

System Design Review Process Overview

STEPS

1. FUNCTIONAL REVIEW

The FR examines the functional, constraints (including safety and environment) and performance requirements defined for the system.

2. PRELIMINARY DESIGN REVIEW

The PDR examines the proposed system architecture and the allocation of requirements to the sub systems. It ensures that the technical risk and the safety aspects are appropriately covered by the architecture and interfaces are defined.

3. TEST READINESS REVIEW

The TRR ensures that the product, its test equipment, support personnel, and test procedures are ready for the verification activities.

4. SYSTEM ACCEPTANCE REVIEW

The SAR examines the system end products and documentation, and inspection, demonstration, test data and analyses that support its verification. The SAR ensures that the all requirements have been satisfied.

5. OPERATIONAL READINESS REVIEW

The ORR examines the actual operational set up (e.g. spare parts availability), and ensures that the personnel and procedures have reached the required maturity.

SYSTEM NAME

<<input PBS element name >>

CONTACTS

Project accountable:

Other contact:

STATUS SUMMARY

FR	PDR	TRR	SAR	ORR
1	2	3	4	5

□



Date

PURPOSE

Design reviews are formal assessments of items:

- To ensure the objectives and requirements are understood by the affected and associated ESS programme stakeholders,
- To review the relevancy of the proposed solution from design to verification,
- To show that the major risks and safety hazards have been identified and mitigated as appropriate,
- To check that interfaces are unambiguously defined and agreed upon,
- To ensure that it will possible to proceed to the next development phase,
- To baseline additional work products such that the baseline is more and more comprehensive and can serve as a single point of truth for the participants.
- To evaluate its adequacy, to identify potential inadequacies and issues and to institute changes accordingly.

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<<Reference>>

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Design Review Process

STAGES				
FR	PDR	TRR	SAR	ORR
1				

FUNCTIONAL REVIEW

Goals

The FR examines the functional, constraints (including safety and environment) and performance requirements defined for the system.

WHAT GETS REVIEWED

1. System Requirement Document [ESS-000xxxx]
2. CONOPS [ESS-000xxxx]

ROLES & RESPONSIBILITIES

REQUIRED ATTENDEES

- 1.Review leader
- 2.Reviewer
- 3.Reviewer

INVITEES

- 1.

SIGNATURE

DATE

dd/mm/yyyy

QUESTIONS TO CONSIDER

SUMMARY FINDINGS

	Passed	Passed if	Not passed	N/A
1. Have system performance requirements been defined?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Have all interface requirements been captured? Operational environment? Temperature? Cycles? Humidity? Vibration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Have system utilization requirements been defined? Number of operating hours? Life time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Has the anticipated concept of maintenance been identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Are the functions directly traceable to top system-level requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Does the functional analysis allow for the proper development of the RAM analysis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Are all requirements verifiable?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Do system requirements all trace to upper level requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Have RAM requirements been defined?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Have hazards been identified and ESH requirements been defined?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROVAL

☐ APPROVED AS IS ☐ APPROVED WITH CHANGES ☐ REJECTED

APPROVER

DATE

<<Insert reason>>
<<Reference>>

Detailed Findings

1. Have system performance requirements been defined?
2. Have all interface requirements been captured? Operational environment? Temperature? Cycles? Humidity? Vibration?
3. Have system utilization requirements been defined? Number of operating hours? Life time?
4. Has the anticipated concept of maintenance been identified?
5. Are the functions directly traceable to top system-level requirements
6. Does the functional analysis allow for the proper development of the RAM analysis?
7. Are all requirements verifiable?
8. Do system requirements all trace to upper level requirements?
9. Have RAM requirements been defined?
10. Have hazards been identified and ESH requirements been defined?

Design Review Process

STAGES				
FR	PDR	TRR	SAR	ORR
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PRELIMINARY DESIGN REVIEW

Goals

The PDR examines the proposed system architecture and the allocation of requirements to the sub systems.

It ensures that the technical risk and the safety aspects are appropriately covered by the architecture and interfaces are defined.

WHAT GETS REVIEWED

1. System Architecture Specification []
2. Interface Control Documents [,]
3. Verification Plan []

ROLES & RESPONSIBILITIES

REQUIRED ATTENDEES

- 1.Review leader
- 2.Reviewer
- 3.Reviewer

INVITEES

- 1.

SIGNATURE

DATE

dd/mm/yyyy

QUESTIONS TO CONSIDER

1. Has the architecture of the system been defined?
2. Are all functions of the system allocated to the sub systems?
3. Have the appropriate system-level requirements been broken down and allocated to the depth necessary?
4. Have all external interfaces been propagated to the subsystems?
5. Have all internal interfaces been defined?

SUMMARY FINDINGS

Passed	Passed if	Not passed	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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APPROVAL



APPROVED AS IS



APPROVED WITH CHANGES



REJECTED

APPROVER

DATE

<<Insert reason>>
<<Reference>>

Detailed Findings

1. Has the architecture of the system been defined?
2. Are all functions of the system allocated to the sub systems?
3. Have the appropriate system-level requirements been broken down and allocated to the depth necessary?
4. Have all external interfaces been propagated to the subsystems?
4. Have all external interfaces been propagated to the subsystems?

STAGES				
FR	PDR	TRR	SAR	ORR
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TEST READINESS REVIEW

Goals

The TRR ensures that the product, its test equipment, support personnel, and test procedures are ready for the verification activities.

WHAT GETS REVIEWED

1. Verification Plan []

ROLES & RESPONSIBILITIES

REQUIRED ATTENDEES

- 1.Review leader
- 2.Reviewer
- 3.Reviewer

INVITEES

- 1.

SIGNATURE

DATE

dd/mm/yyyy

QUESTIONS TO CONSIDER

SUMMARY FINDINGS

	Passed	Passed if	Not passed	N/A
1. Has the PDR been completed successfully?	<div></div>	<div></div>	<div></div>	<div></div>
2. Has the SAR of the subsystems been completed successfully?	<div></div>	<div></div>	<div></div>	<div></div>
3. Are all requirements traced to a verification activity in the verification plan?	<div></div>	<div></div>	<div></div>	<div></div>
4. Are proposed verification activities adequately defined with regards to requirements?	<div></div>	<div></div>	<div></div>	<div></div>
5. Is the support environment defined? Location? Involved personnel? Responsibilities?	<div></div>	<div></div>	<div></div>	<div></div>
6. Is the test equipment setup adequately defined? Available? Consumables?	<div></div>	<div></div>	<div></div>	<div></div>
7. Do all stakeholders understand their roles?	<div></div>	<div></div>	<div></div>	<div></div>

APPROVAL



APPROVED AS IS



APPROVED WITH CHANGES



REJECTED

APPROVER

DATE

<<Insert reason>>
<<Reference>>

Detailed Findings

1. Has the PDR been completed successfully?
2. Has the SAR of the subsystems been completed successfully?
3. Are all requirements traced to a verification activity in the verification plan?
4. Are proposed verification activities adequately defined with regards to requirements?
5. Is the support environment defined? Location? Involved personnel? Responsibilities?
6. Is the test equipment setup adequately defined? Available? Consumables?
7. Do all stakeholders understand their roles?

STAGES				
FR	PDR	TRR	SAR	ORR
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**SYSTEM
ACCEPTANCE
REVIEW**

Goals

The SAR examines the system end products and documentation, and inspection, demonstration, test data and analyses that support its verification. The SAR ensures that the all requirements have been satisfied.

**WHAT GETS
REVIEWED**

- 1. Verification Plan []
- 2. Verification Report []
- 3. Integration Plan []

ROLES & RESPONSIBILITIES

REQUIRED ATTENDEES

- 1.Review leader
- 2.Reviewer
- 3.Reviewer

INVITEES

- 1.

SIGNATURE

DATE

dd/mm/yyyy

QUESTIONS TO CONSIDER

- 1. Has the TRR been completed successfully?
- 2. Are all verification records traced to the verification activities described in the verification plan?
- 3. Have test failures been adequately resolved?
- 4. Are verification records sufficiently comprehensive and positive for promoting the integration of the equipment within the parent system?

SUMMARY FINDINGS

Passed	Passed if	Not passed	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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APPROVAL

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APPROVER

DATE

<<Insert reason>>
<<Reference>>

Detailed Findings

1. Has the TRR been completed successfully?
2. Are all verification records traced to the verification activities described in the verification plan?
3. Have test failures been adequately resolved?
4. Are verification records sufficiently comprehensive and positive for promoting the integration of the equipment within the parent system?

Design Review Process

STAGES				
FR	PDR	TRR	SAR	ORR
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OPERATIONAL READINESS REVIEW

Goals

The ORR examines the actual operational set up (e.g. spare parts availability), and ensures that the personnel and procedures have reached the required maturity.

WHAT GETS REVIEWED

1. Training reports ☐
2. Operation procedures ☐.
3. Operation schedule ☐

ROLES & RESPONSIBILITIES

REQUIRED ATTENDEES

- 1.Review leader
- 2.Reviewer
- 3.Reviewer

INVITEES

- 1.

SIGNATURE

DATE

dd/mm/yyyy

QUESTIONS TO CONSIDER

SUMMARY FINDINGS

1. Has the SAR been completed successfully?
2. Are the roles and responsibilities for operating the system defined? For maintenance?
3. Do the key stakeholders understand their responsibilities?
4. Is the operating schedule consistent with the stakeholder's expectations?
5. Have all external programmatic dependencies been coordinated? Warehouse? Workshops?
6. Have subcontractors supporting operation roles and responsibilities defined?
7. Is the operation team trained in accordance with its tasks?
8. Is the equipment user trained in accordance with its tasks?

Passed	Passed if	Not passed	N/A
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APPROVAL

☐ APPROVED AS IS ☐ APPROVED WITH CHANGES ☐ REJECTED

APPROVER

DATE

<<Insert reason>>
<<Reference>>

Detailed Findings

1. Has the SAR been completed successfully?
2. Are the roles and responsibilities for operating the system defined? For maintenance?
3. Do the key stakeholders understand their responsibilities?
4. Is the operating schedule consistent with the stakeholder's expectations?
5. Have all external programmatic dependencies been coordinated? Warehouse? Workshops?
6. Have subcontractors supporting operation roles and responsibilities defined? Contract signed?
7. Is the operation team trained in accordance with its tasks?
8. Is the equipment user trained in accordance with its tasks where applicable?