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Open Source Modeling — Main Motivations and Key Challenges!

by

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Abstract

Model-Based Engineering (MBE) has proven to be highly successful in many different contexts in large software organizations like Ericsson over the last decades. As a result, modeling is now used for wide range of aspects, including, software design, system modeling, information modeling, network architecture modeling, and business process modeling. However, key issues are currently limiting the broader adoption of MBE in the industry. We believe that the main limiting factors at this point are related to the tools. Main issues include the lack of proper support for customization and DSML development, and the lack of capabilities to support a broad range of key development aspects, including testing, tracing and debugging, deployment analysis and validation, design/architecture exploration, variability modeling and product line management, and model/tool integrations. These problems plus the lack of evolution of the commercial tools over the last years has led us to conclude that the traditional model based on proprietary technologies has failed and that we need a new solution based on open source. We believe that the emergence of Papyrus as an industrial-grade open source modeling UML tool has the potential to be a real game changer and that it provides the required cornerstone for the establishment of a new MBE era based on a true collaboration between industry and the research community. This collaboration is in our opinion the only realistic alternative to develop a complete MBE development environment that will provide support for the broad set of capabilities required by end-users.

In this presentation we discuss: Ericsson's experience with MBE over the last 20 years using commercial proprietary tools; the main motivations and plan for the development of an industrial-strength open source modeling tool solution; the key importance of establishing a vibrant community composed of end-users, commercial suppliers, and research/academia; key challenges that will need to be faced in the next years; and main opportunities resulting from the adoption of an open source MBE solution.

Short Biography

Francis Bordeleau is Product Manager in the Software Development group at Ericsson. His main areas of responsibilities include model-based engineering and modeling tools. In this role, he is responsible for defining product specification and roadmap, developing business cases, managing budget, managing open source initiatives, and collaborating with other companies, researchers, and academia. Francis has over 20 years of experience in MBE and software engineering; researching, working, consulting, and collaborating with numerous companies worldwide. Prior to joining Ericsson in May 2013, Francis was the Founder and CEO of Zeligsoft, a provider of domain specific Model Based Engineering (MBE) tooling solutions for distributed real-time embedded systems. He was also Director of Tooling Business for PrismTech.

Francis holds a B.Sc. in Mathematics from University of Montreal, a Bachelor of Computer Science from University of Quebec (UQO), and a Master in Computer Science and Ph.D. in Electrical Engineering from Carleton University.