

MICROGRAVITY SCIENCES AND PROCESSES (A2)
Facilities and Operations of Microgravity Experiments (5)

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DRAGONLAB PAYLOAD BROKERING AND EXPORT CONTROL FRAMEWORKS

Abstract

The SpaceX Falcon 9 launch vehicle and recoverable Dragon spacecraft are both slated for inaugural flights in 2010 with multiple missions annually thereafter. Although initial missions will be focused on logistical cargo services for the ISS, SpaceX is also offering “DragonLab” as a commercial free-flyer specifically for in-space experimentation and technology demonstration. Up to 6000 kg of pressurized and unpressurized payloads can be accommodated with recovery of pressurized payloads as a standard service. Power and data services are also provided to the payloads. DragonLab’s flexible capability and launch rate will make access to microgravity significantly more frequent, dependable and affordable than it has been historically. DragonLab will also be capable of carrying instruments and sensors into space for purposes of on-orbit testing, verification and accumulation of flight heritage. This presents a definitive means to close the infamous “TRL gap” between TRL 5 and TRL 9. For SpaceX, DragonLab presents a significant logistical challenge: marketing the capability to many different customers in numerous, diverse fields of both science and technology development is one challenge; another is the efficient execution and management of a mission with dozens or even hundreds of individual customers. The key to efficient and cost-effective implementation lies in identifying suitable “Brokers” who assume much of the marketing, technical and managerial responsibilities for individual payloads, delivering to SpaceX large, composite “racks” of experiments certified and ready for flight. A Broker may actually consist of a consortium of organizations with technical facilities and experience for successful payload integration and certification, and also marketing arms or consultants to enable assess and penetration into diverse potential markets. Compliance with U.S. Export Control laws presents an additional layer of complexity, especially since at least half of the customers identified to-date are outside of the U.S. SpaceX is in the process of identifying Brokers for DragonLab payloads for both domestic and international payloads. This paper will outline the roles and responsibilities of DragonLab payload Brokers and the motivation and rationale behind it. The contractual and export-control framework is described and the status of this exciting new program will be provided.