

1. Short description:

ERTMSFormalSpecs is an open-source Domain Specific Language specifically designed to model requirements expressed in Subset-026, the trainborne ERTMS requirements document. The tool encompasses the whole development cycle, ranging from requirement management, modeling, and testing, with an emphasis on traceability, as required by the norm EN50128 controlling such developments.

ERTMS Solutions offers an End of Studies Dissertation about automatic integration of Subset-076 integration tests of ERTMS train behaviour using *ERTMSFormalSpecs*.

2. Dissertation content:

1/ Inputs documents and software/model:

- ERTMSFormalSpecs User guide
(https://github.com/openETCS/ERTMSFormalSpecs/blob/master/ErtmsFormalSpecs/doc/EFSW_User_Guide.pdf)
- ERTMSFormalSpecs technical design
(https://github.com/openETCS/ERTMSFormalSpecs/blob/master/ErtmsFormalSpecs/doc/EFSW_Technical_Design.pdf)
- ERTMSFormalSpecs workbench and model covering 59% of Subset-026 and Subset-027 (<https://github.com/openETCS/ERTMSFormalSpecs>)

2/ Reference documents (for information):

- ERTMSFormalSpecs SIL4 EN50128 whitepaper draft 3
- Subset-026: System Requirement Specification
- Subset-027: FIS Juridical Recording
- Subset-034: FIS for the Train Interface
- Subset-076: Test Plan

3/ Scope of work:

Collaboration of the ERTMSFormalSpecs modeling team for Subset-026 model improvements and ERTMSFormalSpecs toolchain improvements, inside the ERTMS Academy learn-by-doing qualifying coaching programme, sanctioned by ERTMS Academy belts.

Automate the integration of existing integration tests, as described in Subset-076.

Redaction of a scientific paper in collaboration with the ERTMS Solutions design and modeling team, for academic publication, with the subject "Automatic integration of Subset-076 integration tests in ERTMSFormalSpecs".

Participation and/or presentation of the development status during an OpenETCS WP3 workshop (to define later).

4/ Duration

The dissertation period would start on 1st of January 2014 and would end on 30th of June 2014 or 30th September 2014, or somewhere in between, according to the circumstances (to be defined)

As the project on which the Student will be working is requesting important efforts, this schedule could start (and end) later.

3. Logistics :

ERTMS Solutions proposes to work in its facilities in Brussels, rue de la Caserne, 45. ERTMS Solutions shall provide the necessary computer hardware and software necessary to ensure maximum productivity during the whole dissertation period.

4. Compensation :

There are no wages for this internship, but the payment of 500€ considered as a compensation, which should be enough to cover the stay in Brussels (room + food).

If interested, please contact Frédéric Du Jardin, fred@ertmssolutions.com