Global Xpress Overview

November 17, 2014
RVTECH Conference
Oregon State University
Corvallis, OR

Andrea Cortese
Director, Inmarsat Maritime
Global Xpress Coverage
Empowering Maritime Community Solutions
The Global Xpress Solution

- Designed and built by Boeing
  - 802HP Platform
- Owned and operated by Inmarsat
- Well tested, reliable platform
- 3 satellites provide global coverage

Empowering Maritime Community Solutions
The Global Xpress Solution

Shipboard Terminals

- Top quality, high throughput performance
- 60cm and 1m models available
- Inmarsat Type Approval ensures quality
- Upgradable Ku-Band terminals

Empowering Maritime Community Solutions
The Global Xpress Solution

Satellite Communications

- Designed by iDirect specifically for GX
- Close coordination with Cisco
- Enables advanced services to work between Cisco and iDirect platforms
  - Traffic prioritisation
  - Bandwidth management
  - Multicast

Empowering Maritime Community Solutions
Inmarsat Gateway: Main Components

NSD – Network Service Device (Edge Appliance/Server)
SDP – Service Delivery Platform (Operation, Business Support Systems & Application Store)
Access Network/Core Network (Core Routing/Switching/Interconnection & core network services (e.g. Content Delivery))

Access Network/Core Network

MMP

NSD – Network Service Device
SDP – Service Delivery Platform
Access Network/Core Network

MMP

MMP

GX SAS
BGAN SAS

MMP

GX SAS
BGAN SAS

GX SAS
BGAN SAS

MMP

GX SAS
BGAN SAS

GX SAS
BGAN SAS

MMP

GX SAS
BGAN SAS

GX SAS
BGAN SAS

Corporation Networks
M2M
Fixed Users
Apps
Data

IP/IPL/IP-VPN/MPLS
The Global Xpress Solution

The Network Service Device

- Cisco 2911 Router platform
- On-board LAN, WAN, Telephone interfaces
  - Connect ship users to satellite terminals
  - Routing control of GX vs. FB
- Mass storage device for content hosting
- Cisco Cloud Application Hosting platform

Empowering Maritime Community Solutions
“Satellite Technology” does not matter

Ka-Band as a technology is not important, although...

- Ka-Band offers higher performance than Ku
- Spot beams ensure full power right to beam edge
- Smaller, more cost effective terminals

Shipping needs a solution that is...

- Reliable
- Available
- Operationally Effective
- Cost Effective
GX network design advantages

▷ Redundant
  • Dual Teleport design
  • Weather, maintenance, local outages

▷ Expandable
  • Additional Ka-band satellites can be added as needed

▷ Hybrid L-band network
  • Handles any Ka-Band interruption
  • Blockage, coverage, atmospheric, regulatory, equipment
  • Maintains IP and VoIP services
  • No additional costs
Empowering Applications and Content

New ways to Distribute Applications
- Third Party companies can list their applications on the GX portals
- Presented directly to the Ship Operators and Crew

New ways to buy services
- Shipping companies can subscribe to services
- Crew can purchase applications and services directly
- Facilitated through GX billing platform

New ways to use airtime
- Applications can dynamically allocate bandwidth
- Content Pre-Positioning services
Flexible Real-Time Bandwidth Control

Customer Bandwidth
(i.e. 1Mbps MIR / 256 CIR)

- VoIP
- Corporate Email & Data
- Browsing
- Traditional Application Data
Flexible Real-Time Bandwidth Control

Customer Bandwidth
*(i.e. 1Mbps MIR / 256 CIR)*

- **VoIP**
- **Trad Data**
- **App Data**

**GX Dynamic Bandwidth Allocation**

- Certain Apps may require additional bandwidth
  - Short term, high volume data needs
  - Customer does not want business traffic negatively impacted
  - Prepaid Applications, when the crew is paying for airtime directly
Flexible Real-Time Bandwidth Control

Entire GX Bandwidth Capacity
(i.e. 50Mbps total capacity to 60cm ant.)

Customer Bandwidth
(i.e. 1Mbps MIR / 256 CIR)
- VoIP
- Corporate Email & Data
- Browsing
- Traditional Application Data

Temporary Bandwidth

Application control of Bandwidth
- Uses API to open additional bandwidth
- Data traffic is passed over the satellite
- Application closes bandwidth
Content Pre-Positioning Service

- Allows Data Files to be Pre-Positioned to the NSD
  - Content is uploaded to the Inmarsat core network
  - Peak and Off-Peak Delivery options
  - Charged for successful deliveries only
  - Time to deliver files is dependent on file size

- Downloaded files are not ‘browseable’ to the shipboard users
  - Application is responsible to access files from the NSD
  - APIs to access Pre-Positioned files provided as part of the Inmarsat SDK
A revolution in maritime communications:

**Telemedicine**
- Telemedicine application get airtime when needed
- High quality without impact on business traffic
- Reduces cost for the shipping company

**Ship security**
- Dynamically open airtime during security event
- Immediate, no delays waiting for more bandwidth
- Secure, separated from normal Internet traffic.

**Crew services**
- Crew can buy a host of products and services directly
- No impact on business traffic
- Great end-user experience, reduces satellite usage
When will GX become available

Satellite Build Schedule
- All three satellites for initial global service are complete and ready for launch
- Fourth satellite is already under construction

Satellite Launch Schedule
- Inmarsat 5 - F1 – Launched December 2013
- Inmarsat 5 - F2 / F3 – Planning for Q1/Q2 2015
- Inmarsat 5 - F4 – to be determined

Current Status
- F1 – In position, completed Alpha and Beta testing successfully
- Maritime terminals have passed network testing on F1
- Commercial Service begun for US Government customer on F1

Full Global Commercial Service
- Planned for early in second half of 2015
Thank You