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Author: Mr. Alessandro Peluso

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Italy,
alessandropeluso16@yahoo.it

Ms. Serena Pipolo

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Italy,
s319174@studenti.polito.it

Ms. Ariane Mansard

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, France, ariane.mansard@sfr.fr

Mr. Matteo Paschero

Politecnico di Torino, Italy, s319155@studenti.polito.it

Mr. Giovanni Antonio Cossu

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Italy,
s319128@studenti.polito.it

Ms. Lisa Wong

ISAE-Supaero University of Toulouse, France, lisabox19@gmail.com

Mr. Henry Wilson

University of Leicester, United Kingdom, hwilson310@googlemail.com

Mr. Antonio Abruscato

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Italy,
abruscatony15@gmail.com

Mr. Alessandro Breda

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Italy,
s319159@studenti.polito.it

Mr. Nathan Lahens

ISAE-Supaero University of Toulouse, France, nathan.lahens@student.isae-supaero.fr

Mr. Maximilien SALINAS

SUPAERO- Ecole Nationale Supérieure de l'Aéronautique et de l'Espace, France,
maximilien.salinas@student.isae-supaero.fr

Mr. Andrea Paternoster

Politecnico di Torino - Thales Alenia Space Italia - ISAE Supaero Toulouse, Italy,
s319150@studenti.polito.it

Mr. Alberto Milan

Politecnico di Torino, Italy, albert.m965@gmail.com

Mr. Benjamin AURY

ISAE - Institut Supérieur de l'Aéronautique et de l'Espace, France, benjamin.aury@student.isae-supaero.fr

Mr. Bastien Chassagnoux

SUPAERO- Ecole Nationale Supérieure de l'Aéronautique et de l'Espace, France,
bastien.chassagnoux@student.isae-supaero.fr

Mr. Jed White

University of Leicester, United Kingdom, jedwhite360@gmail.com

Abstract

The development of the space industry and the increasing potential for profitable activities in space have driven the exploration of new opportunities. The presence of a European Commercial Space Station in Low Earth Orbit would aim to promote European autonomy in this field and capitalize on its growing economy. Indeed, by participating in profitable ventures, Europe can enhance its economic position and strengthen its influence in the space industry. Furthermore, a station would support the development of new technologies and foster innovation, contributing to the overall growth of the European space sector. Indeed, it would serve as a platform for commercial activities, including manufacturing, science experiments, assembly, and in-orbit servicing. This paper summarises the key concepts for the preliminary design of a European Commercial Space Station in LEO starting from a detailed market analysis, the identification of mission requirements and design drivers, investigating different technical solutions and making trade-offs.