

# Cyta's International Network & Satellite Services



# Introduction to Cyta

- ❖ Cyta is a government corporate body and the dominant telecommunications operator in Cyprus
- ❖ A customer-driven enterprise operating in a competitive market
- ❖ Provides the full spectrum of advanced telecommunications products & services, at competitive prices
- ❖ Turnover: € 434m, Profit: € 101m before tax (2013)
- ❖ Long term profitability & no debts
- ❖ Number of employees: approx. 2,400



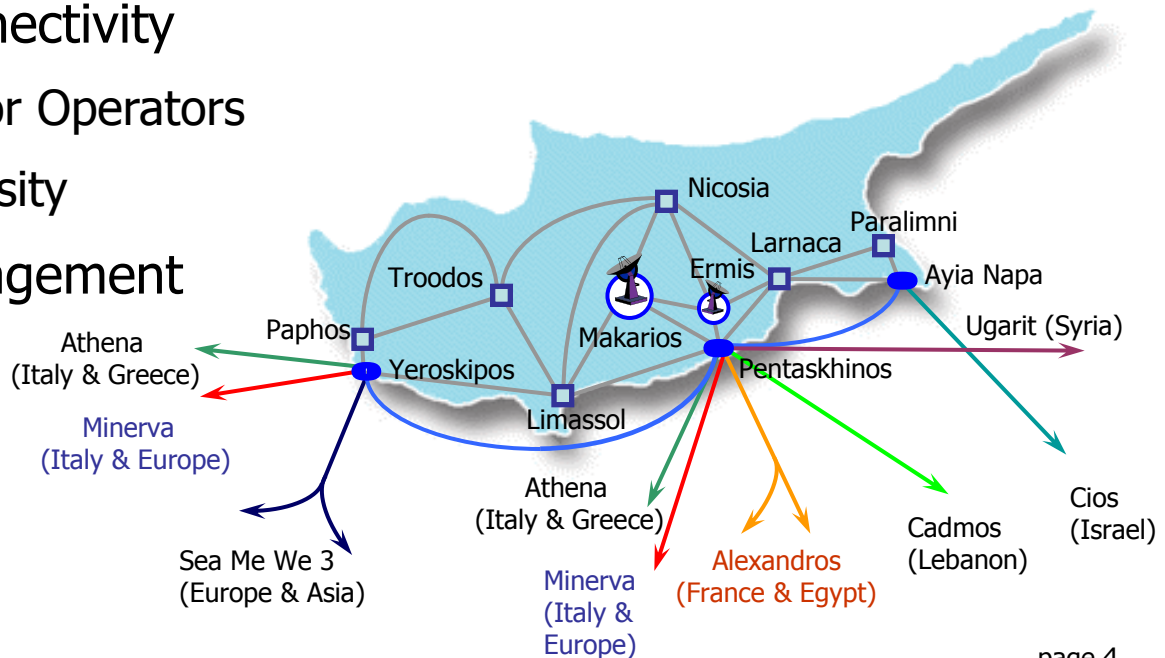
# Cyta's Major Retail Products & Subsidiaries

- The major provider of fixed and mobile communications in the Cyprus market
- Number One Internet Service Provider
- IP/MPLS/Ethernet backbone network-convergence of networks and services
- ADSL access to Cyta's broadband network
- Digital television to the home over ADSL
- Major Subsidiary Companies in Cyprus & Abroad



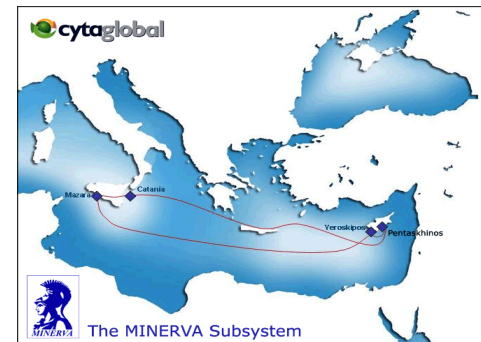
# Cyta's International Network

- International core network over SDH, Ethernet & IP/MPLS
- Two international switching centers
- A regional internet node (Cytanet)
- Two Teleport sites with more than 35 major antennas
- Three cable stations with 9 submarine cable systems
- Global international connectivity
  - ❖ Direct circuits with major Operators
  - ❖ Full redundancy & diversity
- A modern network management & operations center



# Major International Fiber Systems

- Major international fiber systems connect Cyprus to Europe & the rest of the World
  - ❖ Alexandros, a new system to France and Egypt with 96λ capacity in each direction
  - ❖ Minerva to Greece, Italy and thereafter to W. Europe
  - ❖ SMW3 from Australia, Japan & South East Asia to W. Europe
- Main Points of Presence in London, Marseilles, Athens & Cyprus
  - ❖ Additional PoPs in Paris, Amsterdam, Frankfurt, Milan, etc



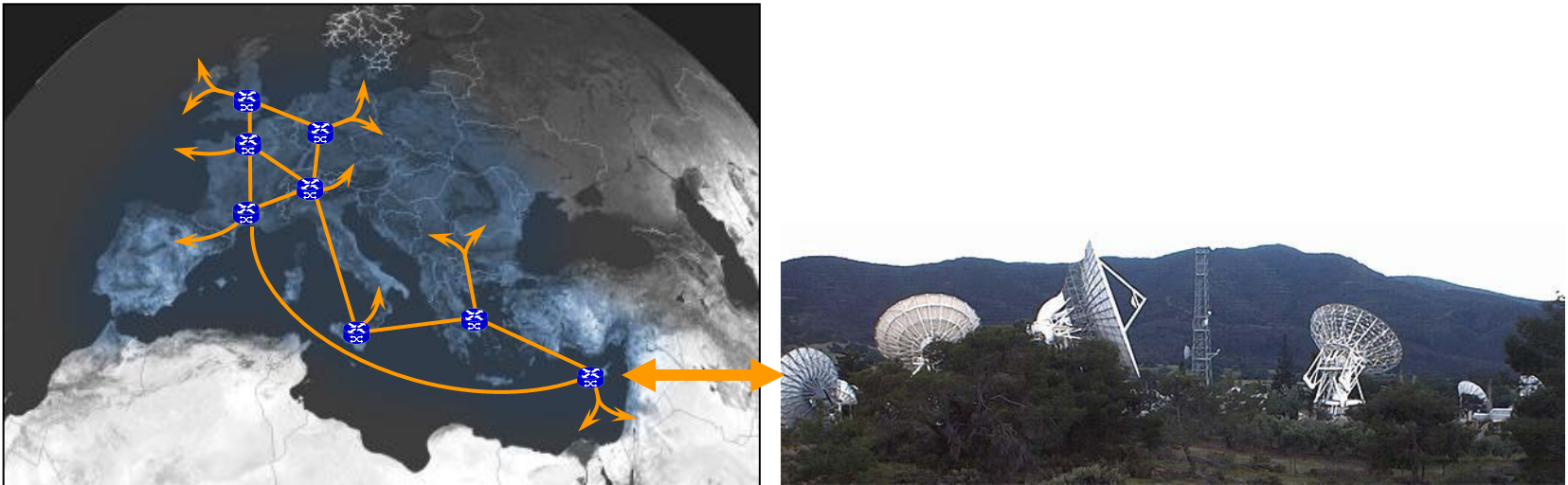
# Cyta's Internet Services

- ❖ The largest Internet Service Provider in Cyprus
- ❖ Global internet connectivity with 70 Gb/s capacity
- ❖ Built-in diversity, redundancy and resilience
- ❖ Broadband access via ADSL, Mobile, Wi-Fi and fiber technologies
- ❖ Major international customers



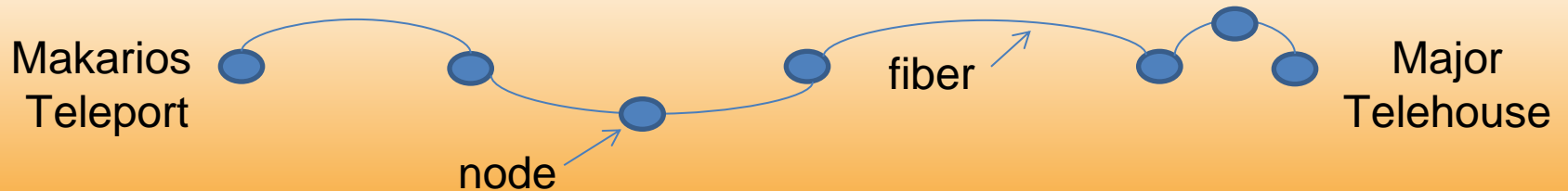
# Integrating Fiber to Satellite Solutions

- ❖ Accept and receive customer services at various Telehouses in Europe and beyond
  - ✓ Additional PoPs in Paris, Amsterdam, Frankfurt, Milan, etc
- ❖ Main Points of Presence in London, Marseilles, Athens & Cyprus
  - ✓ Additional PoPs in Paris, Amsterdam, Frankfurt, Milan, etc
- ❖ Provide Clear Capacity circuits, IP & Ethernet links and VPNs over MPLS
- ❖ Combine fiber and satellite capabilities into integrated products
  - ✓ Global coverage in cooperation with other service partners

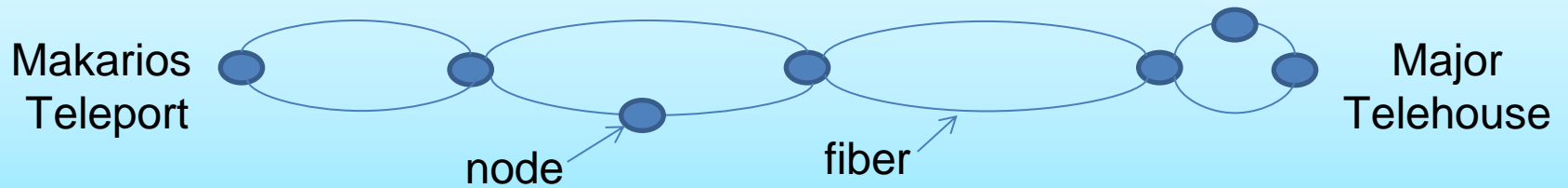


# Supported Connectivity Options

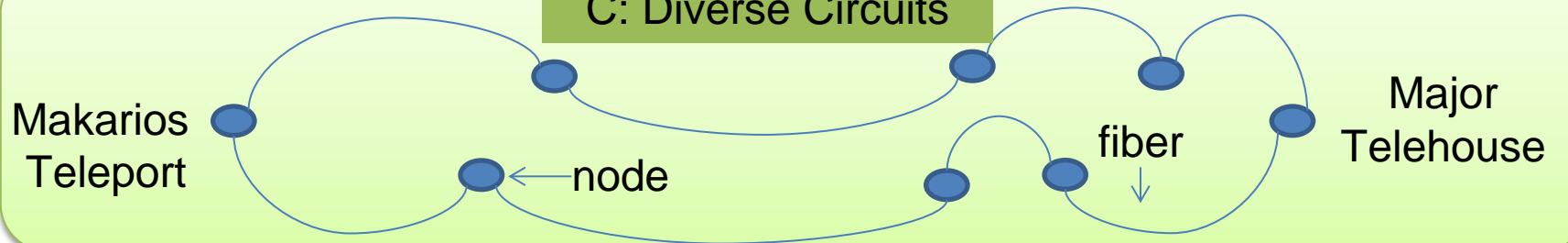
## A: Point-to-Point Circuit



## B: Protected Circuit



## C: Diverse Circuits



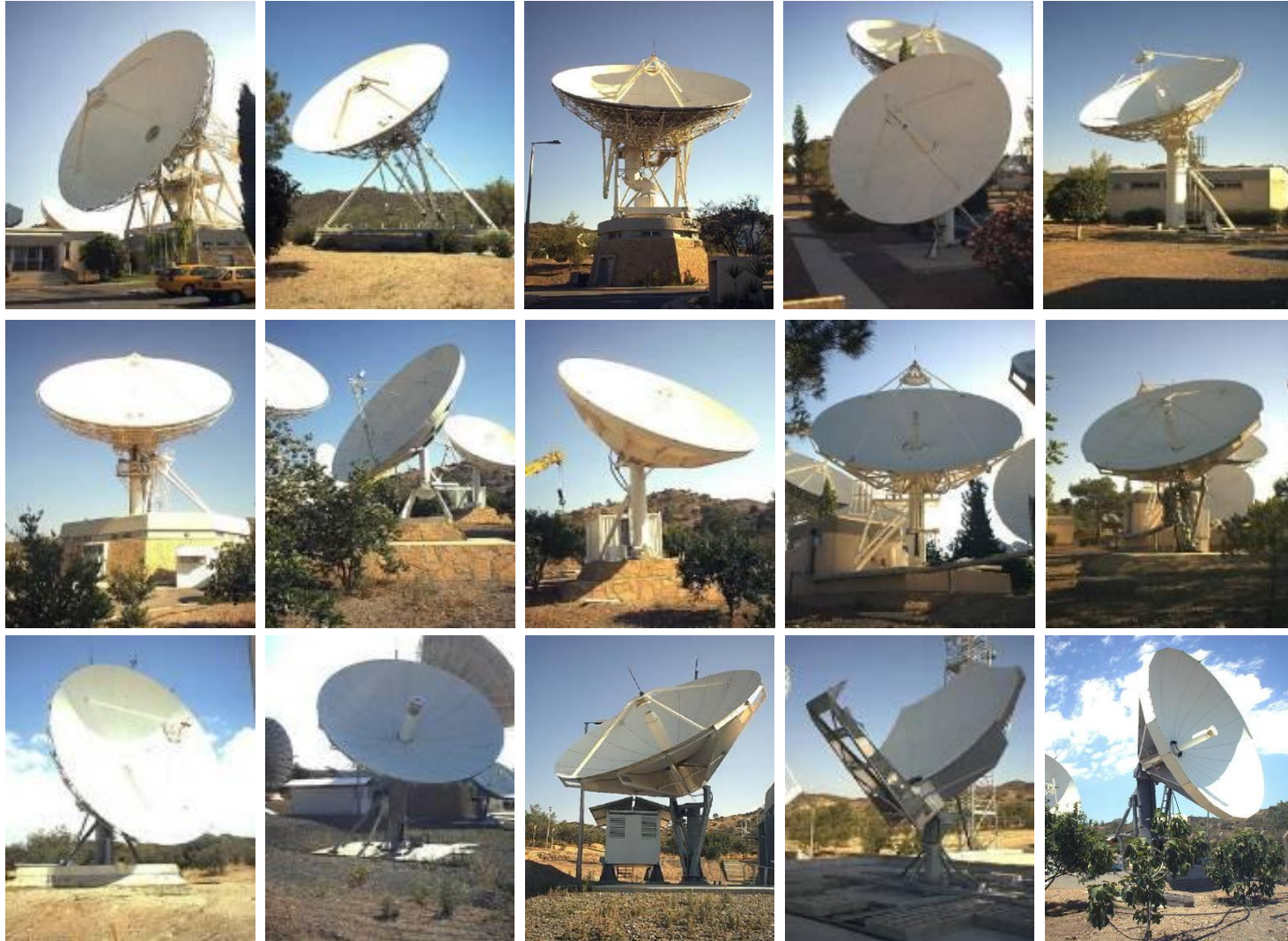


# Teleport Facilities

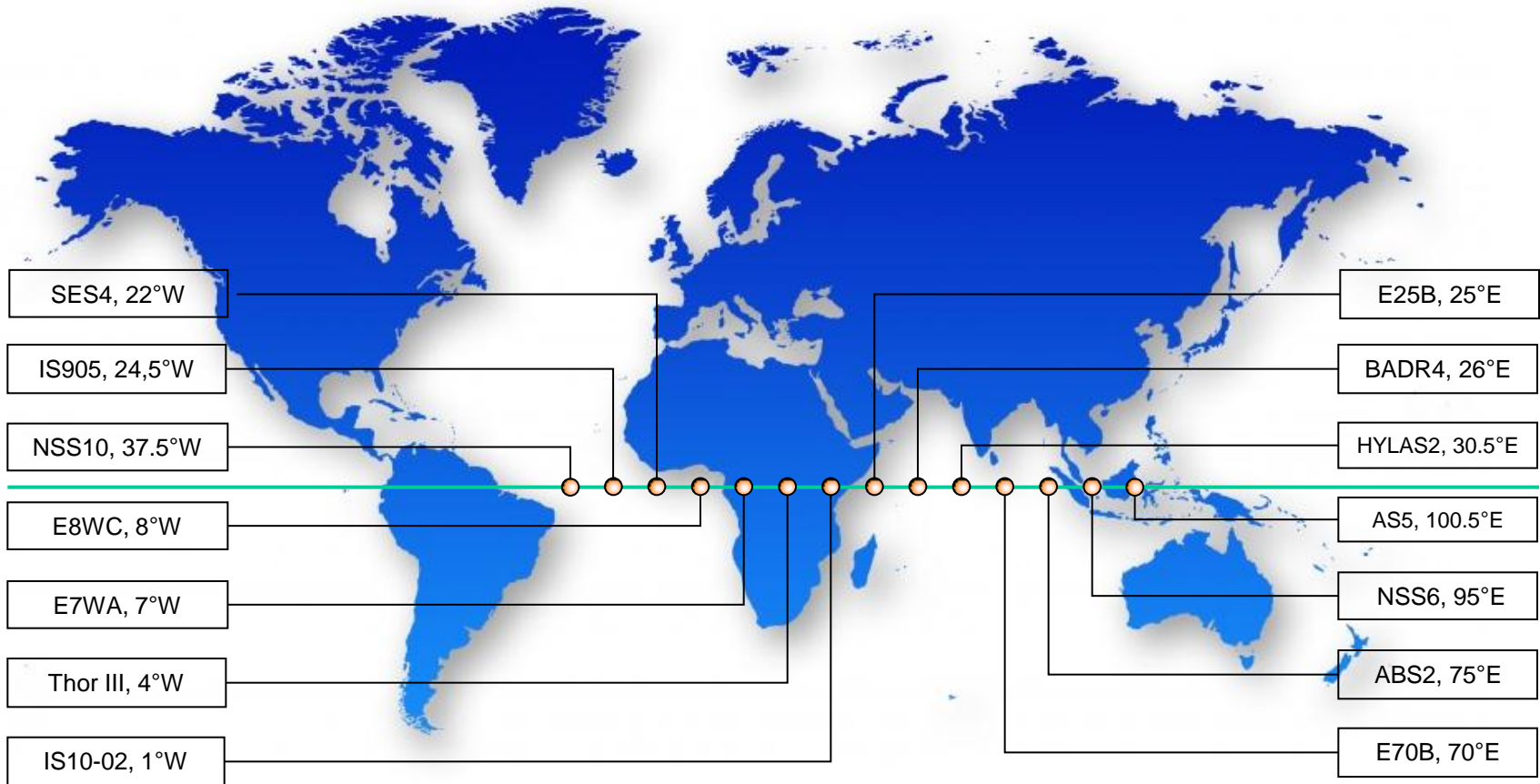
- Two Earth Station sites (MAKARIOS & ERMIS) with a complement of more than 35 major satellite earth stations
- Connections with Intelsat, Eutelsat, SES, AsiaSat, ABS, Hylas, Thor and ARABSAT
- 30+ years of experience in satellite communications
- Maintenance & support on 24/7 basis
- ISO 9001 certified



# Teleport Facilities (cont.)



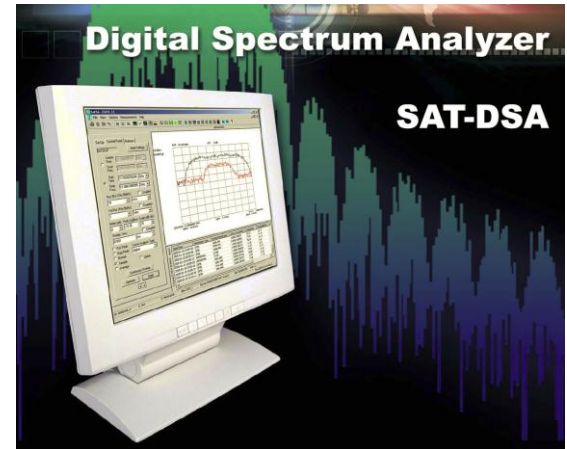
# Satellite Network



- Satellite Communication Services in C, Ku, DBS & Ka band
- Plus several Terminals for Satellite Control in S, C and Ku-band

# Customer Support

- ❖ Provided by experienced qualified technicians
- ❖ Supported by integrated RF Monitoring System with more that 60 terminals connected
- ❖ Operation
  - 24 hours x 365 days monitoring
  - traffic introduction, rearrangement & restoration
  - in-service monitoring
- ❖ Maintenance
  - preventive
  - corrective
- ❖ Installations and Upgrades



# Security & Safety Aspects

- Physical Security
  - Surveillance cameras monitor access to restricted areas
  - Guarded 24 hours x 365 days by Police
  - Remote monitoring of sites
- Network and Information Security
  - Active member in European and international security organizations
  - Comprehensive information security management system in accordance with the ISO27001
- Fire Protection System
  - Fire Alarms (heat & smoke detectors)
  - Fire suppression with Inert Gas System
  - Automatic & portable extinguishers
  - Outdoor fire station points & Trained local personnel
- Hotline with Police and Fire Brigades
- Capabilities for Disaster Recovery & Business Continuity



# Commitment to Quality

## ❖ Accurate measurements

- Daily/weekly/monthly/annual schedules
- Database log-book

## ❖ Quality targets according to:

- ITU recommendations
- Customer contracts
- Service Level Agreements (SLAs)

## ❖ Continuous performance improvement

- Management revisions
- Key performance indicators:
  - fault investigations
  - fault corrections
  - completed preventive maintenance
- 6 month limit for action re-evaluation



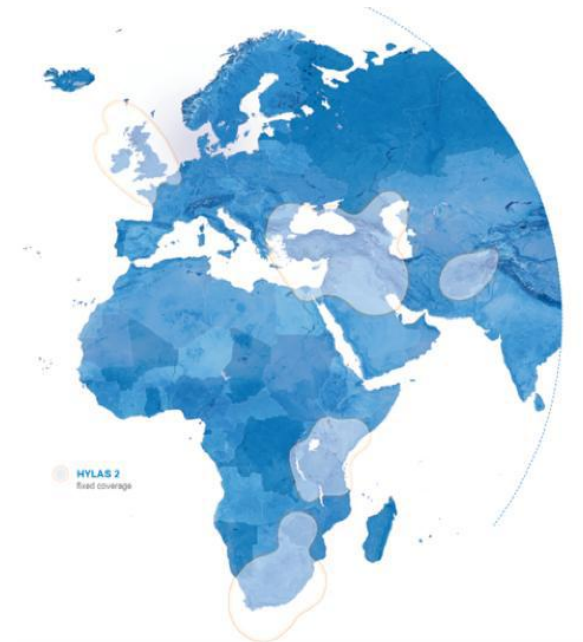
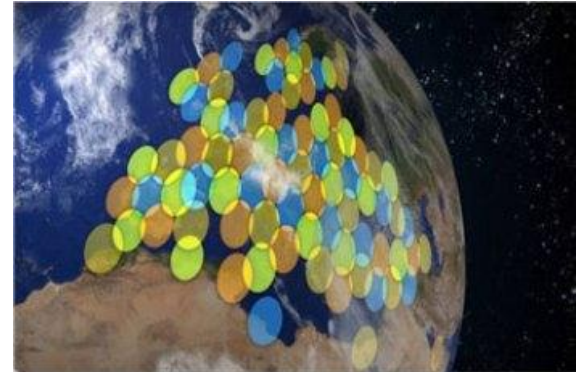
# Services offered via Cyta's Teleports

- ❖ Satellite Gateway Services
- ❖ Television
  - permanent & occasional
- ❖ Satellite Control
- ❖ Monitoring services
- ❖ Data & Internet
- ❖ Hosting services
- ❖ VSAT services
- ❖ Video head-end for IPTV
- ❖ Non Geostationary services



# Satellite Gateway Services

- ❖ New Generation, very high capacity satellites
  - frequency reuse technology offers GHz capacity
- ❖ Lots of Bandwidth to the customers
  - with small terminals
- ❖ Large Gateways to serve satellite and customers
- ❖ Major fiber connectivity needs at Gbps level
  - Redundant & Diverse connections
- ❖ Operations in Ka band
  - Backup Gateway to address sensitivity to rain





# Satellite Control & Monitoring Services

- ❖ Satellite Control
  - Spacecraft Telemetry, Ranging and Control
- ❖ RF Monitoring
  - Confirm customer compliance to the terms of their leases
- ❖ Baseband Monitoring
  - BER measurements to ensure quality of satellite transmissions
- ❖ Interference localization
  - Identify sources of unauthorized transmissions
- ❖ Secure customer access with remote control capability



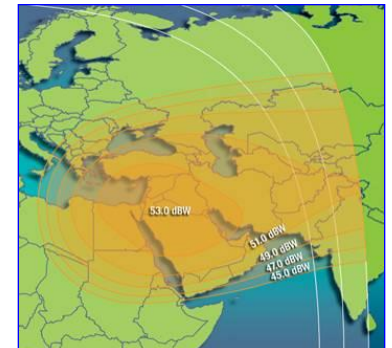
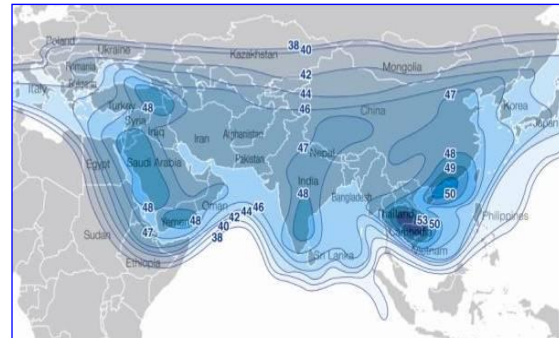
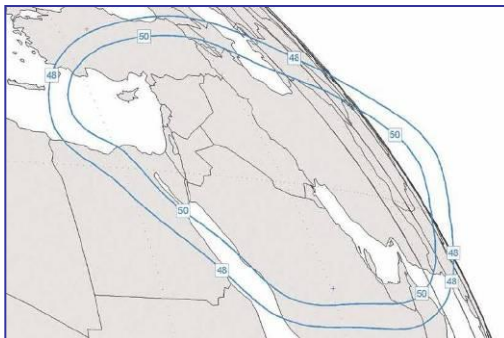
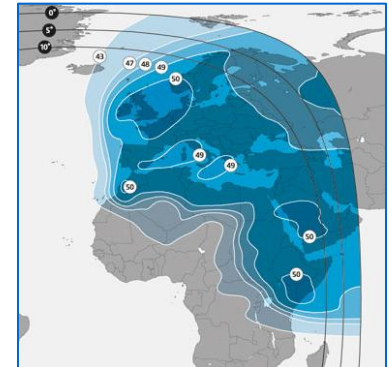
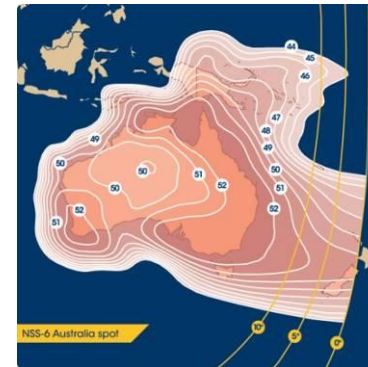
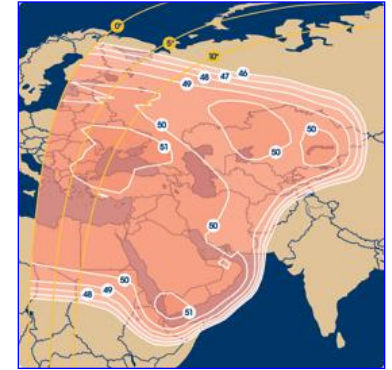
# Hosting Services

- ❖ Dedicated & secure space to host customer equipment
  - Mainly baseband equipment for dedicated applications
- ❖ Integrate with Cyta's facilities and supporting infrastructure to establish a reliable full-functioning system
- ❖ Operational support provided by Cyta
- ❖ Remote monitoring capability for the customer
- ❖ Integrated and customer-specific security provisions



# Cyta's VSAT Services

- ❖ Direct international connectivity with IP backbone, SCPC links and other dedicated connections
- ❖ Different Technologies supported
- ❖ Field support and equipment in association with specialized partners
- ❖ Extensive international coverage
  - land and sea
- ❖ Extra small terminal with low cost



# Video head-end for ADSL TV

- ❖ Multi-channel digital television over ADSL
- ❖ Reception of more than 70 digital channels from various satellites with dedicated antenna farm at the Teleport
- ❖ Assemble digital bouquet with modern MPEG platform for low bit rate encoding, encapsulation and transmission of programs through the Cyta core network
- ❖ Continuous monitoring of all channels on a 24- hour basis



# IRIS Gateway Satellite Services

- ❖ IRIS is a wholly-owned subsidiary company of Cyta
- ❖ IRIS facilities co-located at Cyta's teleports
- ❖ Provides turnaround services via satellite & fiber
- ❖ Offers high quality links between Europe, America, Africa, Middle East and Asia



# IRIS: Products & Services

- ❖ Satellite broadcasting over Asia and Europe with a full-transponder DVB platforms on AsiaSat 5, E7WA, E8WC & E25B
- ❖ Dedicated satellite links for broadcasting and distribution
- ❖ Occasional services for video transmission and turnaround of special events
- ❖ Hybrid solutions with a combination of fiber and satellite means



# IRIS: Occasional Services

- ❖ Satellite turnaround and redistribution based on the customer needs
- ❖ Capability for numerous simultaneous feeds
- ❖ Standard and High Definition services supported
- ❖ Re-encoding, Aspect Ratio Correction, Standards Conversion & customized solutions
- ❖ Turnaround of special events around the world including breaking news and main sports events



# Cyta: Building Long-term Relationships

- ❖ Responding to the customers' needs
- ❖ Solid Track Record
- ❖ Competitive prices
- ❖ 30+ years experience in satellite communications
- ❖ Continuous 24/7 support
- ❖ Satisfied customers worldwide



TATA COMMUNICATIONS



Gulfsat

TRUSTCOMM™





# Why Cyta?

- ❖ Extensive experience in international communications
- ❖ Modern fiber network with international POPs
- ❖ Dedicated Earth Station facilities for satellite access
- ❖ Integrated fiber to satellite solutions
- ❖ Ideal geographical location with optimal weather conditions and interference - free environment
- ❖ Quality services - EFQM and ISO 9001 certification
- ❖ Established player with solid financial position
- ❖ Major satisfied customers worldwide



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