



CRaG Systems Modelling Training and Consultancy

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Business Analysis, Requirements Definition and System Analysis using BPMN and UML Training Course - 5 Days

This BPMN - UML combination training course is aimed at business and system analysts and developers who want to create a model of the business, including business processes, and from it produce a detailed system requirements specification with use cases and a technology-free system analysis model. Industry best practice is taught for business process modelling, system use case modelling and system analysis at every appropriate level of abstraction based on the Business Process Modelling Notation v2.0 for business process modelling and on the Unified Modelling Language v2.4 for systems modelling. The techniques are taught within the context of a business process management (BPM), improvement or re-engineering strategy and a model-driven development process in a way that satisfies the needs of both technical and non-technical stakeholders.

The models produced may form the basis for the design of systems using a variety of different architectures and are traceable from the business process through to each primitive system function. Resulting improvements to estimation, test development and project management are also discussed. Each technique is taught to the level required for competence on a real project. Understanding is tested and improved with exercises based on a real-world business and system examples either using Sparx Systems Enterprise Architect, another suitable BPMN and UML modelling tool or on paper.

Delegates will learn:

- The basics and the necessary detail of the Business Process Modelling Notation (BPMN)
- The basics and the necessary detail of the Unified Modelling Language
- The basics and the necessary detail of Object Orientation
- How to map business process flow on Business Process Diagrams (BPDs) using events, activities, gateways, flows, pools and lanes
- How to map private, public and collaboration processes
- How to structure the business process model using collaboration, hierarchy and concurrency
- How to map primitive process steps and business rules
- How and when to use advanced events, activities, gateways, objects and artefacts
- How to model business data on class diagrams (non-BPMN)
- How to integrate business mapping techniques into a conventional approach to project documentation
- How to map a business process model into a system requirements model such that each element is traceable from one model to the other
- How to create a first cut overview of functional requirements with actors and use cases on a use case diagram
- How to write an effective use case description in a way that satisfies both non-technical and technical stakeholders
- How to specify the flow of events as a basic flow and alternate flows
- How to restructure the use case diagram to handle complex relationships between use cases without bloating the use case model
- How to integrate the use case model with non-functional requirements, data requirements, business rules and screen prototyping
- How a use case driven approach to requirements gathering improves estimation, project planning, test development and traceability
- How to create a detailed model of system data using classes and their relationships
- How to recognise complex data constructs and to use the appropriate syntax to model them

- How to map the functionality of the system requirements onto the object model using sequence diagrams
- How to structure the modelling in the form of a use case implementation
- How to model the dynamics of system data and functionality using state machine diagrams
- How to model at a consistent level of abstraction
- How the modelling performed during system analysis fits into an incremental model-driven development process

Suitable For:



Business Consultants, Business Analysts, Business Process Engineers, Requirements Gatherers, System Analysts and Project Managers with at least 2 years experience. This course is not suitable for those seeking certification as a step towards a qualification. See the Certification Policy for a detailed discussion.

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 BPMN/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 BPMN/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

Introduction

Logistics - People - Business Process Modelling Notation (BPMN) - System Use Cases - Unified Modeling Language (UML) - System Analysis - An Incremental Process for Modelling

Mapping Process Flow

Business Process Diagrams (BPD) - Private Processes - Start and End Events - Activities - Sequence Flows - Exclusive Gateways - Intermediate Events - Public Processes - Pools and Lanes - Message Flows

Mapping Process Flow Workshop

Mapping Collaboration, Hierarchy and Concurrency

Collaboration Processes - Hierarchy using Sub-Processes and Call Activities - Concurrency with Parallel, Inclusive and Complex Gateways - Modelling Process Steps as Tasks - Choosing a Consistent Level of Abstraction

Collaboration, Hierarchy and Concurrency Workshop

Day 2

Advanced Process Mapping

Advanced Event Definitions - Event-Based Gateways - Uncontrolled, Conditional and Default Flows - Normal and Exception Flows - Event, Transaction and Ad-Hoc Sub-Processes - Looping, Multiple Instance and Compensation Activities - Data Objects and Associations

Advanced Process Mapping Workshop

Modelling Business Data

The Conceptual Data Model - Finding Business Entities - Business Entity Relationships - Multiplicity (Cardinality) - Business Entity Attributes

Modelling Business Data Workshop

Mapping into System Requirements

Defining User-Driven and Automated System Tasks - Reorganising into Human versus System Pools - Mapping into Use Case Diagrams

Mapping into System Requirements Workshop

Day 3

Specifying Functional Requirements with Use Cases

System Use Cases and Actors - Primitive Use Cases - Use Case Diagrams - The Basic Flow - Writing Effective Use Case Descriptions - Writing Sub-flows and Alternate Flows - 'Include' and 'Extend' Relationships - Modelling Browser-Based Applications

System Use Case Workshop

Requirements Gathering

Collecting Requirements Information - Proof of Concept Prototypes - Requirements Documents - Estimating and Traceability - Incremental Development

Day 4

Objects and Classes

What is an Object? - Classes and Objects - Attributes - Operations and Methods - Designing Good Classes - Choosing the Best Classes

Object and Class Workshop

Object Modelling with Class Diagrams

Associations and Links - Navigability and Naming - Multiplicity and Other Adornments - Association Classes and N-arys - Aggregation and Composition

Class Diagram Workshop

Day 5

Interaction Modelling with Sequence Diagrams

Interactions, Messages, Operations and Methods -
Sequence Diagrams - Selection and Iteration -
Activation - Communication Diagrams

Sequence Diagram Workshop

State Modelling with State Machine Diagrams

The Meaning of the State Model - States and
Transitions - Events and Conditions - Actions and
Activities - Consistency with Other Diagrams

State Machine Diagram Workshop

System Analysis

Creating the Initial Object Model - The Analysis Cycle -
Iterative Modelling - Prototyping as an Analysis
Technique - Completing the Model

Should the content of the available BPMN or BPMN/UML courses 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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