

Comparing formal verification approaches of interlocking systems - DTU Orbit (09/11/2017)

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The verification of railway interlocking systems is a challenging task, and therefore several research groups have suggested to improve this task by using formal methods, but they use different modelling and verification approaches. To advance this research, there is a need to compare these approaches. As a first step towards this, in this paper we suggest a way to compare different formal approaches for verifying designs of route-based interlocking systems and we demonstrate it on modelling and verification approaches developed within the research groups at DTU/Bremen and at Surrey/Swansea. The focus is on designs that are specified by so-called control tables. The paper can serve as a starting point for further comparative studies. The DTU/Bremen research has been funded by the RobustRailS project granted by Innovation Fund Denmark. The Surrey/Swansea research has been funded by the SafeCap and the DITTO research projects granted by EPSRC and RSSB. The authors would like to thank Linh Hong Vu for providing the benchmark of scheme plans and the drawings of the track plans.

General information

State: Published

Organisations: Department of Applied Mathematics and Computer Science , Software Engineering, Coventry University, Swansea University

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Number of pages: 18

Pages: 160-177

Publication date: 2016

Host publication information

Title of host publication: Reliability, Safety, and Security of Railway Systems. Modelling, Analysis, Verification, and Certification : First International Conference, RSSRail 2016 Paris, France, June 28–30, 2016 Proceedings

Volume: 9707

Publisher: Springer

ISBN (Print): 978-3-319-33950-4

ISBN (Electronic): 978-3-319-33951-1

Series: Lecture Notes in Computer Science

ISSN: 0302-9743

Main Research Area: Technical/natural sciences

Conference: The International Conference on Reliability, Safety and Security of Railway Systems: Modelling, Analysis, Verification, and Certification (RSSRail 2016), Paris, France, 28/06/2016 - 28/06/2016

Software Engineering, Logics and Meanings of Programs, Computer Communication Networks, Systems and Data Security, Mathematical Logic and Formal Languages, Artificial Intelligence (incl. Robotics)

Electronic versions:

2016.1main.pdf. Embargo ended: 16/06/2017

DOIs:

10.1007/978-3-319-33951-1_12

Source: FindIt

Source-ID: 2306622559

Publication: Research - peer-review › Article in proceedings – Annual report year: 2016