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Inmarsat, Intelsat Go Tit for Tat on Competing Mobile Broadband Claims

By Peter B. de Selding

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PARIS — Mobile satellite services operator Inmarsat on Oct. 9 left no doubt about where it sees the biggest threat to its Global Xpress Ka-band mobile broadband service: Intelsat's multisatellite global Ku-band mobile business.

In presentations to investors, Inmarsat Global Xpress officials made numerous comparisons with Intelsat's Broadband Mobility platform, which features 10 mobile beams on seven satellites.

These beams will be overlaid by the Intelsat Epic satellites, which will provide multiple spot beams in C- and Ku-band that, according to Intelsat, offer throughput that is equal to Ka-band. The first Epic satellite, Intelsat 29e, has been ordered and is scheduled for launch in 2015 over the Atlantic Ocean region.

Intelsat has booked orders for the mobility offer from Panasonic Avionics for aeronautical broadband to commercial jetliners, Harris CapRock for government customers, and MTN for maritime markets.

Inmarsat officials made a series of claims regarding Global Xpress' advantages over Intelsat's mobile network. In response to *Space News* inquiries, Washington- and Luxembourg-based Intelsat responded point by point.

The general claim made by Inmarsat is that Ka-band — less crowded in many parts of the orbital arc — is inherently superior to, and less expensive than, Ku-band for broadband applications and has been given lower-priority access to mobile applications by international frequency regulators.

Intelsat rejected that claim:

"This is just simply not true. A bit delivered is a bit delivered, regardless of spectrum. The efficiency of the design (i.e. more bits per hertz) is a major driver of cost. Not to mention being able to use existing hardware and the maintenance and operations aspects."

Panasonic made similar points in a recent [paper comparing Ku- and Ka-band for aeronautical applications](#).

A second claim made by Inmarsat is that Intelsat's network of 10 or more satellites is a patchwork of beams that will force customers to suffer coverage outages as their aircraft or seagoing vessels leave one beam and connect to another.

As a single network, Global Xpress offers smooth handovers during which users will be without coverage for less than 45 seconds, Inmarsat said. For Intelsat's Ku-band network, Inmarsat said, outages of five to 60 minutes may be expected.

Intelsat's response:

"It is not accurate to say that handoffs will last for five minutes. Does anyone really think that commercially oriented customers like [aeronautical satellite service provider] Gogo or Panasonic, or government ISR [intelligence, surveillance and reconnaissance] operations, would find a five-minute handoff to be acceptable? We expect handoffs between beams to be roughly 90 seconds. Intelsat General conducted several very demanding customer tests that

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achieved handoffs as short as 60 seconds. So the range is 60-90 seconds. And don't forget, there are fewer handoffs today with Intelsat's wide Ku beams. Comparatively, it would seem there would be more handoffs on [Global Xpress] given the smaller [spot-beam] sizes than on Intelsat's existing wide Ku beams."

Intelsat said that for its Epic satellites, handoff times should be about the same as for Global Xpress given that the two systems have equivalent spot-beam diameters. New ground hardware suggests moving from one Intelsat Epic satellite to another should take no longer than five seconds, Intelsat said.

In a second comparison with Intelsat's global Ku-band mobility offer, Inmarsat said most U.S. government/military mobile platforms, manned and unmanned, are moving to Ka-band. Only certain legacy systems are staying in Ku-band. Inmarsat pointed to the 10-satellite Wideband Global Satcom (WGS) Ka-band system being launched by the U.S. Department of Defense.

Intelsat's response:

"Many systems are remaining with Ku-band. There are timing issues that may delay many transitions as well. The U.S. government has expressed to us that they intend to use Ku-band well into this decade and beyond. It is our understanding that none of the Reapers [unmanned aerial vehicles, or UAVs] will be retro-fitted with Ka-band terminals, and that the customer has decided to stick with Ku-band for those platforms.

"[S]ome of the Global Hawks [larger unmanned aerial vehicles], like the Navy BAMS systems, will be built to work both Ku- and Ka-band. Currently, there is not an affordable Ka-band system to put on UAVs, and the government has stopped investing in this development.

"The WGS system was not built to support UAVs — it was designed over 10 years ago when UAVs were in their infancy. WGS is the Army's network, and is primarily used for Ka- & X-band ground networks. WGS does not currently support UAVs because the bandwidth demands are far greater than WGS was designed to accommodate. Our customers indicate that wide beams are preferred for ISR operations for obvious reasons — but wide beams are not part of the WGS design, and results in a preference in some cases for traditional Ku-band."

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