UNDP Uzbekistan

UNDP Local Governance Support Project: Participation and Partnership (LGSP)

Promoting e-Governance Strategy

Final Report

Deliverable 3 – Recommendations on transition to paperless document management system in local governments and creating enabling framework in the policy level with technical standards

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Preface

This is a third report required by the TOR. It addresses the issue of the Electronic Management System e-Hujjat that has been created and piloted within the LGSP in the regions of Djizak and Namangan. This report focuses on the lessons learned in Djizak (the regional administration was visited on 8 February 2013), while the Skype conversation with Namangan could not provide sufficient basis for reliable reporting. The report addresses both strategic and practical issues that UNDP should address in completing these pilots by devoting special effort to review the present and desirable legal frameworks by identifying existing gaps preventing from efficient and democratic information management under the e-government paradigm. The report is also a logical continuation of the previous two reports and refers to them where necessary. The author would like to thank the all LGSP staff and especially the project's specialists Ms. Guzal Adilova and Mr. Azizkhon Bakhadirov for their valuable comments during the report preparation.

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Executive Summary

Key finding: The e-Hujjat system of electronic management is a highly successful and effective application, as demonstrated by the Djizak case. It has not only brought tangible cost-saving benefits but also changed for better the internal business processes in regional administration. E-Hujjat is the key e-government instrument at the local level. It should be increasingly viewed as a e-service instrument, not only a document management tool.

Key operational recommendation: LGSP should continue its work in this field for the next 2-3 years to ensure the sustainability and institutionalizations of project results.

Additional operational findings/recommendations:

1) One of the main lessons of e-Hujjat roll-out (which has happened over a very short period of time, which is in itself a major achievement contrasting with not entirely successful previous attempts to created and introduce such a system) has been a realization to emphasize the motivational factors (benefits) of adopting new technology in document management significantly stronger. Therefore, UNDP/LGSP should undertake a broader lesson learned exercise to understand what advances and what hampers the adoption e-Hujjat at the personal, individual level to make the roll-out completion more seamless and effective. It is recommended that in order to guarantee greater acceptance and up-take of the system by the staff of departments and organizations, peer-to-peer coaching and mentoring (e.g. by a core group of e-Hujjat Champions) is practiced by those who use the system and understand its benefits first-hand. The system is often seen as a potential threat to staff employability.

2) The Djizak and Namangan pilot cases should be fully – 100% - completed with the development of a new roll-out strategy accompanied with cleat targets and support measures, including staff motivation. It is advised that, based on the lessons learned results, a White Paper on e-Hujjat Roll-out (possibly with a respective nation-wide Delivery Plan) is prepared and discussed to extend the lessons from the pilot cases to the country at large.

3) The strategy should also consider how far and deep the system should be integrated vertically (from the national to the grassroots level) and horizontally (aiming public offices and organizations located in the region). It should propose specific measures to strengthen the administration's own IT departments which are understaffed and ensure reliable financing to attract competent specialists. That requires the change in the current (largely ineffective) policy; it is advised therefore that UNDP prioritizes this issue with the government using the lessons learned from the pilot cases as evidence. It also should be underlined the importance of these pilots for Uzbekistan as a whole (which can be done via the above-mentioned White Paper with subsequent discussion of its findings). The overarching objective should be the eventual institutionalization of the e-Hujjat EDRMS in Uzbekistan to make it sustainable.

4) It is recommended that e-Hujjat continues to evolve further not only in terms of its functions and user-friendliness, but also a tool breaking new grounds in public management practices. Its newer version needs to replace gradually the current edition. Future versions need to expand its functionality including the work-flow feature to facilitate business process reengineering strategically. The system should gradually become a full-fledged e-government tool providing G2C services as well, in addition to G2G services, especially in the field of access to public office and information.

Additional strategic findings/recommendations:

5) It is essential that the e-Hujjat start facilitating a gradual transition from a document management system to a *public record* platform. There are significant gaps in the current legal provisions governing a broad field of information management. In addition to the planned laws on e-Government, Public Services, Data Protection and Transparency of State Authorities, new regulations are needed to create a system of Public Recordkeeping aligned with these new laws. UNDP can initiate first policy and vision discussions in this regard. The institutionalization of EDRMS in Uzbekistan would eventually require such a law.

6) UNDP should encourage the exploration of new technical standards in the area of electronic document and record management by proposing (and supervising as appropriate) a dedicated Task Force under the e-government interoperability support mechanism. The ISO technical standards (as listed in the Annex) should serve as a basis for strategic development of relevant national standards.

Paperless document management: Theory and Practice

Definition of electronic document management

For local government level, the Electronic Document Management System (or EDMS in short) is a central pillar of the entire electronic government system. In fact, it epitomizes the latter being effectively the tangible and most significant single instrument of electronic government used by local government officials on a regular basis and on a large scale. It is not the register of data and information any more but a management tool to provide services in an optimal and efficient way. The relevance of any EDRMS can be judged by the degree to which it facilitates the transition from a data-based administration to that centered on interoperable services.

Any EDMS should respond to a number of criteria; for example, it should be able to

(i) contain/store metadata including the date the document has been created and filed, the identification of the user who created and/amended it, optical recognition marks (if scanned) and other identifiers;

(ii) index documents (or its parts/extracts), i.e. to keep tracks of the above identifiers for classification/topology purposes (via tracking its previous versions);

(iii) distribute documents via special formats and channels (e.g. when working on a document, its master copy/original needs to be preserved/archived while its versions in certain formats can be distributed for altering, validation, endorsement, etc);

(iv) store and retrieve the document via, e.g. search, again through the use of unique identifiers;

(v) integrate with specific applications so as to work on the documents within the application; it is advised to use open standards for seamless integration (for example, via the Web Distributed Authoring and Versioning (WebDAV[1]) based on the HTTP to facilitate multi-user collaboration on editing documents in an World Wide Web environment as part of the WWW Consortium's work (W3C); or such other protocols and standards as S/FTP, AtomPub, CMIS, SOAP (XML-based));

(vi) ensure certain level of security, which especially concerns the documents that deal with personal data (such as employment/pension or health records); different modes of access control and right management would apply to meet security criteria;

(vii) collaborate among various users who work on the same document;

[1] http://www.webdav.org/

(viii) include specific work-flow modules that allow for defining roles and responsibilities among users in managing the document (e.g. approving or dispatching functions) according to the rules and procedures of a certain business process that the users are part of.

Thus an effective EDRMS should includes such functionalities as the integration with legacy systems, standard/advanced search facilities, task manager functions (sending, monitoring and responding features), controlling document versions, user-definable functions tailored with the user's specific needs and practices, various work flow and form recognition options. Ideally, any file that can be produced should be ready for filing without a need for printing and further scanning. Only the documents that are generated externally outside the EDMS operator's control should be additionally scanned and turned into digital format. Legacy compatibility means that there should be a history reports/search function that ensures continuity of government business processes and services.

The effective and user-friendly EDMS provides the ability to store and access any document and any time (within the user's mandate which might restrict access to certain documents, both internally and externally.) The system must have an ability to file data without limit and in a secure way. Eventually, EDMS should ensure visible and measurable savings of time, space and material/financial resources and lead to the rise in productivity through cost reduction and convenience.

Role of technical standards and legal frameworks

There could be other functionalities that can be assigned to the EDMS which exist in many different types and forms. They often overlap with content, resource or digital asset management systems such as ERPs – Enterprise Resource Planning systems – originally developed for business sector but also used by public organizations. Regardless of the system's type, there are specific document control standards that are clearly defined as a matter of policy. Same applies to public administration. Usually, this is (a) the International Organisation for Standardisation (ISO) that set international standards and related technical documentation, and (b) national standards issued by the relevant state authority based on the former.

The ISO issues a wide range of technical standards organized in the regularly updated catalogues, including in relation to the use of ICTs in office practices. For example, the catalogue number 35.240.30 deals with dozens of the published standards in the field of IT applications in information, documentation and publishing (see the list in Annex 1). The list covers such standards as ISO 8777:1993 Information and documentation -- Commands for interactive text searching, ISO 10160:1997 Information and documentation -- Open Systems Interconnection -- Interlibrary Loan Application Service Definition, and so on. For example, the ISO 2709 is an ISO standard for bibliographic descriptions,

titled Information and documentation—Format for information exchange.[2] The ISO 15836:2009 defines the elements typically used in the context of an application profile which constrains or specifies their use in accordance with local or community-based requirements and policies. This is 'a standard for cross-domain resource description, known as the Dublin Core Metadata Element Set'; it has no limit what can be used as a resource.

It is the best international practice to refer to the respective ISO standards in national norms and laws. For instance, the Australia's regional Victorian government specifically refers the ISO standard ISO 15489 as a basis of the Australian standard on records management.[3] The supportive normative practice – be it national or regional – plays a crucial role in the effective deployment and use of ICT for document management. Apart from specific laws concerned with e-government per se, the legislation in the following three domain of public life is especially important, namely: (i) in public record keeping, (ii) in local (self) government, and (iii) in state administration.

Uzbekistan has a specific law on *Electronic Document Management* No. 611-II of 29 April 2004,[4] which defines the state policy in this field, including the use of electronic document management and the development of related standards. It is determined in the law's article 5 that an electronic document is an information resource that is fixed in the electronic format and confirmed by the digital signature of its user. It should possess other requited technical requisites that allow for identifying it as a unique document. It is also stated (in article 4) that while the main purpose of the circulation of electronic documents is receiving and dispatching them within the information system, the system can be used for payments, arranging deals, official and unofficial correspondence and the communication of other information. Special article 13 states that besides the senders and receivers of electronic documents, there can be information intermediaries who may provide related services. The storage of electronic documents is dealt with in article 16; however, it is very brief and apart from granting the access to electronic information in general terms it refers to other laws and norms as far as its implementation is concerned (it is not clear though what the procedure of such access is and who is the keeper of public information).

The State Agency for Standardization, Metrology and Certification (Uzstandard)[5] is responsible for setting national standards in different fields. The field of information management/ information technology is part of the catalogue of standards (as of 1.1.2012)[6] that covers a broader group of computational and automation equipment (Annex 2). The catalogue contains three specific standards that address such aspects of electronic document management as (1) interaction of electronic document management systems (O'z DSt 1270:2009), (2) requirements for formation, use and storage of electronic documents (O'z DSt 2295:2011), and (3) typical requirements for electronic document management (O'z DSt 2298:2011). There is also a number of applicable standards that cover security of

[2] http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=52142 , accessed on 25 March 2013
[3] http://www.legislation.vic.gov.au
[4] http://www.parliament.gov.uz/ru/law/2004/3013/, accessed 25 March 2013
[5] http://www.standart.uz
[6] http://www.standart.uz/blog/category/42

information and digital signature (cryptology). In the domain of open systems, the ISO standards serve as the national ones. In addition, there is a special Technical Committee devoted to Communications and Informatization.

E-Hujjat – a successful and efficient electronic document management system

The above analysis demonstrates that Uzbekistan has a sufficient legal, normative and operational foundation for managing electronic documents. The emergence in 2011 of the e-Hujjat as a dominant system of electronic document management, created by UNICON.UZ with UNDP's assistance, is a very good – and successful – example of the country's gradual but steady advancement in the area of information management via electronic means. E-Hujjat meets all key requirements described above that such system should have. It is based on the national standard O'zDST 1092:2009 as far as the use and verification of digital signature for identification purposes is concerned. Its newer 2012 version expands the existing functionality by improving the overall interface and adding a range of analytical possibilities such as generation of reports on demand (see the screen shot below).

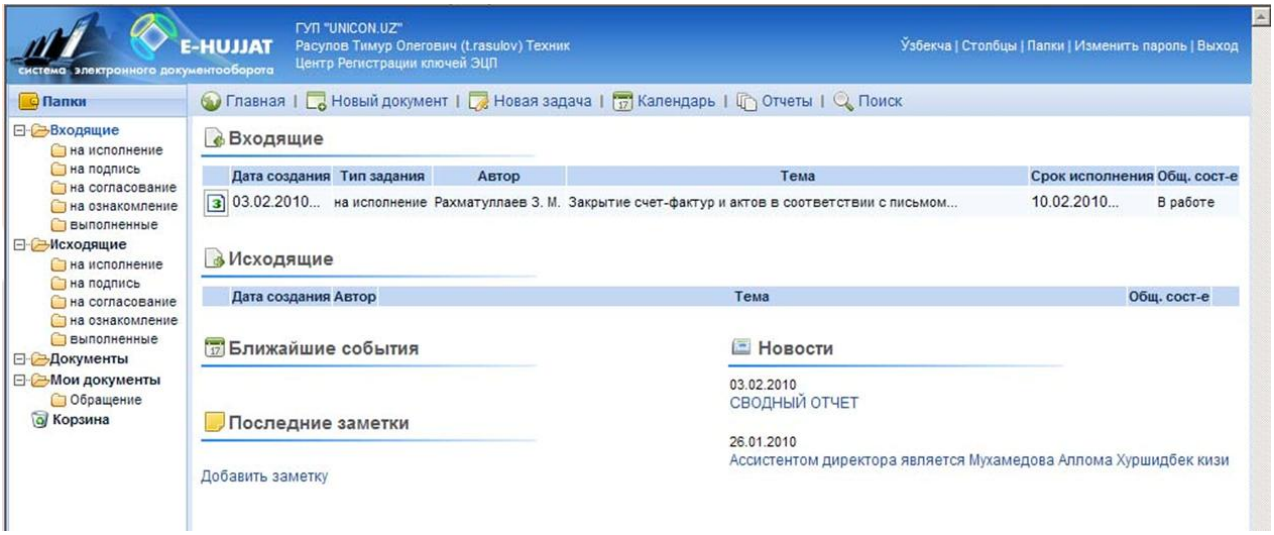

Figure 1 – e-Hujjat interface

e-Hujjat not only does meet in full the provisions set out in the Digital Signature and Electronic Document Management laws, but also corresponds to other key normative policy documents, namely: (a) document management and control within the organs of state authorities and public management (decree of the Cabinet of Ministers of 29 March 1999, number 140), and (b) Procedures and order of working with documents and monitoring performance discipline in state and commercial entities (decree of the Cabinet of Ministers of 28 August 2009, №11-10).

The system can handle any type of electronic documents (in Uzbek and Russian) which are divided into three main categories: incoming, outgoing, and internal. The interface resembles that of e-mail which makes the use of the system easy and intuitive. E-Hujjat is effectively a system of seamless information exchange, using the Internet (thin client) interface. It ensures reliable storage of electronic

documents and their search on dedicated and secure central servers. A range of different public officials can use the system including senior and mid-level managers, chancellery staff, relevant support/general service personnel (such as secretaries), and staff members responsible for document performance control. There is an automatic reminder function if the document has not been worked on as requested. Managers have the right to adjust access control for other staff.

The document can be created anew electronically or converted into an electronic form by scanning a relevant paper document; it can be approved, digitally signed, dispatched, reported, controlled, etc. Each electronic document is properly registered and can be archived after the task has been completed. The e-Hujjat user can customize its interface and tasks by making notes, entering events and news. Overall, this is a highly efficient and user-friendly system of managing documents in an electronic environment.

Djizak pilot case

As mentioned above, EDMS is not just a software application in the field of informatization. It can be a powerful tool of business process reengineering for greater efficiency and transparency, particularly at the local level where it is the main instrument of e-government. UNDP's support in developing and piloting e-Hujjat in Djizak and Namangan has been crucial in making significant improvements in the work of local administrations, especially in their chancelleries that can handle now a far greater work load than before and to do it substantially quicker.

The e-Hujjat system has been in operation in the Djizak regional administration since March 2012. Its efficiency was demonstrated (during the visit on 8 February 2013) by scanning eight paper documents (incoming letters), registering them, creating specific tasks associated with each document and dispatching them in electronic format for follow-up by other staff both in the administration itself and outside it. The entire process performed by the Head of the Chancellery and its Secretary took some 10 minutes, which would not be possible without the system. The number of electronic documents is constantly growing – over 4,000 processed in less than a year in 2012, which reduces fuel and paper costs very visibly. On average, some 23 kg of paper has been saved every day in all departments at regional and rayon levels; this is tantamount to the saving of 8.5 tons of paper per year, which is very substantial.

Findings and recommendations

Learning lessons learned

Yet it is not only the efficiency gains that EDMS brings about. It changes the way the daily work is organized and makes it more meaningful and satisfying for those involved. It also raises the level of competency required to manage the system, which is a significant benefit as well. Still, the roll out of e-Hujjat has not been unproblematic. The Head of the regional administration's chancellery admitted

himself that he had not been a willing adopter in the beginning; in fact, he was against it as saw a threat to the established pattern of familiar procedures and eventually a threat to his own employability. As it's turned out, in spite of these perceived threats, the actual implementation of e-Hujjat has been a success, with the Head of Chancellery now being its main champion and advocate.

This is an important lesson to learn, i.e. the use of digital technologies in the public sector should be well explained to demonstrate clear benefits to its users and the performance of the whole administration. In fact, such benefits should be included into the system's design from the very outset. It is not as much an actual threat as a perceived (imagined) one caused by the lack of knowledge that the user's employability will gain rather than suffer as a result of introducing new digital applications for better management. These lessons also mean that the system's roll-out should be accompanied by adequate support measures in order to respond to the users' both actual and perceived fears regarding their job security.

While the initial introduction of e-Hujjat in Djizak over such a short period of time has clearly been highly successful, the roll-out is not complete, for not all the staff are still using it as they should, especially at within specialized departments and units. Such an under-exploitation of the system diminishes the overall effect that can be felt across the entire region. UNDP should additionally review its experience and lessons learned with piloting e-Hujjat in both Djizak and Namangan and set a targeted roll-out across the region by identifying weak spots (sectors/locations/units/staff) and developing effective support measures that would eventually ensure the gradual accomplishment (by periods) of a 100% coverage of relevant staff and functions.

There is no clarity now as to how to move forward further. During the visit to the Djizak administration, various proposals were offered in terms of how deep the e-Hujjat should penetrate various public offices and organizations. For example, it was suggested that the entire vertical chain of communication and administrative command from the upper national/regional level towards the rayon and local grassroots *mahallas* needs to be covered all way through. One-two pilots would be help explore the feasibility of such vertically integrated solutions. Whereas the grassroots mahallas do not have significant administrative powers, tasks are delegated from above for execution; it also can serve as an entry point for information access by the public. Also, there are questions as to how wide the horizontal integration should be to connect the regional administration (and its departments) with other entities located in the region. All these issues are strategic and need to be looked at. The best way to do it is to undertake an informal ad-hoc review and lesson learned exercise.

Other problems that were discussed during the visit – such as the unreliable connectivity/infrastructure and the understaffed IT department (reflected and commented in the 2nd Mission Report) – need be addressed as well. For instance, it was recommended that a stronger emphasis should be made on strengthening administrations' own IT departments rather than seeking help from IT the Committee's Regional IT Centres (or those of the UZBTELECOM). It is essential that when problems arise, the help is provided quickly by the dedicated e-Hujjat team located on the administration's premises who know the situation well, at least at the roll-out initial stages (it does not

exclude cooperation with the regional IT Centres that also need to develop their competencies to provide technical support when needed).

Prioritizing motivation

The roll-out support measures should place a special emphasis on motivational factors that have not worked well until now. That might include the development of more effective peer support mechanism, when underperforming or unwilling to use the system colleagues benefit from mentoring or coaching from their more advanced peers. Such mentoring/coaching may take form of selecting a group of e-Hujjat so called Champions who also need to be encouraged and motivated themselves to provide such support by, for example, inviting them to participate in study tours to learn other countries' experience.

All negative factors and positive experiences need to be documented with evidence, for example, through a series of interviews with both successful and underperformed staff. Its results should then be evaluated and assessed through a SWOT analysis to prepare a new roll-out plan with all the units and its staff listed with specific targets set in terms of timeline and coverage. The SWOT analysis should be preceded by a functional review that should take a full account of the potential offered by electronic document management to improve internal work-flow and business processes. Opportunities for including the customizable work-flow functionality into the e-Hujjat interface need to be explored as well.

Embarking on such an analysis, preparing a new roll-out plan with realistic targets, elaborating adequate support measures and implementing them may take more time than originally was envisaged. Yet it is critically important to go through this process, so as to have sufficient and reliable experience from the pilot cases gained within the LGSP and prepare as a result a White Paper containing specific suggestions to the government regarding how best to implement the e-Hujjat system nation-wide, in all regions. A national seminar is recommended to organize to discuss the White Paper findings as part of broader knowledge management and exchange activities and agree on the national Delivery Plan including a plan for closer integration with Single Window Centres.[7] The project needs to be extended and financially strengthened accordingly to accommodate these new tasks.

Improving legal framework

The e-Hujjat White Paper and the ensuing National Delivery Plan should not be viewed in isolation from other e-government activities including those related to particular practices and law making. Concrete proposal should be made and discussed in respect to the elimination the existing bad practice of maintaining in parallel paper documents, alongside their electronic analogues. The concept and practice of electronic document management should be viewed through its potential impact on the entire e-

[7] Specific recommendations provided in the second mission report

government progress in implementing the Action Plan 2013-2017. E-Hujjat at the local level is de-facto e-government in action where real-life interoperability occurs. Many useful indicators can come out of how it is used and its actual deliverables. It is advised that UNDP and the government (the State Committee, UNICON.UZ) have a forward-looking strategy of refining the system further.

However, at the moment, e-Hujjat serves mainly as a tool for providing government-to-government (G2G) e-services. In future, it should be increasingly viewed as a source of government-to-citizen (G2C) services as well, especially in the field of Open Government concept as far as access to the data/documents (including those relating to meetings and corresponding proceedings) held by the government is concerned (access to public sector information/data). Such functionality should be reflected in the set of e-Hujjat new features that would allow for closer and direct interaction between state authorities and citizens (entrepreneurs, media, etc). The project has prepared an excellent public relations and communications guide for regional information centers set up within the Djizak and Namangan regional administrations. Since the main goal of such information services (centres) is to improve government-citizen communication, it is recommended that the e-Hujjat's features helping disclose public information – letters, decisions, data, etc. – are extended to the information centres' staff within their mandate. It is essential that access to public sector information and related documents on a large scale encourages pro-active use and re-use of such information repeatedly. However, this is not an easy task for any, even most advanced in terms of administrative efficiency and openness government.[8]

In general, the country's existing legal basis that underpins the development of state information systems, resources and interactive services is extensive[9] and has been constantly expanded and updated. Still, there are certain gaps that hinder more effective use of ICTs for efficient and transparent information management, including access to public sector information. Usually, as other countries' experience demonstrates, a 'standard' set of laws would include several legal acts that complement each other (Figure 2 below). For example, the Public Administration Act usually aims at the integration of ICT into administrative practices for greater efficiency of the back-office in the interest of improved public services at the front end.[10] Local Government Act (an extremely important law in the Western context of self-governance) may have special provisions – both ICT- and non-ICT related) to ensure better access for the general public to local meetings/information/documents/officials.

[8] Suffice to mention, that while the UK has had its Local Government (Access to Information) Act from 1985, its key laws have been passed relatively recently; e.g. the Data Protection Act was adopted in 1998 (requires that every organisation that deals with personal data registers with the UK's Information Commissioner's Office; Freedom of Information Act was passed in 2000 ; the INSPIRE regulations that demand all spatial data be public for better environmental policies was enacted in 2009. Usually, this is still a learning process for any state and authority.

[9] See the Initial Report for the list of main laws and regulations.

[10] As a result, some Central-Eastern European countries that needed to transform their public sectors quickly and substantially (in order to qualify as the EU's new member states) had to pass relevant laws and institutionalize their outcomes by establishing Ministries for Public Administration which were in charge of e-government as well. Often they were subsequently re-named as Information Society Ministry (Slovenia, Hungary, Chech Republic) which underlines the paramount role of ICTs for public administration reform.

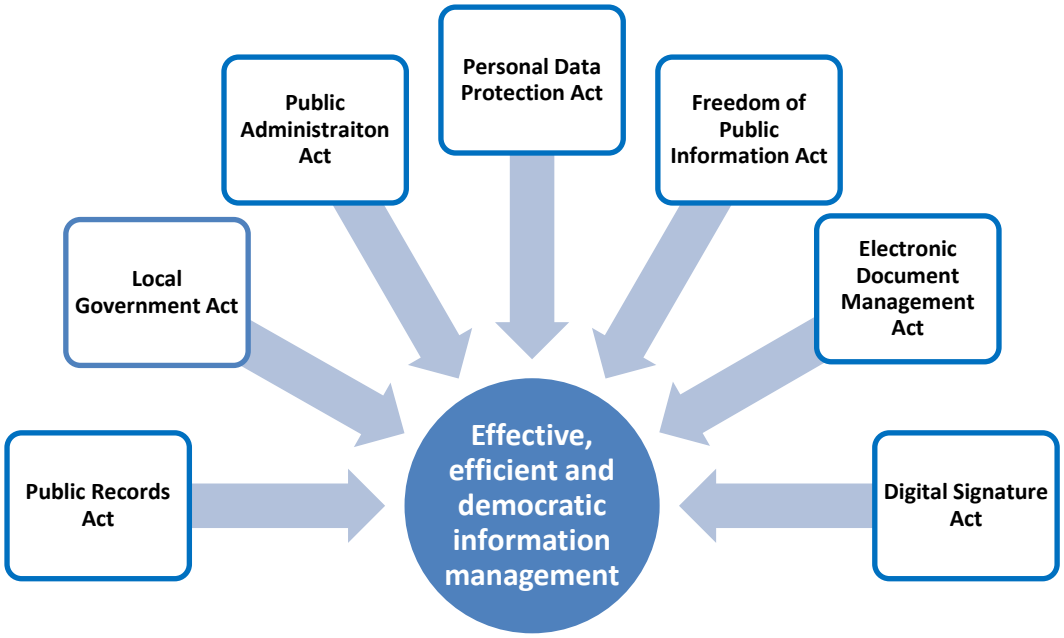

Figure 2 – legal basis of effective and democratic information management

With the advent of new digital technologies, a new generation of Freedom of Information Acts has emerged beyond a more traditional domain of access to environmental information[11] to cover more areas of public life and government activities for greater transparency and openness. This trend has eventually resulted in the global Open Government Partnership which requires the participating countries to assume concrete obligations in this area; for example, by elaborating national actions plans and self-assessment reports in close cooperation with civil society.[12] A wide spread of new technologies has forced to develop new principles of protecting privacy and personal data security in Personal Data Protection laws.[13] However, there is no one size-fits-all approach, for in different socio-economic and political settings there could be different laws (their titles, content, etc).

Some of the key laws are already in force in Uzbekistan; these include on Informatization, Electronic Document Management, Digital Signature (supported by other norms and regulations issued by the Cabinet of Ministers to create an enabling institutional environment). Also, there is a law on Local Government (although it does not specifically refer to the use of ICTs or regulates access to

[11] Regulated internationally by the UN Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, adopted on 25th June 1998 http://www.unece.org/env/pp/introduction.html.

[12] http://www.opengovpartnership.org/, http://data.gov.uk/blog/ogp-uk-national-action-plan-self-assessment-report.

[13] Security of state information systems and data can be regulated by other more specialized laws in the field of cyber-security and state affairs.

information/meetings). Also, more laws are planned for adoption. According to the latest draft of the Action Plan for the implementation of the Electronic Government in the Republic of Uzbekistan 2013-2017, three new laws are envisaged for adoption, namely: (a) e-Government Law, (b) Public Services Law, and (c) Personal Data Law. The latter is especially welcome (as long as it deals with the *protection* of personal data) to fill in the existing legal gaps relating to efficient and democratic information management. In addition to and beyond the domain of e-government, there is a draft law on the Transparency of State Authorities which is at present under public discussion. It is foreseen that after its adoption it will be piloted in the regions of Samarkand and Bukhara.[14]

The currently discussed Transparency Law is highly important in bridging the existing gaps in the legal foundation in general viewed from the good governance perspective. It essential that this Transparency Law – which is effectively an analogue of the widely spread Freedom of Public Information Acts – includes explicit references to the use of modern web technologies (e.g. articles 3, 7, 11) by public authorities. The official web sites shall be used at the front end to provide access to public information and documents (also access to official meetings, which is highly commendable – article 14). Overall, the issue of front-office access is very well described in spite of the law's certain generality when it comes to the description of the enforcement mechanisms and processes – more detail would be desirable in relation to 'how', in addition to 'what'. The former could address more thoroughly the issue of the corresponding back-office processes and regulations; that is, how all or certain public information, data, documents shall be generated and circulated *before* being posted on the web sites by information services. It is obvious that the EDRMS – at least at the local (government) level – will be the main channel and storage facilities for such information and data; yet, the EDRMS is not mentioned in the draft law at all (also article 3 "Main notions and definitions" does not refer to it). As a consequence, the role of electronic document management in delivering public information to the front end from the back office is not clear. The Transparency Law should be more explicit in guaranteeing seamless integration of EDRMS into local (government) affairs in general and in delivering relevant public information to the front office effective and efficient in particular. That would significantly improve the quality of such information and documents, and eventually the quality of access and overall transparency of public affairs. In general one can conclude that the public side the document management – public record management – appears to be underdeveloped in comparison to the informational content (including services) itself. Legal provisions need to address this relative shortcoming by providing more detailed description of key processes of information generation, storage, access, provision, use and re-use and by highlighting the role of e-Hujjat in it. It is advised that institutional aspects are also mentioned in the law to define owners, operators, managers, suppliers, consumers of information (rather than making such at a later stage). Direct references would ensure greater certainty and lesser ambiguity of the interpretation of law's provisions and create a stronger basis of law enforcement and sustainability.[15]

[14] The draft law is discussed at http://www.norma.uz/publish/doc/text81222_zakon_respubliki_uzbekistan1

[15] A classic example comes from Korea, where the law on Digital Signature included specific provisions governing the establishment of the concrete PKI infrastructure, especially certification authorities; that has helped make the law clear and enforce it practically. In contrast, in many post-Soviet countries Digital Signature laws do not provide a clear road-map for the institutional set-up of how certificates to be issued, which has created numerous

The planned laws need to be as detailed as possible to avoid misinterpretation and serve as useful road-maps at the enforcement phase.

The development of specific standards concerning the electronic management of documents, the identification of those that are public (and therefore can be accessed by the public via the EDRMS as a public service) and the creation of a comprehensive system of public record keeping should become the next phase of e-government development in general and e-Hujjat evolution in particular.

From document management to public record management

As mentioned, the role of the EDMS should not be viewed too narrowly as a system of document management alone within units and organizations. From a forward-looking perspective, e-Hujjat as a *de-facto* and *de-jure* national EMDS standard needs to be institutionalized more broadly both as a key e-government instrument – as a source of e-services in the area of information management, as an instrument of access to public documents, and as a system of public records keeping at all levels of public administration.

Nonetheless, it is important to start building gradually local capacities for information management. The challenge of effective information management was a central theme of the 2nd Mission Report supported by concrete organizational measures within the work on e-government interoperability framework. The role of electronic document management in building such capacities cannot be overestimated. It was recommended to work closer with the State Archive Agency (UzArchive).[16] One of the directions of joint cooperation is to address the issue of public records and their keeping (and related standards as part of the boarder information management challenge). Whereas there is a recent law (2010) on the Archive Affairs, its provisions specifically focus on managing the archives and archived documents. The law does not address the public side of documents and does not define what public record is (any document including in electronic form is also a record). Typically, this is the subject matter of the Public Record Act, which Uzbekistan does not have yet. While the Archive Agency does not necessarily needs to be the keeper of public records (usually this is a role of the executive state body such as the GoskomCITT), such a keeper function needs to be determined and defined within the national governance system. This is especially important in the age of digital communications, which greatly facilitate access and retrieval of documents and records.

At the moment, there is no coherent system to manage and keep public records in Uzbekistan. Electronic document management is concerned with a narrower field of managing current public documents via digital means. The notion of the 'document' is not necessarily tantamount with that of the 'record'. It should be noted in this respect that providing access to public information, as well as its

problems in enforcing the law; its interpretation varies greatly resulting in substantial delays in establishing PKI centres that often are in conflict and competition.

[16] www.archive.uz

continuous use and re-use by governments and other actors constitute an a very important aspect of public service in general and e-government in particular. The 2nd Mission report demonstrated that using an example of the UzArchive State Agency which provides a range of highly important G2G and G2C services in the area of pension system. This case also demonstrates that any document managed electronically constitutes also a record that can be kept for future reference, use and re-use. The system of electronic document management thus becomes a system of the electronic document and record management. This is how it is defined internationally – an Electronic Documents and Records Management System or EDRMS.

The concept of document management should be expanded to reflect the public record management as well. It is about electronic management of documents as public records (in addition to what might be defined as a public record beyond documents per se). In other words, additional public record keeping standards are needed to be elaborated. Such standards should ensure the efficient management of the entire scope of public information. The public record keeper would ensure the application of such standards. The Public Record law would specify particular recordkeeping frameworks, procedures, organizational structures, roles, subordination and communication processes. To do so, a special Task Force can be established under the e-Government Interoperability mechanism, possibly under the aegis of the respective Technical Committee of the State Standardization, Metrology and Certification Agency to develop technical standards and their conformity with those of the ISO. The public document and record keeping standards needs to take a proper account of the international regulations/standards issued by the ISO and be based on the national law that regulates the management of public records in Uzbekistan.

At present, the GoskomCITT is responsible for the creation of the system of 'further development of the information environment on the electronic government platform through the creation of the electronic document management system';[17] it is also in charge of developing electronic libraries, ensuring access to information resources stored therein, and also controls the use of information technology in state (public) administration, including the use of relevant standards. Whereas it is clear the EDRMS falls under these areas of responsibility assigned to the State Committee, it is not entirely clear whether it also the keeper of public records and documents at large contained in various information systems and state bodies.

The Informatization Law of 2003 (11 December, № 560-II)[18] has a special provision in article 8 that deals with documenting information. In particular, it requires that any information resource stored/ processed in the information system with the aid of digital signature is defined as electronic document

[17] Among other tasks, which include the formation, storage and use of state information resources and data bases, creation and management of the integrated inter-agency communication and data exchange networks, integration of state information resources, establishment of unified vertical corporate networks of state entities and ministries, introduction of electronic forms of public service provision for entrepreneurs and population (article 589, chapter 3, the decree of the Cabinet of Ministers of Uzbekistan of 19 December 2012, number 355 on the approval of the provisions governing the State Committee on Communications, Informatization and Telecommunication Technologies of the Republic of Uzbekistan; pages 280-281 on www.lex.uz. of the

[18] http://lex.uz/Pages/GetAct.aspx?lact_id=82956

and has the same legal power as the relevant paper document. The information documentation process is managed by a dedicated state body. The subsequent decree of the Cabinet of Ministers of 22 November 2005 (No. 256) specifies the requirements for documenting information resources managed by the state. The State Communication and Informatization Agency (today's the State Committee GoskomCITT) was named as the state entity in charge of the development of the procedures governing the information documentation process.

The Decree lists several general mandatory requisites that the document (as a state information resource) should have, for example: title, owner/keeper, source, date of creation and registering, rules of use, and other requisites necessary for classification and systemization; it is required that the documents should be searchable using the above requisites. However, there is no reference in the decree to any international or national standards as far as electronic document or record is concerned. It is advised therefore that in the absence of the Public Record Law, the planned e-Government Law would addresses that issue adequately to avoid ambiguity. Possibly, amendments need to be made to the Electronic Document Management Law as well.

Annex 1 – ISO standards catalogue 35.240.30: IT applications in information, documentation and publishing[19]

Including Standard Generalized Markup Language (SGML), automatic translation machines, etc.

ISO/IEC 2382-17:1999 Information technology -- Vocabulary -- Part 17: Databases	90.93	JTC 1/SC 32
ISO 2709:2008 Information and documentation -- Format for information exchange	90.93	TC 46/SC 4
ISO 5428:1984 Greek alphabet coded character set for bibliographic information interchange	90.93	JTC 1/SC 2
ISO 8459:2009 Information and documentation -- Bibliographic data element directory for use in data exchange and enquiry	60.60	TC 46/SC 4
ISO 8777:1993 Information and documentation -- Commands for interactive text searching	90.93	TC 46/SC 4
ISO 8879:1986 Information processing -- Text and office systems -- Standard Generalized Markup Language (SGML)	90.93	JTC 1/SC 34
ISO 8879:1986/Amd 1:1988	60.60	JTC 1/SC 34
ISO 8879:1986/Cor 1:1996	60.60	JTC 1/SC 34
ISO 8879:1986/Cor 2:1999	60.60	JTC 1/SC 34
ISO 9069:1988 Information processing -- SGML support facilities -- SGML Document Interchange Format (SDIF)	90.93	JTC 1/SC 34
ISO/IEC 9070:1991 Information technology -- SGML support facilities -- Registration procedures for public text owner identifiers	90.93	JTC 1/SC 34
ISO/IEC 9541-1:2012 Information technology -- Font information interchange -- Part 1: Architecture	60.60	JTC 1/SC 34
ISO/IEC 9541-2:2012	60.60	JTC 1/SC 34

[19] http://www.iso.org/iso/home/store/catalogue_ics/catalogue_ics_browse.htm?ICS1=35&ICS2=240&ICS3=30&, accessed 25 March 2012

Information technology -- Font information interchange -- Part 2: Interchange format		
ISO/IEC 9541-3:2012 Information technology -- Font information interchange -- Part 3: Glyph shape representation	60.60	JTC 1/SC 34
ISO/IEC 9541-4:2009 Information technology -- Font information interchange -- Part 4: Harmonization to Open Font Format	60.60	JTC 1/SC 34
ISO/IEC 9541-4:2009/Cor 1:2009	60.60	JTC 1/SC 34
ISO/TR 9544:1988 Information processing -- Computer-assisted publishing -- Vocabulary	90.93	JTC 1/SC 34
ISO/IEC TR 9573:1988 Information processing -- SGML support facilities -- Techniques for using SGML	90.93	JTC 1/SC 34
ISO/IEC TR 9573-11:2004 Information processing -- SGML support facilities -- Part 11: Structure descriptions and style specifications for standards document interchange	90.93	JTC 1/SC 34
ISO/IEC TR 9573-13:1991 Information technology -- SGML support facilities -- Techniques for using SGML -- Part 13: Public entity sets for mathematics and science	90.93	JTC 1/SC 34
ISO/IEC 10036:1996 Information technology -- Font information interchange -- Procedures for registration of font-related identifiers	90.93	JTC 1/SC 34
ISO/IEC 10036:1996/Cor 1:2001	60.60	JTC 1/SC 34
ISO/IEC 10036:1996/Cor 2:2002	60.60	JTC 1/SC 34
ISO/IEC TR 10037:1991 Information technology -- SGML and Text-entry Systems -- Guidelines for SGML Syntax-Directed Editing Systems	90.93	JTC 1/SC 34
ISO 10160:1997 Information and documentation -- Open Systems Interconnection -- Interlibrary Loan Application Service Definition	90.20	TC 46/SC 4
ISO 10160:1997/Amd 1:2002 Addition of annex D acknowledging the National Library of Canada as the Maintenance Agency	60.60	TC 46/SC 4
ISO 10161-1:1997 Information and documentation -- Open Systems Interconnection -- Interlibrary Loan Application Protocol Specification -- Part 1: Protocol specification	90.20	TC 46/SC 4
ISO 10161-1:1997/Amd 1:2002 Support for Use of Object Identifier in "identifier" Parameter of the Extension Data	60.60	TC 46/SC 4
ISO 10161-1:1997/Amd 2:2002 Addition of annex I acknowledging the National Library of Canada as the Maintenance Agency and Registration Authority	60.60	TC 46/SC 4

ISO 10161-2:1997 Information and documentation -- Open Systems Interconnection -- Interlibrary Loan Application Protocol Specification -- Part 2: Protocol implementation conformance statement (PICS) proforma	90.20	TC 46/SC 4
ISO/IEC 10179:1996 Information technology -- Processing languages -- Document Style Semantics and Specification Language (DSSSL)	90.93	JTC 1/SC 34
ISO/IEC 10179:1996/Cor 1:2001	60.60	JTC 1/SC 34
ISO/IEC 10179:1996/Amd 1:2003 Extensions to DSSSL	60.60	JTC 1/SC 34
ISO/IEC 10179:1996/Amd 2:2005 Extensions to multilingual and complicated document styles	60.60	JTC 1/SC 34
ISO/IEC 10180:1995 Information technology -- Processing languages -- Standard Page Description Language (SPDL)	90.93	JTC 1/SC 34
ISO/IEC 10180:1995/Cor 1:2001	60.60	JTC 1/SC 34
ISO 10244:2010 Document management -- Business process baselining and analysis	60.60	TC 171/SC 2
ISO/TR 10255:2009 Document management applications -- Optical disk storage technology, management and standards	60.60	TC 171/SC 2
ISO/IEC 10744:1997 Information technology -- Hypermedia/Time-based Structuring Language (HyTime)	90.93	JTC 1/SC 34
ISO 12083:1994 Information and documentation -- Electronic manuscript preparation and markup	90.93	TC 46/SC 4
ISO 12200:1999 Computer applications in terminology -- Machine-readable terminology interchange format (MARTIF) -- Negotiated interchange	90.93	TC 37/SC 3
ISO 12620:2009 Terminology and other language and content resources -- Specification of data categories and management of a Data Category Registry for language resources	60.60	TC 37/SC 3
ISO 12639:2004 Graphic technology -- Prepress digital data exchange -- Tag image file format for image technology (TIFF/IT)	90.93	TC 130
ISO 12639:2004/Amd 1:2007 Use of JBIG2-Amd2 compression in TIFF/IT	60.60	TC 130
ISO 12640-1:1997/Cor 1:2004	60.60	TC 130
ISO 12640-1:1997 Graphic technology -- Prepress digital data exchange -- Part 1: CMYK standard colour image data (CMYK/SCID)	90.93	TC 130

ISO 12640-2:2004 Graphic technology -- Prepress digital data exchange -- Part 2: XYZ/sRGB encoded standard colour image data (XYZ/SCID)	90.93	TC 130
ISO 12640-2:2004/Cor 1:2008	60.60	TC 130
ISO 12640-3:2007 Graphic technology -- Prepress digital data exchange -- Part 3: CIELAB standard colour image data (CIELAB/SCID)	90.93	TC 130
ISO 12640-4:2011 Graphic technology -- Prepress digital data exchange -- Part 4: Wide gamut display-referred standard colour image data [Adobe RGB (1998)/SCID]	60.60	TC 130
ISO/DIS 12640-5 Graphic technology -- Prepress digital data exchange -- Part 5: Scene-referred standard colour image data (RIMM/SCID)	40.60	TC 130
ISO 12641:1997 Graphic technology -- Prepress digital data exchange -- Colour targets for input scanner calibration	90.93	TC 130
ISO 12642-1:2011 Graphic technology -- Input data for characterization of four-colour process printing -- Part 1: Initial data set	60.60	TC 130
ISO 12642-2:2006 Graphic technology -- Input data for characterization of 4-colour process printing -- Part 2: Expanded data set	90.93	TC 130
ISO/IEC 13240:2001 Information technology -- Document description and processing languages -- Interchange Standard for Multimedia Interactive Documents (ISMID)	90.93	JTC 1/SC 34
ISO/IEC 13240:2001/Cor 1:2003	60.60	JTC 1/SC 34
ISO/IEC 13250:2003 Information technology -- SGML applications -- Topic maps	90.92	JTC 1/SC 34
ISO/IEC 13250-2:2006 Information technology -- Topic Maps -- Part 2: Data model	90.93	JTC 1/SC 34
ISO/IEC DIS 13250-3 Information technology -- Topic Maps -- Part 3: XML syntax	40.00	JTC 1/SC 34
ISO/IEC 13250-3:2007 Information technology -- Topic Maps -- Part 3: XML syntax	90.92	JTC 1/SC 34
ISO/IEC 13250-4:2009 Information technology -- Topic Maps -- Part 4: Canonicalization	60.60	JTC 1/SC 34
ISO/IEC DIS 13250-5 Information technology -- Topic Maps -- Part 5: Reference model	40.99	JTC 1/SC 34
ISO/IEC 13250-6:2010	60.60	JTC 1/SC 34

Information technology -- Topic Maps -- Part 6: Compact syntax		
ISO/IEC 13673:2000 Information technology -- Document processing and related communication -- Conformance testing for Standard Generalized Markup Language (SGML) systems	90.93	JTC 1/SC 34
ISO/TR 14105:2011 Document management -- Change management for successful electronic document management system (EDMS) implementation	60.60	TC 171/SC 2
ISO 14289-1:2012 Document management applications -- Electronic document file format enhancement for accessibility -- Part 1: Use of ISO 32000-1 (PDF/UA-1)	60.60	TC 171/SC 2
ISO/DIS 14739-1.3 Document management -- 3D use of Product Representation Compact (PRC) format -- Part 1: PRC 10001	40.99	TC 171/SC 2
ISO/IEC TR 15285:1998 Information technology -- An operational model for characters and glyphs	90.93	JTC 1/SC 2
ISO/DIS 15339-1 Graphic technology -- Printing from digital data across multiple technologies -- Part 1: Principles and characterized reference printing conditions	40.93	TC 130
ISO/IEC TR 15413:2001 Information technology -- Font services -- Abstract service definition	90.93	JTC 1/SC 34
ISO/IEC 15445:2000 Information technology -- Document description and processing languages -- HyperText Markup Language (HTML)	90.93	JTC 1/SC 34
ISO 15511:2011 Information and documentation -- International standard identifier for libraries and related organizations (ISIL)	60.60	TC 46/SC 4
ISO 15836:2009 Information and documentation -- The Dublin Core metadata element set	60.60	TC 46/SC 4
ISO 15836:2009/Cor 1:2009	60.60	TC 46/SC 4
ISO 15930-1:2001 Graphic technology -- Prepress digital data exchange -- Use of PDF -- Part 1: Complete exchange using CMYK data (PDF/X-1 and PDF/X-1a)	90.93	TC 130
ISO 15930-3:2002 Graphic technology -- Prepress digital data exchange -- Use of PDF -- Part 3: Complete exchange suitable for colour-managed workflows (PDF/X-3)	90.93	TC 130
ISO 15930-4:2003 Graphic technology -- Prepress digital data exchange using PDF -- Part 4: Complete exchange of CMYK and spot colour printing data using PDF 1.4 (PDF/X-1a)	90.93	TC 130

ISO 15930-6:2003 Graphic technology -- Prepress digital data exchange using PDF -- Part 6: Complete exchange of printing data suitable for colour-managed workflows using PDF 1.4 (PDF/X-3)	90.93	TC 130
ISO 15930-7:2010 Graphic technology -- Prepress digital data exchange using PDF -- Part 7: Complete exchange of printing data (PDF/X-4) and partial exchange of printing data with external profile reference (PDF/X-4p) using PDF 1.6	60.60	TC 130
ISO 15930-8:2010 Graphic technology -- Prepress digital data exchange using PDF -- Part 8: Partial exchange of printing data using PDF 1.6 (PDF/X-5)	60.60	TC 130
ISO 15930-8:2010/Cor 1:2011	60.60	TC 130
ISO 16612-1:2005 Graphic technology -- Variable printing data exchange -- Part 1: Using PPML 2.1 and PDF 1.4 (PPML/VDX-2005)	90.93	TC 130
ISO 16612-2:2010 Graphic technology -- Variable data exchange -- Part 2: Using PDF/X-4 and PDF/X-5 (PDF/VT-1 and PDF/VT-2)	60.60	TC 130
ISO/CD 16642 Computer applications in terminology -- Terminological markup framework	30.99	TC 37/SC 3
ISO 16642:2003 Computer applications in terminology -- Terminological markup framework	90.92	TC 37/SC 3
ISO 16684-1:2012 Graphic technology -- Extensible metadata platform (XMP) specification -- Part 1: Data model, serialization and core properties	60.60	TC 130
ISO/CD 16684-2 Graphic technology -- Extensible metadata platform (XMP) specification -- Part 2: Validation using RELAX NG	30.20	TC 130
ISO/CD 16760 Preparation and visualization of RGB images to be used in RGB-based graphic arts workflows	30.20	TC 130
ISO/CD 17469-1 Document management -- Strategy markup language (StratML) -- Part 1: StratML core elements	30.99	TC 171/SC 2
ISO 17933:2000 GEDI -- Generic Electronic Document Interchange	90.93	TC 46/SC 4
ISO/CD 18626 Information and documentation -- Interlibrary Loan Transactions	30.20	TC 46/SC 4
ISO 19005-1:2005 Document management -- Electronic document file format for long-term preservation -- Part 1: Use of PDF 1.4 (PDF/A-1)	90.93	TC 171/SC 2
ISO 19005-1:2005/Cor 1:2007	90.93	TC 171/SC 2

ISO 19005-1:2005/Cor 2:2011	60.60	TC 171/SC 2
ISO 19005-2:2011 Document management -- Electronic document file format for long-term preservation -- Part 2: Use of ISO 32000-1 (PDF/A-2)	60.60	TC 171/SC 2
ISO 19005-3:2012 Document management -- Electronic document file format for long-term preservation -- Part 3: Use of ISO 32000-1 with support for embedded files (PDF/A-3)	60.60	TC 171/SC 2
ISO/IEC 19757-2:2008 Information technology -- Document Schema Definition Language (DSDL) -- Part 2: Regular-grammar-based validation -- RELAX NG	60.60	JTC 1/SC 34
ISO/IEC 19757-3:2006 Information technology -- Document Schema Definition Languages (DSDL) -- Part 3: Rule-based validation -- Schematron	90.92	JTC 1/SC 34
ISO/IEC CD 19757-3 Information technology -- Document Schema Definition Languages (DSDL) -- Part 3: Rule-based validation -- Schematron	40.00	JTC 1/SC 34
ISO/IEC 19757-4:2006 Information technology -- Document Schema Definition Languages (DSDL) -- Part 4: Namespace-based Validation Dispatching Language (NVDL)	90.93	JTC 1/SC 34
ISO/IEC 19757-4:2006/Cor 1:2008	60.60	JTC 1/SC 34
ISO/IEC 19757-5:2011 Information technology -- Document Schema Definition Languages (DSDL) -- Part 5: Extensible Datatypes	60.60	JTC 1/SC 34
ISO/IEC 19757-7:2009 Information technology -- Document Schema Definition Languages (DSDL) -- Part 7: Character Repertoire Description Language (CREPDL)	60.60	JTC 1/SC 34
ISO/IEC 19757-8:2008 Information technology -- Document Schema Definition Languages (DSDL) -- Part 8: Document Semantics Renaming Language (DSRL)	60.60	JTC 1/SC 34
ISO/IEC 19757-8:2008/Cor 1:2011	60.60	JTC 1/SC 34
ISO/IEC 19757-9:2008 Information technology -- Document Schema Definition Languages (DSDL) -- Part 9: Namespace and datatype declaration in Document Type Definitions (DTDs)	60.60	JTC 1/SC 34
ISO/IEC 19757-11:2011 Information technology -- Document Schema Definition Languages (DSDL) -- Part 11: Schema association	60.60	JTC 1/SC 34
ISO 20775:2009 Information and documentation -- Schema for holdings information	60.60	TC 46/SC 4

ISO 21127:2006 Information and documentation -- A reference ontology for the interchange of cultural heritage information	90.92	TC 46/SC 4
ISO/CD 21127 Information and documentation -- A reference ontology for the interchange of cultural heritage information	30.60	TC 46/SC 4
ISO/IEC CD 21320-1 Information technology -- Document Container File -- Part 1: Core	30.20	JTC 1/SC 34
ISO 23950:1998 Information and documentation -- Information retrieval (Z39.50) -- Application service definition and protocol specification	90.93	TC 46/SC 4
ISO 24517-1:2008 Document management -- Engineering document format using PDF -- Part 1: Use of PDF 1.6 (PDF/E-1)	90.93	TC 171/SC 2
ISO/CD 24517-2 Document management -- Engineering document format using PDF -- Part 2: Use of 32000-2 including support for long-term preservation (PDF/E-2)	30.20	TC 171/SC 2
ISO/IEC 24754-1:2008/Cor 1:2011	60.60	JTC 1/SC 34
ISO/IEC 24754-1:2008 Information technology -- Document description and processing languages -- Minimum requirements for specifying document rendering systems -- Part 1: Feature specifications for document rendering systems	60.60	JTC 1/SC 34
ISO/IEC TR 24754-2:2011 Information technology -- Document description and processing languages -- Minimum requirements for specifying document rendering systems -- Part 2: Formatting specifications for document rendering systems	60.60	JTC 1/SC 34
ISO 25577:2008 Information and documentation -- MarcXchange	90.92	TC 46/SC 4
ISO/DIS 25577 Information and documentation -- MarcXchange	40.00	TC 46/SC 4
ISO 26162:2012 Systems to manage terminology, knowledge and content -- Design, implementation and maintenance of terminology management systems	60.60	TC 37/SC 3
ISO/IEC 26300:2006 Information technology -- Open Document Format for Office Applications (OpenDocument) v1.0	60.60	JTC 1/SC 34
ISO/IEC 26300:2006/Cor 1:2010	60.60	JTC 1/SC 34
ISO/IEC 26300:2006/Amd 1:2012 Open Document Format for Office Applications (OpenDocument) v1.1	60.60	JTC 1/SC 34
ISO/IEC 26300:2006/Cor 2:2011	60.60	JTC 1/SC 34

ISO 28178:2009 Graphic technology -- Exchange format for colour and process control data using XML or ASCII text	60.60	TC 130
ISO 28500:2009 Information and documentation -- WARC file format	60.60	TC 46/SC 4
ISO 28560-1:2011 Information and documentation -- RFID in libraries -- Part 1: Data elements and general guidelines for implementation	60.60	TC 46/SC 4
ISO 28560-2:2011 Information and documentation -- RFID in libraries -- Part 2: Encoding of RFID data elements based on rules from ISO/IEC 15962	60.60	TC 46/SC 4
ISO 28560-3:2011 Information and documentation -- RFID in libraries -- Part 3: Fixed length encoding	60.60	TC 46/SC 4
ISO/WD TS 28560-4 Information and documentation -- RFID in libraries -- Part 4: Encoding of data elements based on rules from ISO/IEC 15962 in an RFID tag with partitioned memory	20.20	TC 46/SC 4
ISO/WD 28560-5 Information and documentation -- RFID in libraries -- Part 5: unique item identifier (UII) for libraries	20.20	TC 46/SC 4
ISO/IEC TR 29166:2011 Information technology -- Document description and processing languages -- Guidelines for translation between ISO/IEC 26300 and ISO/IEC 29500 document formats	60.60	JTC 1/SC 34
ISO/IEC 29500-1:2012 Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 1: Fundamentals and Markup Language Reference	60.60	JTC 1/SC 34
ISO/IEC 29500-2:2012 Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 2: Open Packaging Conventions	60.60	JTC 1/SC 34
ISO/IEC 29500-3:2012 Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 3: Markup Compatibility and Extensibility	60.60	JTC 1/SC 34
ISO/IEC 29500-4:2012 Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 4: Transitional Migration Features	60.60	JTC 1/SC 34
ISO/IEC 29500-4:2008/Cor 1:2010	90.99	JTC 1/SC 34
ISO 30042:2008 Systems to manage terminology, knowledge and content -- TermBase eXchange (TBX)	90.92	TC 37/SC 3
ISO/IEC NP 30114-1	10.99	JTC 1/SC 34

Information technology -- Extensions of Office Open XML File Formats -- Part 1: Guidelines		
ISO/IEC CD 30114-2 Information technology -- Extensions of Office Open XML -- Part 2: Character Repertoire Checking	30.99	JTC 1/SC 34
ISO/IEC DTS 30135-1 Information technology -- Digital publishing -- Part 1: EPUB3 Overview	40.20	JTC 1
ISO/IEC DTS 30135-2 Information technology -- Digital publishing -- Part 2: Publications	40.20	JTC 1
ISO/IEC DTS 30135-3 Information technology -- Digital publishing -- Part 3: Content Documents	40.20	JTC 1
ISO/IEC DTS 30135-4 Information technology -- Digital publishing -- Part 4: Open Container Format	40.20	JTC 1
ISO/IEC DTS 30135-5 Information technology -- Digital publishing -- Part 5: Media Overlay	40.20	JTC 1
ISO/IEC DTS 30135-6 Information technology -- Digital publishing -- Part 6: EPUB Canonical Fragment	40.20	JTC 1
ISO/IEC DTS 30135-7 Information technology -- Digital publishing -- Part 7: EPUB3 Fixed -- Layout Documents	40.20	JTC 1
ISO 32000-1:2008 Document management -- Portable document format -- Part 1: PDF 1.7	90.60	TC 171/SC 2

Annex 2 – Catalogue of national standards in the field of information technology and automated identification (ИЗМЕРИТЕЛЬНЫЕ ПРИБОРЫ. СРЕДСТВА АВТОМАТИЗАЦИИ И ВЫЧИСЛИТЕЛЬНОЙ ТЕХНИКИ)

РСТ Уз 146-87	**П 16**	Безмен рычажный ВР-20 Взамен РСТ УзССР 146-78
O’z DSt 1171:2008	**П 41**	Микроскопы инструментальные. Типы, основные параметры и размеры. Технические требования Взамен ГОСТ 8074
O’z DSt 1178:2008	**П 43**	Лупы. Типы, основные параметры. Общие технические требования. Взамен ГОСТ 25706-83
O’z DSt 1034:2003	**П 77**	Извещатели пожарные дымовые оптико-элек-тронные. Общие технические требования. Методы испытаний
O’z DSt 1035:2003	**П 77**	Извещатели пожарные. Общие технические требования. Методы испытаний
O’z DSt 2309:2011	**П 77**	Извещатели пожарные тепловые. Общие технические требования и методы испытаний
O’z DSt 6.17.01:1999	**П 85**	Автоматическая идентификация. Штриховое кодирование. Система кодирования продукции. Основные положения
O’z DSt 6.17.02:2000	**П 85**	Автоматическая идентификация. Штриховое кодирование. Термины и определения
O’z DSt 6.17-03:1999	**П 85**	Автоматическая идентификация. Штриховое кодирование. Порядок регистрации предприятия, присвоения, пересмотра и отмены кодов EAN на продукцию
O’z DSt 6.17-04: 2001 (ИСО/МЭК 154 20)	**П 85**	Автоматическая идентификация. Штриховое кодирование. Спецификация символики EAN
O’z DSt 6.17.05:1999	**П 85**	Автоматическая идентификация. Штриховое кодирование. Порядок расположения штрихкодовых символов EAN на потребительских товарах и транспортных упаковках. Общие требования
O’z DSt 6.17.06:2002	**П 85**	Автоматическая идентификация. Штриховое кодирование. Спецификация символики. ITF
O’z DSt 6.17- 07:2001	**П 85**	Автоматическая идентификация. Штриховое кодирование. Порядок присвоения регистрации, изготовления, пересмотра и отмены кодов O'z TNT на продукцию
O’z DSt 6.17-08:2003	**П 85**	Автоматическая идентификация. Кодирование штриховое. Спецификация символики Code 128 (КОД-128)
O’z DSt 6.17.09:2002	**П 85**	Автоматическая идентификация. Кодирование штриховое. Спецификация символики СОДЕ-39 (КОД 39)
РСТ Уз 566-90	**П 85**	Система обработки информации. Кодированный набор символов с узбекским алфавитом. Коды 7 и 8 битные
O’z DSt 1092:2009	**П 85**	Информационная технология. Криптографическая защита информации. Процессы формирования и проверки электронной цифровой подписи Взамен O’z DSt 1092 :2005
O’z DSt 1105:2009	**П 85**	Информационная технология. Криптографическая защита информации. Алгоритм шифрования данных. Взамен O’z DSt 1105:2006
O’z DSt 1106:2009	**П 85**	Информационная технология. Криптографическая защита информации. Функция хэширования Взамен O’z DSt 1106:2006

O’z DSt 1108:2011	**П 85**	Информационная технология. Взаимосвязь открытых систем. Структура сертификата открытого ключа ЭЦП и сертификата атрибута Взамен O’z DSt 1108:2006
O’z DSt 1109:2006	**П 85**	Информационная технология. Криптографическая защита информации. Термины и определения
O’z DSt 1118:2006	**П 85**	Средства вычислительной техники. Клавиатуры. Расположение клавиш и символов узбекского языка на основе кириллицы
O’z DSt 1135:2007	**П 85**	Информационная технология. Требования к базам данных и обмену информацией между органами государственного управления и государственной власти на местах
O’z DSt 1204:2009	**П 85**	Информационная технология. Криптографическая защита информации. Требования безопасности к криптографическим модулям
O’z DSt 1270:2009	**П 85**	Электронный документооборот. Взаимодействие систем электронного документооборота
O’z DSt 2295:2011	**П 85**	Электронный документ. Требования к формированию, применению и хранению
O’z DSt 2298:2011	**П 85**	Информационная технология. Электронный документооборот. Типовые требования
O’z DSt ISO/IEC 7498-1:2009	**П 85**	Информационная технология. Взаимосвязь открытых систем, базовая эталонная модель. Часть 1. Базовая модель (ISO/IEC 7498-1, IDT)
O’z DSt ISO 7498-2:2011	**П 85**	Информационная технология. Взаимосвязь открытых систем, базовая эталонная модель. Часть 2. Архитектура безопасности (ISO 7498-2, MOD)
O’z DSt ISO/IEC 19794-1:2009	**П 85**	Автоматическая идентификация. Идентификация биометрическая. Форматы обмена биометрическими данными. Часть 1. Структура
O’z DSt ISO/IEC 19794-2:2009	**П 85**	Автоматическая идентификация. Идентификация биометрическая Форматы обмена биометрическими данными. Часть 2. Данные изображения отпечатка пальца – контрольные точки
O’z DSt ISO/IEC 19794-4:2009	**П 85**	Автоматическая идентификация. Идентификация биометрическая. Форматы обмена биометрическими данными. Часть 4. Данные изображения отпечатка пальца
O’z DSt ISO/IEC 19794-5:2009	**П 85**	Автоматическая идентификация. Идентификация биометрическая. Форматы обмена биометрическими данными. Часть 5. Данные изображения лица
O’z DSt ISO/IEC 2382-8:2007	**П 85**	Информационные технологии. Информационная безопасность
O’z DSt 1985:2010	**П 87**	Информационная технология. Виды, комплектность и обозначение документов при создании информационных систем
O’z DSt 1986:2010	**П 87**	Информационная технология. Информационные системы. Стадии создания