



# Transponder supply

NSR's recent *Global Assessment of Satellite Demand, 3rd. Edition* study indicates that NSS-8 would have added only about 1.6 per cent to the global total of C-band supply and 0.9 per cent to global Ku-band supply if it had been successfully launched.

The explosion of the Sea Launch rocket carrying the NSS-8 satellite in late January 2007 provides an unfortunate yet useful illustration of how individual satellites can impact transponder supply in specific regional markets and how this effect is viewed both by satellite operators and users of commercial satellite capacity. Over the years, NSR has noted all too often that the commercial satellite industry either gives little attention to the issue, simply making general comments like "we have oversupply" or conversely "we have undersupply". Or, one operator in a specific market may state they are seeing "oversupply" while another may claim that the market is experiencing "undersupply". But the reality is that they are referring to internal demand on their fleets and not to the condition of the overall market. NSR has seen over and over again that the issue of "supply" in a specific market has many facets, and "over" or "under" all depend on how one looks at the market in question.

Returning to the NSS-8 failure, research from NSR's recent *Global Assessment of Satellite Demand, 3rd. Edition* study indicates that NSS-8 would have added only about 1.6 per cent to the global total of C-band supply and 0.9 per cent to global Ku-band supply should it have been successfully launched. In key markets addressed by NSS-8 such as South Asia or Sub-Saharan Africa, the supply growth would have been on the order of 2.7 per cent to 3.8 per cent for C-band capacity and 3.7 per cent to 4.5 per cent for Ku-band capacity. Of course, even these numbers are a bit arbitrary because unleased supply can technically be allocated in any proportion to any market covered by a specific satellite footprint.

These numbers also illustrate that the impact in terms of commercial C-band and Ku-band supply of the NSS-8 satellite, or in fact any single commercial satellite, is not very large. The importance of any single satellite on supply in a market is even further diminished when one considers that NSR estimates C-band fill rates in Sub-Saharan Africa were averaging 56 per cent in 2006, and Ku-band fill stood at about 67 per cent. In South Asia, C-band fill rates were about 65 per cent, and Ku-band fill rates were averaging 63 per cent. This implies that unleased capacity stood at roughly four to ten times (depending on the market) the capacity that would have been brought to bear should the NSS-8 satellite have been successfully launched.

Given the above, one might think that the loss of the NSS-8 was a blessing in disguise for the overall commercial satellite sector given this "oversupply" of capacity. It is at this point, as one delves deeper into the subject of transponder supply, that it becomes clearer that issues surrounding over and undersupply are not so straight forward. First and foremost, not all transponder supply is "created equal". The above analysis, while only considering station-kept satellites, takes no account of the exact coverage areas of the satellites over the Sub-Saharan African or South Asian markets. Nor does it consider the power levels in each beam or the lifetime left on the satellites addressing each market.

For example, if one were looking for several transponders worth of high power Ku-band capacity on satellites that have at least 10-years lifetime left for DTH services in East Africa or Pakistan, there may well be a shortage of capacity. Conversely, should one only need a few MHz of lower power C-band capacity for a one or two year period, then there would almost certainly be an abundance of trans-

ponder capacity available for leasing.

The loss of NSS-8 will certainly be bitterly felt by SES New Skies. In general, the failure of any satellite is poor news for our industry as it is a terrible waste of capital resources, often leads to delays for other launches or raises concerns for existing on-orbit satellites for other operators, and only gives terrestrial service providers fuel in their constant competition with satellite service providers for many classes of customers. For SES New Skies in particular, the NSS-8 satellite would have positioned them well for potentially picking up business in hot markets like DTH services in India, Pakistan, East Africa and elsewhere. These opportunities are largely lost for them for the next few years or will oblige SES Global to look for opportunities to possibly reposition another satellite asset to the 57 East slot in order to reinforce the aging NSS-703 satellite currently at this location.

Conversely, the failure of the NSS-8 satellite offers opportunities to the other major global players and smaller regional operators to fill any gaps that SES Global cannot manage to cover. From the point of view of a client of satellite services, the redundancy built into the commercial satellite market of multiple players with different satellites covering specific markets is important for ensuring that new businesses can get off the ground or existing services can expand no matter the situation of any single satellite (though, not without some heartache in case of failures).

Going even a step further, one can speculate that the loss of NSS-8 could lead to even more transponder supply being launched in the coming years than if it had been successful. This line of reasoning goes as such. New operators are appearing within the commercial satellite market almost as fast as consolidation is seen on the top end. The prospects of companies such as ProtoStar, KazSat and Asia Broadcast Satellite are improved (though not guaranteed) because they will now have somewhat less competition in a number of the key markets they are targeting. Should the above companies meet with success, it can be expected the chances that they will launch new satellites for new markets (which is the stated goal of all three) will increase measurably.

It is hoped that the above market analysis has helped shed some light on the intricate and at times conflicting nature of assessing commercial transponder supply in our industry. The nature of transponder supply depends greatly on who you are, what capacity you want to lease or have to sell, and how a satellite operator attributes supply on its own fleet and that of its competitors. Further, the law of unintended consequences is in full effect in our industry, and while no one wants to see a launch failure, it is illustrated above that failures have the potential to actually lead to more supply on the market. A careful understanding of commercial satellite transponder supply is crucial for success in our industry, and more in-depth discussion on the subject will hopefully help all parties to better find the right balance between supply and demand that is so crucial to the financial success of all involved. ●

*The full report - Global Assessment of Satellite Demand, 3rd Edition is available from NSR. Visit [www.nsr.com](http://www.nsr.com)*



# Preparatory meeting paves the way

ITU meeting focuses on future of radiocommunication, and paves the way for 2007 World Radiocommunication Conference.

**Clear headway was made** at the Conference Preparatory Meeting (CPM-07) by the adoption of a Report containing the technical, operational and regulatory bases to be used by the World Radiocommunication Conference (WRC-07) that will take place later this year. Nearly 1100 participants from over 100 countries attended the meeting.

World radiocommunication conferences are mandated to review and revise Radio Regulations, the international treaty governing the use of radio-frequency spectrum and satellite orbits. WRC-07 will facilitate the future management of spectrum in more efficient ways, with global implications for policy-makers and industry as well as end users.

CPM-07 addressed a variety of frequency-related matters dealing with the future development of communications such as aeronautical telemetry and telecommand systems, satellite services, mobile communications, maritime distress and safety signals, digital broadcasting, satellites for meteorology, and the prediction and detection of natural disasters.

Chairman of CPM-07, Mr Kavouss Arasteh said, "Following a lengthy and productive preparatory process during the past four years, one basic principle prevailed, that of consensus building. Even though the number of agenda items involved in the process was about half of those dealt with in previous conferences, there were still some very complex and controversial matters on the table." The Chairman added that thanks to the spirit of cooperation, compromise, mutual understanding and the principle of consensus building, the output represents balanced results, which will greatly facilitate the work of WRC-07. In his closing remarks, Mr Arasteh said, "I strongly believe that the CPM process is very important and useful for the ITU membership, in particular, for those who were unable to attend the ITU Radiocommunication Study Group meetings and even the CPM-07 meeting. I hope that we have responded to the expectations of the membership."

Mr Houlin Zhao, Deputy Secretary-General of ITU stated, "The outcome of this meeting represents an important step in the national and regional preparations for WRC-07, the landmark event for the advancement of radiocommunications that will take place next autumn."

CPM-07 reached consensus on the additional spectrum needed for the future development of 3G mobile communications including IMT-2000 and IMT-Advanced, as well as the management of existing band usage. Discussions took into account both terrestrial and satellite aspects with special attention to the needs of developing countries. Agreement was also reached on the technical basis and compatibility studies for the upgrade of radiolocation services to primary status in the 9000-9200 MHz and 9300-9500 MHz.

## Reach for the sky

With the increasing complexity of aircraft design and mounting pressure to shorten timescales for the development of new aircraft, WRC-07 will consider the increasing demand for access to spectrum for the provision of aeronautical telemetry and telecommand systems.

Flight tests have led to five candidate bands being identified by

CPM-07: 4400-4940MHz, 5030-5091MHz, 5091-5150MHz, 5150-5250MHz and 5925-6700MHz. Regulatory provisions that may be required were also developed at the meeting. CPM-07 discussed aeronautical mobile services, the allocation of additional spectrum in parts of the bands between 108MHz and 6GHz, and the modernization of civil aviation telecommunications systems.

Discussions on fixed-satellite, mobile-satellite and broadcasting-satellite services below 3GHz saw agreement on the protection of terrestrial digital television services in the 620-790MHz band. However, WRC-07 is likely to witness intense debate on space and terrestrial services sharing the 2500-2690GHz band.

A valued-added proposal formulated at CPM-07 gives better protection to maritime frequencies around 156.5MHz used for distress and safety purposes. Considering the issue of re-distribution of the spectrum between different radiocommunication services in the band 4-10 MHz, the meeting developed some additional options aiming at striking a compromise at the upcoming WRC-07.

Technical sharing and regulatory issues were discussed at CPM-07 for the operation of High Altitude Platform Stations (HAPS). These stratospheric platforms/repeaters are capable of providing expanded coverage of high-capacity, competitive services to urban and rural areas, especially in tropical countries experiencing high rainfall.

## Down to earth

WRC-07 will also take decisions concerning new frequency bands to be allocated for science services. Earth-exploration and meteorological satellites provide valuable services worldwide. CPM-07 examined approaches that explore further development and protection of different science services, including radio astronomy services.

CPM-07 also took a close look at improving the international spectrum regulatory framework, outlining possible options for improving the effectiveness of Radio Regulations with respect to the evolution of applications, systems and technologies. The areas of focus were:

- Spectrum usage and operational characteristics of electronic news gathering systems (ENG);
- Technical parameters for planning broadcasting-satellite service in the band 21.4-22GHz in Regions 1 and 3;
- Technical aspects of terrestrial optical free-space telecommunications; and
- Using spectrum at frequencies above 3000GHz.

Mr Valery Timofeev, Director of ITU's Radiocommunication Bureau, explained that the CPM Report represents a complete and up-to-date description of the status of the technical, operational and regulatory environment upon which WRC-07 can make its decisions. He said that many of the items contained in the Report are complex and far reaching, linked with major technological developments in key areas of radiocommunication, coupled with new innovative ideas for their regulation. Mr Timofeev said that the importance of these new initiatives is reflected in the significant proportion of regulatory material contained within the current Report. ●



# Vessels return home

Following the unsuccessful launch of the NSS-8 spacecraft on January 30, and subsequent safing of all systems, Sea Launch is now in the process of securing the Odyssey Launch Platform and taking initial measures to determine the root cause and implement necessary corrective actions.

On January 30, a Zenit-3SL vehicle, carrying the NSS-8 satellite, experienced an unsuccessful launch. All personnel at the launch site were accounted for and there were no injuries. "The safety of our people is our number one priority," said Rob Peckham, President of Sea Launch, immediately following the incident.

A minute after the event, an Incident Command team was organized to check all systems for safety and to secure the Odyssey Launch Platform.

A preliminary assessment of the platform indicated that, while it sustained limited damage, the integrity and functionality of essential marine, communications and crew support systems remained intact. The team performed a comprehensive assessment of all aspects of the vessel, including its structural integrity and seaworthiness, in anticipation of identifying and planning the next steps.

Within a few hours the marine crew determined the Launch Platform was safe and capable of operating under its own power, and began to repopulate the vessel. The Sea Launch Commander, which was positioned four miles from the Launch Platform at the time of lift-off, incurred no damage during the launch attempt and supported all safing and securing activities on the Odyssey.

In the process of verifying her seaworthiness, the marine crew confirmed that the Odyssey's main structures were in good condition and marine systems were operational. With requisite certification in hand, both the Odyssey and the Sea Launch Commander departed the launch site at the Equator to return to Sea Launch Home Port in Long Beach, California. Both vessels travelled under their own power and at normal speeds, arriving at Home Port on predicted schedules.

The Sea Launch team submitted applications for all necessary permits and licenses required for repairing the Launch Platform as well as for an investigation of the event.

The Sea Launch partners are now conducting an independent investigation to review relevant data, determine root cause and develop recommendations for corrective actions. In accordance with established procedures, Sea Launch Company established a Failure Review Oversight Board (FROB) to review the partners' findings, conclusions and recommendations. Kirk Pyshey, Vice President and Chief Systems Engineer for Sea Launch, is chairing this board. The primary activity of the FROB will commence once the partner-led independent investigation is complete.

Concurrently, Sea Launch is making the necessary repairs required for re-certification of the Odyssey to ensure a safe, thorough and efficient return to reliable service. The most notable damage found during the vessel's assessment was the loss of the flame deflector, located below the launch pad, and the position of the aft doors of the hangar, which were off of their supports. This hangar houses and protects the transporter-erector support structure during launch operations.

Other Launch Support Equipment was found to be in good condition. Plans for resuming the 2007 manifest will be determined, pending repairs on the Launch Platform and results of the investigation.

"Our team has witnessed first hand the robustness of the Launch Platform, which was designed and built to withstand a full range of conditions, including off-nominal scenarios," said Peckham. "The inherent strength of this vessel, combined with the safe and professional response of the launch team, characterizes a system that is capable of operating in the most demanding of conditions, for the purpose of serving our customers.

"We deeply regret the loss of the NSS-8 satellite, which was designed to be a significant part of the SES NEW SKIES fleet, said Peckham. "We are receiving consistent expressions of confidence in our system and our team from our customers and the insurance community. "The Sea Launch team is the best in the business and will continue to work diligently to understand the anomaly, identify the root cause and determine a corrective course of action. As we move forward, we are maintaining a positive, progressive mind-set and a dedication to excellence. We have begun to discuss a plan for a Return to Flight."





# Turning to the private sector

Among the participants at the event in February were executives from communications, hardware, Internet, software and venture capital firms, including Intel, Cisco Systems, Nokia Siemens Networks, Hewlett Packard, Google, IBM Venture Capital Group, Visa International, Microsoft, as well as Stanford University and the University of California, Berkeley.

## Throwing down the gauntlet

Speaking at the opening of the "UN Meets Silicon Valley" event, Dr Touré focused on three main trends that appear to be influencing the ICT industry: innovation and cybersecurity; changing business models; and the development of new markets. "Innovation is a key source of new products, added value and fresh growth in revenues," Dr Touré told participants. "I want to challenge you to think beyond the borders of Silicon Valley, beyond even the borders of the United States, to the emerging markets in the rest of the world." He said that closing the digital divide should not be seen as charity, but as a sound business model attractive to industry.

The Secretary-General stated that ITU is a unique intergovernmental organization which also boasts of strong relations with business. ITU has more than 650 members from the private sector along with its 191 Member States. "The Union has a noble mission: to provide access to the benefits of ICT to all the world's inhabitants," Dr

ITU Secretary-General Hamadoun I. Touré conferred with some of the leading lights of Silicon Valley at a meeting in Mountain View, California, with the aim of cementing ties with the private sector and promoting the use of state-of-the-art in ICT to bridge the digital divide.

Touré said, "To achieve that goal, we need to work in partnership with governments, the private sector and civil society, and to exploit the dynamism of regions like Silicon Valley."

A road map to connect the unconnected by 2015 was set out by the World Summit on the Information Society that was organized by ITU in 2003 and 2005. With world leaders recognizing the potential of ICT as an enabler for development, Dr Touré said the moment is ripe to harness the culture of innovation and competition in Silicon Valley to connect the world. ITU has been charged with building the infrastructure required and ensuring security in cyberspace as well as bring together all stakeholders in meeting the goals of the Summit. Visit [www.satellite-evolution.com](http://www.satellite-evolution.com) for the full story.

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# Hear the latest

Globecomm Systems has recently announced record revenues for Fiscal 2007 Second Quarter (F2007 Q2) and six-month financial results.

**Globecomm Systems Inc.**, a global provider of end-to-end satellite-based communications solutions, has recently announced financial results for the Company's fiscal 2007 second quarter and six-months ended 31 December 2006.

### Fiscal Year 2007 second quarter results

Revenues for the Company's fiscal 2007 second quarter increased 22.8 per cent to a record \$36.7 million, compared to \$29.9 million in the same period last year. Revenues from ground segment systems, networks and enterprise solutions increased by 25.4 per cent to \$28.4 million driven by continued success in the government marketplace. Revenues from data communications services increased 14.5 per cent to \$8.4 million revenue mainly in life cycle support services in the government marketplace. Overall, revenues in the government marketplace as a percentage of total revenues increased to 62 per cent for the three-months ended 31 December 2006 from 56 per cent in the same period last year.

Net income for the Company's fiscal 2007 second quarter increased 92.7 per cent to \$1.8 million, or \$0.11 per diluted share, compared to net income of \$0.9 million, or \$0.06 per diluted share, in the second quarter of fiscal 2006.

The increased revenue and increase in gross margin percentage drove the increase in net income. The increase in gross margin was mainly driven by the ground segment systems, networks and enterprise solutions' pre-engineered systems product line in the government marketplace.

### Fiscal Year 2007 six-month results

Revenues for the Company's fiscal 2007 six-months ended December 31, 2006 increased 5.0 per cent to a record \$62.4 million, compared to \$59.5 million in the same period last year. The increase in revenues was driven by a 19.9 per cent increase in revenues by the data communications services business segment primarily driven by increased life cycle support services, along with an increase in telephony service revenue. Revenue for ground segment systems, networks and enterprise solutions remained relatively consistent compared to the same period last year. Overall, revenues in the government marketplace as a percentage of total revenues increased to 62 per cent for the six-months ended December 31, 2006 from 52

per cent in the same period last year.

Net income for the Company's first six-months of fiscal 2007 increased 55.5 per cent to \$2.7 million, or \$0.17 per diluted share, compared to net income of \$1.8 million, or \$0.11 per diluted share, in the same period last year. The increased revenue and an increase in the overall gross margin percentage of the Company drove the increase in net income. The increase in gross margin is due to increased revenue in the government marketplace in both the life cycle support services and pre-engineered systems product line in the data communications services and ground segment systems, networks and enterprise solutions business segments, respectively.

### Management's review of results

David Hershberg, Chairman and Chief Executive Officer (CEO) of the Company, said: "Globecomm continues to gain traction in the government marketplace in both the ground segment systems, networks and enterprise solutions, and the data communications services business segments, which is resulting from the ability to provide turnkey systems and related services under one roof. For example, in the second quarter, the Company announced a multi-year life cycle support services contract from Harris Corporation to sustain the Federal Aviation Administration FTI-SAT program by supporting equipment previously deployed by Globecomm at forty-three sites across the US. We are increasingly seeing requests for these types of turnkey services and have the infrastructure in place to rapidly respond to such requirements." Hershberg continued, "During the quarter, the Company received a contract for multi-band Auto-Explorer terminals, which allow for ease of operation on both commercial and military satellites. This is a very important contract as it sets the foundation for the development of future multi-band terminals, including Ka-Band to support communications to and from the next generation of military satellites slated for launch in the next eighteen months. Additionally, the Company received a follow-on contract from NATO to provide additional systems in support of a multi-national global positioning satellite-based friendly Force Tracking System (FTS). We are hopeful that there will be additional FTS requirements in the future and look to expand the Company's current relationship with NATO."

### Management's current expectations

Globecomm continues to expect record consolidated revenues for fiscal year 2007 in excess of \$145 million, or at least a 15 per cent increase over fiscal 2006, and record earnings per diluted share in excess of \$0.45 per share, representing at least a 67 per cent increase over fiscal 2006 earnings per diluted share, excluding a net non-recurring gain in fiscal 2006 in the amount of \$0.02 of earnings per diluted share.

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