Draft Proposal For training and Support of Thales Feasibility Study

# 1. Introduction

This is a preliminary discussion document and draft proposal for the provision of Technology Training and Support for a ‘Railway Control Application Development – Feasibility Study’ to be conducted by Thales, Romania. The proposal is a response from University of Southampton (hereinafter Soton) to an enquiry from Thales CMCS:001SCM00149109;01P03.

Suggested durations do not include travel time, which will be added for costing.

# 2. Training

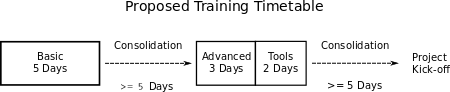
Location: The training will be conducted at a facility provided by Thales in Stuttgart.

Pre-requisites:

* It would be useful for students to have read some preliminary material on Event-B modelling. Some references will be provided prior to the training.
* It is assumed that the students will have a knowledge of Java and developing Eclipse plug-ins including use of the EMF and GMF packages.

The training will be arranged in 2 sessions, of 5 days duration each, with a consolidation period of one week in between the sessions. We suggest the consolidation period so that the trainees have a chance to assimilate and experiment with the basic topics covered in the first session before moving on to the advanced topics. (This may also depend on which students attend each session. For example, we would recommend that the advanced users also attend the basic module).

An exercise will be set for the consolidation period. Support will be provided via telephone and email during this period.



Both sessions will be delivered by Dr C.F. Snook who has expert knowledge of UML-B and Dr A.Edmunds. who has expert knowledge of the code generation tools. Both, Snook and Edmunds have extensive knowledge of Event-B modelling with the Rodin toolset and are experienced developers of Rodin plug-ins. Note that Soton do not have extensive knowledge of, nor direct control over, the Pro-B source code.

Session 1 will cover the topics requested in 2.1 Module – Basic User (5 days)

Session 2 will cover the topics requested in 2.2 Module – Advanced use\* and 2.3 Module – Tools Developer\*\*.

\* Please note that access to the full results of [2] may be restricted because this case study is subject to IPR restrictions.

\*\* An aspect of Tool Development, which is not specifically identified by Thales, is the Event-B EMF and Generic Diagrams support framework. Soton recommends including this topic in the tool development section because several plug-ins rely on it.

# 3. Coaching and Support for Prototype Development

Due to the duration of the prototype development it is assumed that this would be carried out at Thales premises in Romania.

It is suggested that Snook and Edmunds both make 3 on-site visits of 3 days each at monthly intervals during the duration of the prototype development.

During these visits the Thales team can select whatever topics they need the Soton team to discuss or assist with for supporting the prototype development. This could include assistance with modelling and verification as well as development of plugins or support for Thales to develop plug-ins.

In addition Snook and Edmunds will provide remote support as required, via email and telephone, throughout the 3 month period of the prototype development.

This proposal does not include any significant bespoke tool development effort or extensive coding activity apart from that requested during prototype development support visits. Where an issue is identified that requires significant development then advice will be provided such that Thales can decide whether to request a quote for the work to be undertaken or to undertake the work themselves.

# Other Support

Reported bugs in the Rodin toolset are normally fixed f.o.c. as part of the on-going development cycle by Soton and its partners at their discretion. Soton would attempt to provide this to the best of its ability but timeliness cannot be guaranteed.

In particular, note that Soton does not have direct control over the Rodin platform (and some plug-ins) and bugs in these are fixed as part of a periodic schedule.

The Rodin development team (including Soton) are also willing to consider feature requests for the open source tool set so that it aligns with the needs of industry and where these align with the generic aims of the toolset they may be incorporated f.o.c. into the development cycle.