Identi fier	Requirement description	Elaborate (Y/N)	Require ment met?
Solutio	on Constraint		
MC1	The solution must satisfy all laws, regulations and recommendations listed in Chapters 2.1 and 2.2 in the "System Requirements Specification" document.	Ν	Y
Open :	source code licensing		
MC2	The ownership of copyright and other related rights for software components developed for the Customer is transferred to the Customer in line with clause 10.1.1 of the main agreement. Any software developed by the Contractor, including standard software, shall be open source. The term «open source» is limited to mean that the source code shall as a minimum be made available to the Customer. The core system, i.e. those parts directly involved in e-voting or counting of e-votes or that otherwise use, store or manipulate election data where no paper audit trail exists, shall be open source. However, third party closed source standard components are allowed in the core provided certification requirements, as set out below, are met. With the exception of third party closed source standard components, the core system components must as a minimum be licensed to allow the Customer to make the source code available to the public and allow anyone to copy, modify, inspect, compile, debug and run the core for testing purposes. With the exception of third party closed source standard components, the license to all system components must as a minimum allow the Customer or anyone the Customer authorizes to copy, modify, inspect, compile, debug and run the core for testing purposes. To avoid doubt, for third party standard components, the requirement for open source or a relevant certification applies only to core software components. To avoid doubt, for third party standard components, the requirement for open source or a relevant certification applies only to core software components. To avoid doubt, for third party standard components, the requirement for open source or a relevant certification applies only to core software components. Norwegian elections.	Y, in App 3, below the heading "Open Source"	Y
MC3	It must be possible for anyone to compile the open source components of the core system, but not necessarily to set up a complete e- voting system.	N	Y

MC4	For all components in the system, the use of a generally recognized open source license that is accepted by The Open Source Initiative is preferable to closed source.	Ν	Y
MC5	Closed source core components, must hold a relevant, recognized security certification, that is a Common Criteria EAL 4 or FIPS 140-2 Security Level 2 or higher certification. Closed source core components in the process of being certified for the aforementioned certifications are also acceptable. A Common Criteria or FIPS 140-2 certification will make certain assumptions about the operating environment, which must be taken into account. Exceptions may be made for third party hardware device drivers if no viable certified or open source alternative exists. Such exceptions must be identified and a proper justification given in the elaborations to this requirement.	Y, in App 3, below the heading "Open Source"	Y
Impler	nentation environment of the system		
MC6	The operations partner is yet to be decided. The Contractor must describe the conditions for running the system as defined by the requirements.	Y, in App 3.	Y

Identifier	Requirement description	Elaborate (Y/N)	Requirement met? (Y/N)
Technical re	quirements		
GR1.1	All system components shall communicate across open and well defined interfaces, such as EML.	Ν	Y
GR1.2	The system shall have an architecture facilitating the easy replacement of system software components.	Ν	Y
GR1.3	The system source code shall be well commented and documented, and easily maintainable.	Y	Y
GR1.4	The Elections System shall be able to exchange daily updates of the Electoral Roll in a structured format with systems delivered to other municipalities by other vendors.	N	Y
GR1.5	In the event of a loss of communication, the Electoral Roll shall still be available locally on client PCs in polling stations. The local copy of the Electoral Roll shall automatically synchronize with the central master copy on restoration of communication. The user in the polling station shall be notified of the loss of and restoration of communications.	Y, in App 3. Please add a heading "Fall- back solution"	Y
Security Met	hodology		
GR2.1	The supplier shall be certified to, or work according to ISO 27001	Y, in App 6, below the heading "Security"	Y
GR2.2	The supplier shall have documented and implemented a Secure Software Lifecycle Development process	Y, in App 6, below the heading "Security"	Y
GR2.3	The supplier shall in the development process create the necessary documentation for a formal review process and Common Criteria certification to EAL4+ of all components directly related to e-voting, including counting and returning of members.	N	Y

GR2.4	The supplier shall in the development process of Election System components <i>not</i> directly related to e-voting create the necessary documentation for a Common Criteria certification to EAL2.	N	Y
Scope for	deliverables and implementation		
GR3.1	The system must be divided into partial deliveries. Each delivery must be a complete subsystem. It must be possible to perform part acceptance tests on each partial delivery.	Y, in App 4	Y
GR3.2	The system must be ready for customer acceptance test November 1st 2010 (full scale, all elections). All customer acceptance tests and all vendor correction of system errors, and regression tests should be finished within December 31th 2010.	Y, in App 4	Y
GR3.3	First deadline is the submission of list proposals from the political parties is March 31th 2011. The system must be configured and ready for use by the local communities from March 1 st 2011.	Y, in App 4	Y
GR3.4	The Principal has an option to order services to assist the local Municipalities in the following: system support 24/7 from July 1st 2011, user training, e-counting support (24/7 for one week).	Ν	Y
GR3.5	The system must scale for full implementation in Norway.	Ν	Y
GR3.6	The Principal must have an option to acquire software licenses for full scale implementation if this is not included in the software delivered for the pilots in 2011. The Principal prefer to have a license for unlimited use in Norway. But if such license is not offered, the Contractor must base pricing e-counting on 200 scan-centers with the average of 3 scanners (600 scanners totally).	Y, in App 3	Y
GR3.7	The Contractor's core team must be located in Oslo, Norway.	Y, in App 6	Y
GR3.8	The Contractor must provide an office in Oslo, Norway, with work space for the core team and meeting facilities.	Y, in App 6	Y
GR3.9	The Contractor has to cover own expenses for development environment and infrastructure and hardware cost related to their own development and testing.	Ν	Y

GR3.10	The Contractor must provide services to assist the Principal in the following: User training, system support (Working days 08:00-16:00) and central configuration of system.	Y, in App 2A	Y
Standards	for Software Quality and IT Service Management Systems		
ST4.1	The Contractor shall be certified to or work according to ISO 9001/TickIT (ISO/IEC 12207). Documentation from the Contractor is needed.	Y, in App 4 below the heading "Quality Control"	Y
ST4.2	The system shall be developed to satisfy the requirements of a data centre operator certified to or working according to ISO/IEC 20000-1 and ISO 27001. Documentation from the Contractor is needed.	Y, in App 4 below the heading "Quality Control"	Y
ST4.3	For work covered by the Maintenance Agreement-option, the Contractor shall be certified to or work according to ISO/IEC 20000-1. Documentation from the Contractor is needed.	Y, in App 4 below the heading "Quality Control"	Y
ST4.4	The Contractor shall describe their test strategy including methodology and tools for testing (usability testing, unit testing, accessibility testing, system testing, regression testing, volume testing, performance testing, security testing, acceptance testing) bug reporting and change management.	Y, in App 5	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional	Requirements			
F 0.1.1	Manage users	 The system must have functionality for the management of users. The system must have functionality for: 1. The creation of new users. Each user must have a unique identifier. 2. The maintenance of existing users 3. The deactivation of users 4. The assignment of authentication method to a user System administrators must be able to provide users with a link to a web page where users can communicate their needs regarding access to functionality in the system so that the administrator can assign roles based on their needs. 	Y, in App 2A	Υ
F 0.1.2	Assign roles	The system must have functionality for the assignment of users to one or more roles	Y, in App 2A	Y

F 0.1.3	Manage roles	 The system must have functionality for the management of roles. The system must have functionality for: 1. The creation of new roles. It must be possible to create a new role from scratch or based on an existing one. Each role must have a unique identifier. 2. The maintenance of existing roles 3. The deactivation of roles 4. The assignment of securable objects to a role 5. The assignment of allowed actions a particular role may perform on a securable object 6. The assignment of authentication method to a role 7. The assignment of owner(s) to a role Users may have several roles in the system, but some roles will be mutually exclusive. The system must have functionality for defining (flagging) what roles are mutually exclusive. 	Y, in App 2A	Υ
F 0.1.4	Assign securable objects	The system must have functionality for the mapping of securable objects to a role.	Y, in App 2A	Y
F 0.1.5	Assign permissions	The system must have functionality for the mapping of permissions (Create, Read, Update etc.) to a role (In relation to securable objects).	Y, in App 2A	Y

F 0.1.6	Manage permissions	The system must have functionality for the management of permissions. Permission levels may include read, create, modify, delete, approve etc. The system must have functionality for: 1. The creation of permissions and permission levels. It must be possible to create a new permission level based on an existing one 2. The maintenance of existing permissions and permission levels 3. The deletion or in-activation of permissions and permission levels	Y, in App 2A	Y
F 0.1.7	Manage securable objects	The system must have functionality for the management of securable objects. Securable objects may include data sets, databases input fields, output fields, sets of functionality/module etc. The system must have functionality for: 1. The listing of all securable objects within the application. 2. Inheriting permissions and assigned roles from another securable object 3. Breaking inheritance between securable objects	Y, in App 2A	Y
F 0.1.8	Search/Filter on user, role, securable object or permission	 The system must have functionality for searching/filtering on user, role, securable object and permission. The system must have functionality for viewing the inheritance hierarchy of secureable objects/roles/permissions 	Y, in App 2A	Y
F 0.1.9	Present results	The system shall present the relations between user, role, securable object and permission.	Y, in App 2A	Y
Performan	ce Requirements			
P 0.1.1		Checking of permissions for access to securable objects shall not cause any significant increase in the election system response times.	Ν	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional I	Requirements			
F 0.2.1	Find configuration	The central/local system administrator must be able to retrieve an existing configuration or create a new one.	Y, in App 2A	Y
F 0.2.2	Create new configuration	The central/local system administrator must be able to either create a brand new configuration or a new configuration based on an existing template.	Y, in App 2A	Y

F 0.2.3	Configure	 The Central/Local system administrator must be able to perform configuration in a design environment. This environment shall not require programming skills. The design environment shall guide the user through a set of steps where they must be able to: 1. The creation and maintenance of Elections (General Election, County Election, Municipality Election, Referendums, and Sami Election) system data based on the EML schema using relevant EML elements and attributes. The current version is described in Election Markup Language (EML) Version 5.0. The user must be able to set attribute values describing the characteristics of the election/referendum. Import of external files (XML/EML) must be possible. 2. Create and/or maintain Party/Group details, codes, roles etc. Import of Party codes from The Register of Political Parties (The Brønnøysund Register Centre) must be possible. 3. Create and/or maintain terms for an election (Captions, menu texts, help texts, error messages etc.) and the translation of these. It must be possible to create a new language, copy all existing terms and export these for translation. The system must also facilitate the import of translated terms. Norwegian Bokmål, Nynorsk and English terms must be translated and available in the system for the 2011 election. 4. Create and/or maintain reports (See use case 0.1 'Definition of roles') 5. Create and/or maintain reports (See use case 5.1 'Reporting') 6. The creation and/or maintenance of workflows. Workflow management shall provide end users with a way to orchestrate or describe complex processing of data in a visual form, much like flow 	Y, in App 2A	Υ
		describe complex processing of data in a visual form, much like flow charts but without the need to understand computers or programming. (E.g. orchestration of approvals, alerts etc.).		
F 0.2.4	Preview configuration	The Central/Local system administrator must be able to see a preview of the configuration and test the configuration.	Y, in App 2A	Y
F 0.2.5	Store configuration	The configuration is stored in the system	Ν	Y
F 0.2.6	Approve configuration	An authorized individual must be able to approve the configuration	Y, in App 2A	Y
F 0.2.7	Store approval	The approval is stored in the system	Ν	Y

F 0.2.8	Edit configuration	The central/local system administrator must be able to edit an existing configuration up until a preconfigured date.	Y, in App 2A	Y
F 0.2.9	Open template	The central/local system administrator must be able to create a new configuration based on an existing configuration (With or without template data).	Y, in App 2A	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional	Requirements			
F 0.3.1	Provide initial dataset	SKD provides the Electoral Roll dataset	Ν	Y
F 0.3.2	Create initial dataset	The Election System shall load the initial Electoral Roll dataset	Y, in App 2A	Y
F 0.3.3	Provide updates of Electoral Roll	SKD provides Electoral Roll updates	Ν	Y
F 0.3.4	Import updates	The Election System shall receive updates from the Electoral Roll in time period and intervals configured for the Election/Referendum. The system shall notify the system administrator regarding exceptions. IMPORTANT: All changes to the registry are transferred unprocessed, transaction by transaction. This means that both errors and corrections are transferred. The ES should take this into account, and not process errors that will be corrected in a later transaction. The system shall include a voters' register which presents the latest updates. The voter must be able to check, as a minimum, the information which is held about him/her on the register, and request corrections.	Y, in App 2A	Y
Performan	ce Requirements			1
P 0.3.1		For F 0.3.4 potentially as many as 1 million transactions/hour at peak.	Y, in App 2A	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Require ment met?
Functional	Requirements			
F 0.4.1	Fill in application data	The system must have an interface allowing the voter, party/group or the Electoral Committee must fill in a predefined application form.	Y, in App 2A	Y
F 0.4.2	Store application	The application is stored in the system.	Ν	Y
F 0.4.3	Notify Electoral Committee	The system shall notify the Electoral Committee that a new application has been submitted.	Ν	Y
F 0.4.4	Approve voter for listing in Electoral Roll?	The Electoral Committee must be able to approve or reject the application from within the system.	Y, in App 2A	Y
F 0.4.5	Update Electoral Roll	The Electoral Committee must be able to update the Electoral Roll.	Y, in App 2A	Y
F 0.4.6	Store approval and update Electoral Roll	The system shall store the approval and Electoral Roll update.	Ν	Y
F 0.4.7	Store rejection with reason	The system shall store the rejection with a reason.	Ν	Y
F 0.4.8	Notify voter	The system shall notify the voter, party/group that their application has been approved or rejected.	N	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Require ment met? (Y/N)
Functional	Requirements			
F 1.1.1	Select election/referendum	Party/group representative must be able to select the election/referendum he/she wants to manage candidates/signatures for.	Y, in App 2A	Y
F 1.1.2	Enter/import, edit, remove candidates/signatures	A representative for a party/group must be able to enter or import (csv, xls, etc.), edit and delete list proposal candidates and signatures. Extra preferences may be given to certain candidates (Highlight top candidates) depending on the election type. The system must have functionality for recognizing signatures through scanning (ICR) and functionality for attaching the scanned file to the list proposal. The Party/Group must also be able to attach the signatures to the list proposals manually. The system must have functionality for the production of ballot papers. The party/group must be able to withdraw their list proposal up until a pre-configured date (§6-5). The system shall notify the Electoral Committee if the list proposal is withdrawn.	Y, in App 2A	Y
F 1.1.3	Store list proposal	The list proposal is stored in the system.	Ν	Y
F 1.1.4	Check candidates/ signatures against Electoral Roll	The system shall check candidates and identification from signatures (signer ID) against the Electoral Roll. The system shall also check the number of names of candidates and signatures on a list proposal according to §6-2 and §6-3.	Y, in App 2A	Y
F 1.1.5	Check duplicates	The system must be able to detect duplicates candidates and signatures across list proposals.	Y, in App 2A	Y
F 1.1.6	Store candidates/ signatures	The system must store the candidates and signatures.	Ν	Y
F 1.1.7	Approve list proposal	The system must have functionality for approving a list proposal by a authorized party/group representative.	Y, in App 2A	Y
F 1.1.8	Approval stored	Approval is stored in the system	Ν	Y

F 1.1.9	Create notifications	The system must notify the Electoral Committee and the parent organisation (If the party/group is a child organisation of another party/group) when a list proposal has been approved. The system shall create notifications to all candidates on the list proposals. The notification shall include the candidate's rights according to the law and deadline for applying for exclusion from the party list.	Ν	Y
F 1.1.10	Publish list proposal	From the received notification the Electoral Committee must be able to publish the list proposals (External web page and for printing - See use case 5.1 Reporting)	Y, in App 2A	Y
F 1.1.11	Reject with reason	The system shall store the rejection with a reason.	Ν	Y
F 1.1.12	Notify party/group	The system shall notify the party/candidate with a verification error and information of how to handle the error or deviation.	Ν	Y
F 1.1.13	Reject with reason	The system shall store the rejection with a reason	Ν	Y
F 1.1.14	Notify party/group	The system shall notify the party/candidate with a verification error and information of how to handle the error/deviation.	N	Y
Performance	ce Requirements			
P 1.1.1	Indication of performance	General election – ~10-20 parties/groups, 3600 candidates County election - ~ 18 parties/groups, 7000 candidates over a 3 month period (19 counties) Municipality election - ~ 221 parties/groups, 63 000 candidates over a 3 month period (430 municipalities)	N	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Require ment met?
Functiona	al Requirements			
F 1.2.1	Present list proposals	The system shall present all list proposals submitted by the parties/groups	Y, in App 2A	Y
F 1.2.2	Approve list proposal?	The Electoral Committee must be able to approve/reject a list proposal.	Y, in App 2A	Y
F 1.2.3	Store approval	The system must store the approval.	Ν	Y
F 1.2.4	Notify party/group, candidate and Electoral Committee	The system shall notify Party/Group and Electoral Committee regarding the approval	Ν	Y
F 1.2.5	Publish approved parties/groups	The Electoral Committee must be able to publish a list of approved parties on a web page that is available to the general public.	Y, in App 2A	Y
F 1.2.6	Edit list proposal	The Electoral Committee must be able to edit (Create, update or remove) candidates and signatures on a list proposal if necessary. (There will be a dialogue/negotiation between Party/Group and EC regarding this step.)	Y, in App 2A	Y
F 1.2.7	Store changes	Changes made to candidates or signatures must be stored in the system.	Ν	Y
F 1.2.8	Notify party/group/candidate	The system shall notify party/group/candidates regarding changes made to the list proposal. Candidates and parties/groups may submit a complaint according to §6-6 and §6-8. The complaint may result in amendments to the list proposal.	N	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional	Requirements			
F 2.1.1	Voter listed in Electoral Roll?	The system shall present valid elections/referendums to the voter based on their rights in the Electoral Roll.	Y	Y
F 2.1.2	Select election	The voter must be able to select one of the elections/referendums presented by the system. The voter must be able to vote any number of times and on any number of elections/referendums without having to re- authenticate each time they cast a vote.	Y	Y
F 2.1.3	Select voting options/adjustments	The voter must be able to select vote options and make necessary adjustments before casting their vote. The voter shall be presented with a set of steps and options depending on the configuration of the election/referendum (See use case 0.2 'Configuration of Election System' and 'Representation of the People Act'). Display of party lists must be random if parties are displayed to the user. The system shall facilitate candidate search if the election is pre- configured to allow for adjustments.	Y	Y
F 2.1.4	Cast vote	The voter casts their vote	Y	Y
F 2.1.5	Store vote and make preliminary mark off Electoral Roll	The system makes a preliminary mark off against the voter in the Electoral Roll. The system shall flag whether the vote has been cast in a controlled or uncontrolled environment. Votes cast in a control environment overrides any subsequent e-votes cast in an uncontrolled environment. The system must store the vote securely in the system.	Y	Y
F 2.1.6	Notify voter	The system shall notify the voter that their vote has been cast	Y	Y
F 2.1.7	Store exception	The system shall store the exception if the voter does not exist in the Electoral Roll and terminate the use case. The exception is handled in use case 0.3 'Electoral Roll'.	Y	Y

F 2.1.8	Notify voter	The system shall notify voter that they do not exist in electoral roll. The notification message shall describe the process for applying for membership in electoral roll.	Y	Y
Performanc	e Requirements			
P 2.1.1		The system must be easy scalable for performance of this use case in peak hours. Figures are not available at the moment.	Y, in App 2A	Y
Other non-f	unctional requiremes			
NF 2.1.1		The voter shall not receive message about previous votes at any step in	Y, in App	Y
		the process.	2A	

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional I F 3.1.1	Requirements Check voter against Electoral Roll	 The Polling Committee/Electoral Committee must be able to check the following for all voters: Whether the voter is listed in the Electoral Roll Whether the voter is listed in the Electoral Roll for the municipality Whether the voter already has cast an advance paper vote The system must facilitate barcode scanning of voting cards as well as the functionality for searching for a voter in the Electoral Roll. 	Y, in App 2A	Y
F 3.1.2	Mark off in the Electoral Roll	The Polling Committee/Electoral Committee must be able to mark off voters in the Electoral Roll for voters that belongs to the municipality and has not already cast an advance paper vote.	Y, in App 2A	Y
F 3.1.4	Register data	 The Polling Committee/Electoral Committee must be able to: Register that they have received votes from voters that do not exist in the Electoral Roll. Register that they have received votes from voters that do not exist in the Electoral Roll of the municipality Register that they have received votes from voters that have already cast an advance p-vote 	Y, in App 2A	Y
F 3.1.5	Store registration	The registration must be stored in the system. The system shall notify the relevant Committee regarding these exceptions.	N	Y
F 3.1.3	Store mark off	The system shall store mark off.	Ν	Y
F 3.1.7	Store preliminary mark off	The system shall store preliminary mark off.	Y, in App 2A	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirement met? (Y/N)
Functional	Requirements		-	
F 3.2.1	Register counted results	 The Polling Committee Electoral Committee and County Electoral Committee must be able at various stages to enter: 1. Advance results a. Preliminary results (Party totals) - §10-5 b. Final results (Party and candidate totals) - §10-6 2. Election day results a. Preliminary results (Party totals) - §10-5 b. Final results (Party and candidate totals) - §10-5 b. Final results (Party and candidate totals) - §10-6 2. Election day results a. Preliminary results (Party totals) - §10-5 b. Final results (Party and candidate totals) - §10-6 3. It must be possible to import the results in various formats (csv, xls, etc.). These formats will be defined at a later stage. The County Electoral Committee is only involved in this step for the County Council Election and Parliament Election. 	Y, in App 2A	Y
F 3.2.2	Register data for election protocol	 The Electoral Committee, Polling Committee and County Electoral Committee must be able to register data for the election protocol (§10-7). This data will be defined at a later stage, however may include: 1. Number of questionable ballots (that do not meet the requirements of §10-3) 2. Number of votes received in a cover envelope 3. Etc. 	Y, in App 2A	Y
F 3.2.3	Store registration	Election results and data for the Electoral Protocol are stored in the system.	Ν	Y
F 3.2.4	Present results and show difference	The system shall present preliminary and final results for the various levels depending on election and show differences between those results.	Y, in App 2A	Y
F 3.2.5	Approve result?	Authorized election members must be able to approve the results.	Y, in App 2A	Y
F 3.2.6	Store approval	The approval is stored in the system	Ν	Y
F 3.2.7	Notify approval	The system shall notify relevant Committees regarding the approval of results.	N	Y
F 3.2.8	Overwrite final results	The relevant Committee must be able to overwrite the results if there is a difference between the preliminary and final results.	Y, in App 2A	Y

F 3.2.9	Recount	The relevant Committee must perform a recount.	Ν	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirement met? (Y/N)
Functional	Requirements			
F 3.3.1	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.)	Y	Y
F 3.3.2	Scan ballots	The relevant Committee scans ballots. The scanner shall produce image files suitable for optical character recognition according to industry standards.	Y	Y
F3.3.3	Read ballots	The election system must be able to perform optical character recognition 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.	Y, in App 2A	Y
F 3.3.4	Store results	Election results and data for the Election Protocol is stored in the system.	N	Y
F 3.3.5	Present results and show difference	The system must be able to present preliminary and final results and the difference between preliminary and final results.	Y, in App 2A	Y
F 3.3.6	Approve results?	Relevant Committee must be able to approve the results.	Y	Y
F 3.3.7	Store approval	The approval is stored in the system.	Ν	Y
F 3.3.8	Notify approved results	The system shall notify the relevant Committees regarding the approval.	N	Y
F 3.3.9	Overwrite results	The relevant Committee must be able to overwrite the results if there is a difference between the preliminary and final results.	Y, in App 2A	Y

F 3.3.12	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 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.	Y, in App 2A	Ŷ
F 3.3.13	Store with reason	Rejected ballots will be stored the system with a reason.	N	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirement met? (Y/N)			
Functional	Requirements						
F 3.4.1	Count valid e-votes	The system must facilitate the counting of valid e-votes (Last e-vote submitted). The system must be able to check to see whether the voter has: 1. Also cast a p-vote. A p-vote overrides any e-votes submitted. 2. Cast an e-vote in a controlled environment. E-vote cast in a controlled environment overrides any e-votes later cast in an uncontrolled environment The system must ensure the secrecy of the e-vote in the counting phase. E.g. in small constituencies the e-votes shall be counted together with another constituency.	Y, in App 2A	Y			
Performanc	Performance Requirements						
P3.4.1		The system must have capacity to count approximately 2 000 000 e- votes in 30 minutes.	Y, in App 2A	Y			

Identifier	Function	Requirement description	Elaborate (Y/N)	Requiremen t met? (Y/N)
Functional	Requirements			
F 3.5.1	Verify vote according to \$10.1 and \$10.2	Votes received in a cover envelope will have to be verified (Set as approved or rejected with reason) according to the law (§10- 1 and §10-2).	Y, in App 2A	Y
F 3.5.2	Mark off in Electoral Roll	The Electoral Committee must be able to mark the voter off in the Electoral Roll.	Y, in App 2A	Y
F 3.5.3	Store mark off in Electoral Roll	The system shall store the vote as approved and mark off voter in the electoral roll (Final mark off).	Y, in App 2A	Y
F 3.5.4	Verify ballot according to §10.3	Ballots from votes received in cover envelope and questional ballots from the Polling Committee will have to be verified (Set as approved or rejected with reason) according to the law (§10- 3).	Y, in App 2A	Y
F 3.5.5	Register data	The Electoral Committee must be able to register rejected votes with a reason according to (\$10-1 and \$10-2)	Y, in App 2A	Y
F 3.5.6	Store rejection with reason	Rejected votes will not be marked off in the electoral roll. The rejection must be stored with a reason.	N	Y
F 3.5.7	Register data	The Electoral Committee must be able register rejected ballots with a reason according to (§10-3)	Y, in App 2A	Y
F3.5.8	Store rejection with reason	The rejection must be stored with a reason.	Ν	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirement met? (Y/N)
Functional	Requirements			
F 4.1.1	Choose report	The system must present reports which can be run.	Y, in App 2A	Y
F 4.1.2	Run export	The Electoral Committee must be able to select any report or system data from a contest and run an export data to SSB.	Y, in App 2A	Y
F 4.1.3	Transfer data to SSB	The system shall transfer data via a service in the formats defined by SSB.	Y, in App 2A	Y
F 4.1.4	Receive data	SSB received data from the Election System	Ν	Y
F 4.1.5	Create confirmation	SSB creates a confirmation message which is sent back to the Election System	N	Y
F 4.1.6	Store confirmation	The Election system stores the confirmation	Y, in App 2A	Y
F 4.1.7	Notify Electoral Committee	The Election System notifies the Electoral Committee regarding the confirmation	N	Y
F 4.1.8	Create exception	SSB creates an exception message which is sent back to the Election System	N	Y
F 4.1.9	Store exception	The Election system stores the confirmation	Y, in App 2A	Y
F 4.1.10	Notify Electoral Committee	The Election System notifies the Electoral Committee regarding the exception	N	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requireme nt met? (Y/N)
Functional	Requirements			
F 4.2.1	Merge e-votes and p-votes	The system must facilitate a secure and reliable method to aggregate e-votes and p-vote results and to calculate a correct result.	Y, in App 2A	Y
F 4.2.2	Distribute seats and return members	The system shall calculate the correct distribution of seats and returning of members according to a preconfigured method (e.g. St Lagües modified method)	Y, in App 2A	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional	Requirements			
F 5.1.1	Select election/referendum	The designer must be able to find and select the election/referendum he/she wants to edit or create a new report for.	Y, in App 2A	Y
F 5.1.2	Create report	The designer must be able to create and configure a new report. The 'report design module' shall provide alternate modes so that the user can choose whether to work in visual mode or directly in the query language. No reports shall be hard coded. Report creation shall not be restricted only to developers. The designer must be able to configure a report to run at any time and date during an election/referendum.	Y, in App 2A	Y
F 5.1.3	Preview report	The system presents a preview of the report	Y, in App 2A	Y
F 5.1.4	Store report	The report is stored in the system	Y, in App 2A	Y
F 5.1.5	Select election/referendum	The Electoral Committee must be able to find and select the election/referendum they want to extract a report from.	Y, in App 2A	Y
F 5.1.6	Select report	The Electoral Committee must be able to find and select the report (Election results or system data) they wish to run.	Y, in App 2A	Y
F 5.1.7	Present results	The system shall present results to the user.	Y, in App 2A	Y

F 5.1.8	Manage results	The Electoral Committee must be able to manipulate (sort, filter and group) the report results. The Electoral Committee must be able to save the report results (election results, system data, ballots, polling cards etc.) either in the system or on a local machine as in various formats: 1. CSV 2. HTML 3. XML 4. EML 5. PDF 6. RTF 7. ODF 8. OOXML 9. Image formats (BMP, GIF, JPEG, PNG, TIFF, EMF) 10. Formats required for: a. The production of ballots based on approved list proposals. Ballots must be created in a format that can be read by the ICR. b. The production of polling cards based on data in the Electoral Roll. The polling card shall have a barcode.	Y, in App 2A	Y
		 Ballots must be created in a format that can be read by the ICR. b. The production of polling cards based on data in the Electoral Roll. The polling card shall have a barcode. 11. Commonly used publishing formats which makes it easy to publish system data (list proposals) and election results to public portals (e.g. www.valgresultat.no) 		
		The Electoral Committee must be able to save system data or results to a location where they can be downloaded by authorized individuals for production. The Electoral Committee must be able to e-mail a report as an attachment in any of the formats specified. The Electoral Committee must be able to export results to SSB – see 'Use Case 4.1 Reporting of results to SSB'.		
F 5.1.9	Select existing report	The designer must be able to choose from existing reports	Y, in App 2A	Y
F 5.1.10	Edit existing report	The designer must be able to edit existing report.	Y, in App 2A	Y

Identifier	Function	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
Functional	Requirements		1	
F 5.2.1	Log all events	 The system must be able to log all significant events (Record user, time and events). Some of these logs may include: 1. All election transactions 2. Attacks on the operation of the election system and its communications infrastructure 3. System failures, malfunctions and other threats to the system 4. Log of events at all levels of the Election System (including e.g. the system operating system level) 5. Etc. The audit logs shall be protected against unauthorized modification. 	Y, in App 2A	Y
F 5.2.2	Access audit log	The auditor must be able to access, filter and search through all audit logs	Y, in App 2A	Y
F 5.2.3	Create report	The auditor must be able to create reports. See use case 5.1 'Reports' for reporting functionality.	Y, in App 2A	Y
F 5.2.4	Monitor event log	The monitoring agent shall run in the background, continuously monitoring the event log detecting abnormal behaviour.	Y, in App 2A	Y
F 5.2.5	Create warning	The system shall create warning and notify the auditor(s)	Y, in App 2A	Y
F 5.2.6	Configure monitor agent	The auditor must be able to configure parameters for detecting abnormal behaviour in the system.	Y, in App 2A	Y
Performanc	e Requirements			
P 5.2.9		The use of audit functions and searching in audit logs, performed during the polling phase of the election, shall have no impact on the voting system capacity or on response times experienced by voters.	Y, in App 2A	Y

P 5.2.10	Response times when using than 1 second. In the case of	the audit system shall normally be less f complicated and 'heavy' search	Y, in App 2A	Y
	operations longer response requirements shall be agree	times may be acceptable. Response time d upon during the system design phase.		

Identifier	Function	Requirement description	Elaborate (Y/N)	Require ment met? (Y/N)
Functional	Requirements			
F 9.1.1	User decides on location	The user decides where they want to access the system from	Ν	Y
F 9.1.3	Access system	The user accesses the system	Y, in App 2A	Y
F 9.1.4	Log on	The user enters log on credentials	Ν	Y
F 9.1.5	Forward to CAI	The system forwards transaction to common identity provider operated by DIFI	Ν	Y
F 9.1.6	Authenticate user	CAI authenticates using the SAML 2.0 protocol. The Election System must be able to integrate with any identity provider via the SAML 2.0-protocol	Ν	Y
F 9.1.7	Return user to election system	The CAI automatically returns the authenticated user to the Election System	N	Y
F 9.1.8	Confirm assertion	The election system receives user authentication assertion and confirms it with the CAI	N	Y
F 9.1.9	Check User roles	The Election System checks user rights (Defined in use case 0.1. 'Definition of roles') and returns associated roles.	Y, in App 2A	Y
F 9.1.10	Select role	The user must be able to select what role he/she wishes to proceed with.	Y, in App 2A	Y
F 9.1.11	Issue temporary voter credentials	An authorized individual issues temporary credentials to voters that have arrived at the Polling Station without an approved e-ID. Temporary voter credentials can only be used once and within a limited configurable time period.	Y, in App 2A	Y
F 9.1.12	Access system	The user accesses the system.	Y, in App 2A	Y
F 9.1.13	Enter temporary credentials	The user enters temporary credentials	Y, in App 2A	Y

F 9.1.14	Authenticate user	The system authenticates user. If the authentication fails, the use case	Y, in App 2A	Y
		terminates and the user is presented with a message. If the		
		authentication succeeds, the system will check user rights and return		
		associated roles to the user.		

Identifier	Requirement description	Elaborate (Y/N)	Requirement met? (Y/N)
Navigation A	rea		
(EL) 1.1.1	All ordinary form pages must contain a navigation area on the left side of the screen.	Ν	Y
(EL) 1.1.2	The navigation area must contain a title for each of the pages of a form. For forms containing track options, only the regular pages shall be shown until a track has been selected.	Ν	Y
(EL) 1.1.3	The page titles in the navigation area must provide an easy-to-understand description of the topic(s) on the page, using as few words as possible. The most important information in the title should be presented first in the text. All page titles within a form must be different from one another. In cases where it is possible to differentiate between different menu options by using easy-to-understand names, numerical codes (numbers used to identify different posts) must be avoided or be placed last.	Ν	Y
(EL) 1.1.4	Each individual page title must be linked to a form page, and allow the form filler to choose the order in which he or she would like to complete, or read, the relevant pages. The representation of the active page must be highlighted.	Ν	Y
(EL) 1.1.4a	The page order in forms must be locked where: 1) the order is significant with regard to response interpretation and quality, or 2) the order will depend on responses given on previous pages.	Ν	Y
(EL) 1.1.5	Standardized text, in the navigation area above the first page reference, must indicate whether the completion order can be random or is locked.	Ν	Y
(EL) 1.1.6	In forms with many pages (normally more than 7 - 8 pages), titles for different groups of pages (group titles) should be added above the pointers to the individual pages, or as a super ordinate level in an expanding menu. Collective terms used for the subordinate pages must be easy to understand for the relevant user group. The group titles must be highlighted.	Ν	Y
The Information	ion Area		
(EL) 1.2.1	All ordinary form pages must contain an information area on the right side of the screen.	Ν	Y
(EL) 1.2.2	In the information area, the user will be presented with a user-requested help and feedback on how to correct errors (error messages and warnings). The text must be presented in its entirety, i.e. not as a tool tip, hint or in another way which require specific positioning of the mouse pointer.	N	Y

(EL) 1.2.3	User-requested help must appear when the user clicks on a standardized help icon in connection with a question. The user can make the help text disappear from the screen by clicking again on the same symbol, and must be replaced by a different text if the user clicks on the icon connected to a different question.	Ν	Y
(EL) 1.2.4	Error messages and warnings must appear in the information area if the corresponding field is clicked upon on a separate validation page.	Ν	Y
(EL) 1.2.5	Both the help texts or error messages/warnings and the input field must be visible within one screen. The start of the information should appear automatically on the same line as the question it relates to.	Ν	Y
Other Eleme	nts		
(EL) 1.3.1	The labels, input fields, help symbols and inline help used in the form must be presented in a separate input area between the navigation area and the information area.	Ν	Y

(EL) 1.3.2	 At the top right hand corner of every ordinary form page, there must be a link entitled"Help". This link must open up a separate page (help page) with access to relevant information about the following topics: About completion and use Brief information stating that a help symbol next to the input fields provides a more detailed explanation, that the system stores data continuously, and that nothing is being submitted before you explicitly tell the system to do so on the last page. About sub-forms and enclosures On how the different forms are interconnected with one another, and the possible need to transfer data and figures between different forms; on how and where to find and download sub-forms, and on how to add an attachment. Contact information About contact person and the relevant authority, telephone number, email address etc for further assistance for both technical and subject-related guidance. About the form General guidance and information about the form which cannot naturally be linked to one specific input field or field group. Including reply deadlines, declarant target group, and in what situations the form is to be used. In addition, legal basis for collecting the information, information about the right of appeal, about penal provisions and about eventual re-use of information. The information may be presented directly in the form or in separate sub-pages, depending on how extensive and detailed the information is. The help page does not have to have a standard page layout. 	Ν	Υ
Track option	s and response-dependent questions (From structure and order)		
(EL) 2.1.1	In forms where a significant number of questions are irrelevant for specific form filler groups, or where different form filler groups shall complete significantly different sets of questions, different tracks must be developed. Each individual user shall be directed to the relevant track. Several tracks may consist of identical pages/question sequences.	N	Y
(EL) 2.1.2	Questions that fall within the scope of a track but still only applies to a small percentage of the declarants (response dependent questions) should be made inaccessible to users which they do not concern. A long sequence of rarely relevant questions should rather be established as a separate track.	Ν	Y

(EL) 2.1.3	Both labels and input fields for response dependent questions must be grayed on the form pages and only be opened for completion if previous answers indicate that they are relevant.	Ν	Y
(EL) 2.1.4	In cases where it is necessary for the purpose of selecting the correct track or response dependent question, an additional filtering question may be added. This shall only be done in cases where the collective simplification for the users is greater than the additional work generated by adding the filtering question.	N	Y
(EL) 2.1.5	Questions which determine track options or response-dependent questions should be presented directly before the relevant track option or response dependent question, unless this conflicts with the logical composition or general division of topics.	Ν	Y
Paging and	bage order (From structure and order)	_	
(EL) 2.2.1	Questions which concern one and the same logical topic should be presented on one page, even if this means that the user will have to scroll vertically. For extensive topics, one should attempt to create logical subcategories and present them on separate pages. A reasonable number of pages is more important than keeping the pages short. It is important to mention that users using screen magnification software will have difficulties with scrolling (From the Norwegian association of the Blind and Partially Sighted).	Ν	Y
(EL) 2.2.2	Fields/questions (if any) relating to personal identification (the number, name and address of the declarant, form filler or inquirer should all appear on the initial form page. Other questions should be avoided on this page. This page must be entitled "Introduction."	Ν	Y
(EL) 2.2.3	When questions presented on different pages are closely related, they should be presented in an order that correspond to the form filler's natural chain of thought, normally moving from premises/ingredients to conclusions/summaries.	Ν	Y
(EL) 2.2.4	If the form will present a summary of completed data across different pages, this summary must be presented on a separate page at the end. This page must be entitled "Summary", and the Summary page must indicate clearly that the form has not yet been submitted.	N	Y
(EL) 2.2.5	Personal identification information about the declarant must be repeated in the form of text, (not input fields) on the Summary Page.	N	Y

(EL) 2.2.6	Each individual page should be delimited with a view to avoid an unreasonably long download time. The download time is affected by such factors as graphics use, the amount and type of controls and the number of fields.	Ν	Y
Page structu	ire (From structure and order)		
(EL) 2.3.1	All form pages must have a heading (page title) which clearly describes what is being dealt with on the relevant page. In cases where the page title is not identical to the short title given in the navigation area, the short title must appear in parentheses after the full title	Ν	Y
(EL) 2.3.2	The order in which the fields appear on a page must follow a natural logic, from the first to the last (e.g. from last year's figures to this year's, from January to December), and from the various components to the end result (e.g. from price per item to total expense).	Ν	Y
(EL) 2.3.3	The order in which all the elements appear on a form page must follow the natural direction for reading from left to right and from the top downwards.	Ν	Y
(EL) 2.3.4	The elements linked to one and the same field must be presented in the following order: < field number (If any)>, <label>, <help symbol="">, <signs (if="" any)="">, < input field>, <descriptive etc="" format,="" limit="" term,="" value="">. On the next line <reference instant<br="" or="" other="">explanation (inline help text)></reference></descriptive></signs></help></label>	Ν	Y
(EL) 2.3.5	In cases where a form contains three or more fields which logically belong together (field category), these fields must be grouped together on the same page and be given a descriptive name. This also applies to additions and subtractions as well as calculations. The category must be marked with outline borders, and all fields belonging to the same group must be kept inside these borders. If the page contains only one category, borders shall not be used.	Ν	Y
(EL) 2.3.5a	As an alternative to outline borders, and in order to indicate a weaker connection, additional space between the rows can be used.	Ν	Y
(EL) 2.3.6	In cases where a field group will not be visible within one single screen, one should if possible attempt to create logical sub-groups and present them separately.	Ν	Y
(EL) 2.3.7	Horizontal scrolling shall not be required. Page elements should be placed vertically, above each other rather than side by side, if necessary to ensure that this requirement is adhered to.	N	Y
(EL) 2.3.8	The choices available for checkboxes, radio buttons and drop down lists must use a wording that is meaningful for the user.	Ν	Y

multiple choice lists should be divided, and single choice lists should be	presented in two	
steps.		
3.7 Identification labels (From Form elements)		
(EL) 3.1.1 Forms with long complex titles should be given an additional easy-to-und similar to the short title given to laws. The short version of the form title parentheses after the formal, full title in the form's title field, so that it ca concept.	derstand short title, N should appear in an be used as a search	Y
(EL) 3.1.2 Field numbers (often used to identify different posts) are only to be inclu they are important for guidance or communication purposes in relation to be avoided in cases where they are not required.	ided in the label when N o the field, and must	Y
(EL) 3.1.3 For electronic forms that are also published in a paper version, the label a field must be identical for both versions, provided the field itself shall ha same meaning in both versions.	assigned to a given N ave the exactly the	Y
(EL) 3.1.4 In cases where it is important to the form filler's understanding of a particle denomination such as percent (%), limit values such as the maximum dec and/or formats, such as date formats, should be described in connection v and not in user-requested help.	icular field, the N duction permitted, with the actual field	Y
Tables (From Form elements)		
(EL) 3.2.1 If a similar set of data shall be submitted for an unknown and varying num form should present a dynamic table where new rows can be added if needed.	mber of units, the N eded.	Y
(EL) 3.2.2 If necessary to avoid vertical scrolling, an existing table must be divided the web form. The individual parts must be divided logically and be given understand headings.	into several tables in N n different easy-to-	Y
(EL) 3.2.2a When utilizing the full page width is essential to avoid horizontal scrollin extensive tables must be presented on a separate page (table page) withou layout. The pages shall be designed to work with a minimum resolution of	ng, particularly N ut the standard page of 800x600.	Y
(EL) 3.2.3 In tables where labels appear above cells (column headings), vertical scro labels disappearing from the screen when filling in the bottom fields, sho	olling resulting in N buld be avoided.	Y

(EL) 3.3.1	A field which receives value(s) automatically from (an) other field(s) that are not visible on the screen at the same time as the receiving field, must be equipped with user requested help explaining where the figure came from. The field or fields from which the figures are being transferred should also be equipped with similar user-requested help explaining the transfer.	Ν	Y
(EL) 3.3.2	Manual transfer of text, or manual copying or summations of figures from one field to another in the same form, or to a different form, should be avoided. In cases where the form filler still has to manually transfer a value from one field to another, this operation must be explained in inline help, present at the receiving field as well as the sending field.	Ν	Y
(EL) 3.3.3	As long as it does not conflict with logic and topic division in general, figures that are part of summations and calculations should be kept on a single page to reduce the need for calculations and transfer of values across pages.	N	Y
(EL) 3.3.4	When a summation has to stretch across several pages, interim sums should appear at the bottom of each page.	Ν	Y
(EL) 3.3.5	If there are several interim sums which are not simultaneously visible to the user, a separate summations group should be created at the bottom of the page. If the interim sums are located on different pages, they should be transferred to a summary page.	N	Y
(EL) 3.3.6	In forms with calculations stretching across several pages whose end result is important to the declarant, the results should be added to a summary page.	Ν	Y
(EL) 3.3.7	In cases where it may be particularly unclear as to where a calculated figure originates from, the calculation formula or basis should be described in inline help. Less important formulas may be included as user-requested help.	Ν	Y
Conventions	and symbol use (From Form elements)		
(EL) 3.4.1	For fields equipped with user-requested help, a clickable symbol, leading to the relevant help text, must be provided. The symbol must be placed directly in front of the relevant input field. Help symbols for groups must be placed directly after the label for the category.	N	Y
(EL) 3.4.2	The help symbol must alter appearance when activated (clicked on).	N	Y
(EL) 3.4.3	Checkboxes must be used where the user is permitted to select more than one out of multiple predefined answers (multiple choice questions), while drop down list or radio buttons must be used where only one answer is permitted (single choice questions).	Ν	Y

(EL) 3.4.4	For public forms, pre-selected values should not be provided for checkboxes or radio buttons. In cases where the user is permitted to give an empty answer, "Don't know" or "No reply" (e.g.) shall be a valid and selectable option.	Ν	Y
(EL) 3.4.5	Where it may serve to improve the form filler's understanding of the task, checkboxes, radio buttons and drop down lists should be used instead of open input fields.	Ν	Y
(EL) 3.4.6	To save place, drop down list should be preferred to radio buttons when presenting a large number of mutually exclusive response alternatives. For tables, radio buttons are not an option.	Ν	Y
(EL) 3.4.7	For dates, the format dd.mm.yyyy must be used.	Ν	Y
(EL) 3.4.8	The following should be the standard order for elements that can receive focus with the help of the tab key on the keyboard: Help symbol (if any) for the first input field ->the input field (or first value from the top of the options list)-> forward button to the next form page (or the next natural option)->other elements on the page (if any). Grayed fields are skipped in the tab sequence. It is important that as many shortcut keys are defined as possible, for example in terms of search, storing data etc, as long as the shortcut keys are well known (de facto standards). This will improve the user experience especially for people with visual impairments (From the Norwegian association of the Blind and Partially Sighted).	Ν	Y
(EL) 3.4.9	Fonts, font sizes, colors and other graphic elements, must be used consistently and uniformly in all forms issued by the same inquirer. The forms must differentiate clearly between various types of elements (headings, category headings, labels, error messages and warnings, etc.). As a general rule, sans serif fonts should be used and colors should provide good contrast.	Ν	Y
(EL) 3.4.10	The form must comply with current conventions relating to web accessibility for all, including	Ν	Y
	WAI requirements and general W3C conventions.		
Prefilling (Fr	om Help and feedback messages)		
(EL) 4.1.1	Information which the inquirer has access to internally or from other sources, should only be presented in the form if the presentation is relevant to the form filler.	N	Ŷ
(EL) 4.1.2	When it is necessary to check if registered information is (still) correct, this information should be prefilled in the form. The same applies to deduction rates and other constants which may be useful to the user.	N	Y
(EL) 4.1.3	Prefilled information, for example from public registers, which the form filler can not alter, should appear as text, while editable prefilled values must be presented in a field.	Ν	Y

(EL) 4.1.4	In cases where prefilled register data cannot be altered in the form, information on how to report changes elsewhere, must be provided in inline help.	Ν	Y
Help texts (F	rom Help and feedback messages)		
(EL) 4.2.1	Help texts believed to be necessary to a large percentage of form fillers must be presented briefly in the input area as inline help. Where a more extensive textual presentation is required, this information must be supplemented with a more detailed userrequested help.	Ν	Y
(EL) 4.2.2	All fields, which according to experience lead to inquiries from form fillers, must be equipped with explanatory user-requested help. Avoid help texts where it would not provide additional information of relevance to any user group.	Ν	Y
(EL) 4.2.3	Explanations provided in user-requested help must be adapted to fit the needs of the least skilled form fillers who do not make use of professional advisers and do not complete their form through professional systems.	Ν	Y
(EL) 4.2.4	One user-requested help text should not exceed the height of one single screen.	Ν	Y
(EL) 4.2.5	In cases where it is necessary to provide a quite extensive presentation as userrequested help, it should be presented in two layers, so that a basic general description points to a separate in- depth description. The in-depth description must be presented on a separate page (in-depth page) which does not have to follow the standard page layout.	Ν	Y
(EL) 4.2.6	Where it may be useful to the users, the help texts should contain links to other fields, words or phrases found in the form. Links may also be provided to information of special interest, or information which may interest particular user groups, if the text specifies clearly what kind of information the link leads to, and who it concerns. Links to information that is irrelevant to the form completion should be avoided.	Ν	Y
(EL) 4.2.7	Vital general information that is not related to individual fields or field groups, must be presented on a separate help page to the form in general.	Ν	Y
(EL) 4.2.8	Considerable effort should be put into tailor-making text for web presentation. In general, the help texts must be shorter, more structured and divided into smaller segments than what would have been acceptable for guidance material produced on paper.	N	Y
(EL) 4.2.9	The readability of help texts should be increased through use of typographic means. Except for very brief phrases, the texts should be broken into a series of easily readable chunks with highlighted headings and keywords.	Ν	Y

(EL) 4.3.1 In cases of incorrect completion of individual fields, an error message must appear in the information area and the relevant field must be clearly marked. Messages presented in a separate window (dialogue boxes or pop-ups) must not be used. N Y (EL) 4.3.2 An overview of all cases where mandatory input fields have been left blank, and of errors detected by cross-validation, must appear in an all-inclusive error summary on a separate validation page prior to signing/submission. The list must also contain cases relating to incorrect completion which have not been corrected during completion. N Y (EL) 4.3.3 The error summary should also include warnings relating to unusual, but permitted values or ombinations or values, such as improbable deviations (e.g. from the expected date, or known average values) or improbable combinations (e.g. from the expected date, or known average values) or improbable combinations (e.g. throw the validation page, the user must be directed to the right place in the form, where the relevant field/fields must be clearly marked. And the complete error message and/or warning must appear in the information area N Y (EL) 4.3.5 Once the user has corrected the error or made other changes, the error summary must be updated the next time the validation page is presented. N Y (EL) 4.3.6 The purpose of a merror message is to help the form filler. The error message shall not primarily tell what is done wrong, but must point out how to fill it in correctly. (Use "Enter a valid postal code", rather than "the postal code" is invalid"). N Y (EL) 4.3.7 The purp	Error messa	ges and warnings (From Help and feedback messages)		
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(EL) 4.3.3The error summary should also include warnings relating to unusual, but permitted values or combinations of values, such as improbable deviations (e.g. from the expected date, or known average values) or improbable combinations (e.g. turnover / number of employees, age / number of children). The error summary must indicate clearly which of the errors listed that are absolute errors and which are improbabilities.NY(EL) 4.3.4By clicking on an error in the error summary on the validation page, the user must be directed to the right place in the form, where the relevant field/fields must be clearly marked. And the complete error message and/or warning must appear in the information areaNY(EL) 4.3.5Once the user has corrected the error or made other changes, the error summary must be updated the next time the validation page is presented.NY(EL) 4.3.6The purpose of an error message is to help the form filler. The error message shall not primarily tell what is done wrong, but must point out how to fill it in correctly. (Use "Enter a valid postal code", rather than "the postal code is invalid").NY(EL) 4.3.7The purpose of a warning is to make the form filler reconsider whether the field has been 	(EL) 4.3.2	An overview of all cases where mandatory input fields have been left blank, and of errors detected by cross-validation, must appear in an all-inclusive error summary on a separate validation page prior to signing/submission. The list must also contain cases relating to incorrect completion which have not been corrected during completion.	Ν	Y
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(EL) 4.3.8Error messages or warnings relating to a cross-validation must include a standard text explaining that the (possible) error may be found in any and all fields included in the validation. All of the relevant fields must be marked as containing errors/possible errors.NY(EL) 4.3.9An error message or warning must not exceed the height of one screen.NY	(EL) 4.3.7	The purpose of a warning is to make the form filler reconsider whether the field has been correctly filled in. The text used in the warning, or on the validation page, must specify clearly that the entered value/combinations will be accepted as valid without alterations	N	Y
(EL) 4.3.9 An error message or warning must not exceed the height of one screen. N Y	(EL) 4.3.8	Error messages or warnings relating to a cross-validation must include a standard text explaining that the (possible) error may be found in any and all fields included in the validation. All of the relevant fields must be marked as containing errors/possible errors.	Ν	Y
	(EL) 4.3.9	An error message or warning must not exceed the height of one screen.	Ν	Y

(EL) 5.1.1	Following submission, a confirmation page must confirm that the form has been received. The confirmation page must identify the inquirer and provide identification information about the declarant. The confirmation page must also provide the user with a reference number to be used in further, future communication between the declarant/form filler and the inquirer.	Ν	Y
(EL) 5.1.2	In forms with a summary page, the information on this page must be repeated on the confirmation page, to the extent it could be of value to the user.	Ν	Y
(EL) 5.1.3	The confirmation page should state clearly that new errors may be discovered during the further processing.	Ν	Y
(EL) 5.1.4	On the confirmation page, the user must have the opportunity to print the confirmation page, and to receive it by email.	N	Y
Other extern	al functions related to the form (From the form environment)		
(EL) 5.2.1	In the best possible manner the inquirer must facilitate for that external websites, as well as their own websites, are able to deep link to each of the individual forms. I.e. that the link must lead directly to the form and not to a superordinate site or an intermediate page level. For sites with logins, users who have followed the form link must come directly to the relevant form after login.	Ν	Y
(EL) 5.2.2	In the best possible manner, the inquirer must facilitate for that both external, as well as internal searches are able to locate all forms, including all parts of a form set, whether the search phrase include elements of the full title of the form, or its short title (if any).	Ν	Y
(EL) 5.2.3	In the best possible manner, the inquirer must facilitate for that the text presented under About the Form is accessible from both external as well as internal form overviews and collections of links, before the actual form is selected.	Ν	Y
(EL) 5.2.4	In forms with required login, the user (form filler) must at all times be informed that he/she is logged in, and have easy access to log out. The username or other identifying information must be presented in the top right hand corner of every page followed by a log-out button directly below	N	Y
(EL) 5.2.5	The user experience of forms and form environments, must be approximately the same for all browsers and operating systems that are more than marginally used in the market.	Ν	Y

(EL) 5.2.6	It must be possible to print out the entire form or relevant parts of the form, i.e. all labels, response alternatives and entered replies (if any) both before, during, and after completion. In addition, the form must facilitate for separate printouts of the confirmation page, the	N	Y
	validation page, help overview and in depth pages (if any).		
(EL) 5.2.7	In cases where the form filler will have to select a value from a comprehensive code set, he/she must be given easy access to the alternatives through a built-in search function, or other suitable well constructed dialogue. The selected code should be entered automatically into the relevant field.	Ν	Y
(EL) 5.2.8	Prior to submission of form sets, an overview must be presented, indicating which forms are included in the submission.	Ν	Y
(EL) 5.2.9	All entered data in a form must be saved automatically as often as possible during completion.	Ν	Y
(EL) 5.2.10	In order to ensure legal protection and traceability for the declarant, it must be possible to retrieve an authentic representation of all data entered, into the same form version that was used during completion of the form.	N	Y
Accessibility	Bequirements (WCAG 2 0)		
Accessionity			
WG 1.1	Text Alternatives: Provide text alternatives for any non-text content		
WG 1.1 WG 1.1.1	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A)		
WG 1.1 WG 1.1.1 WG 1.1.1.1	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text.	N	Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text.	N N	Y Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2 WG 1.1.1.3	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text. Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page.	N N N	Y Y Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2 WG 1.1.1.3 WG 1.1.1.4	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text. Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page. Form buttons have a descriptive value.	N N N N	Y Y Y Y Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2 WG 1.1.1.2 WG 1.1.1.3 WG 1.1.1.4 WG 1.1.1.5	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text. Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page. Form buttons have a descriptive value. Form inputs have associated text labels or, if labels cannot be used, a descriptive title attribute.	N N N N N	Y Y Y Y Y Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2 WG 1.1.1.2 WG 1.1.1.3 WG 1.1.1.4 WG 1.1.1.5 WG 1.1.1.6	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text. Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page. Form buttons have a descriptive value. Form inputs have associated text labels or, if labels cannot be used, a descriptive title attribute. Embedded multimedia is identified via accessible text.	N N N N N N	Y Y Y Y Y Y Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2 WG 1.1.1.2 WG 1.1.1.3 WG 1.1.1.4 WG 1.1.1.5 WG 1.1.1.6 WG 1.1.1.7	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text. Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page. Form buttons have a descriptive value. Form inputs have associated text labels or, if labels cannot be used, a descriptive title attribute. Embedded multimedia is identified via accessible text. Frames are appropriately titled.	N N N N N N N	Y Y Y Y Y Y Y Y
WG 1.1 WG 1.1.1 WG 1.1.1.1 WG 1.1.1.2 WG 1.1.1.2 WG 1.1.1.3 WG 1.1.1.4 WG 1.1.1.5 WG 1.1.1.6 WG 1.1.1.7 WG 1.2	Text Alternatives: Provide text alternatives for any non-text content Non-text Content (Level A) All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text. Images that do not convey content, are decorative, or with content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text. Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page. Form buttons have a descriptive value. Form inputs have associated text labels or, if labels cannot be used, a descriptive title attribute. Embedded multimedia is identified via accessible text. Frames are appropriately titled. Time-based Media: Provide alternatives for time-based media	N N N N N N N	Y Y Y Y Y Y Y Y

WG 1.2.1.1	A descriptive text transcript (including all relevant visual and auditory clues and indicators) is provided for non-live, web-based audio (audio podcasts, MP3 files, etc.).	N	Y
WG 1.2.1.2	A text or audio description is provided for non-live, web-based video-only (e.g., video that has no audio track).	Ν	Y
WG 1.2.2	Captions (Prerecorded) (Level A)		
WG 1.2.2.1	Synchronized captions are provided for non-live, web-based video (YouTube videos, etc.)	N	Y
WG 1.2.3	Audio Description or Media Alternative (Prerecorded) (Level A)		
WG 1.2.3.1	A descriptive text transcript OR audio description audio track is provided for non-live, web- based video	Ν	Y
WG 1.2.4	Captions (Live) (Level AA)		
WG 1.2.4.1	Synchronized captions are provided for all live multimedia that contains audio (audio-only broadcasts, web casts, video conferences, Flash animations, etc.)	Ν	Y
WG 1.2.5	Audio Description (Prerecorded) (Level AA)		
WG 1.2.5.1	Audio descriptions are provided for all video content NOTE: Only required if the video conveys content visually that is not available in the default audio track	N	Y
WG 1.2.6	Sign Language (Prerecorded) (Level AAA)		
WG 1.2.6.1	A sign language video is provided for all media content that contains audio.	Ν	Y
WG 1.2.7	Extended Audio Description (Prerecorded) (Level AAA)		
WG 1.2.7.1	When an audio description track cannot be added to video due to audio timing (e.g., no pauses in the audio), an alternative version of the video with pauses that allow audio descriptions is provided.	Ν	Y
WG 1.2.8	Media Alternative (Prerecorded) (Level AAA)		
WG 1.2.8.1	A descriptive text transcript is provided for all pre-recorded media that has a video track.	N	Y
WG 1.2.9	Audio-only (Live) (Level AAA)		
WG 1.2.9.1	A descriptive text transcript (e.g., the script of the live audio) is provided for all live content that has audio	Ν	Y
WG 1.3	Adaptable: Create content that can be presented in different ways (for example simpler layout) without losing information or structure		
WG 1.3.1	Info and Relationships (Level A)		

WG 1.3.1.1	Semantic markup is used to designate headings (<h1>), lists (, , and <dl>),</dl></h1>	Ν	Y
	emphasized or special text (, <code>, <abbr>, <blockquote>, for example), etc. Semantic markup is used appropriately.</blockquote></abbr></code>		
WG 1.3.1.2	Tables are used to markup tabular data. Headings, where necessary, are used to associate data cells with headers. Data table captions and summaries are used where appropriate.	N	Y
WG 1.3.1.3	Text labels are associated with form input elements. Related form elements are grouped with fieldset/legend	Ν	Y
WG 1.3.2	Meaningful Sequence (Level A)		
WG 1.3.2.1	The reading and navigation order (determined by code order) is logical and intuitive.	Ν	Y
WG 1.3.3	Sensory Characteristics (Level A)		
WG 1.3.3.1	Instructions do not rely upon shape, size, or visual location (e.g., "Click the square icon to continue" or "Instructions are in the right-hand column").	Ν	Y
WG 1.3.3.2	Instructions do not rely upon sound (e.g., "A beeping sound indicates you may continue.").	Ν	Y
WG 1.4	Distinguishable: Make it easier for users to see and hear content including separating foreground from background		
WG 1.4.1	Use of Color (Level A)		
WG 1.4.1.1	Color is not used as the sole method of conveying content or distinguishing visual elements.	N	Y
WG 1.4.1.2	Links are distinguishable from surrounding text. If color alone is used to distinguish links, an additional differentiation (e.g., it becomes underlined) is provided when it receives focus.	N	Y
WG 1.4.2	Audio Control (Level A)		
WG 1.4.2.1	A mechanism is provided to stop, pause, mute, or adjust volume for audio that automatically plays on a page for more than 3 seconds.	Ν	Y
WG 1.4.3	Contrast (Minimum) (Level AA)		
WG 1.4.3.1	Text and images of text have a contrast ratio of at least 4.5:1.	N	Y
WG 1.4.3.2	Large text (over 18 point or 14 point bold) has a contrast ratio of at least 3:1	Ν	Y
WG 1.4.4	Resize text (Level AA)		
WG 1.4.4.1	The page is readable and functional when the text size is doubled.	Ν	Y
WG 1.4.5	Images of Text (Level AA)		

WG 1.4.5.1	If the same visual presentation can be made using text alone, an image is not used to present that text.	Ν	Y
WG 1.4.6	Contrast (Enhanced) (Level AAA)		
WG 1.4.6.1	Text and images of text have a contrast ratio of at least 7:1.	Ν	Y
WG 1.4.6.2	Large text (over 18 point or 14 point bold) has a contrast ratio of at least 4.5:1	Ν	Y
WG 1.4.7	1.4.7 Low or No Background Audio (Level AAA)		
WG 1.4.7.1	Audio of speech has no or very low background noise so the speech is easily distinguished.	Ν	Y
WG 1.4.8	Visual Presentation (Level AAA) Blocks of text over one sentence in length:		
WG 1.4.8.1	Are no more than 80 characters wide.	Ν	Y
WG 1.4.8.2	Are NOT fully justified (aligned to both the left and the right margins).	Ν	Y
WG 1.4.8.3	Have adequate line spacing (at least 1/2 the height of the text) and paragraph spacing (1.5 times line spacing).	Ν	Y
WG 1.4.8.4	Have a specified foreground and background color. These can be applied to specific elements or to the page as a whole using CSS (and thus inherited by all other elements).	Ν	Y
WG 1.4.8.5	Do NOT require horizontal scrolling when the text size is doubled	Ν	Y
WG 1.4.9	Images of Text (No Exception) (Level AAA)		
WG 1.4.9.1	Text is used within an image only for decoration (image does not convey content) OR when the information cannot be presented with text alone.	Ν	Y
WG 2.1	Keyboard Accessible: Make all functionality available from a keyboard		
WG 2.1.1	Keyboard (Level A)		
WG 2.1.1.1	All page functionality is available using the keyboard, unless the functionality cannot be accomplished in any known way using a keyboard (e.g., free hand drawing).	Ν	Y
WG 2.1.1.2	Keyboard focus is never locked or trapped at one particular page element. The user can navigate to and from all navigable page elements.	N	Y
WG 2.1.1.3	All page functionality is available using the keyboard.	Ν	Y
WG 2.2	Enough Time: Provide users enough time to read and use content		
WG 2.2.1	Timing Adjustable (Level A)		

WG 2.2.1.1	If a page or application has a time limit, the user is given options to turn off, adjust, or extend that time limit. This is not a requirement for real-time events (e.g., an auction), where the time limit is absolutely required, or if the time limit is longer than 20 hours. Suppliers may deviate from this guideline if their planned solution is conflicting with security requirements. If so, the supplier must document why they deviate.	Ν	Y
WG 2.2.2	Pause, Stop, Hide (Level A)		
WG 2.2.2.1	Automatically moving, blinking, or scrolling content that lasts longer than 3 seconds can be paused, stopped, or hidden by the user. Moving, blinking, or scrolling can be used to draw attention to or highlight content as long as it lasts less than 3 seconds. The user must be able to turn off visual effects such as blinking, automatic updates etc (From the Norwegian association of the Blind and Partially Sighted).	Ν	Y
WG 2.2.2.2	Automatically updating content (e.g., automatically redirecting or refreshing a page, a news ticker, AJAX updated field, a notification alert, etc.) can be paused, stopped, or hidden by the user or the user can manually control the timing of the updates.	Ν	Y
WG 2.2.3	No Timing (Level AAA)		
WG 2.2.3.1	The content and functionality has no time limits or constraints. Suppliers may deviate from this guideline if their planned solution is conflicting with security requirements. If so, the supplier must document why they deviate.	Ν	Y
WG 2.2.4	Interruptions (Level AAA)		
WG 2.2.4.1	Interruptions (alerts, page updates, etc.) can be postponed or suppressed by the user.	Ν	Y
WG 2.2.5	Re-authenticating (Level AAA)		
WG 2.2.5.1	If an authentication session expires, the user can re-authenticate and continue the activity without losing any data from the current page. Suppliers may deviate from this guideline if their planned solution is conflicting with security requirements. If so, the supplier must document why they deviate.	Ν	Y
WG 2.3	Seizures: Do not design content in a way that is known to cause seizures		
WG 2.3.1	Three Flashes or Below Threshold (Level A)		
WG 2.3.1.1	No page content flashes more than 3 times per second unless that flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red. (See general flash and red flash thresholds)	Ν	Y
WG 2.3.2	Three Flashes (Level AAA)		
WG 2.3.2.1	No page content flashes more than 3 times per second.	N	Y

WG 2.4	Navigable: Provide ways to help users navigate, find content, and determine where they are		
WG 2.4.1	Bypass Blocks (Level A)		
WG 2.4.1.1	A link is provided to skip navigation and other page elements that are repeated across web pages.	Ν	Y
WG 2.4.1.2	If a page has a proper heading structure, this may be considered a sufficient technique instead of a "Skip to main content" link. Note that navigating by headings is not yet supported in all browsers.		Y
WG 2.4.1.3	If a page uses frames and the frames are appropriately titled, this is a sufficient technique for bypassing individual frames.	Ν	Y
WG 2.4.2	Page Titled (Level A)		
WG 2.4.2.1	The web page has a descriptive and informative page title.		
WG 2.4.3	Focus Order (Level A)		
WG 2.4.3.1	The navigation order of links, form elements, etc. is logical and intuitive.	Ν	Y
WG 2.4.4	Link Purpose (In Context) (Level A)		
WG 2.4.4.1	The purpose of each link (or form image button or image map hotspot) can be determined from the link text alone, or from the link text and it's context (e.g., surrounding paragraph, list item, table cell, or table headers).		Y
WG 2.4.4.2	Links (or form image buttons) with the same text that go to different locations are readily distinguishable.	Ν	Y
WG 2.4.5	Multiple Ways (Level AA)		
WG 2.4.5.1	Multiple ways are available to find other web pages on the site – at least two of: a list of related pages, table of contents, site map, site search, or list of all available web pages.	N	Y
WG 2.4.6	Headings and Labels (Level AA)		
WG 2.4.6.1	Page headings and labels for form and interactive controls are informative. Avoid duplicating heading (e.g., "More Details") or label text (e.g., "First Name") unless the structure provides adequate differentiation between them.	N	Y
WG 2.4.7	Focus Visible (Level AA)		
WG 2.4.7.1	It is visually apparent which page element has the current keyboard focus (i.e., as you tab through the page, you can see where you are).	Ν	Y
WG 2.4.8	Location (Level AAA)		

WG 2.4.8.1	If a web page is part of a sequence of pages or within a complex site structure, an indication of the current page location is provided, for example, through breadcrumbs or specifying the current step in a sequence (e.g., "Step 2 of 5 – Shipping Address").	Ν	Y
WG 2.4.9	Link Purpose (Link Only) (Level AAA)		
WG 2.4.9.1	The purpose of each link (or form image button or image map hotspot) can be determined from the link text alone.	Ν	Y
WG 2.4.9.2	There are no links (or form image buttons) with the same text that go to different locations.	Ν	Y
WG 2.4.10	Section Headings (Level AAA)		
WG 2.4.10.1	Beyond providing an overall document structure, individual sections of content are designated using headings, where appropriate.		Y
WG 3.1	Readable: Make text content readable and understandable		
WG 3.1.1	Language of Page (Level A)		
WG 3.1.1.1	The language of the page is identified using the HTML lang attribute (<html lang="en">, for example).</html>	Ν	Y
WG 3.1.2	Language of Parts (Level AA)		
WG 3.1.2.1	When appropriate, the language of sections of content that are a different language are identified, for example, by using the lang attribute (<blockquote)="" lang="es"></blockquote>	Ν	Y
WG 3.1.3	Unusual Words (Level AAA)		
WG 3.1.3.1	Words that may be ambiguous, unknown, or used in a very specific way are defined through adjacent text, a definition list, a glossary, or other suitable method.	Ν	Y
WG 3.1.4	Abbreviations (Level AAA)		
WG 3.1.4.1	Expansions for abbreviations are provided by expanding or explaining the definition the first time it is used, using the <abbr> element, or linking to a definition or glossary. NOTE: WCAG 2.0 gives no exception for regularly understood abbreviations (e.g., HTML on a web design web site must always be expanded).</abbr>	Ν	Y
WG 3.1.5	Reading Level (Level AAA)		
WG 3.1.5.1	A more understandable alternative is provided for content that is more advanced than can be reasonably read by a person with roughly 9 years of primary education.	Ν	Y
WG 3.1.6	Pronunciation (Level AAA)		
WG 3.1.7.1	If the pronunciation of a word is vital to understanding that word, its pronunciation is provided immediately following the word or via a link or glossary.	N	Y
WG 3.2	Predictable: Make web pages appear and operate in predictable ways		

WG 3.2.1	On Focus (Level A)		
WG 3.2.1.1	When a page element receives focus, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user.	N	Y
WG 3.2.2	On Input (Level A)		
WG 3.2.2.1	When a user inputs information or interacts with a control, substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user unless the user is informed of the change ahead of time.	Ν	Y
WG 3.2.3	Consistent Navigation (Level AA)		
WG 3.2.3.1	Navigation links that are repeated on web pages do not change in order when navigating through the site	Ν	Y
WG 3.2.4	Consistent Identification (Level AA)		
WG 3.2.4.1	Elements that have the same functionality across multiple web pages are consistently identified. For example, a search box at the top of the site should always be labeled the same way.	Ν	Y
WG 3.2.5	Change on Request (Level AAA)		
WG 3.2.5.1	Substantial changes to the page, the spawning of pop-up windows, uncontrolled changes of keyboard focus, or any other change that could confuse or disorient the user must be initiated by the user. Alternatively, the user is provided an option to disable such changes.	Ν	Y
WG 3.3	Input Assistance: Help users avoid and correct mistakes		
WG 3.3.1	Error Identification (Level A)		
WG 3.3.1.1	Required form elements or form elements that require a specific format, value, or length provide this information within the element's label (or if a label is not provided, within the element's title attribute).	Ν	Y
WG 3.3.1.2	If utilized, form validation cues and errors (client-side or server-side) alert users to errors in an efficient, intuitive, and accessible manner. The error is clearly identified, quick access to the problematic element is provided, and user is allowed to easily fix the error and resubmit the form.	N	Y
WG 3.3.2	Labels or Instructions (Level A)		
WG 3.3.2.1	Sufficient labels, cues, and instructions for required interactive elements are provided via instructions, examples, properly positioned form labels, and/or fieldsets/legends.	N	Y

WG 3.3.3	Error Suggestion (Level AA)		
WG 3.3.3.1	If an input error is detected (via client-side or server-side validation), provide suggestions for fixing the input in a timely and accessible mapper.	Ν	Y
WG 3.3.4	Error Prevention (Legal, Financial, Data) (Level AA)		
WG 3.3.4.1	If the user can change or delete legal, financial, or test data, the changes/deletions are reversible, verified, or confirmed.	N	Y
WG 3.3.5	Help (Level AAA)		
WG 3.3.5.1	If the user can submit, change, or delete information, the information is reversible, verified, or confirmed.	Ν	Y
WG 3.3.6	Error Prevention (All) (Level AAA)		
WG 3.3.6.1	If the user can submit information, the submission is reversible, verified, or confirmed.	Ν	Y
WG 4.1	Compatible: Maximize compatibility with current and future user agents, including assistive technologies		
WG 4.1.1	Parsing (Level A)		
WG 4.1.1.1	Significant HTML/XHTML validation/ parsing errors avoided	Ν	Y
WG 4.1.2	Name, Rule, Value (Level A)		
WG 4.1.2.1	Markup is used in a way that facilitates accessibility. This includes following the HTML/XHTML specifications and using forms, form labels, frame titles, etc. appropriately.	Ν	Y
Other acces	sibility and usability requirements		
AU 1	HTML must be structured according to the logical information flow on a page so that users with assistive devices will be able to get the same order of information as users without special needs.	Y, in App 2A	Y
AU 2	Cross-platform independence for the e-voting client. The e-voting client must work well for most browsers and operating systems. The supplier must list browsers and operating systems that support the e-voting client.	Y, in App 2A	Y
AU 3	The system shall present the end-user with an option to change language when using the application. This means that all content should be presented in the selected language including file attachments providing translated versions have been uploaded to a database.	Y, in App 2A	Y

AU 4	 File attachments formats should be presented in the following formats: PDF – 1.4 or newer, or PDF/A – ISO 19005-1 (Where the intent is to keep the original look and feel of a document) ODF – ISO/IEC 26300 (Documents that the users can modify after download) Note that PDF is difficult for users with visual impairments. Today Microsoft Windows is the most widely used operating system for people with disabilities 2. This means that companies developing assistive devices have mainly been focusing on one OS. This gives an advantage for users with disabilities even if monopoly has its own challenges. Microsoft has an open file format Open Office XML (OOXML) which could be added as to compliment the two others as OOXML is a more accessible format than PDF and ODF (1.0) 	Y, in App 2A	Υ
AU 5	For the e-voting client, pages should be designed so that they do not exceed 200 kb	Y, in App 2A	Y
AU 6	The system shall be unit independent i.e. the user must be able to use the system on different PCs, independent of the PC that was used first time around.	Y, in App 2A	Y
AU 7	The system shall be flexible/elastic and function well within standard resolution ranges (from 800x600 and up).		Y
AU 8	The system shall present the user with options to change text sizes and contrast in any browser.	Y, in App 2A	Y
AU 9	The system shall work with mouse pointers and keyboards in a consistent and standard manner. This also applies to entry fields, radio buttons, drop-down lists etc.	Y, in App 2A	Y
AU 10	Font types such as Thiresias (http://www.tiresias.org/fonts/index.htm - developed especially for users with visual disabilities), Arial or Verdana should be considered. Serifs should be avoided. It must be possible to change the font sizes to 14-16pt (dependent on font type) and larger. Fonts should not be in italics, capital letters or have effects such as for example blinking text. (From the Norwegian association of the Blind and Partially Sighted.)		Y
AU 11	The supplier must make login and authorization as accessible and user friendly as possible. This is normally the first and largest hindrance for users with visual disabilities (<i>From the Norwegian association of the Blind and Partially Sighted.</i>) For the e-voting client, the usability and accessibility of the login and authorization mostly depends on the solution for the forthcoming Common Authentication Infrastructure (CAI) provided by Difi.	Y, in App 2A	Y

AU 12	The supplier must while maintaining high user-friendliness for the solution, remove as many technology-related barriers as possible for the users. For the e-voting client, the suppliers shall NOT use applets, flash, plug-ins, etc. for interaction purposes, and otherwise (for instance for authentication and encryption of ballots to be cast) keep the need for users to download and use these technologies to a minimum.	Y, in App 2A	Y
AU 13	Use of JavaScripting for interaction purposes, will possibly have a negative effect on the user experience for users with assistive devices and should be kept to a minimum. See also AU 1.	Y, in App 2A	Y
AU 14	The response time shall be optimized for all requests with a maximum response time of 2 seconds unless there is a good reason why it should be higher. Response time is measured from the time that the user performs the action that says "Go" until the user receives enough feedback from the computer to continue the task. It is the user's subjective wait time. If expected response time is longer than 2 seconds, the user must be given sufficient feedback during the wait time. If expected response time is longer than 10 seconds, the user must also be notified/warned beforehand.	Y, in App 2A	Y
Methodol	ogy Requirements		
M 1	The supplier shall document how accessibility and usability ties in with overall the development process/methodology.	Y, in App 6 below heading "Accessibility and Usability"	Y
M 2	The supplier shall document accessibility test strategy, how they intend to implement accessibility routines and what tools they intend to use for accessibility validation during development.	Y, in App 6 below heading "Accessibility and Usability"	Y
M 3	The supplier shall document usability test strategy, including methodology and how they intend to implement usability routines within the development team and with regards to the project phases.	Y, in App 6 below heading "Accessibility and Usability"	Y

M 4	The supplier shall provide support to external consultants, independent people that will be brought in to test the solution	Y, in App 6 below heading "Accessibility and Usability"	Y
M 5	The supplier shall document how the design process ties in with the overall development process.	Y, in App 6 below heading "Accessibility and Usability"	Y

Identifier	Requirement	Doc ref / applies to	Elaborate? (Y/N)	Requirement Met? (Y/N)
OS0	General security requirements			
OS0.1	The system must meet the "E-vote 2011 Security Objectives"	General requirement	Ν	Y
OS0.2	The system shall meet the intention of the requirements in the Council of Europe recommendation on E-voting	General requirement	Ν	Y
OS0.3	The election system shall be constructed in a way to facilitate Common Criteria Certification.	General requirement	Ν	Y
OS0.4	One and only one valid vote shall be counted per voter per contest, even if there occured a failure in the election system.	General requirement, UC 3.4	Y, in App 2A	Y
OS0.6	It shall not be possible to insert without proper authorization, delete or modify any votes in the Election System .	General requirement, UC 2.1, 3.4, 4.2	Y, in App 2A	Y
OS0.8	Authorised election officers shall be able to abort the e-voting process while allowing the paper voting for the election event to proceed. If aborted, It shall not be possible to restart the e-voting process for the same election event	General Requirements , UC 0.2	Ν	Y
OS0.9	The election system structure and functionality shall enable all phases of the election to be fully recovered after detected malfunctions of the network connection, of the storage of data or after any failure of the server side election system.	General requirement	Y, in App 2A	Y
OS0.12	The solution for voting in an uncontrolled environment shall issue a message to inform the voter whether the vote has been successfully cast, i.e. is recorded properly in the election system, or not.	UC2.1	Y, in App 2A	Y

OS0.12B	The Election System shall provide the e-voter with 'end-to-end' proof that the cast vote is received, recorded and counted as the voter intended. NOTE: To conteract vote selling, this option may require a judicial process, where the confirmation that the vote is correctly counted is obtained in a controlled environment.	General requirement, UC2.1	Y, in App 2A	Y
OS0.13	The election system shall ensure that the voter's choice is accurately represented in the vote and that the sealed vote is successfully stored.	UC2.1	Y, in App 2A	Y
OS0.14	The election system shall not allow the disclosure of the number of votes cast for any voting option until after the end of the polling phase. This information shall not be disclosed to the public until after the end of the voting period.	UC3.4	Y, in App 2A	Y
OS0.15	The election system shall maintain reliable synchronised time sources. The accuracy of the time source shall be sufficient to maintain time marks for audit trails and observation data, as well as for maintaining the time limits for registration, nomination, voting, or counting.	General requirement, UC 5.2	Y, in App 2A	Y
OS0.16	To allow for delay in messages when passing over the election channel, the acceptance of electronic votes into the election system shall remain open for a configurable period of time after the end of the polling phase.	UC2.1	N	Y
OS0.17	Lists that are forwarded for the production of ballot papers shall be protected against unauthorised access and changes .	UC 1.2	Y, in App 2A	Y
OS0.18	The voter can, at any time up to the point of vote casting, abort his polling process without losing his right to vote. The right to vote shall be retained, even in the event of a technically necessitated abort, for instance due to a timeout or errors during communication	UC2.1	Y, in App 2A	Y
OS0.19	Before executing any action required by the election officers, the election system shall identify and authenticate the election officers and verify the officers right to perform the action.	General Requirmenets , UC 0.1	Ν	Y
0S1	Effective Voter Registration			

OS1.2	The election system shall ensure identification of users in a way that they can unmistakably be distinguished from other persons (unique identification).	UC 9.1	Y, in App 2A	Y
OS1.3	A voter shall only be able to vote in contests that he/she is entitled to vote in.	UC2.1	Ν	Y
OS2	Effective Voter Authenticity			
OS2.1	The e-voting components of he election system shall be configurable to require (re-) authentication for every contest, every vote or every session.	UC2.1	N	Y
OS2.2	The election system shall be able to authenticate voters, party officials and election officers by means of the national eID and other approved electronic ID's in common use in Norway. The national authentication service 'Samttrafikknavet fra DIFI' (CAI) will be used for validation. In addition, when required by EU regulations, the election system shall be able to validate eID from EU member states, if the eID from the EU member statet offers a security level equivalent to the national eID requirement .	UC 9.1	Ν	Y
OS2.3	During remote electronic voting, the voter authentication shall expire after an idle period (idle time-out). The length of the idle time-out period shall be configurable.	UC2.1	N	Y
OS3	Effective Voter Anonymity			
OS3.1	The election system shall guarantee that stored votes are, and will remain, anonymous, and that it is not possible to reconstruct a link between the vote and the voter.	General Requirement	Y, in App 2A	Y
OS3.3	At no time shall votes be in clear text while a link exists between vote and voter in the ESD.	UC 2.1	Y, in App 2A	Y
OS3.4	The election system shall guarantee that votes when counted are, and will remain, anonymous, and that it is not possible to reconstruct a link between the vote and the voter.	General requirement, UC 3.4	Y, in App 2A	Y

OS3.5	The message to the voter, when voting in an uncontrolled environment, confirming that the e-vote has been properly recorded in the election system, shall not reveal the content of the ballot in clear text and shall not reveal whether the e-vote will actually be counted or not.	UC 2.1	Y, in App 2A	Y
OS3.6	The audit system shall maintain voter anonymity at all times.	UC 5.2	Y, in App 2A	Y
OS4	Effective Vote Confidentiality	-		
OS4.1	The election system shall ensure the secrecy of the any vote at all stages of an election.	General requirement	Y, in App 2A	Y
OS4.2	Cryptographic keys, passwords and other confidential information used to protect the secrecy and anonnymity of votes shall be handled in a secure way, to ensure that these cannot be used to breach the secrecy of the vote.	General requirement	Y, in App 2A	Y
OS4.3	The election system shall maintain the privacy of individuals. Confidentiality of voters' registers stored in or communicated by the election system shall be maintained.	General requirement	Y, in App 2A	Y
OS4.4	Residual information holding the e-voter's decision or the display of the e- voter's choice shall be destroyed after the vote has been cast. When voting in an uncontrolled environment, the e-voter shall be provided with information on how to delete, where that is possible, traces of the vote from the device used to cast the vote (e.g. cookies).	UC2.1	Ν	Y
OS4.7	If cryptographic techniques are used to protect the confidenciality and integrity of e-votes and the information in the voting system, the cryptographic keys and asymmetric algorithms shall have a strenght that is equivalent or better than RSA using 2048 bit keys, while symmetric algorithms shall have a strength equivalent to or better than AES-256.	General requirement	Y, in App 2A	Y
OS4.8	Hashing algorithms shall be of a strength equivalent to SHA2 or better. Known weak algorithms such as SHA1 or MD5 shall not be used.	General requirement	Y, in App 2A	Y

OS4.9	The election system shall provide for secure storage and encryption of the submitted e-vote.	General requirement	Y, in App 2A	Y
OS4.11	When cryptographic techniques are used, private or secret cryptographic keys shall be protected in a manner reflecting their importance.	General requirement	Y, in App 2A	Y
OS5	Effective System Identification and Authentication			
OS5.1	If the vote is cast in an uncontrolled environment, the voter shall be informed about the means to verify that a connection to the official election system has been established and that the authentic ballot has been presented.	UC2.1	Y, in App 2A	Y
OS5.4	System components shall require authentication to establish communication. On-line communications shall be mutually authenticated. Authentication shall be done by means of digital certificates or similar	General requirement	Y, in App 2A	Y
OS6	Effective System Registration			
OS6.1	On the central election system plattform, it shall be possible to prevent the execution of code that is not properly approved by an auditor team during the code review process.	General requirement	Y, in App 2A	Y
OS6.2	It shall be possible to baseline the system configuration by a review process, and at a later time to prove that the system configuration has not been changed from the baseline. It shall be possible to ascertain that only approved and certified software is installed and running.	General requirement	Y, in App 2A	Y
OS7	Effective System Access Control			
OS7.1	Access to securable objects in the election system shall be role based	General requirement	Y, in App 2A	Y
OS7.2	The election system shall restrict access to its services, depending on the user identity or the user role, to those services explicitly assigned to this user or role. User authentication shall be effective before any action can be carried out.	General requirement	Y, in App 2A	Y

OS7.3	The access control system shall be sufficiently flexible and granular to support the change of existing, or introduction of new roles.	UC 0.1	Y, in App 2A	Y
OS7.4	The user roles shal be personal and be based on the principle of least privilege	General requirement	N	Y
OS7.6	If, at any stage of an election, votes that are not completely anonymus (i.e. is it possible to infer what a specific voter has voted) need to be processed in any authorised intervention affecting the system, the Election System shall require this to be carried out by teams of at least two people (i.e it shall not be possible for a single election officer to compromise or manipulate an election).	General requirement	Y, in App 2A	Y
OS7.7	If the secrecy of votes depends on access to a secret (e.g. a cryptographic key), before the polling phase is started, access to the secret shall be divided between a group of N people in such a way that it will require the cooperation of M out of the N persons. Each member of the group of N people shall possess an unique secret or factor. M and N shall be configurable. M shall be less than N, N shall be larger than 5.	General requirement	Y, in App 2A	Y
OS7.8	Secret cryptographic keys used to protect the integrity, anonymity and confidentiality of e-votes shall be stored in a secure way that is at least as secure as storage in an HSM certified to be compliant with FIPS-140-2 Level 3 or better if used in controlled environments. In less secure operating environments FIPS-140-2 level 4 is required.	General requirement	Y, in App 2A	Y
OS7.9	Where asymmetrical cryptographic private keys are shared as per OS7.7, they shall be generated using multiparty computation, so the private keys will not be known to anyone before they are to be used. For further reference see Realizing Distributed RSA Key Generation using VIFF (Mauland, Reistad & Mjølsnes 2009)	General Requirement	Y, in App 2A	Y

OS7.11	The election system shall protect authentication data so that unauthorised entities cannot misuse, intercept, modify, or otherwise gain knowledge of all or some of this data.	UC 9.1	Y, in App 2A	Y
OS7.13	Passwords shall be stored as the hash-value of at least two secure one-way hashing algorithms, a unique salt shall be used when hashing each password	UC 9.1	N	Y
OS7.14	The authentication function of the election system shall be such that it supports a separation of duty within the group of election officers.	General requirement	Y, in App 2A	Y
OS7.15	Operation access to the central parts of the voting system will be granted to authorised administrator, operators, auditors and election observers only.	General requirement	N	Y
OS7.16	Administrator, operator, auditor and election observers privileges shall be the minimum necessary to satisfy the operational requirements for the voting system.	General requirement	N	Y
OS7.17	Administrator, operator and auditor access shall require strong authentication, i.e two factor authentication.	UC 0.1, 9.1	Y, in App 2A	Y
OS8	Information Integrity			
OS8.1	The election system shall ensure that E-votes, that have been acknowledged, will not be lost or altered under any circumstance.	General requirement	Y, in App 2A	Y
OS8.4	It shall not be possible during transfer in the network, or between system modules, to alter, delete or add vote records undetected	UC2.1,	Y, in App 2A	Y
OS8.5	The election system shall maintain the confidentiality of the votes and keep them sealed until the counting process.	General requirement	Y, in App 2A	Y
OS8.6	The integrity of data communicated in, to or from the Election System shall be maintained. Data-origin authentication shall be carried out.	UC 0.2	Y, in App 2A	Y
OS8.7	Even though the e-voting client domain may be under outsider control, the e-voting solution shall be such that it is not feasible for an outsider to systematically manipulate the votes without detection.	UC2.1	Y, in App 2A	Y

OS8.9	The election system shall detect and report any unauthorised changes to a vote.	General requirement	Y, in App 2A	Y
OS8.10	The election system shall supply the e-voter with a message whereby the voter can ascertain that the vote was recorded as intended. The message may be either out-of band or protected against outside manipulation. The message may contain one or more shared secrets provided to the voter prior to the e-voting phase of the election. The message shall be electronically signed by the election system, so false messages can be detected.	UC 2.1	Y, in App 2A	Y
OS8.12	The decryption of anonymous e-votes and the counting of e-votes shall be done in a part or parts of the election system that is not, and has never been, connected to any external network (air-gapped).	UC3.4	Y, in App 2A	Y
OS8.13	The vote-casting annotation in the Electoral Roll shall be inseparably combined with the storage of the vote in the ballot box.	General requirements	Y, in App 2A	Y
OS8.14	The sources of the data containing the electoral roll and the lists of candidates shall be authenticated.	UC0.3, 1.1, 1.2	Y, in App 2A	Y
OS8.15	It shall be possible to verify the integrity of data transferred between system modules	UC3.3	Y, in App 2A	Y
OS8.16	It shall be possible to verify the authenticity and integrety of data imported into the Election system (e.g. files containing scanned images of ballot papers, Electoral Roll)	General Requirement, UC3.3	Y, in App 2A	Y
OS8.17	No functions shall exist that allow the election officers to reset the election system to its initial state after the polling phase has begun.	UC 0.2	Y, in App 2A	Y
OS8.18	If stored or communicated outside controlled environments, the votes shall be encrypted.	General requirements	Y, in App 2A	Y
OS8.19	It shall be ensured that the election system presents an authentic ballot to the voter.	UC2.1	Y, in App 2A	Y

OS9	Service Availability			
OS9.1	The election system shall contain measures to preserve the availability of its services during the election process. It shall resist, in particular, malfunction, breakdowns or denial of service attacks.	General requirement	Y, in App 2A	Y
OS9.2	In the event of a system restart, the system architecture shall not impede the quick restoration of e-voting services.	General requirement	Y, in App 2A	Y
OS9.4	The election system shall perform regular checks to ensure that its components operate in accordance with its technical specifications and that its services are available.	General requirement	Y, in App 2A	Y
OS9.5	Even though a voter is allowed to cast an unlimited number of e-votes in an election, the election system shall provide provisions so that this right cannot be used to launch denial of service attacks.	General requirement	Y, in App 2A	Y
OS10	Information Availability	-		
OS10.1	The authenticity, availability and integrity of the voters' registers and lists of candidates shall be maintained.	UC 0.3, 1.1, 1.2	Y, in App 2A	Y
OS11	Service Protection			
OS11.1	No part of the system shall be vulnerable to any attack on the "OWASP Top Ten"	General requirement	Ν	Y
OS11.2	The bid winner shall perform a risk assessment of using his/her deliverables as an Election System in Norwegian elections, and describe the residual risk. It shall be up to the Ministry to accept or reject this risk.	General requirement	Ν	Y
OS11.3	The bid winner will be required to keep a continuously updated threat model enumerating the identified threats, vulnerabilities and corresponding mitigations, and systematically use this throuhtout the contract period to mitigate identified vulnerabilities not accepted by the Ministry.	General requirement	N	Y
OS11.5	The components of the Election System exposed to the PND shall be properly protected against hacking, malicious software of any kind and against DNS attacks.	General requirement	Y, in App 2A	Y
OS12	Operator Integrity	-		
OS13	Open Audtiting and Accounting			

OS13.2	At any time during an election the election officers shall be able to perform a self-test of the election system, assuring the integrity of the security functions and the user and system data. Any failure that may endanger the proper operation of the system shall be reported.	UC 0.2, 5.2	Y, in App 2A	Y
OS13.3	The election systems shall generate reliable and sufficiently detailed observation data so that election observation can be carried out. The time at which an event generated observation data shall be reliably determinable. The authenticity, availability and integrity of the data shall be maintained.	UC5.2	Y, in App 2A	Y
OS13.4	The audit system shall be designed and implemented as part of the election system. Audit facilities shall be present on different levels of the system: logical, technical and application.	UC5.2	Y, in App 2A	Y
OS13.5	Audit functions of the election system shall include recording, providing monitoring facilities and providing verification facilities.	UC5.2	Y, in App 2A	Y
OS13.6	The audit system shall be open and comprehensive, and actively report on potential issues and threats.	UC5.2	Y, in App 2A	Y
OS13.8	The audit system shall provide the ability to oversee the election or referendum and to verify that the results and procedures are in accordance with the applicable legal provisions.	UC5.2	Y, in App 2A	Y
OS13.9	The audit system shall provide the ability to cross-check and verify the correct operation of the election system and the accuracy of the result, to detect voter fraud and to prove that all counted votes are authentic and that all valid votes have been counted.	UC5.2	Y, in App 2A	Y
OS13.10	The audit functions of the election system shall provide the ability to verify that an recording of e-votes and counting of e-votes and p-votes has complied with the applicable legal provisions, and that the election results are an accurate representation of the authentic votes.	UC5.2	Y, in App 2A	Y

OS13.11	The audit system shall be protected against attacks which may corrupt, alter or lose records in the audit system.	UC5.2	Y, in App 2A	Y
OS13.12	The fact that a vote has been cast within the prescribed time limits shall be ascertainable.	UC5.2	Ν	Y
OS13.13	In the event of a crash / shutdown of the server-side of the election system, or a communication failure or a failure of the storage media, before restarting the polling phase, the election system shall ensure the integrity of the polling phase data.	General Requirment	Y, in App 2A	Y
OS14	System Disclosability / Openness			
OS14.1	When using the Election System, before any election or referendum takes place, the System shall enable the competent electoral authority to satisfy itself that the election system is genuine and operates correctly. It shall be possible to ascertain that only approved and audited software is running in the election system.	UC 0.2	Y, in App 2A	Y
OS14.4	All system components of the election system shall be independently verifiable i.e. it shall be possible to certify that all system components act accordingly to their specifications.	General requirement, UC 5.2	Y, in App 2A	Y

Identifier	Requirement description	Elaborate (Y/N)	Requireme nt met? (Y/N)
Software Re	equirements		
EIS1	The system shall interface with the Population Registry for updates of the Electoral Roll during an election. This requirement is detailed in use case 0.3.	Ν	Y
EIS2	The system shall interface with SSB for election results and other election data. This requirement is detailed in use case 4.1 Reporting of results to SSB.	Ν	Y
EIS3	The system shall interface with external portals for the publishing of list proposals and election results (valgresultat.no). This requirement is detailed in use case 5.1 Reporting.	Ν	Y
EIS4	The system shall interface with a common authentication infrastructure. This requirement is detailed in use case 9.1 Authentication. In the event that the CAI from DIFI is not available in 2011, the Elections System may fall back on the Altinn portal, which uses the same interface (SAML v2.0) and technology (Sun OpenSSO).	Y, in App 2A	Y
EIS5	The system shall interface with Altinn for the submission of list proposals (option).	Y, in App 2A	Y
EIS6	The Elections System shall be able to import structured information on count results from systems delivered to municipalities by other vendors for the distribution of seats and reporting on a county level.	Y, in App 2A	Y
Hardware R	equirements		
EIH1	The system shall interface with industry standard scanners (TWAIN and ISIS). This requirement is detailed in use case 3.3 Electronic Counting of p-vote.	Y, in App 2A	Y
EIH2	The system shall interface with printers for the production of polling cards, voting cards etc. This requirement is detailed in use case 5.1 Reporting.	Y, in App 2A	Y

Identifier	Requirement description	Elaborate (Y/N)	Requirem ent met? (Y/N)
D1	 User documentation shall be written in Norwegian ("bokmål" and/or "nynorsk"). All other documentation shall be written in English or Norwegian. 	N	Y
D2	Describe delivered technical documentation according to Chapter 9 "Documentation" in the "System Requirements Specification" document.	Y, in App 2A	Y
D3	Describe delivered documentation for installation and operations according to Chapter 9 "Documentation" in the "System Requirements Specification" document.	Y, in App 2A	Y
D4	Describe delivered user documentation according to Chapter 9 "Documentation" in the "System Requirements Specification" document.	Y, in App 2A	Y