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Satellite Applications for Sustainability and Climate (3)

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SHAPING SATELLITE APPLICATIONS AND SUSTAINABILITY AND CLIMATE THROUGH
WORLD RADIOCOMMUNICATION CONFERENCE 2023 (WRC-23)

Abstract

World Radiocommunication Conference 2023 (WRC-23) holds paramount significance in shaping technological evolution of the landscape of global telecommunications for satellite applications and operations. Among the main key decisions was the allocation of new frequency band to Earth Stations in Motion (ESIMs) to deliver high-speed broadband onboard aircraft, vessels, trains, and vehicles. Regarding research and exploration in space, a new frequency band was allocated for Earth exploration satellite service to enable ice measurements for better weather forecasting and climate monitoring. Opening a new frequency band for the aviation industry for aeronautical mobile satellite service will enable bi-directional communications via non-geostationary satellite systems for pilots and air traffic controllers everywhere including over oceanic and remote areas. Usage of satellite-to-satellite link made available especially for low-latency applications such as weather forecasting and disaster risk reduction was agreed. A new resolution has been adopted for recognition of importance of space weather observation by space weather sensors as part of the meteorological aid service to observe weather phenomena including solar flares, solar radiation and geomagnetic storms which can interfere with radiocommunication services including satellites, mobile phone services and navigation systems. The outcomes of this conference resonate across the satellite industry, influencing technological advancements and operational protocols for these diverse satellite applications. The paper explores how these decisions contribute to global satellite communication and efforts in environmental monitoring, disaster response, and scientific research, emphasizing the role of WRCs in coordinating satellite orbits to prevent interference and optimize communication capabilities with the international regulatory procedures.