Navy SATCOM Users Workshop @ ISCe 2008

Broadband and IP Via Satellite for Navy Applications

Moderator: **Maj. Gen. James B. Armor**, USAF (Ret.), Founder – The Armor Group, LLC

Speakers: **Peter Pardee**, Vice President – Hughes Network Systems
Ron Samuel, President – Eutelsat America
Kay Sears, President – Intelsat General Corp.
Larry Simon, Senior Director – Americom Government Services (AGS)
Jeff Thompson, Space Initiatives Manager – Cisco Systems

Organizers: Hannover Fairs USA, Inc.; AIAA American Institute of Aeronautics and Astronautics

Co-Hosts: SIA; California Space Authority

Track Sponsor: AMERICOM Government Services

Uniting expertise in satellite broadband

tooway™ The new way to broadband

Strategic Partnership for consumer broadband In Europe via distributor network

eutelsat COMMUNICATIONS

> Europe's leading satellite operator

> Capacity commercialised on 24 satellites

Skylogic a eutelsat company

> Europe's largest teleport for broadband

> Providing services to distribution network in Europe, Africa, Asia, Americas

ViaSat

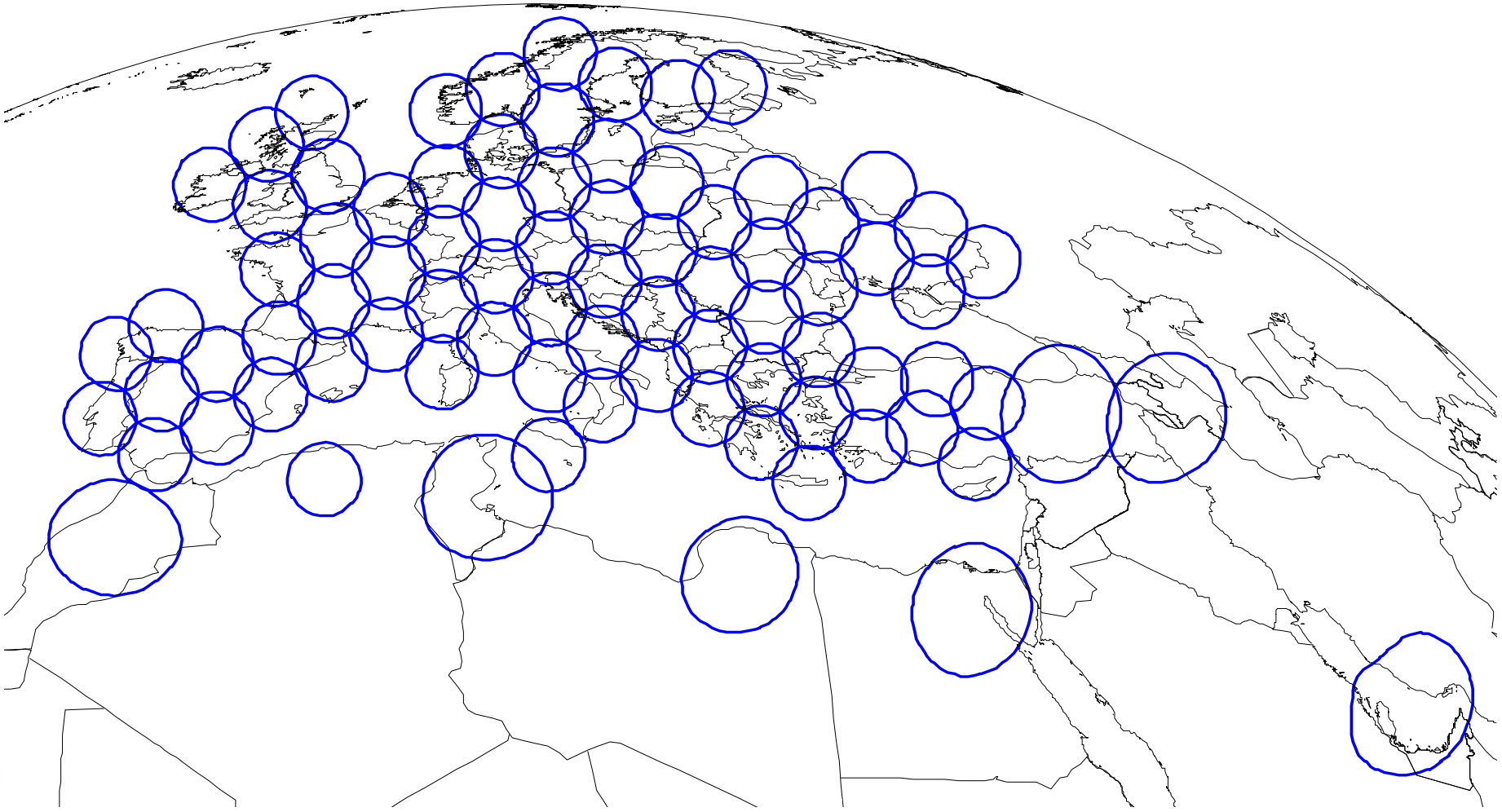
> Producer of innovative satellite solutions

> World leader for consumer broadband terminals (more than 750 000 terminals to date)

ViaSat eutelsat COMMUNICATIONS Skylogic a eutelsat company

KaSat service coverage

tooway™
The new way to broadband



ViaSat eutelsat COMMUNICATIONS Skylogic a eutelsat company

Tooway terminal characteristics

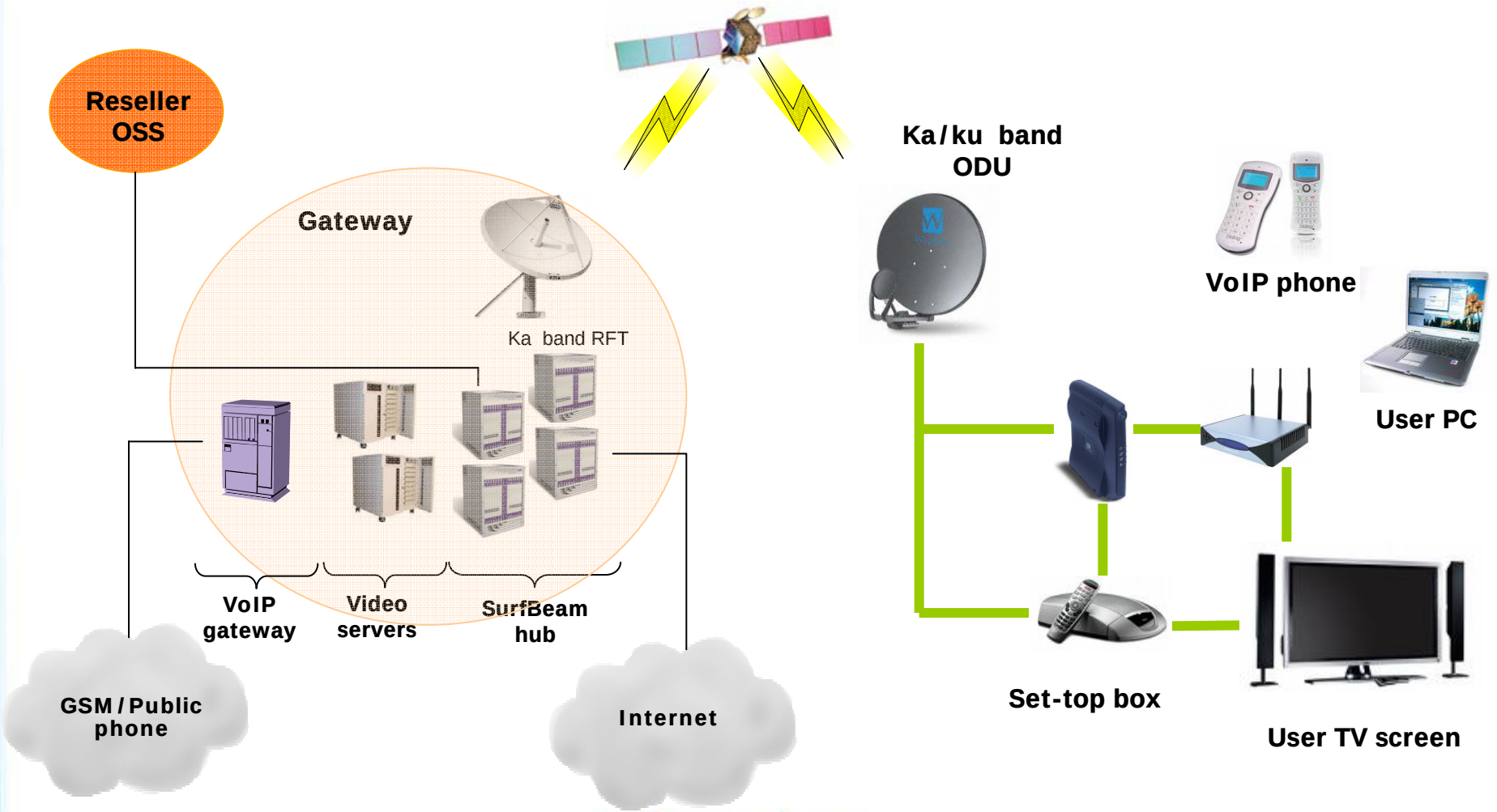
tooway™
The new way to broadband

- The Tooway new generation terminal will allow higher throughputs:
  - Several tens of Mbps in download
  - Several Mbps in upload
- The Tooway new generation terminal will work on different bands
  - Ku band for DTH reception
  - Ka band for interactivity (triple play)
- The Tooway new generation service will provide also professional services

ViaSat eutelsat COMMUNICATIONS Skylogic a eutelsat company

System architecture

tooway™
The new way to broadband



ViaSat
eutelsat COMMUNICATIONS
Skylogic a eutelsat company

Navy SATCOM Users Workshop @ ISCe 2008

Broadband and IP Via Satellite for Navy Applications

Moderator: **Maj. Gen. James B. Armor**, USAF (Ret.), Founder – The Armor Group, LLC

Speakers: **Peter Pardee**, Vice President – Hughes Network Systems
Ron Samuel, President – Eutelsat America
Kay Sears, President – Intelsat General Corp.
Larry Simon, Senior Director – Americom Government Services (AGS)
Jeff Thompson, Space Initiatives Manager – Cisco Systems

Organizers: Hannover Fairs USA, Inc.; AIAA American Institute of Aeronautics and Astronautics

Co-Hosts: SIA; California Space Authority

Track Sponsor: AMERICOM Government Services

US Navy Satellite Broadband

Short & Long Term Demand Drivers/Challenges

Kay Sears
President
Intelsat General Corporation
June 12, 2008

INTELSAT
General Corporation

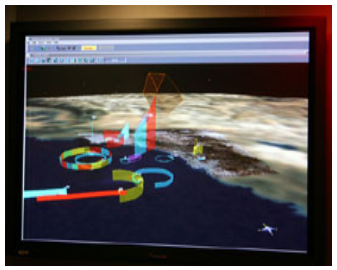
Network Centric Environment Demands Change

“If you are not making any big bets, you are a fixed strategic target and at risk.”

-DoD Office of Force Transformation

INTELSAT General Corporation

Near Term US Navy Satellite Broadband Demand Drivers



- **C4ISR**
  - Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems.
  - Tactical communications needs are increasing, new C4ISR systems under development.
- **Improved Warfighter Situational Awareness**
  - The global war on terrorism has demonstrated the need for substantially improved situational awareness, increased agility and enhanced responsiveness to address emergent threats.
  - Demand centered intelligence, real time war-fighting intelligence
  - Sharing with coalition maritime partners, dramatically increased requirements for flexible and rapid information sharing with coalition maritime partners.
- **Back-Office Applications**
  - Force Level Variants and Unit Level Variants could see increasing back office data transfer requirements.
  - Payroll & Demand Centered Logistics
  - Morale, Welfare & Recreation
  - Training & Medical assistance

INTELSAT General Corporation

Long Term US Navy Satellite Demand Drivers- UAVs/BAMS

- **BAMS- Broad Area Maritime Surveillance**
  - Command and sensor links potentially increasing based upon RQ-4N Global Hawk architecture
  - Requirements could exceed 45 to 50 Mbps per sortie over time
  - CONOP's to include UAV to-ship, ship-to-ship sensor data re-distribution.
- **Technically Advanced HSV-2**
  - 64Kbps connections to HQ on earlier vessels may be replaced by 3Mbps or 6 Mbps Satcom links
  - The Joint Interoperable Mission Planning and Rehearsal System is designed to allow a commander to conduct mission planning while en route to a crisis area.
- **Riverine**
  - Littoral Missions

INTELSAT General Corporation

Challenges

- **Bandwidth prioritization - Military Wideband Global Satellites**
  - Ka-band and X-band antenna retro-fits onboard ships
    - Lengthy service window to make changes
  - "Closest-To-The-Fight" prioritization among service branches could mean re-allocation of resources
- **Will commercial providers of Ku-band capacity cover the oceans with high power capacity?**
  - Will Global C-band beams be included on future satellites as the Navy transitions to X-band and Ku-band for bulk of it's requirements?
- **Flexible Modem/Network Architectures:** Required to adapt to influx of more ships in any given operational area
  - Transit and Surge requirements could require flexible contracting practices
- **Move to "everything over IP"** Communications policy DoD wide, could drive changes in modem architecture while Navy is still fielding current modem upgrades.

INTELSAT General Corporation

Navy SATCOM Users Workshop @ ISCe 2008

Broadband and IP Via Satellite for Navy Applications

Moderator: **Maj. Gen. James B. Armor**, USAF (Ret.), Founder – The Armor Group, LLC

Speakers: **Peter Pardee**, Vice President – Hughes Network Systems
Ron Samuel, President – Eutelsat America
Kay Sears, President – Intelsat General Corp.
Larry Simon, Senior Director – Americom Government Services (AGS)
Jeff Thompson, Space Initiatives Manager – Cisco Systems

Organizers: Hannover Fairs USA, Inc.; AIAA American Institute of Aeronautics and Astronautics

Co-Hosts: SIA; California Space Authority

Track Sponsor: AMERICOM Government Services