

Deployment of the PUS-C Standard in Projects supported by an Automatic Generation Toolset

The overall objective of this activity is to initiate the development of a new generation of tools, taking benefit of the formalism used to specify the PUS-C foundation model and the capabilities offered by the PUS service type and service abstraction models. The use of formal (i.e. logic based) information and process modelling techniques is required to ensure the "state of the art" nature of the expected results (including verifying and validating the adequacy of the many concepts developed in the PUS-C standard).

The scope of this activity was to:

- Verify and validate the adequacy of the PUS foundation model specified in clause 5 of the PUS Standard to capture the related in scope, clause 6 semantics.
- Further develop the PUS foundation model to capture additional semantics to fully generate the clause 6 service type's system requirements, as well as to fully generate the clause 8 service type's interface requirements.
- Related to the PUS foundation database:
 - Develop the first operational version of the PUS Foundation database.
 - Populate the PUS foundation database with all standardized PUS data.
- Related to the PUS Microsoft Word document generator:
 - Develop the PUS Microsoft Word document generator.
- Related to the PUS ASN.1 code generator:
 - Produce all ASN.1 and ACN models needed to cover the existing PUS services.
 - Develop a tailoring tool to allow creating new services, configure the ASN.1 models and generate code using the ASN1SCC tool.
- Verify and validate the adequacy of the PUS service type system requirements by developing, for each standardized service type
 - The state machines, in Z.100 SDL, that formalize the behaviour of the related services.
 - The message sequence charts, in Z.120 MSC that specifies end to end scenario.
- Verify the adequacy of the performed work and its outputs by demonstration in a realistic use case.