

Filling in the Whitespace: Research Opportunities in Model-Driven Software Development and Model-Driven Engineering

Bran Selic*

* Carleton University and Malina Software Corp

Model-driven development (MDD) is an approach to development of software systems that is steadily gaining new adherents in industry. This is due to its clear potential for major improvements in productivity and product quality over more traditional development methods. There have been numerous successful applications of MDD in industrial and other production environments that have unequivocally demonstrated its viability and effectiveness. However, at present, MDD comprises a rather mixed collection of ad hoc technologies and methods, mostly of which were developed by industrial teams responding to specific problems and immediate market requirements. Consequently, there is very little or no clear theoretical foundation that would provide the basis for systematic and technically sound introduction and application of this important new approach. This has not only resulted in technical problems, but has also greatly impeded the wider penetration of MDD in practice.

In this talk, we first look at some of the key characteristics of MDD, discuss the current state of the art, and review some of the salient results achieved in practice. Next, we examine what is needed to provide the necessary theoretical basis for MDD and identify specific key areas of required research. Finally, we describe a new initiative by the Ontario Centres of Excellence and the IBM Centre for Advanced Studies created specifically to support the exploration of this fertile new *terra incognita*