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# Rising Challenges in Radio Frequency and Orbital Resource Management from a French perspective

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Thomas Welter
Head of regulatory affairs and orbit/spectrum department
Agence Nationale des Fréquences
FRANCE

National challenges

# 01 | **Number of new operators and experience**

- The number of private satellite operators is increasing quickly since 2020.
- Not all new satellite operators are experienced in spectrum management.
- The French law foresees that “the applicant shall provide the National Frequency Agency with the technical assistance necessary to implement the provisions of the Radio Regulations.”
- In practice, helping “new space” companies to get up to date with the ITU procedures is a very time consuming process.
- How do other administrations help their « new space » companies ?

International challenges

# 02 | **ITU treatment time and coordination process**

- The treatment time of **coordination requests** is currently **11.6 months** (status April 2026), down from 16.0 months (June 2025). The regulatory time imit under No. 9.38 is 4 months.

- The treatment time of **advanced publications** is currently **0.7 months** (April 2026), down from 4.4 months (June 2025). The regulatory time limit under No. 9.2B is 2 months.

- Another **4 months** need to be added for the period of comments from other administrations, before the coordination / consultation process can start.

- The development cycle of « new space » projects is very short. The time between submission of the filing and the launch is often less than a year, sometimes a couple of months.

- What happens when satellites are launched when the coordination / consultation process is not finished or, in some cases, has not even yet started ?

International challenges

# 03 | **Avoiding interference / space operations**

- In one case, a French satellite and a foreign satellite were launched on the same rocket.
- Both satellites had exactly the same frequencies for telecommand and control (TT&C). The associated Earth stations were also relatively close.
- Neither satellite had propulsion. Thus they stayed very close to each other after the separation from the rocket.
- In order to prevent interference, both administrations had to sign an urgent satellite agreement enabling both satellites to transmit under certain conditions for the first 60 calendar days from the launch date (until they were sufficiently separated in space).
- Have other administrations encountered similar difficulties ?

# 04 | **Challenges for in-orbit services / sustainability**

- More and more « new space » companies are offering in-orbit services, including the inspection, repairing or refueling of customer spacecraft.

- Such missions require :

  – frequent orbit changes;
  – space-based radars for close approaches, or contact between spacecraft
  – guaranteed interference-free transmissions for mission-critical operations

- Are the Radio Regulations, its frequency allocation table (art. 5) and coordination / notification procedures (art. 9 & 11), sufficiently flexible for such operations ?

- Are the new space operators choosing the right frequencies for the mission-critical operations ? (quite often off-the-shelf equipment in the S-band and X-band for TT&C and Earth observation).

International challenges

# 05 | **Identification of space objects / sustainability**

- 46.000 tracked large objects in space (>10cm), and around 16.000 functioning operational satellites. SSA under the responsibility of COPUOS/UNOOSA.

- During the full life cycle of a satellite, but particularly during the launch and early orbit phase (LEOP), it is a critical issue to identify and track the newly launched spacecraft to ensure reliable operations and therefore space safety and sustainability. Res.74 ask to provide guidance focusing on the radio-frequency spectrum and associated satellite-orbit resources used by space services.

- So-called active radiocommunication tracking aids may be beneficial to support the trackability of small objects via passive orbit determination as well as serving information about the object like identifiers, operational status, *etc.*

- A collision in space between two space objects, or an uncontrolled return on Earth of a space object (collision with an aircraft or human activity on Earth) can have disastrous consequences.

- Certainty about the objects involved will help to solve the legal consequences. Shall the international community work on mandatory / non mandatory standards for space object identification?

International challenges

# 06 | **Identification of transmissions**

- When interference occurs, it is important to identify the administration responsible for those transmissions.
  - In case the interference comes from the ground, it is relatively easy to identify the responsible administration through geolocation techniques. The responsible administration is the one on the territory of which the interfering station is located.
  - In case the interference comes from space, it may be harder to find out which administration is responsible, especially when the interference comes from non-geostationnary satellites.

- According to the ITU Handbook on Spectrum monitoring, identification of space station emissions is generally based on the comparison of the measured emission and orbital characteristics with those found in the reference database and documentation. Reference characteristics consist of a list of the emission and orbital characteristics of all space stations, which have been published or made available to the monitoring service. The unknown station is identified by the iterative elimination of those stations, which do not correspond to the measured characteristics. This is a very time consuming process.

- Would identification signals as foreseen in article 19 of the Radio Regulations be feasible and helpful to identify interferers ?

International challenges

# 07 | **Multiple notifying administrations**

- An increasing number of satellite operators is using multiple notifying administrations for the same system.
- This creates difficulties to identify the administration which is really responsible for the system.
- This difficulty has been raised in the work of WP 4A.
- In case of interference it is important to know to which administration to write to.
- In such cases, French administration exchanges with other administrations to clarify which administrations is responsible at any given time through bilateral agreements with the other administration. However such agreements are not visible to third parties.
- Is there similar practice by other administrations ?

# 08 | **Foreign filings on a national satellite and vice-versa**

- More and more often, satellites include hosted payloads from several administrations, ie also administrations different from the satellite administrations.

- “WRC-12 recognizes that an administration can bring into use, or continue the use of, frequency assignments for one of its satellite networks by using a space station which is under the responsibility of another administration or intergovernmental organization, provided that this latter administration or intergovernmental organization, after having been informed, does not object, within 90 days from the date of receipt of information, to the use of this space station for such purposes.” (circular letter CR/333 of 2 May 2012).

- How administrations ensure that they have the information from operators of the nationality of the BiU/BBiU satellites?

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## Agence nationale des fréquences

T. +33 (0)1 45 18 72 72
F. +33 (0)1 45 18 73 00

78, avenue du Général de Gaulle
94707 MAISONS-ALFORT CEDEX

**www.anfr.fr**

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