

Requirements Modeling

Guaranteeing correct and workable requirements

“For the first time, modelling appears to me to be a tool, not a burden”. -
Lew Mullen, Schlumberger

This seminar will show you:

- How to use requirements models to prove the required functionality
- How to elicit requirements using models
- How to add rigor to your requirements
- How to understand your customer's requirements using models

Requirements modeling and you

Requirements models are used when gathering requirements, and during systems analysis. Whether you consider eliciting requirements to be a separate activity, or a part of systems analysis, the importance of correct requirements must be a high priority for you. Building accurate models means that you can guarantee the correctness of your requirements.

All engineering disciplines use models to develop the products they intend to build. Requirements models are used to discover and clarify the functional and data requirements for software and business systems. Additionally, the requirements models are used as specifications for the designers and builders of the system.

What a system is and what does a system do

You can describe a system by what it is, and by what it does. For an example of what it does, consider this typical statement from a requirements specification: “The product must calculate the cheapest fare”. Beyond this innocent description of what the system must do, lies a complex set of rules, procedures, data and functions. It is the task of requirements modeling to discover the rules for calculating the cheapest fare, the algorithms needed,

and the data needed to support those calculations. In other words, the requirements models describe what the system is.

You also use models when eliciting requirements. A quickly sketched data flow model is an indispensable aid during interviews. A data model reveals the policy of the system. Thus a data model constructed with your customer quickly reveals any gaps in the policy. A state model can explain how a system behaves, and thus clarifies for a potential user the consequence of the requirements.

This seminar shows you how to use the requirements models to elicit requirements, and how to prove the correctness of those requirements. Workshops during the seminar give you the practical skills to put these models to work for you right away.

This seminar is a companion to Mastering the Requirements Process. It teaches you the various models available to the modern requirements engineer and systems analyst. It gives you the tools to improve your skills, and to improve the way you build your systems specifications.

Is this for me?

By bridging the gap between the requirements gathering and systems analysis, this seminar brings you an intensive tour of the available requirements models, and most importantly, how you can make the best use of use them.

You should attend if you are a:

- **Requirements engineer**
- **Business analyst**
- **Systems analyst**
- **Systems manager**
- **Project leader**
- **Consultant**

What will I learn in two days?

Modeling

Modeling systems that you intend to build makes sense for a number of reasons. This section introduces some of them, and takes you on a short tour of the available models, when they are used and why.

The Context Model

The context model is used to describe the scope of the problem, and discovers exactly what is inside the work to be studied, and what is outside. Moreover, we demonstrate how to determine if the scope is accurate and complete.

Business Events

Most systems and work that we study today is large and complex. Business events are the most effective way of partitioning large systems into smaller parts. The work's response to each of the events can be studied and modelled as a way of understanding and improving the work.

Process Modelling

Work is an active process. That is, it is made up of dynamic activities that transform and move information around. We use event-response process models, process specifications and data definitions, as well as systems viewpoints to represent the business/system activities.

Data Modelling

The stored data is the core of any system. Class models are used to demonstrate how the stored data is a reflection of the business policy. Heuristics are introduced to help find the classes, attributes and associations to reflect the business policy. Later, the class model is used as the basis for the design for an automated product.

State Modelling

State models describe systems from the point of view of their behaviour. When we look at state models we see some useful links to the other models so far constructed. The transitions between states are caused by business events, and the state model can be used to model the states that the classes attain as they are processed by the activities of the process model.

Modeling the product

Once the work/business has been correctly understood, we introduce an automated product to help with that work. Before the product can be satisfactorily implemented, it is useful to model it to ensure correct functionality. We use a variety of UML models to demonstrate the product prior to implementation.

Learn through practice

This seminar includes frequent workshops and opportunities to apply the illustrated techniques. Work with the instructor to build models and prove or disprove example requirements. Construct models to elicit requirements, and then feed them back to see if your understanding matches that of your customer. Also, learn to evaluate when each of the models is useful, and what degree of detail is necessary.

For more information and contact details

For in-house courses contact James Robertson at The Atlantic Systems Guild james@systemsguild.com.

Please also see our companion courses at www.volere.co.uk

In the United States contact Software Quality Engineering www.sqe.com

In the United Kingdom contact IRM UK www.irmuk.co.uk/index.htm

In Italy contact Technology Transfer S.r.l www.tti.it

In Denmark contact Iocore www.iocore.dk/volere

In Australia contact DP Education www.dped.com.au