



esa



Tailoring the E40-B Standard

(excerpt version for sample purposes)



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(excerpt version for sample purposes)

Abstract

Tailoring is one of the key concepts in the ECSS standards framework, and applies in full to the E-40B standard. After a brief introduction to the concept of tailoring, the approach to tailoring taken in E-40B is presented:

- tailoring all ECSS family for a big project*
- tailoring E-40B: why, how, who*

prepared by:



Tailoring the E-40B Standard

Slide 2

What does Tailoring Mean?

□ The Oxford English Dictionary defines the word **tailor** in the following ways:

- ✧ “Tailor” (*noun*) – a maker of men’s clothes, especially to order
- ✧ “Tailor” (*verb*) – to make clothes as a tailor, to make in a simple smoothly-fitting design
- ✧ “Tailor” (*verb*) – **to make or adapt for a specific purpose**, as in “the new factory is tailored to our needs”



□ The last definition is closest to the interpretation used in the ECSS standards

- ✧ The concept of tailoring is not new with the ECSS standards
- ✧ The concept appeared as early as the 1980s in the German V quality standards, and in the IEEE Software Engineering standards

M-00-02
Introduction

ECSS: The Nine General Principles of Tailoring

1. Identification of Applicable Standards
2. Establishment of applicable requirements
3. Tailoring at all levels
4. A systematic tailoring method
5. Tailoring is performed for each phase
6. Overall programme requirements always considered
7. Exceptional mandatory requirements (no waiver at any level)
8. Introduction of new requirements (if any, must be justified)
9. Harmonize selected requirements

M-00-02

4.1

The overall Tailoring process.

See also:
M-00-02

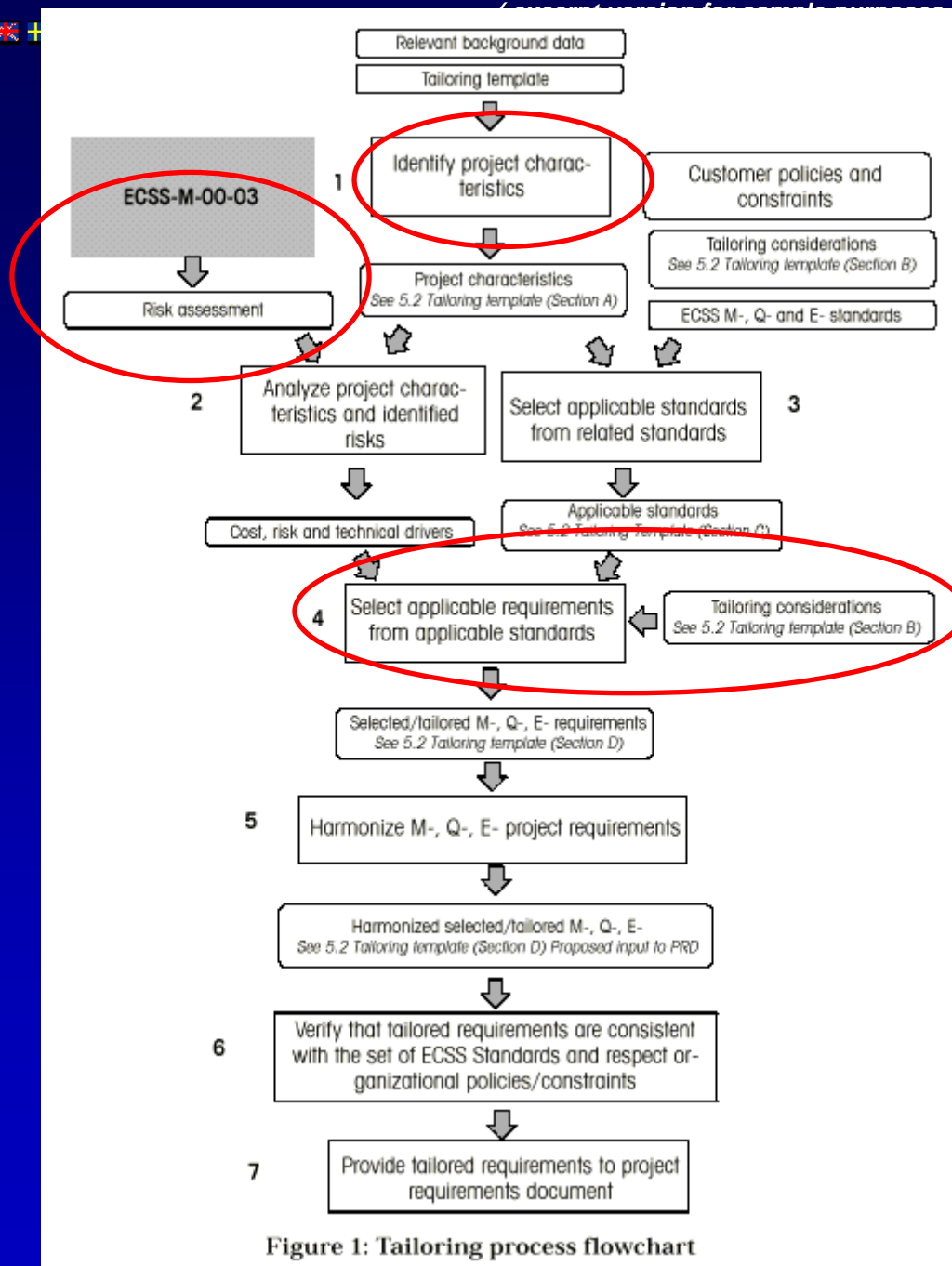
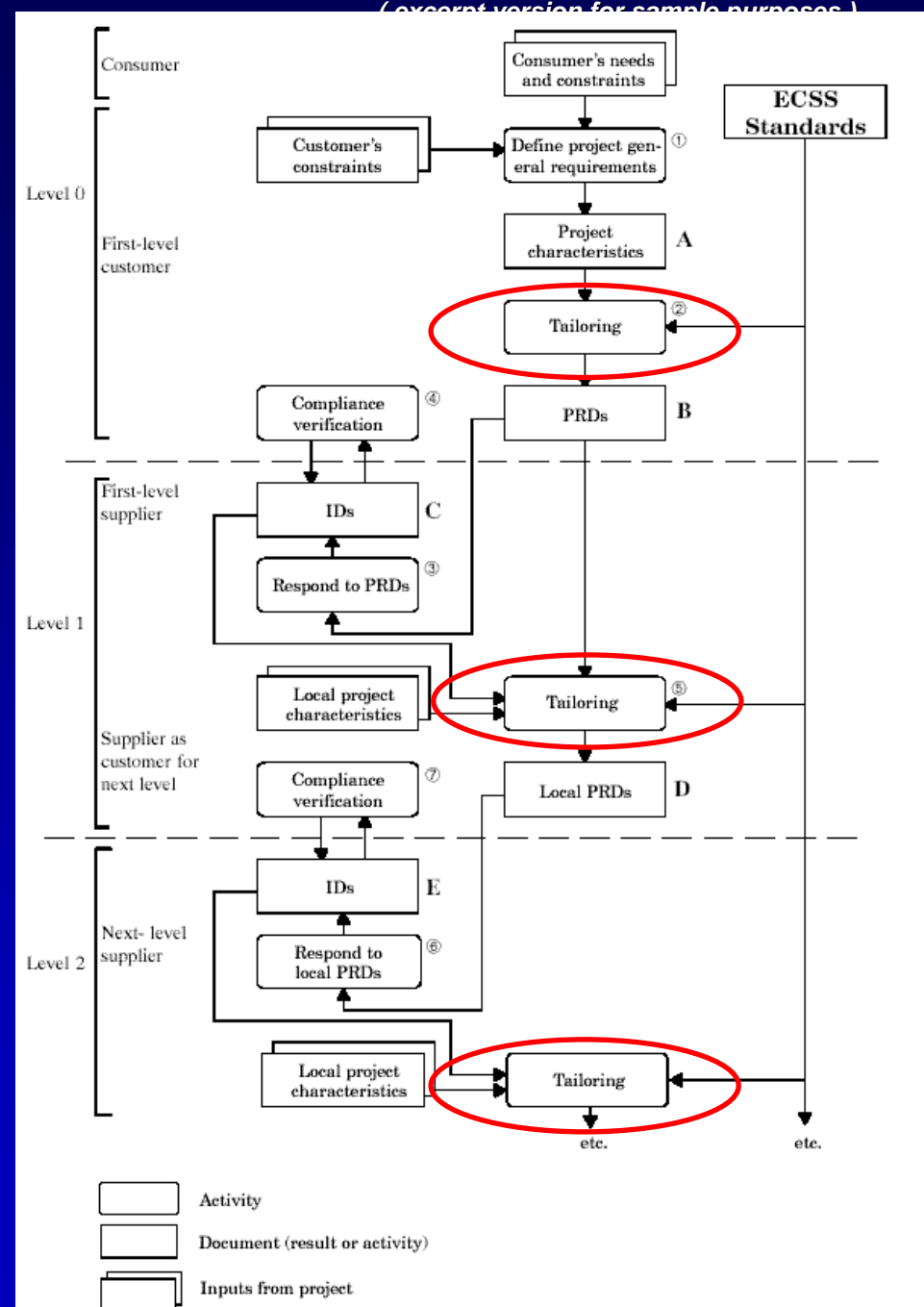


Figure 1: Tailoring process flowchart

The recursive Tailoring Process in the Customer-Supplier Hierarchy (see M-00)

Business agreements:

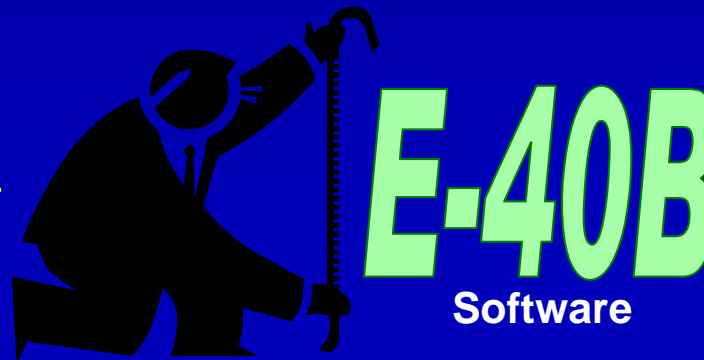
- ✦ Customers deliver Project Requirements Documents (PRDs);
- ✦ Suppliers reply with Implementation Documents (IDs)



Introduction to Tailoring E-40B

- The ECSS-E-40B lists **exhaustively** the requirements for the **best practices** in space software engineering
 - ✧ That is, it covers *all possible types* of space software engineering projects
 - ✧ Some tailoring is already in place (requirements for MMI software, flight software, etc.)
- Therefore, E-40B must also be tailored for each individual project
 - ✧ Focus the effort, target the budget

*Tailoring
guidelines
for E-40B*



E-40B
C.1

Introduction to Tailoring E-40B

□ Benefits:

- ✧ to **help** the customer to prepare the project
- ✧ to verify the **completeness** of the statement of work,
- ✧ to **clarify** the software project to the suppliers/bidders
- ✧ to **help** making better (or evaluating) proposals

*Tailoring
guidelines
for E-40B*



E-40B
C.1

Tailoring Software Engineering Projects

- The first step is to understand the requested **level of quality** for the project. This involves
 - ✧ the characterization of the *project*
 - ✧ the characterization of the *product*
 - ✧ the identification of the needed *processes*

- We have seen that M-00-02 provides an example set of **tailoring considerations** for programmatic and technical factors
 - ✧ but they are generic

- PSS-05 already cited the “Factors in applying the Standards”



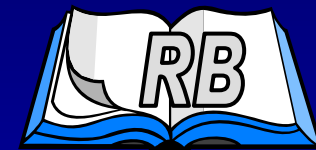
“What are the tailoring factors for my software project”?

- *technical*
- *operational*
- *management*

E-40B
C.2

Documenting the Results of Tailoring

- Each subclause is reviewed, on the basis of the identified factors at project level
 - ✦ producing a **tailoring table** listing which requirements are applicable
- The tailoring process results in a short document including
 - ✦ the project characteristics (as a justification for the tailoring)
 - ✦ the tailoring table (requirement, applicability, and rationale)
- The tailoring document is baselined in the **Requirements Baseline** and reviewed at the **System Requirements Review**



Reqts Baseline



System Reqts Review

E-40B
C.2



Summary

- ❑ Tailoring is a fundamental aspect of using the ECSS standards in an **efficient** way
 - ✧ Help the Customer preparing the project
 - ✧ Help the Supplier bidding and executing the project

- ❑ Annex C is the primary source of information on the proper approach to tailoring to be taken with respect to the E-40B standard
 - ➔ *but requires thinking and adaptation*
 - ✧ *Characterize the project*
 - ✧ *Evaluate the risk of waiving requirements*
 - ✧ *Evaluate each requirement*