3.3 Electronic counting of p-votes



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E-vote 2011

Use case specification: 3.3 Electronic counting of p-votes

Project: E-vote 2011





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1. Executive Summary

The system must have functionality for the optical character recognition of image files produced during scanning. The relevant Committee must be able to enter file metadata describing ballot characteristics that cannot be read from the image. The system must be able to pick up exceptions where recognition fails and allow for validation and correction.

The election system must facilitate the scanning of ballots providing:

- 1. Advance results:
 - a. Preliminary results (Party/group totals)
 - b. Final results (Party/group and candidate totals)
- 2. Election day results (Party/group and candidate totals):
 - a. Preliminary results (Party/group totals)
 - b. Final results (Party/group and candidate totals)

2. Purpose

The purpose of this use case is to:

- 1. Count p-votes electronically and distribute results on parties and candidates
- 2. Provide functionality for the manual validation of exceptions
- 3. Provide control of preliminary votes against final votes
- 4. Capture data for the Election Protocol

3. Actors

Actor	Description
ES	The Election System
EC	Electoral Committee
CEC	County Electoral Committee



4. Pre-Conditions

ID	Description	Comments
3.3.1	P-votes are ready for scanning after the voting phase has been	Electronic counting is relevant for all types of elections
	completed.	where paper ballots are used.

5. Post-Conditions

ID	Description	Comments
3.3.2	The results from scanned p-votes are stored in the system.	Approved results forms the basis for use cases 4.1
		'Reporting to SSB' and 4.2 'Settlement'.
3.3.3	The Election Protocol is updated	

6. Trigger

P-votes are ready for scanning.



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7. Main Flow - Functional Requirements

7.1. Detailed flow - functional requirements

ID	Actor	Function (Requirement)	Requirement description	Ref
F 3.3.1	PC/EC/CEC	Select election	The relevant Committee must be able to select election and enter file meta data	
			describing ballot characteristics that cannot be read from the image (e.g. batch	
			identification such as location, ballot batch identification etc.)	
F 3.3.2	PC/EC/CEC	Scan ballots	The relevant Committee scans ballots. The scanner shall produce image files	

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			suitable for optical character recognition according to industry standards.	
F3.3.3	ES	Read ballots	The election system must be able to perform optical character recognition	E1
			reading the image files (ballots). Both image data and meta data must be stored	
			in the system. The system must be able to recognize correctly minimum 99 %	
			of all scanned ballots. The system shall check that each ballot paper is unique	
			and reject duplicates. Duplicate ballots shall be reported with an error message.	
			The scanners and ICR must be able to read special ballots for blind.	
F 3.3.4	ES	Store results	Election results and data for the Election Protocol is stored in the system.	
F 3.3.5	ES	Present results and show	The system must be able to present preliminary and final results and the	
		difference	difference between preliminary and final results.	
F 3.3.6	PC/EC/CEC	Approve results?	Relevant Committee must be able to approve the results.	A1, A2
F 3.3.7	ES	Store approval	The approval is stored in the system.	
F 3.3.8	ES	Notify approved results	The system shall notify the relevant Committees regarding the approval.	

7.2. Alternate flow 1 – Overwrite results (A1)

ID	Actor	Function (Requirement)	Requirement description
F 3.3.9	CEC	Overwrite results	The relevant Committee must be able to overwrite the results if there is a difference between
			the preliminary and final results.

7.3. Alternate flow 2 – Rescan (A2)

ID	Actor	Function (Requirement)	Requirement description
F 3.3.2	PC/EC	Scan ballots	See requirement F 3.3.2

8. Exception Flows

8.1. Exception flow 1 – Verify rejected votes (E1)

ID	Actor	Function (Requirement)	Requirement description
F 3.3.12	EC	Verify error	The Electoral Committee must be able to check rejected ballots. An attached copy of the ballot
			must be available on the screen next to the error (highlighted) so that the Electoral Committee

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			easily can compare this with the paper copy. The operator shall be able to make necessary adjustments and either approve or reject the ballot. If the ballot is approved, it will be stored as approved and distributed according to F 3.3.4. The Electoral Committee must be able to perform ad-hoc checks and it is important that necessary information is available on the same screen and that they can find scanned copy of a ballot searching on ballot ID.
F 3.3.13	ES	Store with reason	Rejected ballots will be stored the system with a reason.

9. Non-Functional Requirements

9.1. Accessibility and usability

ID	Requirement description	Ref
3.3.4	See 'Accessibility and usability requirements'	8.1

9.2. Security

ID	Requirement description	Ref
3.3.5	See General Requirements	0.01
OS8.15	It shall be possible to verify the integrity of data transferred between system modules	
OS8.16	It shall be possible to verify the authenticity and integrety of data imported into the Election system (f.i. files containing scanned images of ballot papers, Electoral Roll)	

9.3. Rules & regulations

ID	Requirement description	Ref
3.3.5	This use case refers to regulations described in the Representation of the People Act (the Election Act) chapter 10.	
	http://www.regjeringen.no/upload/KRD/Kampanjer/valgportal/Regelverk/Representation_of_the_People_Act170609.pdf	
3.3.6	This use case refers to chapter 8 in regulations relating to parliamentary and local government elections (Representation of the	
	People Regulations)	
	http://www.regjeringen.no/upload/KRD/Kampanjer/valgportal/Regelverk/Regulations_2003_EN_170609.pdf	

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3.3.7	This use case also refer to the Council of Europe e-vote Recommendation Rec(2004) 11.	
	http://www.coe.int/t/dgap/democracy/activities/GGIS/E-	
	voting/Key_Documents/Rec(2004)11_Eng_Evoting_and_Expl_Memo_en.pdf	