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Is E-Voting Relevant for the OSCE?

At almost exactly the same time as the Council of Europe was finalizing its recommendation on judicial, operational, and technical standards for electronic voting, or e-voting, in Strasbourg, the OSCE participating States and ODIHR were discussing the same topic in depth for the first time. The Supplementary Human Dimension Meeting on "Electoral Standards and Commitments", held in Vienna in July 2004, considered, among other things, what e-voting would mean for the future of the OSCE. The overall attitude of the participants was cautious optimism about the potential of this new technology.

Starting Point

Awareness of and interest in e-voting, in all its many forms, has grown considerably in recent years. Those involved include states, international organizations, the scientific and academic community – especially experts in law and ICT – and businesses, and each has its own specific and not necessarily mutually reconcilable goals.[2]

The field of e-voting currently possesses neither a unified terminology nor, in many cases, relevant standards. This will be considered in detail in the current contribution. There is also no broad agreement on the current potential for implementing e-voting, nor on the fundamental benefits that it would bring. This is due to differences of opinion among experts and, above all, a traditional rejection of any fundamental changes to electoral law, particularly where technology is involved whose workings are hidden from view. Various types of resistance to e-voting can also be voiced by the political opposition, individual academics, and NGOs, which may be politically manipulated.

On the other hand, certain states and groups of individuals have a strong interest in the technology's introduction. This may, for example, reflect their desire to see more effective or simpler voting procedures, higher participation rates, or may be bound up with commercial or academic interests. The positions taken by individual states on e-voting reflect specific national conceptions of the state, the civil service, and the citizens – even where technical

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1   This article reflects the personal opinions of the author. Translated from the German.
2   E.g. speed (market leadership) versus caution (building acceptance and trust), ease of use versus confidentiality, the development of academic specializations versus integrated, multidisciplinary approaches. An attempt has been made to co-ordinate activities through OASIS, see, in particular: http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=election.

details may be identical in various cases. Cultural factors of this kind play an important role in every discussion of e-voting.

Electoral law is a particularly difficult legal subfield – one that not only touches upon every individual and political group, but also broaches fundamental questions of democracy. As a rule, it can be assumed that those with the power to change electoral law will not accept reforms unless they can expect to gain – or at the very least can guarantee that they will not lose out. The requirement in many countries for a qualified parliamentary majority to change the law on elections is a significant hurdle to reform and can be abused to serve other ends.

E-voting raises not only these political and cultural questions, but also others of a legal and technical nature. It thus creates a need for co-operation between politicians, civil servants, lawyers, and technical experts. Such close co-operation between experts from so many fields is difficult to arrange but indispensable to understanding the full extent of the challenge and the range of possible solutions, mastering them, and ensuring acceptance of the solutions that are found.

What Is E-Voting?

In popular discourse, the term "e-voting" is currently used to refer to a variety of very different processes. The single factor they all have in common is the use of electronic media for gathering and/or registering votes and opinions.

E-voting should not be confused with non-binding electronic surveys (e-consultation[3]) such as online opinion surveys – however easy to perform and superficially effective these appear to be. Surveys of this kind suffer above all from the fact that only internet users can take part, which means they can easily present a distorted picture. More importantly, such surveys may be based on opinions that are given lightly and are, in particular, legally meaningless.

Moreover, the debate on e-voting should be kept separate from the debate over the enhancement or expansion of democracy – in particular, in terms of (more) participatory and/or direct democracy (e-democracy, e-participation). These debates – as valid as they are – should be pursued separately from the matter of electoral reform, which is already complicated enough.

To clarify and simplify the discussion, the term "e-voting" should be used exclusively to refer to the use of electronic media to political elections and referenda. According to this definition, e-voting refers to methods used by citizens to register their votes in elections (and maybe also for voter and candidate registration) and methods used by authorities to gather, store and

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3   In contrast, the term "e-polling" can be used for both elections and opinion surveys.

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manage data related to elections. E-voting thus comes under the categories of both e-government and e-administration – electronic communication between citizens and authorities and among local and national government departments – and is generally considered to be an improved (because supplementary) service that authorities could or should provide to their customers.

Basic e-voting applications include maintaining an electronic register of voters[4] and calculating and communicating the results of elections. Mechanical voting machines that count votes electronically (and may also transmit the results instantaneously) are a further option, as are ballot boxes with a reading device built into the slot, which can count votes as they are cast and may also be capable of transmitting the data for further processing. Displaying ballot information on a (single) screen in the voting booth presents a greater technical challenge than using printed ballot papers, especially when there are many candidates.

Remote e-voting, where voters cast their ballots in the physical absence of electoral officials, is both legally and technically more difficult. The greatest challenge here is the transfer of the "ballot paper" to the voter's computer (which may be at home, in the office, on board a plane, etc.), where it can be completed and returned to the electoral commission (remote i[nternet]-voting).[5]

With some simplification, we can distinguish between two basic forms of e-voting: e-voting in the polling station – monitored in person by electoral officials – and e-voting from elsewhere, i.e. remote e-voting.[6] Further differences in the type of e-voting result from the kind of device used and the means by which the data is transferred. E-voting systems may be implemented using existing technologies or custom-made devices: voting machines, PCs, keypad telephones, palmtop computers, mobile phones or digital television systems. Some of these technologies are suitable for use in both supervised and unsupervised environments. E-voting data my be transferred by telephone, internet, via state and/or private data networks, or may be physically transferred on data storage media.

E-voting creates challenges in several areas, not all of which have yet been mastered. It must be demonstrated *with absolute certainty* that only eli-

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4   The electronic register of voters may also be made accessible to individual electoral commissions on election day and may allow members of the public to both view its contents and to enrol or change their details online. See, for example: https://oevf.aec.gov.au.

5   Remote i-voting combines features of remote voting – no electoral official is present while ballots are cast (to authenticate voter identity and ensure that voters are not physically intimidated) – and internet voting, state authorities cannot carry out a technical examination of the device used to vote and information on votes cast is transferred without inspection by the electoral authority). However, in contrast to (paper-based) postal voting, the transfer of ballot information in i-voting does leave a traceable audit trail. The definition of i-voting used here does not encompass internet voting at a polling station.

6   Composite forms are also conceivable, e.g. the supervised casting of ballots using electronic means in local government offices, embassies, consulates, and state post offices.

gible voters cast votes (identification[7] and authentication), that they vote without physical duress, that each votes only once, that their votes are not interfered with while being transferred to the electoral commission (or that any interference could be detected), that – at least after a certain length of time has passed – individual votes cannot be traced back to the individuals that cast them (anonymity to ensure election secrecy), that, nonetheless, an audit trail enables ballots to be inspected both during and after voting, and much more. As well as respecting the basic principles of electoral law, it is also necessary to take into consideration the individual electoral regimes in specific countries and what this means for their practical application.[8] Unless the introduction of e-voting is to coincide with a change to the electoral law, it is necessary to translate all these features into electronic functionality.

As well as choosing between the various technical solutions available, it is also necessary to explain the system chosen to the electorate in order to create the requisite level of confidence in the e-voting procedure. This is generally a time-consuming process that requires a significant investment in publicity materials and persuasive effort but one that is vital if the new technology is to win acceptance for use in general elections.

E-Voting in the OSCE Area

E-voting in its many forms is becoming ever more widespread in the OSCE area. E-voting systems are already being planned, tested, and implemented for use in polling booths, public buildings, public spaces, and from home computers. This section provides an overview of efforts to implement e-voting systems in the OCSE area (as of mid-2004).

E-voting systems planned or already implemented in OSCE participating States can be classified as follows:

- The implementation of a complete e-voting system for specific elections (at least in certain districts or for certain groups of people)
- Legally binding test implementations of e-voting ("pilots")
- Non-binding test implementations ("tests")

It is also possible to distinguish among implementations of e-voting

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7 It requires a minimum of two separate elements to demonstrate this conclusively: an object held by the voter (e.g. a voting card, proving entitlement to vote), and a piece of information known only to the voter (such as a PIN – whether freely chosen or allocated centrally). These may be augmented by the use of technologies such as barcodes and biometric data.

8 E.g. list systems, various kinds of preferential voting, a requirement to vote in person, proxy voting, voting before polling day ("advance voting"), the requirement for postal votes to be witnessed, holding several elections on the same day, allowing for the rights of candidate representatives and independent domestic or foreign observers.

- in nationwide elections (for head of state, national parliaments, the European Parliament) or national referenda;
- in regional and local elections and referenda;
- in "non-political" elections (elections to company boards, works councils, offices within private clubs and associations, etc.). Here it is important to distinguish between corporate bodies under public law (e.g. municipal corporate bodies or corporations or institutions directly established by statute) and those under private law (e.g. clubs and publicly listed companies).

At present, implementations of e-voting tend to be limited to legally binding pilots and non-binding tests, on the one hand, and regional elections or referenda and "non-political" elections, on the other. Polling-booth-based e-voting, however, is already in widespread use in nationwide elections in Belgium, the Netherlands, the USA, Russia, Azerbaijan,[9] and in restricted areas or test implementations in Germany, Canada, Portugal, and Denmark,[10] to name but a few. Preliminary plans or concrete initiatives to roll-out e-voting following successful testing already exist in Ireland, Portugal,[11] and Kazakhstan.[12]

In recent years, legally binding i-voting pilots in political elections and referenda have been carried out in England (regional elections since 2002),[13] Switzerland (regional referenda since 2003),[14] the Netherlands (European Parliament elections in 2004), and Spain (a local referendum in 2004). Mention ought also to be made of a large i-voting pilot carried out in the election of the High Council for French Expatriates *(Conseil supérieur des Français de l'étranger, CSFE)*, which elects twelve members of the French Senate, and which can thus be considered a political election.

Plans exist to expand i-voting in Estonia (local elections in autumn 2005), and Spain (possible EU referendum 2005). The i-voting system SERVE *(Secure Electronic Registration and Voting Experiment)*, whose implementation for US citizens living abroad was planned for the US presidential election in November 2004, was put on ice in spring 2004. France is planning a cautious transition to i-voting, beginning with elections to institutions under public law (judges in labour courts, officeholders in professional associations) and only later extending to encompass political elections. Germany is continuing along the path of non-binding tests and legally binding

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9   Not to mention Brazil, Paraguay, and India.
10   As well as Australia.
11   Tests carried out since 1997.
12   And in Mexico, Venezuela, Peru, and Colombia.
13   An overview of 2003 is available at: http://www.odpm.gov.uk/stellent/groups/odpm_localgov/documents/page/odpm_locgov_608479.pdfdocuments/page/odpm_locgov_608479.pdf. Further details are available, for example on the project in the town of Swindon, at: http://www.odpm.gov.uk/stellent/groups/odpm_about/documents/page/odpm_about_608652.hcsp.
14   2003/2004 in the canton of Geneva (Anières, Cologny, and Carouge).

pilots in "non-political" elections (student elections, elections of employee representatives, works councils, and bodies representing senior citizens). In Switzerland, new tests are due to begin in 2004 and 2005 in the cantons of Zurich and Neuchâtel.

Several countries and regions – including France[15], Italy[16], Catalonia[17], Spain[18], Germany[19], Austria[20], and Portugal – have also carried out non-binding trials of i-voting in both state (political) and private (non-political) elections.

In Slovenia, Hungary, and Bulgaria, plans for e-voting systems exist in the form of draft laws, which have, however, not been approved by the countries' parliaments. The Czech Republic and Romania plan to carry out trials. In Canada, legal provision has been made for carrying out e-voting research and trials.

A number of other states – including Sweden, Norway, Austria, Luxembourg, and Bulgaria – have established political or administrative commissions to examine the potential use of e-voting, or have entrusted existing bodies with this task.[21] In general, their aim is to gather information at home and abroad, to identify the wishes of voters and the technical parameters, to commission and evaluate feasibility studies, and to produce roadmaps – and to do all this before rash or overhasty actions are taken that could lead to practical problems or issues of trust and thus undermine the actual goal of introducing e-voting.

In many countries, discussions and activities relating to e-voting have been carried out in tandem with efforts and initiatives in the area of e-government. One way that this has been achieved is through multilateral agreements, such as the EU's eEurope action plans and the related benchmarking processes.[22] Another question that is closely linked to the e-voting issue in some countries is that of electronic signatures, which allow the appending of legally effective signatures to electronic documents. Multilateral EU standards have also been introduced in this area.[23]

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15 Parliamentary elections June 2002 in Vandoeuvre-lès-Nancy and an i-referendum in Issy-les-Moulineaux in November 2002.
16 E.g. in the local elections of 17 November 2003 in Avellino, Campobasso, and Cremona.
17 Catalan expatriates were able to vote via internet in a test held in parallel with the regional parliamentary elections of November 2003; 730 took advantage of this possibility.
18 Most recently, held alongside the parliamentary elections of 14 March 2004 in Lugo (Mosteiro-Pol), Zamora, and Toro (Zamora).
19 See, for example, http://www.i-vote.de and http://forschungsprojekt-wien.de.
20 See http://www.e-voting.at.
21 E.g. the Task Force E-Letzeburg, Commission Nationale de la Société de l'Informatique (CNSI), Luxembourg, and the "E-Voting" working group of the Austrian Interior Ministry, which is charged with determining the legal, technical, and economic requirements for the implementation of any e-voting model in Austria. See under "E-Voting", at: http://www.wahlinfo-bmaa.at.
22 Cf. http://europa.eu.int/information_society/eeurope.
23 See Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures.

As well as laws and regulations in individual countries that make explicitly mention of e-voting[24] and the most recent recommendations of the Council of Europe (CoE), there are other national and international sources that need to be taken into consideration. These include national specifications on matters such as data protection[25] and technical standards.[26] Government or non-government roadmaps[27] and government programmes[28] that aim at the implementation of e-voting are also relevant to policy making in this area. Especially important, and also relevant for other interested parties, are implementation reports on completed projects, particularly when they are presented in a transparent fashion and provide room for alternative, independent opinions that differ from those of the project managers.

Several academic studies of e-voting have already been published.[29] Some of these have provoked such strong public or political reactions that e-voting projects were put on hold in the USA and Ireland in 2004 as a result.[30]

In the multilateral arena, significant developments include the report by the Commission for Democracy through Law, known as the "Venice Committee", on "the Compatibility of Remote Voting and Electronic Voting with the Requirements of the Documents of the Council of Europe".[31] The report

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24 E.g. Articles 27a to 27q of the Swiss Decree on Political Rights, in combination with the amended Federal Law on Political Rights, both of which became effective on 1 January, 2003; in the UK: Part II, Representation of the Peoples Act 2000, and e.g. The Sheffield (Electronic Voting Scheme) Order 2003; the Netherlands Interim Rules on Experiments Conducted as part of the Remote Electronic Voting Project (Remote Electronic Voting Experiments Act) from spring 2004; and Paragraph 43, Sections 4 and 5 of the Austrian Law on the Representation of Students (*Hochschülerschaftsgesetz*) 1998, BGBl. I No. 22/1999 as amended by BGBl. I No. 18/2001 with effect from 6 March 2001.

25 On this, cf. the French Commission nationale de l'informatique et des libertés in its Délibération no 03-036 du 1er juillet 2003 portant adoption d'une recommandation relative à la sécurité des systèmes de vote électronique, at: http://www.cnil.fr/index.php?id=1356& delib[uid]=12&cHash=d4482266b8.

26 E.g. *Online-Wahlsysteme für nichtparlamentarische Wahlen: Anforderungskatalog* [Online Voting Systems for Non-parliamentary Elections: Catalogue of Requirements], Physikalisch-technische Bundesanstalt, Berlin, April 2004.

27 E.g. in Switzerland and England; or non-governmental or semi-official roadmaps, such as: Recommendation report of the French Internet Rights Forum: What is the future of electronic voting in France? 26 September 2003, at: http://www.foruminternet.org/en/publication/lire.phtml?id=11.

28 E.g., in the coalition agreement of the current German government: "Universal access to the Internet can strengthen the political decision-making process as an aspect of e-democracy. This goal is also served by conducting trials of online voting in political elections at the sub-state level." (editor's translation), the original can be found at: http://www.bundesregierung.de/Bundesregierung/Koalitionsvertrag-I.-Praeambel-,1774/VIII.-Sicherheit_-Toleranz-und.htm.

29 E.g. Alexander Prosser/Robert Krimmer (eds), *Electronic Voting in Europe – Technology, Law, Politics and Society*, Gesellschaft für Informatik, Bonn 2004.

30 E.g. David Jefferson et al., A Security Analysis of the Secure Electronic Registration and Voting Experiment (SERVE), 20 January 2004, at: http://www.servesecurityreport.org, and Margaret McGaley/J. Paul Gibson, Electronic Voting: A Safety Critical System; Department of Computer Science, National University of Ireland, Maynooth, March 2003, at: http://www.cs.may.ie/research/reports/2003/nuim-cs-tr-2003-02.pdf.

31 European Commission for Democracy through Law (Venice Commission), Report on the Compatibility of Remote Voting and Electronic Voting with the Requirements of the Documents of the Council of Europe, on the basis of a contribution by Mr. Christoph Graben-

concludes that remote voting is compatible with the CoE's standards, provided certain precautionary measures are taken when postal voting or electronic voting procedures are carried out. But where e-voting takes place without supervision by election officials, compatibility is only ensured when systems are secure and reliable. Above all, it is essential to ensure that voters can correct their choice before it is transmitted and can obtain confirmation of their vote. The system must also be transparent.

Council of Europe Standards

A year and a half in preparation, the text of the Recommendation of the CoE Committee of Ministers to member states on legal, operational and technical standards for e-voting and the Explanatory Memorandum that accompanied it were adopted at expert level on 6 July 2004.[32] This recommendation is the first to create multilateral standards on e-voting, and places the CoE at the cutting edge of developments.[33] It was drawn up by a multidisciplinary group of experts in a very short time, despite the fact that they had to start from scratch. The recommendation was approved by the Committee of Ministers of the Council of Europe on 30 September 2004.

Building on generally accepted electoral principles, the recommendation consists of e-voting-specific legal and operational standards and technical requirements that member states are obliged to uphold when implementing e-voting. The technical requirements directly address the ICT industry, whose products are required to fulfil these criteria if they are to be bought by CoE member states.

The recommendation makes no statement as to the necessity or desirability of e-voting. Nevertheless, it does list reasons given by individual states for their interest in the technology. Because details of electoral law differ from country to country, the recommendation contains only *minimal standards*, which may be augmented by domestic standards applying to e-voting procedures and technologies.

The recommendation goes beyond classical e-voting by referring many times to e-elections – political elections and referenda – in which electronic means play a role in *any* phase of the election (not necessarily or only in the casting of ballots).

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warter (substitute member, Austria), 12-13 March 2004, Doc. CDL-AD(2004)012, at: http://www.venice.coe.int/docs/2004/CDL-AD(2004)012-e.pdf.
32   The texts are available at: http://www.coe.int/democracy.
33   The EU – with the exception of a few powers relating to elections to the European Parliament – lacks any competencies in the area of electoral law. The European Commission provided financial support for a number of early e-voting test projects and plans similar efforts of this kind as a follow-up to the "eDemocracy" seminar (Brussels, 12-13 February 2004), at: http://europa.eu.int/information_society/programmes/egov_rd/events/edemocracy_seminar/agenda/index_en.htm.

According to the recommendation, e-voting must comply with all principles of democratic elections and must be as reliable and secure as elections that are held using non-electronic means. When implementing e-voting, member states should examine their existing legislation to see if it needs to be adapted to deal with new conditions and threats that arise from the advent of e-voting, e.g. in criminal, privacy, or election-monitoring law.

Two years after the recommendation is adopted, the member states are to examine their policies and their experience of e-voting and of the recommendation and to present the results of this examination to the Secretariat of the Council of Europe. This is to provide the CoE and its members with an opportunity to take any additional steps related to e-voting that may prove necessary within the CoE framework.

The section of the recommendation dealing with legal standards applies the principles of democratic elections and defines appropriate standards for application to e-voting. It details 35 individual legal standards relating, among other things, to transparency, verifiability and accountability, and reliability and security. The recommendation also includes 25 operational standards, on notification, voter registration, candidates, voting, results, and auditing. The document's 52 technical requirements relate to accessibility, interoperability (between various technical systems), systems operation, security (broken down by phase), auditing, and certification.

E-Voting as a Topic at the OSCE's Supplementary Human Dimension Meeting in July 2004

On 15 and 16 July 2004, the OSCE's Supplementary Human Dimension Meeting on Electoral Standards and Commitments convened in Vienna. Its main objective was to discuss universal election principles, existing OSCE commitments, and best practices for democratic elections.

One point of departure for the meeting was a Russian proposal, made several years ago, that the OSCE conduct a general examination of electoral questions with reference to *all* OSCE participating States. This proposal had already formed the basis for a call for the Permanent Council to examine the need to elaborate further commitments in the area of elections, which was made at the OSCE Ministerial Council in Porto on 7 December 2002.[34] The Ministerial Council repeated this call in Maastricht on 2 December 2003, further charging ODIHR to examine opportunities to improve support for participating States in implementing recommendations made in ODIHR elec-

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34   Cf. OSCE, Tenth Meeting of the Ministerial Council, Porto, 6 and 7 December 2002, in: Institute for Peace Research and Security Policy at the University of Hamburg/IFSH (ed.), OSCE Yearbook 2003, Baden-Baden 2004, pp. 421-455, here: pp. 451-452.

tion observation reports.[35] The Vienna Supplementary Meeting consisted of three consecutive sessions:

- The OSCE/ODIHR 2003 Progress Report "Existing Commitments for Democratic Elections in OSCE Participating States",
- Implementation of existing OSCE commitments for democratic elections and follow-up on OSCE/ODIHR recommendations,
- Identification of possible areas for supplementing the existing OSCE commitments and the potential need for additional commitments.

E-voting was identified as a subtopic of the third session in the annotated agenda of the Supplementary Meeting. Meeting participants were provided with the following ODIHR documents as working papers:

- Existing Commitments for Democratic Elections in OSCE Participating States (October 2003),
- Existing Commitments for Democratic Elections in OSCE Participating States: A Progress Report,[36]
- and the ODIHR discussion paper "Election Principles and Existing OSCE Commitments for Democratic Elections".[37]

The discussion paper raised specific questions relating to elections, discussed them with reference to OSCE commitments and the experience of ODIHR, and submitted suggestions for discussion. This document noted that electronic elections and counting procedures, identified as "challenges of the future", serve merely to accelerate processes and save paper and must retain all the main elements and options present in conventional voting systems. Technologies may not entail any new requirements or limitations that could have an impact on the execution of the right to vote.

Before e-voting is introduced, states are required to guarantee that the comprehensive technical preconditions needed to ensure accurate results are in place. It is also necessary for them to have gained the confidence of the general public. Necessary precautionary measures mentioned include effective complaint procedures and the ability to perform a manual recount. Moreover, voters must be able to change their electronic vote before finally casting it, and it must be possible to print out the electronic ballot paper before the vote is finally recorded. Further desirable features include the ability to create a real-time printout of the vote after it is cast and to perform manual counts. Irrespective of which e-voting system is deployed, all counts must be itemized in detail and broken down to the smallest possible unit, accessible to in-

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35   OSCE Eleventh Meeting of the Ministerial Council¸ Maastricht, 1 and 2 December 2003, MC.DOC/1/03, 2 December 2003, Decision No. 5/03, Elections (MC.DEC/5/03), p. 81, at: http://www.osce.org.
36   ODIHR.GAL/39/03.
37   PC.SHDM.GAL/7/04, 9 July 2004.

spection by representatives of the candidates and by observers, and they must be published.

Several participants in the meeting in Vienna touched upon the subject of e-voting. The mood was interested and generally positive, and there was support for the idea that the OSCE should concern itself with the topic. Switzerland, Kazakhstan and Azerbaijan gave presentations on their e-voting systems and the results of studies they had carried out, while other participants dealt with the question of electronic registers of voters. The overemphasis placed on the matter of paper print-outs in the ODIHR discussion paper was criticized by two participants.[38] Austria noted, among other things, that transparency, trust, and public awareness can and must be secured by maximizing openness. There must be no state or corporate secrets. The state must always be in charge of the process. A prerequisite for the introduction of e-voting is that it is trusted by both the general public and the political opposition. The major challenges that need to be met concern, on the one hand, voter identification and authentication, and, on the other, anonymity and the audit trail.

Opportunities for the OSCE

The OSCE, which has proved itself to be a forward-looking and "progressive" institution since its inception, cannot deny the reality of e-voting in its participating States. To what extent the Organization itself should become involved is another question.

It is hardly the OSCE's task to determine the value or feasibility of introducing e-voting. Nor can the Organization decide on the best method by which participating States can introduce e-voting.[39]

Because the Council of Europe has already created standards on e-voting, there is no need for the OSCE to duplicate this work. However, the Council of Europe's standards could also be examined by those OSCE States that are not members of the Council of Europe, who could be required to give an opinion within the OSCE framework. That could also be useful for the review of the recommendations scheduled to be undertaken by the Council of Europe in autumn 2006.

One area where it would be more sensible and productive for the OSCE to get involved is questions relating to the implementation of e-voting. In the

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38   The repeated emphasizing of the need for paper proofs of voting reflects but one of the expert views on the subject. In any case, it only applies to e-voting in polling stations. The underlying question can be answered in other ways. Recourse to paper does not in itself meet the challenges that have to be faced.

39   The author's brief suggestions on the latter point can be found in: E-Voting: International Developments and Lessons Learnt, in: Alexander Prosser/Robert Krimmer (eds), Electronic Voting in Europe – Technology, Law, Politics and Society, Lecture Notes in Informatics (LNI), vol. P-47, Gesellschaft für Informatik, Bonn 2004, pp. 31-42, here: p. 40f.

form of the ODIHR election observation missions, the OSCE already has an effective instrument that could be applied here.[40]

E-voting is not limited to "Western" states, but even if it were, this would not exclude ODIHR election observation missions from addressing the issue, as evidenced by the missions conducted recently in the UK and the USA. Forms of e-voting are already being used in the eastern half of the OSCE area (in Russia and Azerbaijan), or are being planned (in Kazakhstan). In states where election results are frequently criticized or even challenged by opposition parties or international institutions, there is a special need to monitor the use of e-voting, which is often less transparent and familiar to the citizenry than conventional, paper-based voting.

This would require the creation or acquisition of the appropriate exper-tise. It would be possible here – as in other matters related to election obser-vation – to make use of questionnaires and a pool of international experts in electoral law, ICT, and electoral practice. This would enable OSCE election observation missions, following expert examinations of e-voting systems in theory and practice, to either express criticisms and suggestions for im-provement or to lay the fears of concerned parties to rest.

There follows a questionnaire on the subject of e-voting developed by the author. Its aim is to enable participating States that are planning to intro-duce e-voting (or to have their projects evaluated by a third party) to provide preliminary information *prior to* international evaluation.

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40   The ODIHR Election Observation Mission to the Presidential Election in Kazakhstan on 19 September 2004 may be considered as the first example of work in this area, in which context the following announcement was made: "The observers will monitor voting, counting, and tabulation of results, *including the possible use of information technology* in these important elements in the electoral process." (Emphasis added); at: http://www.osce.org/news/show_news.php?ut=2&id=4280.

Annex

Basic E-Voting Questionnaire

The competent national authority is invited to provide detailed answers to all applicable questions. The hints given in brackets are merely suggestions; alternative answers may be given. We would be grateful for any further country-specific information, where this is available.

1. Type of e-voting system used
1.1. Brief description of system used
1.2. Where will the system be implemented? (at polling stations/elsewhere)
1.3. What will the legal status of the implementation be? (legally binding result/test only)

2. What elections and individuals are affected?
2.1. In what elections or referenda is e-voting to be used?
2.2. Who will be entitled to use the system? (all voters/specific groups)
2.3. What special conditions will apply to the use of the e-voting procedure? (need for separate registration [by paper/post/electronically]/use without prior notice)

3. In the case of polling-station based e-voting:
3.1. Will individual voters only be able to vote at their designated polling station or at any polling station offering e-voting?
3.2. How is the ballot cast? (paper and pencil, scanner at ballot box, mechanical/electronic machine, PC, paper printout of cast ballot …)
3.3. How is data on votes cast stored? (in ballot-box/on machines in individual polling stations/directly transmitted to election authority)
3.4. Transmission of ballot data (physical transfer of hardware module/electronic transfer)
3.5. Location for storage and counting of e-ballots

4. In the case of remote e-voting (i.e. not in polling stations):
4.1. Where will electronic votes be cast? (e.g. local government offices, post offices, supermarkets, at home … – where public venues are used, will voting be supervised by (electoral) authorities?)
4.2. What will the time-frame for voting be? (is it identical with that for paper voting at polling stations?)
4.3. What devices will be used? (provided by the authorities, certified by the authorities, provided privately – kiosk/PC/telephone [numbers/SMS]/ digital TV/etc.)
4.4. Voter credentials (username/password[s] – how obtained [e-mail, post]; smart cards; use of digital certificates/electronic signature)

4.5. What channel(s) will be used to transmit data? (post, internet, phone [which kind?], digital TV, …)

4.6. Where will data be stored and counted?

5. By what means will universal, equal, free, and secret suffrage be ensured?

6. How will lists of electors be created, stored and how will access be managed? [lists of electors, *i.e.* of persons eligible to vote] (paper-based/ electronic storage/paper printouts/direct access by polling station officials – public accessibility)

7. How will candidates be registered? (in person/paper/electronically)

8. Recounts (electronic/manual; by the same or a different electronic system)

9. Consultation with candidates and/or political parties on the e-voting system (how/when/what participants/feedback/follow-up?)

10. Languages used on devices/websites used for e-voting

11. Informing and training the electorate (how/when/test sites)

12. Access by observers to individual stages in the e-voting process and to technical components of the system (partisan/independent, domestic/ international – extent granted)

13. Hardware used (supplier[s], [independent] tests, certification …)

14. Software used (supplier[s], [independent] tests, certification, made public …)

15. Extent of use (incl. number/percentage of polling stations/electorate)

16. Risk assessment (undertaken, results, made public)

17. Audit trails of e-ballots

18. Previous tests (number, extent, occasion, whether by a hostile third party, made public, implementation of lessons learnt)

19. Previous use of e-voting in the country (same system/different system/ lessons learnt/public reaction/follow-up//in another country)

20. Option/requirement to perform end-to-end verification, *ex-ante* and *ex-post*.

21. Authority/authorities responsible for system security and operability/ operation

22. Body certifying the system and date of certification (independent body? … once/regularly)

23. Reasons for introducing e-voting

24. Strategies/action plans/roadmaps/timelines for introduction (*please enclose/attach relevant texts*)

25. Groups/individuals involved in the development/implementation strategies and concrete activities (including academia, opposition, civil society/NGOs …)

26. Legislation (by which body, date, texts – *please enclose/attach*)
27. Implementation of national standards (what standards, issued by which body, extent of implementation)
28. implementation of international standards (in particular Council of Europe standards, and ICT and web standards), irrespective of formal binding force
29. International co-operation (multilateral arrangements/individual partners/time/follow-up)