# Exercise 2: Requirements specification (Lastenheft)

Delivery: 26.10.2015

Stefan Fritsch, Tabea Schmidt

## User Interfaces:

### Overview

- The user should be able to see the latest status of the election
- The user should also be able to navigate to the voting view and all election views from the home page

### Voting view

- In this view the user can specify his 'Erststimme' and 'Zweitstimme' at the same time for his 'Wahlkreis'
- There is also a possibility to vote invalid
- In order to be able to vote the user has to specify himself by entering his identifier and his date of birth
- Afterwards he will be notified whether his vote was submitted successful.

### Election view

- The election view offers seven different analyses for the elections of 2009 and 2013
- The analyses are:
  - Q1: The distribution of seats per party in the 'Bundestag'
  - Q2: A list of all members in the 'Bundestag'
  - Q3: For each 'Wahlkreis' the voter participation, the winner candidate and the number of 'Erststimmen' and 'Zweitstimmen' for each party in 2009 and 2013
  - Q4: A list with all 'Überhangsmandate' in this election
  - Q5: A list with all winner parties per 'Wahlkreis'
  - Q6: The top ten of the tightest winners per party
  - Q7: The same analysis as in Q3, but with not aggregated data
- In each analysis the user can select the year of the election he wants to see
- The shown data can be a result of previously aggregated data

## Functional requirements:

### Voting

- Every citizen eligible to vote has to be able to submit his ‘Erststimme’ and ‘Zweitstimme’ exactly once
- For every user the system has to check if there is already a vote from his identifier and eventually decline it.
- The user should be able to submit an invalid vote

### Analysis of the current election

- The preliminary result of the current election should be visualized in the analyses, which were described earlier
- It is allowed to aggregate the votes for each analysis with the exception of the last one

### Results of former elections

- The elections of 2009 and 2013 are the former elections, which have to be accessible
- It has to be possible to display the results of former elections as reference data with the previously described analyses

## Non-functional requirements:

### Performance

- The application has to withstand the load of votes from all elective citizens, which are about 60 million votes
- This means that the loading times during the process of the election should not exceed 20 seconds.
- The loading time of the analyses should not exceed 20 seconds in order to provide information quickly

### Updates

- The application has to update the results of the election quickly
- This means that the temporary result should be computed every 30 minutes
- The application should be able to process all votes until 8 hours after the election has ended
- The occurrence of errors is not allowed while computing the results

**Usability**

- The application has to have a high usability due to the use by every possible elector in Germany
- The application has to offer a clear user interface, a good ease of learning and clear and informative error and warning messages.

**Multi-User mode**

- The application has to be able to handle multi-user mode due to the use by every possible elector in Germany
- The different users are not allowed to be interfered by one another

**Acceptance criteria:**

**Reliability**

- The application has to perform the required tasks in the above-mentioned timeframe and without making mistakes
- The results, which are computed by the application, have to be accurate

**Loading time**

- The loading time of the application should not exceed 20 seconds
- A single vote should be submitted within 5 seconds

**Voting**

- The casting of a vote has to be saved and is not allowed to be lost under any circumstances
- The vote has to be stored without a connection to the elector, who submitted it

**Recovery**

- The application has to contain a recovery possibility in the case of failure.