INTUITION

INTELLIGENT MULTI-ORBIT SUPPORT

DELIVER THE RIGHT SERVICES FOR EVERY APPLICATION ON EVERY ORBIT

With lowered in launch cost and the proliferation of NGSO constellations, success as a service provider depends on interoperability between networks and across diverse constellations into one infrastructure that can manage them all.

GEO and non-GEO satellites each have their own distinct advantages, and most large GEO operators are in the process of acquiring NGSO capacity and coverage. When one orbit can't meet all the customer requirements and a multi-orbit solution is ideal, operators need a ground system to handle this kind of complex operation and to provide critical capabilities that make seamless multi-orbit operations possible, ranging from optimized beam switching, cross-orbit bandwidth management, and orchestration of radio resources and end-to-end services.

The move towards an orbit-agnostic, multi-orbit ground segment will open doors to new opportunity and revenue for operators savvy enough to adopt a ground system that can complement their innovation every step of the way.

ARE YOU PREPARED FOR A MULTI-ORBIT FUTURE?

As your multi-orbit journey unfolds, let Intuition support you with the evolving ground segment capabilities necessary to achieve success, including:

Optimized Beam, Bandwidth Management and Satellite Switching
Intuition builds on iDirect's industry-best features for advanced mobility including fastest optimized beam switching, fast reacquisition and blockage mitigation, spread spectrum, and load balancing, plus high data throughput and efficiency.

Global Bandwidth Management
This core platform capability enables intelligent bandwidth pooling and partitioning across the operator's entire global network which may consist of many satellites across different orbits and numerous beams that are dynamically created and resized. Operators can allocate bandwidth within arbitrary boundaries without regard to beam footprints to meet demanding service level agreements across all customers. GBWM is designed to manage contention and prioritization and maintain QoS parameters, as well as roaming capabilities between service provider networks.

Flexible Hardware and Software with Software-Defined Capabilities
Operators need to easily interoperate via multi-orbit and multi-access functions including hosting and switching between multiple waveforms and roaming across different service provider networks.

Advanced Waveforms

These enable the return links to be self-organized in response to rapidly changing beam capacity and terminal mix without external or manual intervention.

Tracking Algorithm Innovation

Unlike GEO, tracking non-GEO satellites requires the computation of their location and velocity in real time. However, tracking each orbit with different algorithm will incur additional delay in transition and convergence. A single algorithm to track both GEO and non-GEO satellites enables seamless switching across different constellations and is compatible with GEO infrastructure.

New API-driven NMS and APIs for Orchestration

Coordinating the operations and resource usage of multi-orbit constellations will require both the space and ground segments to be completely in sync in executing configuration changes and handovers. APIs to facilitate service and resource orchestration are critical to future ground segment implementations. When combined with our new API-driven NMS, we deliver comprehensive alignment across applications.

Interoperability

Collaboration with partners and industry groups on requirements will enable all parties to leverage each other's respective strengths. Developments--such as a common form factor for the ability to host multiple waveforms, switch constellations and orbits, and roam across different service provider networks--will rely on interoperability to be of maximum benefit.

MULTI-ORBIT PROOF OF CONCEPT

iDirect has demonstrated the fully integrated network operation using satellites from two orbits: HEO and GEO. The platform accounted for variations in orbital paths and was able to compute satellite location at any point without need of correction from remote terminals. This single tracking solution can support multiple orbit types (GEO, HEO, GIO, MEO, LEO). This streamlined approach is a major building block to simplify operations and enable seamless switching across different constellations.

BUILD YOUR PATH TO MULTI-ORBIT SERVICES

At iDirect, we see a future where operators and service providers will demand their satcom terminals to roam across multi-orbit networks, utilizing universal modems and multiple providers. Intuition – built around standards and designed for collaboration with an open ecosystem of operators and terminal providers – is laying the path ahead.