M2M in Public Services

Moderator:
Matt Hatton, Director, Machina Research

Panelists:
David Wigglesworth, Vice President of Data Services, Iridium
Gert Pauwels, Marketing Mgr Int’l M2M Center, Orange Business Services
Christian Allred, Senior Vice President of International, ORBCOMM
M2M in Public Services

David Wigglesworth,
Vice President of Data Services
Iridium - A diverse, global communications provider of mobile voice and data services via 66 in-orbit satellites

- Publicly Traded NASDAQ:IRDM
- Serving 523,000 customers across the land-based handset, maritime, aviation, machine-to-machine (M2M) and government markets
  - 168,000 M2M Subscribers
- 2012 revenue of $384 million and OEBITDA of $190 million
- 2005-2010 service revenue and OEBITDA CAGRs of 18% and 26%
Iridium NEXT Positions Us for the Future

- Fully funded approximately $3 billion plan that supports our success for many years
- Compatibility with existing network and devices
- Seamless network transition and customer continuity
- Retains LEO architecture with 66 new operational satellites, 6 in-orbit spares and 9 ground spares
- Scheduled deployment between early 2015 and 2017 via 8 Falcon 9 launches (9 SVs/launch)
- Significant advantages including expanded capacity and higher data speeds

Note: Fully funded approximately $3 billion business plans assumes borrowings under the $1.8 billion COFACE financing agreement, together with internally generated cash flows, including cash flows from hosted payloads.
66 Sensors with 62deg FOV
Short Burst Data Service

Antenna

Iridium Transceiver

Telematics Package

Iridium Gateway

SBD Network Equipment

Leased Line OR VPN OR Internet

Application Host Server

Related data access

Associated Partners:

Conference Sponsored by:
Diverse network traffic with significant growth opportunities

- M2M (SBD) Data Transmission
- Voice Call
- High-Speed Data Traffic

One week plot of M2M/SBD session, voice call and high-speed data origination points
APPLICATIONS IN PUBLIC SERVICES
Tsunameters

- Deployed in the Pacific and Atlantic
- 2 year endurance in challenging environments
- Part of a strategic monitoring and alerting capability
- When to evacuate/when not to
Man Over Board System

- Used in the UK for fisherman
- Automatic detection of immersion in water
- Panic button
- Coastguard notification of MOB in < 1 minute versus hours

http://www.rnli.org.uk/mob_guardian/
Driver Behavior Mentoring

- **Solution: inthinc “WaySmart 820”**
  - Iridium Short Burst Data used to provide communications to improve driver safety for those working in remote and harsh environments
  - In-vehicle, verbal mentoring in real time for driving behaviors such as speeding, seat belt usage, sharp turns, hard stopping and rapid acceleration
  - Automated Department of Transport Driver Log reporting
  - Distracted driving prevention with ability to detect and restrict mobile device usage for calls, texting, browsing and other applications
  - Real-time incident notification via text, e-mail or phone call
  - Real-time and historical reporting via a web portal for instant feedback and trend analysis

- **Results:**
  - 73% increase in seatbelt usage
  - 86% reduction in speeding violations
  - 89% reduction in aggressive driving behaviors
  - 80% improvement in crash rates
  - At a major oil field service company:
    - Crashes have reduced 80%, with a $5 million return-on-investment.
    - ROI attained through recovery of vehicles, fuel savings and savings from driver log efficiencies
    - Awareness raised around avoiding road hazards as well as staying alert and safety inspections
Fleet Management Solutions Tracking

• Situation: With the annual fleet fuel and maintenance cost at more than $20 million, DHS needed to improve efficiency
• Solution: FMS GPS tracking equipment
  – DHS Office of Detention and Removal (DRO) uses FMS to monitor its fleet of buses, vans and law enforcement sedans
  – Permits dispatch centers to securely login and monitor vehicles’ location, movements
  – Asset readiness of specialty law enforcement vehicles

Results:
– Compliance with Federal Property Management Regulations (FPMR)
– Fleet situational awareness for effective and efficient missions
– Over 2000 of the 4500+ vehicles tracked in real time
– Reduced costs, improved officer safety, enhanced mission execution and streamlined fleet maintenance
Personal Tracking and Emergency Management

- Remote tracking
  - Enable anyone you designate to track your location via online maps
  - “Breadcrumbs” appear at user-determined intervals from 10 minutes to four hours
- Two-way Text Messaging
  - Send and receive text messages – up to 160 characters
  - Send to cell phones, email, Facebook, Twitter, & other inReach users
- Interactive SOS
  - Send a detailed SOS describing your situation – injuries, weather, specific terrain challenges, etc.
  - Send updates if situation or conditions change, receive instructions for what to do until help arrives. Enables emergency responders to be fully prepared
- Emergency Response Center
  - 24 x 7 x 365 SOS monitoring
  - Emergency dispatch
  - Coordination with Government Rescue Coordination Centers
SENDs

- Satellite Emergency Notification Devices
- RTCM SC-128 Standard
- Definitions for use of commercial satellite devices for emergency alerting
- Covers functional and technical performance
Fisheries Enforcement & Management

FWI®
World Wide Coverage
Global Tracking, Monitoring & Communications

The Faria WatchDog Vessel Monitoring System is type approved by over 30 countries and agencies around the world including:

- The FWI system provides reliable and cost-effective marine satellite tracking and communications anywhere in the world, including the northern A-4 waters, and meets the demanding requirements of the commercial fishing industry.
- With the FWI 750VMS, Fishery managers can monitor compliance, track violators and provide substantial evidence for prosecution while maintaining the integrity of the individual fisherman's effort.
Iridium Benefits to M2M in Public Services

- Global coverage
  - Uniform coverage and operating characteristics
    - Service performs the same irrespective of land/sea, latitude/longitude
    - Same device will work anywhere in the world
    - Single global agreement with Network Operator (where permitted by local country Regulations)
    - Complements terrestrial communications solutions - Less than 10% of the earth’s surface is served by terrestrial wireless and wire line
  - Low latency
    - Typically 10-20 seconds
    - Single network gateway access point
    - High value price/performance capabilities
- Capabilities well suited to M2M
  - No SIM required
  - No roaming
  - Simple, small antenna size
  - Global real time network availability
  - LEO architecture mitigates line of sight issues in GEO systems
  - Inter-satellite links limits dependence on terrestrial infrastructure
  - Optimal for messages up to several hundred bytes
  - Reliable acknowledged network protocol - deterministic service
  - Simple device and network interfaces
- Satellite low data rate solutions vary in quality - Iridium has the lowest global uniform latency with a high quality service
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Moderator:
Matt Hatton, Director, Machina Research

ORBCOMM OVERVIEW

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Where does ORBCOMM fit in?

- Leading global satellite data communications company
- Purpose-built for M2M communications throughout Public Sector & Industrial Applications
- Two-way data communications services now incorporating social mediums like Twitter
- Use of ORBCOMM solutions in Farm-to-Fork Applications in order to track, monitor and control elements within cold chain logistics

ORBCOMM is here...

and here...

ORBCOMM is simply everywhere...
Leader in satellite M2M

- 650,000 end devices on the network
- 1 Million messages processed per day
- 27 OG1 and 18 OG2 Satellites
- 15 GESs in 12 countries
- 100 Countries licensed worldwide

High growth potential

Poised for international expansion

By the Numbers

Global satellite coverage

27.3% CAGR (2006-10)

1 Million messages processed per day

650,000 end devices on the network

27 OG1 and 18 OG2 Satellites

15 GESs in 12 countries

100 Countries licensed worldwide

1 Million messages processed per day

27.3% CAGR (2006-10)
Industry leader in key verticals

- **25 Million**
  - Asset tracking
  - Fuel management
  - Driver risk management
  - Navigation and route planning
  - Dispatch optimization
  - Emergency response

- **4 Million**
  - Asset tracking
  - Working records
  - Load summaries
  - Driver management
  - GPS & usage hours
  - Fuel consumption
  - Tampering and security
  - Maintenance alerts

- **48 Million**
  - Smart Grid/meter infrastructure
  - Electric power transmission and distribution
  - Renewable energy/grid integration
  - Pipeline monitoring
  - Load balancing
  - Scheduled updates and & safety alarms
  - Transmission of throughput and tank level data
  - Cathodic protection

- **40 Million**
  - Vessel Monitoring Services (VMS)
  - Environmental monitoring
  - Cargo security
  - Bio surveillance
  - Remote surveillance
  - Fleet management
  - AIS data
  - Law enforcement

- **5 Million**
  - Asset tracking
  - Military & civil logistics
  - Geofencing & border patrol
  - Environmental monitoring
  - Cargo security
  - Bio surveillance
  - Remote surveillance
  - Advanced sensing of critical infrastructure
  - Law enforcement
Satellite AIS

- Shipboard broadcast system that transmits a vessel’s identification and position
- Aids vessel tracking and improves maritime safety
  - Maritime domain awareness
  - Surveillance and security
  - Correlation with other sensors
  - Search and rescue
  - Logistical tracking and reporting
  - Energy and commodity management
  - Incident investigations
  - Environmental monitoring
  - Area of operation compliance
  - Counter piracy

Tracking over 50,000 vessels globally
Enabling machines that Tweet
ORBCOMM acquires StarTrak & Par LMS to provide an ideal Farm-to-Fork solution

**Dry Van**
- Asset Tracking
- Tractor Power On/Off
- Door Open/Close

**Cold Chain**
- 2-Way Reefer Monitoring & Control
- Temp Probes
- Fuel Sensor
- Tire Pressure

**Supply Chain**
ORBCOMM is here...

and here...

and here...

ORBCOMM is simply everywhere...
m2m
Orange Business Services
International M2M Center
Gert Pauwels, Marketing manager
Orange Group

- 170,000 employees
- 29,500 employees dedicated to B2B
- 50 billion € consolidated revenues, B2B 1/3
- 4,000 researchers in Orange Labs
- +200 employees dedicated to M2M
- 3 million active SIM cards
- 32 mobile operations
- B2B presence in +200 countries

Associated Partners:

Conference
Sponsored by:
... with new customers

- **Coyote**
  - Speed camera alert devices
  - Coverage: Europe

- **bglobal**
  - Smart metering
  - Coverage: UK

- **Sorin Group**
  - Medical monitoring solutions
  - Coverage: Europe & USA

- **Nespresso**
  - Telemetering
  - Coverage: Europe
M2M in Public Services (1/3)

Public Services

- From **Prisoner Monitoring** over **Alzheimer devices**
M2M in Public Services (2/3)

Public Services

• From Coyote Services over Public transport
M2M in Public Services (2/3)

Public Services

- From **Air Monitoring** over **Utilities**
to continue to deliver on this promise Orange will focus on three key axis over the coming months

international

standardisation

partnerships