

ITU Workshop on the efficient use of the radio-frequency spectrum

It's working better than ever !



Overview

- ▲ Cleaning up MIFR
- ▲ Improve the regulations
- ▲ Opportunities for new entry
- ▲ Incentives for optimal spectrum/orbit use





Who we are

- ▲ A world-leading satellite operator, providing reliable and secure satellite communication solutions
- ▲ Reach of over 291 million households world-wide
- ▲ Over 1,270 employees around the globe at 23 locations worldwide
- ▲ Listed on NYSE Euronext Paris and Luxembourg Stock Exchange under the ticker symbol SESG.

Cleaning up MIFR

- ▲ ITU BR started this initiative back in May 2009, when the BR urged administrations to remove unused frequency assignments and networks from the MIFR (CR/301)
- ▲ This practice has received endorsement from industry and administrations alike
- ▲ WRC-12 modified RR Article **13.6**, providing the ITU BR with a clear process for cleaning up the MIFR
- ▲ A significant number of recorded assignments have been cancelled as a result of this effort

- ▲ SES supports this BR work going forward based on the established regulations

WRC-12 decisions – More clear environment

- ▲ WRC-12 decisions concerning the Bringing Into Use (BIU) and suspension of frequency assignments has brought clarity in the RR
- ▲ WRC-12 also asked the BR to identify the specific satellite networks and earth stations with which coordination needs to be effected in the case of coordination under RR **9.7**, **9.7A** and **9.7B (9.36.2)**
- ▲ This clarity is needed by all administrations and operators who rely on clear procedures in Articles 9 and 11 for the coordination and notification of their satellite networks

WRC-15 – Our philosophy

- ▲ The current regulatory environment is not perfect, but the process works!
 - Hundreds of satellites operating in the geostationary arc in a variety of frequency bands
 - Many new geostationary communication satellites are planned, notably from new national operators

- ▲ Therefore, any proposed changes for further improvement should be assessed on a case-by-case basis
 - Due to the complexity of the existing regulations, every proposed change should be carefully studied for its advantages, but also for its drawbacks
 - A complete revision of the entire regulations would lead to a lot of uncertainty and unpredictable consequences

WRC-15 – One idea

- ▲ Re-assessment of the orbital positions limitations in Paragraph A of Annex 7 to RR Appendix 30
 - Currently there are orbital position limitations on modifications to the BSS Plan or List; in Region 2 BSS in 12.2-12.7 GHz and to Region 1 BSS in 11.7-12.2 GHz. Annex 7 also contains associated e.i.r.p. limits for Region 1 BSS in a portion of the arc.
- ▲ Is there an ongoing need for some type of Annex 7 orbital position limitations?
 - Special consideration may need to be given to operational systems implemented under the Annex 7 regime
 - Consideration should also be given to other factors, such as parity between the regions and services – BSS is subject to orbital position limitations while FSS in the same frequency bands are not.

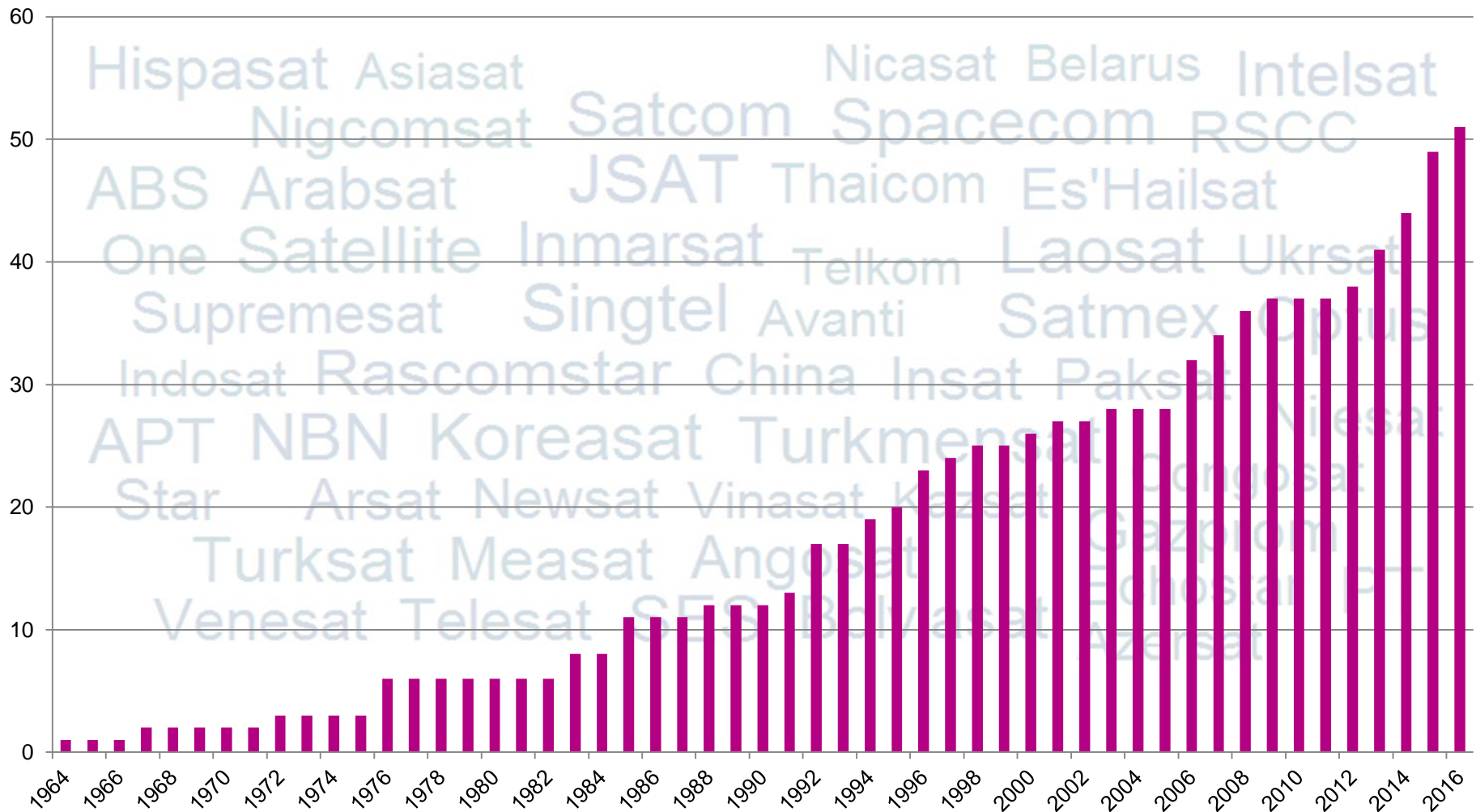
	BSS --> FSS (Annex 1, Section 6 of Ap 30)					
	Peak			EOC		
e.i.r.p. density of interfering network (dBW/MHz)	43.7	43.7	43.7	37.7	37.7	37.7
Associated pfd (dBW/m2/27MHz)	-104.0	-114.0	-124.0	-110.0	-120.0	-130.0
Geographic discrimination (dB)	0.0	10.0	20.0	0.0	10.0	20.0
Orbital separation to meet Ap 30 levels (deg)	10.1	4.0	2.7	5.8	3.1	2.0

Opportunities for new entries

- ▲ RR Appendices **30** and **30A** were designed to provide for the guaranteed use of frequencies from geostationary orbit positions for the transmission of broadcasting-satellite services to all Member States of the ITU
- ▲ Similarly, RR Appendix **30B** was designed to provide a guarantee of access to all Member States of the ITU to fixed-satellite service spectrum allocations for use from orbital positions on the geostationary orbit. Within this Plan, there is 1 600 MHz of spectrum (2 x 800) for each Member State of the ITU
- ▲ WP 4A is continuously working on improving the efficient use of the GSO spectrum resource
 - Earth station off-axis antenna gain patterns
 - Implementation and continued study of Coordination Arc
 - Specification of earth station off-axis power levels
 - Adaptive power control standards
 - Sharing methodologies
 - Updates on service requirements for newer digital modulation techniques
- ▲ Resolution 553 (WRC-12) on “Additional regulatory measures for broadcasting-satellite networks in the band 21.4-22 GHz in Regions 1 and 3 for the enhancement of equitable access to this band”

Opportunities for new entries

Number of operators 1964 - 2016



Opportunities for new entries

- ▲ Although the number of operators continues to increase, there is a recognition of the fact that the unplanned C- and Ku-band are the most congested and heavily used frequency bands as of today
- ▲ In order not to complicate this congestion further, two important aspects need to be considered:
 - ▲ For C-band
 - Deployment of IMT-Advanced as per WRC-15 Agenda item 1.1 would constrain future FSS earth stations from being deployed, and therefore any identification of IMT in any part of the C-band will lead to further congestion of this satellite band.
 - The international community needs to recognize that ensuring access to the orbital/spectrum resource for satellite services, means that the existing use of the FSS should not be tempered with
 - ▲ For Ku-band
 - One means to alleviate some of the congestion in the unplanned Ku-band is identify frequency bands for additional allocation in R1 (uplink and downlink) and in Regions 2 and 3 (uplink), as per WRC-15 agenda item 1.6

Incentives for optimal spectrum/orbit use

- ▲ Whether one is a “big” operator, or “small” operator, we all have to abide by the rules laid out in the RR Article 9 and 11 for coordination in the unplanned bands, and we all face a large number of coordination requirements when submitting a filing
- ▲ However, operators have learned to approach the coordination by focusing on the satellite networks that are closest, and which have real (planned) operations
- ▲ In any case, the large number of (commercial) communication satellites in geostationary orbit means that the current system, which has been developed and matured over many years, has been working
- ▲ Studies in the ITU are on-going as to whether further improvements can be made, and it is too early to provide any conclusions
- ▲ SES is supportive of these technical and regulatory studies, but would not be supportive of any non-regulatory or non-technical “incentive” to be implemented
 - There is no evidence that such incentives will achieve the desired result
 - Any non-regulatory or non-technical incentives would be outside of the scope of ITU-R

In Summary...

- ▲ Cleaning up MIFR
 - *Let's continue!*
- ▲ Improve the regulations
 - *Let's continue!*
- ▲ Opportunities for new entry
 - *It's there already! Don't make it worse!*
- ▲ Incentives for optimal spectrum/orbit use
 - *Let's keep it technical/regulatory!*



Thank you!

