



COLLABORATIVE OPEN SOURCE AIRCRAFT DESIGN FRAMEWORK FOR EDUCATION - AGILE ACADEMY INITIATIVES AND RESULTS

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Abstract

AGILE Project is a 3rd generation Aircraft Design Optimization project involving heterogeneous teams of expert across Industry, Academy and Research organization. The establishment of effective collaborative design methodologies is currently acknowledged as the key enabler for future product development processes. At the same time, the need to introduce collaborative design techniques within educational activities is also well recognized by the Academic, Research and Industrial communities. AGILE project supported by European Commission's H2020 Programme, is setting the "AGILE Paradigm", a conceptual framework which contains all the elements to implement a multidisciplinary collaborative design network and several open source elements to implement and use in academic collaborations. The AGILE Academy initiative is conceived to infuse into the Academic organizations and educational environments the "AGILE Paradigm", and make available all the technologies developed within the AGILE Project, which support the implementation of such a Paradigm. This paper focus is on the inception, approach and results of the AGILE Academy participants from several universities around the world.

1 Introduction

The AGILE EU Project [1] is dedicated to the development of distributed multidisciplinary optimization methodology. The project is based on the key technologies developed over the last 10 years in the DLR: such as, for example, a

common data format CPACS [2] and RCE [3] environment. The main purpose of AGILE project is to reduce by 20% the time of the convergence process in the aircraft optimization and by 40% for the multidisciplinary optimization in a team of various experts by the end of 2018.

AGILE ACADEMY Activities: AGILE ACADEMY consists of a series of activities carried out in collaboration with the Academic institutions. Such activities will support educational activities, such as student's thesis and University workshops, in order to promote and to make available the AGILE technologies to the entire Academic and research community [4]. Two main activities are proposed:

Phase 1 - AGILE Incubator: One team of distributed students, collaboratively working on a common aircraft design task. Focused within the AGILE EU project partner community.

Phase 2 - AGILE Challenge: multiple teams of students, collaboratively working and competing on a single (or multiple) design task(s). Focused multiple universities and research organization across the globe.

2. The AGILE Paradigm

Modeling framework for full MDO involving several disciplinary modules and heterogeneous teams for a complete aircraft development is still an open challenge. As pointed out in a