



Radiocommunications and climate change

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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

193 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	Earth exploration-satellites Meteorological satellite	
	The acquisition, processing, analysis and distribution of data from remote sensing satellites	Space operation	
	Solar radio monitoring	Radioastronomy Space research	
	Ground observation of atmosphere characteristic		Meteorological aids
Radionavigation			
Mobile systems			
Other applications	Construction optimisation	Earth exploration-satellites	
	Traffic optimisation	Mobile systems	
	Energy, water and fuel savings	Radionavigation	
	Planting decision, irrigation planning	Broadcasting	
	Disseminating alert messages, coordination of relief activities and advice to public		Satellite
			Amateurs



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

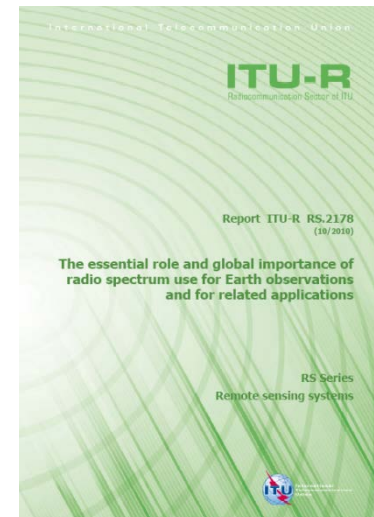


World Radio Conference -15

- **Active sensing –**
resolution of 50 cm- additional 600 MHz spectrum
- **Avionic intra communication**
A380-470 km of wire, 5 700 kg, **206 kgCO₂/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

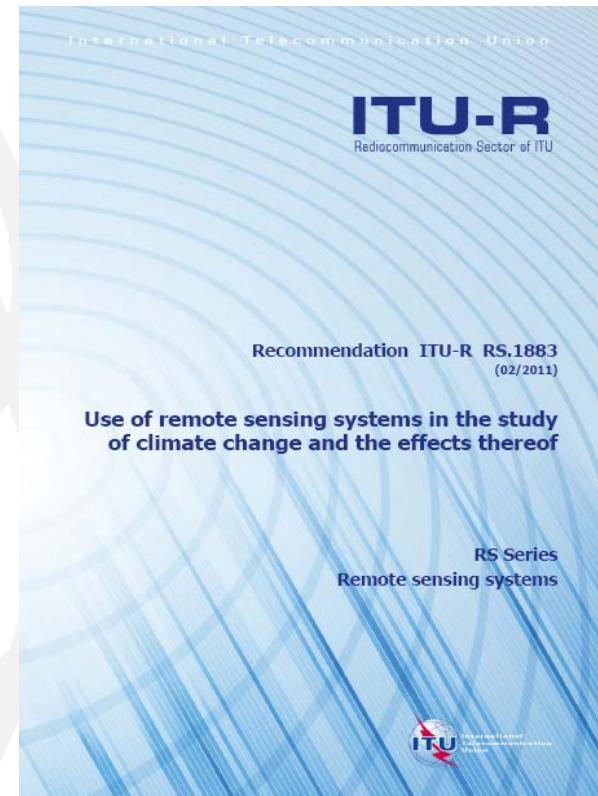
- Earth observation satellite-based worldwide
- **6.7 billion US \$ in 2008**
- Meteosat Third Generation in Europe- about
2.8 billion Euros
- 90's: an efficient warning system could have decreased the economic impact of natural disasters by **240 billion US \$**
- economic benefits to US agriculture (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





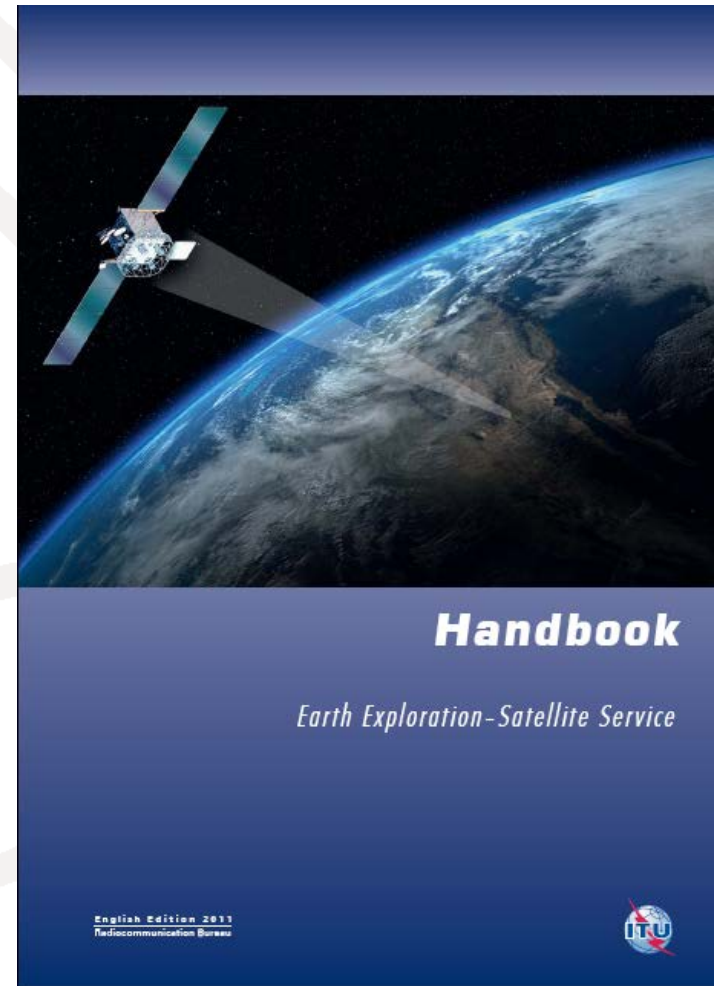
ITU-R highlights

- 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>



ITU-R highlights

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





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?