Software Defined Radio Forum Activities

Avionics Special Interest Group
(Av SIG)

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Background

- **Why is ACAST involved in the Forum?**
  - To foster a cost-effective methodology to certify avionics, with international standards and operational modes, that allows for low life-cycle cost and that is in compliance with existing and next generation air-ground and air-air CNS requirements & functions.

- **Why am I the Chair of the Software Defined Radios (SDR) Forum AvSIG?**
  - To foster communication amongst the aviation community for the use of Software Defined Radios in aviation

- **Who is the SDR Forum?**
  - The SDR Forum is an open, non-profit corporation dedicated to supporting the development, deployment, and use of open architectures for advanced wireless systems. http://www.sdrforum.org/

- **Why is the SDR Forum important?**
  - To bring the global community together to work on common problems and to develop standards and recommendations.

- **What are the challenges of the SDR Forum?**
  - A few challenges are the security requirements for SDR, testing of the SCA for private industry, adoption of and rules for cognitive radios, spectrum usage and adoption of SDR in high assurance areas (Aviation, Space and Public Safety).

Aviation Special Interest Group Av SIG
Participating Organizations

- Booz Allen Hamilton
- Southwest Research Institute
- General Dynamics
- Intel
- Rohde&Schwarz
- Thales Communications
- Pentland Systems
- Frequentis
- Orange
- Lyrtech
- Virginia Tech.
- Ohio University
- Aximetric
- Unitech

- Innivative Concepts
- SCA Technica
- Vanu Inc.
- DataSoft
- Xilinx
- SP&T Group
- Object Interface
- RockwellCollins
- GDDS
- Ohio Aerospace Institute
- USAF
- FAA
- Euro Control
- NASA

Av SIG Overview

- The Av SIG is an organization within the SDR Forum that provides a focus for activities in which the aviation community has an interest.

- Goals of the Av SIG are to promote activities and technologies that will advance the state of the art in aviation communication, navigation and surveillance.

- This working group endeavors to promote technologies and methodologies for implementation of SDR avionics.

- The Av SIG also interacts with other Committees and Working Groups within the Forum to provide the aviation community's inputs into the publications and initiatives undertaken by the Forum.

Activities this Year

- Formation of the Av SIG under the Markets Committee

- Completion and acceptance of the Goal Statement

  This Working Group is promoting activities and technologies that will advance the state of the art in aviation communication, navigation and surveillance. This working group endeavors to promote technologies and methodologies for implementation of SDR avionics

- Completion and acceptance of the Charter.

- Completion and acceptance of a Vision Statement.

  The SDR Forum Special Interest Group for Avionics vision is the development of an open, standardized and flexible avionics communications architecture based on the use of software defined radio enabling technologies, in order to enable a reduction in the number, initial cost and life cycle costs of discrete avionics boxes in the cockpit as well as a significant reduction in the time and cost of certification to infuse new functionality; opening opportunities for technology innovation, network centric operational capabilities and protect against obsolescence; while enhancing required availability, integrity and security.

- Accumulated a glossary of terms for common working terminology.

- Currently in the process of producing an Request For Information (RFI) on aviation SDR related areas.

Planned Activities

- September SDR Forum Meeting in Brussels to vote out the RFI

- Planned Joint meeting with the Security working group on common criteria for aviation DO 178-B

- Collect comments from the RFI and publish comments

- Development of a web repository for all information

- Develop requirements for SDR in aviation

- Start work on the development of Minimum Operational Performance Standards (MOPS) for an SDR
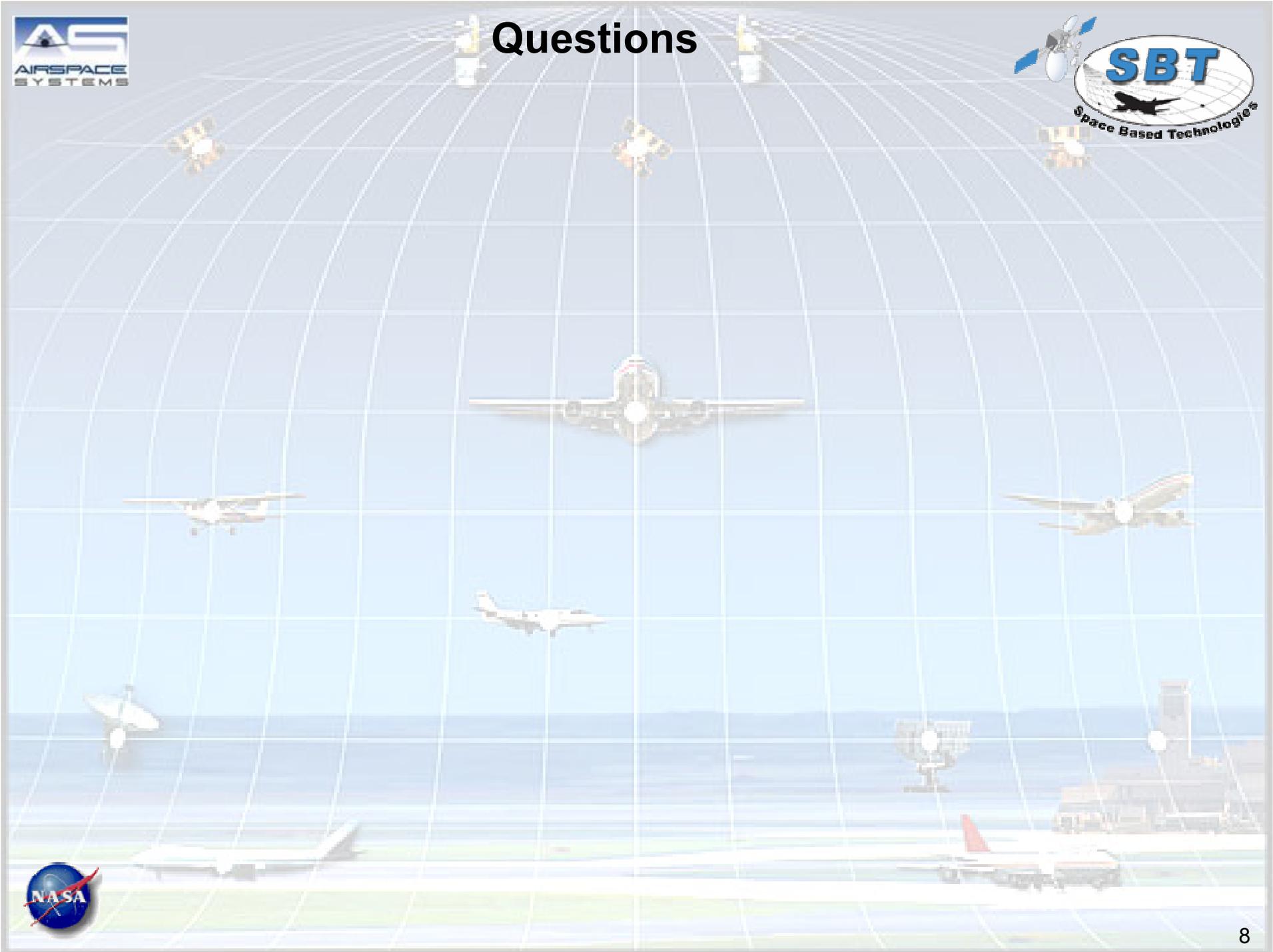
Bi Weekly Telecon

- Bi weekly telecons are held Wednesdays at Noon EST
- Phone # (216) 433-6280
- Meeting ID (28466427)
- Next telecon August 31st, 2005

Anyone interested is welcome to call in

Questions

Charter

- The SDR Avionics Special Interest Group (SDR-Avionics) of the SDR Forum's Research and Development Working Group will serve as a common meeting ground to foster international discussion about the (future) role of software radio technology for civil and military aviation purposes between national administrations, aviation agencies, air navigation service providers, aviation equipment manufacturers, and others as appropriate.

- SDR-Avionics will develop and examine use cases, analyze market drivers, and identify synergies and opportunities between the potential use of software radio technology in aviation and other sectors.

- SDR-Avionics will investigate candidate architectures and enabling technologies for the various application domains of aviation (e.g. Communication, Navigation, Surveillance and Security).

- SDR-Avionics will identify and document benefits and issues (such as certification, regulatory aspects) for the aviation sector, and facilitate the investigation of issues.

- SDR-Avionics will identify and invite key speakers to address interested members of the SDR Forum in technical aspects of SDR avionics applications, as well as evolving or enabling technologies.

- SDR-Avionics will identify and prepare proposal for technical requirements for software radio equipment specific to aviation, if required;