

The System Concept: Bringing Order to Chaos

A One-Day Tutorial With Dr. Regina M Griego

Friday, 9 November 2007, 8:00 a.m – 5:00 p.m.

Location: Marriott Albuquerque Pyramid North, Albuquerque, NM

ABSTRACT

Currently most system lifecycles do not include a defined process for eliciting and capturing requirements. For most projects, the lifecycle begins with writing the requirements. The pre-requirements stage is often haphazard and ill defined. This approach usually results in a requirements specification that is poor in quality, and, ultimately, the integrity of the product is compromised. Most requirements are traditionally elicited in a series of unstructured meetings. Diverse people come together and try to formulate the requirements for a product. The engineers are responsible for translating the concepts gathered individually at meetings into specifications that can be used to develop the product. This process is very painful and difficult.

Most concurrent engineering efforts begin while the product concept is still fluid and with no defined requirements elicitation process. **If an engineer proceeds to design with a fluid product concept, the uncertainty practically ensures that the product developed does not meet stakeholder expectations.** The goal of a requirements elicitation and analysis process should be to develop a shared vision or concept of the system to be specified before concurrent engineering design effort begins in earnest. This shared vision is often called a conceptual model and is an extremely useful communication tool at the onset of a project. The system conceptual model becomes the initial mapping of the intangibly abstract into something more concrete.

This tutorial provides a requirements elicitation, analysis, and specification methodology that assists systems engineers in developing a shared vision that becomes the basis for requirements. Topics include:

Methods for identifying Stakeholders

- Life-cycle
- Mission or "Day in the Life of the System"
- Context – Systems and Organizations
- Customers
- Hostile Users

Developing Stakeholder Profiles

- Roles, Interaction and Success Criteria
- Needs and Opportunities

Goal and Subgoal Analysis of Stakeholders

- Why do stakeholders even want to bother with your system?
- Cognitive walkthrough from the stakeholder perspective to getting what they want

Translating Goals into Use Cases

- Partitioning and layering of various stakeholder goals
- Factoring of common functionality
- Developing the Use Case Architecture

Developing Behavioral Models for Use Cases

- Deciding on concurrency and sequentially of behavior
- Walking through "as-is" & "to-be" scenarios of behavior
- Doing the "what if" for the behavior
- Revisiting the Use Case Architecture

Using Behavioral Models to Develop Requirements

- Formalizing the Use Case Models with English Prose
- Picking out the Requirements
- What about the behavior that the Use Cases don't cover?

Initial Development of the Structural Model for the System

THE PRESENTER

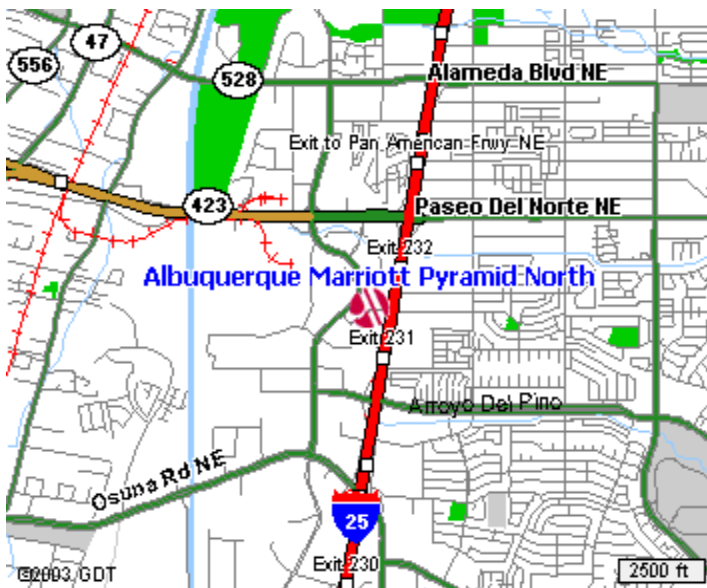
Dr. Regina M. Griego is a respected leader in the area of Requirements Engineering. Her focus is on using modeling as a way to formalize requirements. Regina is the Assistant Director for SE Technical Processes on the INCOSE Technical Leadership Team and past president of the INCOSE Enchantment Chapter. She is also an Industry Fellow for Stevens Institute and a Deputy Director for the INCOSE Model-based Systems Engineering Initiative.

Currently, Dr. Griego is a Principal Member of the Technical Staff at Sandia National Laboratories. She is a Program Integration Engineer in the Weapons Program Integration Department and provides early lifecycle Systems and Enterprise Engineering Support on a number of strategic projects. Before joining Sandia, Dr. Griego functioned as Deputy Director of Advanced Technology developing Computer-based Systems in the area of Flight Safety. She has also functioned as a Project Manager and Systems Engineer in diverse areas including E-Business Applications in the Insurance Industry, Point of Sale Systems, and MRI Medical Systems. Dr. Griego has consulted in other areas including Transportation and Home Automation. She began her career at Sandia designing and implementing embedded Telemetry Systems.

Dr. Griego has a Ph.D. in Computer Engineering with a specialty in Requirements Engineering from New Mexico State University, an MS in Computer Science from University of Colorado, an MS in Electrical and Computer Engineering from University of Arizona, and a B.S. in Electrical and Computer Engineering from New Mexico State.



MEETING DETAILS



Location: Marriott Albuquerque Pyramid North, 5151 San Francisco Rd NE, Albuquerque, NM 87109, (505)-821-3333, URL: "<http://Marriott.com/ABQMC>".

Directions: From Junction of I-40 and I-25 in Albuquerque take I-25 North to exit 232, Paseo Del Norte. Take a left and cross the freeway to the south-bound Frontage Road.

Package: The tutorial cost includes notes, catered lunch and snacks. Acknowledgement of payment receipt will be by e-mail.

Payment: Please submit the attached registration form and \$150 (member) or \$175 (non-member) as indicated on the form. See the website for opportunity to pay with PayPal. www.incose.org/enchantment

TUTORIAL ENROLLMENT FORM (Remit with Payment)

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Albuquerque, NM

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Payment by CREDIT CARD: can *only* be accepted via the link at the INCOSE Enchantment web sight: www.incose.org/enchantment. Credit card payment will *not* be available at the door.

Mail completed form(s) and a check made out to "INCOSE Enchantment Chapter" to:

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Questions? Please contact Rodger Oetzel at rpoetzel@aol.com or Murray Elowitz at melowitz@comcast.net.