

# Requirements Review Report for SPORTS

Reviewed Document title: Requirements Review Report for SPORTS

Reviewed Document version: 1.0

Reviewers: Prajwal Umesha

Date of review:

References: Requirement Review Checklist, Guidelines to write a good requirement

Link for the checklist:

<https://docs.google.com/document/d/1JeqUBeMrNefQkGYE56uGDWT9NGGYwZYMe6SSGxAPXIY/edit?tab=t.0#heading=h.6b254fe4o849>

## Requirements Review part 1 (summary is in appendix 2)

Haifeng

Location	Description	Category	Resolution	Reviewed by and date
<i>Where issue was found [section/paragraph/req. #]</i>	<i>Brief description (i.e. few sentences or less) about what the issue is</i>	<i>Checklist category/question which led to identification of issue</i>	<i>What is (to be) done to fix identified issue, or reasoning why no change is needed</i>	
Requirement 4.1.1	Ambiguity in secure authentication process description; lacks measurable criteria.	Correctness	Clarify secure login requirements, including encryption method and evaluation criteria, and apply EARS format.	Haifeng, Oct 26th 2024
Requirement 4.1.2	Missing criteria for usability enhancement, lacks traceable metrics for usability.	Precise and Clear	Specify measurable usability enhancements, such as dropdown or autocomplete features, and apply EARS format.	Haifeng, Oct 26th 2024
Requirement 4.1.3	Doesn't specify error handling for partial form submissions; lacks detailed criteria.	Correctness	Define error-handling for missing fields; specify required format or type, and include error notification.	Haifeng, Oct 26th 2024

Requirement 4.1.4	Unclear on specific payment security requirements; lacks conflict handling for payment failures.	Special Issues	Add security protocols for payment, including a contingency for failed transactions, with alert notifications on failure.	Haifeng, Oct 26th 2024
Requirement 4.1.5	Needs clearer scheduling update details after registration confirmation.	Traceability	Specify steps for schedule update confirmation after successful registration, and reference related requirements for traceability.	Haifeng, Oct 26th 2024
Requirement 4.2.1	Secure login lacks specific encryption or authentication mechanisms.	Special Issues	Specify encryption method, add multi-factor authentication for login, referencing Requirement 4.1.1 for consistency.	Haifeng, Oct 26th 2024
Requirement 4.2.2	Added timeout of 60 seconds for sport/league selection and clarified handling of invalid/unavailable selections (error message + refreshed list).	Correct (User Prompt & Error Handling)	Added 60-second timeout for prompts and clarified how the system refreshes the list after invalid selections.	Poorna, Oct 25th 2024
Requirement 4.2.2	Defined that dropdown lists are dynamically populated from the backend and require manager authentication for league registration.	Precise (Data Source & Authentication)	Stated that dropdowns are populated from backend data and that the manager must be logged in with proper permissions.	Poorna, Oct 25th 2024
Requirement 4.2.3	Added validation for each player entry after filling required fields, with the ability to modify player registration details before submission.	Validation & Modification	The system now validates each player's details individually and allows the team manager to update or modify entries before final submission.	Poorna, Oct 25th 2024
Requirement 4.2.4	Clarification needed on error handling and conflict response.	Clarity & Special Issues	Added prompt for the manager to review payment details in case of a failed transaction. Included guidelines for notifying the manager of payment processing issues and suggesting alternative actions.	Poorna, Oct 25th 2024
Requirement 4.2.4	Lack of security compliance and traceability of requirements.	Compliance & Traceability	Added a requirement for data security measures, including encryption of payment information. Related Requirement 4.1.3 referenced to ensure traceability.	Poorna, Oct 25th 2024

Requirement 4.2.5	Lack of emphasis on real-time updates of match history.	Clarity	Emphasized that the system shall continuously update the match history in real-time as matches are played.	Poorna, Oct 25th 2024
Requirement 4.2.5	Absence of match statistics summary.	Functionality	Added a requirement for the system to provide a summary of match statistics, including total wins, losses, and draws.	Poorna, Oct 25th 2024
Requirement 4.2.6	The requirement description contains minor errors, such as the misspelling of "roaster" instead of "roster," and unclear phrasing like "edited it anytime." There is a lack of measurable criteria, such as how often the roster can be updated or the exact timing of the confirmation process. Furthermore, the system's response to concurrent updates or invalid inputs is not defined. There is no mention of assumptions, constraints, or non-functional requirements like security or data encryption, which are important for privacy and compliance, especially when updating sensitive team information.	Correctness, Precise, Traceability, Special issues, Complete	<ul style="list-style-type: none"> <li>• Correct spelling and grammatical errors.</li> <li>• Add measurable criteria, such as specifying the interval for team roster updates and how the confirmation information should be displayed.</li> <li>• Define the system's mechanism for handling concurrent updates and invalid inputs.</li> <li>• Consider adding relevant non-functional requirements, such as data encryption and access control.</li> </ul>	Wan Wang, Oct 26th 2024
Requirement 4.3.1	Initial requirement did not include details about available facilities.	Completeness	Added a new field to capture available facilities at the venue for more comprehensive information.	Poorna, Oct 25th 2024
Requirement 4.3.2	Initial requirement lacked a notification feature for venue availability changes.	Completeness	Added a requirement to notify event owners of changes to venue availability for improved communication.	Poorna, Oct 25th 2024
Requirement 4.3.3	Initial requirement lacked confirmation communication for bookings.	Completeness	Added a requirement to send a booking confirmation email to the organizer with booking details.	Poorna, Oct 25th 2024
Requirement 4.4.1	The requirement lacks measurable criteria for how "up-to-date" the displayed information should be.	Precise. Clear and Unambiguous	Updated the requirement to include measurable criteria, such as "the schedule will refresh within 5 minutes of a match result update.	Prajwal, Oct 25th 2024

Requirement 4.4.1	Specifies that login is necessary for viewing the schedules and standings, but according to the elicitation session, the user doesn't need to login to view the standings	Correct	Changed the requirement to remove the login for viewing the standings	Prajwal, Oct 25th 2024
Requirement 4.4.1	Consists too much technical details and implementation	Special issues	Updated the requirements and removed the technical implementations, technical details to be included in the system specification	Prajwal, Oct 25th 2024
Requirement 4.5.1	In test cases the word correct is used, which is not clear.	Clear, Precise	Updated to add what the correct information and mentioned the fields that are needed	Prajwal, Oct 25th 2024
Requirement 4.5.2	Description has "relevant safety instruction". The word relevant is not clear and needs more specification	Clear	Changed it to exact safety instructions that are required.	Prajwal, Oct 25th 2024
Requirement 4.5.2	Need to rewrite according to EARS format	Correct	Updated to the respective EARS format	Prajwal, Oct 25th 2024
Requirement 4.5.2	The sentence "If any safety regulations are not met, the system will display warnings." is not clear. Display warning need to be more precise as, what are the warnings that need to be displayed and how it has to be displayed."	Clear, precise and unambiguous	Changed it to include the safety regulations to make it more clear. Also write the exact warning details.	Prajwal, Oct 25th 2024
Requirement 4.5.3	4.5.3 looks like a duplicate of 4.5.2	Correct	4.5.3 merged with 4.5.2	Prajwal, Oct 25th 2024
Requirement 4.6.1	"The system shall automatically update", the word automatically doesnt specify how the details are updated. Also what details needs to be put into the system and how shall it be done? Through a form or some other medium is not specified	Correct	Need to change the req to specify the details that needs to be added such as win/loss, score etc. Also how these are added into the system such as a form.	Prajwal, Oct 25th 2024
Requirement 4.6.1	Using the sentence "updating in real time". The word real time is misleading and ambiguous.	Clear, Precise	Changed the word in real time such as that the standing needs to be refreshed within 1 seconds after the update.	Prajwal, Oct 25th 2024
Requirement 4.6.1	Requirements not written in EARS format	Correct	The requirements written in the EARS format	Prajwal, Oct 25th 2024
Requirement 4.6.2	Grammar needs to be corrected while	Correct	Rewritten as Users shall be able to	Prajwal, Oct 25th 2024

	writing requirements example: users can search.		search for a specific team in the league using the search bar	
Requirement 4.6.3	Words like can are used. Words such as shall, should be used instead.`	Correct	The requirements need to be written in the EARS format, Words such as shall and should be used instead.`	Prajwal, Oct 25th 2024
Requirement 4.7.1	Conflicting venue schedule update steps; lacks conflict-resolution mechanism.	Special Issues	Define steps to resolve scheduling conflicts by providing alternate time slot options and send conflict notifications.	Haifeng, Oct 26th 2024
Requirement 4.7.2	Ambiguous manual conflict resolution process; lacks specific examples or criteria.	Special Issues	Provide examples of conflict resolution, specify alternate time slots or locations, and ensure timely conflict notifications.	Haifeng, Oct 26th 2024
Requirement 4.8.1	Real-time update for schedule lacks criteria for "timeliness"; ambiguous requirement.	Clear and Precise	Define timeliness criteria, such as instant or within seconds, and add notification feature to alert users of updates.	Haifeng, Oct 26th 2024

### Appendix 1: the checklist for the requirements review

Category	To check	Author
Correctness	<ul style="list-style-type: none"> <li>Can someone unfamiliar with the system understand exactly what is being asked without additional clarification?</li> <li>Does the requirement specify measurable criteria?</li> <li>Is the requirement relevant to the overall system goals?</li> <li>Are any assumptions or constraints clearly stated?</li> <li>Have potential conflicts or dependencies with other requirements been identified?</li> <li>Are there any duplicate requirements?</li> <li>Is the requirement free from grammatical errors?</li> </ul>	Prajwal
Precise, clear, and unambiguous	<ul style="list-style-type: none"> <li>Are all precise requirements explicitly defined with measurable criteria to avoid ambiguity?</li> <li>Does each precise requirement clearly trace back to specific project goals or stakeholder needs to ensure accuracy?</li> </ul>	Wan

	<ul style="list-style-type: none"> <li>• Is there a system in place to periodically assess the precision of requirements, ensuring they remain relevant and achievable?</li> <li>• Is the precision of each requirement reviewed and refined regularly to enhance the overall quality of the system?</li> <li>• Have high-level precise requirements been broken down into well-defined sub-requirements with measurable standards and accuracy checks?</li> </ul>	
Traceability	<ul style="list-style-type: none"> <li>• Is each requirement uniquely and correctly identified?</li> <li>• Check that each requirement traces back to a source, such as stakeholders (e.g., league managers, venue owners) or high-level system objectives (e.g., managing sports events efficiently).</li> <li>• Is the traceability process reviewed periodically to identify areas for improvement?</li> <li>• Verify that all high-level requirements (e.g., league management, payment processing) are broken into detailed sub-requirements with clear traces to their source.</li> </ul>	Haifeng
Special Issues	<ul style="list-style-type: none"> <li>• Are all requirements actually requirements, not design or implementation solutions?</li> <li>• Are specific measures to ensure compliance documented (e.g. encryption of user data, protection of payment information)?</li> <li>• Are there rules for how the system should respond when it detects a venue scheduling conflict (such as a change in weather), such as notifying league organizers?</li> <li>• Is there a need to explain how the system should respond when a threat or attack is detected (such as locking an account or sending an alert)?</li> <li>• Are there plans to regularly review and update external service dependencies to ensure compatibility and security?</li> </ul>	Haifeng
Complete	<ul style="list-style-type: none"> <li>• Are all inputs, outputs, and user interactions clearly defined?</li> <li>• Does the requirements document address all known user needs and system needs?</li> <li>• Have all boundary cases been considered and included in the requirements (e.g., error conditions, invalid inputs)?</li> <li>• Are all functional requirements fully specified, covering all use cases and scenarios?</li> </ul>	Poorna

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|  | <ul style="list-style-type: none"><li>• Are all necessary non-functional requirements (e.g., performance, security, scalability) included and defined with measurable criteria?</li></ul> |  |
|--|---|--|

## Appendix 2: A summary of our findings (requirements review report part 2)

In conclusion, we have created five categories for a 'good' requirement (see appendix 1):

**Correctness, Precise, Clear, and Unambiguous, Traceability, Special Issues, and Complete.**

Each category covers essential aspects such as clarity, relevance, and measurability of requirements, along with traceability to system goals and stakeholders. We have also emphasized the importance of addressing potential conflicts, ensuring compliance with security standards, and defining all functional and nonfunctional requirements to create a comprehensive and well-structured system. By applying these categories during the review process, we were able to identify key areas for improvement.

The requirement review highlighted several areas that needed attention, with a focus on improving clarity, adding measurable criteria, and addressing security concerns across different requirements. Key findings include:

1. **Ambiguity and Measurability:** Several requirements were found to be vague, particularly regarding system actions like login procedures, real-time updates, and error handling. Terms like “up-to-date” and “real-time” were clarified with specific definitions (e.g., refresh within 5 minutes or 1 second after an update).
2. **Security and Compliance:** There were gaps in security protocols, particularly around login authentication and payment processing. Updates were made to include encryption methods, multi-factor authentication, and clear steps for handling failed transactions and ensuring data security.
3. **Error Handling and Conflict Resolution:** Error-handling processes were incomplete, especially in form submissions and payment failures. The review added specific steps for conflict resolution, including options for alternative time slots in scheduling and real-time notifications for failure scenarios.
4. **Traceability and Completeness:** Some requirements lacked traceability and connections to related system needs, particularly around scheduling updates and roster changes. These have been revised to ensure alignment with related requirements, and non-functional aspects such as security and system updates were added.

5. **Formatting and Language:** Several requirements were rewritten to follow a clearer format, using the EARS structure, and ambiguous language was replaced. Terms like “can” were changed to “shall,” and grammar issues were corrected to improve overall clarity.

## Appendix 3: Updated requirements

**Here is the link for our updated requirement document:**

[https://docs.google.com/document/d/1\\_oqY6D9Tm-Ly51W2Gtx4p0P3nPpR0s9r/edit](https://docs.google.com/document/d/1_oqY6D9Tm-Ly51W2Gtx4p0P3nPpR0s9r/edit)

In summary, the report's findings during the requirements review process have been updated in the requirements document. Requirements are updated according to the requirements review report to ensure they meet the five key criteria: Correctness, Precision and Clarity, Traceability, Special Issues, and Completeness. This update addresses specific issues identified in the review, such as clarifying vague requirements, adding measurable criteria, improving security protocols, and ensuring traceability across all requirements.

As shown in the revision history, the current version **(2.0)** incorporates these updates based on the feedback provided on October 26, 2024, with contributions from the team members HaiFeng Huang, Wan Wang, Prajwal Umesha, and Poorna B S Rao. These changes reflect a thorough review and are aimed at ensuring that the requirements are now better aligned with system goals, user needs, and compliance standards.





