



MEASAT Satellite Systems Sdn. Bhd.

Business Continuity Planning in the Satellite Industry

August 2010

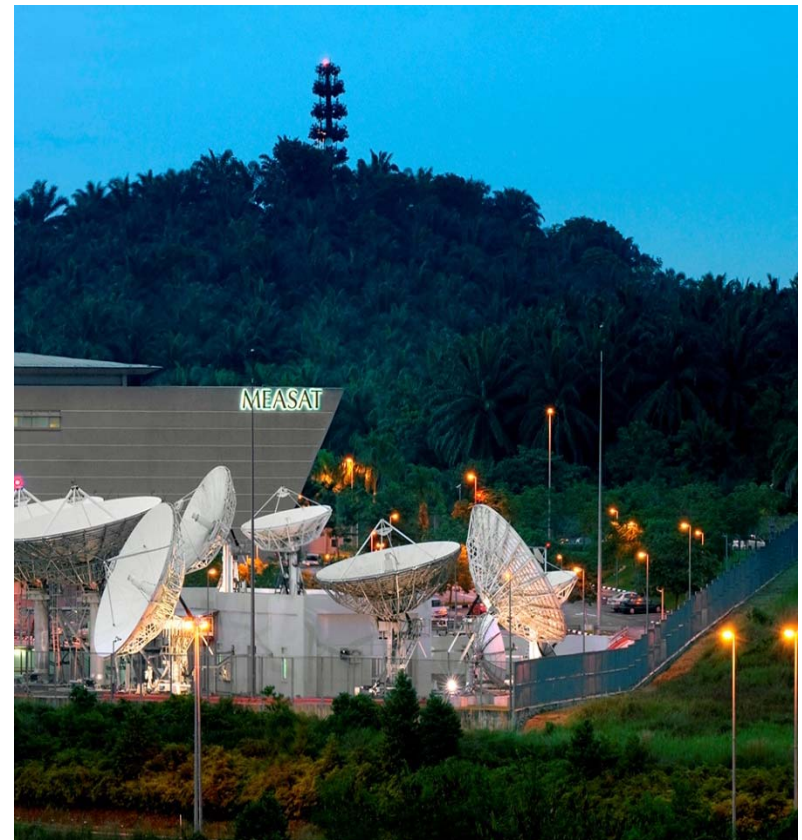


Regional Satellite Operator of the Year
Excellence in Satellite Management
September 2008

MEASAT Overview

Summary

- ◆ Regional satellite operator providing satellite solutions across 145 countries throughout the Asia Pacific, Middle East, Africa, Europe and Australia.
- ◆ Fleet of four (4) spacecraft operated from the state-of-the-art MEASAT Teleport and Broadcast Centre (MTBC) located outside of Kuala Lumpur, Malaysia.
- ◆ Pioneer in the use of high-powered Ku-band transponders to support Asian DTH operators
- ◆ Today supporting strong customer base including (i) Malaysian ICT Industry; (ii) region's strongest DTH PayTV neighborhood; (iii) one of the regions a Strong Video Distribution neighborhoods (with leadership in HD); (iv) an initial position in fast growing African market.
- ◆ Portfolio of 16 Orbital slots filed with the International Telecommunications Union for future fleet expansion.
- ◆ Named Regional Satellite Operator of the Year 2008 in the Excellence in Satellite Management Awards at the 12th World Summit for Satellite Financing in Paris, France.



MEASAT Customer Base

Strongest Regional DTH Base



Top Tier Video Distribution

Standard Definition



High Definition



Strong Malaysia Presence



Presentation Summary

- Providing a unique advantage as a communication platform. Satellites today are used for a range of essential communication, commerce and entertainment services. This includes the provision of television services which today has become a multi-billion dollar industry across the region.
- While satellites provide an ideal delivery platform for PayTV, satellites also have certain risks which need to be recognized and mitigated as part of a BCP strategy.
- While there are a number of things a satellite operator can (and should) do to address these risks -- and support their DTH customers -- satellite operators need to work collaboratively with DTH platforms and satellite manufacturers to ensure satellite provides a robust delivery platform to address future needs

Advantages of Satellite Platforms

Advantages of Satellites TV Delivery

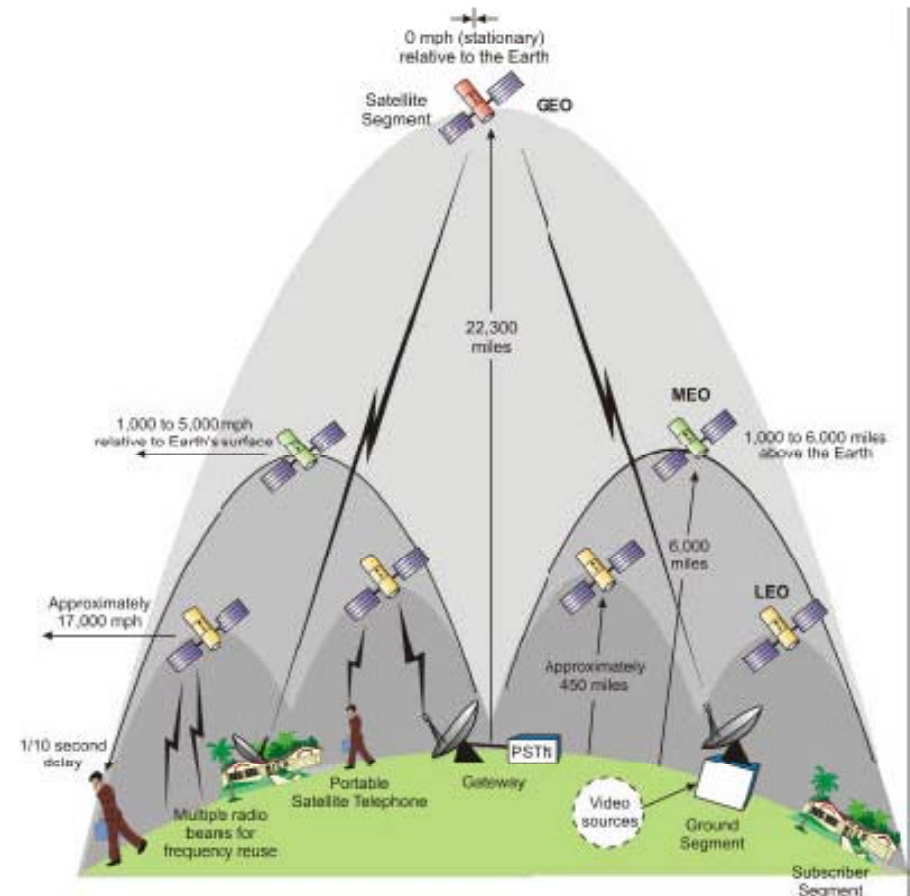
Wide coverage area: Able to reach urban and rural populations across a entire country or region

Immediate Coverage : Provide immediate coverage on launch enabling rapid rollout of network while overcoming the “last mile” problem

Cost effective: Provide a platform that distributes content in cost effective manner irrespective of distance

Reliable: High signal availability with less points of failure compared to terrestrial networks

High Capacity: DTH systems able to provide capacity for up to 500 TV channels



Example Satellite Applications

Voice & Data	Video Broadcasting	Corporate Networks	IP Traffic
<ul style="list-style-type: none">• Bandwidth on Demand• Trunking• DAMA services• Store & Forward• Rural telephony	<ul style="list-style-type: none">• Cable TV distribution• Direct to Home• Video contribution (backhaul of content from production to uplink, eg. SNG)• Video on Demand	<ul style="list-style-type: none">• Private networks (VSATs)• Distance learning• Telemedicine	<ul style="list-style-type: none">• Internet backbone connectivity• Broadband interactive services• In-flight aircraft services• Internet direct access• Mediacasting

Asian DTH Platforms

DTH operations By Country



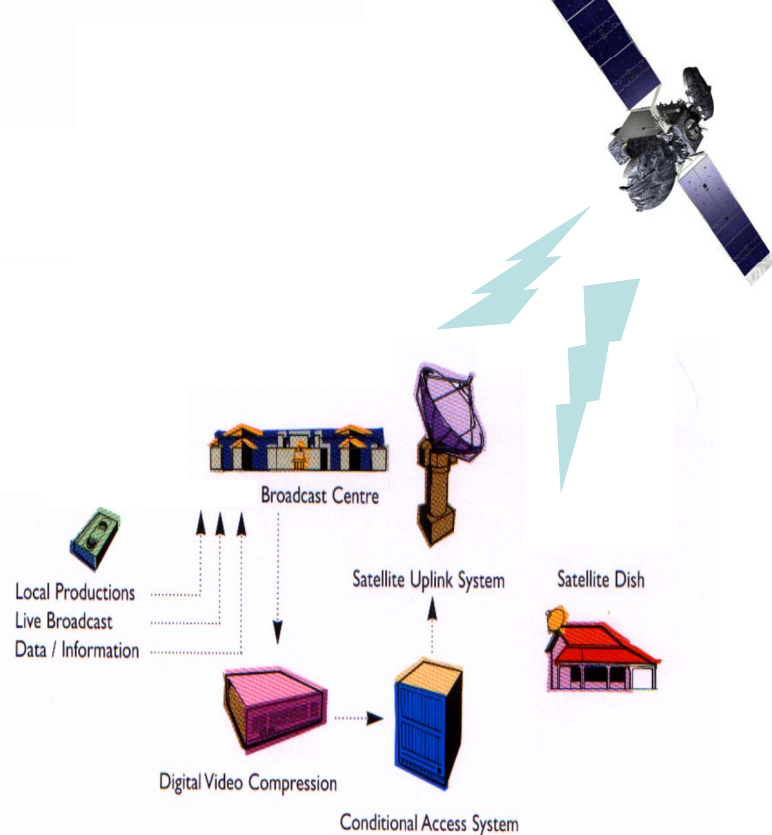
■ Operational

Platform	Country	Subscribers
DD Direct	India	6.0m
Zee Dish TV	India	5.8m
Tata Sky	India	5.0m
Sun Direct	India	4.5m
Sky PerfectTV	Japan	3.7m
Astro	Malaysia	2.9m
Airtel	India	2.8m
Reliance Big TV	India	2.5m
Sky Life	Korea	2.3m
Foxtel	Australia	1.6m
True Vision	Thailand	0.9m
Videocon D2H	India	0.9m
Austar	Australia	0.7m
Indovision	Indonesia	0.7m
Dialog TV	Sri Lanka	0.19m
VTV	Vietnam	0.15m

Source: Industry sources

Risks of Satellite Delivery

Potential Failure Points



Issues

- Satellites operating in harsh environment of space for extended periods; if issue occurs, equipment cannot be readily 'repaired'
- Satellite capacity tailored to meet specific DTH requirements (coverage / power levels)
- Satellites often operated with limited spare capacity available (that can be relocated in case of failure)
- Switching costs of moving to an alternative satellite prohibitive
- Time for replacement satellite can be 24 to 36 months

Satellite Failures

04/30/10 05:34 PM ET

Galaxy 15, Still Adrift, Poses Threat to Its Orbital Neighbors

By Peter B. de Selding

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PARIS — An Intelsat satellite that stopped communicating with its ground controllers April 5 remains out of control and has begun moving eastward along the geostationary arc, raising the threat of interference with other satellites in its path, Intelsat and other industry officials said.

In what industry officials said is an unprecedented event, Intelsat's Galaxy 15 satellite has remained fully "on," with payload still functioning even as it has le 133 degrees west longitude 36,000 kilom

The first satellite likely to face signal inte 11 C-band satellite owned by SES of Lux degrees west, just two degrees away fro

Rob Bednarek, chief executive of the SE operates AMC-11, said Intelsat and SES 5 to coordinate how to minimize the Gala media customers.

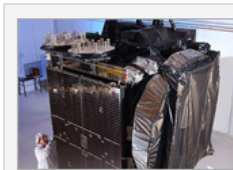
04/20/10 02:05 PM ET

Orbital Blames Galaxy 15 Failure on Solar Storm

By Peter B. de Selding

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PARIS — The in-orbit failure of the Orbital Sciences-built Intelsat Galaxy 15 telecommunications satellite April 5 was likely caused by unusually violent solar activity that week that damaged the spacecraft's ability to communicate with ground controllers, Orbital officials said.



Galaxy 15 satellite. Credit: Orbital

Satnews Daily

May 14, 2010

Galaxy 15 'Zombiesat' Gone Wrong — Will 'Lost' Be Lost?

There has been much exchange of information regarding the report of the communications satellite Galaxy 15 which on April 5, has not responded to ground commands hence the moniker from some of "zombiesat". After sending between 150,000 and 200,000 commands to the satellite to bring it back into service, Intelsat was forced to scrap its satellite-recovery efforts and to resort, on Monday, to a limited-duration effort to force the satellite to shut down its transponders. This was to be accomplished by sending a strong series of signals designed to cause Galaxy 15's power system to malfunction and force a shutdown of the satellite's payload.

Washington-headquartered Intelsat foresaw this as a final attempt to shutdown Galaxy 15, which was unsuccessful. Now the satellite is approaching AMC-11. "There is no active testing of the payload," the company said in its Tuesday statement. In fact, this sat has taken up space in the same orbit as another C-band satellite, the AMC-11 spacecraft operated by

Nigeria's NIGCOMSAT-1 ceases operations



NIGCOMSAT-1, a giant Chinese-built Nigerian Communications satellite, launched amid pomp and fanfare last year, has ceased functioning, in what has been attributed to power failure.

Great Wall Industry Corp, the company that sent the satellite into orbit last May, reported yesterday that the satellite ceased functioning on Tuesday morning.

"The solar wing malfunctioned and this led to exhaustion of electric power, after which the satellite failed," said Geng Kun, the spokeswoman for Great Wall Industry Corp, which launched the satellite into orbit atop a Long March 3-B rocket.

Most satellites carry solar panels on an extendable wing to generate electricity, with backup batteries activated only when in the earth's shadow.

Built by the China Academy of Space Technology as part of a \$311 million deal signed by the Asian country and Nigeria in 2004, the giant satellite was launched in 2007, with an intention of expanding cell phone and Internet services in central Africa.

The deal was the first in which a foreign buyer had purchased both a Chinese satellite and its launching service.

Nigeria's Chinese-built satellite goes dark

By Peter J Brown

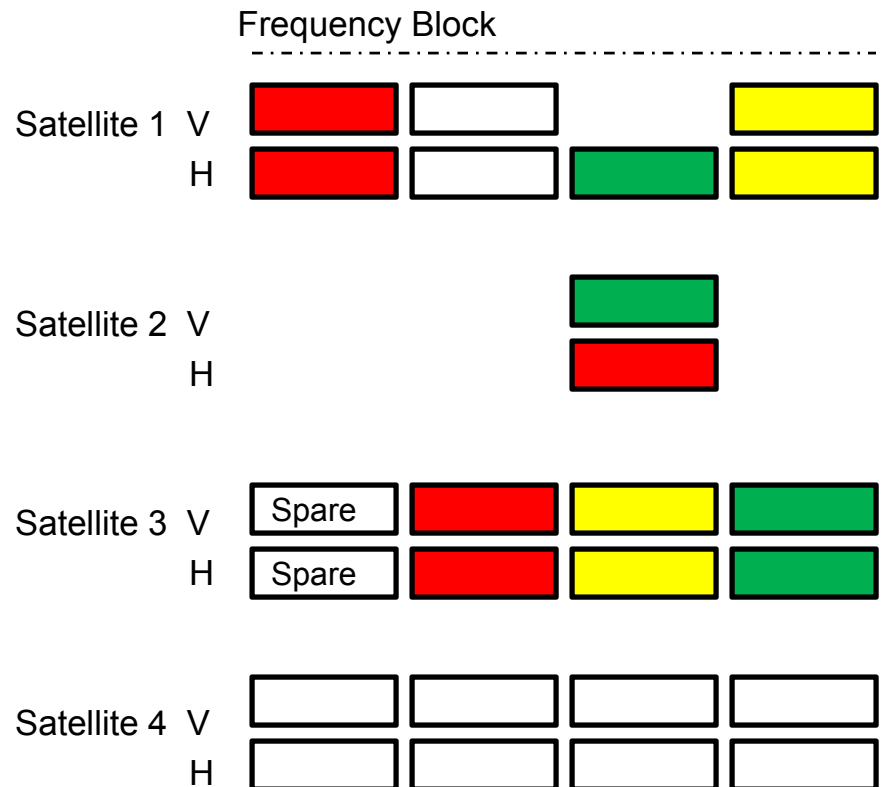
In May 2007, the Nigerian government rejoiced as the Chinese-built Nigeria Communications Satellite - 1 (NIGCOMSAT-1), was sent into orbit by a Chinese rocket at the Xichang launch facility. Nigeria was upbeat and looking forward to 15 years of advanced telecommunications service, thanks to a satellite which China, along with sending into space, had funded to the tune of well over \$200 million.

Satellite Operator Approach

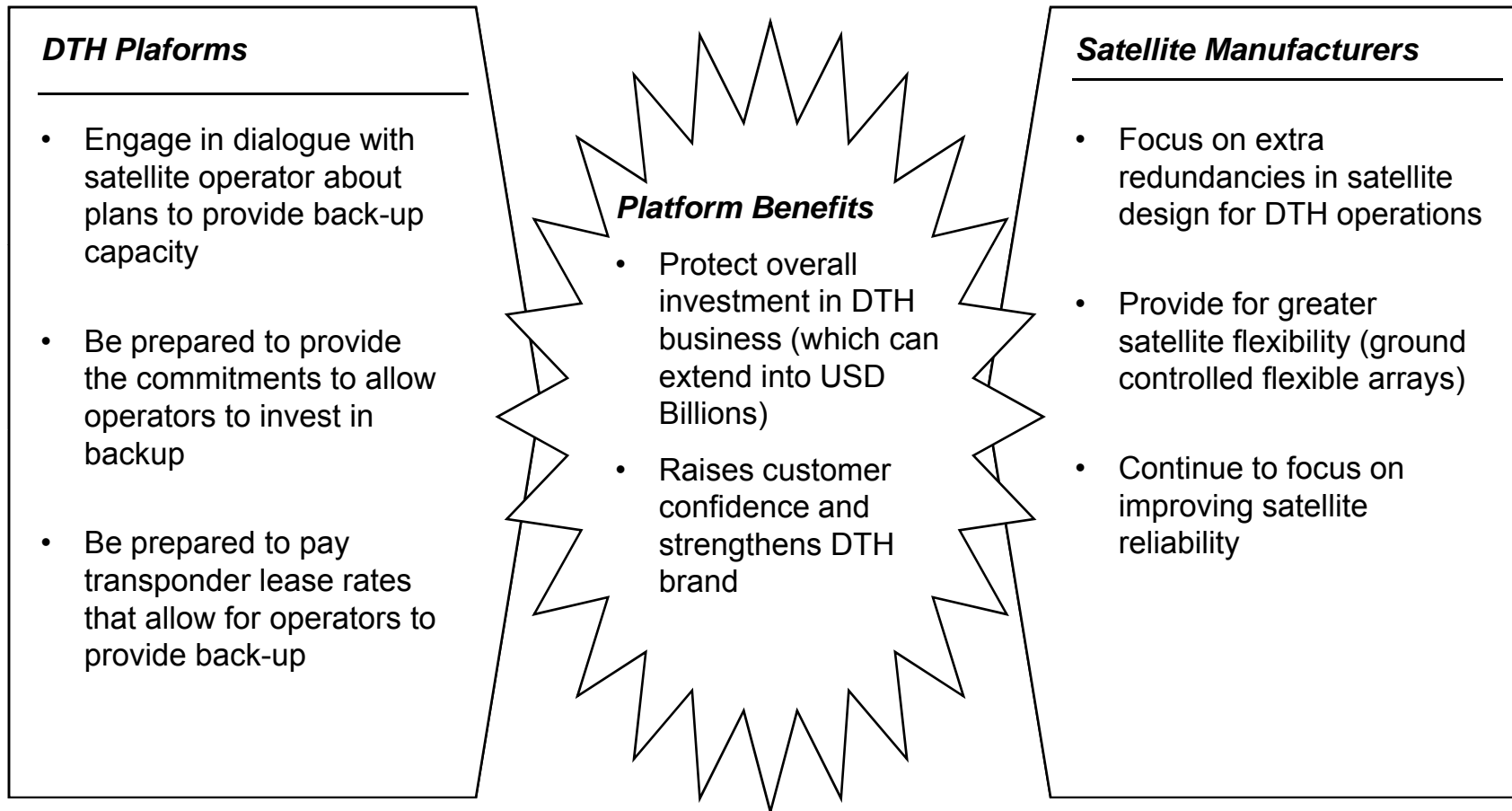
Approach

- Utilize slot to support multiple DTH platforms across multiple markets
- Fly multiple satellites in orbital slot providing in-orbit diversity / redundancy
- Utilize different bus designs to avoid fleet risk
- Operate with spare capacity (to allow switching in of back-up capacity)
- Work with satellite operators in adjacent slots to develop in-orbit spares able to support multiple markets as / when required

MEASAT 91.5E Slot Development Plan



Support from Manufacturers and DTH Platforms



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Thank You