

Aerospace Daily: Company Looking To Fill Vacant Experiment Slots On Space Shuttle Endeavour

By Jefferson Morris/Aerospace Daily

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One of a handful of companies with NASA's blessing to perform private experiments on the space shuttle is trying to sell vacant space on a life sciences experiment module scheduled to fly on Endeavour next May.

The Advanced Separations Processing Facility (ADSEP) was designed and built by Indiana-based Space Hardware Optimization Technology, Inc. (SHOT) to conduct life sciences research in space. Roughly the size of a shuttle middeck locker - 18 inches by 11 inches by 21 inches - its three lunchbox-sized "cassettes" contain automated experiments. Additional cassettes can be sent up in a separate storage container and inserted into ADSEP as required.

Although the company is in negotiations with various candidates, as many as two experimental slots are still open. SHOT wants to nail down the roster of experiments by the end of the year, in order to ensure sufficient prep time before Endeavour's scheduled launch on May 23.

"It's like filling seats on an airplane," SHOT CEO Mark Deuser said during a press availability in Washington Oct. 28. "We want the plane fully occupied." The approximate cost of each cassette slot starts at \$100,000, and goes higher depending on the nature of the experiment. Deuser said he hopes a successful rapid turnaround will demonstrate to NASA SHOT's ability to quickly fill empty space.

For the past 14 years SHOT has provided equipment and services to customers performing research in both space- and ground-based laboratories, and it is one of four U.S. companies that has an agreement with NASA allowing it to conduct experiments on the shuttle for its own customers. In addition to ADSEP, the company developed the Avian Development Facility (ADF), which launched aboard Endeavour in December 2001.

ADSEP's first flight on the shuttle was in 1996, where it was used to conduct cell separations experiments. Since then it also has been used to perform experiments in drug microencapsulation, biochemical purification and extraction, protein crystal growth, and colloid dynamics.

The module can be used to conduct seven types of experiments, although SHOT is under contract to NASA to allow greater variety. When hooked into the shuttle's telemetry stream, researchers on the ground can control the experiments in real time.

The company is developing a modified version of ADSEP for the International Space Station (ISS) that is scheduled to go up on assembly flight 13A in the fall of 2003, according to Deuser.

With long-duration research in mind, from the beginning of the module's development, "we really envisioned leaving the processing unit on station, eventually, and just taking the cassettes back and forth," he said.

NASA's partnership with SHOT "is a step forward in being able to commercialize activity in space," according to Joseph Kernan, lieutenant governor of Indiana and current chairman of the Aerospace States Association. "It's clearly a direction that we have to move in to reduce the cost of going into space."

Deuser and Kernan met with NASA officials Oct. 28 in Washington to discuss ways of getting other companies in Indiana involved in commercial activity on the ISS.

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