

SY - Functional Requirements Checklist (JPL)

CLARITY

1. Are requirements specified in an implementation free way so as not to obscure the original requirements?
2. Are implementation and method and technique requirements kept separate from functional requirements?
3. Are the requirements clear and unambiguous (i.e, are there aspects of the requirements that you do not understand; can they be misinterpreted)?

COMPLETENESS

1. Are requirements stated as completely as possible? Have all incomplete requirements been captured as TBDs?
2. Has a feasibility analysis been performed and documented?
3. Is the impact of not achieving the requirements documented?
4. Have trade studies been performed and documented?
5. Have the security issues of hardware, software, operations personnel and procedures been addressed?
6. Has the impact of the project on users, other systems, and the environment been assessed?
7. Are the required functions, external interfaces and performance specifications prioritized by need date? Are they prioritized by their significance to the system?

COMPLIANCE

1. Does this document follow the project's system documentation standards? Does it follow JPL's standards? Does the appropriate standard prevail in the event of inconsistencies?

CONSISTENCY

1. Are the requirements stated consistently without contradicting themselves or the requirements of related systems?
2. Is the terminology consistent with the user and/or sponsor's terminology?

CORRECTNESS

1. Are the goals of the system defined?

DATA USAGE

1. Are "don't care" condition values truly "don't care"? ("Don't care" values identify cases when the value of a condition or flag is irrelevant, even though the value may be important for other cases.) Are "don't care" condition values explicitly stated? (Correct identification of "don't care" values may improve a design's portability.)

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FUNCTIONALITY

1. Are all functions clearly and unambiguously described?
2. Are all described functions necessary and together sufficient to meet mission and system objectives?

INTERFACES

1. Are all external interfaces clearly defined?
2. Are all internal interfaces clearly defined?
3. Are all interfaces necessary, together sufficient, and consistent with each other?

MAINTAINABILITY

1. Have the requirements for system maintainability been specified in a measurable, verifiable manner?
2. Are requirements written to be as weakly coupled as possible so that rippling effects from changes are minimized?

PERFORMANCE

1. Are all required performance specifications and the amount of performance degradation that can be tolerated explicitly stated (e.g., consider timing, throughput, memory size, accuracy and precision)?
2. For each performance requirement defined:
 - a. Do rough estimates indicate that they can be met?
 - b. Is the impact of failure to meet the requirement defined?

RELIABILITY

1. Are clearly defined, measurable, and verifiable reliability requirements specified?
2. Are there error detection, reporting, and recovery requirements?
3. Are undesired events (e.g., single event upset, data loss or scrambling, operator error) considered and their required responses specified?
4. Have assumptions about the intended sequence of functions been stated? Are these sequences required?
5. Do these requirements adequately address the survivability after a software or hardware fault of the system from the point of view of hardware, software, operations personnel and procedures?

TESTABILITY

1. Can the system be tested, demonstrated, inspected or analyzed to show that it satisfies requirements?
2. Are requirements stated precisely to facilitate specification of system test success criteria and requirements?

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TRACEABILITY

1. Are all functions, structures and constraints traced to mission/system objectives?
2. Is each requirement stated in such a manner that it can be uniquely referenced in subordinate documents?