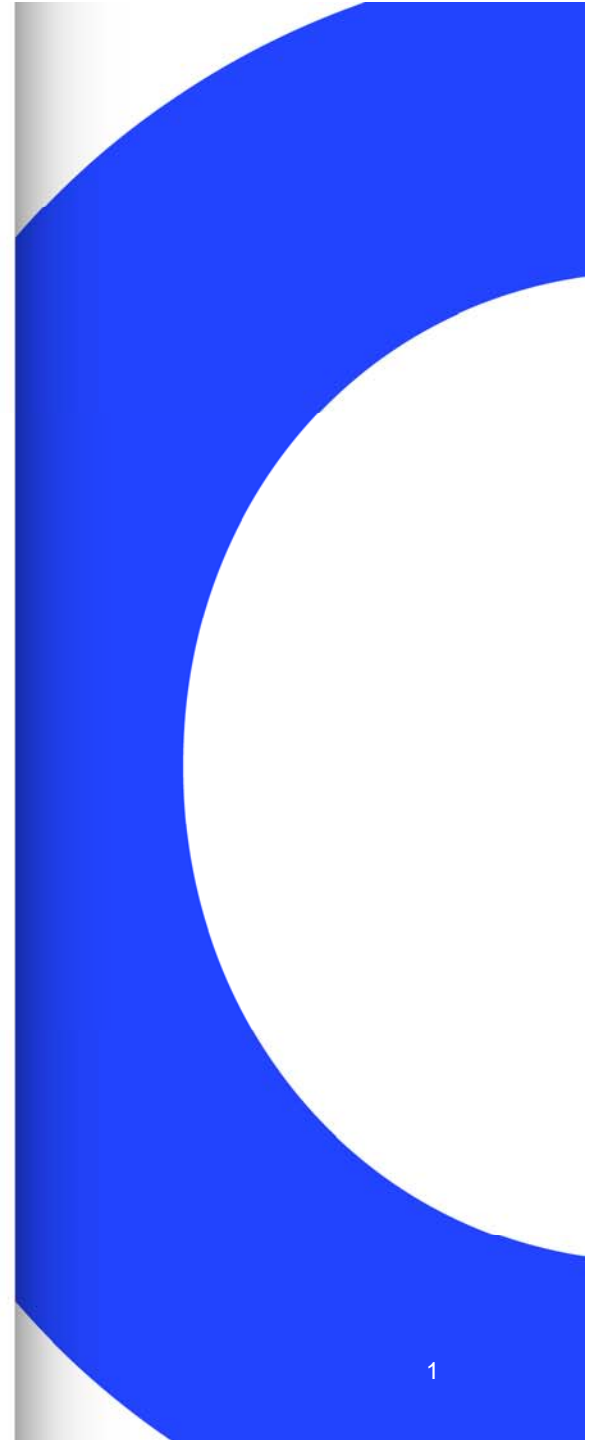


EUR(O)VISION

EUROVISION NETWORK

TRANSMISSION
TECHNOLOGIES,
PRESENT AND
FUTURE



EUROVISION

CONTENT

01 EUROVISION NETWORK
SHORT PRESENTATION

02 EUROVISION NETWORK
FUTURE DEVELOPMENTS

EUROVISION

EUROVISION
NETWORK
SHORT
PRESENTATION

THE NETWORK

- The Eurovision network is a delivery platform that bring premium news, sports and music events to the broadcasters through radio, TV and other media.
- Dedicated network with a superior global footprint for international live connectivity. Dedicated capacity and available bandwidth.
- Dedicated and fully-managed environment. Combines satellite and fiber.
- Constantly evolving, leading-edge technology. Firmly based on staff expertise

EBU NETWORK PRODUCTS

Contribution: We provide broadcast contribution of top live sports events to broadcasters

Transmission: We provide ad hoc or permanent unilateral transmissions services, at flexible bit-rates, by satellite and fibre from any location to the broadcaster.

Facilities: We provide Members with production infrastructure and facilities, office space in key locations around the world (Washington DC, Moscow, Rome).

Content Exchanges: We operate the world's largest news and news sports content exchange platform

Production: We offer production facilities for live events in the field

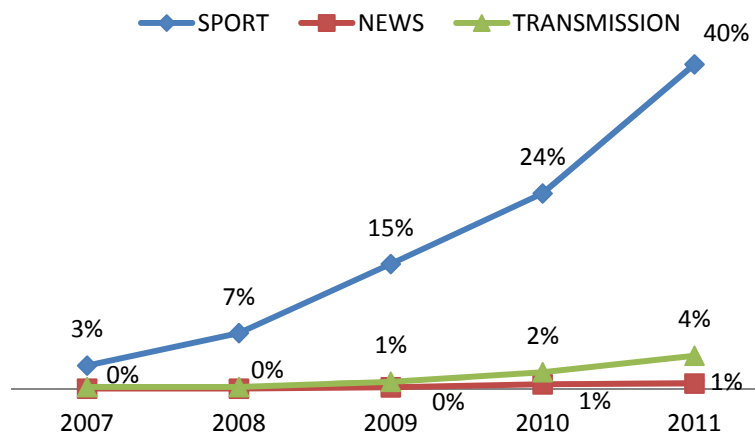
SOME EUROVISION NETWORK STATISTICS

- Approximately 45,000 News and Sports News items and 3,800 concerts between Members every year
- Approximately 78,000 individual transmissions in 2011 (mainly sports related)
- About 30,000 hours of transmissions for Sports

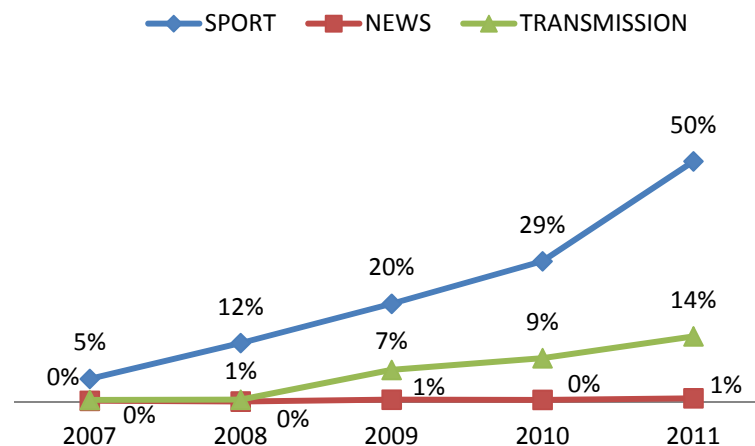
HD IN EUROVISION NETWORK

THE PROPORTION OF HD SERVICES IN SPORTS HAS REGULARLY INCREASED OVER THE LAST 5 YEARS

HD TRANSMISSIONS, %



HD HOURS, %

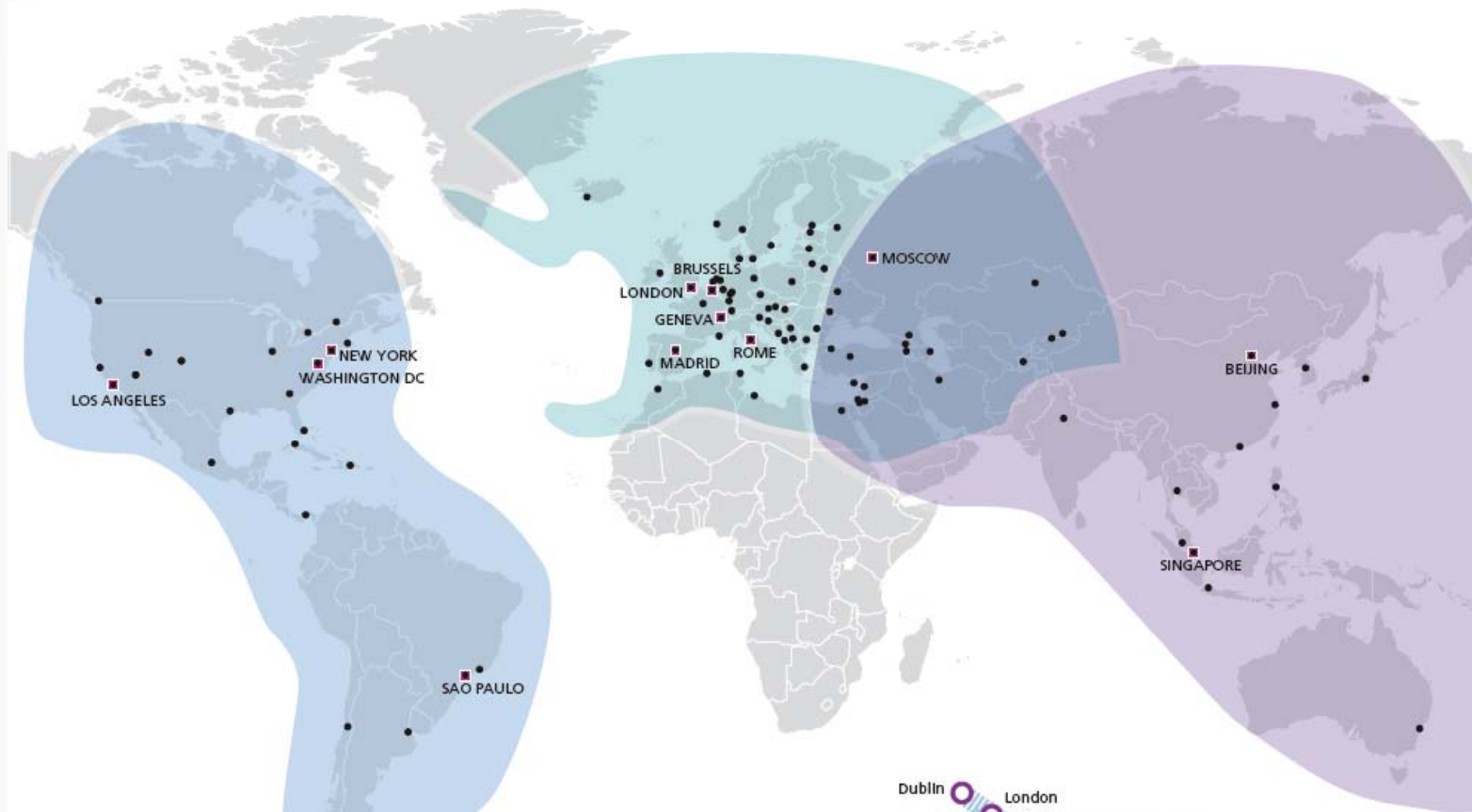


THE CURRENT EUROVISION NETWORK - SATELLITE

Reasons for a Satellite

- Global network accessibility; complete geographical coverage
- Multicast by definition. Point to multipoint services easier to achieve.
- Possible to uplink from anywhere. Initiate a reception point with short notice
- Rapid connections to the backbone
- Reliability of distribution; satellite platforms experiences less malfunctions than fiber (e.g. accidental breaks to a fiber line)
- **EBU operates permanent leases on 6 satellites worldwide: EU7A and EU10A in Europe, IS805 and NS806 in Americas, AS5 and AP7 in Asia**

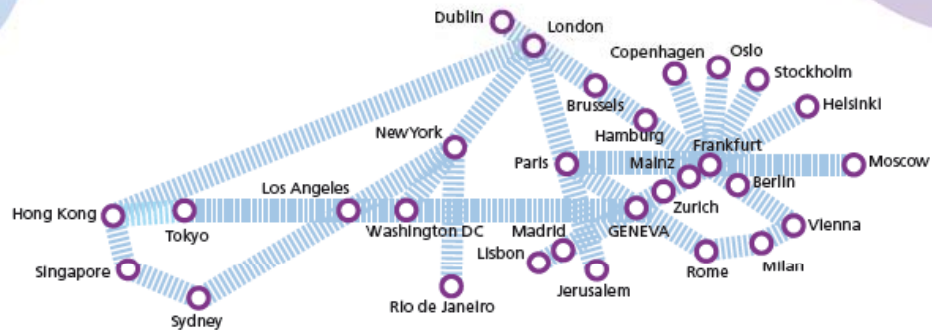
EUROVISION



Eurovision Offices
and Access Points to the
Eurovision Network

Intelsat 806 at 40.5° W and Intelsat 805 at 55.5° W
Intelsat 7A at 7° E and 10A at 10° E (KU/KU)
Intelsat 5 at 100.5° E

IE Eurovision Fibre Network

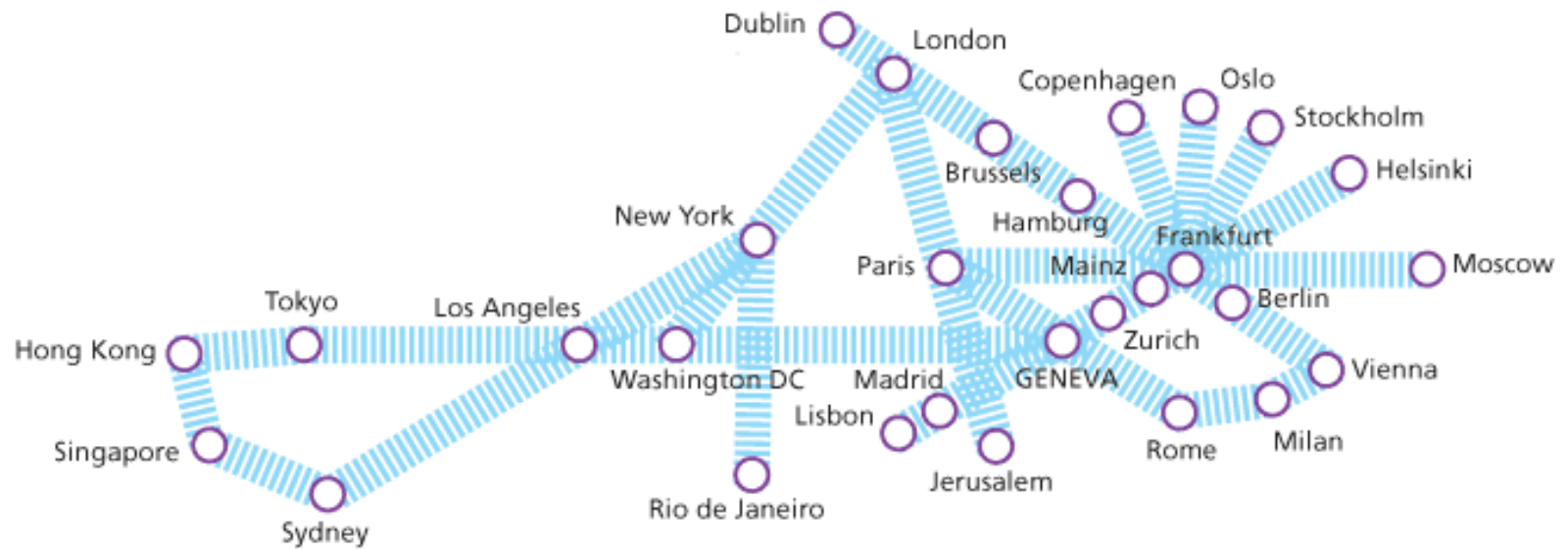


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THE CURRENT EUROVISION NETWORK – FIBRE

Reasons for a Fibre

- Point to point, bidirectional by definition; increased demand for exclusive, video and data circuits, require fibre connections
- Highest possible bitrates; increasing number of HD transmissions in the future require even more bandwidth.
- Affordable bandwidth; cost of unicast bandwidth is cheaper on a fiber network in comparison to satellite. Cost model is very “logarithmic”.
- Fibers provides lowest latencies
- Fibers tend to be more immune to eavesdropping and interception than satellite
- **EBU operates a fully managed fiber network, FiNE, with more than 120 nodes and more than 300 trunk lines**



Note: this is a generic schematic of the core FiNE network. There are regular changes to the routes and the capacity of any route, determined by usage and contract requirements

NETWORK SECURITY – NOC AND BACKUP

- The NOC Geneva was a single point of failure in the network.
- In earlier years the NOC was more a coordination centre. Nowadays much more video processing and management is centralized there
- A proper backup facility was required for operational business continuity.
- A state of the art backup facility have been established in Leuk . This facility is presently ensuring full backup for big events and will gradually extend the backup for all operations.

SUMMARY – 2012 NETWORK ADVANCEMENTS

- Deployment of new encoders and decoders across the network – H264
- Implementation of new modulation schemes for satellite
- Super multiplexes, for increased bandwidth for Americas and Asian distribution
- New fiber circuit technologies : cheaper, adapted to usage and more flexible (GigE, DWDM)
- NOC B – Leuk, Network Security - Backup to NOC Geneva for big events
- Call centre and better monitoring in Network Resources, assistance for NOC in crisis periods

EUROVISION

EUROVISION
NETWORK
FUTURE
DEVELOPMENTS

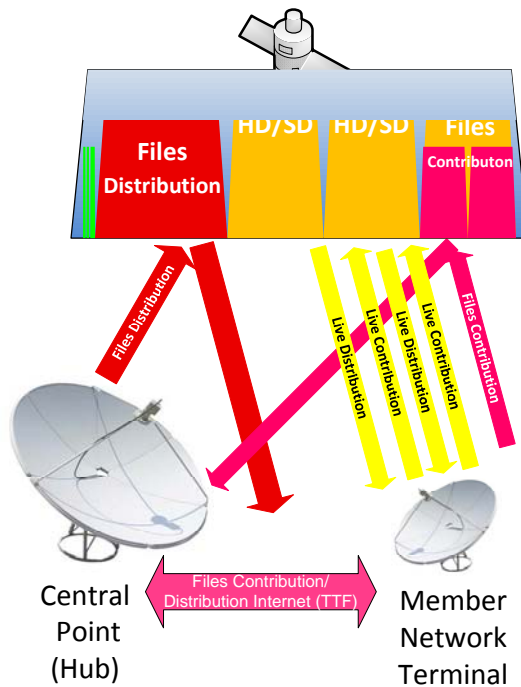
NEED FOR ADAPTATION

- Diversity of transmission technologies reinforce security of each network type
- Fiber and satellite need to be seamlessly combined in the new technologies
- Support for new services. Support for mandatory activities.
- Improved performance and cost savings for the Network
- Superior customer service
- We need a significant Technology Refresh to maintain and improve our competitiveness.

FNRMN SUMMARY

- The FNRMN is a **dedicated Network for News Exchange** activities (Mandatory Network Element)
- It is a **state-of-the-art future-proof** network
- **All News requirements** are fulfilled
- It allows a **consolidated overall reduction in network running costs**
- Fully operational by end 2014

FNRMN REQUIREMENTS



- Overall reduction in OPEX
- Additional services (Files as well as Lives)
- Future proof Technology
- Enhanced operation (Automation and remote)

NETWORK MANAGEMENT – NOC

- EBU day-to-day operations are becoming much more complex than before: number and complexity of transmissions, SD/HD, different bit rates, different equipment types.
- The NOC manually coordinates most of the transmissions and requires skilled staff. It is reaching limit of its capabilities.
- Automation has become a key requirement. We are embarking on an automation program for the NOC.

NETWORK MANAGEMENT – NOC AUTOMATION

- Better service quality for our customers. Automating network operations will increase the efficiency of the NOC and reduce the costs incurred from operator errors as a result of manual configuration network management.
- Improve advanced network monitoring techniques and provide centralised network analytics.
- NOC control and monitoring tools will be adapted to fully support the new transmission technologies

Completion target by end of 2014

NETWORK SECURITY – NOC B FOR ALL OPERATIONS

- NOC B role in Leuk will be gradually extended to ensure the highest network availability and fault restoration capabilities for all operations.
- NOC B will be part of company's distributed disaster recovery plan
- Control systems will be upgraded to provide the ability to spread network operations in a 'rolling' window between Geneva and the subsidiaries

Completion target by end of 2013

NETWORK RESOURCES MANAGEMENT – NEW BOOKING AND SCHEDULING

- Review of Eurovision operating and invoicing tools to cope with short term improvements
- Introduction of additional online booking tools for customer initiated network transmission reservations
- Introduction of new scheduling tools adapted for new transmission techniques
- Improvement of Capacity Planning – Better long term forecasting

Completion target by end of 2015

SATELLITE NETWORK OPTIMIZATION

- Generalization of H264 over the network
- Wide implementation of new modulation techniques.
- Improved demand and capacity management tools
- Increased use of multiplexes.

Completion target is ongoing

FINE NETWORK OPTIMIZATION

- SDH interfaces replacement with Ethernet/IP. Migration to Ethernet or IP based services on FiNE improves the reach and accessibility of the network
- Topology revision. New innovative technologies for fibre network operations will migrate the FiNE to a next generation network
- Management software upgrades
- Improve the mix of old and new services that compliment broadcast operations (file transfer, data services, telephony, voice communications etc)

Completion target is ongoing

NETWORK DEVELOPMENTS GOAL

The overall improvements to be introduced in the Eurovision network are aimed to significantly improve the overall security, enhance the customer experience of network users and doing so in a commercially viable manner.