

Method and Associated Apparatus for Capturing, Servicing and De-Orbiting Earth Satellites Using Robotics

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DESCRIPTION

This invention is a Free-flying spacecraft, or a global positioning system satellite. The method involves autonomously establishing a link between a spacecraft to be serviced and a servicing vehicle, which has a robot system including a grappling arm and a dexterous robot. Commands are sent to the robot system that address the servicing needs of the spacecraft, where the servicing vehicle has a de-orbit module and an ejection module, and the de-orbit module is separated from ejection module after the servicing of the spacecraft is concluded. The de-orbit module remaining with the spacecraft facilitates de-orbiting of the spacecraft.

FEATURES AND BENEFITS

- The servicing vehicle has a de-orbit module and an ejection module, where the de-orbit module is separated from ejection module after the servicing of the spacecraft is concluded, and the de-orbit module remaining with the spacecraft facilitates de-orbiting of the spacecraft servicing, thus allowing the opportunity to direct the landing of the spent satellite in a safe location away from population center such as the ocean.
- The method services the satellites and other spacecraft without human presence on or near the spacecraft to be serviced. The method uses the principle of supervised autonomy to control spacecraft servicing mission.method:2 |

APPLICATIONS

- Robotics
- Communications
- Earth Remote Sensing
- Defense

FOR MORE INFORMATION

If you are interested in more information or want to pursue transfer of this technology, GSC-15002-1, please contact:

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