

Overview

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With the fifth EVOTE conference series the tradition of interdisciplinary discourse on electronic voting at Castle Hofen continues with articles from experts in academia, administration, politics and industry. The dialogue and sharing continues in 2012 with an impressive set of papers and presentations on various aspects of electronic voting.

This year's conference theme is *challenges to electronic voting: transparency, trust and voter education*. The 2012 proceedings consist of 21 papers selected in a double-blind review process from 44 submissions to bridge the gap between theory and practice covering topics like verifiability of Internet and electronic voting, coercion resistant voting systems, auditing and testing as well as mobile voting for sight-impaired citizens. The papers are clustered in nine sessions, which are presented in the following:

The **first session** looks the recent practical experiences with Internet voting in Norway and the implications on verification. Ida Sofie Gebhardt Stenerud and Christian Bull present the experiences and challenges of the election commission in Norway with the implementation of Internet Voting and the lessons learnt. Jordi Barrat, Michel Chevallier, Ben Goldsmith et al. evaluated the Internet voting in Norway and analyse in their paper the special feature of return codes to ensure voter verification in Norway.

The **second session** presents the technical perspective on Internet voting in Norway. The first paper by Jordi Puiggali and Sandra Guasch describes the technology behind the voter verification return-code scheme and analyses the implementation from a developer's perspective. Denise Demirel, Hugo Jonker and Melanie Volkamer investigate the mixnet used in Norway and propose a verification method to improve efficiency and privacy.

In the **third session** verification of electronic voting is discussed with an analysis of the e-voting system used Victoria, Australia by Craig Burton, Chris Culnane, James Heather, Thea Peacock, Peter Ryan, Steve Schneider, Sriramkrishnan Srinivasan, Vanessa Teague, Roland Wen and Zhe Xia. Maina Olembo, Anna Kahlert, Stephan Neumann and Melanie Volkamer look at the possibilities for verification in the online voting solution POLYAS.

Session four presents new research on coercion resistant e-voting systems. The paper by Oliver Spycher, Reto Koenig, Rolf Haenni and Michael Schläpfer proposes a verifiable Internet voting protocol that prevents voter coercion. Jerome Dossogne, Frederic Lafitte and Oliver Markowitch present how multi-party designated verifier signatures can be used as a solution to provide coercion freeness in electronic voting schemes.

Session five deals with the growing challenges of auditing and testing of electronic voting systems. Michelle Shafer, Cyrus Walker, Jay Aceto and Edwin B. Smith propose a methodology for auditing of electronic voting systems. Mark Philips and Richard Soudriette discuss the importance of independent testing of electronic voting systems and the practical implication.

In **session six** practical experiences with Internet voting for citizens living abroad are presented and discussed. Ardita Driza-Maurer, Oliver Spycher, Geo Taglioni and Anina Weber present the experiences with Internet voting in Switzerland. Tiphaine Pinault and Pascal Courtade provide an inside look on the French Internet voting project for citizens abroad.

The **seventh session** presents practical experiences with electronic voting machines. First Carlos Vegas looks at the new e-voting machine in Belgium. Guillermo Lopez Mirau, Teresa Ovejero and Julia Pomares analyze the developments and implementation in Argentina.

Session eight presents the research findings on different analysis of the current status quo of electronic voting. Nina Boulus-Rødje maps the literature on electronic voting and highlights the important topics of discussion. Jessica Myers and Joshua Franklin developed a classification structure of current and future voting technologies. Jurlind Budurushi, Stephan Neumann and Melanie Volkamer analyze the results of a survey on the use of smart cards to support the voting process.

The **ninth session** looks at new debates and developments in the field of electronic voting. Marc Teixidor Viayna analyses the consequences of null votes for electronic voting systems. Dalia Kader, Ben Smyth, Peter Ryan and Feng Hao propose a recovery round to enable the election result to be announced if voters abort, and adds a commitment round to ensure fairness. H. Serkan Akilli presents mobile voting as an alternative for blind voters. And Jonathan Ben-Nun, Niko Fahri, Morgan Llewellyn, Ben Riva, Alon Rosen, Amnon Ta-Shma, Douglas Wilkstrom report on the design and implementation of a new cryptographic voting system, designed to retain the look and feel of standard paper-based voting systems.