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Space Transportation Solutions for Deep Space Missions (4-D2.8)

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KNOWLEDGE AND TECHNOLOGY BUILDING BLOCKS FOR SPACE ACCESS ARCHITECTURES

**Abstract**

Gateway Earth Development Group (GEDG) is proposing to develop a technically and economically viable architecture for interplanetary space exploration. It also proposes to utilize on-orbit satellite servicing, manufacturing, and space tourism as enablers for the development of a space station (Gateway Earth) in Earth's geostationary orbit (GEO). At this station, interplanetary spacecraft could be built and serviced to take astronauts on missions across the Solar System.

This paper, which is a part of an existing draft architecture design, analyses the available knowledge and technology landscape to enable architectural solutions to modular access to space. In particular, it maps all available papers and patents on component modules of the station, such as tugs, launch and return infrastructure.

The paper aims to provide the various stakeholders in the field of space access with a broad overview of their position, with respect to ownership of IP, in their particular domain. It will help them strategize their research efforts by identifying white spaces and areas where substantial work is needed. It can also be a useful tool in identifying the right partners to collaborate and minimize the duplication of efforts.

Since the technology blocks for space access can be quite broad, this paper will utilize WIPO's (World Intellectual Property Organization) International Patent Classification system to classify the technologies for analyses and providing intelligible insights.