Domain Specific Languages and Standardization: Friends or Foes? – Invited Talk for DsE@CAiSE2011

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Abstract. Domain specific languages capture the domain knowledge through the constructs of the language, but making a good language takes more than combining a set of domain concepts in some random fashion. Creating a good language – which does take time and maturing – requires knowledge also from the domain of language design.

It turns out that general abstraction concepts are useful for many different domains and most probably it will be beneficial to find ways to reuse such concepts in the domain specific languages. But there are challenges.

The general constructs should be recognizable as general even in a domain specific context. The general constructs may need adaptation to the domain specific ones. Still the reuse of general constructs should be such that implementing the domain specific language should not be made increasingly difficult. How many domain specific languages you have seen including well established concepts like inheritance and overriding?

The talk will show one way to compromise between the domain specific and the general standardizable through the example of a common variability language now under standardization in OMG. We will consider the advantages and challenges in greater detail and discuss alternative approaches. The talk will give a number of examples of domain specific as well as general languages, their creation and evolution as well as their implementation.

About the author. Dr. Øystein Haugen is Senior Researcher at SINTEF and part time Associate Professor at University of Oslo. He has earlier worked in industrial research in a small startup company with typographic systems, in large multinational companies ABB and Ericsson with methods and languages for system development and design.

He has worked with developing languages and with implementing language. He started working with making a computer microprogrammed to run the first object-oriented language Simula as efficiently as possible. He went on to taking part in the development of SDL (Specification and Description Language) in the ITU (International Telecom Union). Then he led the development of MSC (Message Sequence Charts) to the MSC-2000 version of the language and subsequently turned his attention to UML where he chaperoned the changes to the sequence diagrams in the UML 2.0 revision.

He is now leading the work on the Common Variability Language standardization within OMG.