



**CONFERS Lexicon**  
**March 2023**

A charge of CONFERS Technical Working Group (CTWG) is to discuss and refine the terms and language used by CONFERS in the discussion of rendezvous and proximity operations (RPO) and on-orbit servicing (OOS) missions.

Attachment A contains the list of terms under consideration in the CTWG. The CTWG aims to provide consistency within CONFERS and other international organizations of RPO OOS terminology. Terms in the lexicon generally have dictionary definitions, but in addition have more specialized usage in the context of on-orbit servicing and appear in this lexicon to clarify that specialized usage. As such, the CTWG presents the defined OOS / RPO terminology for CONFERS below:

<b>Term</b>	<b>CONFERS Lexicon Definition</b>
<b>Abort</b>	An action which stops an on-board process and, if necessary, initiates an alternate process to put the servicer spacecraft and client space object in a safe and collision-free state.
<b>Active GNC Agent</b>	The vehicle performing active GNC to accomplish RPO and pre-capture alignment with the Passive GNC Vehicle.
<b>Active Capture System</b>	Traditionally on the Servicer Spacecraft, the active system involved in capturing the Client Space Object.
<b>Approach Volume</b>	An agreed-upon three-dimensional space centered on the GNC passive vehicle (Client Space Object or Servicing Vehicle) where unintentional contact is possible within the passive anomaly recovery time and where ranging and active relative orbit control is needed for safety. Synonym for proximity operations control volume. See Annex A Volumes and Zones
<b>Berthing (verb)</b>	The act of effecting a rigid connection between a Servicing Spacecraft and a Client Space Object with the aid of a robotic arm.

<b>Term</b>	<b>CONFERS Lexicon Definition</b>
<b>Capture (verb)</b>	The act of establishing a physical connection between two space objects.
<b>Client</b>	An entity/organization procuring the service.
<b>Client Space Object</b>	The space object being serviced by the Servicer spacecraft.
<b>Collision Avoidance Maneuver</b>	An operation executed by a space object relative to another space object to avoid contact for a specified amount of time.
<b>Combined Stack</b>	A combined client space object and servicer spacecraft after Docking or Berthing.
<b>Combined Stack Attitude Control</b>	An on-orbit service in which the servicer spacecraft maintains attitude stability for the combined stack.
<b>Docked Life Extension</b>	On-orbit services enabling increased duration of client operations as a Combined Stack.
<b>Docking (verb)</b>	When a Servicer Spacecraft executes a controlled trajectory to effect a rigid connection with a Client Space Object.
<b>Free-Flyer Capture Operations</b>	A subset of proximity operations where the Servicer Spacecraft and Client Space Object intentionally perform mutually agreed actions to make and maintain physical contact.
<b>Free-flyer</b>	Orbiting objects with no mechanical connection prior to initiation of capture operations.
<b>Grapple</b>	First contact leading to a Berthing operation with the aid of a robotic arm.
<b>Hard Capture</b>	Final rigid connection between vehicles; also period where vehicles are physically mated, and servicing activities may commence.
<b>Inspection</b>	Sensing of a Client Space Object by a servicer spacecraft.
<b>Keep-Out Volume</b>	A minimum 3-D volume of space around the Client Space Object defined based on navigational uncertainty of each Rendezvous, Proximity

<b>Term</b>	<b>CONFERS Lexicon Definition</b>
	Operations and Docking phase or any additional operational volume into which a Servicer Spacecraft may not enter without approval.
<b>Magnetic Capture</b>	A type of capture employing magnetic forces to provide the initial non-rigid and/or the final rigid connection which enables servicing activities.
<b>On-Orbit Assembly</b>	On-orbit activities to physically attach objects to each other.
<b>On-Orbit Servicing (OOS)</b>	Activities by a servicer spacecraft or servicing agent on a client space object which require rendezvous and/or proximity operations.
<b>Prepared</b>	Configured with navigation fiducials and capture interfaces and/or servicing interfaces.
<b>Passive Capture System</b>	Traditionally on the Client Space Object, the passive system involved in mating the Client Space Object and Servicer Spacecraft.
<b>Passive GNC Agent</b>	<p>The vehicle that the Active GNC Vehicle is navigating towards.</p> <p>Note: the Passive GNC Agent may either be Servicer Spacecraft or Client Space Object.</p>
<b>Proximity Operations</b>	Orbital maneuvers performed between a servicer spacecraft and a client space object on a relative planned path within a pre-defined Approach Volume.
<b>Proximity Operations Control Volume</b>	Synonym for Approach Volume.
<b>Relocation</b>	Changing the orbit of the Client Space Object by a Servicing Vehicle.
<b>Rendezvous</b>	Process wherein two space objects (at least one of which is a manufactured body) are intentionally brought close together through a series of orbital maneuvers at a planned time and place.

<b>Term</b>	<b>CONFERS Lexicon Definition</b>
<b>Servicer</b>	An entity/organization that provides in-Space servicing operations.
<b>Servicer Spacecraft</b>	Spacecraft performing the servicing action.
<b>Soft Capture/Soft Dock</b>	Initial non-rigid connection between vehicles.
<b>Servicing Operations</b>	Action provided by Servicer Spacecraft to the Client Space Object, including but not limited to: inspection, capture, docking, berthing, relocation, refueling, life extension, removal, combined stack control, repair, upgrade, assembly, manufacturing, un-docking, un-berthing, release.

## **Attachment A: Terms under consideration**

68 terms are under consideration by the CTWG for inclusion in the CONFERS Lexicon. They are:

Abort-Passive  
Attitude Control Services  
Augment  
Automated  
Autonomous  
Co-Elliptical  
Controlled  
Cooperative Client  
Co-Orbital  
Credible Anomaly  
Credible Failure  
Departure  
Drifting Natural Motion Circumnavigation  
Dynamic Station Keeping (DSK)  
Fail Operation  
Fail Safe  
Fiducial  
Forced Motion Circumnavigation (FMC)  
Free Drift  
Foreign Object Debris (FOD)  
Grapple  
Grapple Feature  
Grappling (verb)  
Hold  
Joint Mission Operations  
Legacy Spacecraft  
Mating Operations  
Natural Motion Circumnavigation (NMC)  
Navigation Data - Absolute  
Navigation Data-Relative  
Nominal Mission  
Non-Contact Support  
On-orbit Upgrade  
Orbit Maintenance (Assistance)  
Passively Safe  
Passive Anomaly Recovery Time  
Phases-Launch and Insertion  
Phases-Rendezvous  
Phases-Transfer  
Radial/In-Track/Cross-Track Coordinate Frame  
Refill  
Refuel  
Refueling Value  
Relative Motion Coordinate Frame  
Release

Removal  
Rendezvous-Close Approach  
Rendezvous-Far  
Repair  
Replace  
Resident Space Object (RSO)  
Resume  
Retreat  
Safe Orbit  
Safety Zone  
Secondary State Determination  
Separation  
Servicing Agent  
Servicing Operation Termination (SOT)  
Servicing Operations Initiation  
Situational Awareness Data  
Spacecraft Fiducial  
Synchronized Time  
Teleoperation  
Towing  
Un-Prepared  
Upgrade  
Waypoint