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Introduction

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For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/IEC/IEEE DIS 24748-8

Systems and software engineering — Life cycle management —

Part 8: Technical reviews and audits on defense programs

*Ingénierie des systèmes et du logiciel — Gestion du cycle de vie —
Partie 8: Revues techniques et audits des programmes de défense*

ICS: 35.080

ISO/IEC JTC 1/SC 7

Secretariat: **BIS**

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2025-08-22

Voting terminates on:
2025-11-14

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialised system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO/IEC documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/JTC 1, Information technology, Subcommittee SC 7, Software and systems engineering, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

A list of all parts in the ISO/IEC/IEEE 24748 series can be found on the ISO website.

This second edition cancels and replaces the first edition (ISO/IEC/IEEE 24748-8:2019), which has been technically revised.

The main changes are as follows:

- used document structure, terminology, etc. more consistent with related ISO standards (e.g. ISO/IEC/IEEE 15288:2023) and style requirements;
- reorganized and consolidated text for more consistent wording and to support different acquisition life cycles and organizations;
- added information to support software using highly iterative and incremental (Agile) life cycles;
- defined common processes for technical reviews and audits on defence projects;

- defined review and audit topics associated with technical reviews and audits, replacing acceptability criteria;
- added context to support readers without significant defence industry experience;
- updated to reflect current best practices (e.g. digital engineering);
- removed selected guidance material (e.g. annexes describing optional reviews);
- updated definitions, acronyms, and bibliography to be consistent with revised text.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

This document responds to the needs of defence projects to have more specific and detailed requirements for technical reviews and audits as part of the assessment of projects during their life cycle. The requirements and guidance in this document have been written at the most general level possible so that they can meet the needs of defence agencies in different countries, either by direct application or by tailoring for an agency's specific needs.

Defence projects can be different from typical commercial projects in several ways:

- Defence systems can have hazards to human safety, the environment and national security that make their ownership and use prohibited outside of a defence organization. This can constrain the ability of projects to develop and deploy solutions for test and operational use;
- Acquisition teams can require comprehensive, cohesive technical data for systems and system elements, particularly plans, requirements and architectural descriptions (e.g. for certification activities or organic support);
- Acquisition teams using public funds often need extensive visibility into the definition and execution of supplier processes to support their fiduciary responsibilities.

These differences can result in the need to support more stakeholders in the review and audit process (6.6) and the need to review and audit more information items than found in typical commercial projects. However, non-defence projects are encouraged to apply it if useful.

This document can be used in one or more of the following modes:

- by an acquirer and a supplier, to help develop an agreement on the contribution of each party to the technical reviews and audit approach;
- by a project, to help establish and execute a technical review and audit approach for that project;
- by an organization, to help establish a desired approach to technical reviews and audits that can be applied across multiple projects;
- by process assessors, to serve as a reference for use in the performance of process assessments that support organizational process improvement.

NOTE Several tables in this document include a unique identifier (ID) for each table entry. This identifier can be used as desired to support compact references to the table entry in tailoring descriptions, checklists, etc.

Systems and software engineering — Life cycle management —

Part 8: Technical reviews and audits on defense programs

1 Scope

This document establishes the requirements for technical reviews and audits to be performed throughout the acquisition life cycle of defence projects. This document provides the purpose, timing, activities and tasks for each technical review and audit. It can be used to establish agreement between acquirers and suppliers on the technical reviews and audits that are needed for the project, as well as the focus and expectations of each technical review and audit.

This part of ISO/IEC/IEEE 24748 is applicable to:

- those who implement or plan to implement technical reviews and audits in the acquisition of defence-related systems (and parts thereof) or services;
- those who are responsible for the technical management of projects concerned with the engineering of systems;
- those responsible for executing ISO/IEC/IEEE 15288 system life cycle processes for defence projects.

While primarily supporting the acquirer-supplier agreement mode, this document also can be used to support the other modes such as use by organizations, projects, and process assessors.

NOTE In this document, the terms project and program are used interchangeably.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO, IEC, and IEEE maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>
- IEEE Standards Dictionary Online: available at <https://ieeexplore.ieee.org/xpls/dictionary.jsp>

NOTE Definitions for other system and software engineering terms can be found in ISO/IEC/IEEE 24765, available at www.computer.org/sevocab.

3.1.1

agile

development approach based on iterative development, frequent inspection and adaptation, and incremental deliveries in which requirements and solutions evolve through collaboration in cross-functional teams and through continual stakeholder feedback

[SOURCE: ISO/IEC/IEEE 24748-1:2024, 3.4]

3.1.2

artefact

work product that is produced and used during a project to capture and convey information

[SOURCE: ISO/IEC/IEEE 15288:2024, 3.6]

3.1.3

configuration audit

review of processes, product definition information, documented verification of compliance with requirements and an inspection of products to confirm that products have achieved their required attributes and conform to released product configuration definition information

EXAMPLE functional configuration audit, physical configuration audit, system verification review

Note 1 to entry: Unless otherwise stated, the use of the term “audit” in this document is intended to refer specifically to a configuration audit.

[SOURCE: SAE EIA-649C, 4.1, modified – Some examples were removed and note 1 added.]

3.1.4

configuration baseline

configuration of a product, at a specific point in time, which serves as a basis for defining change, for conducting verifications, and for other management activities. For a software product, the build baseline includes the actual product

EXAMPLE allocated baseline, build baseline, developmental baseline, functional baseline, product baseline

[SOURCE: SAE EIA-649C, 4.1]

3.1.5

evaluation

systematic determination of the extent to which an entity meets its specified criteria

[SOURCE: ISO/IEC 25001:2014, 4.1]

3.1.6

increment

tested, deliverable version of a product that provides new or modified capabilities

[SOURCE: ISO/IEC/IEEE 33202, 3.17, modified - “software” has been removed.]

3.1.7

information

knowledge that is exchangeable amongst users, about things, facts, concepts, and so on, in a universe of discourse

[SOURCE: ISO/IEC 10746-2:2009, 3.2.6]

3.1.8

information item

information product

separately identifiable body of information that is produced, stored, and delivered for human use

Note 1 to entry: A document produced to meet information requirements can be an information item, part of an information item, or a combination of several information items.

Note 2 to entry: An information item can be produced in several versions during a project or system life cycle.

[SOURCE: ISO/IEC/IEEE 15289:2017, 3.1.12]

3.1.9

information item content

information included in an information item, associated with a system, product or service, to satisfy a requirement or need

[SOURCE: ISO/IEC/IEEE 15289:2017, 3.1.13]

3.1.10

iteration

<process> repeating the application of the same process or set of processes on the same level of the system structure

[SOURCE: ISO/IEC/IEEE 15288:2023, 3.28]

3.1.11

recursion

<process> repeating the application of the same process or set of processes to successive levels of system elements in the system structure

[SOURCE: ISO/IEC/IEEE 15288:2023, 3.31]

Note 1 to entry: No specific order of application is implied by this definition. For software and hardware system elements, a process may be applied at recursively lower levels for system definition and recursively higher levels for system realization.

Note 2 to entry: This definition does not imply any specific hierarchical, vertical, or horizontal structure for the system of interest, enabling system, organization, or project.

3.1.12

software configuration item

computer software configuration item

aggregation of software that is designed for configuration management and treated as a single entity in the configuration management process

[SOURCE: ISO/IEC/IEEE 24765:2017]

Note 1 to entry: The state of technology progression has resulted in the functionality of software code being realized by its execution while embedded in devices that are not properly described as computers (e.g., digital signal processors, field programmable gate assemblies). This document uses software configuration item to encompass the broader execution environment of software code.

3.1.13

specification

information item that identifies, in a complete, precise, and verifiable manner, the requirements, design, behavior, or other expected characteristics of a system, service, or process

[SOURCE: ISO/IEC/IEEE 15289:2019, 5.24]

Note 1 to entry: The more generic term is used for consistent terminology within this document and includes terms such as System performance specification, System requirements document, System/subsystem specification, or Agile backlog.

3.1.14

system

arrangement of parts or elements that together exhibit a stated behaviour or meaning that the individual constituents do not

Note 1 to entry: A system is sometimes considered as a product (3.32) or as the services (3.42) it provides.

Note 2 to entry: In practice, the interpretation of its meaning is frequently clarified by the use of an associative noun, e.g. aircraft system. Alternatively, the word “system” is substituted simply by a context-dependent synonym (e.g. aircraft), though this potentially obscures a system principles perspective.

Note 3 to entry: A complete system includes all of the associated equipment, facilities, material, computer programs, firmware, technical documentation, services (3.42), and personnel required for operations and support to the degree necessary for self-sufficient use in its intended environment (3.16).

[SOURCE: ISO/IEC/IEEE 15288:2023, 3.46]

3.1.15

technical reviews

systems engineering technical reviews

a series of systems engineering activities conducted at logical transition points in a system life cycle, by which the progress of a project is assessed relative to its technical requirements using a mutually agreed-upon set of criteria

Note 1 to entry: Includes both incremental and system perspectives, as applicable, and considers technical maturity amidst programmatic constraints (cost/schedule), to ascertain readiness to proceed to subsequent activities with acceptable risk.

Note 2 to entry: Unless otherwise stated, the use of the term “review” in this document is intended to refer specifically to a technical review.

3.1.16

user

individual or group that interacts with a system or benefits from a system during its utilization

[SOURCE: ISO/IEC/IEEE 15288:2023, 3.53]

3.1.17

work product

artefact produced by a process

EXAMPLE Project plan, requirements specification, design documentation, source code, test plan, test meeting minutes, schedules, budgets, incident reports.

Note 1 to entry: A subset of the work products can form a baseline for further work, and some will form the set of project deliverables.

[SOURCE: ISO/IEC 20246:2017, 3.20]

3.2 Abbreviated terms

ASR	alternative systems review
CDR	critical design review
ICA	incremental configuration audit
ICR	iterative capability review
ID	identifier
IPR	iterative planning review
IRR	incremental release review
IVR	incremental viability review
FCA	functional configuration audit

PCA	physical configuration audit
PIR	project initiation review
PDR	preliminary design review
PRR	production readiness review
RASIC	responsible, accountable, supports, informed, consulted (model)
SBOM	software bill of materials
SFR	system functional review
SME	subject matter expert
SRR	system requirements review
SVR	system verification review
TRR	test readiness review

4 Conformance

Users of this document can make claims of conformance (conformance statements) to some or all requirements in this document. Users can structure the form of such claims to meet their needs, therefore this document does not prescribe the form of these claims.

Also, per ISO/IEC 17007 this document does not address specific methods or procedures for individual conformity assessment activities, nor does it address general rules or methodology for conformity assessment.

For more information about conformance, see [Annex B](#) and www.iso.org/iso/foreword.html.

5 Concepts

5.1 Project assessment and control

Reviews and audits support the “assess the project” activity of the ISO/IEC/IEEE 15288 project assessment and control process. The overall purpose of this process is to:

- assess if plans are aligned and feasible;
- determine the status of the project, technical and process performance;
- direct execution to confirm that the performance is according to plans and schedules, within projected budgets, to satisfy project objectives.

This process evaluates, periodically and at major events, the progress and achievements against requirements, plans, and overall strategic objectives. Information is provided for management action when significant variances are detected.

Although both reviews and audits support project assessment and control, technical reviews tend to include more focus on proactive areas such as risk identification, whereas configuration audits focus more on confirming the proper operation and outcomes of the configuration management system (5.2). Together, they provide key points throughout the project to evaluate significant achievements and to assess technical maturity and risk. Project assessment is performed at major project decision points by means of these reviews and audits, and the results inform a project’s management to enable any required project control actions. These actions can include redirecting project activities and tasks as appropriate to correct identified deficiencies.

5.2 Configuration management

Reviews and audits also support the “perform configuration identification” and “configuration verification and audit” activities of the ISO/IEC/IEEE 15288 configuration management process. The overall purpose of the configuration management process is to manage system and system element configurations over their life cycle. Managing includes establishing and maintaining consistency, integrity, traceability, and control. Configurations include information items and their product configuration information (e.g. version number).

Reviews and audits typically assess sets of related information items (e.g. requirements, architecture, design) for desired attributes such as consistency, integrity, and traceability. Thus, reviews and audits can be used where appropriate to support the incorporation of quality information items into a project configuration baseline (e.g., functional baseline, allocated baseline, or product baseline) and to provide confidence that the baseline is sufficiently mature to be used in future activities. ISO/IEC/IEEE 24748-7 provides additional information on configuration management for defence projects, including configuration baselines.

5.3 Validation

Reviews and audits also support the ISO/IEC/IEEE 15288 validation process. The overall purpose of this process is to provide objective evidence that the system, when in use, fulfils its business or mission objectives and stakeholder needs and requirements, achieving its intended use in its intended operational environment. Although validation can be done for the system of interest (or a system element) after it has been implemented or integrated and verified, validation can also be performed for individual information items produced in the definition and realization of the system and its elements. The validation process can help confirm:

- the “right” information items have been produced according to the needs and requirements of the stakeholders;
- whether or not these information items will result in the “right” system once realized.

Reviews and audits provide opportunities for stakeholders to provide early and frequent feedback on the evolution of the system and its associated information items with respect to the stakeholders’ needs and requirements. These stakeholder discussions (in-process validation) can help determine that the proposed baselines are acceptable to the organization, customer, user, and other stakeholders.

Proposed changes to enhance system performance or to reduce risk or cost are welcome for consideration, but after baselining these will go through formal change control, since others can be building on previously defined and released information items.

5.4 Information and digital engineering

Much of the value of a review or audit comes from the effective evaluation of project information and consideration of the results. Project information can be provided in a static format (a document or database), as an interactive model or simulation, as a demonstration, or any other means best suited to the expected outcomes of the review or audit. In some cases, the evaluation can be used to determine formal acceptance of an information item. However, an excessive focus on information item acceptance can get in the way of supporting the project assessment and control (5.1), configuration management (5.2) and validation (5.3) needs of the project. This document uses the term “review or audit topic” to establish the necessary information and associated attributes needed to support the review or audit outcomes. As much as possible, this document specifies the necessary information and its attributes, not how the information is made available, to support its use across different organizations and life cycles. However, some suggestions for information items to use with the review and audit topics are included in [Annex A](#).

An incomplete information item (“draft,” “preliminary,” etc.) can be used for some reviews or audits, so long as the completeness and other technical qualities support the expected outcomes of the review or audit. Generally, review and audit topics do not distinguish between incomplete and complete information items.

Modern engineering practices incorporate digital engineering concepts, enabling the use of integrated models and simulations throughout the project lifecycle to digitally represent the system and associated information items. The extent to which a project adopts a digital engineering approach will not impact

“what” reviews and audits need to be conducted, but it can have a profound and revolutionary impact upon “how” they are conducted. A well-defined digital ecosystem, with an associated authoritative source of truth and static and interactive models of systems and their environment, will enable timely and iterative analyses. In addition, by leveraging constructive, virtual, and live simulation tools, the ecosystem can enable exploration of options not easily analysed elsewhere.

5.5 Agile development

To create frequent opportunities for effective project assessment and control, validation, and value delivery, some projects adopt the principles and practices described in ISO/IEC 33202 and ISO/IEC/IEEE 24748-10, particularly for software systems or system elements. Typical Agile implementation aspects relevant to this standard include:

- Stakeholder needs, system requirements, design, etc. can evolve rapidly over the course of the project, with different functional capabilities at different levels of maturity at any point. A Definition of Ready may be defined to support decision gates (6.1), such as determining that sufficient information exists to start implementation. However, these decisions can happen so frequently as to overwhelm the ability of key stakeholders to participate in them (6.6);
- To support this highly iterative and incremental approach, stakeholder needs and associated requirements may be defined in units of work called Agile backlog items, sometimes supplemented by global requirements captured in a Definition of Done. These backlog items may be decomposed into smaller related units of work and ultimately allocated to specific schedule periods, responsible teams, system element implementation versions, and associated test or other verification data as needed. Where a complete set of requirements, etc., is needed for a system or system element (Introduction), extracting such information directly from Agile backlog information can be difficult, in part because the sequence in which backlog items are implemented will usually affect the result. This can lead to the creation of alternate representations (including traditional requirements specifications, interface control documents, and other such documents) for systems and system elements;
- Rather than relying on large-scale reviews of comprehensive configuration baselines of increasing fidelity over the course of the project, Agile projects may use lightweight reviews of backlog item definition and completion, coupled with validation of deliverable products in an operationally representative environment, creating a single technical baseline that evolves incrementally as the backlog evolves. This approach is particularly effective for software, where modern languages and tools can narrow the distinction between requirements, design, implementation and test, and where the cost to correct defects is lower than many physical systems.

[Clause 9](#) addresses technical reviews and audits for Agile projects.

6 Timing and frequency

6.1 Alignment to system life cycle model

Per ISO/IEC/IEEE 15288, every system has a life cycle model that comprises one or more stages, as needed. The stages can be iterative, concurrent, or overlapping, as appropriate for the system’s scope, magnitude, complexity, changing needs, and opportunities. Typical system life cycle stages include concept, development, production, utilization, support, and retirement. These stages describe the major progress and achievement milestones of the system through its life cycle.

Stages give rise to decision gates. These decision gates apply specific decision criteria and are used by organizations to understand and manage the inherent uncertainties and risks associated with business case, costs, schedule, performance, or functionality of a system. The stages thus provide a framework within which a project has high-level visibility and control of technical management and technical processes.

Reviews and audits are assessment tools that provide decision-makers with sufficient information on the project’s technical readiness to proceed to the next stage or to the next decision point within a stage. As a result, reviews and audits are often aligned to the beginning or end of each stage, as well as to key decision points within a stage, as appropriate.

See ISO/IEC/IEEE 24748-1 for details on different system life cycle models and how to select a life cycle model for a specific project. ISO/IEC/IEEE 24748-2 provides additional information on decision gates.

6.2 Risk-based decision points

In addition to life cycle stage boundaries, a review or audit can be held prior to a project task that poses significant technical or programmatic risks. For example, a test readiness review can be held prior to a particular test that has significant safety or security risks.

6.3 Entry criteria

A review or audit should not be conducted (7.2) unless and until the system under development meets the associated entry criteria. Entry criteria should support the purpose of the review or audit, including the required level of development maturity. The entry criteria are applied across all requirements and technical disciplines. Example entry criteria include:

- completion of required activities and tasks to prepare for the review or audit (7.1);
- availability of specific information items necessary to support the review or audit topics (5.4)

Entry criteria should be documented in appropriate project plans prior to the start of the review or audit.

6.4 Exit criteria

The conduct of a review or audit (7.2) should be considered complete only after the associated exit criteria have been met. Example exit criteria include:

- confirmation that the expected review or audit outcomes have been achieved;
- action items have been properly dispositioned.

Exit criteria should be documented in appropriate project plans prior to the start of the review or audit.

6.5 Application to system elements

For complex systems, the project can choose to perform certain reviews or audits for one or more system elements depending on the interdependencies involved. These recursive system-element-level reviews or audits support an overall system-level review or audit. This document takes a minimalistic approach to defining the content of each review and audit such that the content is intended to be sufficient to support each instance of that review or audit performed by a given project.

6.6 Iteration and concurrency considerations

For those projects that repeat all or part of the life cycle stages (e.g. to support incremental deliveries), some or all reviews and audits may be performed as part of each iteration. However, particularly for projects that iterate frequently, this can strain the availability of the review or audit team and related resources. In this case, a project can combine certain reviews or audits or hold certain reviews or audits after a given number of iterations. For these cases, the project should consider the tradeoffs between the potential risks of not holding all reviews and audits every iteration and the adverse impacts to project resources.

6.7 Removing, combining, or adding reviews or audits

Projects should only conduct reviews or audits that are necessary given the structure of the project's acquisition life cycle, e.g. where in the acquisition cycle the project will enter, or one-of-a-kind projects without a production requirement.

Projects can also add other reviews or audits, based on project characteristics such as complexity, risk posture, nature, or specific domain. Some examples include Operational Readiness Review, System Readiness

Review, and Transition Readiness Review. The specific approach to adding such reviews is beyond the scope of this document.

7 Technical review and audit processes

7.1 Prepare process

7.1.1 Purpose

The purpose of the prepare process is to support the efficient and effective conduct and completion of the review or audit.

NOTE [Annex C](#) provides additional information on review planning, including guidance on defining roles, responsibilities, and other key attributes for participants in the review or audit.

7.1.2 Outcomes

As a result of the successful execution of the prepare process, these outcomes shall be achieved:

- a) participants in the review or audit ([C.4](#)) are identified and prepared to contribute to a successful review;
- b) necessary materials, including review or audit topics and related information items ([5.4](#)), are available to conduct the review;
- c) potential impediments affecting the ability to achieve the purpose of the review or audit are identified and addressed;
- d) entry criteria ([6.3](#)) are accepted as complete.

7.1.3 Activities and tasks

The activities and tasks defined in [Table 1](#) shall be implemented for this process in accordance with applicable organization policies and procedures.

Table 1 — Activities and tasks: prepare process

ID	Description
P11	Review and update planning. (This activity consists of the following tasks.)
P1101	Confirm that project plans define the review or audit sufficiently to support the expected outcomes of the review or audit.
P1102	Confirm that project plans define the roles, responsibilities, and other key attributes for expected participants in the review or audit.
P1103	Confirm that any standards defined by the acquirer organization as required for use in the review or audit have been applied and tailored for the project.
P1104	Where supplier involvement is permitted, confirm that the acquirer-supplier agreement identifies the required support.
P1105	Coordinate any unique methods required to apply review or audit topics (e.g. the disassembly, inspection, and reassembly of a production-representative configuration item to support verification against related design documentation).
P1106	Coordinate a preliminary agenda with the review or audit team and other key stakeholders prior to conducting the review or audit.
P12	Establish team. (This activity consists of the following tasks.)
P1201	Identify and coordinate with the specific individuals who will be part of the acquirer governance team for the review or audit.
P1202	Identify and coordinate with the full team membership and other key stakeholders in advance of conducting the review or audit, including expectations on review or audit topics and associated information items or alternate sources of information (e.g. demonstrations).

Table 1 (continued)

ID	Description
P1203	Where supplier involvement is permitted, coordinate participation by supplier organizations in the planning and conduct of the review or audit.
P1204	Where supplier involvement is permitted, confirm that the names and roles of any participating supplier individuals have been submitted (e.g. representatives from test and configuration management functions).
P13	Determine readiness. (This activity consists of the following tasks.)
P1301	Confirm funding and staffing profiles support the tasks and specified process outcomes of the review or audit.
P1302	Confirm availability of any required facilities, including unique facilities such as supplier production areas, and associated logistical support including access to virtual meeting tools.
P1303	Where supplier involvement is permitted, submit supplier information items in accordance with the acquirer-supplier agreement, including requirements for the content, timing, and manner of submittal.
P1304	Confirm all of the information items needed to satisfy entry criteria are available, in a configuration that allows relevant cross-information item attributes to be analysed (e.g. traceability, consistency, completeness).
P1305	Identify any specific topics for in-depth whole team discussion at the review or audit.
P1306	Confirm that technical metrics to be used in the review or audit have been updated, are available to the team, and demonstrate sufficient progress and developmental maturity of the system to support the tasks and objectives of the review or audit.
P1307	Coordinate the preparation, assembly and distribution of presentations (e.g. agenda) and related summary materials among presenters and other stakeholders in time to support conducting the review or audit.
P1308	Confirm that the pre-coordinated entry criteria have been met prior to conducting the review or audit.
P1309	Approve the final agenda for the review or audit.
P1310	Approve readiness to proceed to the conduct of the review or audit in accordance with project plans. NOTE Where supplier involvement is permitted, readiness is also approved in accordance with the acquirer-supplier agreement.

7.2 Conduct process

7.2.1 Purpose

The purpose of the conduct process is to support project assessment (5.1), configuration management (5.2), and in-process validation (5.3) outcomes via the evaluation of work performed to date.

7.2.2 Outcomes

As a result of the successful execution of this process, these outcomes shall be achieved:

- a) stakeholder feedback is captured and analysed;
- b) project actions related to emergent issues (e.g. correction of information item deficiencies), risks, or opportunities are identified (C.3);
- c) exit criteria (6.4) are accepted as complete.

7.2.3 Activities and tasks

The activities and tasks defined in Table 2 shall be implemented for this process in accordance with applicable organization policies and procedures.

NOTE These activities are structured to support combinations of an asynchronous approach that can be performed in parallel by one or more subsets of the team, and a synchronous whole team approach ("meeting"). Projects can sequence and iterate these approaches as needed.

Table 2 — Activities and tasks: conduct process

ID	Description
P21	Evaluate information items and related materials. (This activity consists of the following tasks.)
P2101	Apply the pre-coordinated review or audit topics to information items and other sources of information (e.g. demonstrations).
P2102	Summarize the results of the evaluation in a form that supports the objectives of the review or audit.
P2103	Review technical metrics defined for use in the review or audit.
P22	Facilitate meeting. (This activity consists of the following tasks.)
P2201	Review meeting logistics with all participants (e.g., physical location layout, virtual meeting protocols and associated tools, safety procedures, and security procedures).
P2202	Introduce the governance and facilitation team members and other key stakeholders to the participants.
P2203	Review the purpose of the review or audit with the participants.
P2204	Review the meeting agenda with the participants.
P2205	Review with the participants the readiness to proceed with conducting the review or audit, including the status of entry criteria. NOTE This review can include summaries of checklist(s) used to manage readiness.
P2206	Present a summary of project objectives, key considerations, schedule progress, etc. to provide context to participants unfamiliar with the project. NOTE This overview can focus on certain project aspects relevant to purpose of the review or audit; for example, a test-related review can focus on the test and evaluation aspects of the project and how planned tests support the overall project.
P2207	Review action item procedures with participants, including submitting, recording, categorizing, assigning, reviewing and dispositioning action items as applicable.
P2208	Review the status of action items from any prior reviews or audits that relate to the objectives of the review or audit being conducted.
P2209	For a configuration audit, review with all participants the status of minutes from prior configuration audits related to the specific system or system element, as well as any lower-level audits for constituent system elements.
P2210	Review specific information items, other sources of information, or evaluation summaries previously identified as requiring in-depth whole team attention for the review or audit.
P2211	Evaluate whether the overall maturity of the evaluated technical information items (including baseline definition) and any associated cost and schedule information items support the exit criteria and outcomes of the review or audit.
P2212	Propose action items per project plans.
P23	Close review or audit. (This activity consists of the following tasks.)
P2301	Collate all action items.
P2302	Organize and supervise proposed dispositions for all action items.
P2303	Approve the disposition of all action items.
P2304	Where supplier involvement is permitted, obtain concurrence on satisfaction of exit criteria per project plans and the acquirer-supplier agreement.
P2305	Approve closure of the review or audit once all exit criteria have been met, via closure letter or equivalent, in accordance with project plans. NOTE Where supplier involvement is permitted, the closure is also approved in accordance with the acquirer-supplier agreement.
P2306	Acknowledge to key stakeholders that the review or audit was closed in accordance with project plans. NOTE Where supplier involvement is permitted, the acknowledgment is also issued in accordance with the acquirer-supplier agreement.

7.3 Complete process

7.3.1 Purpose

The purpose of the complete process is to communicate and incorporate the results of the review or audit to support desired project outcomes.

7.3.2 Outcomes

As a result of the successful execution of this process, these outcomes shall be achieved:

- a) results of the review or audit are communicated to project stakeholders;
- b) project actions identified in the review or audit are completed or otherwise dispositioned.

7.3.3 Activities and tasks

The activities and tasks defined in [Table 3](#) shall be implemented for this process in accordance with applicable organization policies and procedures.

Table 3 — Activities and tasks: complete process

ID	Description
P31	Document and distribute results. (This activity consists of the following tasks.)
P3101	Prepare the closure summary report and any associated formal meeting minutes.
P3102	Approve and distribute the closure summary report and any associated formal meeting minutes.
P32	Coordinate risks and action items. (This activity consists of the following tasks.)
P3201	Determine if the results of the review or audit indicate a risk level that supports continued execution of the existing project plan and associated investments, and coordinate significant project risks, issues and opportunities with stakeholders.
P3202	Coordinate the resolution or status update of risks, issues and opportunities identified during the review or audit, including identification of root cause and associated mitigation or other disposition.
P3203	Oversee the execution of action item closure plans.
P3204	Sign off final approval of all action items.
P33	Incorporate results. (This activity consists of the following tasks.)
P3301	Establish or coordinate updates to acquirer project planning and associated plans (including contingency plans) where indicated by the results of the review or audit (including as specified in action items). NOTE This includes the plan to the next review or audit.
P3302	Confirm funding and staffing profiles support future work (including future reviews or audits) based on the results of the review or audit.
P3303	Where a formal configuration management baseline is established or affected by the review or audit, transfer control of the baseline from supplier to acquirer as defined in project plans and the acquirer-supplier agreement.
P3304	Establish or coordinate updates to the acquirer-supplier agreement and associated plans where indicated by the results of the review or audit (including as specified in action items). NOTE This includes the plan to the next review or audit.
P3305	Confirm that information items are updated where indicated by the results of the review or audit (including as specified in action items).
P3306	Communicate identified resource shortfalls to key stakeholders.
P3307	Confirm that all information items that are required to be put under configuration control after closure of the review or audit have been processed per project plans.
P3308	Confirm that all project schedule activities associated with the performance of the review or audit have been successfully completed and documented as such.

Table 3 (continued)

ID	Description
P3309	Where supplier involvement is permitted, record closure of the review or audit in supplier records per the acquirer-supplier agreement.
P3310	Where supplier involvement is permitted, confirm that supplier records reflect closure of the review or audit per the acquirer-supplier agreement.
P3311	Where a formal configuration management baseline is established or affected by the review or audit, convene a configuration steering board per project plans if stakeholder requirement changes are required.

8 Application to major capability acquisition pathway

8.1 Overview

8.1.1 Purpose

The purpose of the major capability acquisition pathway is to acquire and modernize defence unique projects that provide enduring capability. These acquisitions typically follow a structured analyse, design, develop, integrate, test, evaluate, produce, and support approach. This process is designed to support major defence acquisition projects, major systems, and other complex acquisitions. Acquisition and product support processes, reviews, and documentation are tailored based on the project size, complexity, risk, urgency, and other factors. Software-intensive components can also be acquired via the Agile software acquisition pathway ([Clause 9](#)), with its inputs, outputs and other dependencies integrated with the major capability acquisition pathway.

The following technical reviews and audits are associated with the major capability acquisition pathway:

- alternative systems review (ASR);
- system requirements review (SRR);
- system functional review (SFR);
- preliminary design review (PDR);
- critical design review (CDR);
- test readiness review (TRR);
- functional configuration audit (FCA);
- system verification review (SVR);
- production readiness review (PRR);
- physical configuration audit (PCA).

NOTE 1 Earlier activities conducted before engagement with the defence acquisition process are outside the scope of this clause.

NOTE 2 Although these activities are described as applying to a system, they can also be applied to a system element as described in [6.5](#).

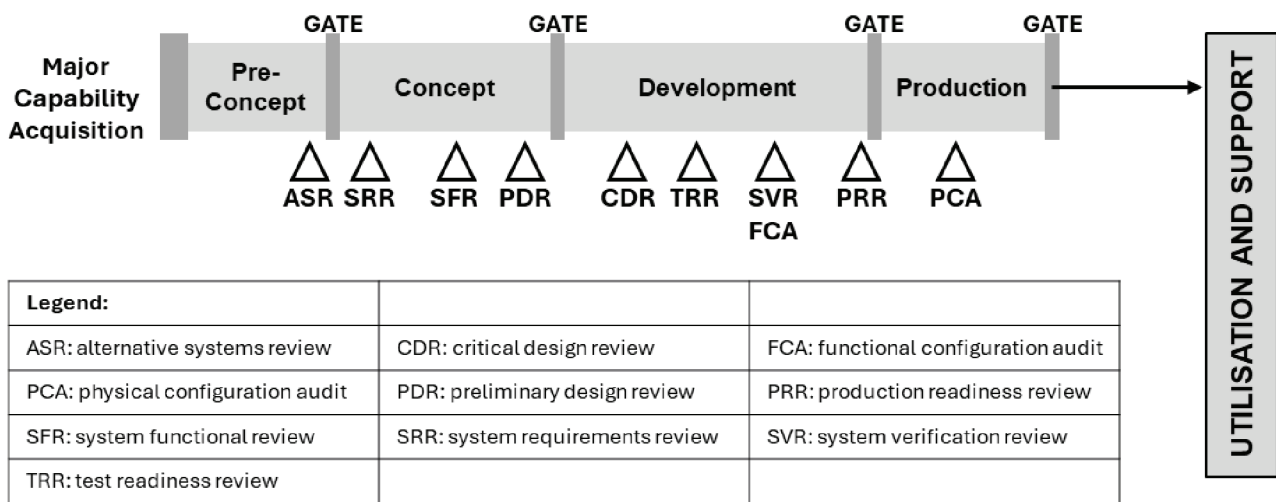
8.1.2 Life cycle

The stages of the major capability acquisition life cycle include:

- pre-concept, which includes an analysis of alternatives and other activities needed to choose the concept for the product to be acquired, to begin translating validated capability gaps into system-specific requirements, and to conduct planning to support a decision on the acquisition strategy for the product;

- concept, which is intended to reduce technology, engineering, integration and life-cycle cost risk to the point that a decision to contract for additional work can be made with confidence in successful project execution for development, production, utilisation and support;
- development, which includes activities to develop, build, test, and evaluate a materiel solution to verify that all operational and implied requirements, including those for security, have been met, and to support production, deployment and sustainment decisions;
- production, which produces and deploys requirements-compliant materiel solutions to receiving operating organizations;
- utilisation and support, which executes the product support strategy, satisfies materiel readiness and operational support performance requirements including personnel training, and sustains the system over its life cycle, including disposal.

Figure 1 depicts an example relationship between reviews and audits and the major capability acquisition life cycle stages.



NOTE Adapted from ISO/IEC/IEEE 24748-7:2025, Figure 1.

Figure 1 — Example reviews and audits for the major capability acquisition pathway

8.2 Alternative systems review (ASR)

8.2.1 ASR purpose

The purpose of the ASR is to confirm that the preferred materiel solution has the potential to affordably meet the user's needs and expectations, and that there is sufficient understanding of the technical maturity, feasibility, and risk of the proposed materiel solution.

8.2.2 ASR outcomes

As a result of the successful conduct of the ASR, these outcomes shall be achieved:

- an ASR-supported dialog between the user community and the acquisition community has led to the preferred materiel solution's functional and performance requirements;
- candidate materiel solutions considered in the analysis of alternatives provide a broad and balanced evaluation of cost, schedule, performance, concepts of operations, and risk;

- c) the preferred materiel solution resulting from the analysis of alternatives has the best potential to be cost effective, affordable, operationally effective and suitable, and can be developed to provide a timely solution to the need at an acceptable level of risk;
- d) threshold requirements derived from key performance parameters and key system attributes have been documented;
- e) decisions based on analysis of alternatives recommendations have been documented;
- f) additional constraints placed on future development activities have been documented.

8.2.3 ASR timing

The ASR should be held after the system parameters for the preferred materiel solution are defined and that solution is balanced with cost, schedule, and risk.

8.2.4 ASR activities and tasks

The technical review and audit processes in [Clause 7](#) shall be implemented in accordance with applicable organization policies and procedures with respect to the ASR.

8.2.5 ASR review topics

The ASR shall incorporate the review topics listed in [Table 4](#).

Table 4 — ASR review topics

ID	Category	ASR review topic
T000000	Stakeholder needs and requirements	The users expected to be associated with the operational resolution of the identified capability gap(s), including operators, maintainers, and support staff, have been identified (e.g. through target audience analysis).
T000001	Stakeholder needs and requirements	Current user need statements (including multi-service and multinational users) about current and evolving capability gap(s), supported missions and associated mission analysis are available and support an analysis of alternative solutions. NOTE Capability gap(s) can be ultimately resolved through procurement of material, changes to training or doctrine, etc.
T000002	Stakeholder needs and requirements	Current user need statements (including multi-service and multinational users) about necessary interfacing and enabling systems in the operational environment and overall system of systems context are available and support an analysis of alternative solutions.
T000003	Stakeholder needs and requirements	The analysis of alternatives has considered a range of alternative solutions with enough detail to support decisions that will satisfy stakeholder objectives.
T000004	Stakeholder needs and requirements	The results of the analysis of alternatives are consistent with current user needs.
T000005	Stakeholder needs and requirements	Required related solutions are identified along with supporting rationale, including the capability gap(s) associated with the related solutions.
T000006	Stakeholder needs and requirements	High-level description of the preferred materiel solution is available, clearly understood and contains enough detail to support further technical analysis.
T000007	Stakeholder needs and requirements	Rationale is available for the preferred materiel solution that supports review outcomes, including applicable scoring results based on the analysis of alternatives.
T000008	Stakeholder needs and requirements	Key assumptions and constraints associated with preferred materiel solution are identified and support the conclusion that this solution can be expected to satisfy the user need statements in terms of technical, operational, risk, schedule and cost (affordability) criteria.
T000009	Stakeholder needs and requirements	Thresholds and objectives are stated as broad measures of effectiveness and suitability; e.g. measures of effectiveness, measures of suitability, and measures of performance.

Table 4 (continued)

ID	Category	ASR review topic
T050000	System requirements	System requirements conform to the characteristics of well-formed requirements statements (e.g. consistent with stakeholder needs and requirements). NOTE See ISO/IEC/IEEE 29148 for descriptions of requirements characteristics.
T050001	System requirements	The system requirements are defined such that they support system functional definition.
T050002	System requirements	The system requirements are defined such that they allow for design trade space.
T100100	System architecture	System of systems interfaces and other external dependencies support further technical analysis.
T401100	System analysis	System safety and hazard analysis performed to date support the acquisition of the preferred material solution at acceptable risk.
T406000	System analysis	Producibility assessments of the preferred material solution indicate acceptable technology levels to initiate an acquirer-supplier agreement.
T450000	Decision management	Results of any trade studies or technical demonstrations for concept risk reduction support initiating the project at acceptable risk.
T600007	Project planning	Critical technologies have been identified, maturity levels have been assessed and maturation plans (e.g. prototyping) developed to the extent required to support the review outcomes.
T600014	Project planning	Relationships between acquirer system requirements and competitive prototyping objectives are established.
T650001	Project assessment and control	Cost estimates and associated models (e.g. system development, software development, hardware fabrication, production, life cycle cost) have been created for the system and system elements per project plans, accurately reflect current technical data, and are consistent with cost targets.
T700000	Risk management	Risk and opportunity assessments (technical, cost, schedule) have been performed, risks and opportunities have been documented as appropriate, and plans for risk mitigation and opportunity handling are mature enough to support project outcomes.

8.3 System requirements review (SRR)

8.3.1 SRR purpose

The purpose of the SRR is to confirm the level of mutual understanding between acquirer and supplier of top-level system requirements is adequate to support further requirements analysis and design activities, and that the system can proceed into initial system design with acceptable risk.

8.3.2 SRR outcomes

As a result of the successful conduct of the SRR, these outcomes shall be achieved:

- a) acquirer and supplier mutually understand the system requirements and performance requirements as captured in the system specification documentation, and that those requirements 1) are consistent with the preferred material solution (including its support concept), 2) are consistent with project budget, schedule, expected risk levels, user and other project-specific constraints, 3) are feasible given available technologies for the preferred system solution, 4) adequately consider the maturity of interdependent system elements, 5) have bi-directional traceability with the set of source documents, 6) have verification methods that are defined and agreed upon, and 7) can meet the project's objectives with manageable risk;
- b) all system requirements and performance requirements derived from acquirer source documentation, and acquirer-accepted requirements previously provided by suppliers' in-house requirements definition are documented and consistent with budget, schedule, risk, other project and system constraints, and end-user expectations;

- c) technical requirements from all acquisition documentation are allocated to specifications;
- d) technical requirements, including statutory and regulatory requirements, have been correctly and completely represented in the set of system requirements and can be developed within project budget and schedule constraints;
- e) the level of understanding of top-level system requirements supports further requirements analysis, decomposition, allocation, and design activities;
- f) tailorable, derived, and correlated requirements are established within the framework of a candidate system logical architecture and fully derived functional segments;
- g) system performance requirements, non-tailorable design requirements, tailorable design requirements, available technology, and project resources (funding, schedule, staffing, and processes) are understood and will support further definition of the system logical architecture.

8.3.3 SRR timing

The SRR should be held when the level of understanding of top-level system requirements is adequate to support further requirements analysis and design activities.

8.3.4 SRR activities and tasks

The technical review and audit processes in [Clause 7](#) shall be implemented in accordance with applicable organization policies and procedures with respect to the SRR.

8.3.5 SRR review topics

The SRR shall incorporate the review topics listed in [Table 5](#).

Table 5 — SRR review topics

ID	Category	SRR review topic
T050001	System requirements	The system requirements are defined such that they support system functional definition.
T050002	System requirements	The system requirements are defined such that they allow for design trade space.
T050003	System requirements	System requirements are sufficiently detailed and understood to enable system functional decomposition.
T050005	System requirements	Performance requirements of major subsystems are documented for each candidate system logical architecture at a maturity that supports review outcomes.
T050006	System requirements	Review of budget margins and error allocations represent an understanding of requirements and any risks have plans and are managed.
T050010	System requirements	Supplier clearly demonstrates an understanding of the acquirer system requirements consistent with the stakeholder needs and requirements.
T050011	System requirements	Bi-directional traceability between the system requirements and the source(s) from which they were allocated or derived (e.g., stakeholder needs and requirements) has been documented, along with appropriate rationale.
T050014	System requirements	System requirements have been approved, including stakeholder concurrence, as described in project plans.
T050100	System requirements	System-of-systems technical interface requirements are defined, including interdependences associated with schedule, test, and configuration changes.
T051001	System requirements	Supplier has expanded the acquirer system requirements to reflect tailored, derived, and correlated quality characteristics, at a maturity that supports review outcomes.
T051101	System requirements	Results of system safety and hazard analysis performed to date are incorporated into the system requirements and (as applicable) system element requirements.

Table 5 (continued)

ID	Category	SRR review topic
T051200	System requirements	System security engineering, communications security, cybersecurity, and program protection requirements are documented for each system conceptual architecture at a maturity that supports review outcomes.
T051201	System requirements	Cybersecurity requirements are consistent with applicable cybersecurity risk management framework requirements (e.g., National Institute of Standards and Technology risk management framework certification and accreditation requirements.)
T051202	System requirements	Cybersecurity requirements for software addresses system data protection, availability, integrity, confidentiality, authentication, and nonrepudiation at a maturity that supports review outcomes.
T051203	System requirements	Cybersecurity requirements for hardware addresses system data protection, availability, integrity, confidentiality, authentication, and nonrepudiation at a maturity that supports review outcomes.
T051300	System requirements	Hardware and software human systems integration (HSI) requirements have been documented consistent with applicable standards and implementation guidance and coordinated with applicable acquirer organizations.
T051400	System requirements	Reliability and maintainability system requirements are documented at a maturity that supports review outcomes.
T051401	System requirements	Reliability and maintainability subsystem allocations support the system requirements at a maturity that supports review outcomes.
T051500	System requirements	System command, control, communication, computer, and intelligence requirements are assessed as supporting review outcomes.
T051501	System requirements	System command, control, communication, computer, and intelligence requirements have been allocated across related segments and subsystems.
T051800	System requirements	Electromagnetic interference and electromagnetic compatibility requirements are documented and correlated with the preliminary system logical architectures.
T051801	System requirements	Environmental qualification requirements (vibration, thermal, humidity, transport, etc.) are documented and correlated with the preliminary system logical architectures.
T051900	System requirements	Preliminary parts, materials and processes requirements have been documented.
T053001	System requirements	Software requirements analysis has allocated high-level software functionality to the applicable portions of the evolving system logical architecture.
T053004	System requirements	Data management software requirements (e.g., automatic file migration and transparent file retrieval, migration between hierarchical levels, utilities to report on media usage, and error detection) are assessed as sufficiently mature to support review outcomes.
T053005	System requirements	Specified software functionality in the system requirements is consistent with the software effort metrics (e.g. size estimates) and the resource-loaded schedule.
T055101	System requirements	System requirements are assessed to be verifiable.
T055102	System requirements	Verification methodologies and environments have been defined for each specification requirement to a maturity that supports review outcomes, and are included in requirements traceability data.
T056001	System requirements	Quality and product assurance requirements and their associated verification criteria have been documented to a maturity that supports review outcomes.
T056002	System requirements	Critical design and manufacturing requirements are documented, including requirements addressing non-developmental items and diminishing manufacturing sources.
T056006	System requirements	Hazardous materials management and pollution prevention requirements are documented.
T057000	System requirements	Supportability requirements have been documented, are consistent with the preliminary system logical architectures, and are traceable to the maintenance and sustainment concept and stakeholder needs and requirements.