# WRC-19: Driving the growth of satellite broadband

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ireless communications technologies are advancing at an unparalleled rate. New innovations have enabled impressive broadband speeds and extended reach, yet one technology stands out in its ability to bring connectivity to all: broadband satellite networks.

Satellite Internet services have come a long way over the last 20 years. Operators used to repurpose satellites that were not originally designed for Internet broadband, resulting in slow and expensive services compared to traditional wired Internet. Spurred-on by customer demand, satellite operators have invested in cutting-edge high-throughput satellites which increase Internet capacities by hundreds of orders of magnitude while greatly lowering the cost per megabyte. Internet speeds and prices are now comparable to terrestrial services, but with ubiquitous satellite coverage. Previously unserved and underserved communities, which land-based networks had deemed "not viable", can now be fully connected.



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Satellite companies are also leading innovation in the communication technology field, developing next-generation powerful, high-throughput Ka-band satellites that increase coverage areas and employ state-of-the-art technologies to provide secure connections to consumers, businesses and governments. These impressive constellations always keep people connected, whether at home, in the office, or on the move.

## WRC-19 – Enabling satellite Internet to bridge the digital divide

The World Radiocommunication Conference (WRC-19) will play an important role in realizing the vision of satellite Internet companies to bridge the digital divide. The Conference is also central for regulators and policy-makers who seek to ensure that essential communication services are made available to their citizens. This year's WRC is no exception, as administrations will make decisions that will have an impact on closing the digital connectivity gap. A handful of critical agenda items (AIs) will determine the level and reach of next-generation innovation and the success of future satellite networks and their goal of universal and affordable Internet coverage.

### Agenda item 1.5 – a framework for earth stations in motion

WRC-19 agenda item 1.5, which considers a framework for earth stations in motion (ESIM), will be paramount in determining the future of satellite-broadband's reach and scale. At the last WRC, in 2015, the conference adopted a framework to allow ESIM to communicate with geostationary (GSO) fixed-satellite service (FSS) networks in the 19.7-20.2 GHz and 29.5-30 GHz bands. WRC-15 adopted this agenda item to consider expansion of the frequency range in which ESIM can communicate to include the 18 GHz (17.7-19.7 GHz) and 28 GHz (27.5-29.5 GHz) bands at WRC-19.

The proposals being made seek to streamline the process to deploy aeronautical, maritime and land ESIM enabling connectivity for first responders, law enforcement and passengers on various modems of travel, including transport and shipping vessels, trains, airplanes and automobiles.

Ka-band satellite applications are already operating successfully on planes today, but regulations are fractured and restrictive. Expanding the use of these technologies is a natural next step in the evolution of mobile connectivity that will further enable communications and business in transit.

### Agenda item 1.6 – regulatory guidance for little-developed bands

As satellite network design evolves to deliver true broadband connectivity, there is a corresponding need for additional spectrum to satisfy this demand. Under agenda item 1.6, the Conference will seek to develop regulatory procedures defining how non-GSO and GSO satellite networks share Q- and V-band fixed-satellite service spectrum between 37.5 GHz and 51.4 GHz. These bands are presently little-developed, but the availability of clear regulatory guidance will ensure that all advantages of satellite communication networks are realized.

### Setting the agenda items for consideration at WRC-23

WRC-19 must also set the future agenda items for consideration at WRC-23, and initiate the studies needed. One such proposal is to examine the compatibility of fixed-satellite systems with terrestrial services allocated in the so-called "E-band" between 71-76 GHz and 81-86 GHz. Access to the E-band spectrum by fixed-satellite services would further bolster the broadband capacity delivered by satellite networks, improve connectivity speeds to end users, and position satellite services as an alternative or complementary platform to terrestrial networks for big-data applications.

In the context of setting future agenda items it is worth noting that the current satellite spectrum at the Ka-band has been targeted by the International Mobile Telecommunications (IMT) community. For the continued development of satellite broadband, Ka-band satellite spectrum must be protected from incursions by the IMT community.

#### Agenda item 7 – improvements to regulatory procedures for satellite services

Finally, WRC-19 will consider improvements to the regulatory procedures for deploying satellite services, under agenda item 7. Decisions made under this agenda item result in reduced regulatory burdens on satellite operators and increased regulatory certainty, underpinning the continued investment in this fast-growing sector. Innovation is being empowered by digital solutions supported by a critical backbone – the Internet. Connecting the unconnected to the global marketplace is essential to drive inclusive and sustainable economic growth where ideas, goods and services are shared with ease and efficiency. Satellite Internet is at the forefront of this innovation lifecycle, aiming to provide Internet to anyone, anywhere. The upcoming WRC-19 plays a critical role in realizing this vision, and must protect satellite broadband spectrum for satellite innovations and services.

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