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5. Griss, M., G. Pour. Accelerating Development with Agent Components
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7. An architecture for Embedded Intelligent Components, PC AI magazine, Jan/Feb 2001

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APPLYING MODEL-VIEW-CONTROLLER IN GEOMETRIC MODELLING METHODOLOGY*

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Abstract: Article describes the union of architectural pattern MVC and five-layer architecture for geometric modelling. Main purpose is creation of high-modular interactive systems. The implementation includes different reusable object-oriented design patterns and shows a possible application of the architectural union.

Key words: Computer graphics, Geometric modelling, Methodology, MVC

1. Introduction

Geometric modelling takes central place in modern Computer Graphics. Geometric modelling methodology defines how such system can be developed to be clear, extensible and stable.

Parallel to the implementation of classical schemata for interactive applications are established technologies for software engineering, which improve the system abstraction. These technologies include the application of high-reusable object-oriented design and architectural patterns. Such pattern is the so-called Model-View-Controller (MVC). It is used in systems, which should bring in loose coupling between the data, its visual representation and the methods of its manipulation.

According to the development purposes of the OpenF [5] system was made attempt for combination of the classical architectures for building geometric modelling systems and modern technologies for achieving higher abstraction. The result of this attempt is subject of present article.

2. Methodology for geometric modelling

In [1] is described methodology for geometric modelling. It is based on the logical separation of the system functionality for processing geometric information. Each functional group is called virtual machine or processor. Each virtual machine handles specific part of the graphic information as processes it and interacts with other virtual machines. Their purpose is to encapsulate relatively independent and similar operations. They communicate with each other via preliminary defined interface and eventually pass processed data. This hierarchy of virtual machines consists of:

- Display processor – via manipulating it, the system draws image,

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