

Tracking Number 2010-03-06 (CSC-02)
Defining the NASA Market

NASA Advisory Council Recommendation:

The Council recommends that NASA assess and define the NASA traffic requirements for crew transport to and from the International Space Station (ISS) and other Low-Earth Orbit (LEO) destinations prior to issuing a draft solicitation for the Commercial Crew Transportation program. The number of flights and/or seats per year purchased by NASA on U.S. commercial spaceflight vehicles has a significant impact on the business plans of and availability of private investment for commercial providers. In assessing its requirements, NASA should consider how the availability of commercial space transportation capabilities could change the concept of operation of the ISS to get the most out of its infrastructure.

NASA Response:

NASA concurs with this recommendation. Crew transportation requirements for the ISS are defined through 2020 based on current operational and research requirements. Today, a total of six United States Operating Segment crewmembers are required to be rotated per year on two flights approximately six months apart. As part of NASA's strategic planning process, NASA will consider how commercial space transportation capabilities could affect or change the ISS concept operations.

From a Human Research Program (HRP) perspective, there are two ISS mission lengths that enable HRP research: 1) six months (or longer) to simulate exploration mission lengths; and 2) three to four months to maximize the number of subjects for physiological experiments. Both of these ISS mission-length scenarios are valuable to HRP depending on the specific issue being addressed. However, increasing the number of crew rotations to four per year will essentially double the ISS cost for crew transportation, training, sustaining, and provisioning the additional crewmembers, which would amount to multiple billions of dollars in additional cost to the ISS Program.