

Arkisys™ Leading Pioneering Team to Explore On-Demand De-Orbit Services

SDA awarded the Arkisys led Team a study to look at De-Orbit augmentation and on-demand commercial services for constellations.

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EINPresswire.com/ -- [Arkisys™](#), a provider of on-orbit services on stable long duration Port Module platforms to support ISAM applications, is excited to kickoff a short burn study effort on de-orbit augmentation and on-demand commercial services for SDA. Led by Arkisys the team includes Kall Morris

Inc., Thermasat Inc., Parabilis Space Technologies, Inc. and Revolution Space. SDA is interested in understanding capabilities to support on-demand de-orbit augmentation for any potential PWSA satellite as a commercially available service.



Notional rendering of a satellite-to-Port Module interaction

“The team’s goal is to dive into the various ground launch and space deployed options available combining the unique talents each team member brings” says Dr. Rahul Rughani, Chief Systems Engineer at Arkisys. “Looking at the Delta-V required both from either ground or from an orbital platform will identify multiple options we can offer to SDA to consider.”

Each company brings a unique perspective and capability to the team. Kall Morris Inc. is developing an end-to-end capture system focused on on-orbit relocation services to support end-of-life, orbit change and debris remediation. “Our [REACCH](#) technology is uniquely created to support conforming to any shape, size and configuration object on orbit, thus this effort is a natural extension of our business case” says KMI Co-Founder and Director of Science Adam Kall. ThermaSat has a unique [HotSwap](#) modular bus they have been developing for commercial and USG use that can be “assembled” and modified on the Arkisys Port Module. “Having the ability to add propulsion and specific contact mechanism provides an option for on-demand assembly of a custom spacecraft for de-orbit augmentation” Troy Howe, CEO of Thermasat, explains. Two different propulsion providers are helping Arkisys develop multiple options for orbital reach and

maneuverability. Parabilis is experienced in high thrust hybrid fuel propulsion systems, and is supporting Arkisys via internal propulsion for its Cutter last mile transfer vehicle and removable reaction control system (RCS) modules. "Having multiple options for propulsion supports maneuverability on orbit which enables multiple options for ground or space deployment" says Greg Berg, Chief Engineer at Parabilis. Revolution Space has developed the PALOMINO advanced propulsion system that is purpose built for simplified integration prior to launch or via on-orbit servicing by attachment to the space system to extend and expand its operational reach.

Arkisys has been privileged to work with each of these companies to help showcase their unique capability in context of post launch modification or creation of space systems on orbit. Invested in early on by the commercially-focused Defense Innovation Unit (DIU) and SpaceWerx, Arkisys has made strong progress in showcasing use cases for a long duration space testbed that is by design able to grow into a larger structure itself on orbit. "Space is a throwaway culture today" says Dave Barnhart, founder and CEO. "Every other platform on Earth can extend life, revenue and new uses through new parts, the right tools and a garage to work in. But not Space. We are fundamentally changing the equation to make that possible ... today" says Barnhart.

Given both the U.S. and other Governments plus a large number of commercial providers are creating constellations with tens of thousands of planned satellites, SDA's study is a strong signal that good stewardship can help foster and create a commercially viable application using ISAM functionality.

Arkisys is just one of multiple companies globally developing capabilities to create a true orbital services ecosystem in space. Arkisys has partnered with, and continues to reach out to, like-minded entities such as Motiv Space Systems, iBOSS, Texas A&M University, Novawurks, GATE Space, Solestial, Obruta, Quidient, etc. to showcase and validate that the ability to shift assembly of a complex space platform from the ground to space is possible.

The study team is excited to develop multiple options that can support SDA and any commercial company globally as we work toward a sustainable, re-usable space architecture.

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