

Highlights of the OMG RFP Draft: Call for a widely accepted Kernel

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Abstract:

The OMG RFP is entitled "A Foundation for the Agile Creation and Enactment of Software Engineering Methods." This title is selected to loudly and clearly strike for three distinctive key points driven by Semat:

(1) It is about finding a kernel.

It emphasizes that the RFP is not creating a new method; instead, it is to build a foundation that “consists of a *kernel* of software engineering domain concepts and relationships that is extensible (scalable), flexible and easy to use”.

(2) Its target group is the practitioners, not the process engineers.

The kernel has to be agile and lightweight to be successful. It focuses on people who do the work: the practitioners (e.g., analysts, developers, testers, etc). This foundation is created by practitioners, and serves the practitioners.

(3) Its focus is on the usage of methods, not the definition of them

Methods are *enactable*. The enactment of a method can be defined as the carrying out of that method in the context of a specific project effort.

These are the critical features that separate this initiative from previous and existing efforts in this space. These features cannot be achieved by simply extending previous and existing work. These are the aspects that will fundamentally change our understanding of how to work with methods and processes.

1 The release of OMG RFP draft

An excerpt from the draft of the OMG Request for Proposal (RFP) has been released to the public on our website. The RFP title is “A Foundation for the Agile Creation and Enactment of Software Engineering Methods”

http://www.semat.org/pub/Main/WebHome/ADTF_SEMAT_RFP_Brief_version.pdf

For an easy read, the excerpt only keeps the relevant information of the RFP, and leaves out the OMG administrative portions.

To recap the background, Semat has decided to create a common ground for software engineering manifest as a kernel of essential elements in this space. To get there the Semat founders agreed to move this effort to become an OMG effort. For more than six months, a team of people from Semat and a team of people from OMG have worked together on this RFP. This RFP will be discussed at an OMG meeting in Salt Lake City on June 22, 2011 and during that week.

Arguably, the RFP is a lengthy document. In this article, I highlight some of the key points to give you a gist of the RFP. For a more thorough description, please refer to the RFP itself.

2 A closer look at the concept of *Method and Practice*

In a loose sense, the traditional definition of *method* is often considered as the synonym of *process*, which may be defined as a systematic way of doing things in a particular discipline. In the RFP, the concept of *method* is considered as “composed from well-defined *practices*.” Where a *practice* “is a general, repeatable approach to doing something with a specific purpose in mind, providing a systematic and verifiable way of addressing a particular aspect of the work at hand”.

One prominent feature of method is its *enactment*. As stated in the RFP, “the enactment of a method can be defined as the carrying out of that method in the context of a specific project effort. Within this context, the practices within the method may be considered use cases for the work that must be carried out to achieve the project objectives, with each practice providing a specific aspect of the overall method.” In shorts, a practice is to a method as a use case is to a software system.

From the draft RFP: “Note that the definition of a practice is intentionally similar to that of a method. Indeed, practices at various levels may be composed from lower-level practices, and a method may be considered to be simply a composite practice targeted at the level of support of an entire discipline. This also allows for the further composition of methods at even higher levels within and across disciplines.”

Methods can be enacted – or as Semat prefers to say: used. To make the point, the method is generally not enforced upon the developers but voluntarily used by them. A practice in itself will in general not be enacted; being composed into a method it will participate in the enactment of the method. Methods are not just descriptions for developers to read, they are dynamic, supporting their day-to-day activities.

Being able to design a method from a set of relevant practices, all described using a kernel of essential elements are key requirements of Semat.

3 The Kernel

The concept of *kernel* is at the heart of the RFP. “A common kernel of underlying concepts and principles applicable across all methods that may be used to define various practices.” To further elaborate the concept, the kernel includes the essence, pervasive concepts and qualities of software engineering – the common ground – Irrespective of code, software system, solution, methods, and organization. They are always prevalent in any software endeavors:

- What we already have (e.g. teams and projects)
- What we already do (e.g. specify and implement)
- What we already produce (e.g. software systems)

The kernel should be concrete, focused and light. The kernel is defined using a domain-specific language, the domain being practices for software development.

4 The language

“In addition to the kernel, the foundation requested by this RFP includes a standard language for specifying practices based on the kernel and for composing methods from the practices.” As further stated in the RFP, the language should be a “language that can be used by a development team to both informally discuss and sketch their methods and then formalize those methods as they find appropriate.” The language is used to describe methods. To fulfill the *enactment* feature of a method, the language will be used essentially to “script” methods for enactment. The scripting in some cases can be very light, perhaps just specifying milestones tracked during the course of a method.

“There is also an important distinction to be made between the rigorous scripting required for executable software and the more flexible scripting that must be allowed for methods.” These scripting should be easy to understand and use by practitioners, and in the meantime, still give them the freedom to add their own judgments for the work in a given context. “In fact, the very goal of the foundation being requested is to allow a development team to take control of its own development method, not to be controlled by it.”

A consequence is that the language must support usages at different levels of details. At the less detailed level the concrete syntax must be intuitive to the casual user. At the most detailed level the language needs to provide for tool support; “automated support for enactment can be very useful, especially for larger project teams, and the language must be defined precisely enough itself to allow for the automated support of methods formalized using the language.”

5 Relationship to other existing OMG specifications

There exist some OMG specifications that could be viewed as similar to the proposed RFP. One of those specifications is SPEM (Software and System Process Engineering Metamodel). After taking a closer look at SPEM and this RFP, you would find three fundamental important differences between the two: 1) The kernel is the critical foundation, 2) the target group being the practitioners instead of the process engineers, and 3) the use of method is more important than defining one.

6 Final Words

The OMG RFP is one of the major milestones of Semat. Moving the development of the kernel and the language to OMG ensure the openness and fairness of the selection process and that the results benefit the entire community.

We would love to hear your feedback and comments on our blogs. Your involvements ensure we are doing the right things and keep us in the right direction.