



Orbit Spectrum Allocation Procedures ITU Registration Mechanism

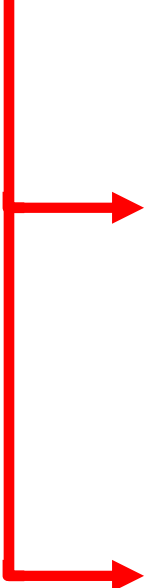
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Wroclaw, Poland, 12 June 2008



- **United Nations Outer Space Treaty (1967)**



Outer space free for exploitation and use by all states in conformity with international regulations

States retain jurisdiction and control over objects they have launched into outer space



- **United Nations Outer Space Treaty (1967)**
- **International Telecommunication Union**
 - Principles of use of orbit/spectrum
 - Allocation of frequency bands
 - Procedures, Plans, operational measures
 - Instruments (CS, CV, RR, RoPs, Recs)



“To ensure rational, equitable, efficient and economical use of the radio frequency spectrum by all radiocommunication services -- including those using the geostationary satellite orbit or other satellite orbits -- and to carry out studies on radiocommunication matters”

Constitution of the ITU, Article 12



Article 44



Radio frequencies & satellite orbits
are limited natural resources



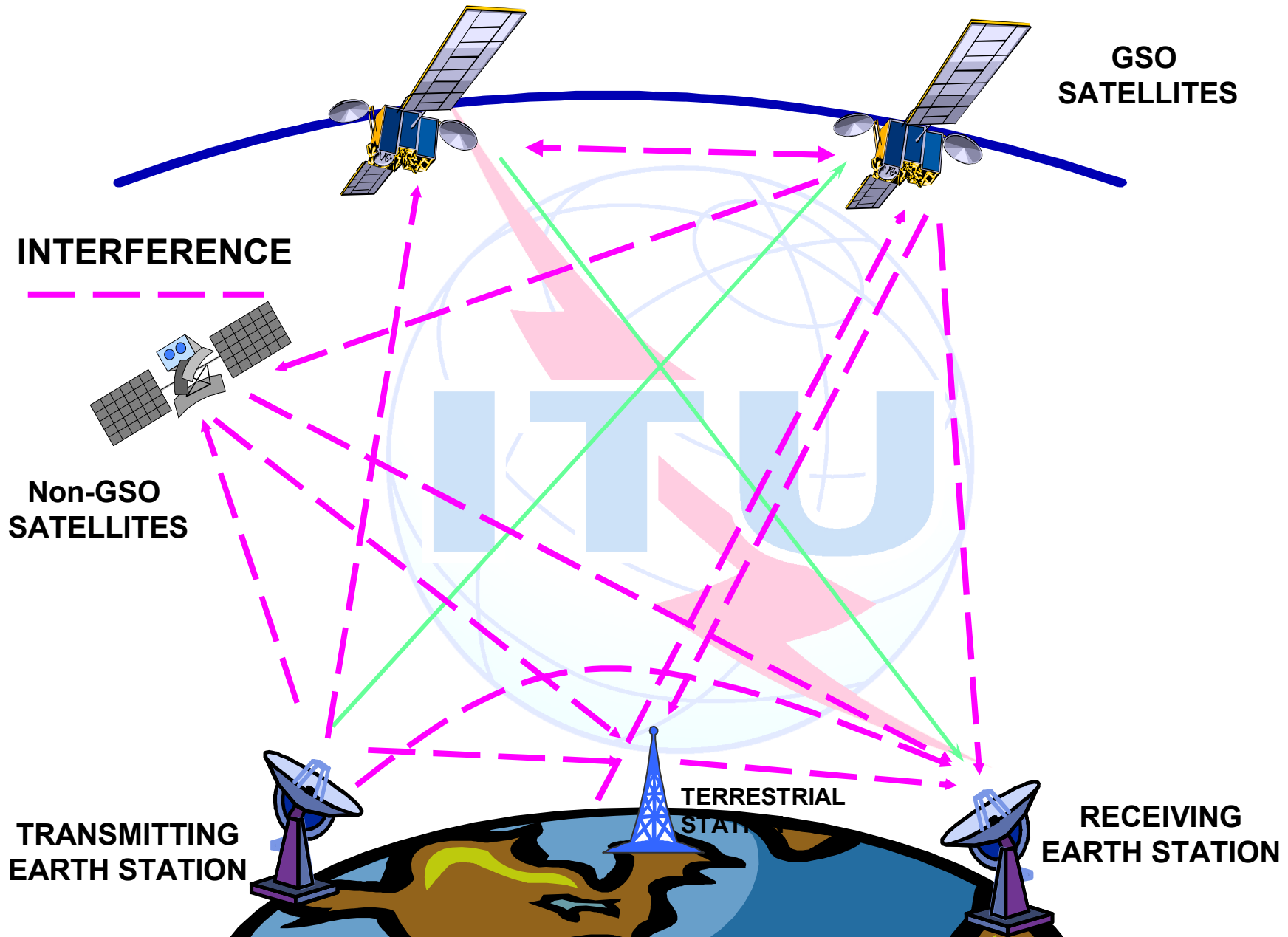
Rational, Efficient, Economical Use



Equitable Access



International
Telecommunication
Union





Propagation of Radio waves



- Laws of physics
- Radio waves do not stop at national borders

Interference



- possible between radio stations of different countries
- This risk is high in Space Radiocommunications

Radio Regulations (RR)

- One of its main purposes - Interference-free operation of RadioComms



Control of Interference

ALLOCATION

Frequency separation of stations of different services

POWER LIMITS

PFD to protect TERR services / EIRP to protect SPACE services / EPFD to protect GSO from Non-GSO

REGULATORY PROTECTION

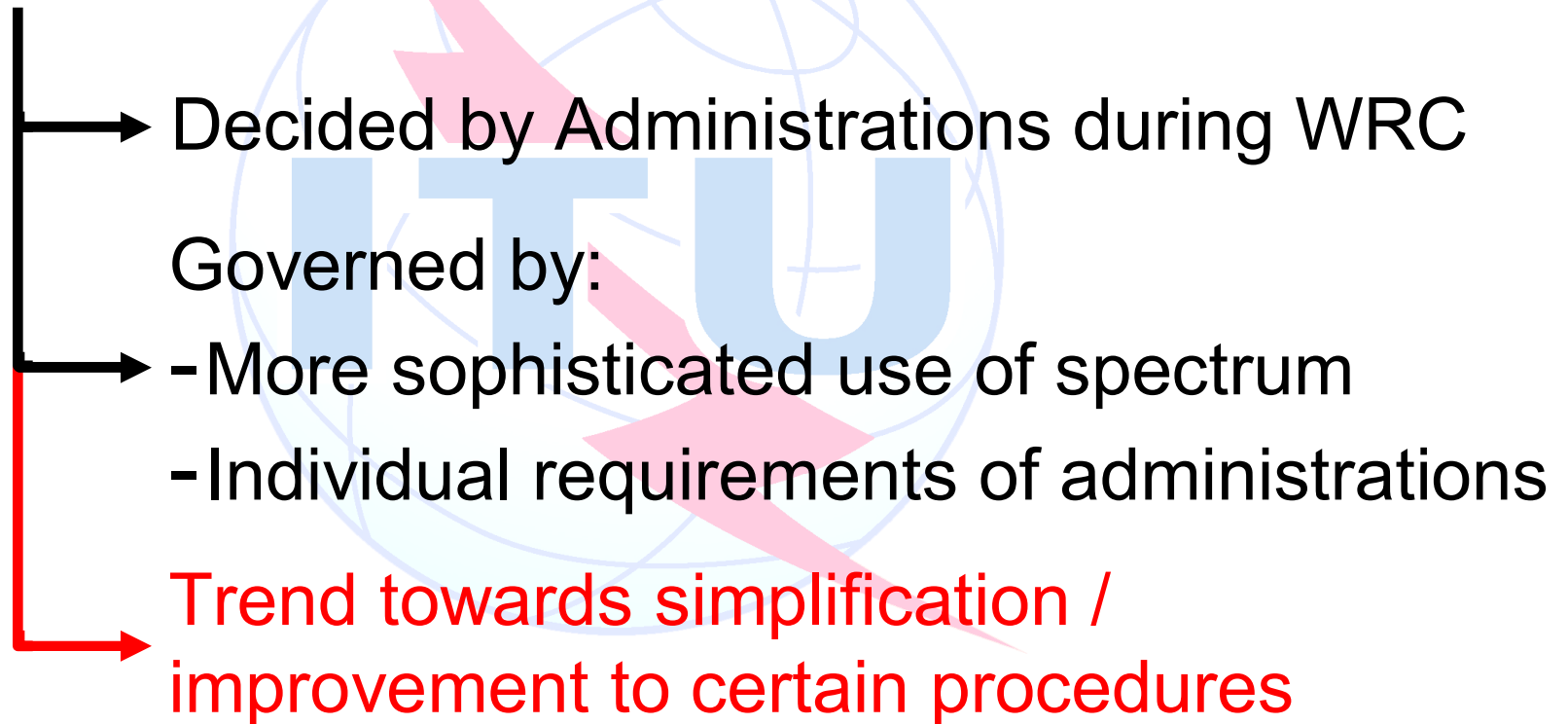
e.g. No. 22.2: Non-GSO to protect GSO (FSS and BSS)

COORDINATION

between Administrations to ensure interference-free operations conditions



- Lengthy & complex procedure





- Lengthy & complex procedure
- + Efficient use of spectrum
- + Equitable access
- + Opportunity to resolve interference before operation
- + Prevents loss of investment, customers & revenue by minimizing unusable capacity due to interference



- **Rights & obligations + applicable procedures**
- **Two mechanisms of sharing orbit / spectrum:**

Coordination Approach

Efficiency \Leftrightarrow First come, first served for actual requirements

Planning Approach

Equitable access \Leftrightarrow Plan for future use



“First Come, First Served” Procedure

- Rights acquired through coordination with administrations concerning actual usage
- Efficient spectrum / orbit management
- Dense/irregular orbital distribution of space stations
- Continuing responsibility for the networks



Article 9 (Sect.I, II)
(Coordination procedure)

Article 11
(Notification procedure)

Article 21, 22
(Limits)

App. 4
App. 5

Res 49

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Procedural Approach
Objectives

**Exchange of
information**



Coordination



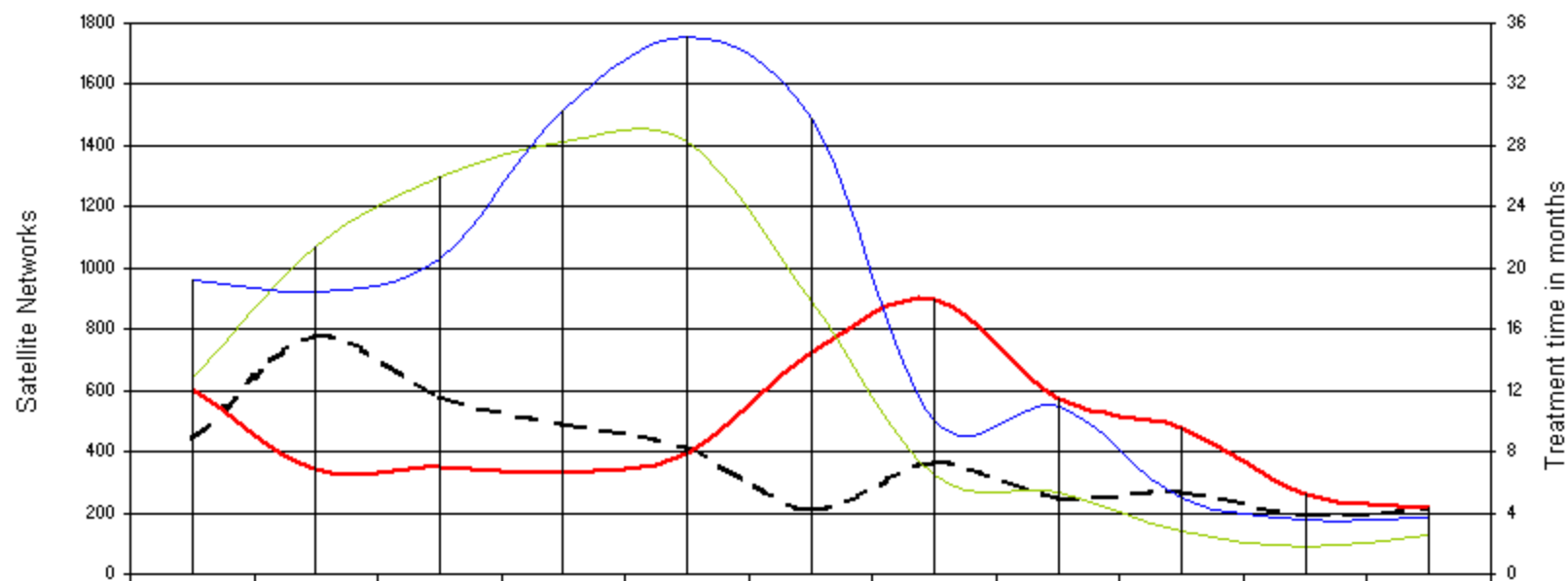


Plan Procedure

- Congestion of the GSO
- Frequency / orbital position plans
- Guarantee for equitable access to the spectrum / orbital resources
 - Spectrum set aside for future use by all countries
 - Predetermined orbital position & frequency spectrum



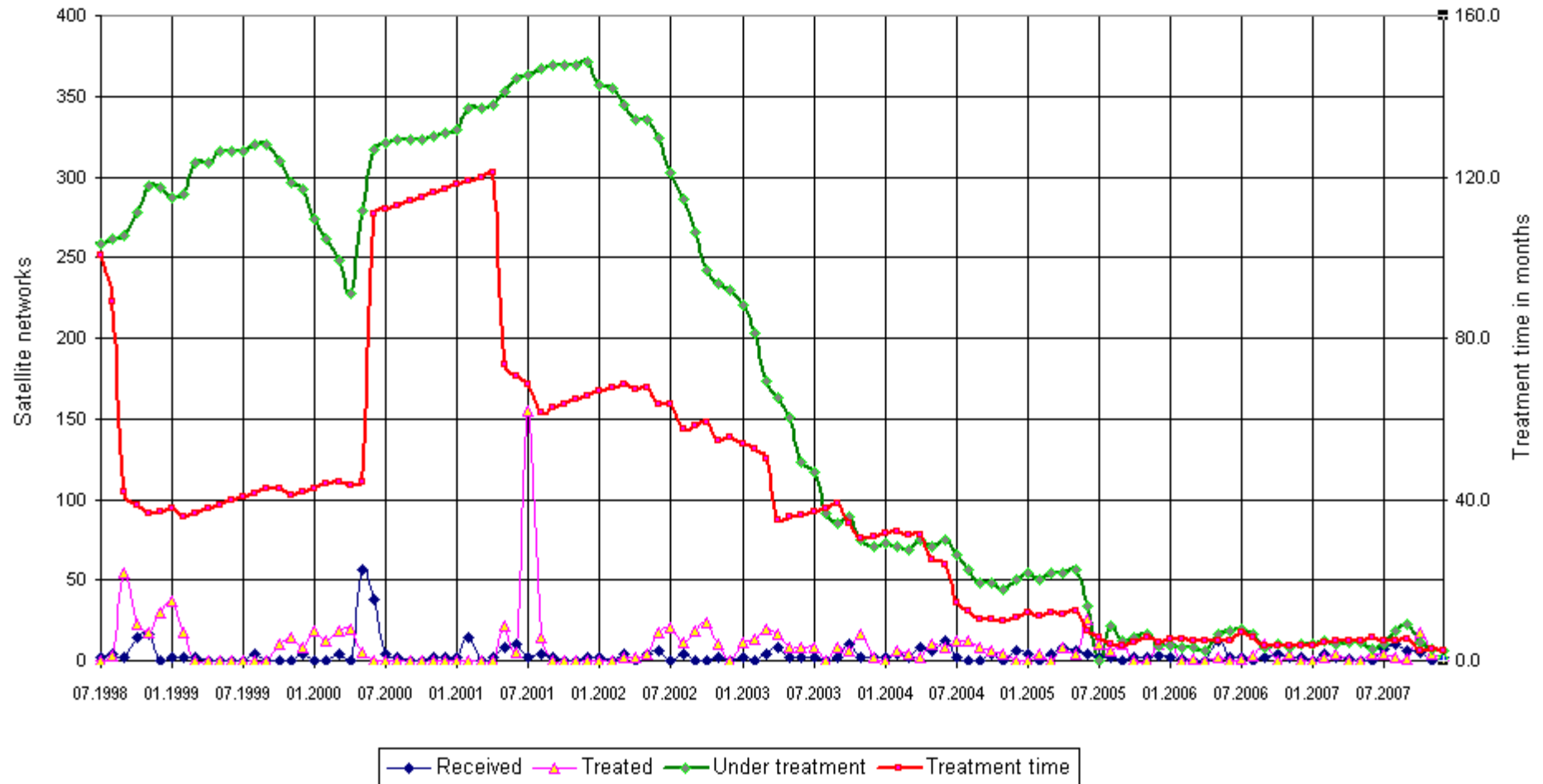
CR/C filings and processing trends for the year 1997-2007



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
— Filings Received	447	773	576	489	416	208	365	249	268	190	209
— Filings Published	605	346	350	328	394	728	898	570	475	258	217
— Under Treatment	642	1069	1295	1410	1409	890	324	269	143	91	127
— Treatment Time (Months)	19.2	18.4	20.6	30.3	35.1	29.8	10	10.9	5	3.6	3.7



Treatment of Article 4 AP30/30A for the 1998-2007 period





International
Telecommunication
Union



	Number of Satellite Networks	Number of Orbital Positions
Coordination Request	1215	724
Notification	792	385

(as of 23.05.2008)



Efficient Use of Orbit / Spectrum by satellite systems

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