Non-functional requirements in iKnow software tender

Stefan Thuis

TU Dortmund

stefan.thuis@cs.uni-dortmund.de

Functional vs. non-functional requirements

Functional: „Requirement the system must be able to perform"	Non-functional: „Requirement how the system should behave"
Business Rules	Performance
Administrative functions	Scalability
Authentication	Availability
Authorization	Reliability
External interfaces	Maintainability
Certification requirements	Security
Reporting requirements	Usability
Legal or regulatory requirements	Interoperability

Non-functional requirements (1)

- **Usability**
  - What type of user will be using the system?
  - Will more than one type of user be using the system?
  - What sort of training will be required for each type of user?
  - Is it particularly important that the system be easy to learn?
  - Is it particularly important that users be protected from making errors?
  - What sort of input/output devices for the human interface are available and what are their characteristics?

- **Documentation**
  - What kind of documentation is required?
  - What audience is to be addressed by each document?

Non- functional requirements: questions

- **Hardware**
  - What hardware is the proposed system to be used on?
  - What are the characteristics of the target hardware, e.g. including memory size and storage space?

- **Performance Characteristics**
  - Are there any speed, throughput, or response time constraints on the system?
  - Are there size or capacity constraints on the data to be processed by the system?

Non- functional requirements: questions

- **Error Handling and Extreme Conditions**
  - How should the system respond to input errors?
  - How should the system respond to extreme conditions?

- **System Interfacing**
  - Is input coming from systems outside the proposed system?
  - Is output going to systems outside the proposed system?
  - Are there restrictions on the format or medium that must be used for input or output?

Non- functional requirements: questions

- **Quality Issues**
  - What are the requirements for reliability?
  - Must the system trap faults?
  - Is there a maximum acceptable time for restarting the system after a failure?
  - What is the acceptable system downtime per 24-hour period?
  - Is it important that the system be portable (able to move to different hardware or operating system environments)?

- **System Modifications**
  - What parts of the system are likely candidates for later modification?
  - What sorts of modifications are expected?

Non- functional requirements: questions

- **Physical Environment**
  - Where will the target equipment operate?
  - Will the target equipment be in one or several locations?

- **Security Issues**
  - Must access to any data or the system itself be controlled?
  - Is physical security an issue?

Non- functional requirements: questions

- **Resources and Management Issues**
  - How often will the system be backed up?
  - Who will be responsible for the back up?
  - Who is responsible for system installation?
  - Who will be responsible for system maintenance?

Success Criteria

Criteria for exclusion
Basic requirements of software architecture mus be fullfilled
Detailed requirement specification must be generated
No installation of additional software required for user
Cookies should not be used
All contents has to be accessible for handicapped persons

Success Criteria: Questions

- **Modification of requirements**
  - Are modifications of the requirements reasonable or needed from the standpoint of bidder?
  - Are modifications of the hardware requirements needed?

- **Project work**
  - Please describe the course of the project with details about
    - Mile stones
    - Order of actions
    - Costs
    - Dead-lines
  - Please describe your co-operation with the contracting entity
  - Please describe how maintenance in different projects was executed and the period of time of life of the software
  - Please describe the proejct team and the roles within the team

Success Criteria: Questions

- **Quality Management**
  - Which standards are used?
  - How do you ensure quality management in your company? Which Tools and test procedures are used?

- **Technical implementation**
  - Which libraries and frameworks are used? What are the license models for these?
  - Which hardware is needed? Which software is needed? How do these components communicate?
  - Can you ensure that html and css are validated?

- **Data migration**
  - How are data migrated to the new system?

Success Criteria: Questions

- **Workflows**
  - Which workflows do you identify and how are they implemented?

- **Performance**
  - How do you ensure performance requirements and how high-performance will the system be?

- **Contentual and functional attributes**
  - Please make a draft of the project realization

- **Miscellaneous**
  - How is backup and recovery ensured
  - A complete help function is needed

Thank you for your attention!