

ILS S-Series Day

S4000M

International specification for
developing scheduled maintenance
programs



S4000M

International specification for developing scheduled maintenance programs

- Introduction to S4000M
- USILS S4000M WG

S4000M

- Provides a procedure that establishes a methodology and decision logic that forms the basis for the development of scheduled maintenance programs, focusing on
 - Safety
 - Reliability
 - Mission accomplishment
 - Legal aspects
 - Ecological aspects

S4000M



Specification Structure

- Chapter 1 – General
- Chapter 2 – Systems & power plant analysis
- Chapter 3 – Structure analysis
- Chapter 4 – Zonal analysis
- Chapter 5 – Terms, abbreviations & acronyms



Chapter 1

General



- The specification
 - Background
 - Scope
 - Organization
- Project
 - Organization
 - Steering committee
 - Working groups
 - Policy and procedures handbook (business rules)
- Procedure
 - Series of processes
 - Execution
 - Develop the scheduled maintenance



Chapter 2



Systems & power plant analysis

- 6 step Maintenance Significant Item (MSI) selection process
- Analysis procedure (functions, functional failures, functional failure effects & failure causes)
- 2 levels of analysis
 - Level 1 – 8 Yes/No questions to sort into 8 Failure Effect Categories (FEC)
 - Level 2 – 6 Yes/No questions about the applicability and effectiveness of maintenance tasks



Chapter 2

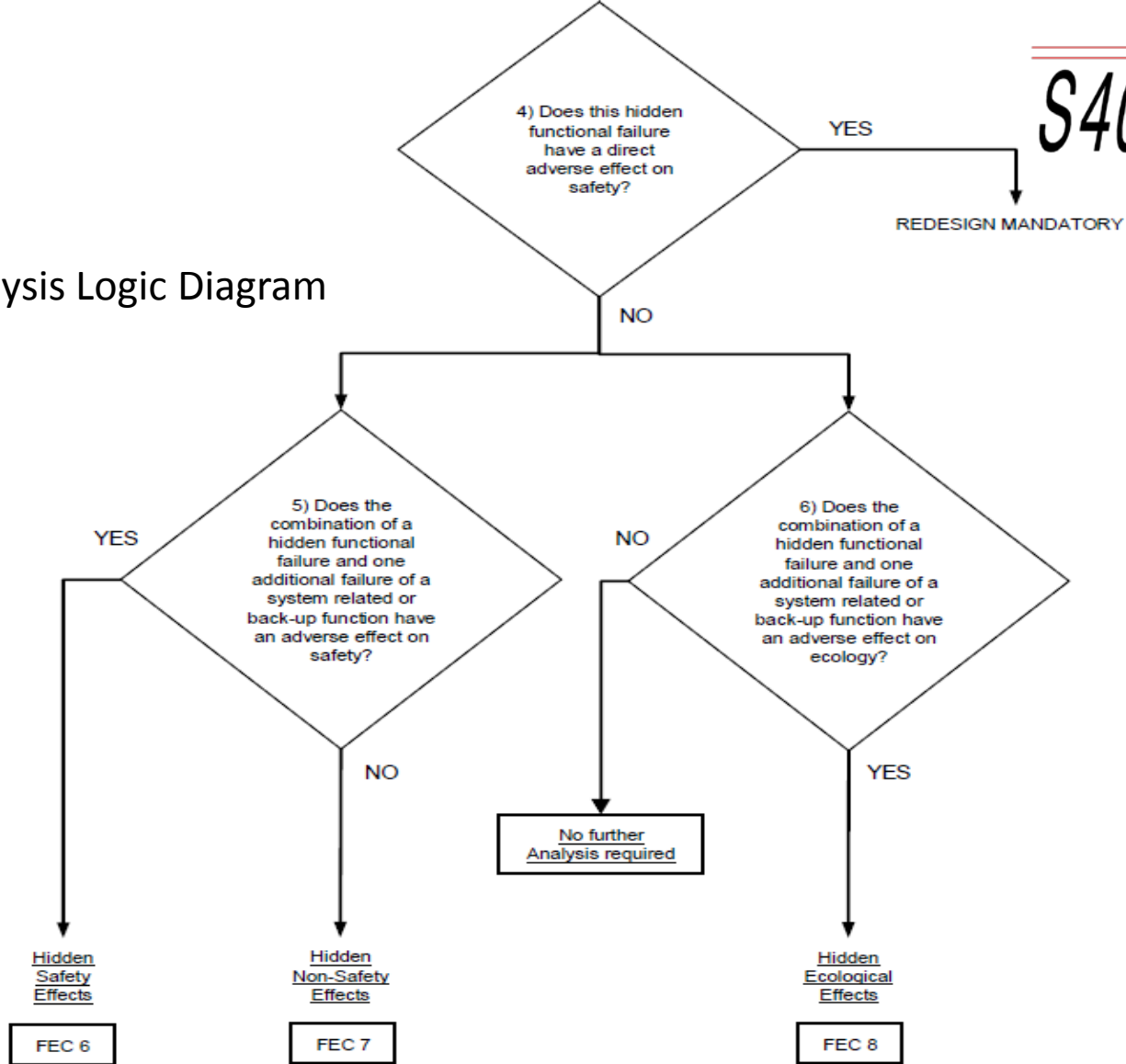


Systems & power plant analysis

- Determination of task intervals
 - Things to consider (supplier recommendations, previous experience, etc)
 - Task interval parameters (time, operating hours events)
- Extend selectable functional failure effects with law and environmental aspects in Level 1-Analysis
 - Certification maintenance requirements
 - Sampling
 - Military missions/operations
 - Maintenance program updates



Example Analysis Logic Diagram



Chapter 3

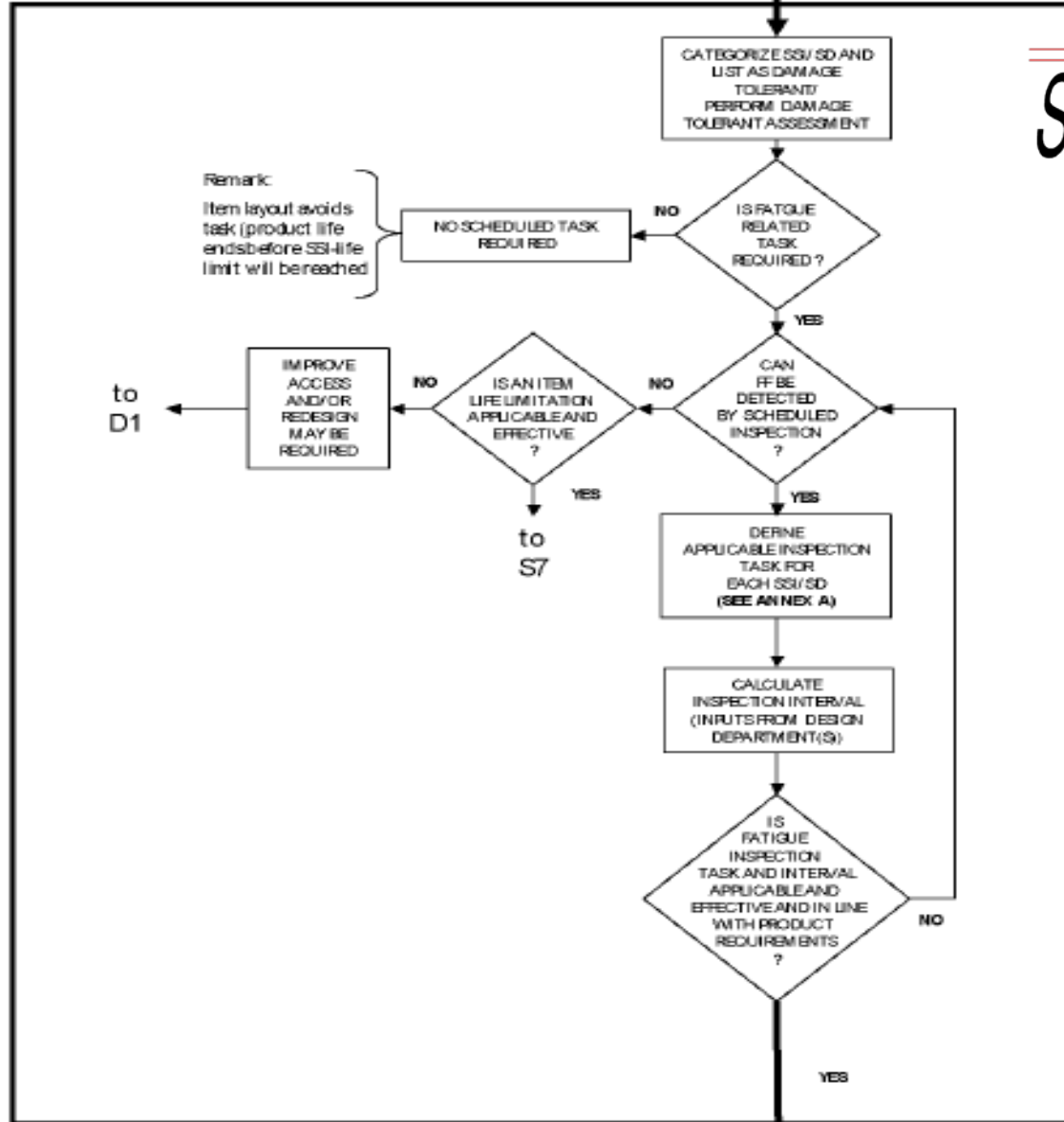
Structure analysis

- Definition of a product structure
 - Structure significant item (SSI)
 - Structural detail
 - Other detail
- Scheduled structural maintenance
- Structural maintenance tasks
- Inspection thresholds
 - AD - Accidental damage
 - ED – Existing knowledge (eg potential damage due to corrosion)
 - FF – Fatigue failure
- Repeat inspection intervals
- Concept on harmonizing selected structural related tasks
- Fatigue related sampling

Chapter 3

Structure analysis

- Corrosion prevention and control programs
 - New materials
 - Metal to metal
 - Metal to composite
 - Composite to composite
- Routine and zonal inspections
- Inspection results
- Damage sources and maintenance requirements
- Scheduled structural maintenance development
- Structural analysis procedure
 - Process Steps (S1, S2, S3, etc)
 - Decision Steps (D1, D2, D3, etc)
- Rating systems for SSIs with examples



Example Structural analysis

Chapter 4

Zonal analysis



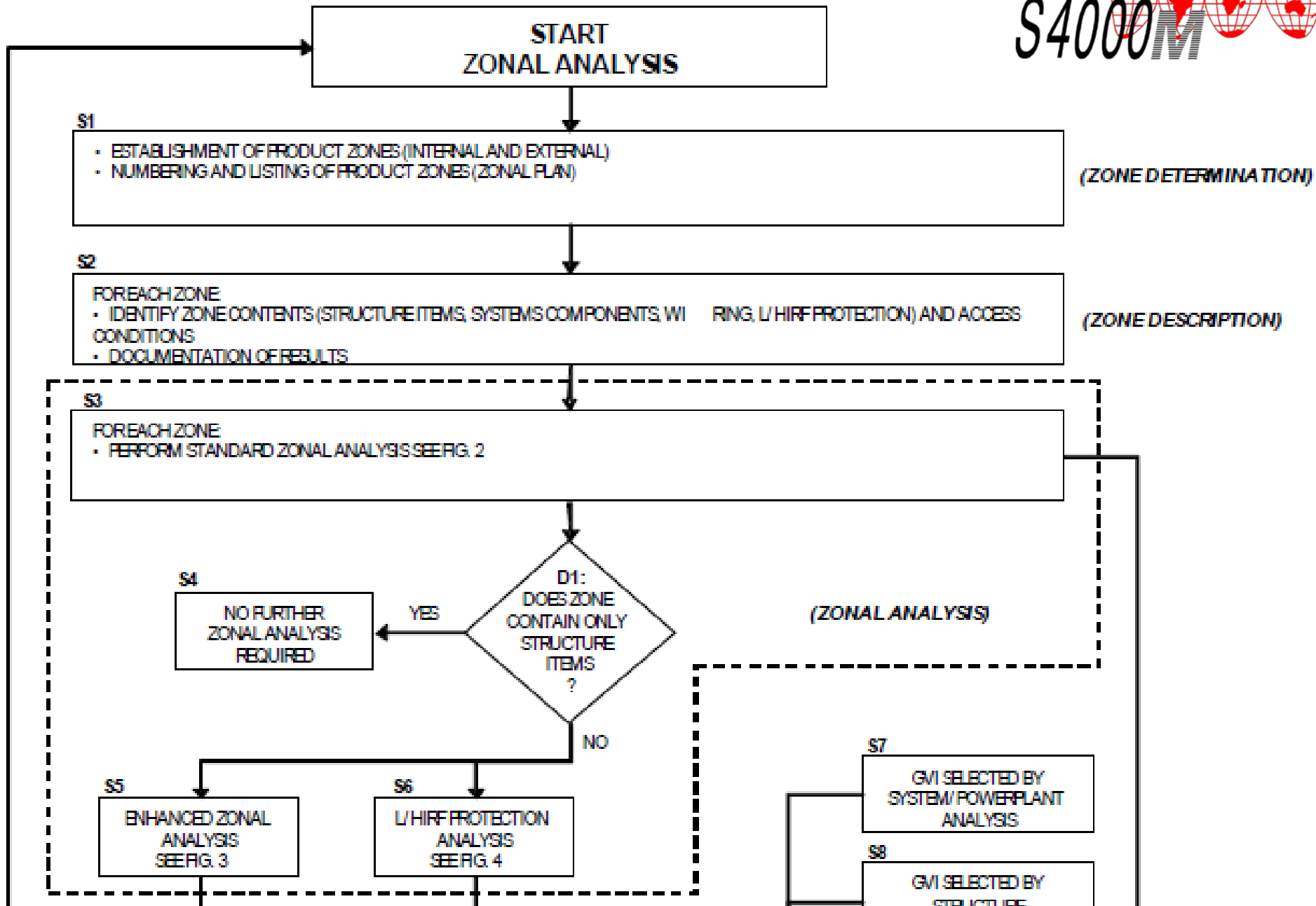
- Zonal analysis
 - Gives a general guideline for definition and selection of zones
 - Integrates standard zonal analysis, enhanced zonal analysis and Lightning/High Intensity Radiated Field (L/HIRF) analysis into a common zonal analysis process
 - Improves zonal rating for standard zonal analysis (interval determination)
 - Improves enhanced zonal analysis covering specific requirements (eg L/HIRF etc)



Chapter 4

Zonal analysis

- Zonal analysis
 - Provides modularity of enhanced zonal analysis (due to product needs and/or future analysis aspects)
 - Integrates task selection methods from system/power plant analysis and structure analysis
 - Provides the concept how to harmonize all determined tasks and intervals from zonal analysis
- Procedure
 - Single Work Steps (S1, S2, S3, etc)
 - Decisions (D1, D2, D3, etc)



Chapter 5



- Terms, abbreviations & acronyms
 - Chapter 5.1 – Glossary of terms
 - Chapter 5.2 – Abbreviations and acronyms



Future issue

ASD S4000M future Issue (e.g. 2.0)

Part A

Part B

ASD S4000M
Issue 1.0

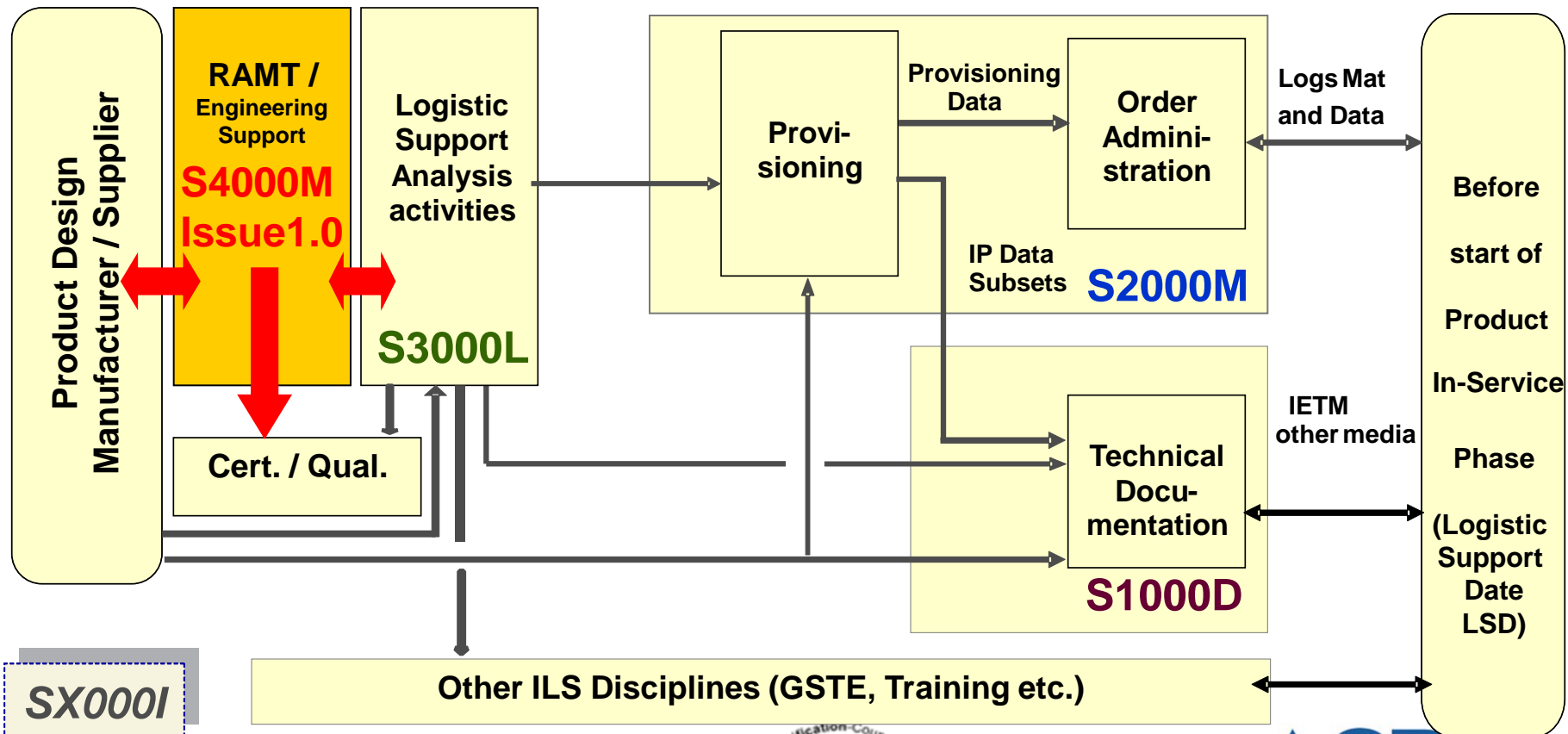
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Optimization of
Preventive
Maintenance (OPM)

Design & Development
Production
Phases

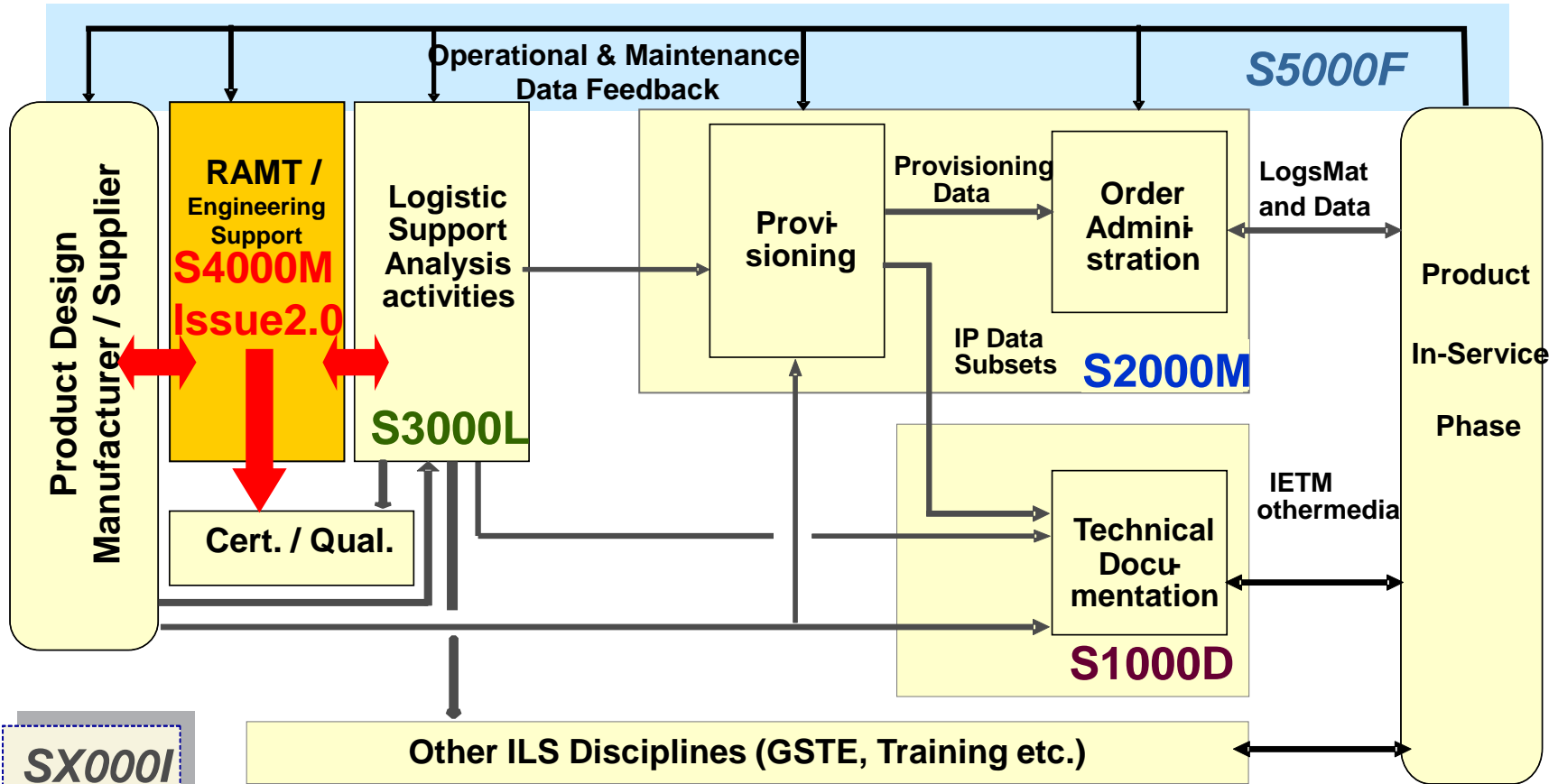
In-Service Phase

Design, development and production phases



SX0001

In-service phase



AIA USILSMG S4000M

S4000M Working Group



AIA USILSMG



S4000M WG Terms of Reference

- S4000M WG Objectives
- Reporting to USILSMG
- Scope of S4000M WG
- Specific Tasks
- Deliverables



AIA USILSMG

S4000M WG Purpose



- Represent US interests in the ASD S4000M community
 - US S4000M requirements are presented for inclusion in future issues of S4000M
 - Harmonization between S4000M & other S - Series specifications from a US perspective
- Report to the USILSMG



AIA USILSMG



S4000M WG Guiding Principles

- Meet on a regular basis
 - Teleconference
 - WebEx
 - Genesis
 - Face-to-face as required
 - Etc
- Report to USILSMG



AIA USILSMG – S4000M WG

- Recruitment drive
 - Systems analysts
 - Structural analysts
 - Zonal analysts
 - Other S – Series community
- Data Modeling & Exchange Working Group (DMEWG)
 - Data modeler



June 21 2012



The End