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# MDA development environment for embedded system

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Recently, the demand of the embedded system has increased greatly. The computer is embedded in various systems. Those are as the cellular phone, the consumer electronic, the Clmano system, and the industrial commodity, etc. And, the embedded computer is adding many functions for the system.

An advanced demand should be made the software made large-scale according to the changed hardware, complex present embedded system development be developed in a very short term while maintaining high reliability and real time besides, and it exists very severely. In a past development technique, as for correspondence to such a current state, a difficult, new development technique is requested.

To solve these problems, MDA(Model Driven Architecture) are going to be adopted in this domain. The MDA is development tecnique was advocated by OMG. Models such as UML have been used as figure to understands for design and analyze so far. In MDA, models are used likes programing language. Feature of MDA is metamodel, PIM/PSM , and code generation.

Metamodel is model for defining model. Moreover, Metametamodel is exists, OMG's metametamodel called by MOF(Meta Object Facility).

PIM(Platform Independent Model) don't depend to any platform. One PIM can transform any PSM(platform specific model).

Code generation create program codefrom models. As a result, development can be made efficiency.

Some MDA tools have begun to be introduced for the embedded system development now.

That MDA tools can absorption difference of platform on very large system such as the cellular phone system. but, MDA tools corresponding to small - middle size embedded system is difficalt. Moreover, the middle size embedded software development needs hardware infomation.

This thesis proposes new MDA. This models hardware infomation in addition to past MDA for the embedded system.

In this thesis, hardware information first needed was arranged. And new metamodel was defined for creating model of hardware infomation.

The DDMM(Device Definition Metamodel) was structured by three sub-metamodels, category, structure and behavior.

Second, The models abide by DDMM defined. models is HW PIM, HW PSM, SW PIM, SW PSM, LIM and LIM.

Third, the Tool abide by this proposal implemented on the Eclipse(Integrated Development Envairoment). This tool using any eclipse plugin, eclipse standard plugin, EMF, and oAW. Last, The clock system implement on the this tool for propose evaluating.

This proporsal was maked efficiency of development of embedded system.