Software Engineering Assignment- 02

Topic: Literature Survey On Various SRS Formats and Drawbacks of IEEE Format

Submitted By:

Megha C Savalgi (15IT220),

NITK

Date: 16/01/2018

IEEE vs IBM

Chapter 1: Introduction

- Both the formats are similar in terms of certain sub-sections such as “Purpose”, “Product Scope”, “References”.
- IBM format has a subsection named “Definitions”, “Acronyms and Abbreviations”, whereas IEEE format contains the same sub-section named “Glossary” under “Appendix”.
- IBM format is missing an important subsection named “Intended Audience and Reading Suggestions”. This section is important because a reader of the document should be able to identify his/her standing with respect to the document. The perspective with which the document is written should be clearly specified.
- IEEE format is missing an important subsection named “Technologies To Be Used”. This subsection is important because a reader of the document should be able to gather the domain associated with the project. It also helps in understanding of technical terms subsequently used in the document.
- IEEE format contains an additional subsection called “Document Convention”. This subsection is of moderate importance as it includes typographical conventions such as fonts, highlights.
- IBM format contains an additional subsection called “Overview” describing the document structure.

Chapter 2: Overall Description

- IEEE format contains an important subsection named “Product Perspective”. This subsection is important because it describes the context and origin of the product and provides a brief description of the product. The reader understands the need of the project. The user also gets a clear idea about the existing systems and improvements made.
- IEEE Format has another important subsection named “Product Functions”. This subsection is important because it explains the functionalities expected out of the project. The reader can make suggest major changes to the project based on this subsection’s viability.
- IEEE format’s “User classes and Characteristics” and IBM format’s “Use-case model survey” subsections are the same, except that the differentiating factors such as frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience are of major concern in the IEEE format.
- IBM format has an important yet pre-mature subsection named “Architecture diagram and Database Design”. This section is important because it shows how the database is going to be managed and the concepts, components part of architecture. Architecture diagram may include UML diagrams. This subsection is early in the software development process as the document drafter is expected to have made final decisions regarding system architecture and database used.
- IEEE format has an important subsection named “Design and Implementation Constraints”. A reader of the document must be made well-aware of the limitations and the conditions on which the project is built upon.

- IEEE format has further subsections named “Operating Environment” and “User Documentation”. “Operating Environment” describes the hardware and software environment in which the project operates. “User Documentation” details the documentation delivery methods. A reader must be having knowledge of these subsections in case of any hurdles or further changes.

1) IEEE format contains important sections “External Interface Requirements”, “System Features” and “Other Non-Functional Requirements”.

IEEE format has a section named “External Interface Requirements” which contains user, hardware, software, communication interfaces whereas IBM format has a section named “Specific Requirements” containing use-case reports and supplementary requirements.

2) IEEE format has a section named “System features” where each use case and its functionality is explained in detail in terms of description and priority, stimulus/response sequences and functional requirements.

“System Features” section is similar to the “Use-Case reports” and “External Interface Requirements” is similar to Specific and “Supplementary Requirements” clubbed together in IBM format.

3) IBM format contains a section named “Supporting Information” which includes Table of Contents, Index and Appendix. May also include use-case storyboards or user-interface prototypes.

IEEE format contains Appendix made up of Glossary, Analysis Models and To Be Determined List.

4) IBM format is missing “Non-functional Requirements” section. While functional requirements describe what a system should do, non-functional requirements define how well it needs to function. Includes system attributes such as security, reliability, performance, maintainability, scalability and usability.

5) The IBM format ends with Concerns/Queries/Doubts which are handled by a discussion forum.

IEEE vs BELITSOFT

- The first two chapters of BELITSOFT are Purpose and Scope which are subsections of the first chapter in IEEE format.
- BELITSOFT format is missing many subsections such as Intended and Reading Suggestions, Document Conventions and References.
- Product Perspective in the BELITSOFT format gives brief description of the project, and has subsections consisting of interface descriptions, operations, constraints and requirements.
- Product Functions section of the BELITSOFT format gives a summary of the major functions that the product will perform, same as the product functions subsection of the Overall Description section.
- Operating Environment is missing in BELITSOFT format. It is important because it specifies the hardware/software platform the product requires.
- User Characteristics section of the BELITSOFT format is same as the User Classes and Characteristics subsection of the IEEE format.
- Limitations section of the BELITSOFT format is similar to Design and Implementation Constraints of IEEE format.
- Assumptions and Dependencies is a separate section in BELITSOFT, whereas it is a subsection under Overall Description in IEEE format.
- Specific Requirements is a section of the BELITSOFT format, not contained in the IEEE format.
- External Interfaces is a section of the BELITSOFT format requires description of each interface used.
- Functions section in the BELITSOFT format is same as the System Features of the IEEE format as they both contain functional requirements and describe use cases.
- Performance Requirements is considered important in BELITSOFT format and made into a separate section whereas it is a subsection under Non-functional Requirements in the IEEE format.
- Verification and Supporting Information conclude the BELITSOFT format.

IEEE vs MSU

Chapter 1: Introduction

Section 1 of both IEEE and MSU SRS formats has common subsections such as Purpose, Scope and References.
MSU format doesn't contain Document Conventions and Intended Audience and Reading Suggestions.
Whereas Section 1 of IEEE format doesn't contain Glossary and Overview of Document.

Chapter 2: Overall Description

User Characteristics and Operating Environment are common subsections here.

MSU format includes Functional Requirements Specifications and Non functional requirements under the this Section. Functional Requirements Specifications elaborates on use cases and use case diagrams.

Product Functions, Assumptions and Dependencies, Design and Implementation Constraints, User Documentation are the sections omitted in MSU format.

1) Chapter 3 of MSU format is named as Requirements Specification containing subsections - External Interface Requirements, Functional Requirements and Detailed Non-Functional Requirements

2) External Interface Requirements is a separate section of IEEE format whereas it is a subsection of MSU format.

3) Functional Requirements is another subsection which gives detailed functionalities of the product.

4) Detailed Non-Functional Requirements elaborate on the non-functional requirements mentioned in the earlier section. Logical Structure of the Data and Security can be included here.

5) There is no scope for Other Non-Functional Requirements Section in MSU format. This section is important because it focuses on Performance, Safety, Security Requirements, Software Quality Attributes, Business Rules. These are essential for the smooth functioning of the product.

6) Many important and necessary Sections/Chapters have been omitted in the MSU format. Appendix is omitted as well, hence To Be Determined List and Analysis Models are not included.

7) List of Figures table is included in MSU format.

8) The MSU format ends with "Index", which is not present in IEEE format.

Drawbacks:

- Sections should be divided on the basis of people it may concern. For example, Technical Section and Business Section can be separated so that only the technical and business teams read the corresponding sections.
- “Technologies to be Used” Section should be included. It mentions all the technologies used in the project.
- “Change Management Process” Section should be included. The Change Management process helps you to manage all requests for change within the project. By putting this change process in place, you'll easily be able to monitor and control the amount of change that takes place.
- “Supporting Information” Section should be included. Supporting or background information can help the readers of the SRS. Special packaging instructions for the code and the media to meet security, export, initial loading, or other requirements.

References:

1] IEEE SRS Format,
https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc

2] IBM SRS Format,
http://www07.ibm.com/in/university/pdf/Jul9_AI_Synopsis_ReqSpec_TGMC_2007.pdf

3] BELITSOFT SRS Format,
https://belitsoft.com/php-development-services/software-requirements-specification-document-example-international-standard

3] MSU SRS Format,
https://www.cse.msu.edu/~cse435/Handouts/SRSExample-webapp.doc