FAA REPORT

AFC Spring 2014 Meeting

Presented By: Tim Pawlowitz

Date: June 10 - 11, 2014

AFC Winter 2014 Meeting

- **At the AFC Winter 2014 Meeting in February I presented the most up to date status on the following topics:**
  - Data Comm
  - Surveillance Broadcast Service (SBS)
  - PED's
  - AeroMACS
- **A copy of that presentation is on the AFC members website.**

Updates from the AFC Winter 2014 Meeting

- **Data Comm**
  - Harris has developed a simulator/model to predict the number of VHF channel's that will be required to meet the predicted network capacity.
    - Divides the country into 5 sectors
    - Partial results (one area out of 5) have been presented to the FAA for comment
  - It is FAA's understanding that there will not be any need for spectrum that is managed by the FAA to support the surface and en route datacomm services.
  - The FAA will ensure that NTIA and the FCC agree with AOC channels (136.500 MHz to 136.975 MHz) being used for AOC and ATS information in a network that is owned and maintained by non-federal entities with FCC licenses where the FAA is only buying a service.

Updates from the AFC Winter 2014 Meeting

- **AeroMACS**
  - MITRE is to present soon the results of their analysis of what the spectrum engineering criteria should be to allow for interference free operations.
    - The results should provide a better idea of the channel reuse possibilities at nearby airports
  - MITRE is also looking at commercially available products for efficient channel modeling.
  - An acquisition strategy document has been completed.
  - The acquisition strategy will be briefed to Steve Bradford soon for an investment strategy decision.

Updates from the AFC Winter 2014 Meeting

- **Surveillance Broadcast Service (SBS)**
  - No updates to report

- **PED's**
  - No updates to report

Virgin Galactic

- **I was asked to present what the FAA is doing to support comm requirements for the initial commercial space transport flights by Virgin Galactic.**
  - The FAA spectrum office has not been approached with any requests to support communications for Virgina Galactic.
  - An Air Space Group has been formed within the FAA to work with Virgin Galactic, but I was unable to get an update from them on the groups activities.
    - The FAA spectrum office is not a participant on this group
  - Any policy/position on what spectrum to use to support communications for Virgin Galactic or any future commercial space transport flights will fall under the FAA's Spectrum Office', International, Policy, and Planning Group.

Recent Activity to Support Soyuz

- **Request: In May 2014, NASA requested 4 STAs: 1 downlink frequency from the Soyuz spacecraft and an uplink frequency for use at White Sands, NM, Wallops Island, VA and Edwards, CA from May 17 thru June15, 2014.**
- **Frequencies: 121.75 MHz (downlink) and 130.167 MHz (uplink)**
- **Purpose: Pre-launch radio/link checkout between the Soyuz vehicle and the ground during the crew transfer mission scheduled to lunch from Russia on May 28, 2014.**
- **Justification: To ensure that the U.S. has the ability to communicate with our own astronauts if an emergency should occur while they are on the Russian spacecraft.**
  - There was an emergency situation that occurred during the last Soyuz mission.

Additional Information About the Request from NASA

- **The request said that the frequencies would not be used during normal operations because the vehicle would not be in view of the 3 earth locations.**
  - Per the request, transmission on 121.750/130.167 MHz would only occur if an emergency situation exists when the Soyuz is required to overflight CONUS.
- **These frequencies are referred as set VH2. The International Space Station (ISS) has a second communication set, VH1, with frequencies above 137 MHz. Per NASA , the Soyuz can only communicate on VH2.**
- **The ISS Segment has S-band (2.2GHz) and Ku-band (15 GHz) that support voice and telemetry for communications between the ISS and Mission Control Center in Houston.**
- **NASA is capable of conducting testing of only the uplinks without using the ATC downlink frequency.**
  - In this case, the downlink can be sent in the S-band or Ku-band.

Background

- **NTIA submitted two letters to NASA in 1996 denying the certification for spectrum support on these two frequencies. (see last 2 slides)**
- **In 2004, the FAA agreed to conduct a "one time" test. At that time, NASA agreed that future communication tests between Soyuz and the ground will be performed on Russia and only non-radiated radio checks at US ground stations.**
- **Multiple requests have been denied by the FAA after 2004.**
- **In 2009, ASRI was willing to support a "one time" test but FAA denied the use of both frequencies.**

FAA's Objection

- **Usage is not in accordance with National or International allocations**
- **Use of 121.750 MHz and 130.167 MHz by Soyuz would have an impact on ATC facilities nationwide that use those frequencies.**

NTIA's Objection Letter 1

FOR AGENDA

SPS-10933

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

Ref: SPS-10582

AUG 27 1996

IDN 95088

Mr. David P. Struba
NASA Headquarters, Code OI
300 E Street, S.W.
Washington, D.C. 20546-0001

Dear Mr. Struba:

I have received the attached letter from the Spectrum Planning Subcommittee recommending that I deny certification of spectrum support for the National Aeronautics and Space Administration's (NASA) International Space Station (ISS) VHF Voice Communication Link (IVVCL). NASA proposed to operate the IVVCL on the frequencies 130.167 MHz and 121.75 MHz to relay voice communications between astronauts and cosmonauts on board the ISS and the NASA Space Shuttle Orbiter during rendezvous and docking missions. Their recommendation is based on reported cases of interference from the Russian Mir system operating on similar frequencies to stations operating in the 117.975-137 MHz in the aeronautical-mobile (R) service.

Therefore, based on the potential for harmful interference to stations in the aeronautical-mobile (R) service, the SPS recommends that certification of spectrum support for the NASA IVVCL System operating on 121.75 and 130.167 MHz or elsewhere in the 117.975-137 MHz band be denied. Moreover, I do not expect that this office will certify spectrum support for any space systems associated with the ISS in this or any band allocated to the aeronautical-mobile (R) service.

Sincerely,

William D. Gamble
Deputy Associate Administrator
Office of Spectrum Management

NTIA's Objection Letter 2

UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
INTERDEPARTMENT RADIO ADVISORY COMMITTEE
Washington, D.C. 20230

August 27, 1996

Mr. William D. Gamble
Deputy Associate Administrator for Spectrum Management
Office of Spectrum Management
National Telecommunications and Information Administration
Room 4099
Herbert C. Hoover Building
U.S. Department of Commerce
Washington, DC 20230

Dear Mr. Gamble:

The Spectrum Planning Subcommittee (SPS) has reviewed the National Aeronautics and Space Administration (NASA) request for spectrum support for the International Space Station (ISS) VHF Voice Communication Link (IVVCL) as documented in a October 10, 1995 letter from Joseph Deskevich to Arthur H. Gray, Secretary of the SPS, (SPS-10582, see Attachment 1). In the letter, NASA proposes to use the frequencies 130.167 MHz and 121.75 MHz to relay voice communications between astronauts and cosmonauts on board the ISS and the NASA Space Shuttle Orbiter during rendezvous and docking missions.

The Preliminary Review provided by NTIA's System Review Branch (SPS-10692, see Attachment 2), indicates that the proposed operations are in a band allocated both internationally and nationally to the aeronautical-mobile (R) service, and thus would not be used in accordance with National or International Tables of Frequency Allocations. Moreover, the Federal Aviation Administration (FAA) SPS representative indicated at a June 20, 1996 NASA briefing and confirmed at the SPS meeting August 15, 1996 that operations of similar systems aboard the Russian MIR satellite have resulted in interference to stations operating in the aeronautical-mobile (R) service in the U.S. National Air Space.

Based on the potential for harmful interference to stations in the aeronautical-mobile (R) service, the SPS recommends that certification of spectrum support for the NASA IVVCL System operating on 121.75 and 130.167 MHz or elsewhere in the 117.975-137 MHz band be denied.

Sincerely,

Paul C. Roosa, Jr.
Chairman, Spectrum Planning Subcommittee