



**Murdoch**  
UNIVERSITY

# Use case modelling

Topic 3

ICT284 Systems Analysis and Design



# About this topic

In the previous topic, we introduced the concept of functional and non-function requirements and information gathering techniques. In the next few topics we focus on techniques for defining and documenting functional requirements.

We begin by identifying use cases, which provide a description of system functions from the perspective of the user in terminology they understand. Identifying and modelling use cases is central to capturing user requirements.

# Unit learning outcomes addressed in this topic

1. Explain how information systems are used within organisations to fulfil organisational needs
2. **Describe the phases and activities typically involved in the systems development life cycle**
3. Describe the professional roles, skills and ethical issues involved in systems analysis and design work
4. Use a variety of techniques for analysing and defining business problems and opportunities and determining system requirements
5. **Model system requirements using UML, including use case diagrams and descriptions, activity diagrams and domain model class diagrams**
6. Explain the activities involved in systems design, including designing the system environment, application components, user interfaces, database and software
7. Represent early system design using UML, including sequence diagrams, architectural diagrams and design class diagrams
8. Describe tools and techniques for planning, managing and evaluating systems development projects
9. Describe the key features of several different systems development methodologies
10. **Present systems analysis and design documentation in an appropriate, consistent and professional manner**

# Topic learning outcomes

## **After completing this topic you should be able to:**

- Understand how models are used to represent requirements
- Explain why identifying use cases is the key to defining functional requirements
- Identify use cases using the user goal technique
- Identify use cases using the event decomposition technique
- Document use cases using a brief description
- Describe the notation and purpose of use case diagram components
- Document use cases using use case diagrams

# Resources for this topic

## READING

- Satzinger, Jackson & Burd, Chapter 3
- Satzinger, Jackson & Burd, Chapter 2 pp.58-60 (Models and modelling)
- There is an interesting article by Jacobson, Spence and Kerr (2016) on the history and current use of use cases on My Unit Readings – read for additional background if you are interested

Except where otherwise referenced, all images in these slides are from those provided with the textbook: Satzinger, J., Jackson, R. and Burd, S. (2016) *Systems Analysis and Design in a Changing World*, 7<sup>th</sup> edition, Course Technology, Cengage Learning: Boston. ISBN-13 9781305117204

# Tutorial 3 –

## Use case modelling

In the previous tutorial we introduced the Conference Coordinator Information System (CCIS), a new information system that is being developed to handle the paper submission and review process for the inaugural Conference on Green IT. As part of project initiation we considered the scope and requirements for the new system in general terms.

In today's tutorial, you will begin to go further into analysis by identifying the functional requirements for the new system with **use case modelling**. You will gain practice with both the user goal technique and the event decomposition technique for identifying use cases, and finally represent them in a **use case diagram**.

# Topic outline

- Defining requirements using models
- Use cases and user stories
- Identifying use cases
  - The User Goal technique
  - The Event Decomposition technique
- Representing and documenting use cases
  - Brief use case descriptions
  - Use case diagrams in UML