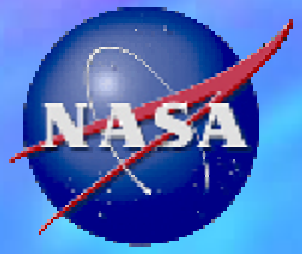

The Scientific and Regulatory Community Partnership in Protecting Scientific Operations

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CORF Meeting Spring 2007

Outline

- Interference protection relies entirely on international and domestic regulations.
- Interaction of the scientific and regulatory communities
- Scientific Spectrum usage is different from the other radiocommunication services.
- Current actions to inform the Regulatory Community.

Interference protection relies entirely on domestic and international regulations.

1. The US Domestic Regulatory Process (FCC/NTIA) determines the level of spectrum interference protection for scientific operations in the US.
2. The UN specialized agency WRC process (ITU-R) determines the international level of protection for scientific operations globally.

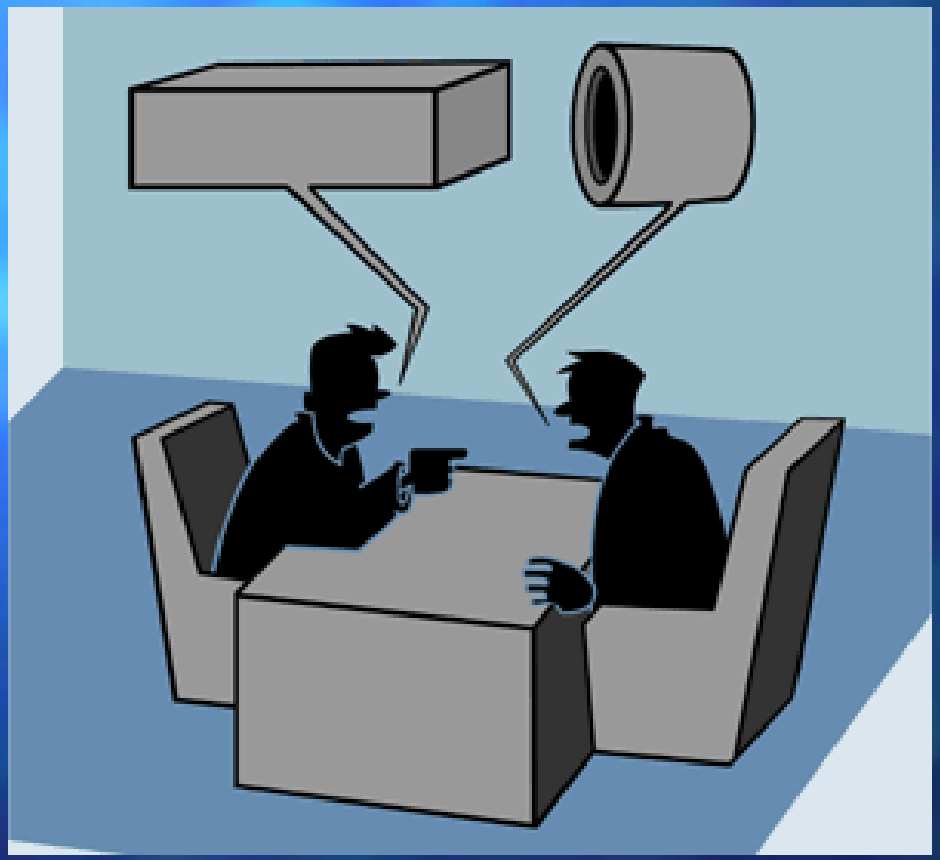
These processes accept formal inputs and make decisions based on those inputs.

- The FCC/NTIA and Administrations, respectively, hold sway. **My opinion: <u>What transpires in the Scientific Community has *minimal* impact on the regulatory process.</u>**
- **However, what transpires in the Regulatory Community has enormous lasting impact on remote**

Interference protection relies entirely on international and domestic regulations.

- Regulatory protection and other gains for scientific operations is equated to increased burden on other telecommunication services.
  - This burden is viewed as either reduced operating freedom or increased cost of operation, or both.
  - Does not matter if the equation is actually true; this is the baseline for scientific operations when seeking regulatory protection or other gains.
  - My Observation: Scientific use of spectrum is not generally perceived as “valuable” to the regulators of most administrations. (particularly Developing Countries)

The scientific and regulatory communities don't effectively interact.



http://www.leebroderickweb.com/

The scientific and regulatory communities don't effectively interact.

Regulatory Community

Scientific Community

Remote sensing itself is different from the other radiocommunication services.

- Acceptable Degradation of communication links due to intra-service interference is well defined and understood.
- “Acceptable” Degradation of remote sensing capability due to interference is not well understood between the regulatory and scientific communities.

The inability to express the impact of interference on the value of the remote sensing products is a serious hindrance to gaining additional regulatory protection.

Remote sensing itself is different from the other radiocommunication services.

- The economic and/or military value of a communications service is well understood and represented.
- The value of scientific spectrum usage is perceived as a somewhat vague societal benefit in comparison.

Since remote sensing protection is equated to a negative impact on economic telecommunication services, a well understood economic value outweighs a vague societal benefit in many

What specifically is needed to address the problem?

The scientific community needs to assist in addressing these issues because their regulatory representatives are unable to do so by themselves:

- What is the level of interference that can be tolerated by instruments before it significantly impacts the products derived from those measurements.
- What is the quantitative value of the remote sensing products that they produce.

Pragmatic issue: Is this requirement for partnership between the scientific community and their regulatory representatives a permanent condition???

Current actions to inform the Regulatory Community

The ITU-R

- Working Party 7C

- The ITU-D
  - Study Group 2, Question 22/2
- US Users of Remote Sensing Products Workshop
  - Planning in process

Current actions: ITU-R

- **ITU-R SG 7 Question ITU-R 243/7**
  "Characterization of technical parameters and interference effects and possible interference mitigation techniques for passive sensors operating in the Earth exploration-satellite service (passive)".
  - www.itu.int/pub/R-QUE-SG07.243-2006/en
  - **1** What are the range of applications and uses of passive sensors and its products?
  - (Plus four other areas of study)

Current actions: ITU-D

- **ITU-D SG 2 Question 22/2** *"Utilization of ICT for disaster management, resources, and active and passive space-based sensing systems as they apply to disaster and emergency relief situations*"
  - www.itu.int/pub/R-QUE-SG07.243-2006/en
  - 2 Identification and examination of active and passive sensing system applications for their potential effect in enhancing disaster mitigation.

Current actions: Workshop

- **USA National Space Policy**
  - **www.ostp.gov/html/US%20National%20Space%20Policy.pdf**
  - **No mention of remote sensing interference protection**
    - **However, protection of GPS from interference is included**
- **US Users of Remote Sensing Products Workshop**
  - Bring together the private sector clients and the government sector (regulatory and providers)
    - Current and future products, and issues.
  - Seek ways to involve the public sector.
  - NASA SMO has allocated funding for Workshop.
  - NOAA supportive
- Realistically, timing of Workshop is late Spring 2008