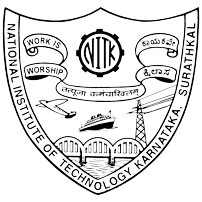
IT350: Software Engineering

Assignment 2



Comparison of Various Software Requirement

Specification Formats based on Table of Contents

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on

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To

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Format 1(IEEE)

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**Advantages**

1. Very detailed and concise

2. Useful for the developers to get a good idea of what the client wants to see in the final product

3. There is a provision to add requirements later by including them in the “To Be Discussed” section

4. Evolving documentation

5. Follows a standard document convention that has to be followed by all the maintainers

**Disadvantages**

1. It is hard for the client to specify some requirements(like communication interfaces) in such

detail at the beginning phase

2. Many sections may be marked under “To Be Discussed” remain unfilled during the initial phases

3. Takes a considerable amount of time to prepare

4. SRS will undergo many revisions due to refinement of requirements

5. Less focus on UML/class diagrams, though they help the developer visualize the final product.

Format 2

**1. Purpose**

**2. Scope**

**3. Product Perspective**

3.1. System Interfaces

3.2. User Interfaces

3.3. Hardware Interfaces

3.4. Software Interfaces

3.5. Communications Interfaces

3.6. Memory Constraints

3.7. Operations

3.8. Site Adaptation Requirements

**4. Product Functions**

**5. User Characteristics**

**6. Limitations**

**7. Assumptions And Dependencies**

**8. Apportioning Of Requirements**

**9. Specific Requirements**

**10. External Interfaces**

**11. Functions**

**12. Usability Requirements**

**13. Performance Requirements**

**14. Verification**

**15. Supporting Information**

**Advantages**

1. Has extra details about memory constraints and special operations by the user

2. The “Apportioning” section is a helpful addition as it maps the requirements to the software that

will carry out the given operations to satisfy the requirement.

3. “Site adaptation requirements” help in ensuring the end product will be compatible with more

systems by specifying any data or initialization sequences that are specific to a given site

4. “Usability requirements” include measurable effectiveness, efficiency, and satisfaction criteria in

specific contexts of use.

5. Provides the verification approaches and methods planned to qualify the software

6. Supporting info contains : Sample input/output formats, descriptions of cost analysis studies, or

results of user surveys; A description of the problems to be solved by the software; Special

packaging instructions for the code and the media to meet security, export, initial loading.

**Disadvantages**

1. Much more complicated and time consuming to create. No user documentation.

2. Harder for the client to specify such requirements detail at the beginning phase(more revisions).

Format 3

**1. Introduction**

1.1 Purpose

1.2 Document Conventions

1.3 Intended Audience and Reading Suggestions

1.4 Project Scope

**2. Overall Description**

2.1 Product Perspective

2.2 Product Features

2.3 User Classes and Characteristics

2.4 Operating Environment

2.5 Design and Implementation Constraints

2.6 User Documentation

2.7 Assumptions and Dependencies

**3. System Features**

Core Features

Additional Features

**4. External Interface Requirements**

4.1 User Interface

4.2 Hardware Interfaces

4.3 Software Interfaces

4.4 Communications Interfaces

**5. Other Nonfunctional Requirements**

5.1 Performance Requirements

5.2 Safety Requirements

5.3 Security Requirements

5.4 Software Quality Attributes

**6. Key Milestones**

**7. Key Resource Requirements**

**8. Other Requirements**

**9. Appendix A Glossary**

**10. Appendix B Project Proposal**

**Advantages**

1. Less complicated than Format 2 to create

2. “Key Milestones” give the client a good idea of what to expect and when. This avoids unrealistic

expectations

3. “Project Proposal” provides a complete summary of the given problem statement and what the

end product will be capable of

4. System features are split into core and additional so that developers can assign priorites.

5. Key Resource requirements divide the huge problem into managable logical chunks and state the

necessary required expertise, internal/external resources to satisfy the requirements and the

associated constraints

**Disadvantages**

1. Many revisions can still arise.

2. Harder for the client to specify such requirements in such detail at the beginning phase

Format 4

|  |  |
| --- | --- |
| **1. Introduction**  1.1 Purpose  1.2 Scope  1.3 Definitions, Acronyms, and Abbreviations  1.4 References  1.5 Overview | **5**  5  5  6  6  6 |
| **2. Overall Description** | **6** |
| **3. Specific Requirements**  3.1 Functionality  3.2 Usability  3.3 Reliability & Availability  3.4 Performance  3.5 Security  3.6 Supportability  3.7 Design Constraints  3.8 On-line User Documentation and Help System Requirements  3.9 Purchased Components  3.10 Interfaces  3.10.1 User Interfaces  3.10.2 Hardware Interfaces  3.10.3 Software Interfaces  3.10.4 Communications Interfaces  3.11 Licensing Requirements  3.12 Legal, Copyright, and Other Notices  3.13 Applicable Standards | **7**  7  11  11  12  12  13  13  13  13  14  14  14  14  15  15 |
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**Advantages**

1. Simpler format than 1,2 and 3, easier to make

2. Client can specify functionality without going into the specific sub-requirements

3. Includes Legal information and standards

**Disadvantages**

1. No diagrams to aid developers think of the final product

2. More focus on non functional than functional requirements.

3. Support Information can be vague since there is no proper definition

**Format 5**

|  |  |
| --- | --- |
| **1. Introduction**  1.1 Purpose  1.2 Scope  1.3 Definitions, Acronyms, and Abbreviations  1.4 References  1.5 Technologies to be used  1.6 Overview | 4  4  4  4  5  5  5 |
| **2. Overall Description**  2.1 Use-Case Model Survey  2.2 WEB Architecture diagram  2.3 ER Diagram  2.4 Architecture diagram  2.5 Data Dictionary  2.6 Assumptions and Dependencies | 6  6  8  9  10  11  15 |
| **3. Specific Requirements**  3.1 Use-Case Reports  3.2 Class Diagram  3.2 Supplementary Requirements | 16  17  17  17 |

**Advantages**

1. Simplest format

2. Use-case/class/ER/Web Architecture diagrams aid the software developers

3. Includes Legal information and standards, not mentioned in others

**Disadvantages**

1. Maybe too simple

2. Supplementary requirments might mix up functional and non-functional requirements

3. No mention about user documentation

References

Format 1: IEEE SRS https://web.cs.dal.ca/~hawkey/3130/srs\_template-ieee.doc

Format 2: International Standard for custom SRS - https://belitsoft.com/php-development-

services/software-requirements-specification-document-example-international-standard

Format 3: https://www.cise.ufl.edu/class/cen3031sp13/SRS\_Example\_1\_2011.pdf

Format 4: https://www.utdallas.edu/~chung/RE/Presentations07S/Team\_1\_Doc/.../SRS4.0.doc

Format 5: IBM SRS https://www.ibm.com/developerworks/.../files/.../document/.../SRS\_Sample.doc