for SYSTEMS to be secure, and specifies how security is to be achieved, managed and monitored.

The statement, therefore, fulfills an important role in the overall approval strategy of the IT Office, or in a project specific strategy. It is based on KJC security policy and risk assessment, or imposed by parameters covering the operational

environment. The statement may take one or more forms, dependent upon the nature and complexity of the IT system or network (or network of networks).

Security Operating Procedures (SecOPs) are a precise description of the implementation of a previously defined security requirement, the operating procedures to be followed, and personnel responsibilities, of a specific SYSTEM. This detailed description of the proposed operations (e.g. modes, services to be provided) will include a description of the SYSTEM security features forming the basis of approval.



PILLAR 6: Analytics, Development and Implementation Methodologies

STRATEGIC GOAL 6:

ICT solutions, prior to their full implementation, thoroughly analyzed, designed and tested by different levels of technical staff and end user representatives. Adequate and timely training provided to the end users.

KJC has noticed that in the past certain stages of development, training and implementation of CMIS were missing or they were inadequately performed. Consequently, KJC will look for a new approach in the future ICT efforts, and also, that additional set of skills and knowledge be put in and around ICT efforts.

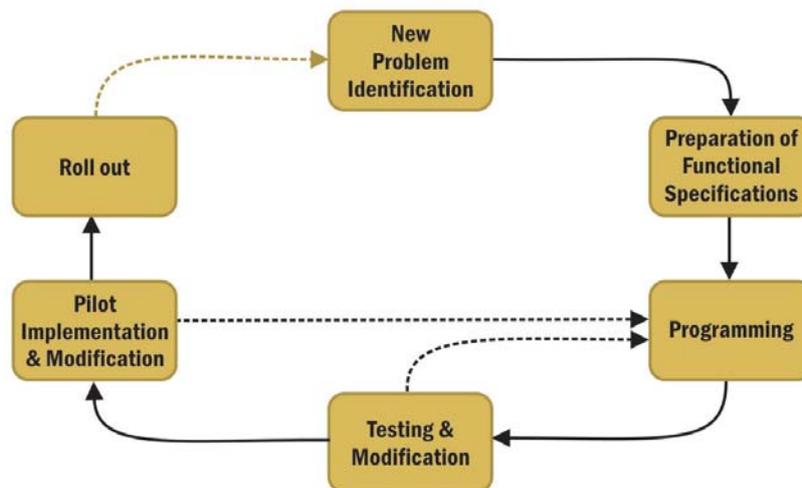
KJC's sponsorship, involvement of the end court users and strong representation of legal knowledge in development, training and implementation acting hand-in-hand with hardware and software specialists will be a new formula which will be applied for implementation of this Strategy.

In addition, strong project management skills will be indispensable.

Input of statistics experts, involvement of knowledge management skills as well as other specialties will enrich the process and produce wanted results and help achieve goals set up in this Strategy.

The human resources are a precondition. Proper methodology, procedures and their application is a way to organize human resources and lead them to the wanted results.

Development and implementation of the future software solutions in the Kosovo judiciary will be done in accordance with the process presented on the graph:



Principal Strategic Programs which will help create the core of Analytics, Development and Implementation Methodologies will be:

- 6.1. Establish business process analysis methodologies**
- 6.2. Develop software applications in accordance with the technical standards**
- 6.3. Ensure adequate testing and acceptance methodologies**
- 6.4. Provide training on basic and advanced ICT skills to all end users**
- 6.5. Create implementation methodologies which fit the needs of KJC, courts and court employees**

Additional Strategic Programs which will be in support of the core Strategic Programs will be:

- 6.6. Ensure interoperability with other Kosovo ICT Systems and the EU Systems in the long term**
- 6.7. Create web services for access of the public (Web Portal)**
- 6.8. Create on-line access to court decisions and legislation (Documentation Center)**
- 6.9. Introduce and use officially e-mail in the Kosovo judiciary**
- 6.10. Implement “digital signature” as it becomes available in Kosovo**

STRATEGIC PROGRAM 6.1: Establish business process analysis methodologies

Essential precondition for quality development of software applications is performance of business process analysis. KJC will seek that the business process analysis for the future software solutions be performed by KJC’s in-house resources and strong involvement of the end users through work of the User Group.

Business process analysis will be the first step in the new development cycle procedure which will be used by KJC. Business process analysis in consultation with the User Group will identify problems, bottlenecks or implements in the first step of the design process. In the next step, working together with software development specialists, it will be in charge of development of functional specifications which will be the “request order” for developers and programming.

Beside accurate identification of the current work processes and their right interpretation to the programmers, KJC expects that business process analysis clearly indicates what implements in court processes or organization are possible in parallel with introduction of ICT. In cases when current legislation or regulation explicitly prevents introduction of more efficient solutions, KJC requests to be informed and in accordance with its competences will address the issue in question.

STRATEGIC PROGRAM 6.2: Develop software applications in accordance with the technical standards

All future software development in Kosovo has to be performed based on the functional specifications developed by the business process analysts and approved by the User group. Before starting the development, timeline and deadlines for development of some or all functionalities will have to be established.

Development of software has to be performed in accordance with good engineering practices and with software development tools approved. ICT manager has to ensure that at any moment development is performed in accordance with development and security standards. This includes precise documentation and explanations of code development and



technique used which can enable instantaneous transfer of work to other developers in case of changes in human resources.

ICT manager in cooperation with Documentation / Knowledge Management Specialist will ensure that at all the times full and complete documentation is available on each and every step of software development.

A copy of source code of each application in use in the Kosovo judiciary will have to be stored off-site in accordance with the ICT security standards.

STRATEGIC PROGRAM 6.3: Ensure adequate testing and acceptance methodologies

In the future efforts in introduction of ICT in Kosovo judiciary, testing has to occur progressively as the development of application advances.

Beside routine testing which developers perform regularly in the development phase, testing by the business process analysts who produced functional specifications should be the next stage in the test process.

After final testing that will be performed by the business process analysts, implementation component (trainers) should test developed software with minimal set of instructions in order to identify dummy errors which were difficult to predict or discover in the previous phases. If any new bugs identified, the software should be returned for modifications.

After the project team is satisfied that a valid and reliable version of software is developed it should be demonstrated to the User Group. The User Group should approve its implementation in the pilot environment, and later after piloting is completed, the User Group should approve

the roll out for the whole judiciary of Kosovo.

The testing and acceptance methodology will have to be written and formally approved by the User Group in early stages of operational implementation of the ICT Strategy.

STRATEGIC PROGRAM 6.4: Provide training on basic and advanced ICT skills to all end users

One of the first activities in regard of implementation of the ICT strategy will be directed towards an “inventory” of basic ICT skills in the Kosovo judiciary. Based on the results, a training methodology will be developed and executed throughout the whole judiciary of Kosovo. Every individual in need of basic ICT training will be provided with it. Final testing will be independent and obligatory for every employee in the Kosovo judiciary. Successful passing of the basic ICT test will represent a basis for adequacy of an individual to receive future specialized ICT training and in that way its ability to perform in the future fully automated environment in Kosovo courts.

Improvement of basic ICT skills should encompass betterment of typing skills of all future users of the CMIS 2013 including all judges and court presidents.

In terms of specialized training for use of CMIS 2013, a new training methodology and training means will have to be created. Previous training efforts in Kosovo judiciary were inadequate and in big part responsible for not well acceptance of ICT efforts. New training methodology has to be “hands on” approach based, at the work place of employees and in adequate time length performed.

Speeding up in the training process in order just to achieve project milestones, as well as unreasonable resistance of users to accept training and improve their skills, will not be tolerated by KJC.

The training methods and methodology will have to be written and formally approved by the User Group at an appropriate stage of operational implementation of the ICT strategy.

STRATEGIC PROGRAM 6.5: Create implementation methodologies which fit the needs of KJC, courts and court employees

Implementation means far more than just training. Training is very important, but it is just one component of successful implementation. Implementation of new ICT technologies and applications in the Kosovo judiciary will mean a process in a prolonged duration through which end users will have a chance to see and experience usage of new solutions enough in advance before it comes time for them to use it (for example, through study visits to pilot/model courts within Kosovo).

This process will be intended to educate users and to relieve them from fear which can cause unreasonable resistance. Timely purchase, delivering and installation of equipment will also be a part of synchronized implementation efforts. Delivery of equipment will have to be highly synchronized with training efforts. In cases when building and infrastructure works will be needed, they have to occur in time and be completed in a way that they do not disturb any other training and implementation efforts.

The project team in charge of implementation of this strategy will have to develop implementation methodology and checks out its effectiveness within pilot and model implementations. Input of the User Group in this methodology will be requested as well.

Regardless of the necessary number of implementation steps, synchronization of activities is of the vital importance for the implementation methodology. It has to be clearly defined which activities precede and

which ones follow. Time line and deadlines for each activity have to be established for every implementation location.

Implementation team in charge of a particular location has to monitor performance of each preparatory activity and to ensure that they get correctly performed. In case of deviations from the implementation plan, corrective actions will have to be undertaken. Under no circumstances may any implementation activity step be skipped, improvised or otherwise amended.

On the contrary, the key success element in implementation is to look for how to do the job better and how the end users will benefit more. In cases where improvements to the implementation methodology are identified, they should be in a systematic way incorporated in the upgraded implementation methodology. All implementation teams should be trained for the upgraded implementation steps, and should apply them in the uniform way in all courts.

The implementation methodology will have to be written and formally approved by the User Group at an appropriate stage of operational implementation of the ICT strategy.

STRATEGIC PROGRAM 6.6: Ensure interoperability with other Kosovo ICT Systems and the EU Systems in the long term

Kosovo judiciary information system will have to exchange information with all relevant IT systems in Kosovo. The exchange of information will be two way, in and out of the judiciary information system. In a great part, electronic exchange of information and data, and their validity will greatly depend on achievements within Goal 1 of this Strategy. In order to enable technical part of exchange of information, a parallel activities on legal framework will have to be taken in due time. The other



challenge will be availability of necessary registries in Kosovo.

Operational team has to perform an inventory of all reliable electronic public registers in Kosovo. At minimum, exchange of information with some of these registers (i.e. citizens and legal persons) has to be ensured in CMIS 2013 version. In case that these minimal exchanges are not achieved, it will undoubtedly lead to “dirty” data and wrong statistics, what could significantly jeopardize integrity of CMIS 2013 upfront.

In later, upgraded versions of CMIS 2013, all available public registers in Kosovo should be exchanging information electronically with the judicial information system. Also, the judicial information system should start to share its data with relevant public registers (i.e. police, business registry, cadastre, etc.)

In a long run, Kosovo judiciary information system should be exchanging data with relevant EU information systems. Analysis of those requirements and enabling of “open ends” within the new Case Management System should take place as soon as the other implementation activities allow for it.

STRATEGIC PROGRAM 6.7: Create web services for access of the public (Web Portal)

Web portal of the Kosovo judiciary will represent the major output within this Strategy in terms of citizen access to the judiciary.

The implementation team for this Strategy will have to constantly bear in mind that all solutions implemented in the Kosovo judiciary will have to, in the end, serve citizens, their access to justice and overall increase of transparency of works performed in the courts.

Access of citizens to information through web portal will be enabled through three major phases.

In the first phase, a web portal will be created with individual web pages for all courts in Kosovo based on single content management. In this phase, all basic information for each court should be available to Kosovo citizens. Information available at this stage will be of “static” nature or uploaded/upgraded manually.

The second phase will be enabled after implementation of CMIS 2013 in all courts in Kosovo. At that stage, all “dynamic” information about courts and cases should become available to the citizens automatically, as they get generated in the courts (hearing schedules, case details and changes in cases)

The third phase will deliver electronic notifications and enable e-filing. This phase will be preconditioned with availability of digital signature, and overall readiness of citizens of Kosovo to use e-mail and internet. This phase is to be achieved in a long term.

STRATEGIC PROGRAM 6.8: Create on-line access to court decisions and legislation (Documentation Center)

KJC recognizes that one of Kosovo judges’ biggest needs is in availability of court decisions, adjudication practices, legislation and international standards and conventions. Through implementation of the ICT Strategy, KJC intends to significantly help this need.

As a separate part of the web portal, with restricted access, a documentation center will be created. The documentation centre will provide relevant court decisions, their classification and indexing, all up to date legislation and relevant regulation in Kosovo, as well as important judgments of international courts and other international standards and conventions. All judges in Kosovo will have access to this documentation centre on-line (from work or any other place).

In order to create, maintain and up-date the content of the documentation center and to preserve its value for judges, a group of employees will be hired for this task, within overall effort to implement this Strategy. A special group of prominent judges will be appointed to review and approve judgments and other contents which will be uploaded. Hiding of personal and other restricted data in published decisions as well as other relevant standards will be applied.

To make this documentation centre operational and up to international standards, KJC will look for possible bilateral, regional or international cooperation with a judicial system which has this component well established.

STRATEGIC PROGRAM 6.9: Introduce and use officially e-mail in the Kosovo judiciary

E-mail system for Kosovo judiciary has to be established, the end users to be trained and e-mail to be officially in use, as soon as possible.

KJC considers that not having e-mail on disposal of all employees in Kosovo judiciary is not acceptable. Communication costs which are made by using conventional communication means are high and not as efficient as e-mail can be.

Kosovo judiciary and all its employees should have available e-mail accounts at the Kosovo judiciary domain. Adequate training has to be delivered together with establishment of e-mail accounts.

KJC will ensure through its policies that e-mails are used on daily basis and to represent the means of official communication within the Kosovo judiciary.

STRATEGIC PROGRAM 6.10: Implement “digital signature” as it becomes available in Kosovo

Introduction of digital signature in Kosovo is out of KJC’s competences, but KJC considers that availability of digital signatures is of high importance for work of courts and the applied functionalities of CMIS 2013 and the Web Portal.

In order to maximize investment in the ICT, KJC will carefully monitor developments related to availability of digital signatures. As soon as legislation and technical preconditions start to exist in Kosovo, the implementation team for this ICT strategy should perform a thorough business process redesign and incorporate usage of digital signature in CMIS 2013.

Availability and usage of the digital signatures with their benefits in the Kosovo judiciary (at the time of writing this Strategy) are considered to be a long term goal.

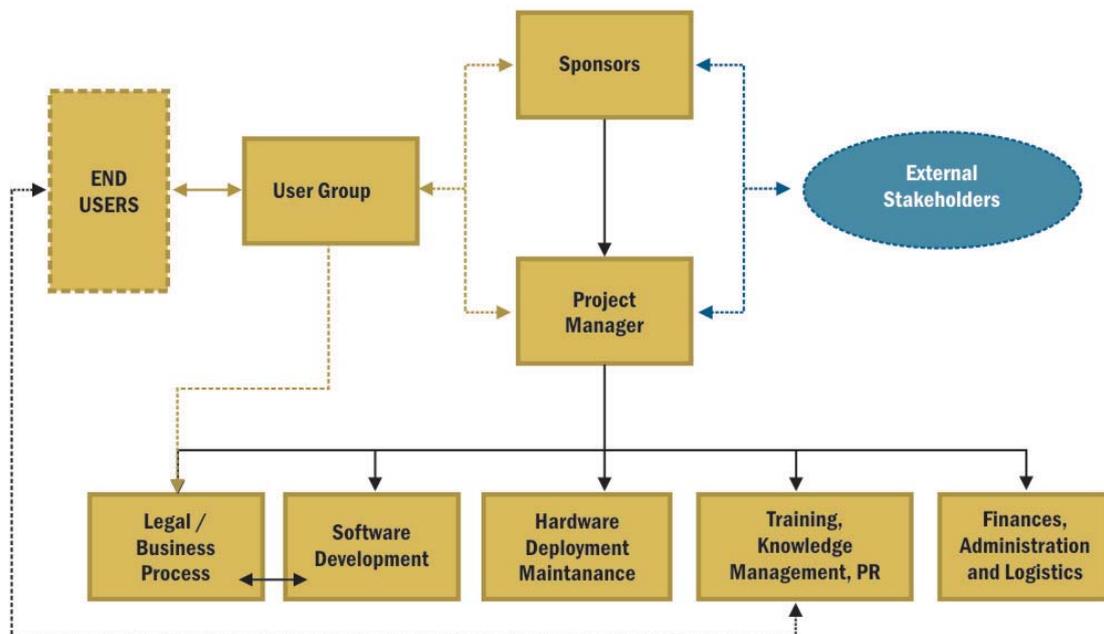
PILLAR 7: Adequate Human Resources

STRATEGIC GOAL 7:
KJC created stable in-house resources needed for implementation of the ICT Strategy

KJC in the previous period experienced that development and implementation of ICT solutions in judiciary is quite complex. In order to conduct successful ICT projects in judiciary it is necessary to have a variety of knowledge and skills on the disposal throughout project life cycles. Beside ICT expertise (hardware and software), in the future ICT efforts, KJC will need expertise in legal/business process analysis, training, implementation, statistics, and documentation/knowledge management.

In order to coordinate and synchronize all these expertise, but also to do coordination with project stakeholders, sponsors and end users, strong project management skills will be needed as well.

KJC foresees that the future organization of the operational level in charge of execution of the ICT Strategy should follow up the organizational scheme:



To build this Pillar and to achieve the Strategic Goal 7, KJC will initiate and perform the following Strategic Programs:

- 7.1. Establish and maintain strong project management and organization
- 7.2. Establish and maintain strong in-house ICT resources
- 7.3. Create and train business process analysis resources
- 7.4. Build up training resources
- 7.5. Hire local ICT officers
- 7.6. Gradually create help desk support
- 7.7. Provide training for KJC staff

STRATEGIC PROGRAM 7.1: Establish and maintain strong project management and organization

KJC will appoint a project manager who will play a central figure in charge of the operational level for execution of the ICT Strategy. The project manager will be in charge of achieving goals specified in the ICT Strategy by using resources which he/she will be assigned to manage. He/She will ensure coordination with end users, user group and external stakeholders.

The task of the project manager will be to develop operational plans which will match operations to available budgets, and to manage resources in order to deliver requested results within prescribed deadlines.

The project manager will be involved in the process of selection of experts who will be engaged in the project. The project manager will be directly responsible to both the director of the Secretariat for planning and operational issues and the President of the Council for strategic issues.

In addition to KJC efforts, the project manager will actively work on identifying

further financing opportunities with all stakeholders.

STRATEGIC PROGRAM 7.2: Establish and maintain strong in-house ICT resources

For implementation of the ICT Strategy, KJC will need a combination of in-house and outsourced knowledge and expertise in the ICT field. In order to synchronize activities of various ICT specialists as well as to combine in-house and outsourced resources, one person will be appointed to be in charge of the ICT component. This person will be responsible to the manager in charge of overall execution of the ICT Strategy.

KJC's biggest need in terms of ICT resources is in finding a way to have on full disposal market-class software developers. As the market salaries for this category is quite high, KJC will have to seek ways how to acquire these resources. A critical precondition for development, and later for maintenance of software applications in use in Kosovo judiciary, is full and unconditional KJC's disposal of these resources.

Beside the developers, KJC will have an equal need for system/network administrators, database administrators (DBAs), web developer(s) and ICT security specialists.

For all of these profiles, there is a strong demand in Kosovo, what consequently imposes that KJC will encounter significant difficulties in hiring of quality ICT staff.

KJC will seek to attract and maintain these resources through additional donors' funding (for a limited period of time) and significant investment in their training and education.



STRATEGIC PROGRAM 7.3: Create and train business process analysis resources

In order to perform all specified tasks and to provide a systematic and organized guidance for programmers to develop applications suitable to the needs of the Kosovo judiciary, full time lawyers will be engaged in the projects which will implement this ICT strategy. Their responsibility will be to maintain applications in use in Kosovo judiciary, in full compliance with legal and regulatory requirements, as well as to maximum extent possible maintain them to be in full compliance with the end user requirements.

KJC will seek to create a new profile of lawyers for this task, as the educational institutions in Kosovo do not provide this specific cadre. Preferably, KJC will identify open-minded lawyers with the bar exam passed and good grasp on ICT concepts. KJC is aware that it will be needed to invest significant level of coaching and training in these resources in order to make them capable to come up with concepts for re-engineering of court workflows and in that way maximize investments in the ICT.

Overall goal for these resources will be to seek for solutions which will increase efficiency and transparency of the judicial system through and in parallel of introduction of ICT in the Kosovo judiciary.

Strong preference of KJC will be that these resources be trained through practical work in Kosovo with international consultants.

STRATEGIC PROGRAM 7.4: Build up training resources

In order to match expectations in training and implementation methodologies as provided in this Strategy, KJC will have to build up in-house training resources.

Training resources will be organized in teams which will provide “hands-on” training at work places of each employee in the Kosovo judiciary.

Number of teams will be established in accordance with available budgets and desired speed of implementation. Prevailing number of team members will be lawyers with good understanding of ICT. In addition, individuals with ICT background will be added to the teams. All member teams will have to have strong skills in transferring the knowledge.

In periods of reduced implementation efforts, team members with legal background will assist the business process / legal component, while ICT background individuals will be placed on the disposal of the ICT component. Upon completion of in-field implementations, the training resources will be used to create help desk and regional ICT support.

STRATEGIC PROGRAM 7.5: Hire local ICT officers

Successful outcome of this Strategy will create a new reality for the Kosovo courts in which court works are fully automated, and to the big extent dependant of functional ICT infrastructure

KJC recognizes that such a changed environment in courts will require certain level of permanent ICT support at the level of the courts. To meet proactively this future demand, KJC will initiate an

appropriate process which should enable hiring of ICT officers in each court in Kosovo.

All local ICT officers will be subordinated and fully coordinated by the operational level in charge of implementation of the ICT Strategy. Local officers will be in charge of maintaining the ICT infrastructure in functional order, implementation of applications, training, web page content and audio/video recordings at level of individual courts.

STRATEGIC PROGRAM 7.6: Gradually create help desk support

In the initial phase of implementation of the ICT Strategy, KJC will focus on direct, in-the-courts, training and support to the end users.

For that purpose, two levels of support will be enabled. The first level will be ICT officers employed in courts, while the second level will be a specialized training unit composed of lawyers and ICT specialist at level of KJC.

Once the major roll out of ICT in the Kosovo judiciary is over, what implies that users significantly increased their ICT skills, unit created for the purpose of providing training in field will be transformed into a help desk service.

In principle, lawyers from the implementation team should take positions of the help desk officers at KJC, while ICT experts from the implementation team should be positioned as the regional ICT officers.

In that advanced state, in the Kosovo judiciary, still the first level of user support will be provided through local ICT officers while, the second level will be provided through help desk services for application issues, and through regional ICT officers for escalated hardware issues.

In a longer term it could be considered introduction of help desk software and further improvements in the help desk organization.

STRATEGIC PROGRAM 7.7: Provide training for KJC staff

In order that ICT equipment and environment be properly run and managed, KJC ICT staff shall be constantly trained. All ICT staff shall be trained for technologies which KJC uses and technologies which are scheduled for implementation in the future. Mainly, trainings will be organized through certified training programs.

To ensure that security responsibilities are understood, security education and awareness training shall be mandatory for all personnel involved, including senior management and KJC staff.

Besides training of the ICT background staff, business process/ legal, implementation and documentation centre staff should receive extensive training within needs for effective performance of their tasks and reaching goals set up by this Strategy.

Operational level for execution of the ICT Strategy will have to develop and execute a detailed multi-year training plan.

Significant part of KJC's strategy to attract scarce ICT human resources and to build its own in-house manpower is based on significant investment in education of KJC's own staff.

PILLAR 8: Statistical and Management Resources and Capabilities

STRATEGIC GOAL 8:

Accurate statistical reports based on real time data available and on the disposal of KJC, court presidents, judges and administrators.

Currently in the Kosovo judiciary, data gathering is labor intensive job, while statistical reports are limited in quantity, quality and availability.

One of the principal goals of the ICT Strategy is to change the current situation. Data and statistical reports have to become widely available and to be based on real time data. A precondition for it will be successful development and implementation of CMIS 2013.

KJC considers to be of extreme importance to ensure data quality throughout implementation of CMIS 2013. In order to ensure that future CMIS 2013 statistical reports be accurate, KJC will actively monitor implementation efforts and will undertake all necessary steps to monitor and ensure quality of data and statistical reports.

KJC expects that significantly better overview of the situation in the Kosovo courts, as well as KJC's ability to react timely and proactively with its decisions, will become available with introduction of ICT in Kosovo judiciary.

Specific Strategic Programs which will be initiated within this Pillar are:

8.1. Significantly increase reporting capability of KJC

8.2. Enhance KJC's ability to manage the judicial system

8.3. Achieve CEPEJ and other international reporting standards

STRATEGIC PROGRAM 8.1: Significantly increase reporting capability of KJC

In order to better its overview of the Kosovo judiciary, KJC will seek, through development of CMIS 2013, that all important and relevant data get collected as well as reporting by variety of different criteria on collected data be possible.

Principal data collection and reporting should be directed towards explanation of certain issues which KJC might consider as bottle necks or potential problems of the judicial system.

KJC will request that the User Group appointed by KJC take a strong role in defining reporting needs, and in that capacity provide significant input to the operational level for defining data sets which will be necessary to be collected within CMIS 2013.

In order to improve further KJC's ability to analyze data, statistics experts will be

involved in analyzing data and suggesting better ways for data collection. In medium to long term, it will be expected that statistical experts provide their inputs, based on advanced statistics models and methods to the ICT developers. Outcome of that process should be that advanced statistical predictions and future trends be available as standard reporting features of CMIS 2013.

STRATEGIC PROGRAM 8.2: Enhance KJC's ability to manage the judicial system

KJC's ultimate goal is to increase effectiveness and efficiency of the Kosovo courts with investment in and introduction of ICT. ICT, per se, has notable but limited capabilities to increase efficiency. ICT will help to abandon duplicative works and to speed up repetitive tasks. In that way some court resources will be freed up and it will be able to move them to other court operations in which bottle necks are experienced. KJC is seeking for significantly more than that through introduction of the ICT.

In order to manage effectively the judicial system, KJC will need data and analysis which are targeted to very specific problems. Initial data obtained from Kosovo judiciary information system will be used only to define a problem, its size, scope, and seriousness.

Resolving problems and bettering of the system will require KJC's interventions and decisions. By making interventions and decisions based on real-time data, KJC will take an active role in management of the system. Without introduction of ICT, KJC is greatly limited in these abilities.

KJC will not be the only one to monitor potential issues and to seek for solutions on its own. KJC will ask all level of employees in the Kosovo judiciary to take active managerial roles in performance of their work duties. CMIS 2013 will have to

be developed in a way to provide enough data and reports to all levels of employees starting from court presidents, all the way down to registry officers. Every individual within established hierarchy will be expected to monitor reasons which or might be endangering efficiency of his work and his organization and undertake measures or seek for assistance proactively.

STRATEGIC PROGRAM 8.3: Achieve CEPEJ and other international reporting standards

Collection of data, statistical analysis and management of the Kosovo judiciary is one of needs which requires introduction of ICT in the Kosovo judiciary.

Availability of ICT in support of data collection and reporting is widely expected by the international organizations which are dealing with monitoring of efficiency of national court systems.

As Kosovo is determined to join the European Union, KJC will also have to meet established standards and requirements. In terms of reporting, KJC will have to observe and meet requirements of CEPEJ and other specialized agencies.

Throughout development phases of CMIS 2013, a particular attention should be paid to analysis of these international reporting requirements and standards. CMIS 2013 has to be developed in such a way that in a reasonable period of time gets capable of automatic generation of the most of internationally required reports.



Annexes

Annex I - The Assessment Report

Annex II - Members of the Work Group

Annex III - Server room specifications

Annex IV - Acronyms Used

Annex I - The Assessment Report

Executive Summary

Project “Building capacity of the Kosovo Judicial Council on Information Technology is initiated by the Kosovo Judicial Council and it is co-financed by the European Commission TAIEX program and the Government of Norway. This project is scheduled as a three phase project. The first phase should produce an assessment of past and current ICT efforts in the Kosovo judiciary, the second phase should create the ICT Strategy for a five year period and the third phase should develop Operational plans for execution of the ICT Strategy.

This report represents the final output of the Phase I.

The assessment team, composed of the Project Manager, Business process specialist, ICT infrastructure expert and ICT security expert, conducted desk top analysis of available documentation and performed field visits to Kosovo in period July – September 2011. Findings and Assessment of the team is organized in 10 chapters of this report: Legal and Policy Framework, Sponsorship, Ownership and Decision Making, ICT Service Level Efforts in Kosovo Judiciary, Hardware Infrastructure, Software Technical Aspects, Security Aspects, Human Resources ICT, Business Process Requirements, Statistics and Management and Finances and Budget. Every chapter, and in some cases sub-chapters are followed with respective conclusions of the assessment team.

The assessment team identified both positive and negative developments in the previous ICT efforts in the Kosovo judiciary.

Major positive findings are that a change at the highest level of authority in KJC has occurred recently and that all KJC structures now provide full and a real support for introduction of ICT in Kosovo judiciary. Lack of support at the highest level was one of major reasons for lack of successes in introduction of ICT in the past. Next to it, and regardless of all issues encountered in relation to introduction of the ICT in Kosovo judiciary in the previous periods, the assessment team succeeded to identify enough KJC and court employees (at all levels) who are still willing to help proper introduction of ICT.

On the other hand, in the past, inadequate level of efforts occurred in different stages of CMIS development, testing and acceptance phases. Technology selected for development of CMIS, over period of years and under market conditions, became obsolete. Similar situation is with servers, workstations and some other hardware pieces. Although purchased new, several years later when this assessment is done, that equipment is depreciated in full, and should be replaced.

Currently, major knowledge (in all segments) about CMIS possesses an outsourcing company. In terms of human resources, KJC lacks market-class ICT software developers, business process specialists and training resources.

KJC budget will not be able to support most of activities and purchases needed in the period of the next five years in the ICT field. Searching for additional donor funding will be indispensable.



More exact funding predictions will be obtained through the next phases of this project when the Strategy and Operational plans get developed. These two phases should help KJC to determine needed financial levels, direction in which the donor assistance should be requested and finally for requesting bigger state budget and better itemization of purchases within requested/approved budgets.

Finally, introduction of the ICT in Kosovo judiciary has no alternative. KJC has to undertake this endeavor in order to fulfill its duties and responsibilities prescribed by Laws of Kosovo, as well as to respond to

international standards which are followed by most of the European countries.

The assessment team is of an opinion that regardless of all obstacles in the past, with development of the ICT Strategic plan, Operational plans, proper staffing, changed methodologies and significantly better preparation works, together with a coordinated donor assistance, Kosovo judiciary can make significant steps forward in the period of the next five years.

Summary of Conclusions follows up this Executive Summary and should be considered as the integral part of the Executive Summary.

Summary of Conclusions:

Legal and Policy Framework

KJC is responsible for introduction of ICT in the Kosovo judiciary. Legislative reinforcement and clear definition of this KJC's responsibility would be preferred.

Legislative and regulatory framework for operational introduction and use of ICT in Kosovo judiciary is underdeveloped. As this is an important precondition for successful roll out of ICT, KJC has to make a significant effort in this direction.

Recognized international judicial standards undoubtedly require KJC to increase its efforts in introduction of ICT

Three parallel records management systems in place could be recognized through observance of court workflow. This is a significant burden on courts and court employees. Due to it, efficiency of both courts and employees suffers. It is a must that there is only one functional records management system in place in courts of Kosovo.

Significant logistics and operational challenge is terms of court structure reorganization will occur in 2012. This has to be taken in serious consideration when developing later ICT strategy and operational plans.

Sponsorship, Ownership and Decision Making

Significant step forward, in comparison to the previous reports (2008) occurred at the sponsorship level. Appointments of the new Council, the President of the Council and the Director of KJC's Secretariat created a real support for introduction of ICT in Kosovo judiciary. Lack of support at the highest level was one of major reasons for lack of successes in introduction of ICT in the past.

KJC has to position itself and to take a lead role in coordination of donor efforts.

By working on the ICT strategy, KJC has an excellent opportunity to bring closer donor community to its own ICT efforts.

Development / Implementation of CMIS:

Business process aspects and CMIS features

Current version of CMIS has some good features and good level of legal knowledge could be spotted through review of List of Values (“coded fields”) within the application.

Unfortunately, CMIS was never thoroughly tested either in lab or real-life environment.

The assessment team in a brief test session (what timeframe for this activity within the scope of this project allowed), identified quite quickly and quite many flaws of the current CMIS version.

Deciding about the future of the current CMIS version, would first require proper and thorough testing and gap/flaw inventory.

Development, Testing and Acceptance

In the past, inadequate level of efforts occurred in different stages of CMIS development, testing and acceptance. A lack of commitment to do thorough testing enabled roll out of incomplete application throughout the whole court system.

Kosovo judiciary does not have CMIS “testing environment”. This is a very important testing and training tool. Future ICT plans must include creation of this environment.

Training

Preparatory activities, training methodology and training of the end users did not yield desired results in the past.

Unfortunately, but it is a matter of facts, the training process in almost all segments will have to be repeated, before (and in parallel to) any new ICT implementation effort.

Implementation

Doing training “in class” and requiring trainees to switch to “live” regime on their own was far from good approach.

High level support of KJC as well as training, monitoring and reporting operational level capacities have to be in place and in field, in order to implement a dramatic change as introduction of CMIS in court system is.

Current Status

Regardless of all issues encountered in the previous periods, the assessment team succeeded to identify enough KJC and court employees (at all levels) who are still willing to help proper introduction of ICT



Internet access of users of ICT

QoS involves prioritization of network traffic. QoS can be targeted at a network interface, toward a given server or router's performance, or in terms of specific applications. A network monitoring system must typically be deployed as part of QoS, to insure that networks are performing at the desired level.

An Internet usage policy would provide employees with rules and guidelines about the appropriate use of company equipment, network and Internet access. Having such a policy in place helps to protect both the business and the employee; the employee will be aware that browsing certain sites or downloading files is prohibited and that the policy must be adhered to or there could be serious repercussions, thus leading to fewer security risks for the business as a result of employee negligence. The Internet Usage Policy is an important document that must be signed by all employees upon starting work.

E-mail

Having in mind the fact that most of the infrastructure is in place, e-mail system should be implemented for whole judiciary. Judicial sector should have its own Internet domain.

Access to an e-mail system should be through either LAN or WAN. Judicial users should also have ability to access e-mail over Internet.

Hardware infrastructure

Part of every ICT environment is working network. Kosovo judicial has working local and wide area networking. All locations are part of that judicial network. KJC's goal is to connect all locations by the optical network build by Ministry of Public Administration and has backup connections by DSLs or leased lines. Hardware infrastructure is not so good. All servers are old and obsolete and they are not suitable for basis of modern technology. The trends in IT area are virtualized servers with dedicated storage appliance. With technology like that, we get reliable, scalable and flexible infrastructure. All servers and other ICT equipment should be in server room that suits standards and gives assurance about security and adequately environment for ICT equipment.

KJC provides some new desktop equipment and computers for courts and prosecutor offices each year. The main problem is that there are more employees who need desktop computers for their work than available desktop computers. Some computers are too old and should be replaced with new one. KJC needs at least 540 new desktop computers.

Software, Technical Aspects

Operating system on desktop computers is Microsoft XP. It is old and Microsoft will cancel support in near future. The same story is repeated on server's environment. KJC should plan to upgrade both, desktops and servers system with newer version. System environment with principles like AD, Group policy, WSUS, etc. are good and KJC should go further on that path.

KJC had established simple backup environment which includes suitable backup plan. KJC should move to more sophisticated central backup solution that supports database backup "point in time".

Concept of CMIS is based on out of date technology. At the time of implementation of CMIS, WAN connections to all judicial locations couldn't be provided with appropriate bandwidth. In this view the only reasonable solution was the decentralization of databases. The main database was implemented in the Supreme Court and 8 local databases were implemented at different locations around Kosovo. Principles of client-server technology at present are not suitable. CMIS should be centralized application based on web technology. The application should be connected with external sources like Personal Record Evidence, Business Record Evidence etc.

Security Aspects

The web services maintained by KJC are currently highly vulnerable to constant cyber attacks from the internet. Without any security vulnerability assessment it is impossible to define the exact method of the successful attacks and this way the proper way of defense.

The usage of wireless access to the local network could be very dangerous if the connection is established without any proper encryption. Although the reported wireless connection was secured with a proper method it is still possible that other insecure wireless connection points exist all over the network. In case an attacker could gain access to the internal network through one of these unsecured connections the resulting damage could be very high.

The current status of the system update management, internet security, virus and spyware protection is not effective because a client computer could reach the internal network and services even if it is infected by a virus or spyware and/or it does not have all the updates installed. Allowing the connection of these clients to the system create a high vulnerability to the system and shall not be allowed.

Human Resources, ICT

Major knowledge in regard of CMIS (as a backbone of the entire KJC's ICT System) is in possess of an outsourcing company.

KJC ICT Department needs reinforcement in human resources. Particularly, market-class developers are needed if KJC would like to switch "knowledge ownership" to in-house resources.

Current level of salaries in KJC can not allow hiring at market rates. Alternative ways and donor assistance should be explored.

Either ICT Department or any other department in KJC Secretariat do not have necessary business process / legal knowledge at level needed for modifications and development of CMIS (Re: 2.8.2.)

Business Process Requirements

In legislative and regulatory terms, KJC has to enable "experimenting" with new technologies, organization and work processes in "pilot" courts, if transition from "pen and paper" to "ICT solutions" is wanted.

KJC has to form a committed group of court employees with a task to actively participate and contribute in all KJC's ICT efforts.

CMIS (or any future ICT effort) for its success will require business process / legal specialists as part of the permanent KJC's Secretariat structure.

High level of coordination and synchronization has to be achieved between ICT and Business Process Units.

Statistics and Management

Current KJC reporting capabilities are all manual and limited. For managing the whole judiciary, KJC needs accurate real-time data. Introduction of ICT can significantly help KJC (and its employees at all levels) to better manage their tasks and the system as a whole.

It is essential, that in early stages of any new ICT effort, KJC clearly specifies reasons and expected results for doing the particular ICT effort. Without setting up clear goals, it will be impossible that ICT per se, will yield satisfactory results.



Budget and Finances

Having in mind all findings and conclusions in this report, it is quite obvious that KJC budget will not be able to support most of activities and purchases needed in the period of the next five years. Searching for additional donor funding will be indispensable. But, the local funding and particularly lobbying for increased KJC budget should not be neglected.

More exact funding predictions will be obtained through the next phases of this project when the Strategy and Operational plans get developed. These two phases should help KJC to determine needed financial levels, direction in which the donor assistance should be requested and finally for requesting bigger state budget and better itemization of purchases within requested/approved budgets.



Annex II – Members of the Work Group

KJC to provide a list

Annex III – Server room specifications

General Space Characteristics

Room specifications:

- Room walls, ceiling, and doors should be sound isolated from other occupied areas.
- Doors should be 106 to 122 cm wide and 250 cm tall.
- Antistatic floor finishing (no wax) is recommended for raised floor tiles or sheet vinyl.
- Room should not have windows (for security, sound, and environmental management reasons).

Equipment:

- Maximum electrical density of computing equipment in a server room should not exceed 300 watts per square meter.
- Computer racks should have seismic bracing and proper grounding.
- Computer racks should have adequate clearance per manufacturer specifications (but no less than 122 cm front and 90 cm rear clearance).
- The room itself should have a minimum 275 ceiling.
- The room should have at least one phone.

Fire prevention:

- Room should have an adequate fire suppression system (a “pre-action” type system is highly recommended).
- Room should be fire rated if cabling and cooling systems are combined in the same space above the ceiling or below the floor.

Cooling:

- An under floor air distribution system is preferred, although ducted systems are acceptable. In either system, racks should be arranged in a hot isle/cold isle configuration. If under floor, minimum height should be 60 cm and the raised floor must be designed to accommodate the weight of fully loaded server racks, as well as any lifting and transportation devices used in the movement of racks, computational equipment, and ancillary support systems.

Mechanical Systems

Air conditioning (AC):

- Room cooling and humidity control should be via an independent AC system (i.e., not connected to main building system), with a return air design point temperature and relative humidity of 22 °C (± 1 °C) and 45% (± 5 %), respectively.
- Chilled water based A/C systems are strongly preferred, with the intent that they use campus chilled water at a design point of supply and return temperatures of 8 °C and 16 °C, respectively.
- There should be sufficient clearance (minimum 10 cm) between the A/C unit and computer racks in order to avoid potential damage from water leaks, as well as to allow for maintenance access.

Future Planning:

- Room design should include appropriate planning for the removal of AC unit condensate (either via gravity or pump).

- Sufficient cooling redundancy should be considered and installed if possible; a backup refrigerant-based cooling system in parallel with the building chilled water system and multiple AC units in an N+1 design will provide the best protection against failure.
- Sufficient future expandability and scalability shall be analyzed and designed in conjunction with the mechanical and electrical system specifications
- In both the design and operational phases, experts should calculate the “thermal buffer” of a room as a function of typical heat load and room air volume in order to determine and plan for the time window between a cooling system failure (partial or complete) and the point at which a room temperature limit is reached.

Electrical Systems

Capacity and quality:

- The room should have separate, dedicated power panels for both computer equipment and the A/C system. Mechanical and electrical systems should be designed for long term, maximum expected room utilization (though not to exceed 300 watts per square meter).
- Building power quality considerations should be taken into account to determine the need for isolation transformers, UPS systems, and other power conditioning equipment. To the extent possible, such heat generating support equipment should not be located in the server room
- A Power Distribution Unit (PDU) layout is preferred, with power monitoring and UPS support provided on a per rack basis.

- Electrical system should be designed to provide an isolated ground, dedicated neutral, and a grounding grid.

Emergency planning:

- Emergency/backup power should not be tied into the building life safety system. The department must supply and maintain separate backup power (e.g., UPS or generator) if desired.
- Server room electrical distribution system should have easily accessible shunt trip capabilities for emergency shutdown.

Alarms and Security

Alarm systems:

- Critical alarms related to the functioning of the A/C system must be mapped into the Facilities Management Energy Management System.
- The room should have water sensor alarms reporting system.



Annex IV – Acronyms Used

AD	Active Directory
CEPEJ	European Commission for Efficiency of Justice
CIS	Communication and Information System
CMIS	Case Management Information System
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Server
EAR	European Agency for Reconstruction
EC	European Commission
ECLO	European Commission Liaison Office
EU	European Union
EULEX	European Union Rule of Law Mission in Kosovo
GPO	Group Policy Object
GUI	Graphical User Interface
ICT	Information and Communication Technology
IIS	Internet Information Server
KJC	Kosovo Judicial Council
LAN	Local Area Network
MoJ	Ministry of Justice
OLAP	OnLine Analytical Processing
OU	Organisation Unit
PDC	Primary Domain Controller
PRONET	Outsourcing company, a part of ASSECO GROUP now
QoS	Quality of Service
SDC	Secondary Domain Controller
SMIL	Local name for CMIS
SOA	Service Oriented Application
SOAP	Service Oriented Application Protocol
TAIEX	Technical Assistance and Information Exchange (EC Program)
UNMiK	United Nations Mission in Kosovo
UPS	Uninterruptible Power Supply
USAID	United States Agency for International Development
WAN	Wide Area Network
WPA2	Wi-Fi Protected Access II

