





Towards Interoperable Standards The openETCS Approach

supported by:











openETCS@ITEA2 Project

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From Standard to Implementation



Standard

defines

Technical Specification

Interpretation

Realisation

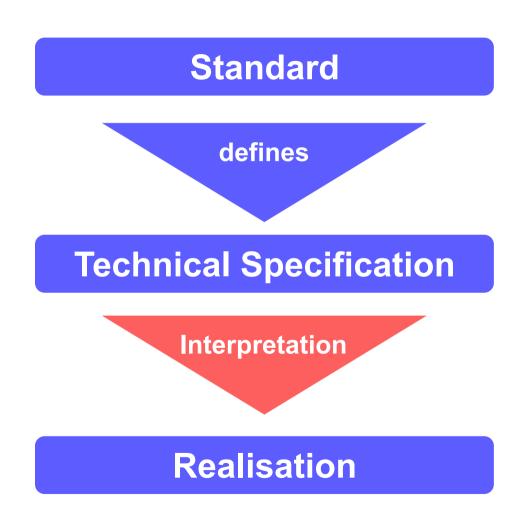
Goal: Interoperability

Goal: Define realisation



From Standard to Implementation



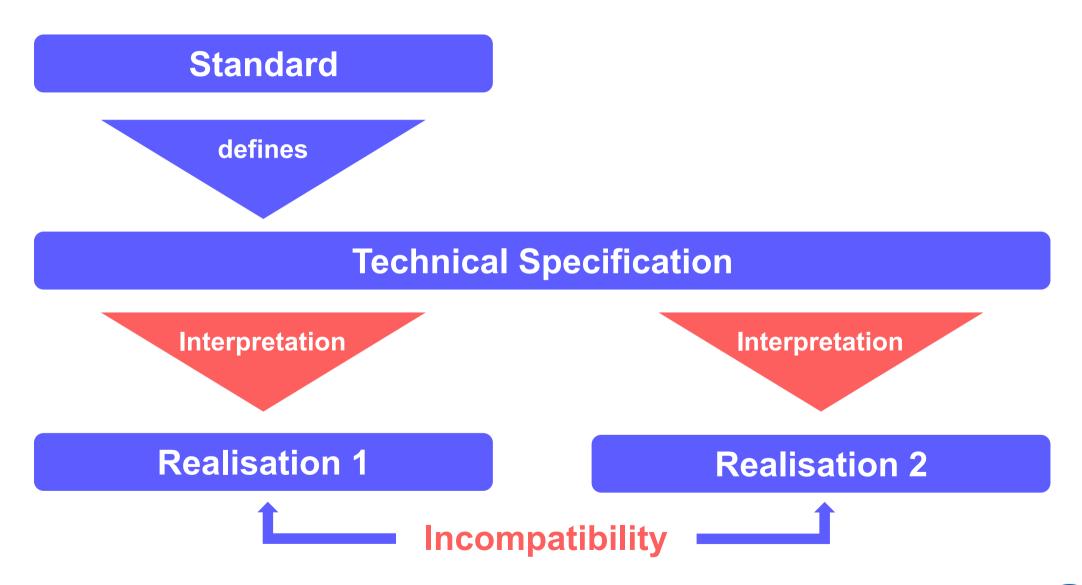


Natural Language



The Reality

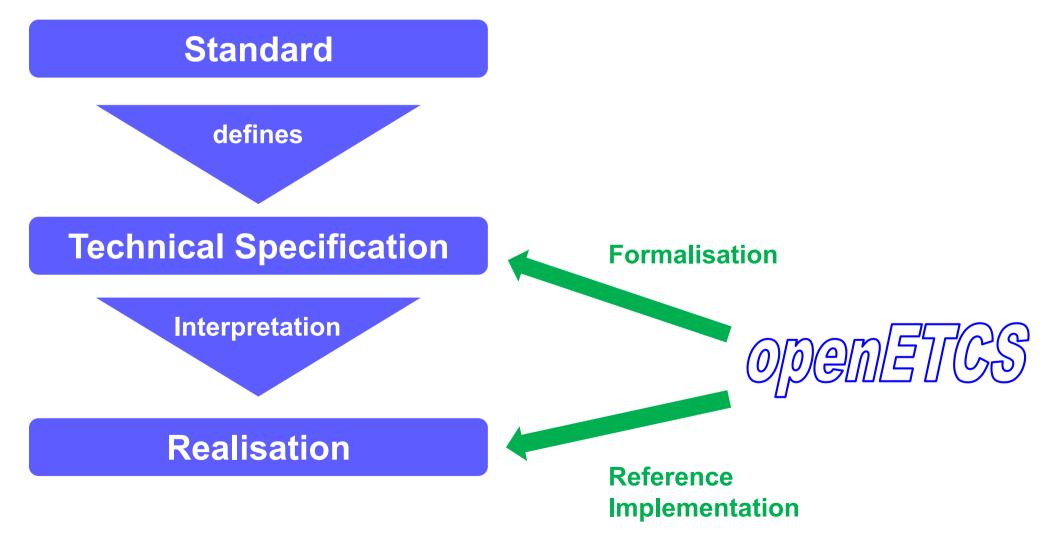






How do we achieve real interoperability?

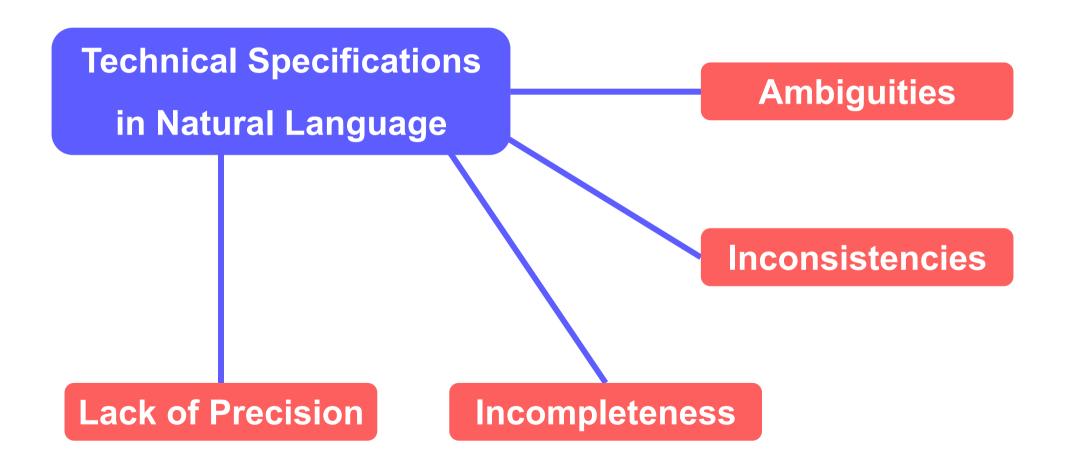






The Problem

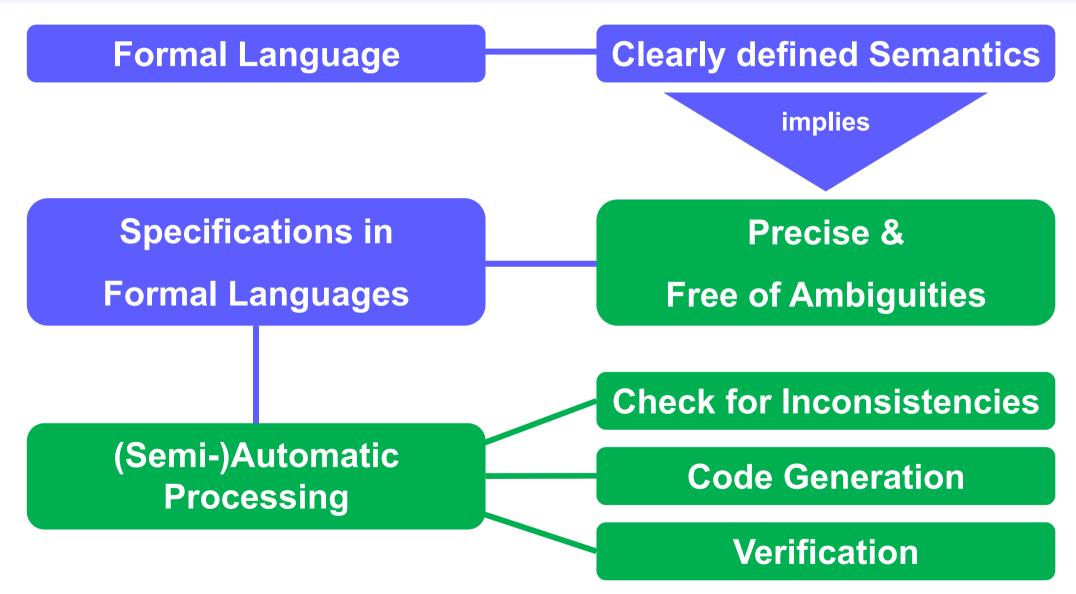






Solution: Formalisation







The openETCS Approach I



■ ManageTrainPosition part1: ValidDataDirect part2: CalculateTrainPosition part3: ManagePositionRep..

PositionReport: < Undefine...

«block» ManageLocationRelatedInfo.. mbi: ManageBaliseInformation

mtp: ManageTrainPosition

in BTM: BTM INFO T in Time: CLOCK T in Odometry: odometry_T out TrainPositionReport: < Un...

ManageBaliseInformatio

in BTM: BTM_INFO_T in TimeStamp: CLOCK_T

out ListOfBalises: < Undefi. out CurrentLRBG out: < Un.

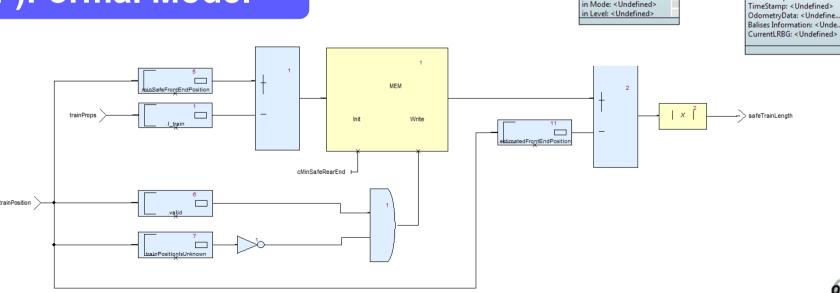
in Mode: <Undefined>

ETCS Specification (natural language)

Formalisation

(Semi-)Formal Model

Behaviour (Scade)



Architecture

(SysML)



The openETCS Approach II



ETCS Specification (natural language)

Formalisation

(Semi-)Formal Model



Code Gen.



Reference Implementation





"Open Proof"



(Semi-)Formal Model under EUPL **Reference Implementation** Licencing **Tools Chain Documentation**



openETCS @ INNOTRANS



openETCS Workshop

- Today, 16:00 18:00
- CityCube Berlin, meeting room R12 (level 3)

Booths of partners:

ERSA

Hall 11.2, Booth 110

Fraunhofer FOKUS

Hall 23B, Booth 206

Systerel

Hall 11.2, Booth 110



CityCube Berlin in Construction (CC BY-SA 3.0, Peter Kuley)

