



International Telecommunication Union

Satellite Based IP Broadband - Business Opportunities

Dr. Robert Hedinger
Executive Vice President
Loral Skynet

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Loral Skynet

- **Loral Skynet of Bedminster, New Jersey, operates one of the world's largest and fastest-growing fleets of satellites:**
 - **7 (seven) are currently in orbit**
 - **4 (four) more are being launched in 2002/2003**
- We provide high-volume communications and data transmission services to broadcasting, cable TV, Internet, industrial companies, government customers around the world.
- Through our global IP multicast network and fiber assets, Skynet provides high-quality data, voice, video and Internet connectivity to multinational enterprises and service providers around the world.



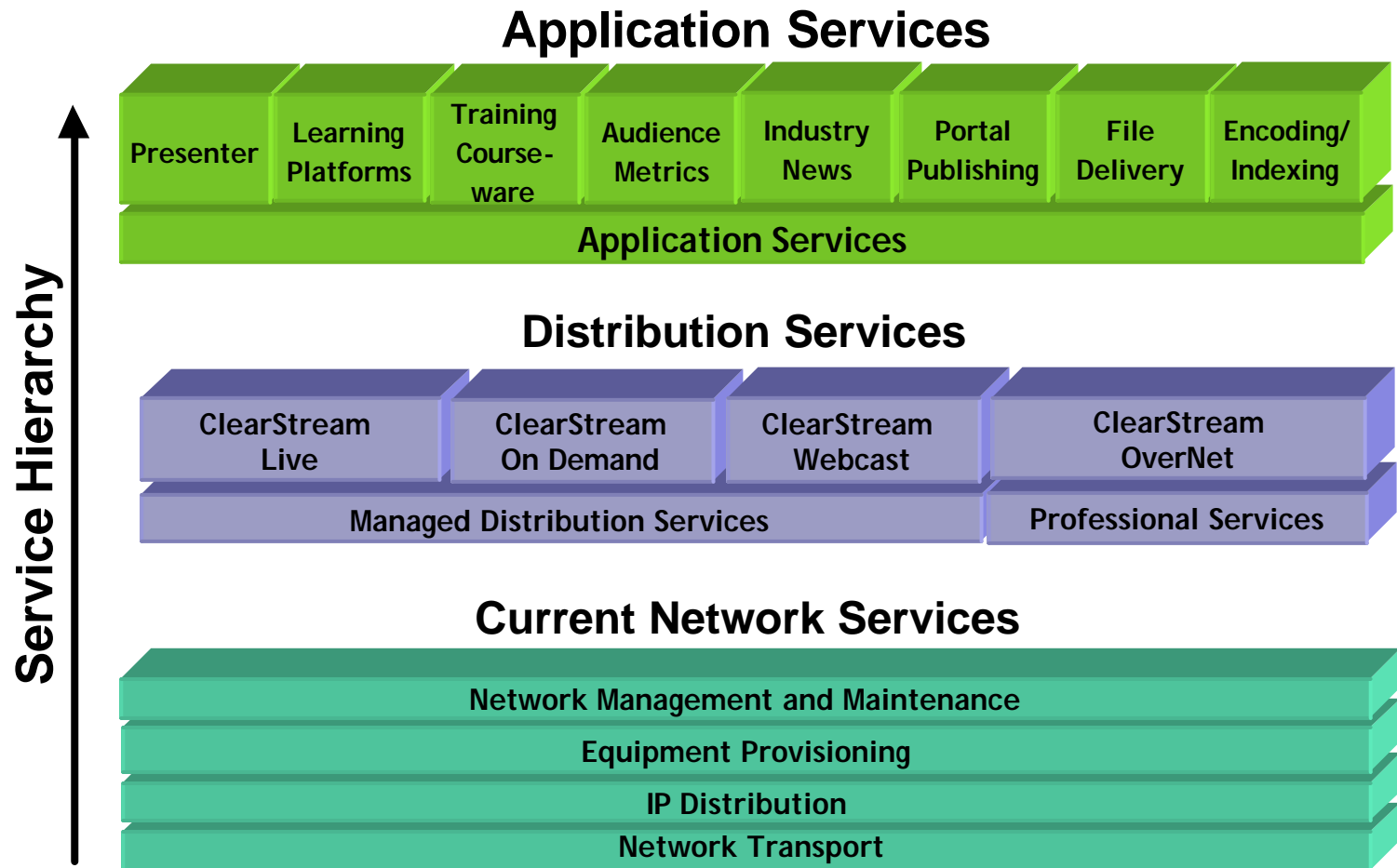
Loral Skynet

- A subsidiary of Loral Space & Communications, a leading satellite manufacturing and satellite-based services company
- 40-year heritage of satellite expertise beginning with Telstar 1 developed by AT&T/Bell Labs
- Strategic portfolio of worldwide assets
- Applications enabled, include:
 - TV broadcasting
 - Broadband networks (enterprise or consumer)
 - Satellite news gathering
 - IP telephony
 - Internet applications
 - Cable programming transport
 - IP/Data networks



Skynet 2-Way IP Services

Range of Applications

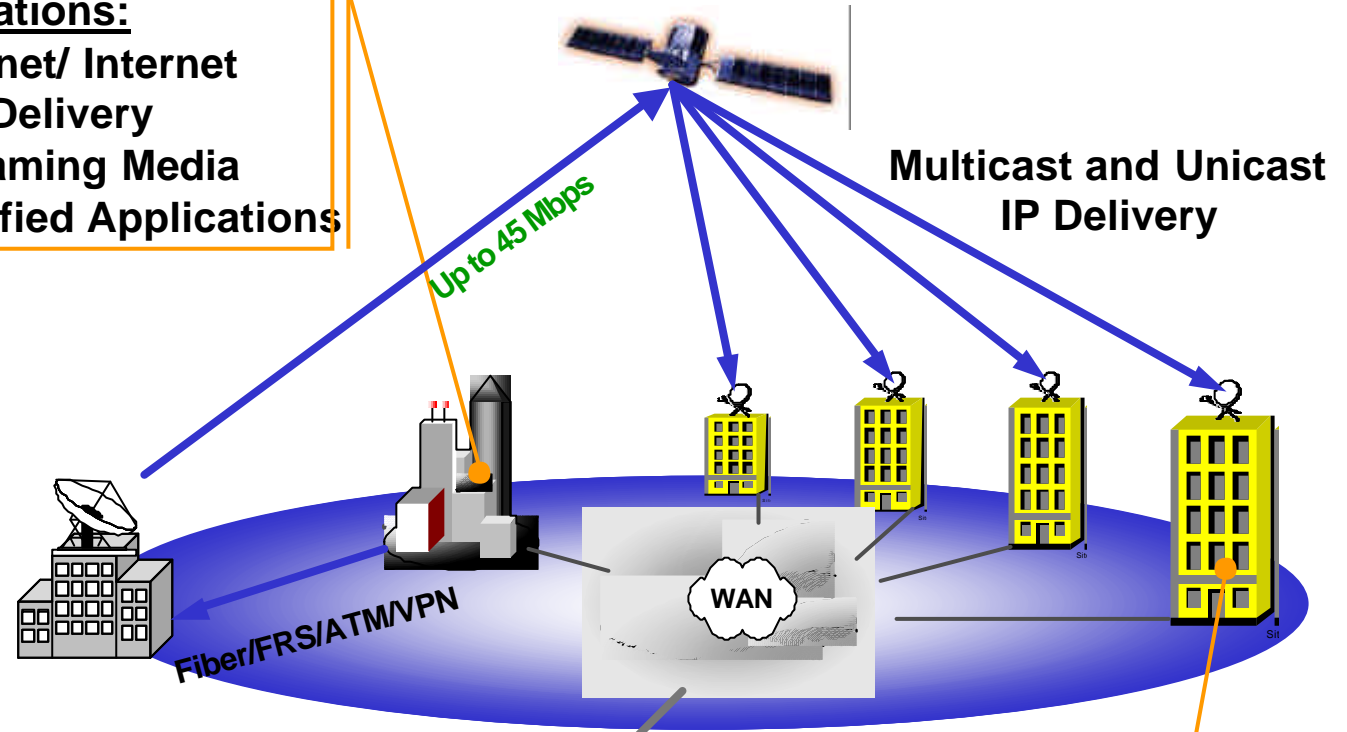




Skynet ClearStream Network

Applications:

- Intranet/ Internet
- File Delivery
- Streaming Media
- Certified Applications



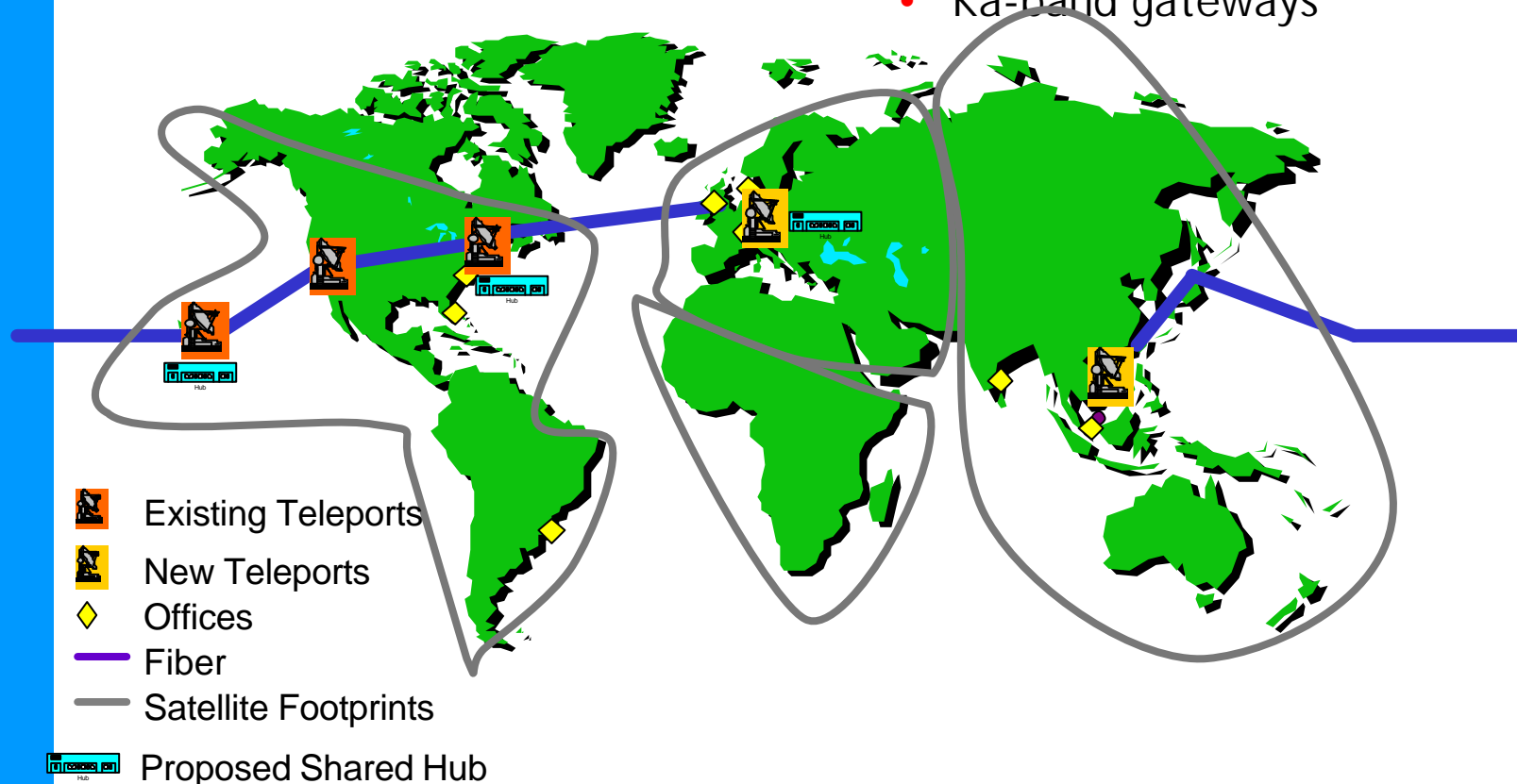
Destination:

- LAN
- Cache
- Servers



Skynet Network Infrastructure

- Global concept and reach
- Regional access and support
- Multiple service functionalities over a single network
 - Two-way shared hub(s)
 - Ka-band gateways



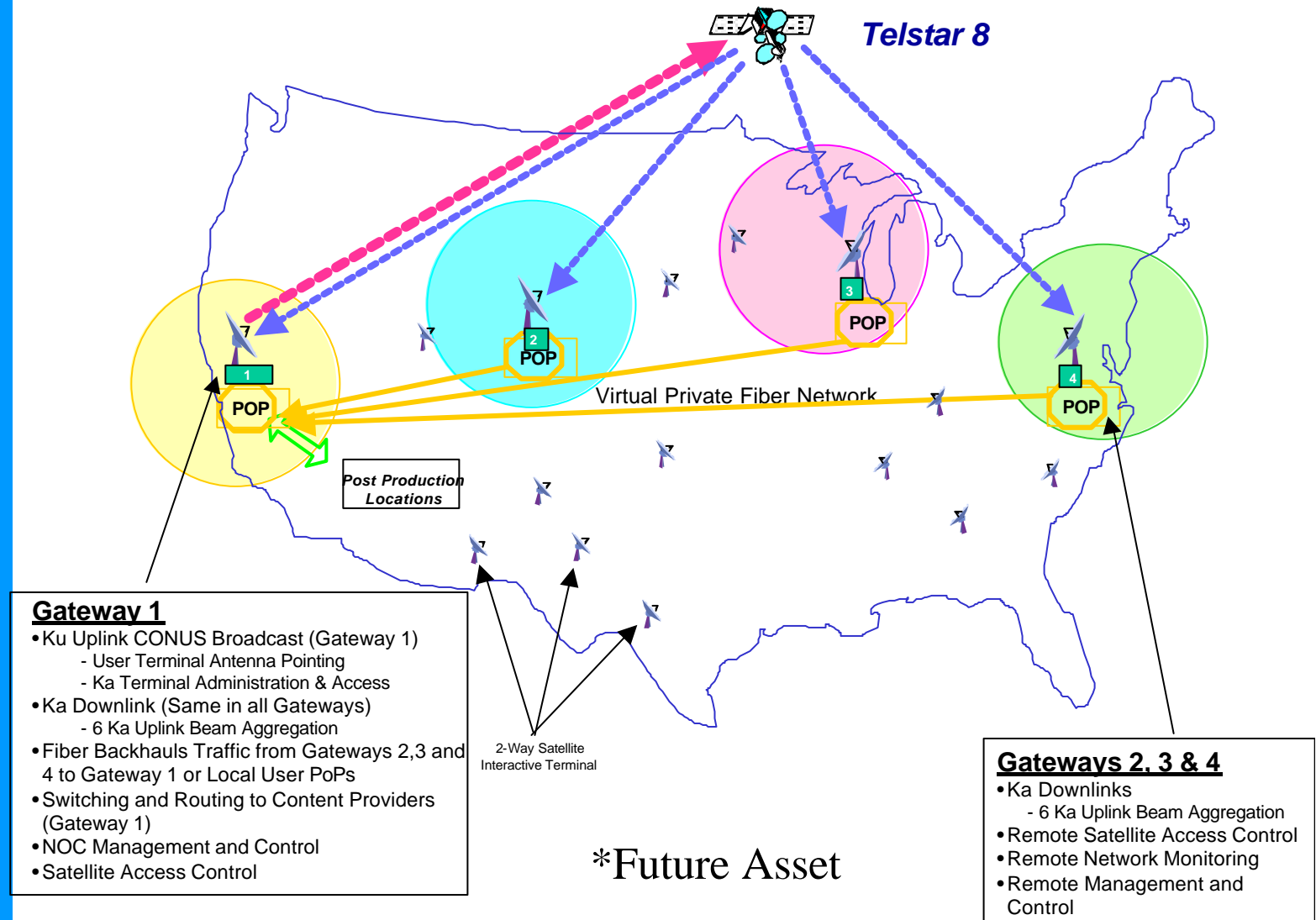


Skynet Two-Way IP Solution

- o Can operate in current FSS bands
- o Frequency reuse in Ka increases slot capacity at lower cost
 - Dual polarizations double bandwidth
 - Spot beam reuse multiplies bandwidth by 4 times
- o Two-way IP Modes
 - Ku Forward / Ku Return
 - Ku Forward / Ka Return
 - Ka Forward / Ka Return
- o Adaptive Power Control and Adaptive Coding for mitigating propagation impacts



Planned Gateway Connectivity for Ka Spot Beams Via Telstar 8*





IP Over Satellite

Critical Factors for Success

- o Optimized and Cost effective satellite network segments - space, ground, and control and management
- o Global standards and specification for Broadband Satellite IP and Multimedia
- o End-to-end integration, ease of implementation and equipment upgrades



IP Over Satellite Standardization Requirements

- o Application Specific Requirements
- o Reference architectures including: interfaces, protocols, Quality of Service, security, and interoperability, for satellite IP networks
- o Global standards liaising with other standard organizations such as ETSI, IETF, and TTA