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Evolution of e-voting projects in Switzerland between 2010 and 2012 and outlook

*Council of Europe*

*E-voting: Recent developments and challenges  
Fourth review meeting of CM Recommendation (2004)11 on legal, operational and technical  
standards for e-voting*

*Bregenz, 11 July 2012*

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## **1) Trials and OSCE observation**

### **92 trials with internet voting at federal level**

Since 2004, 88 trials have been conducted in federal popular votes and four in federal elections, making a total of 92 trials. The systems were employed at numerous cantonal votes and communal votes as well. At each ballot as many as 170,000 voters were able to vote electronically. This did not exceed the limit of 10% of the electorate set by the Ordinance on Political Rights. The last trial has been conducted on 17 June 2012.

### **First use of internet voting at the federal elections of October 2012**

On 23 October 2011 e-voting was used for the first time in federal elections. Approximately 22,000 Swiss voters abroad registered in the cantons of Basel-Stadt, St.Gallen, Grisons, and Aargau were permitted to use one of the e-voting systems. This is about 0.4% of a total of approximately 5,090,000 voters. About 53% of Swiss voters abroad registered in the cantons entitled to take part in the trial made use of this new voting method. The e-voting trials ran smoothly. The technical and logistical challenges were successfully mastered by the cantons involved. This first-ever use of e-voting in federal elections marks the beginning of the second phase in its implementation.

### **First OSCE/ODIHR observation of internet voting: report January 2012**

The 2011 elections to the National Council were observed by the OSCE/ODHIR. The team of experts was particularly interested in the e-voting systems, as this technology is relatively new and to date pilot studies are being conducted in only a few member countries. The report has been issued on 30 January 2012.<sup>1</sup>

## **2) Roadmap on further development**

Drawn up in spring 2011, the "strategic paper on vote électronique" (roadmap)<sup>2</sup> provides an overview of the rollout strategy for the coming years. It lays down common objectives and milestones so as to ensure optimal coordination between the Confederation and the cantons and defines measures to drive the project forward. The strategy document - which was discussed by the Conference of

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<sup>1</sup> For the report see: <http://www.osce.org/odihr/elections/Switzerland/81974>.

<sup>2</sup> See: <http://www.bk.admin.ch/themen/pore/evoting/06552/index.html?lang=de>.

Government Chancellors at its spring meeting in 2011 - is the key planning instrument. The roadmap focuses on the following **five areas of action**:

1. Joint strategy between the Confederation and the cantons
2. Security
3. Expansion
4. Transparency
5. Costs.

### **3) Continued extension of internet voting to Swiss abroad, identified as priority group: almost half of cantons offer internet voting to expatriates**

Since 2001 13 cantons have been involved in this new form of political participation. Some of these cantons are planning to expand their e-voting projects. Next steps will include offering e-voting to Swiss residents and the beginning with e-elections. Further cantons have expressed an interest in introducing e-voting for their Swiss abroad. The Federal Chancellery, as the coordinating body, supports the cantons in implementing their chosen solution. It has set itself the goal of permitting the majority of eligible Swiss voters abroad to cast their ballots electronically in federal votes and referendums by the beginning of 201e and in elections by 2015. Along with these experiences with the Swiss abroad, e-voting is to be gradually made available to Swiss residents as well.

### **4) The security challenges**

Under current legislative limitations only the Swiss abroad and a limited proportion of citizens resident in Switzerland may use e-voting. Since the impact of certain risks increases with the number of voters using e-voting, the roadmap foresees the granting of e-voting access to more users only after crucial security questions have been revisited. The roadmap therefore serves as a basis for a security standards taskforce. The group, comprising representatives from the Confederation, cantons, academics, and various consultants, has the goal to establish a set of minimal security criteria that e-voting systems and their administration need to comply with before the community of users is expanded.

An absolute key requirement of e-voting systems is that they need to generate results as the consolidated collection of legitimate votes (which have not been tampered with). As ballot secrecy has to be maintained at all times, fraud attempts are not as easily detectable as with other Internet applications, such as e-banking. Nevertheless, the technical literature on e-voting cryptography suggests a multitude of privacy-preserving solutions, such as verifiable protocols that allow voters to verify that their vote has reached the voting servers as intended, that it is recorded as cast and that it is tallied as recorded. The taskforce seeks to propose high security requirements and relate its reflections to the existing literature. With this aim, the e-voting research group of Bern University of Applied Sciences (BFH) has been given the task of producing a concept outlining how a verifiable system could be implemented in practice<sup>3</sup>. The Norwegian experience with their trial using a verifiable system in September 2011 also serves as a fine source of inspiration in terms of usability and the implementation of a verifiable protocol in practice.

The security standards taskforce has assumed the user's platform to be the most vulnerable system component. In Norway, the problem has been mitigated by introducing return codes which enable voters to verify whether their vote has been tampered with before arriving at the servers. While Switzerland is looking at Norway's solution with great interest, the Confederation has also given a grant to the Federal Institute of Technology in Zurich (ETH) to elaborate on this sensitive subject and propose appropriate solutions. An ETH-researcher is also a member of the security standards taskforce and shares his insights with it. Regardless of which final technical requirements will be proposed by the security standards taskforce in summer 2012, there will also be organisational requirements to consider, such as requirements on external audits.

### **5) Evaluation of experiences and proposals for further extension**

The Federal Chancellery is currently evaluating the trials conducted since 2006. This evaluation will lead to a third report on "Vote électronique", which is due to be presented to the Federal Council by mid-2013. The report will also make recommendations on how to proceed with the project. At the same time, the current legal basis for e-voting will be reviewed and proposals for modification will be made to the Federal Council, which is in charge of amending the Federal Ordinance on Political Rights.

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<sup>3</sup> <http://www.bk.admin.ch/themen/pore/evoting/index.html?lang=de>.