



Prioritized Use Case List

Rank	Use Case	Description
1	Repositioning of In-Space, On-Orbit Assets (e.g. Space Tug)	A use case to relocate a client satellite from one operational orbit to another. Includes stationkeeping.
2	Upgrade/Replacement of Instruments	A use case to replace (in case of failure) or upgrade (in case of enhanced capabilities) instruments of a client spacecraft.
3	Space Situational Awareness via in-space assets	A use case to inform client spacecraft of objects in space (debris, satellites, etc.) using a maneuverable in-space asset. Does not include fly-by imaging.
4	Assembly of Refueling Depot	A use case to assemble persistent objects in space which host fuel, oxidizer, and/or pressurants to be delivered to client spacecraft.
5	Refueling of GEO Satellites	A use case to replenish fuel, oxidizer, and/or pressurants to a client spacecraft within Geosynchronous Earth Orbit (GEO).
6	Autonomous Payload Swap on Persistent Platforms	A use case to remove and dispose of payloads hosted on a persistent platform and to replace those payloads with new payloads to be hosted.
7	Assembly of Large Persistent Platforms	A use case to assemble in-space platforms through use of in-space robotic agents. The platforms may be used for payload hosting, commodity hosting, space station structure, space infrastructure, or similar use cases.
8	Cislunar Refueling	A use case to replenish fuel, oxidizer, and/or pressurants to a client spacecraft within cislunar space.
9	Delivery of satellite from launch vehicle upper stage to final intended orbit	A use case to deliver satellites from the launch vehicle to their final destination in space.

10	Upgrade/Replacement/Repair of Spacecraft Systems, Subsystems, or Components	A use case to replace (in case of failure) or upgrade (in case of enhanced capabilities) space craft systems, subsystems, or components of a client spacecraft. Subsystems may include propulsion, power, computers, or similar non-payload or non-instrument parts of the spacecraft.
11	Assembly of Deep Space Science Platforms	A use case to robotically assemble science platforms, such as the Great Observatories, in deep space, e.g. the Earth-Sun Lagrange points.
12	In-Space Assembly of Modular Spacecraft	A use case to assemble a spacecraft using modular components available in space.
13	Inspection of Satellites for Failure Assessment	A use case to provide information regarding the cause of failure for a client spacecraft through in-space observations from an inspection spacecraft.
14	Cooperative, Multi-agent Inspection of an RSO	A use case to provide inspection of a resident space object (RSO) through use of several, cooperative inspection spacecraft to enhance observations.
15	Large Debris Disposal/Reposition	A use case to remove large pieces of debris from space, through either delivery to a graveyard orbit or insertion into a disposal orbit.
16	Manufacturing of Structures	A use case to manufacture structures, such as 3D printed habitats, towers, booms, etc., on in space surfaces such as the Moon or Mars
17	Assembly of Large Power Generation/Delivery (transmission) Assets	A use case to provide power utility throughout space, including power generation, receivers, relays, etc.
18	Installing Life Extension Pods on Unprepared Spacecraft	A use case to attach a payload to a client spacecraft without pre-designed installation features to provide relocation services to the client spacecraft in space.
19	Re-entry Systems for Space Manufactured Goods	A use case to provide re-entry services for goods manufactured in space and intended to be used on Earth.

20	ISAM depot-logistics for in-space storage of feedstock & raw materials	A use case to provide in space storage of commodities, such as feedstocks for manufacturing or raw materials, for future use in space.
21	De-orbit for LEO Satellites	A use case to remove satellites from Low Earth Orbit (LEO) through insertion into a disposal orbit.
22	Small Debris Mitigation	A use case to mitigate the impact of small debris through activities such as debris removal, enhanced tracking, or other novel means.
23	Refuel of a Mars transportation system	A use case to provide large quantities of propellant to a Mars transportation system in cislunar space.
24	Manufacturing of Spare Parts	A use case to manufacture spare parts for use in space. The spare parts may be used for maintenance or upgrade of crewed or uncrewed spacecraft.
25	End of Life Services for GEO Satellites	A use case to remove satellites from Geosynchronous Earth Orbit (GEO) through delivery to a graveyard orbit.
26	Servicing of Satellites to Deploy Undeployed Deployables (e.g. Solar Panels, Heat Shields, Antennas etc.)	A use case to provide deployables deployment to client spacecraft which have failed to deploy upon spacecraft initiation.
27	Material Aggregation for Assembly	A use case to aggregate materials in space which are required for robotic assembly of in-space assets.
28	Launching Satellites without Fuel and Subsequently Refueling In Space	A use case to replenish fuel, oxidizer, and/or pressurants to a client spacecraft after launch, as the client spacecraft was launched with limited quantities of these propellants to increase launch capabilities.
29	Installing Payload Pods on Unprepared Spacecraft	A use case to attach a payload to a client spacecraft without pre-designed installation features to provide utilities other than relocation services.
30	Refueling of LEO Satellites	A use case to replenish fuel, oxidizer, and/or pressurants to a client spacecraft within Low Earth Orbit (LEO).