Radiocommunications and climate change

Turin, Italy
7 May 2013

Vadim Nozdrin, Counselor, ITU-R Study Group 7
<vadim.nozdrin@itu.int>
Study Group Department
Radiocommunication Bureau

ITU Overview

Since 17 May 1865

ITU

Helping the World Communicate

ITU-T

Standardization of telecommunication, ICTs, regulation of numbering, international tariffs

ITU-D

Assisting implementation and operation of telecommunications in developing countries

ITU-R

Radiocommunication standardization and global radio spectrum management

191 Member States
+700 Sector Members

ITU-R activity

Establish and update international regulations governing use of the spectrum, through world and regional radiocommunication conferences adopting international treaties

Apply the international regulations governing use of the spectrum – Purpose: To ensure the most efficient use of the orbit/spectrum resource for operation of radiocommunication services free from harmful interference

Produce global standards, Recommendations, reports and handbooks for wireless radiocommunication systems and applications

Inform and assist administrations on radiocommunication matters: organization of and participation in information and capacity-building seminars, participation in colloquiums and workshops

Scope of studies for CC

Activities	Major tasks	Radiocommunication involved
Monitoring the environment	Satellite observations of the Earth's atmosphere and surface The acquisition, processing, analysis and distribution of data from remote sensing satellites	Earth exploration-satellites Meteorological satellite
		Space operation
	Solar radio monitoring	Radioastronomy Space research
	Ground observation of atmosphere characteristic	Meteorological aids
		Radionavigation
		Mobile systems
Other applications	Construction optimisation Traffic optimisation Energy, water and fuel savings Planting decision, irrigation planning Disseminating alert messages, coordination of relief activities and advice to public	Earth exploration-satellites
		Mobile systems
		Radionavigation
		Broadcasting
		Satellite
		Amauters

World Radio Conference-12

- Lightning detection systems;
- Spectrum for Earth exploration satellites;
- Spectrum for oceanographic radars;
- Urging Members State :

- to recognize the importance of Earth observation
- promote the introduction of new applications to address issues such as emerging technologies, climate change, disaster management and other socio-economic matters

World Radio Conference -15

- **Active sensing –**

resolution of 50 cm- additional 600 MHz spectrum

- **Avionic intra communication**

A380-470 km of wire, 5 700 kg, **206 kgCO_2/hour**

- **Automotive radars**

Intellectual transport system

- **Broadband public protection and disaster relief (PPDR)**

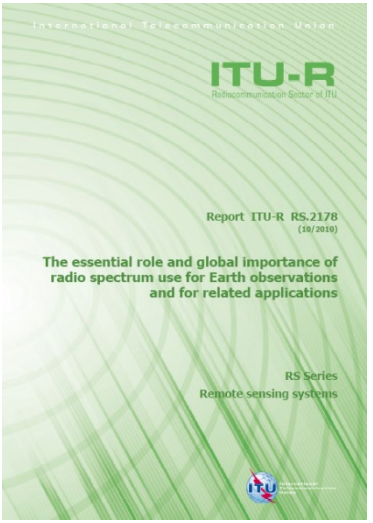
Improved international harmonization, improved aid support, video, cost reduction

- **Nano-pico satellites**

10 cm cube, international regulation?

ITU-R highlights

- Earth observation satellite-based worldwide - ***6.7 billion US $*** **in 2008**
- Meteosat Third Generation in Europe- about ***2.8 billion Euros***
- 90's: an efficient warning system could have decreased the economic impact of natural disasters by ***240 billions US $***
- economic benefits to US agriculture (by altering planting decisions)-
  US $ 265-300 million/year
- savings in the electricity and natural gas ***512 million US*** $ in 2015 and ***2.56 billion US$*** -in 2017

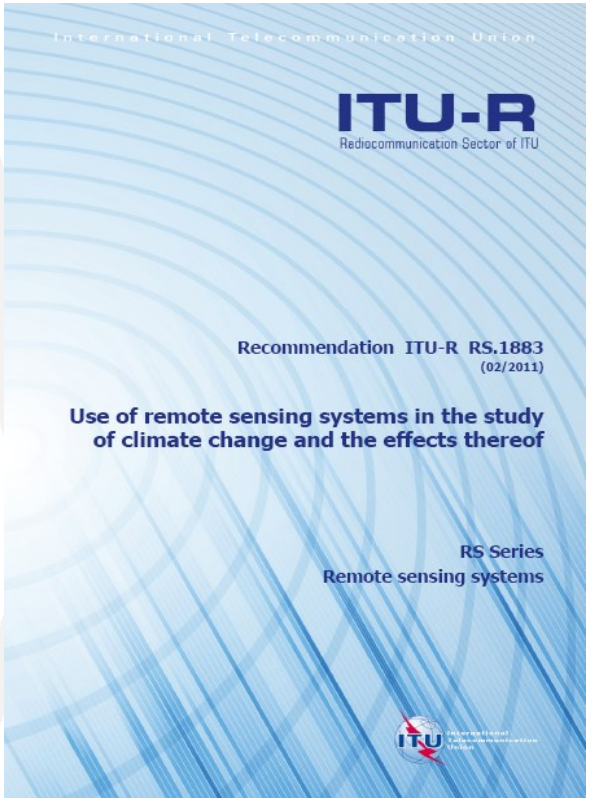


http://www.itu.int/pub/R-REP-RS.2178-2010

ITU-R highlights

- Guidelines on the provision of satellite-provided remote sensing data for the purpose of studying climate change
- Summary of status of major climate variables and forcing factors
- Disaster Management Database

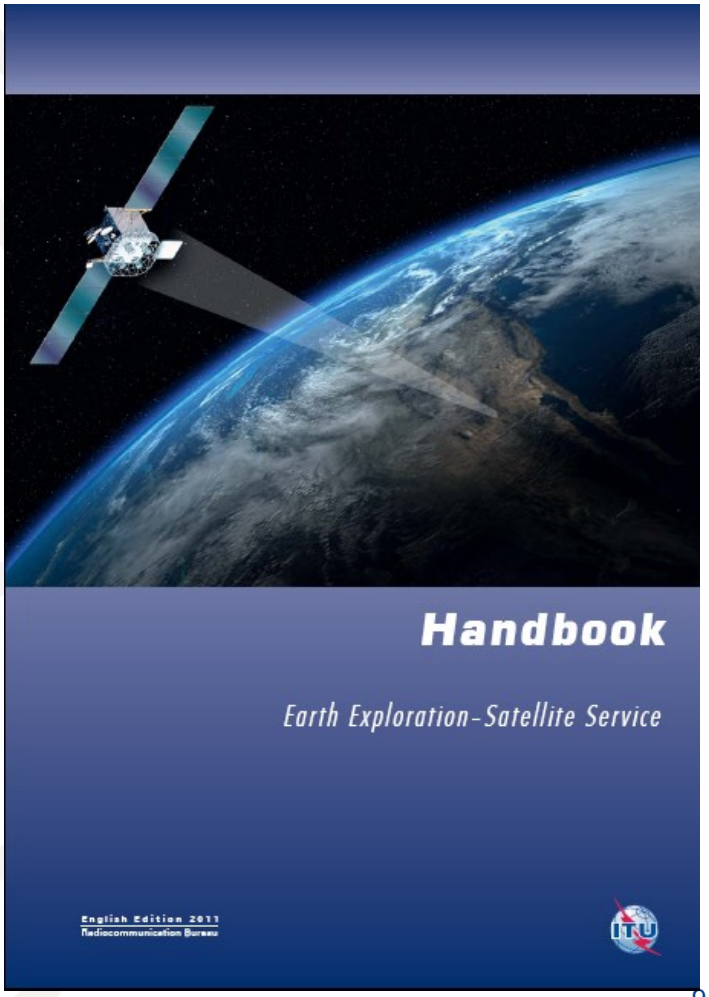
https://www.sfcgonline.org/Remote%20Sensing/default.aspx



http://www.itu.int/rec/R-REC-RS.1883-0-201102-I/en

ITU-R highlights

- development of EESS systems. Basic definitions, technical principles and applications
- to assist administrations in spectrum planning, engineering and deployment aspects



http://www.itu.int/pub/R-HDB-56

Conclusions

- **ITU** is committed to working with other organizations in combating climate change
- Radiocommunications are totally relying on **radio-frequencies** to be harmonised and protected worldwide
- Radiocommunication system's value can not be measured **in only financial terms**, as it prevents large losses of lives or promotes sustainable development

ITU Regional Seminar on "Space science services: regulatory, technical and practical implications" for the Americas Regions, Manta, Ecuador, 20 - 21 September 2012

www.itu.int/ITU-R/go/itu-sem-americas.

Questions?