



DEPARTMENT OF ENERGY TECHNOLOGY
AALBORG UNIVERSITY

PhD Public Defence

- Title:** Verification and Validation of UML/OCL Object Component Model
- Location:** AAU Esbjerg Campus, Room C1.119
- Time:** Friday 28 September at 13.00
- PhD defendant:** Arifa Bhutto
- Supervisor:** Associate Professor Dil Muhammad Akbar Hussain
- Moderator:** Associate Professor Matthias Mandø
- Opponents:** Associate Professor Daniel Ortiz-Arroyo, Department of Energy Technology, Aalborg University Esbjerg (Chairman)
Professor Dr. Engr. Syed Hyder Abbas Musavi, Dean Faculty of Engineering, Science & Technology (FEST), Indus University, Pakistan
Associate Professor Dr. Sadiq Ali Khan, Chairman Department of Computer Science, University of Karachi, Pakistan

All are welcome. The defence will be in English.

After the public defence there will be an informal reception in the vestibule (C2) at Esbjerg Campus.



Abstract:

Modern software application development is a complex and difficult process. In the development of applications; specification and verification are the key components for a well define software. Systematic decomposition of larger complex problem into sub components is the common design strategy. For the development of software, various techniques been used especially components based development is very popular for specification and verification. However, in general there are well-established methods available for specification that has been based on mathematical theories. These methods are used/practiced for every step involved in the development of a software project. The software design and specification using UML, a graphical notation, contacting several types of diagrams enabling modeling different aspects of the design related challenges.

Our research aim is to apply existing model checking tools and techniques to analyze and verify the properties of the design system. We contributed by taking these system specifications and design using the UML object components diagrams, integrated with the OCL constraints, which will enable a more semantical specification focusing on structural and behavioral properties of the system. The object component concepts are accompanied by developing an application to an industrial case study.