Frequency Allocations in Remote Sensing (FARS) Technical Committee

Annual Meeting

July 14, 2014

Sidharth Misra (Chair)
Paolo de Matthaeis (Co-chair)
RSS and xcal derived algorithms will identify RFI & mitigate if possible
Agenda

- Update on membership
- Recent activities
- Update from CORF
- Update from NAS
  - Study on active scientific use of radio spectrum
- Future initiatives
- FARS input requested
FARS membership

- Current membership
  - 86 members
  - Updated members list
  - By employment
    » Industry: 15
    » Government: 40
    » Academia: 31
  - By region
    » North America: 62
    » Europe: 17
    » Asia: 5
    » Other: 2

- Need to work towards increasing FARS membership from other regions, particularly:
  - India
  - China
  - Australia
  - Latin America

- Membership slightly “decreasing”:
  - By-product of updating membership information
Recent Activities

● National Academy of Sciences (NAS) meeting:
  – At the suggestion of the AdCom, Paolo represented FARS at the NAS meeting on the Active Scientific Use of Radio Spectrum
  – Prof. Al Gasiewski from the study will be presenting at the FARS TC annual meeting

● IUCAF 4th School on Spectrum Management (Chile)
  – FARS TC member present

● Committee on Radio Frequencies (CORF) meeting:
  – Both Paolo and I were invited by the CORF to join in their spectrum management related discussions in D.C.
  – Prof. Jasmeet Judge from CORF will be presenting at the FARS TC annual meeting

● Space Frequency Coordination Group (SFCG) meeting:
  – SFCG is an advisory organization with members from Space Agencies and related national and international organizations
  – SFCG is concerned with the effective use and management of radio frequency bands allocated to Space Research, Space Operations, Earth Exploration Satellite, and Meteorological Satellite services
  – FARS might have a greater involvement in the coming years as the role of observers is being expanded
  – FARS member input was requested on a few issues

● Website updated

● FARS article in the June 2014 issue of GRSM
Pick up your hard copies!
Update from the Committee on Radio Frequencies (CORF) of the National Academy of Science (NAS)

presented by Albin J. Gasiewski
Upcoming Meetings

- World Radiocommunication Conference (WRC-15), November 2015
  - A month-long meeting where international spectrum allocations are decided
  - Most responses are already compiled but there is still room to provide input
- Space Frequency Coordination Group (SFCG-35), July 2015
  - Expanded FARS role expected over the next few years
- Committee on Radio Frequencies (CORF), Fall 2014
  - Concentrates mostly on radio science with overlapping interests
Future Strategic Initiatives

- 3% of GRSS reserves and 50% of past years surplus available to the society for strategic initiatives
  - Approximately 300K USD
  - Ideas are welcome!!

Examples:
- Sub-committees (depends on volunteers) to prepare comments to ITU Radio Regulations
- Enable RFI source identification
  - Reporting tool on FARS website for observed RFI
  - FARS forwards findings to appropriate agencies
- Potential partnership with Signal Processing Society
  - Engage TC in their societies
  - Invited talks in FARS session
Requested FARS Input

- Proposed sharing of 5350-5470 MHz band between telecommunication services RLAN (Radio Local Area Networks including Wi-Fi) and active Earth Exploration Satellite Service (EESS) systems
- SAR systems such as ESA's Sentinel-1 and Canada's RadarSat operate at this frequency and would be negatively affected
- An SFCG study shows that a single outdoor RLAN operated within the whole 5350-5470 MHz band is sufficient to exceed the EESS (active) protection criteria and that a RLAN deployment consistent with RLAN industry expectations would create harmful interference exceeding protection criteria
- RLAN supporters contend that mitigation techniques would eliminate the problem (article will be on website)
- FARS TC input is requested
Definition of Acceptable Interference Level

- Input requested by Thomas VanDeak for changes to Recommendation ITU-R RS.1166-4 "Performance and interference criteria for active spaceborne sensors"
  - document establishes the interference and data availability criteria be applied for instruments used for active sensing of the Earth's land, oceans and atmosphere
  - studies defining protection levels should
    » reflect state of the art in active sensing
    » align protection criteria with analysis methods
    » expand material to include sensor mechanics
  - we will provide material via email
SFCG Outcomes Relevant to GRSS

Some Reports, Resolutions and Recommendations Relevant to IEEE GRSS

- NASA interest in EESS (active) allocations in frequency bands lower than the 432-438 MHz band (particularly 40-50 MHz)
- preliminary analysis of potential L-band RFI from Aeronautical Radio Navigation Service (ARNS) and Radiolocation Service (RLS) systems in the 1215-1300 MHz band
- Out-of-Band (OoB) Emission Limits for proposed 7235 to 7250 MHz allocation to EESS
- analysis of worst case interference from mainlobe-to-mainlobe antenna coupling of EESS active sensor receivers in the 35.5-36.0 GHz band