



Proceedings of the Workshop on the
Layout of (Software) Engineering Diagrams
(LED 2007)

Confessions of a Meta-Modeller

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1 pages

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Abstract: Meta-modelling tools are a very useful technology in software engineering tool development, increasing a tool developer's productivity and permitting more focus on the new tool's metaphorical abstractions and notations rather than the technical features of implementation. Constructing meta-modelling tools is, however, a challenging occupation with many interacting technical needs. In the process of managing these needs, the question of diagram layout support has typically been seen as being of low priority. This results in an inability for meta-tool users to specify their notational metaphors efficiently or appropriately, and for the generated tools to be unable to effectively manage diagrams of significant scale and complexity. In this presentation I will examine the deficiencies of current meta-tool layout approaches and the problems these cause for notational designers, tool implementers and end users. I will then discuss some directions we have been taking to enhance diagram layout capability in our own meta-tool work before examining broader issues regarding software tool layout support. This will raise a set of challenges for the community to permit the provision of more understandable and scalable interactive software engineering diagrams while retaining the productivity benefits of a meta-tool approach for their specification.

Keywords: Meta-tools, diagram layout, software engineering

Biography: John Hosking is a Professor of Computer Science at the University of Auckland. He has developed an eclectic set of research interests covering software tools, software engineering, visual languages and environments, and data mapping systems. His more recent work has concentrated in the area of meta-tools for specifying and generating domain specific software tools. John is the author of more than 150 refereed research publications and throughout his career he has been very active in industry consultancy and research contract work.