

Via Satellite

C-Band Fight: To the Victor Go the Spoils **February 1, 2008**

For a while, the satellite industry's battle to retain [C-band](#) spectrum seemed to be a losing proposition, as well-financed telecommunications players were lobbying hard to gain access to the bandwidth. However, the satellite industry found its collective voice and won the fight for the valuable spectrum. More importantly, the effort seems to have provided a wake-up call, as satellite players have learned they must remain vigilant in order to protect their access to bandwidth and be prepared for similar efforts by potential competitors in the future.

When satellite players look at 2007, it will be remembered as the year the industry stepped forward and won a huge spectrum battle against the telecommunications industry. Events at the World Radiocommunications Conference (WRC-07) concerning access to C-band spectrum went overwhelmingly in the favor of the satellite industry.

Agenda Item 1.4 looked into whether part of C-band spectrum should be used for advanced wireless services, but the decision ruled against a global C-band identification for IMT (international mobile telecommunications) services, including WiMax, with restrictions and protections for satellite services also placed within the band. "The WRC-07 outcome was everything that the industry could have desired," says Robert Bell, executive director, World Teleport Association. "The risk was large: that C- and extended C-bands would be overwhelmed by terrestrial interference, disrupting vital services around the world, creating new capacity shortages and forcing the industry to adapt. With their vote for 'No Change,' the national regulators showed their understanding of the critical role these bands play in entertainment, public safety, security and commerce."

Some believe this victory was achieved in the face of daunting odds. "When the C-band spectrum battle really began heating up, many believed that the satellite industry had no chance standing up against such big telecom players," says David Hartshorn, secretary general of the Global VSAT Forum said. "We were facing an industry much, much larger than ours and one that is heavily supported by major players like Nokia, Motorola and Intel, just to name a few. All in all, it was probably the best outcome that we could expect to achieve under the circumstances."

High Stakes

Defeat on the issue ultimately could have led to satellite's ultimate withdrawal from the entire band. "Say in the worst case, the band had been opened for unregulated IMT use, we, over time, would have had to have abandoned the band," says Robert Bednarek, CEO, SES News Skies. "There were some very well done technical studies that showed that if you had a terrestrial transmitter operating in the C-band satellite frequency, you were unable to receive the satellite's signals at Earth stations in the vicinity of such a transmitter. If you extrapolate that across the whole satellite C-band allocation, you are talking about hundreds of thousands of dishes being knocked out of action. Theoretically, this would have been replaced by a fairly undefined terrestrial service. That would have been a complete disaster, not only for the satellite industry, but for all of the users and customers."

By all accounts, it took a significant collective effort to keep terrestrial services from gaining access to C-band. Kalpak Gude, vice president of regulatory affairs at Intelsat says he was surprised by such a positive income and admits that the satellite industry had not "fully appreciated the risks that they were facing. ... That was clearly our fault. When we started to

get concerned and started to notice that there was some traction in the argument and the level of effort coming from the IMT community, we began putting on a strong effort of our own to show that we are not sitting on 800 megahertz of spectrum that is under-utilized,” he says. “The IMT community at that point, two to three years ago, was arguing that C-band was old technology, it was not very significantly used and the satellite industry was moving toward Ku-/Ka-band, so no harm, no foul. Our effort was to show that this was a misinterpretation.”

Those concerted efforts have bought the industry together, says Hartshorn, who paints the battle as a David versus Goliath struggle. “We were surprised to prevail against seemingly overwhelming odds, but on reflection, what we lacked in sheer size we more than made up for with support from the user community, from governments and — it should be noted — from a coordinated effort by the entire satellite communications community,” he says. “Individual companies chipped in, including operators, system integrators, manufacturers ... even the world’s leading launch services provider — Arianespace — made a major contribution.”

Jones Killimbe, CEO of African satellite operator, Rascom (Regional African Satellite Communications Organization), says he was “not surprised” the satellite industry had achieved such a favorable outcome. “The satellite industry can feel satisfied that we were able to safeguard the interests of the C-band users, but we were fighting for a legitimate cause because C-band is very important for the satellite industry which has been around for several decades and will be around for generations to come. The satellite industry achieved what I would call the best possible outcome at WRC-07.”

Such a decisive victory also was important in terms of future spectrum battles, says Hartshorn. “Much has been said about the consequences for the satellite industry had WRC not been as successful as it was,” he says. “I would simply add that this battle was not just about C-band; it was about the viability and role of satellite communications in general and, to that extent, the future of all satellite spectrum hung in the balance: L, X, Ku, Ka, S. You name it. Had we lost the C-band battle, other satcom bands would have been seen as soft targets by terrestrial interests.”

Summary of Exception Footnotes from WRC-07

Frequency Band (MHz)	ITU Region 1	ITU Region 2	ITU Region 3
3400 to 3500		11 Central and South American countries have allocated this part of the band on a primary basis to mobile.	Japan, Korea, Pakistan China, India, Bangladesh, Iran, New Zealand, Singapore and the French colonies have allocated this band to mobile on a primary basis and also have identified this band for IMT.
3500 to 3600			Korea, Japan, Pakistan China, India, Bangladesh, Iran, New Zealand and the French colonies have allocated this band to mobile on a primary basis and for IMT.
3400 to 3600	About 77 countries have allocated these frequencies on a primary basis to mobile services as well as for IMT.		

SOURCE: SUERG

What Happens Now?

Despite the overall consensus that the industry achieved the best possible outcome, some still remain cautious, pointing out that the decision allows some wiggle room for countries. “The threat has not been totally allayed yet. The footnotes provide special provisions for

controlled IMT deployment in several countries,” says Robert Ames, CEO of the Satellite Users Interference Reduction Group (SUIRG). “I am not sure we can call this a winning situation but more of a global draw. While the results within the [United States] were very positive, this is a global situation, and globally not all countries did as well.”

Gude agrees that while the potential threat has been averted, the satellite industry will need to remain on top of the issue. “The ITU process did not, and really could not, tell them that they are not allowed to deploy in this band,” he says. “What it told them was that this was not an easy band to deploy in. Globally speaking, the message from the ITU was that this was not a band worth harmonizing. What we have seen is that you will have an effort from individual countries to explore deploying in portions of the band, particularly the lower portions of the band. So I think it goes from an international regulatory setting to a domestic regulatory setting in individual countries around the world.”

Simple demand for bandwidth most likely means there will be some countries that try to implement IMT services via C-band, but those efforts will be difficult, officials says. “As long as fixed and mobile terrestrial antennas are blasting signals at each other in the C-band, I see no hope of satellite coexisting with terrestrial users in the same band,” says Bell. “But there is every reason to think that the wireless industry will be able to use available spectrum at higher frequencies to meet their needs and deliver the kind of advanced services we all want. With the resolution of this issue, they also have new regulatory clarity that should allow them to invest with more confidence.”

Industry Momentum

With the decision, satellite operators now can look forward to the future. “There is now some certainty,” says Bednarek. “We, as a satellite industry, can continue to invest in new C-band satellites without the threat of losing these frequencies hanging over our heads and having to make a judgment on that with every new satellite we build. More importantly, our customers and the people that use C-band for this wide diversity of applications can continue to build out their applications, be it for cable video distribution, be it for GSM backhauling which is popular in Africa and some parts of Asia, be it for enterprise networks, banks, oil and gas.”

The outcome means that the environment “is now very stable for satellite deployment,” says Gude. “... I think the market is pretty good in terms of threat from the IMT. The vote is a signal that the market recognizes the importance of maintaining the band for the satellite industry. It was very much a reaffirmation by the international community that this band should be available, virtually unfettered for satellite deployment. In the 3.4 gigahertz to 3.6 gigahertz band however, what has come out of that process is not that satellite should not deploy in the band but rather the satellite industry needs to be more careful and diligent in terms of its deployment plans, particularly in places of the world like Africa or Asia.”

Killimbe believes these events only emphasize the importance of the satellite industry on the global communications landscape. “The satellite industry is not a small player in the world telecommunications industry, and no one would expect financial muscles to prevail over objectivity,” he says. “One can not use financial muscles to kick out the incumbents who still have a huge customer base in the world. IMT 2000 is never here to replace the satellite technology but rather to complement it. The satellite industry is also never here to stop new innovations, unfortunately, the coexistence of the two technologies in the same band is currently not technically feasible.”

But the satellite industry must prepare for more spectrum battles, and the lessons learned during the C-band effort will serve the industry well in the future. “What was a big win is the

way the satellite industry came together in a well-organized lobbying campaign,” says Ames. “To have so many governments, organizations, non-profits and technology companies working together to protect a valuable resource shows the tremendous strength and determination of this industry.”

Bednarek believes there are still lessons for the satellite industry to learn. “I would say while it was IMT this time, spectrum is a very scarce resource, and you are always challenged as a user of spectrum to show that you are making the best possible public use and having the highest possible utilization of the spectrum,” he says. “I think it is incumbent upon the satellite industry on a regular basis, and not just when there is an immediate crisis, to make regulators [and] administrators and even our own selves aware of the value of the spectrum and how we are using it at any given time.”

Bottom Line

The satellite industry found its voice, teamed effectively and managed to convince just about everyone that keeping C-band capacity within the industry is vital. But despite the success, lessons do need to be absorbed. While the satellite industry won this time, it may have to do a better job in the future in terms of communicating how it is using spectrum if it is to stave off threats to spectrum, the lifeblood resource of the industry. “It sounds a little strange, but I think process has helped the satellite industry find its voice a little more,” says Bednarek.

While the battle for C-band may have been too close for comfort, the satellite industry emerged victorious and even energized. It must make sure it is never in a position to lose valuable spectrum resources through poor communication.

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