

IAF HUMAN SPACEFLIGHT COMMITTEE

1. Introduction

The IAF Human Spaceflight Committee organizes the Human Spaceflight Symposium (B3) with in total ten sessions. These sessions include the Overview session (B3.1) and multiple sessions focusing on different aspects of human spaceflight.

2. Latest Developments

Within the domain of Human Spaceflight the following developments are worth mentioning:

1. In 2021 the Chinese Space Station was launched. In 2022 it will be extended with additional modules. The activities included:
 - a. 3 manned missions to the station
 - b. 2 cargo missions
 - c. multiple EVA's
2. The International Space Station has received several upgrades in the last year:
 - a. The Russian segment was extended with the *Nauka* module including the European Robotic Arm and the Airlock, and with the *Prischal* module
 - b. The Solar arrays of the ISS received their first upgrade with the deployment of the first pair of ROSAs (Roll Out Solar Arrays)
3. The Space Launch System is approaching first launch for the Artemis 1 mission to demonstrate the Launcher and the Orion MPCV spacecraft
4. Boeing has successfully demonstrated their Starliner spacecraft for commercial transportation of astronauts to the ISS

5. Commercial Human Spaceflight activities have literally taken flight:

- a. Virgin Galactic flew their first mission
- b. Blue Origin has flown several missions among the participants was William Shatner who played Captain Kirk on Star Trek in the sixties
- c. SpaceX flew a first commercial manned space mission with the Inspiration 4 flight
- d. Axiom flew their first commercial mission to the ISS with a SpaceX Dragon capsule, commanded by HSC member Michael Lopez-Alegria

6. NASA has contracted several companies for the design of a commercial space station

3. Breakthroughs

As the major breakthroughs in the field the following can be considered:

1. Start of the Chinese Space Station
2. Start of Commercial suborbital missions
3. First Commercial mission to LEO and the ISS

4. Action plan for the year

Besides the B3 Human Spaceflight Technical Symposium the Committee is organizing the IAC Plenary 3 for 19 September 2022, Monday at 09:00 titled "Value of LEO in the Next Decade" In this plenary the plans for future exploration and value of LEO space stations will be addressed by representatives from Agencies, Industry, and commercial entities.