Helix Requirements Management

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Abstract—**Requirements management ensures the alignment of stakeholder objectives with the final deliverables of a project. HelixRM offers a centralized solution for tracking, reviewing, decomposing, and prioritizing requirements. This paper explores how HelixRM enhances collaboration, traceability, and adaptability in requirements management while integrating with widely used development tools.**

Index Terms—**Requirements Management, HelixRM, Traceability, Collaboration, Project Development**

I. Introduction

Requirements management is an essential aspect of effective project development, as it guarantees that stakeholder needs and objectives are clearly articulated, recorded, and tracked during the project lifecycle. Proper requirements management minimizes the risk of scope creep, misunderstandings, and unmet goals, all of which can greatly affect project success.

HelixRM supports this process by providing a centralized platform for managing and decomposing requirements into actionable specifications. With features like hierarchical organization, traceability, version control, and integration with tools such as Jira, HelixRM improves collaboration among stakeholders and guarantees that requirements align with business objectives. Its functionalities empower teams to quickly respond to changes, maintain consistency, and enhance project transparency, making it an invaluable tool for overseeing complex or large-scale projects.

II. Functionalities of HelixRM

A. Track Requirements

HelixRM's Requirement Tracking feature is essential for keeping track of the software needs of any project. It helps to maintain requirements clear, connected to deliverables, and tracked against their fulfilment criteria.

With a defined plan for managing the requirements,which are essential to maintaining the project's high quality and making sure it satisfies the expectations of the stakeholders, such an organised approach improves project management.

- Why Track Requirements
  - Defined needs: Requirements are clear descriptions of a specific software product [1].
  - Completion Criteria: More precise measurements for when a need is met [2].
- Advantages of Monitoring Requirements
  - Enhanced Cooperation: User-centred design concepts, enhancing personalisation to satisfy requirements [3].
  - Better Project Metrics: Structure for examining how needs have changed over time, for well-informed decision-making [2].
- Real World Usage
  - Software Development: Used in multiple software projects, in order to monitor and address criteria in order to produce higher-quality results [4].
  - Product lifetime Management: Easier to include requirement management into more comprehensive processes for the product lifetime [3].

Even while it might be very advantageous, it might be argued that the extra difficulty of managing all those needs could just result in increased costs and possibly create project timeline delays. For most people, striking a balance between meticulous tracking and nimble approaches is never easy.

B. Review Requirements

C. Decompose Requirements

Decomposing requirements in HelixRM entails subdividing broad business or marketing goals into specific, actionable functional and system specifications. This organised methodology guarantees that all elements of a requirement are comprehensible, traceable, and manageable, thereby optimising the development process.

a) Organize Requirements Hierarchically: HelixRM allows users to establish and oversee hierarchical arrangements for their requirements. General requirements, such as "Improve user experience," can be further divided into more precise requirements, such as "Ensure faster load times for pages" or "Enhance navigation intuitiveness. " This hierarchy offers a clear visual depiction of how specific tasks support broader objectives.

b) Create Traceability Links: Traceability is a fundamental aspect of HelixRM, permitting users to form direct connections between parent requirements and their detailed sub-requirements. For example, a business requirement can be linked to functional specifications and related test cases. This guarantees cohesion across all project components and simplifies impact analysis for prospective changes.

c) Collaborate with Stakeholders: HelixRM's collaboration features promote smooth communication throughout the decomposition process. Team members and stakeholders can provide instantaneous feedback and comments, ensuring transparency and agreement. This engaging method minimizes ambiguity and fosters a shared understanding of the requirements.

d) Use Templates and Reuse Requirements: The platform improves efficiency by offering templates and permitting the reuse of previously validated requirements across various projects. This not only saves time but also guarantees consistency and adherence to organizational standards.

e) Analyze Risks and Dependencies: As part of the decomposition process, HelixRM enables users to recognize and document potential risks and dependencies linked to particular requirements. Integrated risk assessment tools support teams in proactively managing challenges that may arise during development.

f) Export for Wider Accessibility: For external stakeholders or team members not directly utilizing HelixRM, decomposed requirements can be exported into widely used formats such as Word or Excel. This feature guarantees that all pertinent parties can review, approve, or contribute to the refinement process.

By utilizing these functionalities, HelixRM ensures that intricate requirements are methodically disaggregated, fostering improved alignment, traceability, and implementation throughout the project lifecycle.

D. HelixALM Environment

E. Jira Integration

F. Communicate With Stakeholders (?)

G. Connect Requirements to Tests (?)

III. PREPARE YOUR PAPER BEFORE STYLING

Before you begin to format your paper, first write and save the content as a separate text file. Complete all content and organizational editing before formatting. Please note sections III-A–III-E below for more information on proofreading, spelling and grammar.

Keep your text and graphic files separate until after the text has been formatted and styled. Do not number text heads—LaTeX will do that for you.

A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

B. Units

- Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of

English units as identifiers in trade, such as "3.5-inch disk drive".
- Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.
- Do not mix complete spellings and abbreviations of units: "Wb/m^2" or "webers per square meter", not "webers/m^2". Spell out units when they appear in text: ". . . a few henries", not ". . . a few H".
- Use a zero before decimal points: "0.25", not ".25". Use "cm^3", not "cc".)

C. Equations

Number equations consecutively. To make your equations more compact, you may use the solidus (/), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash rather than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in:

$$a + b = \gamma \tag{1}$$

Be sure that the symbols in your equation have been defined before or immediately following the equation. Use "(1)", not "Eq. (1)" or "equation (1)", except at the beginning of a sentence: "Equation (1) is . . ."

D. LaTeX-Specific Advice

Please use "soft" (e.g., \eqref{Eq}) cross references instead of "hard" references (e.g., (1)). That will make it possible to combine sections, add equations, or change the order of figures or citations without having to go through the file line by line.

Please don't use the {eqnarray} equation environment. Use {align} or {IEEEeqnarray} instead. The {eqnarray} environment leaves unsightly spaces around relation symbols.

Please note that the {subequations} environment in LaTeX will increment the main equation counter even when there are no equation numbers displayed. If you forget that, you might write an article in which the equation numbers skip from (17) to (20), causing the copy editors to wonder if you've discovered a new method of counting.

BIBTeX does not work by magic. It doesn't get the bibliographic data from thin air but from .bib files. If you use BIBTeX to produce a bibliography you must send the .bib files.

LaTeX can't read your mind. If you assign the same label to a subsubsection and a table, you might find that Table I has been cross referenced as Table IV-B3.

LaTeX does not have precognitive abilities. If you put a \label command before the command that updates the counter it's supposed to be using, the label will pick up the last counter to be cross referenced instead. In particular, a \label command should not go before the caption of a figure or a table.

Do not use `\nonumber` inside the `{array}` environment. It will not stop equation numbers inside `{array}` (there won't be any anyway) and it might stop a wanted equation number in the surrounding equation.

E. Some Common Mistakes

- The word "data" is plural, not singular.
- The subscript for the permeability of vacuum μ_0, and other common scientific constants, is zero with subscript formatting, not a lowercase letter "o".
- In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- A graph within a graph is an "inset", not an "insert". The word alternatively is preferred to the word "alternately" (unless you really mean something that alternates).
- Do not use the word "essentially" to mean "approximately" or "effectively".
- In your paper title, if the words "that uses" can accurately replace the word "using", capitalize the "u"; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones "affect" and "effect", "complement" and "compliment", "discreet" and "discrete", "principal" and "principle".
- Do not confuse "imply" and "infer".
- The prefix "non" is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the "et" in the Latin abbreviation "et al.".
- The abbreviation "i.e." means "that is", and the abbreviation "e.g." means "for example".

An excellent style manual for science writers is [**?**].

F. Authors and Affiliations

The class file is designed for, but not limited to, six authors. A minimum of one author is required for all conference articles. Author names should be listed starting from left to right and then moving down to the next line. This is the author sequence that will be used in future citations and by indexing services. Names should not be listed in columns nor group by affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization).

G. Identify the Headings

Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is "Heading 5". Use "figure caption" for your Figure captions, and "table head" for your table title. Run-in heads, such as "Abstract", will require you to apply a style (in this case, italic) in addition to the style provided by the drop down menu to differentiate the head from the text.

Text heads organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced.

H. Figures and Tables

a) Positioning Figures and Tables: Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation "Fig. **??**", even at the beginning of a sentence.

TABLE I
TABLE TYPE STYLES

Table Head	Table Column Head		
	Table column subhead	*Subhead*	*Subhead*
copy	More table copy[a]		

[a]Sample of a Table footnote.

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity "Magnetization", or "Magnetization, M", not just "M". If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write "Magnetization (A/m)" or "Magnetization $\{A[m(1)]\}$", not just "A/m". Do not label axes with a ratio of quantities and units. For example, write "Temperature (K)", not "Temperature/K".

REFERENCES

Please number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use "Ref. [3]" or "reference [3]" except at the beginning of a sentence: "Reference [3] was the first ..."

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors' names; do not use "et al.". Papers that have not been published, even if they have been submitted for publication, should be cited as "unpublished" [4]. Papers that have been accepted for publication should be cited as "in press" [5]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [6].

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