



Recommendation SFCG 29-3

EMERGENCY COMMUNICATIONS FOR MANNED SPACE FLIGHT

The SFCG

CONSIDERING

- a) that manned space exploration spacecraft and space stations require continuous and reliable communication with Earth stations;
- b) that the technical characteristics and operational requirements of emergency space communication channels may be different from those of routine links between Earth stations and manned vehicles in space flight, including those for near-Earth, lunar, and planetary missions;
- c) that there are many advantages in the use of predefined sets of frequency pairs with specific channels for manned space exploration emergency communications;
- d) that existing space research service allocations for communications could be used for emergency radiocommunication channels for manned space flight;
- e) that manned space flight requires provisions for emergency communications for the entire duration of a mission;
- f) that a number of administrations are either directly involved in manned space flights, or have space-faring interests, and may be able to operationally contribute to radio communications that have an emergency nature;
- g) that under emergency situations, a crippled manned spacecraft may have the requirement to communicate at low power levels using an omnidirectional antenna, and need to operate in a frequency band that has a very low amount of interference;
- h) that space research service allocations in the 2 025-2 120 MHz and 2 200-2 300 MHz bands generally have desirable characteristics for emergency communications links,

NOTING

- a) that it is desirable to promote and encourage multi-national collaboration if emergency conditions occur during manned space flights;

- b) that an emergency communications link should be independent of the primary nominal command & telemetry links;
- c) that the use of space research service channels for emergency communication is not considered to be a safety service application;
- d) that the sub-band 2293-2297 MHz is a key band for current and future deep space missions and should not be considered for manned emergency communications,

FURTHER NOTING

- a) that Article V of the United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, provides that, “States Parties to the Treaty shall regard astronauts as envoys of mankind in outer space and shall render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of another State Party or on the high seas”;
- b) that this Article further provides that, “In carrying on activities in outer space and on celestial bodies, the astronauts of one State Party shall render all possible assistance to the astronauts of other States Parties.”,

RECOMMENDS

1. that a manned spacecraft experiencing an emergency situation use the 2290-2300 MHz band, excluding the 2293-2297 MHz sub-band, to transmit to the Earth, directly and/or through a DRS;
2. that transmissions to a manned spacecraft experiencing an emergency situation, either directly or through a DRS, use the bands 2025-2110 MHz and/or 2110-2120 MHz;
3. that unwanted emissions in the 2293-2297 MHz band from manned spacecraft emergency transmitters meet the applicable deep space protection criteria stated in Recommendation ITU-R SA.1157;
4. that specific emergency communication frequencies within the bands given in recommends 1 and 2 be coordinated prior to launch through the normal SFCG process.

ENCOURAGES

- 1 that, when practicable and upon request, member agencies with suitable facilities assist the requesting agency in the reception of emergency signals from a manned spacecraft experiencing an emergency situation;
- 2 that, when practicable and upon request, member agencies with suitable facilities assist the requesting agency in providing transmission capabilities to support a manned spacecraft experiencing an emergency situation.