



Resolution SFCG 23-2R1

**USE OF SYNTHETIC APERTURE RADARS
IN THE BAND 5250-5570 MHz**

The SFCG

CONSIDERING

- a) that synthetic aperture radars on board spacecraft are an increasingly important tool for radar imaging of the Earth's surface;
- b) that the C-band (near 5 GHz) is one of the most important bands for radar imaging;
- c) that the band 5250 – 5570 MHz is allocated to the Earth exploration-satellite service (active) and space research service (active) on a primary basis;
- d) that WRC-03 decided to allocate the bands 5250 – 5350 MHz and 5470 – 5725 MHz to the mobile service in the bands for implementation of wireless access systems, including RLANs;
- e) that WRC-03 decided to allocate the band 5250 – 5350 to the fixed service for fixed wireless access (FWA) applications in certain administrations in ITU Region 3;
- f) that WRC-03 decided to upgrade the allocation to the radiolocation service from secondary to primary in the band 5350 – 5650 MHz;
- g) that operation by active sensors in bands allocated to the radiolocation, radionavigation and aeronautical radionavigation services has proven to be feasible both from theoretical studies and from many years of operational experience;
- h) that studies have shown that outdoor usage of even one wireless access system operating in the mobile service can cause interference to narrowband spaceborne SARs in the band 5250-5350 MHz;
- i) that while WRC-03 decided that operation of wireless access systems in the mobile service in the band 5250-5350 MHz should be predominantly indoor, outdoor operation of some systems would still be possible and it is very difficult for administrations to prevent deployments of these outdoor wireless access systems;

- j) that taking into account considering i) above, the relevant protection of EESS (active), particularly space-borne Synthetic Aperture Radar (SAR), is not ensured in the 5250-5350 MHz band;
- k) that the “other mitigation techniques” allowed by WRC-03 and in *resolves* 5 of Resolution 229 (Rev WRC-12) as possible alternative to the limitations to be applied on an individual administration basis to RLAN in the band 5 250-5 350 MHz have still not been defined by any administrations;
- l) that taking into account considering k) above, wireless access system mitigation techniques that would afford the necessary protection to EESS (active) operations in the 5250 – 5350 MHz band have not been found and appear unlikely to ever be found;
- m) that the technical conditions related to wireless access systems in the band 5 470-5 570 MHz are not suitable for compatibility with SAR systems of the EESS (active) service;
- n) that taking into account j), l) and m) and to avoid any potential interference from RLAN, the band 5 350-5 470 MHz has been selected by a number of space agencies to operate narrowband EESS (active) SAR instruments (such as the ESA Sentinel-1 mission (3 satellites), the Canadian missions Radarsat-2 and the upcoming Radarsat-RCM (3 satellites) and the Chinese mission HY-2);
- o) that all the SFCG member agencies benefit from the measurements of these instruments even if they are not operating sensors in these bands,

RESOLVES

1. that member agencies support regulatory actions within their administrations that limit wireless access systems in the band 5250 – 5350 MHz to indoor use only, to the maximum extent practicable in an effort to protect the use of this band for narrowband sensors;
2. that member agencies report any instances of interference in the bands 5250 – 5350 and 5470 – 5570 MHz to the SFCG;
3. that member agencies advocate within their administrations to avoid any allocation to wireless access systems (indoor or outdoor) in the band 5350 – 5470 MHz for the purpose of maintaining the highest reliability and availability of EESS (active) SAR measurements in this band.