# Space Standards

**06 March 2026**

# Systems Engineering

“systems engineering” is defined as a methodical, multi-disciplinary approach for the design, realization, technical management, operations, and retirement of a system.

“System” is the combination of elements that function together to produce the capability required to meet a need.

“Elements” include all hardware, software, equipment, facilities, personnel, processes, and procedures needed for this purpose; that is, all things required to produce system-level results.

“Results” include system-level qualities, properties, characteristics, functions, behaviour, and performance.

# Space Systems Engineering Standards – Listed in BIS

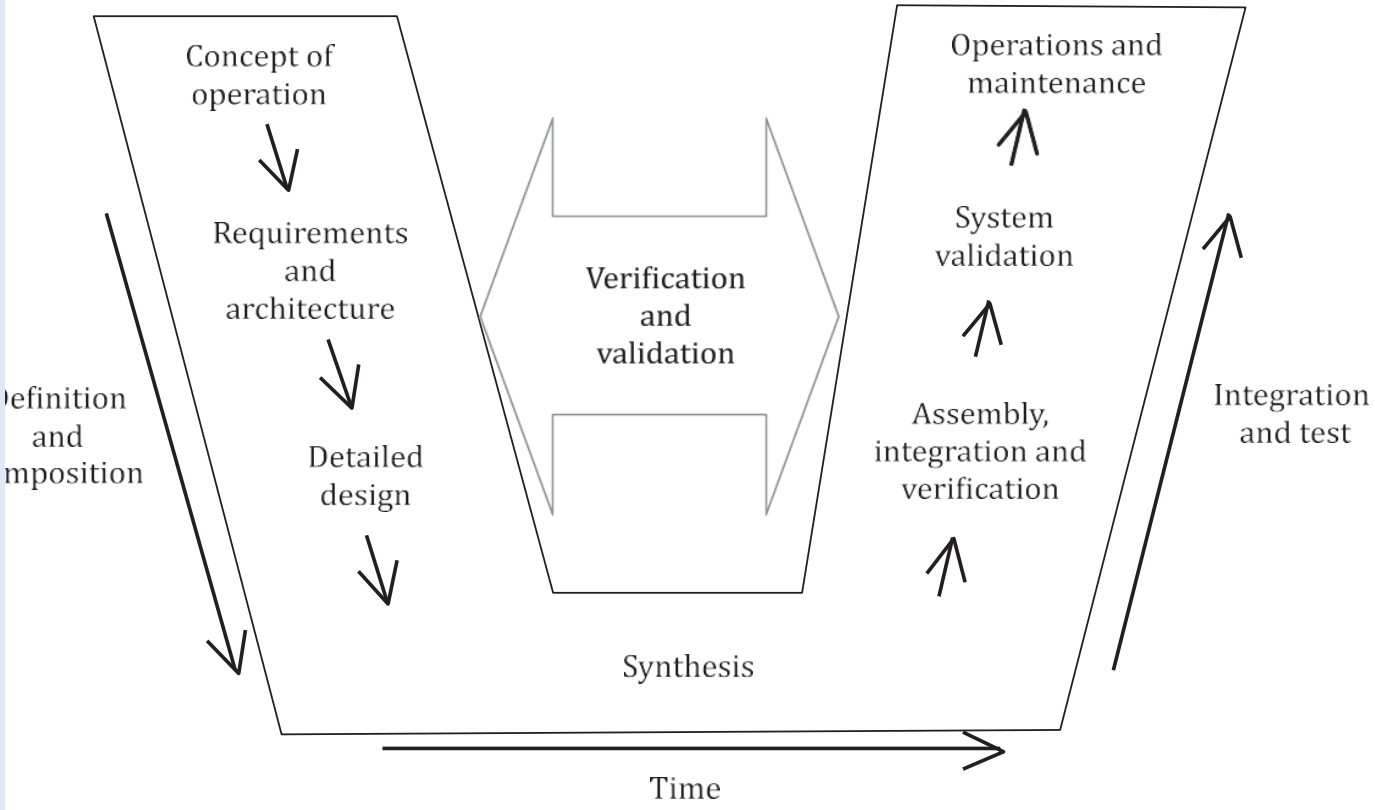
| Sl. | IS No. | Title |
|---|---|---|
| 1 | IS 18895 : 2024 (ISO 18676 : 2017) | Space Systems - Guidelines for the Management of Systems Engineering |
| 2 | IS 18337 : 2023 (ISO 16404: 2020) | Space Systems: Programme Management- Requirements Management |
| 3 | IS 18331 : 2023 (ISO 10789: 2011) | Space Systems: Programme Management Information and Documentation Management |
| 4 | IS 18326 : 2023 (ISO 10794: 2018) | Space Systems: Programme Management Material Mechanical Parts and Processes |
| 5 | IS 18333 : 2023 (ISO 21351: 2005) | Space Systems: Functional and Technical Specifications |
| 6 | IS 18330 : 2023 (ISO 16290: 2013) | Space Systems: Definition of the Technology Readiness Levels and their Criteria of Assessment |

# Guidelines for the Management of Systems Engineering

***IS 18895 : 2024 (ISO 18676 : 2017)***

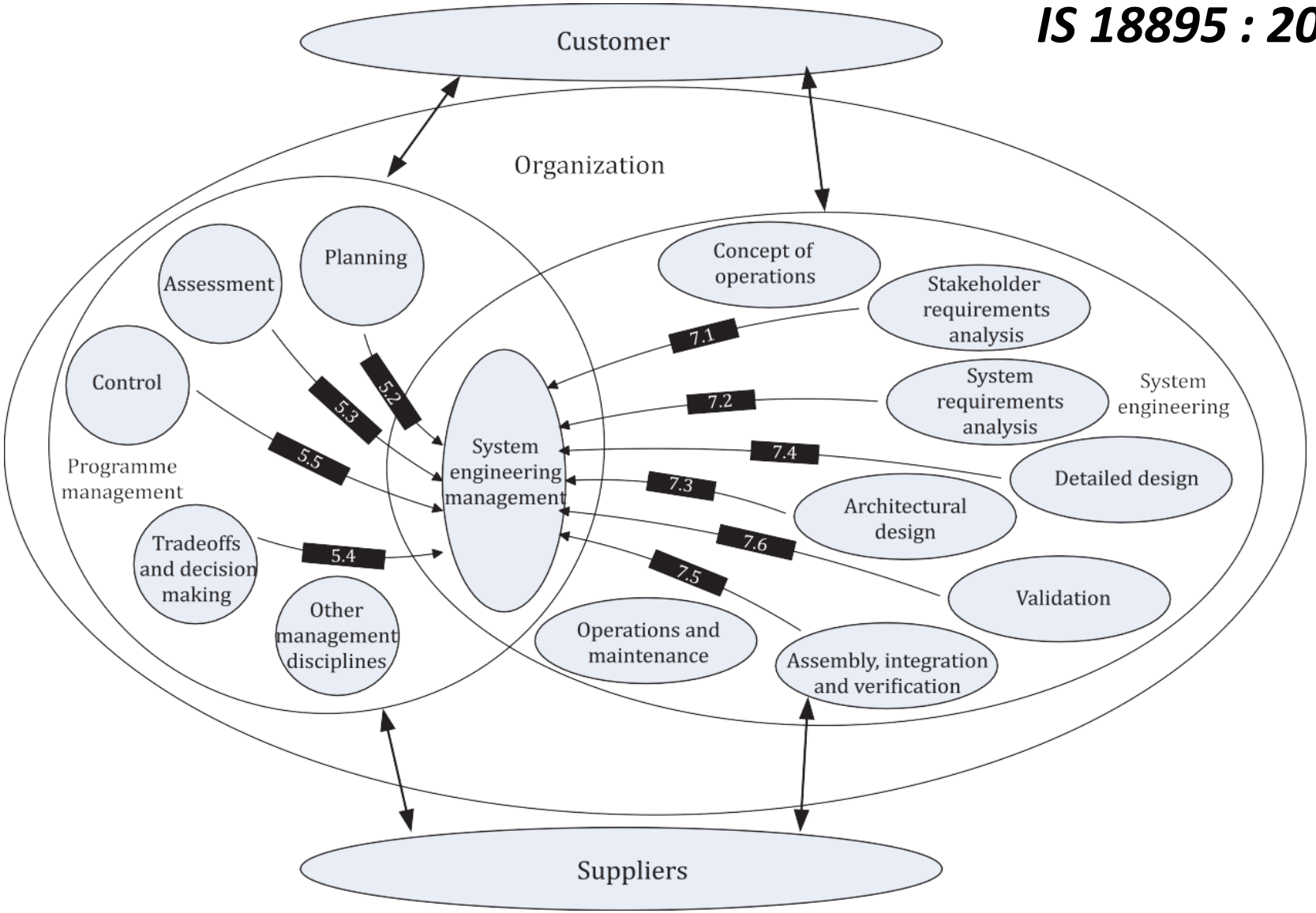
***Common reference for all customers and suppliers in the space sector to work with management systems engineering for all space products and projects.***

- ✓ Framework for the management of SE;
- ✓ Positioning of systems engineering activities related to the management of space activities;
- ✓ Systems Engineering Management Plan
- ✓ System, product and work breakdown structures;
- ✓ Phasing, scheduling and recursivity of the systems engineering management;
- ✓ Reviews & Audits;
- ✓ Status of reporting and assessing – Cost, Schedule, Performance, Quality & Risk



# Guidelines for the Management of Systems Engineering

***IS 18895 : 2024 (ISO 18676 : 2017)***

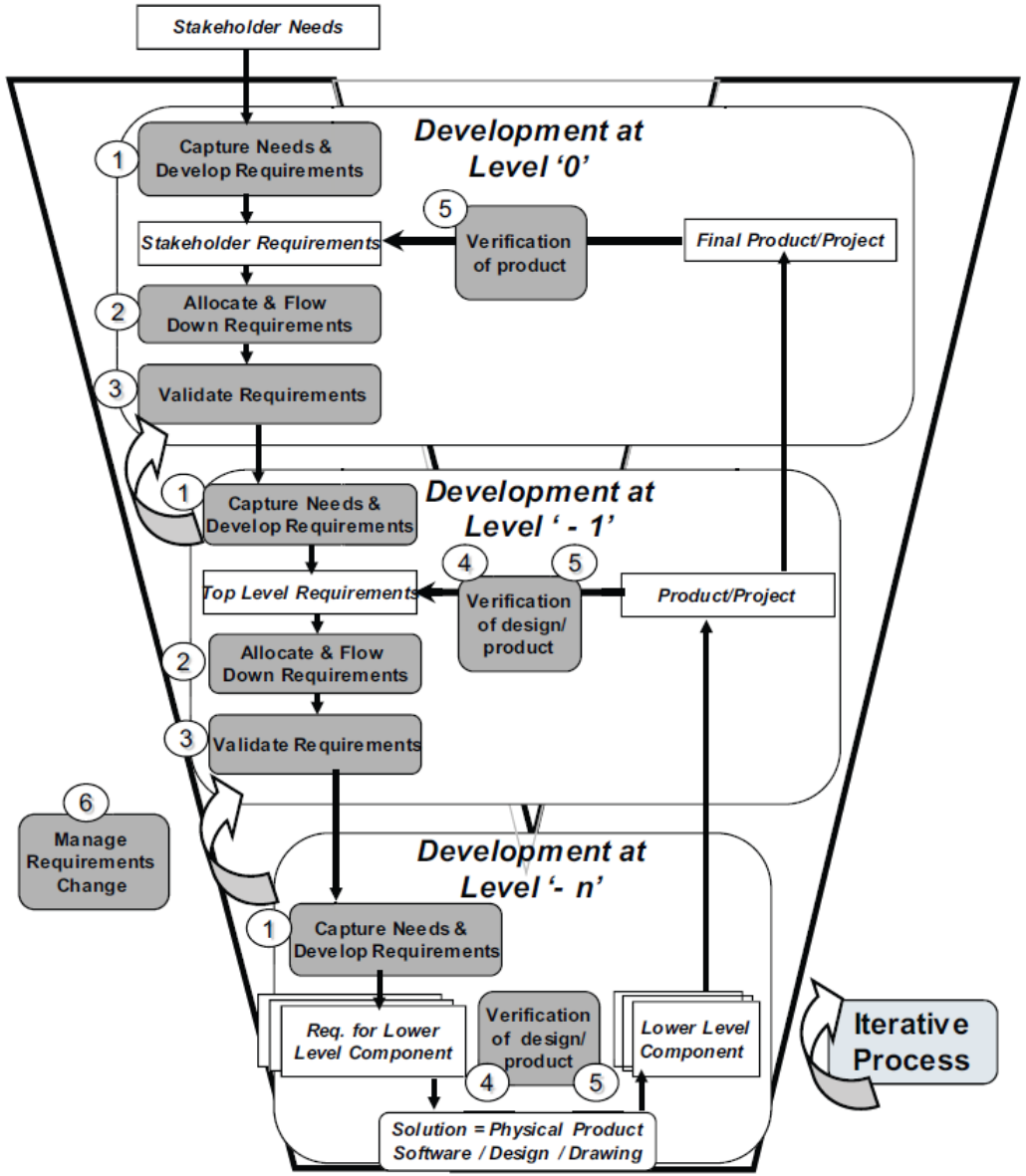


# Programme Management - Requirements Management

## *IS 18337 : 2023 ISO 16404: 2020*

***to ensure stakeholder needs are understood, agreed upon, and realized through the final design and delivered products.***

- ✓ *A subset of the quality management system of the stakeholder and the management requirements contracted between the customer and his own suppliers*
- ✓ *Requirement Management Plan*
- ✓ *Rules for deployment of Requirements Management activities - Company Level and Project Level*
- ✓ *Rules for Requirements Management*
- ✓ *Requirement Management Implementation Metrics - KPIs*



# Programme Management: Material Mechanical Parts & Processes

***IS 18326 : 2023 ISO 10794: 2018***

- ✓ defines the programme management requirements for material, mechanical parts and processes for projects covering mission definition, design, development, production and operations of space systems, including disposal.

- ✓ Mandatory for all space deliverable products across all programme phases: mission definition, design, development, production, operations, and disposal
- ✓ Encompasses all optical, mechanical, or electrical Ground Support Equipment (GSE) interfacing with flight hardware or used in thermal vacuum environments

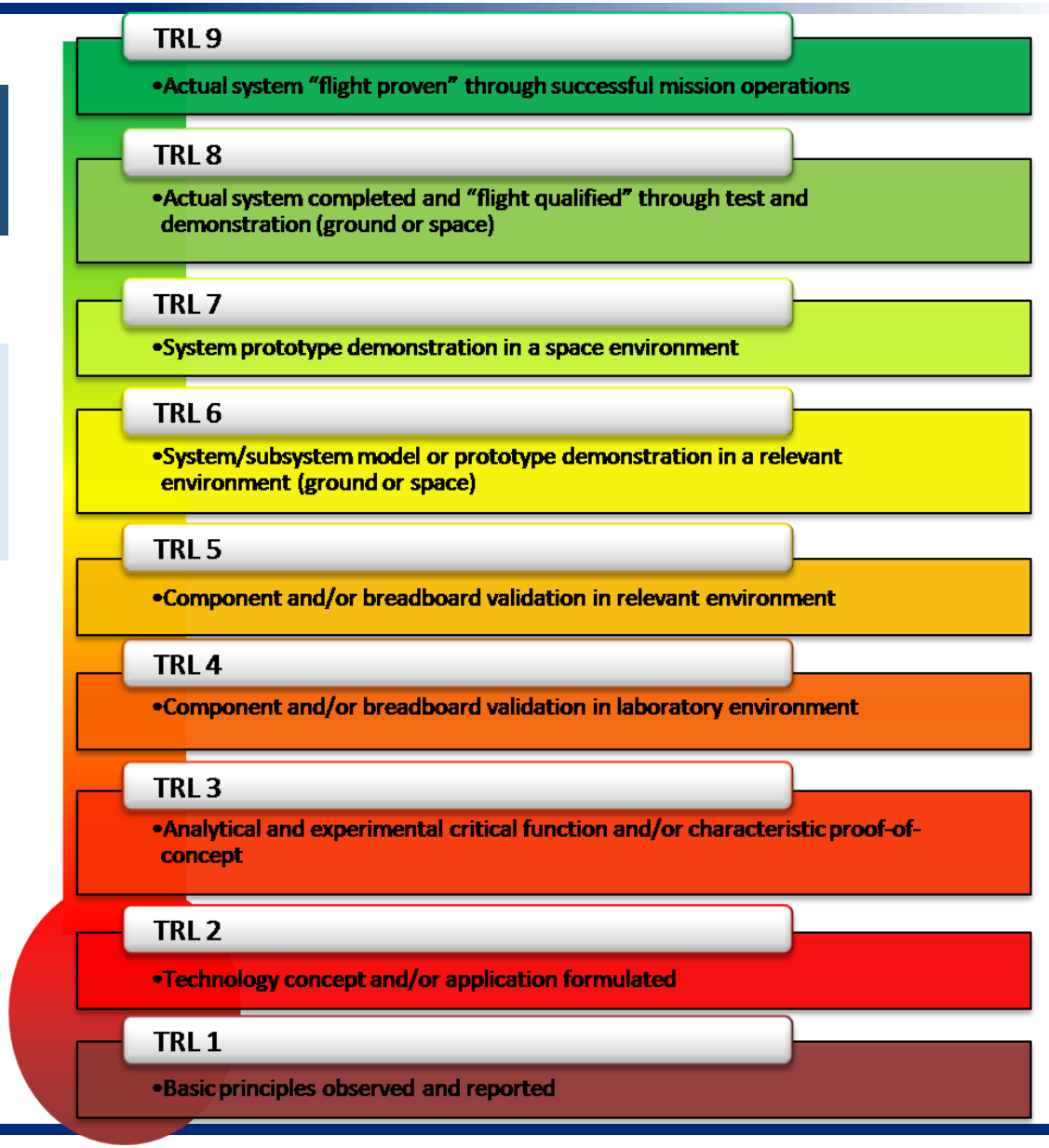
- **MMPP Plan Implementation:** Suppliers must prepare, maintain, and implement an overarching MMPP Programme plan
- **Control Board Governance (MPCB):** Establishment of an MPCB by the PDR to coordinate RFA initiations and approve declared lists
- **Declared Lists Management:** Preparation, consolidation, and updating of DML, DMPL, and DPL lists.
- **Cleanliness & Contamination:** Maintenance of strict control programme, including procedures for physical and chemical pollution risk reduction.
- **End-to-End Traceability:** Implementation of strict rules via unique reference numbers, batch/lot controls, and rigorous alert management

# Definition of TRL and their criteria of Assessment

***IS 18330 : 2023 ISO 16290: 2013***

***Quantify the technology maturity status of specific elements intended for use in space missions***

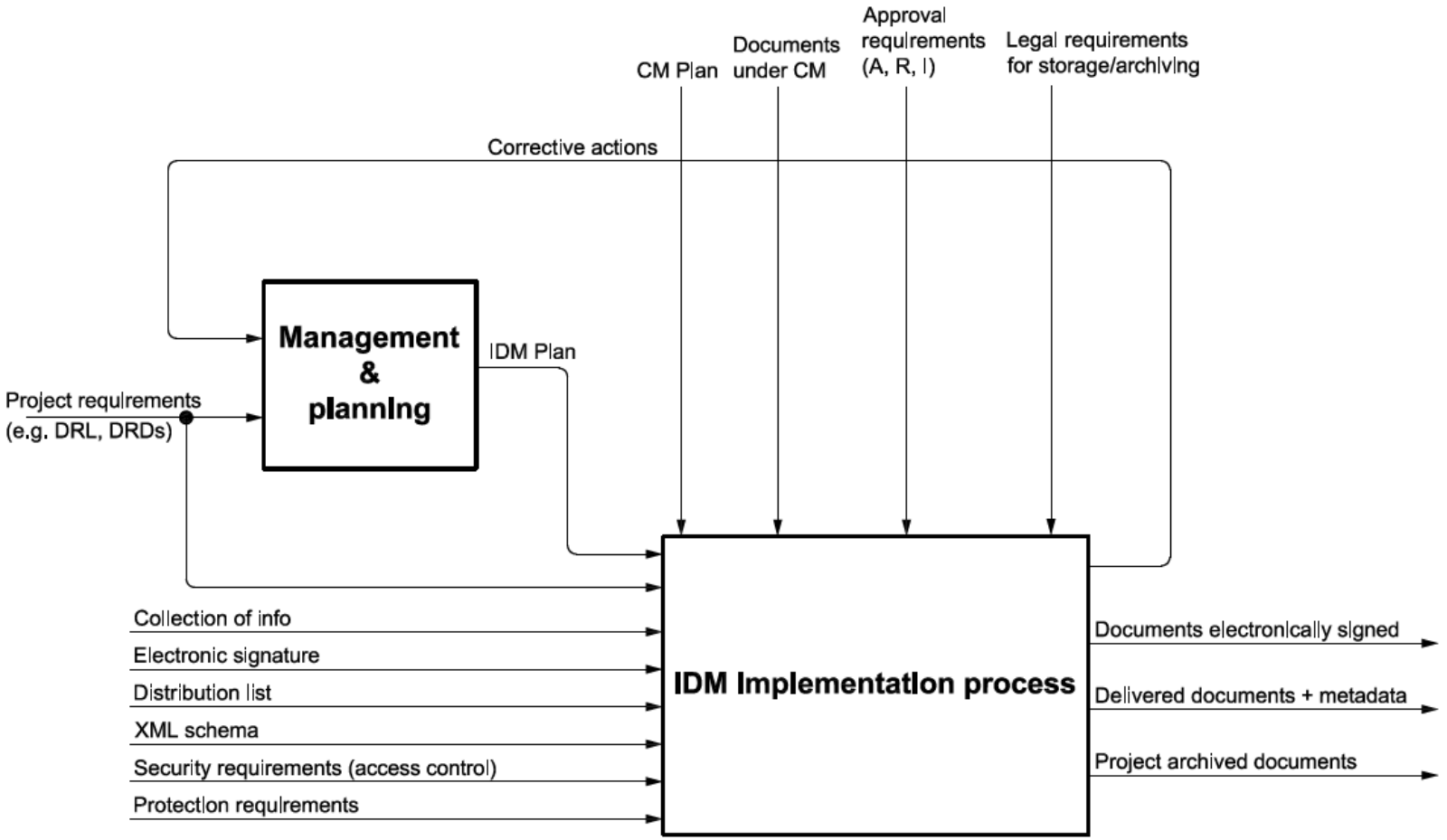
- ✓ Primarily to space system hardware, although the definitions could be used in a wider domain in many cases



# Programme Management - Information and Documentation Management

***IS 18331 : 2023 ISO 10789: 2011***

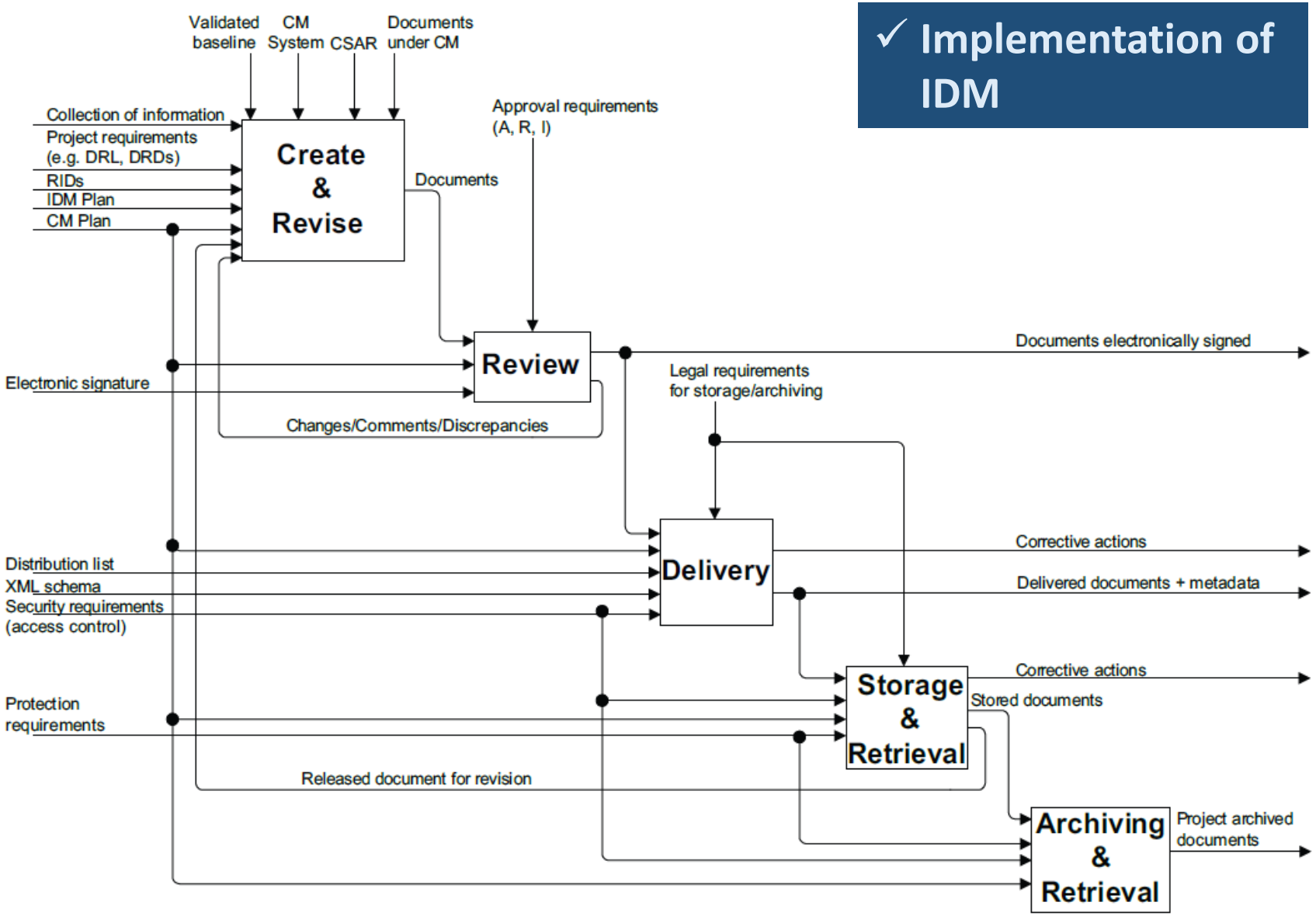
- ✓ Ensure timely and effective creation, collection, review, delivery, storage, and archiving of project information,
- ✓ Maintain correctness, accessibility, availability, reliability, and security of information for all.



# Programme Management - Information and Documentation Management

***IS 18331 : 2023 ISO 10789: 2011***

✓ **Implementation of IDM**



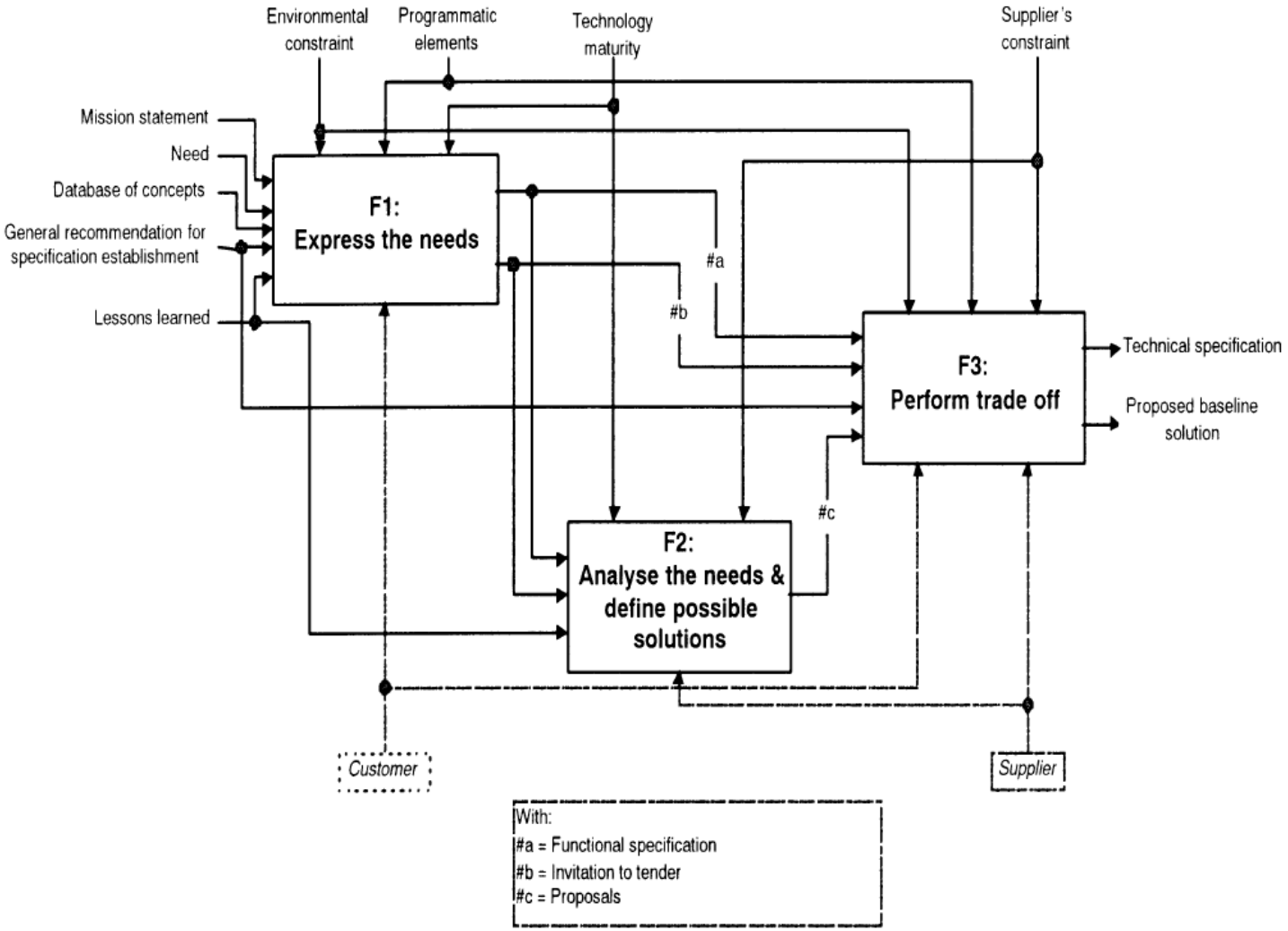
# Functional and Technical Specifications

***IS 18333 : 2023 ISO 21351: 2005***

***FS – A document through which a customer expresses his needs and the related environment and constraints in terms of technical requirements.***

***TS - Evolves from the functional specification and defines the technical performances for the proposed solution as part of a business agreement.***

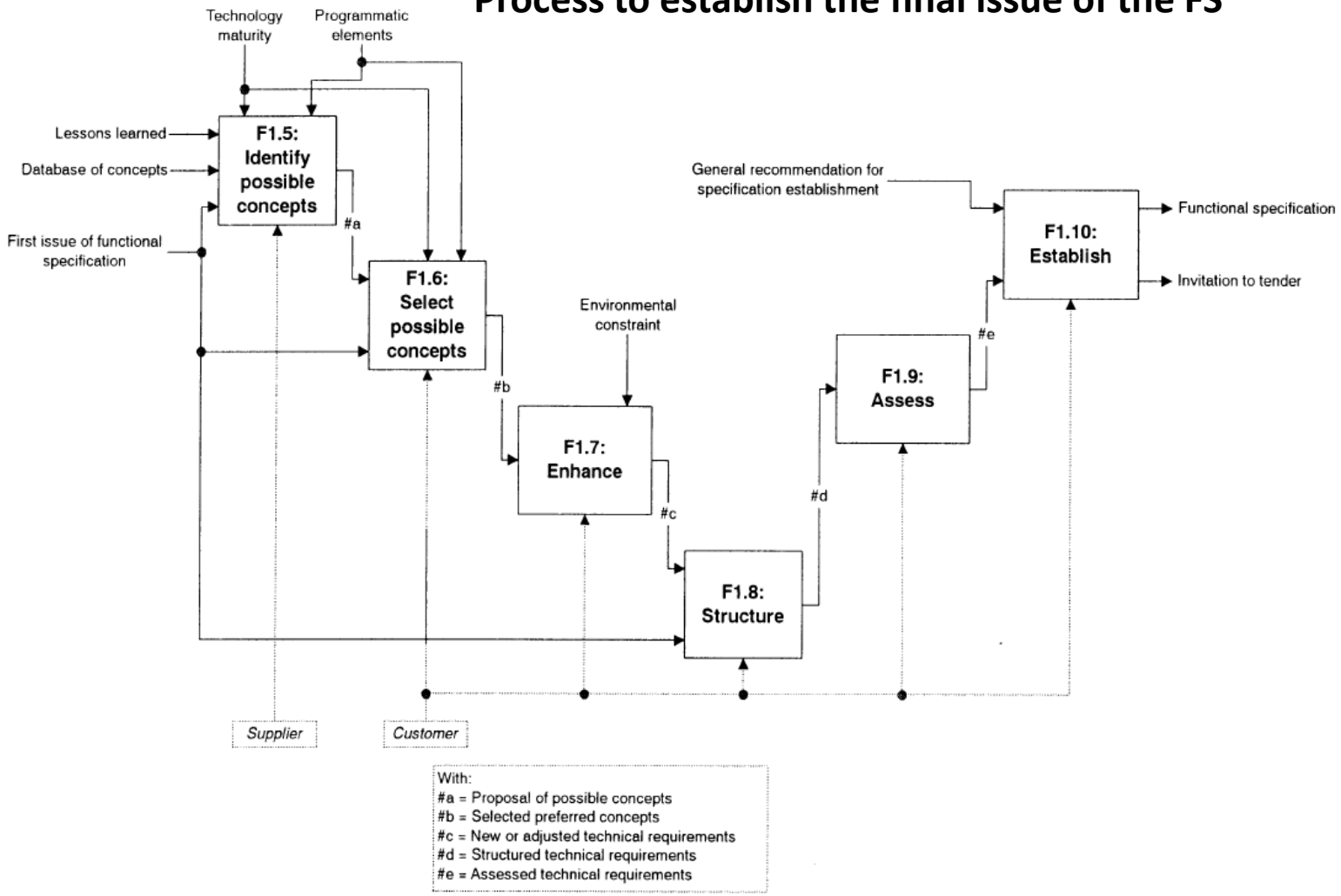
**Relation between FS and TS**



# Functional and Technical Specifications

***IS 18333 : 2023 ISO 21351: 2005***

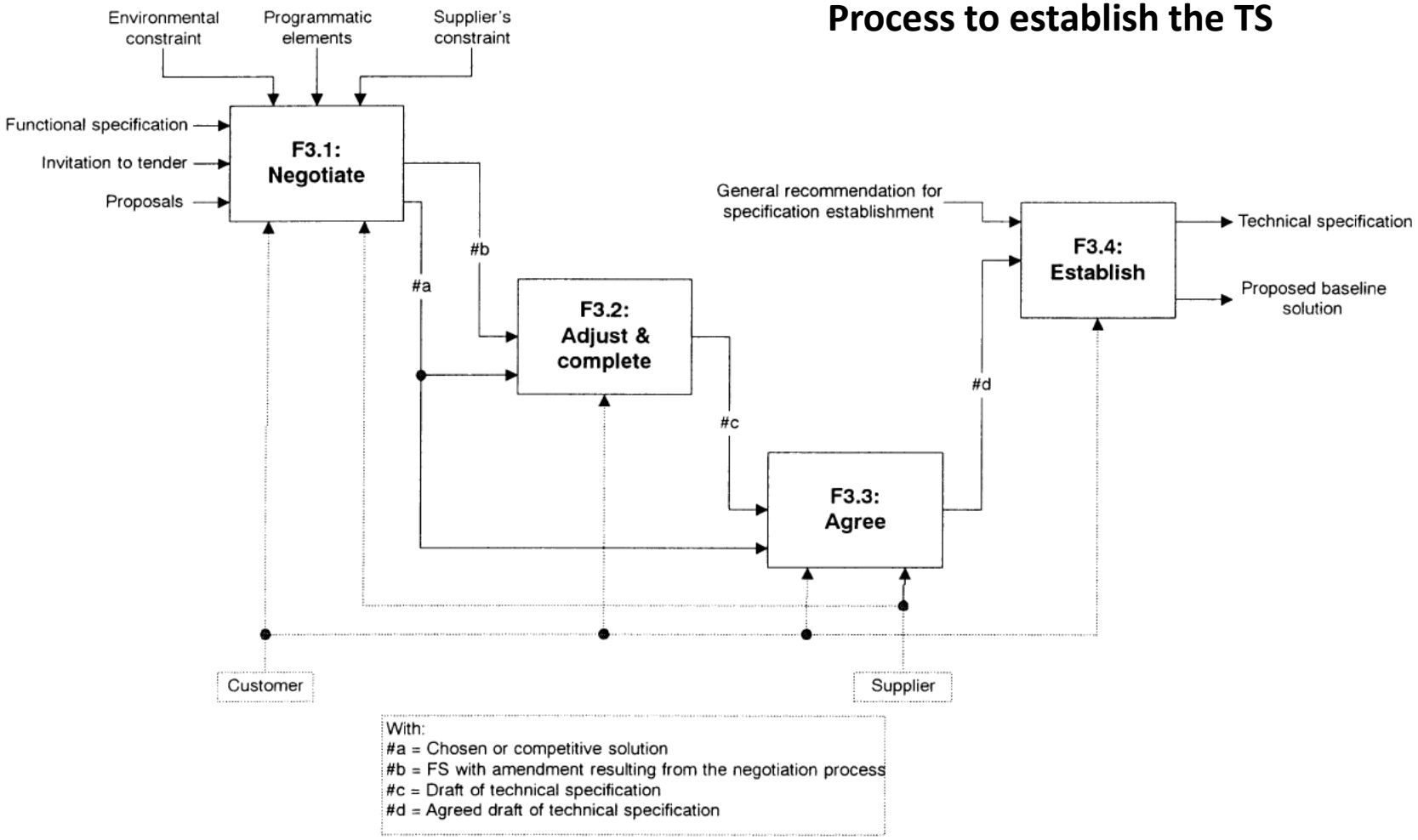
**Process to establish the final issue of the FS**



# Functional and Technical Specifications

***IS 18333 : 2023 ISO 21351: 2005***

**Process to establish the TS**



# Thank you