

Exercise 2 - Product Requirements Document

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Functional Requirements

- Analysis of current election
 - Composition of the Bundestag by party, taking into consideration: Direkt-, Überhangs- and Ausgleichsmandate
 - Direktmandate by party
 - Each vote has to be stored separately but can be aggregated on Wahlkreis-level for faster analysis.
- Comparison to former elections
 - Compare results of current elections to former elections, especially those from 2009 and 2013
 - Votes from former elections are not kept.
- Voting
 - Accept and store votes from people who are eligible to vote.

Nonfunctional Requirements

Performance Voting, evaluation and analysis has to happen in near realtime.

Scalability The system must handle the votes of 60 Million Wahlberechtigte on election day. After the election has closed, the system has to present analytics in realtime to all interested citizens.

Information privacy The personal information of all voters and candidates has to be secure under all circumstances.

Robustness Loss of power, hardware or software crashes must not lead to a loss of votes.

Safety The system has to be safe from intrusion. Only Wahlberechtigte are allowed to vote. They may vote exactly once per election.

Compliance The system has to be compliant with the Bundeswahlgeräteverordnung (BWahlGV) .

User Interface

- Voting
 - Only one vote per person allowed
 - The first vote and/or the second vote can be marked as invalid individually.
 - Order of first and second vote not specified
 - Neutral presentation of all options (i.e. no default values)
- Analysis
 - An easy to use web application allows the user to view statistics of the election as well as the items specified in the analysis-part of the functional requirements.

Acceptance Criteria

- All functional requirements are fulfilled.
- Scalability
 - An input of 150 million votes can be handled in 12 hours.
 - After voting has ended:100 million analyses can be shown over the next 6 hours.
- Performance
 - Vote has to be registered in less than 20 seconds
 - Calculation of the current election status in less than 10 minutes
 - A webpage, showing the current election status has to be served in less than 20 seconds.
- Robustness
 - No votes are lost after power loss, resetting the system.