

SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND
DEVELOPMENT (D3)

Strategies & Architectures as the Framework for Future Building Blocks in Space Exploration and
Development (1)

Author: Dr. Maria Antonietta Perino

Thales Alenia Space Italia, Italy, mariaantonietta.perino@thalesaleniaspace.com

Mr. Federico Massobrio

Thales Alenia Space Espana, Italy, federico.massobrio@thalesaleniaspace.com

Mr. Stewart Pelle

Sofiter System Engineering, Italy, stewart.pelle@external.thalesaleniaspace.com

Mr. maurizio belluco

Sofiter System Engineering, Italy, maurizio.belluco@external.thalesaleniaspace.com

Mr. Alessandro Bergamasco

European Space Agency (ESA), The Netherlands, alessandro.bergamasco@esa.int

EXPLORATION AND LEO POST 2020 ARCHITECTURE SCENARIOS AND CONTRIBUTIONS

Abstract

Recently, NASA announced the decision to extend the operative life of the International Space Station until at least 2024. How to sustain human operations in Low Earth Orbit after 2020 is in fact one of the major debates currently under discussion among the major spacefaring countries within the International Space Exploration Coordination Group (ISECG). The objective is to identify shared exploration goals and to define a coordinated framework for expanding the human presence beyond the Low Earth Orbit. A Global Exploration Roadmap (GER) that takes into account the different players' interests and capabilities to provide both independent contributions and/or participation in cooperation with other actors has been developed. To this end, it is essential to identify the potential European Contributions to an International Exploration Scenario in terms of strategic Building Block Elements and products, and the associated enabling technologies that can allow their proper development. This paper will present the results of the Scenario Studies for Human Spaceflight and Exploration performed by Thales Alenia Space to provide the European Space Agency with a critical assessment of potential future contributions which can be strategically developed upon already available capabilities and that might secure a competitive position for Europe to continue human operations in LEO and beyond.