

Especially when engineering a platform such as PREMAP, where a large number of diverse sets of concepts and mechanisms have to be integrated, one needs a multi-layered modeling approach such as the one discussed in this paper.

Ontology modeling approaches such as OWL [11] are also growing in popularity. OWL has three sublanguages: OWL Lite, OWL DL and OWL-FULL. Of these, OWL Lite and OWL-DL only support models at two levels. This is insufficient for an extensible platform such as PREMAP where subject specific ontologies are first class entities. OWL-FULL allows a class to be an instance of another class. However, there are no OWL Full reasoners available [12, 13]. Besides, in a platform engineering scenario, models should not only capture domain semantics, but also various engineering aspects of the platform. What we need is a combination of the flexibility of model driven engineering principles and the deductive reasoning capabilities of ontologies.

5. Summary

We have given an overview of a computational platform that we are developing in the engineering design space and briefly discussed the model-driven engineering design principles underlying its architecture. We have identified the domain modeling challenge and presented a modeling framework that has been developed to address this challenge. We have also given a brief overview of how model driven techniques have been used to automate some of the key features. There are many other features such as the knowledge engineering framework which have not been discussed due to space limitation.

6. REFERENCES

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