



Direct-to-Device

The Future of Ubiquitous Connectivity





Global Association Representing the Entire Satellite Industry

GSOA provides a platform for collaboration between member companies involved in the satellite ecosystem globally and a unified voice for the sector



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Ground Networks have hit an economic wall

96% global population currently covered by mobile networks, these population occupies **20%** of landmass

to reach just **99%** of the population, terrestrial infrastructure would need to nearly double to **39%** of landmass

Ubiquity (Expanding Reach)

Delivers true 100% geographical coverage, bridging the digital divide for the unconnected 4% and ultra-remote areas without building physical cell tower

D2D Brings...

Economics (Zero Ground Infrastructure)

Eliminates the logistical and financial strain of deploying backhaul, fiber, or Base Stations in unpopulated or harsh geographical environment

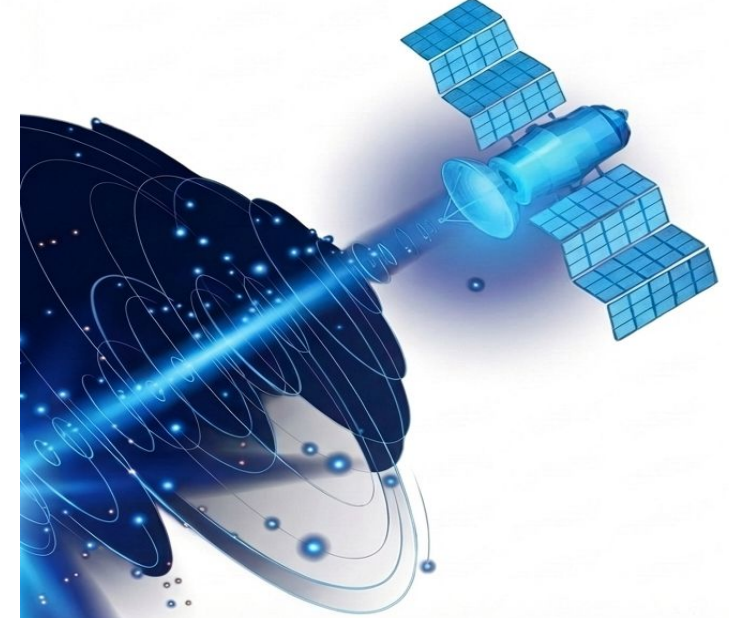
Capability (Critical Applications)

Enables life-saving emergency SOS, supports global IoT applications (agriculture, logistics, maritime) and seamless off grid connectivity



One Path changes the satellite:

- D2D via Terrestrial IMT Spectrum
- Connect to unmodified off the shelf devices
- Satellites act as “cell towers in space”
- Enable mass market access
- Phased roll out from SMS to full voice and data
- Complex interference management
- Requiring new frameworks (like FCC’s SCS rules)
- Active studies at WRC-27 to prevent cross border interference



One Path changes the smartphone:

- D2D via MSS Spectrum (L- and S-band)
- Leverages 3GPP NTN standard spec (rel 17 and later)
- Requires smartphone with latest chips & antennas
- Driven by OEMs
- Focuses on high reliability applications (Emergency messaging)
- Globally harmonised MSS spectrum (L- and S- band)
- Potential for higher bandwidth with additional MSS spectrum at WRC-27
- Stable regulatory framework with low interference to other services



To Bring D2D Successfully to Consumers:

1. Technology alignment through standardisation across satellite and mobile ecosystems;
2. Spectrum access, including licensing models and coexistence frameworks;
3. And international collaboration, especially through WRC-27 and beyond.



Thank You!

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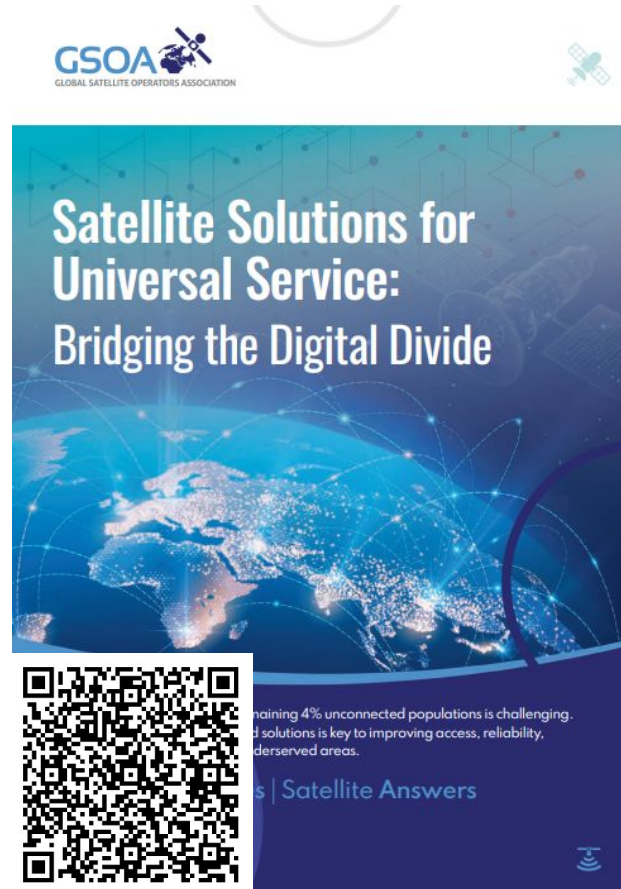
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