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A REVOLUTION IN SATELLITE TELECOMMUNICATIONS

THE NEW FRONTIER FOR MULTIMEDIA SERVICES

By

Alenia Spazio

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A Revolution in Satellite Telecommunications

The new frontier for multimedia services



The most advanced technology now available to everybody

1

- The *SkyplexNet System*
- The *SkyplexNet* Network and Partners
- Evolution of the *SkyplexNet System*

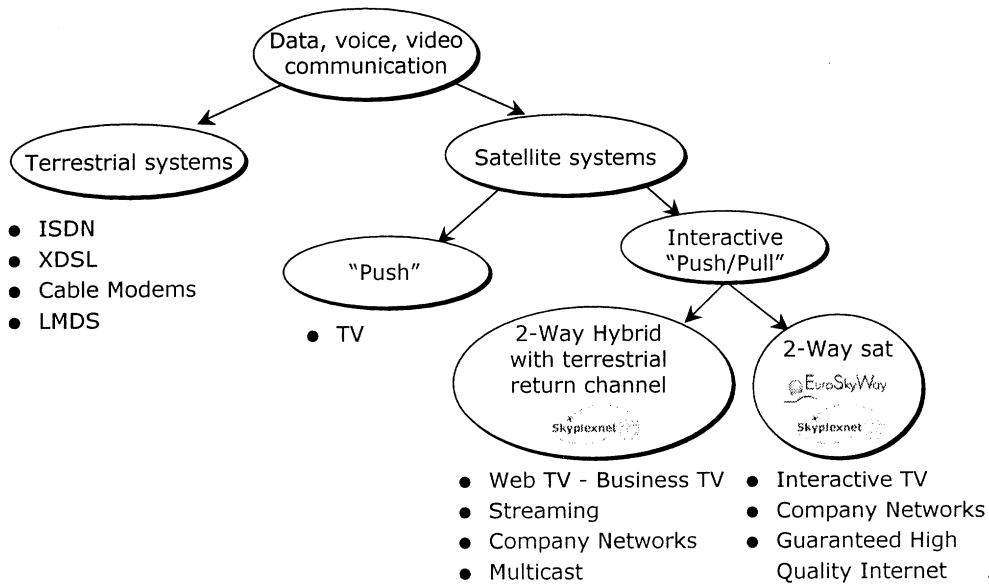
2

10-year forecast

- Data traffic will exceed TV
- The satellite's bandwidth will be ten times greater than at present
- Terminals will be interactive
- Bandwidth will offer connectivity and will be a function of the requested service quality

3

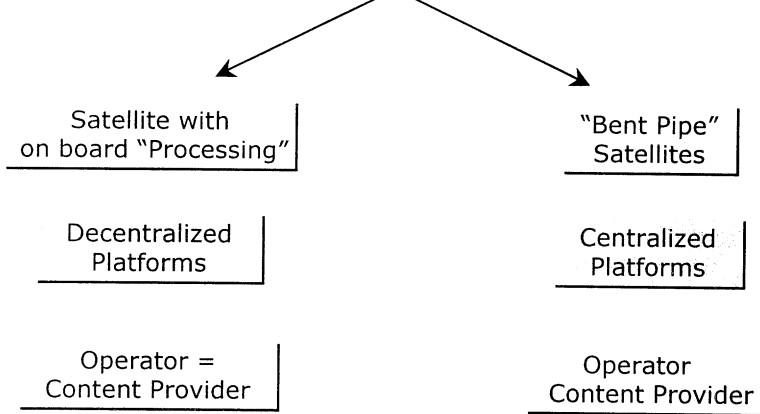
Broadband Platforms



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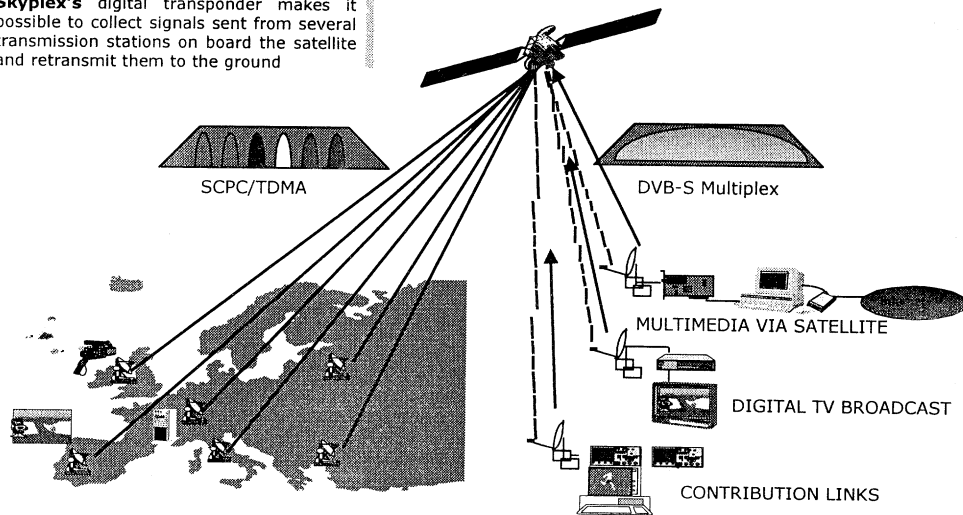
Broadband Platforms

Interactive Push/Pull



Skyplex is the world's first technology to access the satellite from the Content premises

Skyplex's digital transponder makes it possible to collect signals sent from several transmission stations on board the satellite and retransmit them to the ground



Alenia SkyplexNet is the solution allowing the creation of an interactive broadband network

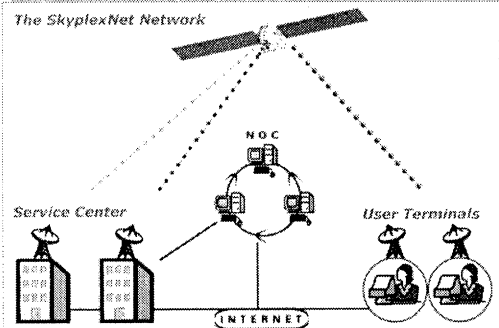
SPAZIO

A Finmeccanica Company

Skyplexnet

- Service providers can access the satellite and transmit content from their premises, without sending it to other Operators' ground stations
- Each provider creates his own satellite network and operates it in complete autonomy
- Only one parabola is needed for Internet and digital TV to receive the services
- Interactivity through the ground telephone line

Modular evolution
Flexibility
Quality
Performance
Competitiveness
Low cost user terminals



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Alenia

SkyplexNet opens the way to new communication solutions

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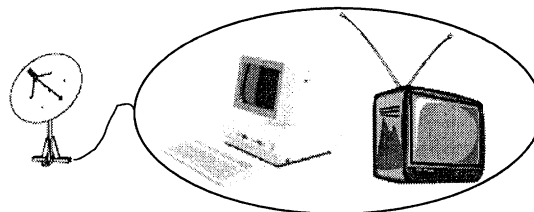
Skyplexnet

SkyplexNet is the best answer for TV/Internet operators, universities, companies with distributed sites, training centres and companies that produce content and want to distribute it widely.

Using only a single Service Centre it is possible to manage programming, distribute content, effect videocommunications and broadcast TV programmes.

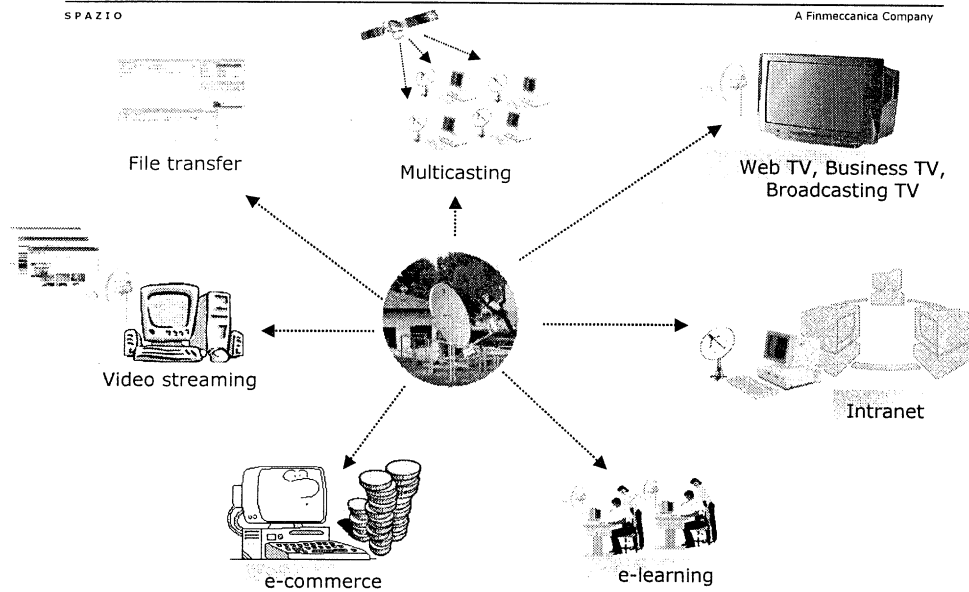
Internet & TV

PC & digital TV linked to the same parabola, pointed at 13°E



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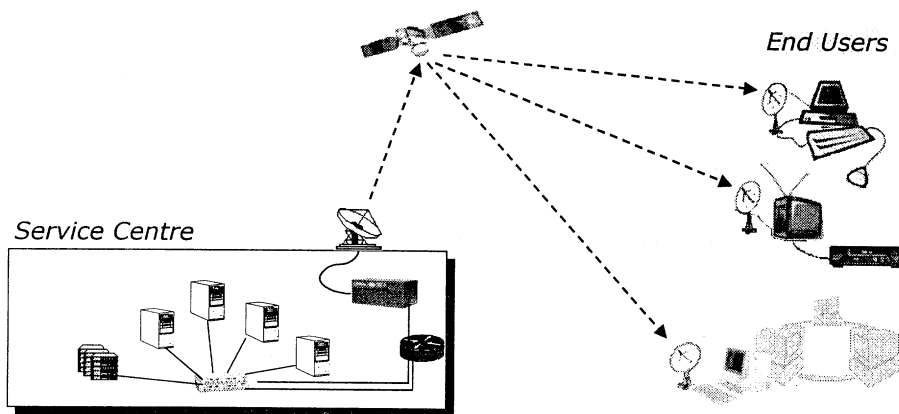
Principal applications



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Autonomous satellite connection

Aggregation of content, scheduling and transmission to satellite directly from the individual Service Provider



It is no longer necessary to use centralized digital platforms:
Service providers operate their own network

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The main elements of the *SkyplexNet* network are:

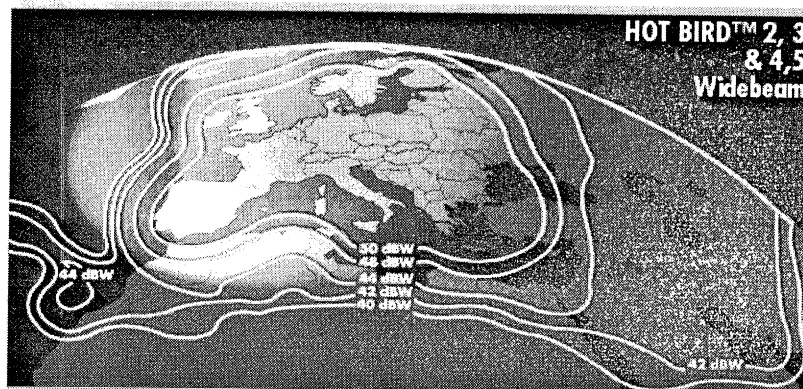
- Network Control Centre (CCR or NOC), managed by Alenia Spazio
 - Carries out the supervision and remote control of the Service Centres
 - Interfaces with the Satellite Operator
 - Assigns satellite capacity on the basis of requests from the Service Centres
 - Guarantees round-the-clock assistance through a Help-desk
- Service Centre, managed by the Customer
 - Drafts the content and organises/schedules the broadcasts
 - Defines transmission modes, priorities and content receivers
 - Interacts with its own remote users
- User segment belonging to the Service Centre
 - Multimedia classrooms, company remote sites, etc.
 - Individuals

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- Dedicated Service Centre at the Service Provider
- Bandwidth on request (from 512 kbps to 6 Mbps)
- Autonomous management of content and programming:
 - transfer of files, data and audio-video
 - interactive videocommunication
 - TV programme broadcasting in DVB MPEG-2 format
 - TV programme and video broadcasting in IP (DVB-MPEG 4) format
- Standard user reception system
- Access to users already equipped with a digital TV decoder and a parabola at 13° East.

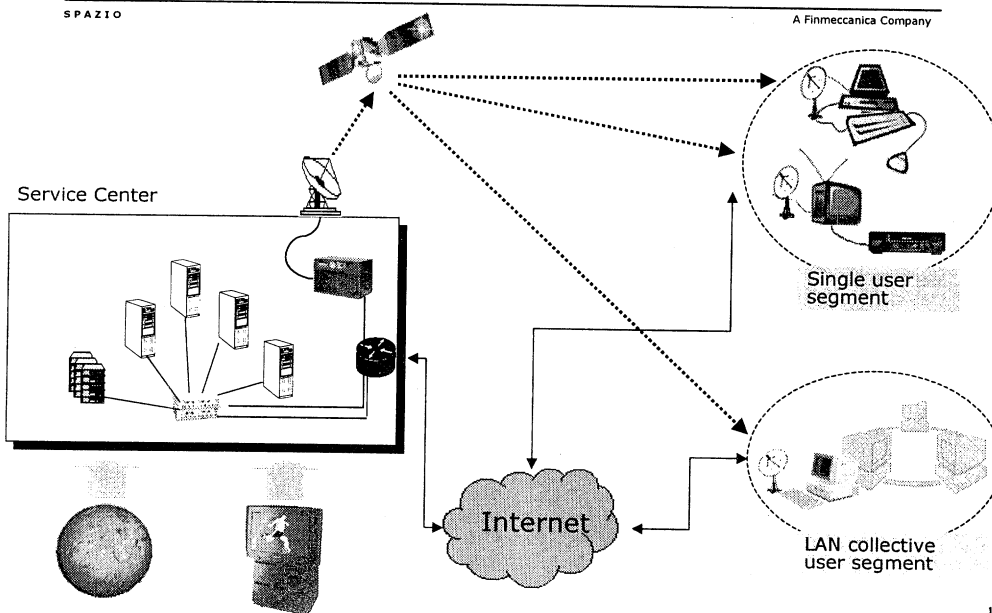
autonomy - flexibility - convergence of satellite TV and Internet

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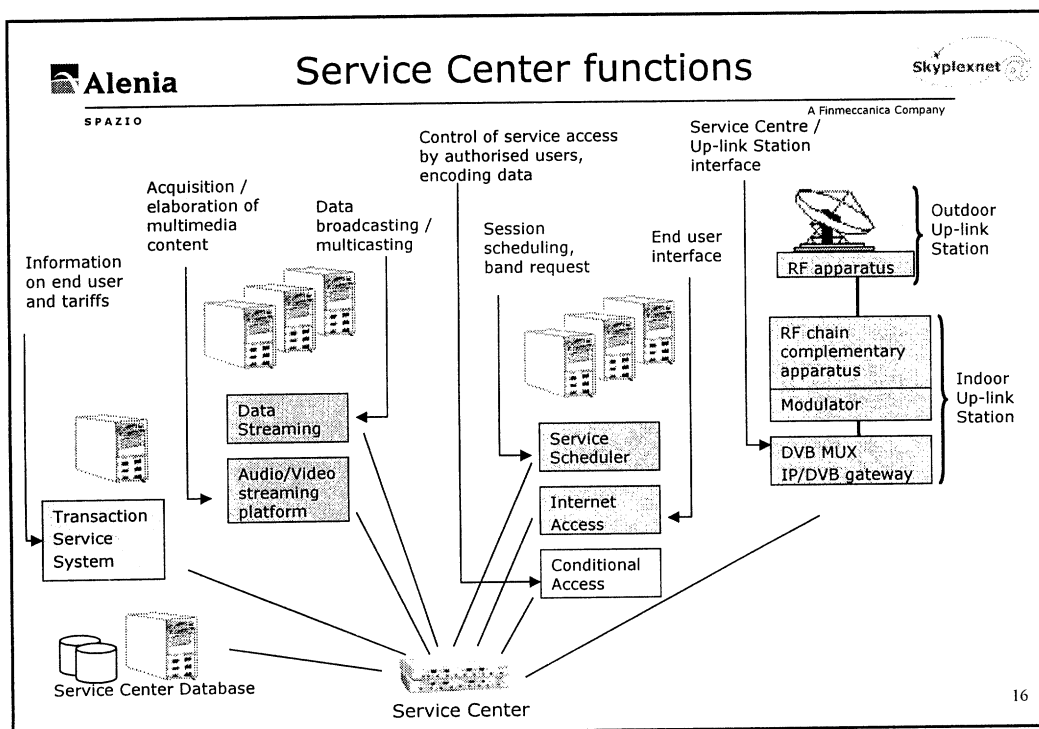
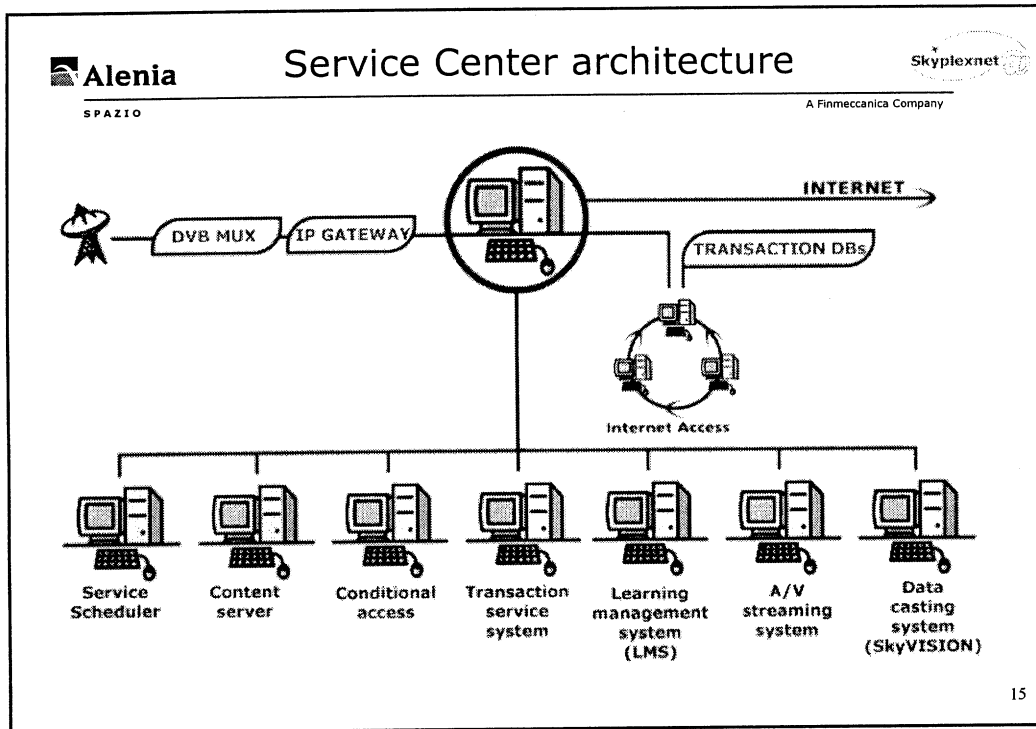


SkyplexNet services are already available on Eutelsat's Hot Bird V satellite at 13° E (Europe and the Mediterranean Basin), the same orbital position as the majority of digital TV channels.

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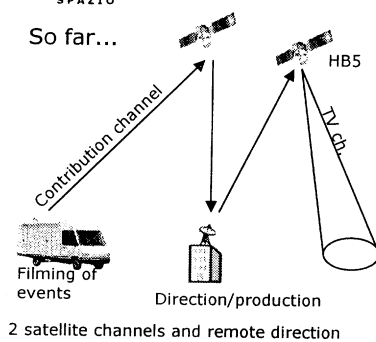




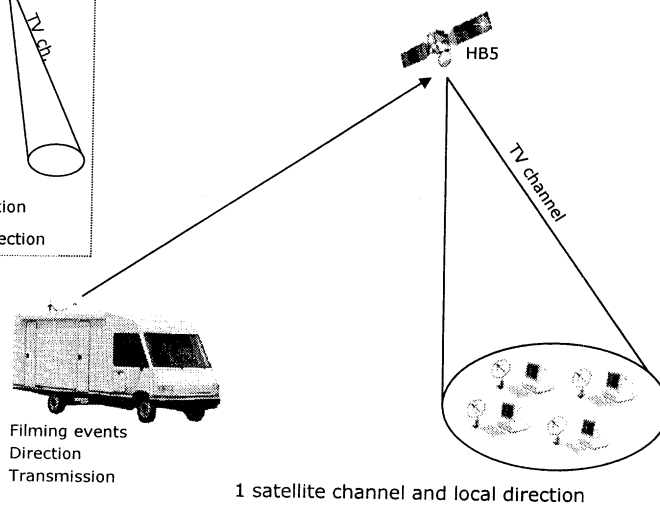
Record of events and real-time transmission to end users equipped with a parabola pointing to 13°East.

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So far...



With the SkyplexNet Mobile Service Center

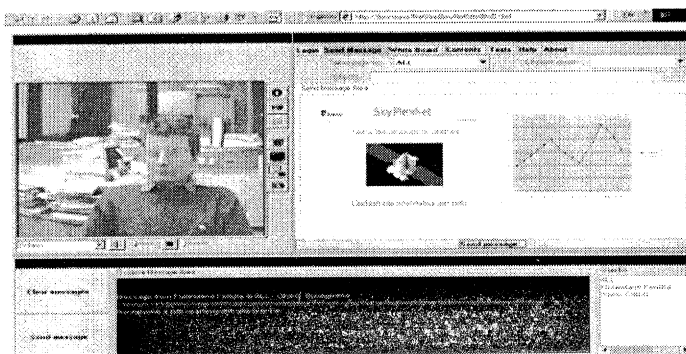


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- Easy and rapid preparation (self-pointing antenna)
- Series functional modules for:
 - MPEG-2 audio-video broadcasting
 - generation/management of transmission schedules
 - data/image/file distribution using IP protocol from external servers
 - interactive videocommunication with link to ground network
 - audio/video direction
 - content production
- Total autonomy (on-board generators)
- Licensed to drive with B-type license

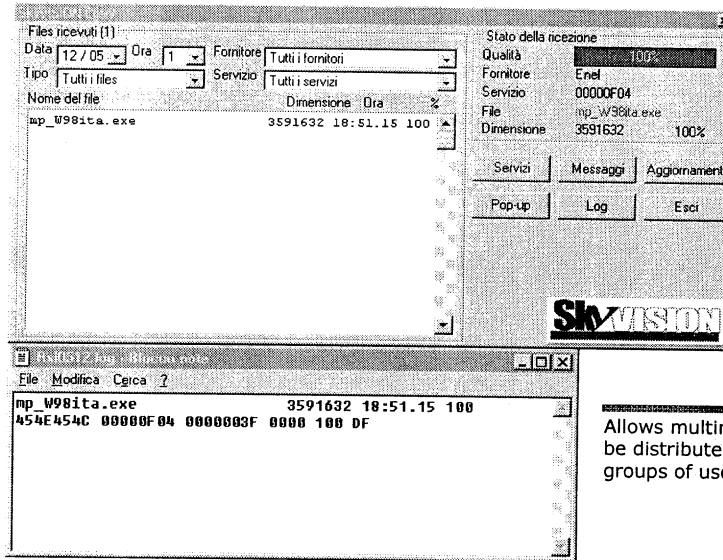
Video channel

Shared board



Chat line for dialogue
(with audio)

Allows the teacher to give a lesson
with multimedia technologies and
interact with students in real time

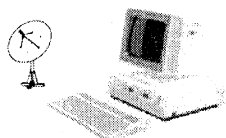


Allows multimedia content to be distributed to pre-selected groups of users

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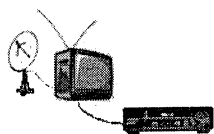
- Data distribution modes in broadcast, multicast or unicast
- Data transmission with automatic error correction
- Recovery and automatic retransmission of lost packets (with return channel)
- Incremental updating of transmitted data
- Warning of incoming data also with other SW applications
- Self-installing client SW compatible with WIN 98, WIN 2000, WIN NT, WIN XP.

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PC + Smart Card

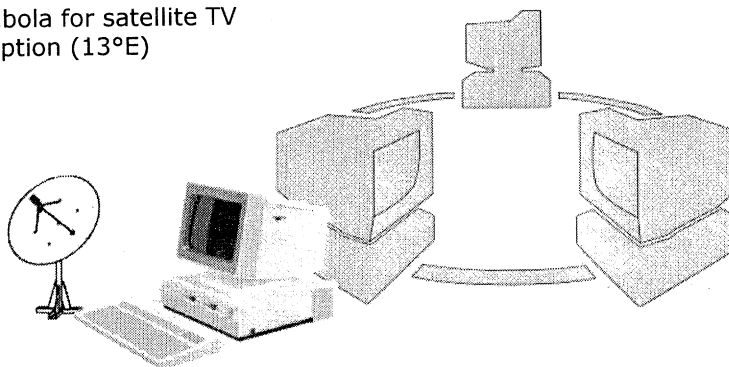
- Pentium PC with DVB satellite reception card
- Parabola for satellite TV reception (13°E)
- Standard modem

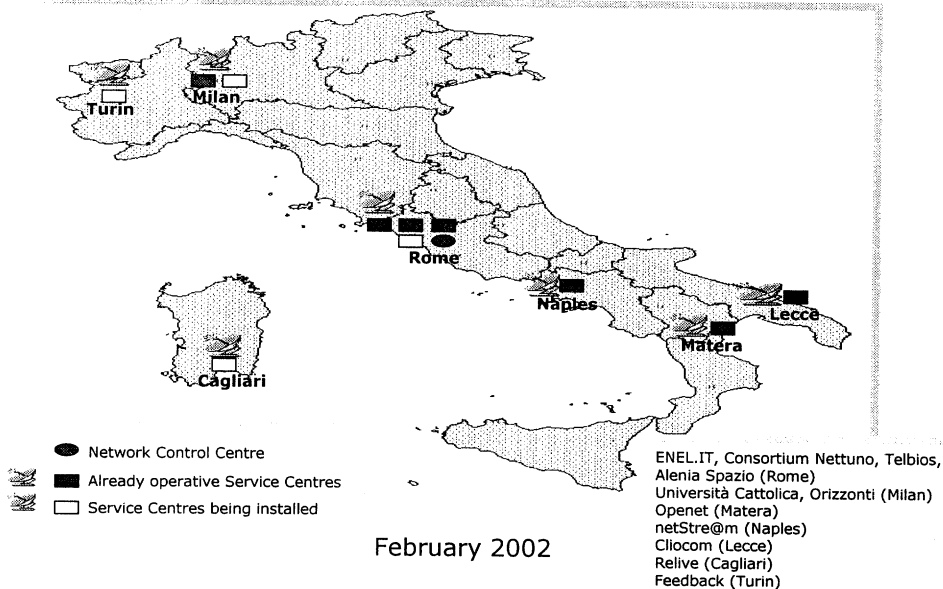


TV + Top Box Set

- Digital TV Top Box Set
- Parabola for satellite TV reception (13°E)
- Software package to extract IP packages from DVB stream (optional)

- PC in network
- LAN Satellite Router
- Parabola for satellite TV reception (13°E)

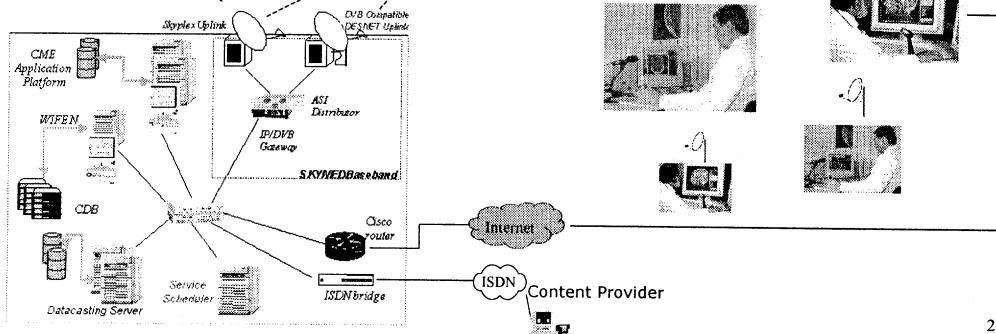




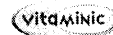
Training and updating of medical, paramedical and administrative personnel (ASL)

Specialist tele-consultancy between hospitals

Service Center (Rome)



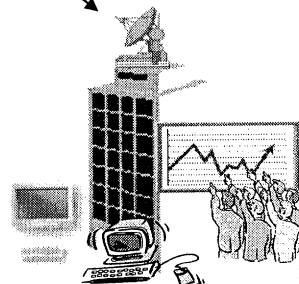
Customised B2B services,
information for large
communities(schools, public
administration bodies,
residents abroad), dedicated
television programmes,
distance training, tele-
conferences, Internet push,
software upgrade...



Partnership Vitaminic - Openet
Technologies to provide music
services by means of
SkyplexNet platform

**PMI, schools, public
administration,
residents abroad**

Service Center (Matera)

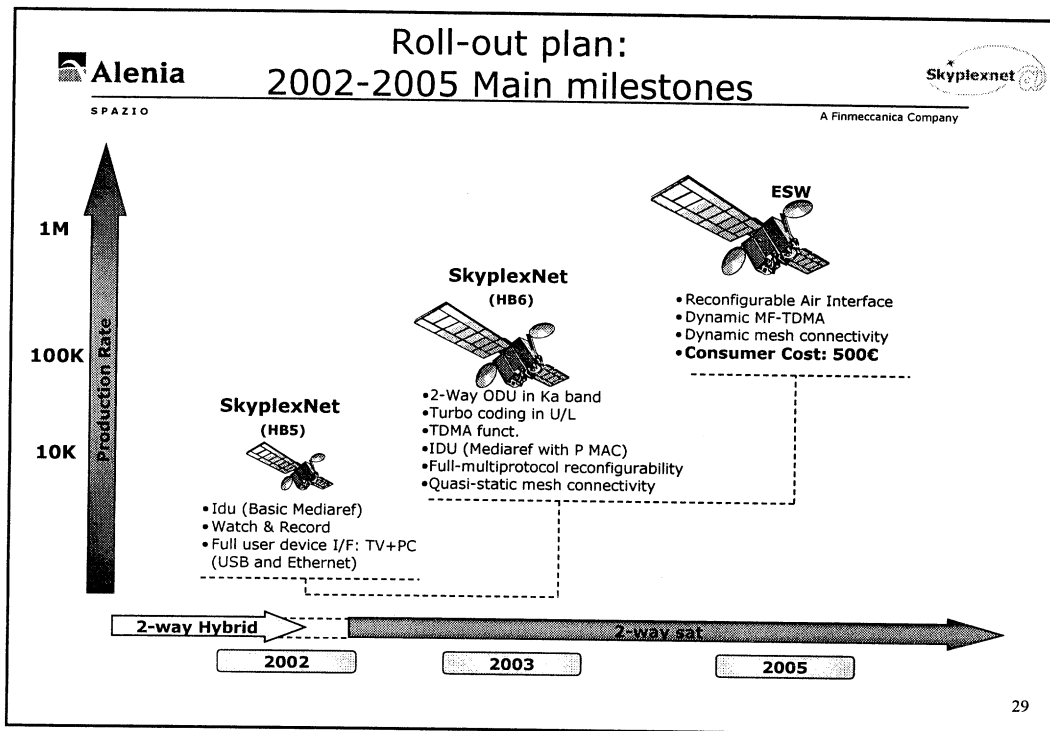


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Evolution of the *SkyplexNet* System



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Alenia *SkyplexNet - HB6* **Skyplexnet**
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The launch of Hot Bird 6 opens the way to the new generation satellites with On Board Processing and Ka band, bringing the following advantages:

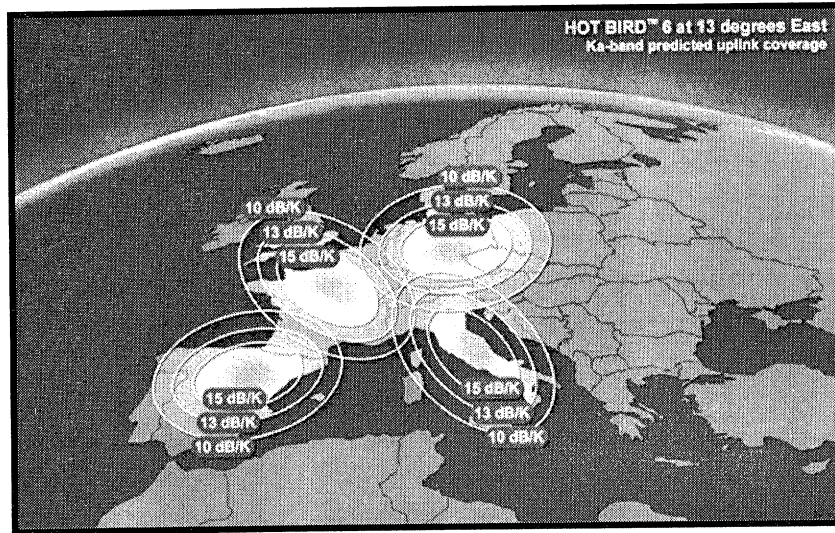
- reduction in Service Centre costs
- bandwidth on demand
- reduction in diameter and power of the transmitting antenna (around 90 cm and 2W)

↓

Service Providers will have an efficient communication platform for 2-way services with meshed connectivity.

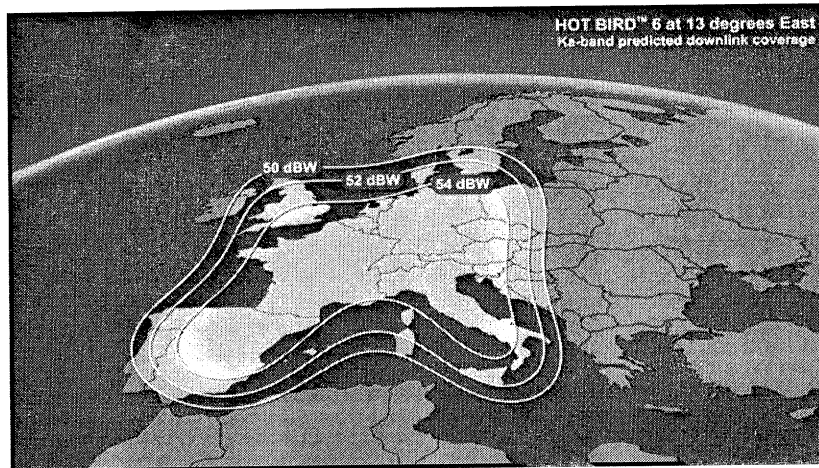
30

Uplink foreseen in Ka band

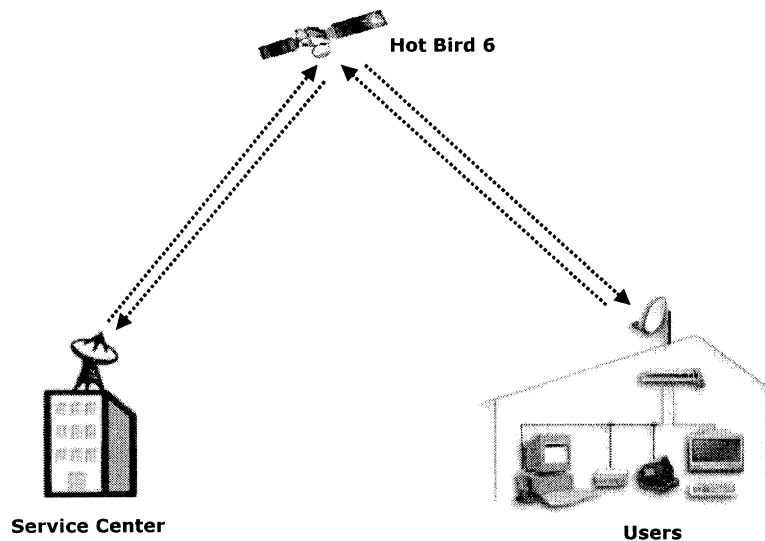


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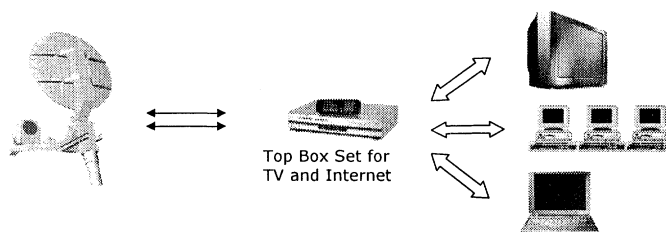
Downlink foreseen in Ka band



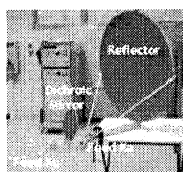
32



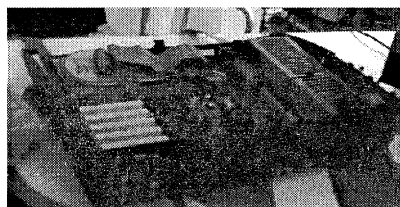
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Terminal Prototype



Two-band Receiving-Transmitting
Parabola (ku/ka)
(Alenia Spazio)



Set Top Box
(STMicroelectronics)

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Satellite platform

	Eutelsat Hot Bird 5	Eutelsat Hot Bird 6	Arabsat	Eutelsat W3A
Date of commissioning	- Operative	- 2002	- N.D.	- 2004
N° transponders	- 3	- 8	- 6	- 5
Transmission band	- Ku band	- Ku / Ka band	- Ku band	- Ku / Ka band
Orbital position	- 13° East	- 13° East	- 26° East	- 7° East
Characteristics	- Point-multi-point broadcast, allows uplink from small terminals rather than routing through centralised platforms.	- See phase 1, plus: • Adaptability to a greater number of applications thanks to an increase in granularity (up to 64 kb) • Turbo code, that allows the use of smaller uplink terminals.	- Identical to Hot Bird 5 but for the North African market.	- Identical to Hot Bird 6 but in a new orbital position dedicated to B2B services.