ITEA 2

INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

DB Mobility Networks Logistics

openETCS

openETCS ADD and RFC Document Structure

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openETCS@ITEA2 Project

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Scope and purpose of openETCS ADD document

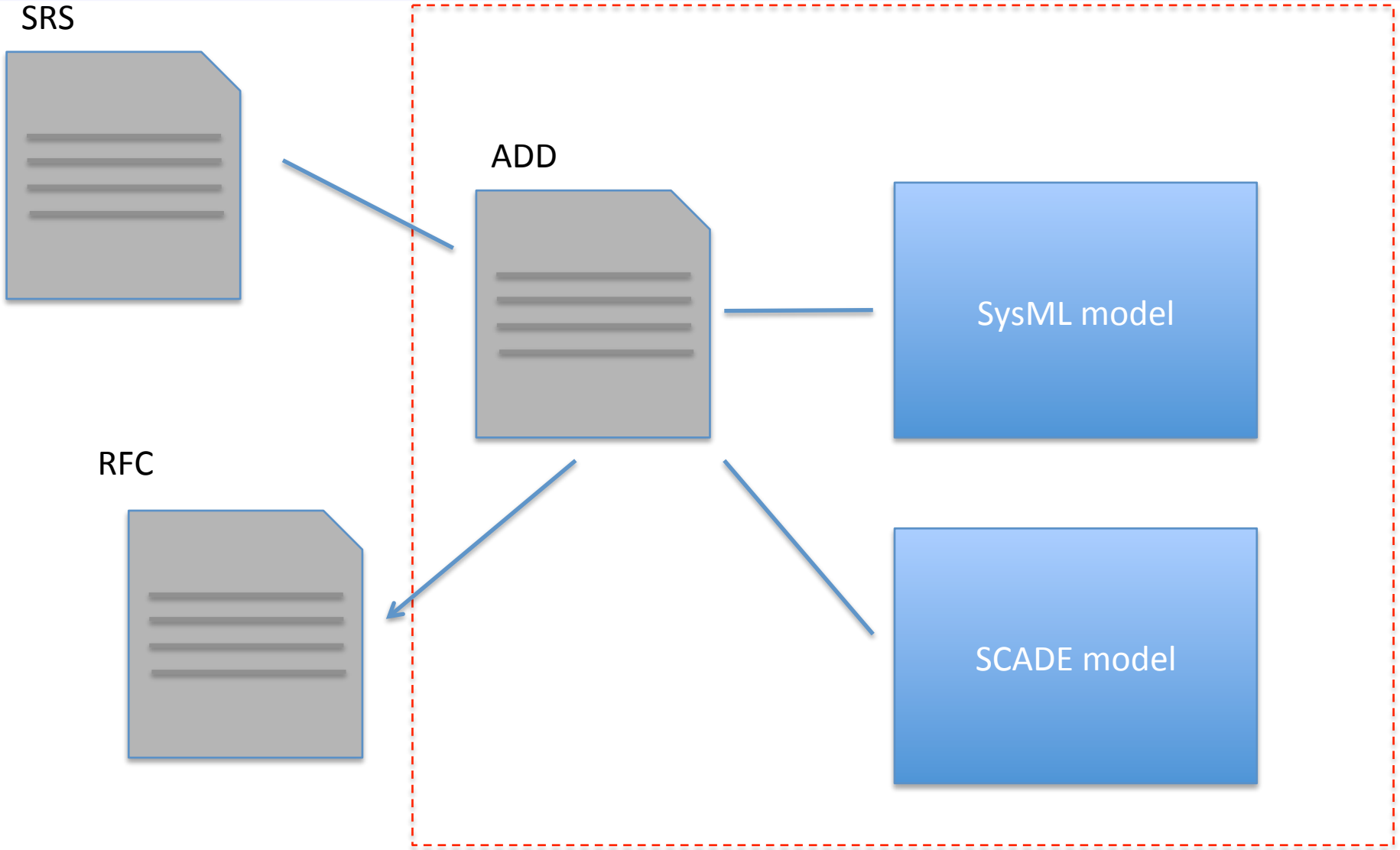
- The openETCS ADD *Iteration 3* is the central requirements specification document of WP3
- It serves as input document for
  - WP3 architecture modeling
  - WP3 software design
  - WP4 software verification and validation
  - and provides interface information for the demonstrator (WP5)
- It is linked to:
  - ERTMS SRS (subset 26 and others)
  - The openETCS RFC document (requests for clarification)
  - The openETCS SysML architecture model
  - The openETCS SCADE software design models and –documents
  - The WP4 test, verification and validation documents (subject to WP4 definition)

History and origin of the ADD document

- openETCS ADD Iteration 1 and 2
- openETCS “calculate train position” SCADE model
- openETCS Data Dictionary
- Workshop results
- Alstom Document “WG3 openETCS database”
- Alstom Document “OpenETCS DNOT 0001 vA”
- Additional documents (list requested)

- We will define the structure 3 of the openETCS ADD during this workshop
- We will elaborate the functional specification using a procedure that we will agree on during this workshop
- Jakob Gärtner (LEA) is managing this process and will also be the mediator between the involved parties.
- In case of disagreement, Jakob has the mandate to take a decision (as a last resort only)

WG3 document hierarchy



Different approaches, integrated

- Alstom documents: SRS- centric
- DB/ NS analysis (iterations 1, 2): functional

- “Calculate train position”[SCADE]: functional, using SCADE formalism
- *(Reminder: ERSA simulator V1/V2, SRS- centric vs. functional analysis)*

- Merging these approaches, plus creating a structure that serves
  - WP3 collaboration in line with openETCS defined processes
  - Clean interface to WP4 and WP5

ADD structure proposal

- Introduction
- System and SW Design process description
- Glossary
- Data dictionary

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- Architecture description (by layers)
  - Overall functional description
  - Functional breakdown (see related slides)
  - Interfaces
  - Structure linkable to SysML

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- Design description
  - Detailed functional description
  - Documentation of design
  - Structure Linkable SCADE model hierarchy

RFC scope and purpose

- We are merging two approaches (SRS-centric; functional)
- The SRS is known to be partially ambiguous; no direct implementation is possible from SRS

- The RFC is a document which has three purposes:
  - Serve as XRF (cross-reference-file) between the SRS and the ADD
  - Document the design decisions (choices against the SRS, or precisions of subjects insufficiently described in SRS)
  - Give input to ERA

RFC structure

- The RFC should match the structure of the ADDs design description
- The RFC document should contain textual reference to SRS per design issue (as often a direct 1:1 or even N:N link is not possible, it shall be a textual analysis, with graphical elements as appropriate)
- The RFC should contain an index, sorted by SRS § that allows reverse reference
- Each design issue should be structured as follows (not all fields are mandatory)
  - Reference to ADD
  - Description of relation to SRS (§§, short synopsis of issue)
  - Design decision(s) taken, with rationale
  - Discussion of discrepancy with SRS

  Each entry should be short, concise and precise