

# Software Requirements Engineering (SE2001)



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# Validation Techniques

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- ❖ Review checklists
- ❖ Prototyping
- ❖ User manual development
- ❖ Model validation
- ❖ Requirements testing

# Review Checklists - 1

3

## ❖ Understandability:

- Can readers of the document understand what the requirements mean?

## ❖ Redundancy:

- Is information unnecessarily repeated in the requirements document?

# Review Checklists - 2

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## Completeness:

- Does the checker know of any missing requirements or is there any information missing from individual requirement descriptions?

# Review Checklists - 3

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## ❖ Ambiguity:

- Are the requirements expressed using terms which are clearly defined? Could readers from different backgrounds make different interpretations of the requirements?

## ❖ Consistency:

- Do the descriptions of different requirements include contradictions? Are there contradictions between individual requirements and overall system requirements?

# Review Checklists - 4

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## ❖ Organization:

- Is the document structured in a sensible way? Are the descriptions of requirements organized so that related requirements are grouped?

# Review Checklists - 5

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## ❖ Conformance to standards:

- Does the requirements document and individual requirements conform to defined standards? Are departures from the standards, justified?

## ❖ Traceability:

- Are requirements unambiguously identified, include links to related requirements and to the reasons why these requirements have been included?

# Checklist Questions & Quality Attributes – 1

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- ❖ Is each requirement uniquely identified?
  - Traceability, conformance to standards
- ❖ Are specialized terms defined in the glossary
  - Understandability
- ❖ Does a requirement stand on its own or do you have to examine other requirements to understand what it means?
  - Understandability, completeness



# Checklist Questions & Quality Attributes – 2

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❖ Do individual requirements use the terms consistently

➤ Ambiguity

❖ Is the same service requested in different requirements? Are there any contradictions in these requests?

➤ Consistency, redundancy

# Checklist Questions & Quality Attributes – 3

10

- ❖ If a requirement makes reference to some other facilities, are these described elsewhere in the document?
  - **Completeness**
- ❖ Are related requirements grouped together? If not, do they refer to each other?
  - **Organization, traceability**



# **THANK YOU**

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