CRaG Systems Modelling Training and Consultancy

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Modelling the IEC 61850-6 Substation Configuration Language SCL with UML and Enterprise Architect Training Course - 2 Days

The content of the course is currently under development. It is envisaged that it will be split roughly between a day introducing the basic concepts of object orientation and the IEC 61850-5 specification and a second day spent teaching how to model them in UML using Enterprise Architect. The hands-on aspect of the course will include getting the structure of the Substation Configuration Language (SCL) into Enterprise Architect in UML form and modelling examples of Substation Automation System (SAS) requirements and solutions in UML based upon the SCL model structure. The modelling should be sufficient to get students to the point where they can produce models up to and including those specified in part e) of Section 5 'Intended Engineering Process with SCL' of the specification. Please let us know if you would like to see any variation of this proposed content.

Delegates will learn:

- The basics and the necessary detail of the Unified Modelling Language
- The basics and the necessary detail of Object Orientation
- The basics and the necessary detail of the use of Enterprise Architect
- The basics and the necessary detail of the IEC 61850-6 Substation Configuration Language SCL
- How to import the Substation Configuration Language (SCL) schema into Enterprise Architect using the xml definition in the specification
- How to describe a system specification in terms of the single line diagram, and allocation of logical nodes (LN) to parts and equipment of the single line to indicate the needed functionality
- How to describe pre-configured IEDs with a fixed number of logical nodes (LNs), but with no binding to a specific process
- How to describe pre-configured IEDs with a pre-configured semantic for a process part of a certain structure, for example a double busbar GIS line feeder
- How to describe complete process configuration with all IEDs bound to individual process functions and primary equipment
- How to add all predefined associations and client server connections between logical nodes at a data level
- How to interpret a specification in UML that describes the above system attributes

Suitable for:

Electrical and Electronics Engineers, Electrical Equipment Specifiers, Real-time Systems Developers and Analyst/Programmers with at least 2 years experience. No prior understanding of either object orientation or UML is required.

Course Logistics:

Course attendance is normally limited to 12 students. Courses start at 9.30am on the first day, 9.00am on subsequent days and finish at 5.00pm each day. Students normally use a computer for the exercises, but these can be performed on paper if required. For a discussion on using a UML modelling tool please see Modelling Tool Use on Courses. Printed course manuals for each student with copies of all presentations, exercises and solutions are provided.

On-Site (In-House) Courses:


The client is expected to provide an appropriate venue, refreshments, XGA/WXGA projector and screen, whiteboard or flipchart and at least one computer per two students loaded with a suitable UML modelling tool, unless exercises are to be performed on paper. For a full discussion of on-site course issues please see On-Site Course Logistics.

Scheduled Public Courses:


CRaG Systems no longer provide scheduled public training. However, we continue to provide on-site (in-house) training for any number of students with special discounts for small classes. You will find our pricing competitive with most public courses for just 2 or 3 students. Please use the On-Site Course Pricing page to get a firm, downloadable quotation for on-site training.

Pricing:


On-site (in-house) course pricing is available from the On-Site Course Price Calculator page. For consultancy pricing please see the On-Site Consultancy Price Calculator.

Training Course Outline

Day 1	Day 2
To Be Defined	**To Be Defined**

Should the content of any Real-Time (RT) UML with Enterprise Architect workshop training course not fit your exact requirements, then CRaG Systems can create a custom course for you. Please either email or call us to discuss your particular needs.

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