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**Meeting to review developments in the field of e-voting since the adoption
of Recommendation Rec(2004)11 of the Committee of Ministers
to member states on legal, operational and technical standards for e-voting**[1]

**Municipal Congress Centre of the City of Madrid
16 October 2008**

**Organised in the framework of the 2008 session of the Council of Europe's
Forum for the Future of Democracy on the theme of e-democracy
(15-17 October 2008)**

REPORT

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[1]https://wcd.coe.int//ViewDoc.jsp?Ref=Rec(2004)11&Language=lanEnglish&Ver=original&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75

Committee of Ministers' Recommendation Rec(2004)11 to member states on legal, operational and technical standards for e-voting was adopted by the Ministers' Deputies in September 2004. The Recommendation invites member states to keep under review their policy on, and experience of, e-voting. With its biennial meetings on developments in the field of e-voting, the Council of Europe provides a platform for considering these developments at a European level. Consequently, the Council of Europe convened an expert meeting on 16 October 2008, in Madrid, to review developments in the field of e-voting since the last review meeting in November 2006.

The main objective of the meeting was to exchange experiences with remote and non-remote e-voting in the different member states, in the light of Recommendation Rec(2004)11.

The meeting was organised within the context of the 2008 Session of the Council of Europe's Forum for the Future of Democracy (15-17 October), the theme of which was "e-democracy: who dares ?". The meeting was one of six workshops and therefore also open to other participants in the Forum.

Representatives of several member states gave a presentation or made statements about the different developments in their countries. The Netherlands has decided to revert to traditional voting, abandoning voting machines. Austria is preparing for its first law-based remote e-voting election to the National Students' Union in 2009. Switzerland has confirmed its direction by legalising remote e-voting, while the United Kingdom has suspended any further experimentation until 2010.

It emerged from the discussion on certification in the field of e-voting that system certification plays a dual role: firstly, reassuring the commissioning party that the technical specifications of the system components correspond to the specifications assigned to them. Secondly, provided certification is made public, it is a major element in creating a climate of trust around the voting procedure.

The representative of OASIS presented the organisation's efforts to have Election Mark-up Language (EML) recognised as an ISO standard. Lastly, OSCE/ODIHR drew attention to the difficult task of observing e-voting which requires an intensive analytical evaluation throughout the electoral process.

For a more detailed account of the discussions see the appended report by workshop rapporteur Laurence Monnoyer-Smith and for more in-depth information about developments in different countries see:
http://www.coe.int/t/dc/files/themes/forum_democratie/2008_more_information_en.asp

There was agreement that when dealing with e-voting, it has to be kept in mind that:

1. the principles of democratic elections (as stipulated, for example, in the "Code of good conduct in electoral matters") have to be respected before e-voting can be introduced;
2. technology is at the service of democracy and not vice versa;
3. the potential of e-voting with regard to including different or more groups of people during all stages of the electoral process, is high;
4. information and education of all involved are vital during all electoral processes;

5. the observation of e-enabled elections creates new challenges and should therefore be developed further;
6. certification of e-voting systems should be a priority in future work on e-voting.

With regard to the Recommendation, the representatives of member states present agreed that the Recommendation on e-voting continues to be accurate and useful. At the same time, however, the participants felt that in the light of experiences and developments in the field of e-voting during the last four years, it might be useful to develop some additional comments on certain parts of the Recommendation. This should then be presented at the next biennial meeting in 2010. It was therefore agreed that the Secretariat of the Council of Europe should take inventory of the topics which member states feel require more elaboration.

In their conclusions[2] from the 2008 Session of the Forum for the Future of Democracy, the General rapporteurs stated the following with regard to e-voting:

"On the occasion of the Forum, representatives of Council of Europe member states reviewed developments in the field of e-voting since the adoption, in 2004, of the Recommendation of the Committee of Ministers on legal, operational and technical standards on e-voting. The Forum encourages the Council of Europe to maintain its prominent role in this important and complex field, thereby providing a platform for discussion and exchange of experience, and a standard-setting body (paragraph 25).

Recent developments in the field of e-voting have shown that increased attention should be paid to certification and observation to guarantee security and transparency and to build trust in the electoral process. The Forum therefore calls on national policy-makers to include these important aspects in their work and to engage in dialogue, at all stages of the process, with both the supporters and critics of e-voting (paragraph 15)."

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[2] http://www.coe.int/t/dc/files/source/concl_final_madrid08_en.doc

Workshop No 3
"ICT in electoral processes"
Report by Laurence Monnoyer-Smith, Professor of Media and Political
Communication Studies, University of Technology, Compiègne, France

Workshop No. 3 hosted the 2008 biennial review meeting on Recommendation Rec(2004)11 of the Committee of Ministers on legal, operational and technical standards for e-voting. It was attended by several representatives of Council of Europe member states and enabled participants to take stock of the application of the recommendation, the difficulties encountered at the local level in some countries and the future challenges to the implementation of e-voting systems, particularly remote Internet services.

We might preface this report by stressing one further aspect of this encounter, which emerges both from close observation of the exchanges during the workshop and from the analysis of these exchanges since the drafting of the Council of Europe recommendation in 2004. It has struck the researcher observing the implementation of new electoral practices linked to the potential of ICT that those involved have now acquired a degree of maturity vis-à-vis the innovation of electronic voting, particularly remote e-voting[3]. It emerges from discussions that the different stakeholders are more reticent about voting machines and remote voting systems than in the past. The highly mixed results of the experiments conducted since the early 2000s have led all those involved (especially the elected representatives) to consider innovative voting methods not as an end in themselves but as an integral part of broader policies geared to improving relations among citizens, the administration and the elected representatives. In the Swiss Canton of Neuchâtel, for example, remote e-voting forms an integral part of the e-government services available to citizens via a one-stop-shop on the Canton website portal, which also offers a range of cantonal and municipal services for both enterprises and individuals.

Nowadays, the Utopian view of e-voting as a miracle solution to the persistent crisis of representativity in democratic countries would no longer seem to be shared by the broad majority of participants in the Forum for the Future of Democracy (FFD). The technical drawbacks of e-voting (particularly in terms of robustness and security) and the lack of confidence in these mechanisms on the part of many citizens (we shall come back to this point) have brought those involved back down to earth. The prevalent analysis is that voting is a key moment in the democratic life of a country, and voting procedures must be primarily geared to remedying the limitations of traditional hardcopy voting. As Ms Gabriele Kucsko-Stadlmayer, the Venice Commission representative, pointed out, the main disadvantages of remote e-voting, particularly the shortcomings in terms of system security, are much less serious given that e-voting enables population groups previously excluded from the electoral process (eg persons with disabilities, soldiers and other citizens abroad) to exercise their voting rights. This points to a transition from a

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[3] - E-voting: an e- election or e-referendum that involves the use of electronic means in at least the casting of the vote.
  - Remote e-voting: e-voting where the casting of the vote is done by a device not controlled by an election official. (Definitions from Rec(2004)11)

conception of e-voting as a symbol of democracies entering the digital era to a conception of e-voting as one of a number of tools for *deepening* democracy. This new angle on e-voting is reflected on the ground by the increased attention being paid to plural modes of exercising democracy and to all the forms that should be used in order to ensure greater inclusion of citizens in decision-making processes and improve the quality of the service provided.

This is probably the reason for the diversity of situations encountered *in situ* and for the practices used in the different countries. The approaches adopted can thus seem contradictory, or indeed diametrically opposed: while the Netherlands have decided to revert to traditional voting, abandoning voting machines, France has authorised the latter since 2003 but is refusing to implement e-voting in areas other than professional elections, which is also the case in Portugal; Austria is preparing for its first real remote e-voting election in 2009[4], Switzerland has confirmed its direction by legalising remote e-voting, while the United Kingdom, despite its very many "pilot runs" (150 since 2002), has suspended any further experimentation until 2010, officially for reasons of electoral timetables[5]. We can see that the multitude of different approaches to e-voting reveals the wide range of political cultures within which it must find its place.

How can we build up trust?

Nevertheless, beyond the heterogeneity of electoral practices observed, there are some obvious common concerns, all in some way connected with creating the conditions for appropriating remote voting systems by establishing a climate of trust between the citizens and the players involved.

The FFD participants were fairly unanimous on the conditions for implementing e-voting: system robustness and reliability, security, efficiency, transparency and accessibility, verifiability and, as additionally suggested by the Venice Commission, a *possible alternative* to e-voting. A combination of all these conditions would create a climate of trust around a system which the citizens regard as complex, impenetrable and highly (excessively?) technical, and over which all the players involved have the feeling of losing all control to private organisations. For instance, the survey presented by Prof. Alexander Trechsel on e-enabled elections in Estonia[6] shows that the main factor in using e-voting rather than traditional systems is how much trust the electorate places in the voting mechanism itself, and to a lesser extent how far they trust their own political elites. That being the case, expanding the use of the new voting systems necessitates rethinking the overall framework for its implementation. Rather than merely improving the technical information supplied to citizens in order to help them understand better and appropriate the functioning of the voting systems, the whole procedure must be reconfigured with an eye to building up the tools for utilisation based on trust. This certainly involves improving the knowledge and functioning of remote voting. The aforementioned survey shows that a proper command of computing and some familiarity

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[4] Elections to the National Students' Union.

[5] The British authorities consider that the simultaneous holding of the European and general elections make experimentation difficult.

[6] Available on-line from the CoE website (http://www.coe.int/t/e/integrated_projects/democracy/02_Activities/D_Democracy_Forum_2008/Present ations_Madrid08.asp#TopOfPage)

with Internet play a positive role in the fact of opting for e-voting[7]. This is why young people are more open to these new facilities than their elders, who are in fact more in favour of continuing the traditional election rituals. The "trust" factor therefore more or less supplants all the traditional socio-economic factors regarding gender, standard of education and level of income: this means that any expansion of e-voting will involve improving the prescriptive, technical and statutory organisation of electoral processes.

The speakers at the session proposed several different solutions, based on three main lines of work:

- firstly, developing mechanisms for certifying and accrediting the voting systems;
- secondly, defining standards to validate the quality of a voting system;
- and thirdly, introducing mechanisms for observing and assessing the various stages of the voting procedure.

Certification mechanisms

While certification mechanisms are commonplace in enterprises, their implementation in elections is sporadic, obscure and unfocused on measures to promote the security and robustness of the technical systems, as Ms Melanie Volkamer (Passau University, Germany), Mr Jordi Barrat i Esteve (University of Alicante, Spain) and Mr Mats Lindberg (OSCE/ODIHR) pointed out. The serious consequences of system malfunctions, and particularly their potential invisibility, necessitate a new mode of certification specifically tailored to e-voting, according to Mr Barrat i Esteve. System certification plays a dual role: firstly, reassuring the commissioning party that the technical specifications of the machines correspond to the schedule of conditions assigned to it, in pursuance of the local regulations in force. The latter have often been discussed inside the specialist communities, often at the instigation of the political authorities that framed the said regulations, following manifold public debates involving the general public and voluntary associations. Compliance with the schedule of conditions therefore basically fits in with a prescriptive framework which is – in principle – based on democratic criteria, ie prior consultation and debate.

Moreover, provided it is made public, certification fulfils yet another role, namely that of giving all the players involved access to the voting by ensuring system conformity and security. It is therefore a major element in creating the climate of trust around the voting procedure. The fact is that many proprietary systems used by local authorities cannot be disseminated to the general public for reasons connected with patents. This is the case in France, where the results of the three expert analyses of certifications conducted on the machines used at the last presidential and general elections in 2007 have been kept confidential. This lack of transparency in certification makes the whole mechanism suspect right from the outset, even though it was actually designed to ensure that the system functioned properly. This is particularly unacceptable to the populations because the private enterprises that supply the machines have on several occasions been caught lying about the reliability of their products. In a democracy, involving private operators

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[7] This statement must, however, be qualified. Other analyses reveal that persons with excellent knowledge of computing are less inclined to trust the voting system. Familiarity with ICT is, however, a positive factor in recourse to e-voting in all surveys of electronic voting. See for instance Oostveen A-M., 2009 (not yet published): "Is this all? User's experiences of an e-voting system", which demonstrates that electors with solid knowledge of computing have more confidence in the remote voting system, whereas booth voters, who have less knowledge, express limited confidence in the system.

in the electoral process necessitates a special legal framework to guarantee that it will not be perverted by individual interests. A number of speakers consider that this new balance which must be struck between the legitimate concern for industrial secrecy and the transparency of voting operations involves using open-source software.

The draft presented by Ms Volkamer goes even further in this direction, and proposes introducing a Protection Profile based on the rules and formats of the Common Criteria (CC) for all voting devices. The idea is to design a type of certification based on a system which corresponds to specific characteristics within a Protection Profile tailored to the specific private or political elections. This public technical profile, which is designed to ensure a high degree of trust among all the players, comprises evaluation modules for system functioning, supervision and monitoring. This would enable the authorities responsible for the election to base certification on a public grid common to all the players: subsequent evaluation of the system provides insurance against malfunctions.

Towards an EML standard?

The question of a single, open standard usable by all the different e-voting systems is a further possible solution to the distrust expressed by the various players in the electoral process. The proposal put forward by OASIS, which comprises government representatives, researchers, enterprises and electoral service providers, is to promote a standard facilitating data exchange between hardware, software and service providers. EML (Election Mark-up Language) is an attempt to take up this challenge by ensuring the harmonious, robust and reliable interoperability of all the systems involved in the electoral system. The standard, which is now at its version 5.0, was designed for use in either public or private elections, either comprehensively, covering the entire process, or selectively for the registration on electoral lists, the voting itself, vote counting or the communication of results. It is a case of providing common interfaces at "critical" stages in the voting procedure in order to certify the relevance, conformity and validity of the data exchanged. One of the advantages of using EML as a standard is that it gives users greater freedom to call on the services of more different hardware and software suppliers and thus escape the pressure to use one proprietary programme. The transparency requirement, particularly in respect of software used by voting system suppliers, which is specific to political elections, is more compatible with open-source software than with proprietary systems. To that extent, recognising the EML as an ISO standard is one of the priority objectives of OASIS, which is actively working towards this goal, backed up by the many experiments of voting with EML which have been conducted since 2003 in the USA and Europe, particularly under the European e-Poll project.

The need for election observers

One last important point raised by the participants was the need for meticulous, in-depth observation of e-voting procedures. According to Mr Lindberg of OSCE/ODIHR, since it is more difficult to observe e-enabled elections than traditional ones, such observation requires intensive analytical evaluation throughout the election, ie from the decision to replace or complement traditional voting with an electronic system to the publication of the election results. E-voting modifies the whole electoral process far upstream of the voting itself, necessitating changes to the traditional modalities of observation in order to guarantee the transparency and democracy of the new procedures being implemented. OSCE accordingly proposes paying specific attention to the following points in each case: the legal framework for e-voting, certification and testing of voting systems, voting

secrecy, the security and functioning of the whole system, public access to the e-voting facility, citizens' standard of education and familiarity with the use of the technologies in question, training for public officials and other persons working in the polling stations, vote hardcopies, vote counting, the transparency of the whole election and public confidence in the electoral process, and lastly, a means of establishing specific responsibilities for each person involved in the process in the event of any system malfunction.

Furthermore, many participants in the workshop stressed that in practice election observation often took the form of auditing, under the experiments conducted in the different countries. In fact, many of these audits focused more specifically on technical aspects where, as Mr Lindberg reminded us, a broader overview of the whole process is needed to create the requisite voter confidence in the electoral process.

Conclusion

Four specific points would seem to emerge from the highly productive discussions conducted at the workshop, reflecting the different players' concerns.

Firstly, as in other fields, the development of digital technology is challenging the traditional relations between the public and private sectors and highlighting the need for a compromise between contradictory requirements (eg transparency and respect for industrial ownership). In democracies, the citizens' attachment to the public nature of the electoral process is such that this problem must be solved in order to guarantee their confidence in electronic elections.

Secondly, new balances must be struck among different potentially contradictory rights: for example, how are we to reconcile the security requirement with voting anonymity, or even the straightforward exercise of voting rights? Technical constraints can lead to the exclusion of certain population groups which are unfamiliar with the technologies used.

Similarly, there is a potential risk of incompatibility, at the local level, between the legitimate demand for certification standards and standardisation of interoperability formats and certain legal, socio-cultural or political requirements. The Forum participants considered that intense work was needed on the local adaptability of standards.

Lastly, it is also vital, in modern democracies, to prevent the citizen from being excluded from elections because of their technical complexity. The implementation of new facilities must not end up giving voters the impression of losing control over one of the fundamental structural phenomena in democratic life. This point raises the broader question of the citizens' place in complex societies and their ability to exercise powers of monitoring and evaluating the major decisions which directly affect them.