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INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY

ICAO WRC-27 Preparatory Workshop

Agenda item 1.16 :

To consider studies on the technical and regulatory provisions **necessary to protect radio astronomy operating in specific Radio Quiet Zones (RQZs),** and in frequency bands allocated to the radio astronomy service on a primary basis globally, **from** aggregate radio-frequency **interference caused by non-geostationary-satellite orbit systems**, in accordance with Resolution 681 (WRC-23).

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Workshop on ITU World Radiocommunication Conference 2027
for AFI Region,
(Dakar, Senegal, 2-3 March 2026)

Presentation Overview

01 **Background**

02 **Potential Issues**

03 **ICAO Position**

04 **Conclusion**

Background

Radio Astronomy

The branch of astronomy concerned with radio emissions from celestial objects.

Main sites

- the Square Kilometre Array Observatory in South Africa
- The Atacama Large Millimeter/submillimeter Array (ALMA) in Chile

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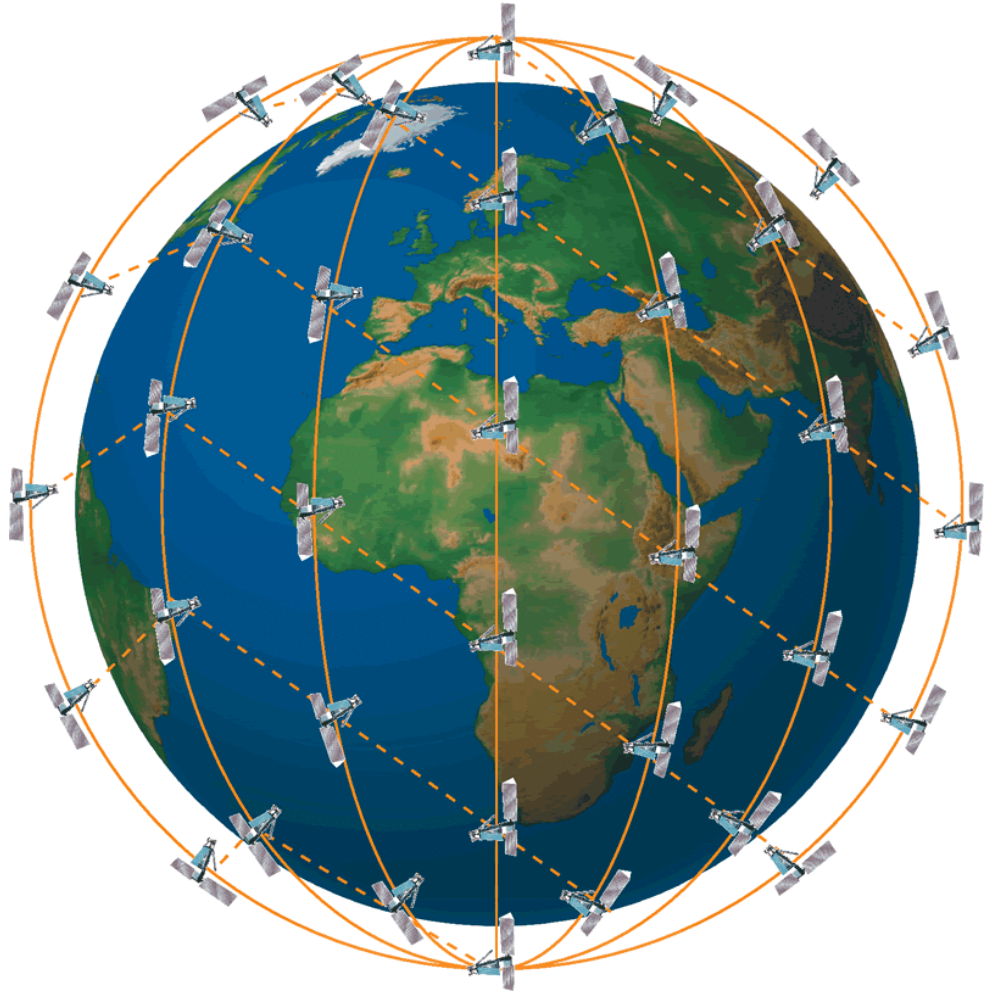
Background

non-geostationary-satellite

NGSO, or non-geostationary satellite orbit, refers to those satellites which occupy either a low-earth orbit (LEO) or medium-earth orbit. (MEO). Unlike geostationary (GSO) satellites, LEO (and MEO) satellites do not occupy a stationary position but **move** in relation to the Earth



since then they are 6300 above our heads

Background

Artificial satellites above our head

- 1957 : Sputnik 1, first artificial satellite
- 1962 : Telstar first telecommunications satellite
- 1990 : 500 satellites
- 2010 : 1000 satellites
- 2018 : more than 2000
- 2019 : first Starlink satellite, since at least 6,700 are over our heads, with the objective of 12,000
- 06 sept 2024 : 10,345 satellites were active
- And more mega-constellations are expected

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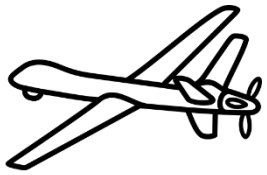
This is causing concern in the astronomical community

Background

Civil aviation is a user of non-GSO constellations when operated in the AMS(R)S and RNSS, and is expected to grow in the coming years (Space Based VHF and C2 Link),



Potential Issues

Resolution 681 (WRC-23) asks for studies on how the aggregate interference from unwanted emissions from multiple non-GSO satellite systems operating in the adjacent and **nearby frequency bands** to those in Table 1 of Resolution 681 (WRC-23) affect RAS.

- “nearby frequency bands” are not defined and “nearby” is subjective.

Resolution 681 (WRC-23) also asks to consider potential solutions for **characterising RQZ** in the Radio Regulations and/or in a WRC resolution.

- This action identifies no frequency band and could included any frequency band including those used by Civil Aviation.

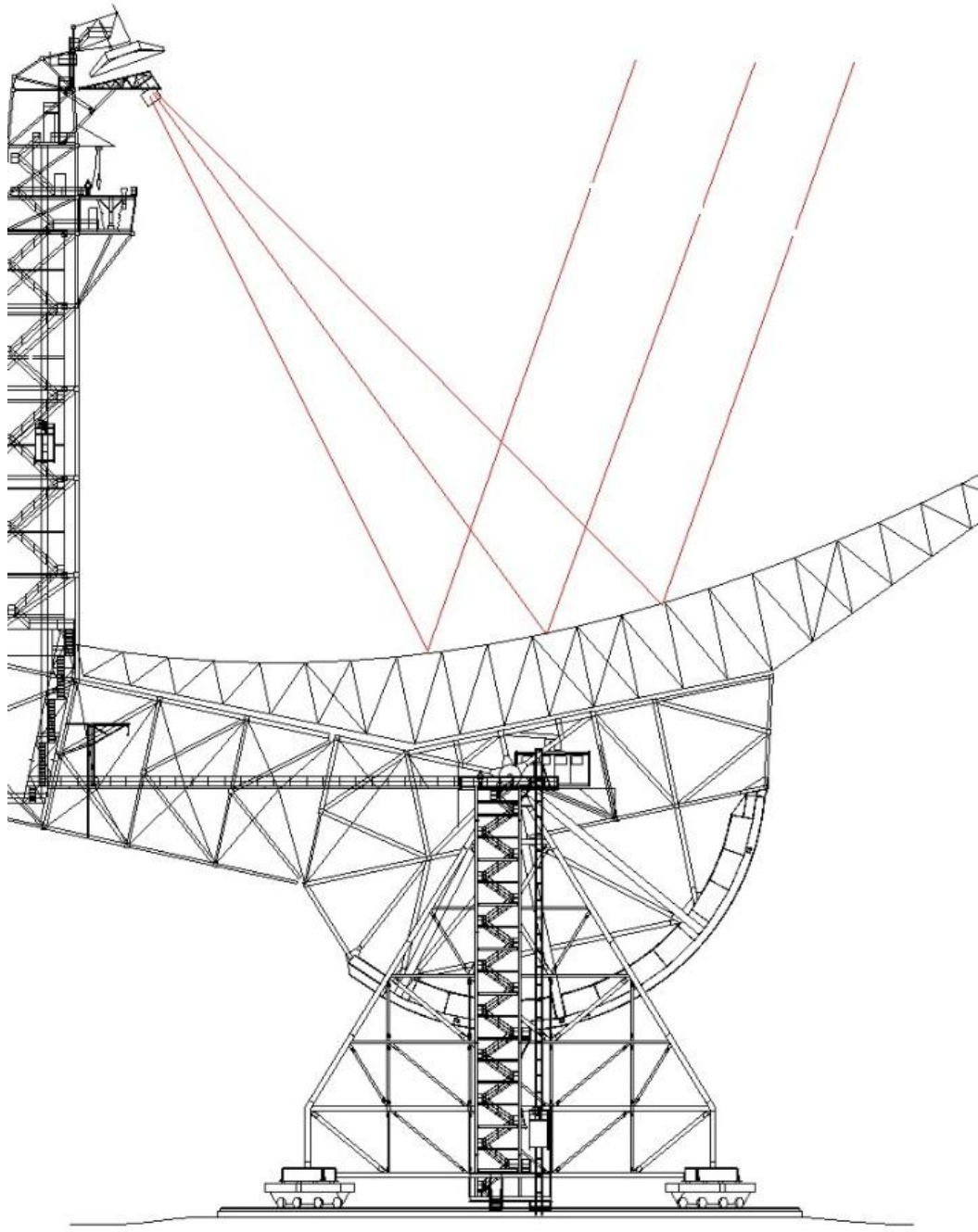
ICAO Position

To ensure that any measures as part of this agenda item related to RQZs would not impose operational and development constraints on non-GSO satellite systems operating in AMS(R)S and RNSS frequency bands.

Conclusion

Although the term ‘nearby’ is subjective, the aeronautical frequency bands are relatively far from those identified in this agenda item. But we must remain vigilant.

The real threat could come from “to consider […] potential solutions to characterize the RQZs”. This ‘invite’ is very open and an uncontrolled oucome could jeopardise the use of all aviation frequency bands in certain regions of the globe.



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Question ?

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Thank You

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