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INTRODUCING CONCURRENT ENGINEERING TO SPACE AND SATELLITE TECHNOLOGY UNDERGRADUATE COURSE

Abstract

In recent decade concurrent engineering has become a *de facto* leading methodology of work in space, aeronautics and sometimes even automotive industry. It has been used in designing ESA space missions for 20 years now, with first Concurrent Design Facility (CDF) built in ESTEC in 1998. Still, it has not become a universal standard in engineering, and universities are specifically reluctant to adopt it into their curricula. As a result, virtually no students are accustomed to the method at the time of their graduation.

As a countermeasure, ESA Academy has decided to offer multiple hands-on courses in their Teaching and Learning Centre in Redu. The main aim is to broaden the gap between university courses and professional space industry requirements. Such courses include: Concurrent Engineering Workshops, CubeSat Concurrent Engineering and most recently Concurrent Engineering Challenge 2017 which the author of this paper is alumnus. Multiple students have benefited greatly from this courses and have been spreading the knowledge either running courses as tutors or implementing the principles in student organisations.

Only a handful of European academia can afford building designated CDFs. However, as this paper shows, implementation of elements of concurrent engineering is possible with limited resources. This papier focuses on concurrent engineering implementation at Gdansk University of Technology. Their recently opened Master's course of Space and Satellite Technologies, backed up by Polish Space Agency is a response for demand for high qualified personnel from Poland's rapid growing space sector.

Both tutor and student perspective on concurrent engineering implementation will be presented.