European Satellite Operators Association

Broadband Financing Mechanisms
Competition Aspects

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Background I:
Ubiquitous EU Coverage Through Satellite

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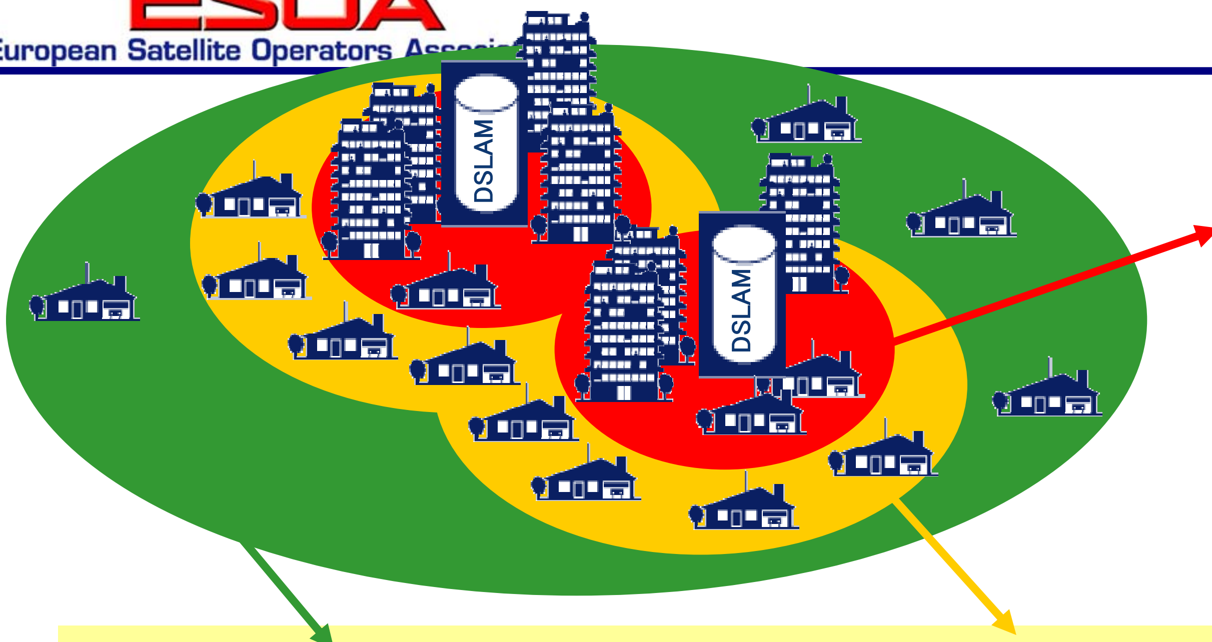
Satellites - The Invisible Infrastructure Already in Place

- Satellite signals already shine down onto the entire EU territory today
- They reach No new substantial infrastructure needed to enable connectivity in the EU

A million extra businesses or households in rural areas can connect to broadband via satellite by the end of 2010

Background II:
Reaching the Un-Served at Times of Crisis



OVER-SERVED MARKET

- Areas within 3 km of next DSLAM, or with FTTH, near cable head-end
- Usually urban areas with a high population density
- Several competing providers of broadband access
- Service up to 20 Mbps, triple play

UN-SERVED MARKET

- Areas located further than 5 km from next DSLAM or cable head-end, meaning no terrestrial broadband is available
- In Europe, unserved areas usually have a low population density

UNDERSERVED MARKET

- Areas within approx. 3-5 km of a DSLAM. Broadband is available at a limited max. speed, up to few Mbps not allowing all kind of services (TV, VoD)
- Usually only one, sometimes two competing providers
- Same price as in over-served areas

EU Recovery Plan objectives match precisely satellite strength

Background III: The Need for a Level Playing Field: The Past & the Present

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Satellite solutions have faced obstacles in terms of discriminatory treatment over the years. The most notable examples are:

- *Digital Switchover*: billions of euros poured into the upgrade of terrestrial systems when satellite has been providing digital transmission for decades (& is even now providing the next generation format HDTV without having received public support)
- *2003 ICT Guidelines*: apply criteria for distribution of funding without considering specifics of satellite. As a result passive infrastructure (dark fibre etc) is supported - this is even called for expressly in the present amended BB regulation from DG AGRI
- *Structural / regional Funds*: Very often satellites have been deliberately excluded as a potential solution e.g. Sued Tirol

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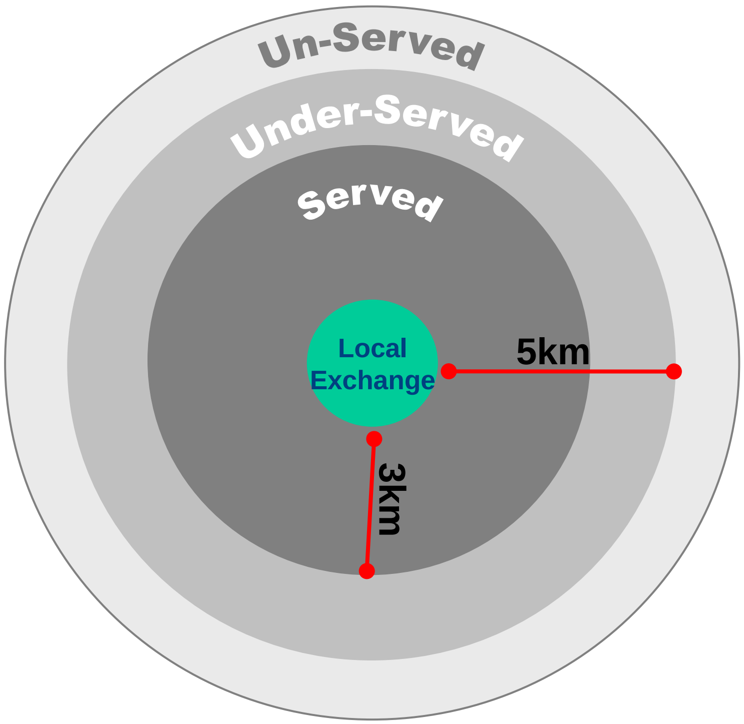
Background III: The Need for a Level Playing Field: The Future

- EC preparing Recommendation on NGA
- Satellites will also play a role in delivering NGA & BB (& not just to provide infill to many not-spots)
- ESOA is concerned that the EC proposals for "public funding for investment in new networks" for NGA may focus predominantly on fibre
- Most bandwidth hungry applications under NGA are likely to be IPTV/ iplayer/ other video based applications which are well-suited for delivery via satellite broadcast or multi-cast:

  Satellites are ideally suited for streaming video

DG COMP should ensure that such communications on NGA may not be construed as an EC recommendation to focus on any specific technology

Market Demand



Population Density

- High — Urban
- Medium — Sub-Urban
- Low — Rural

Technologies

- 2 to 50 Mbps: FTTx, xDSL
- Up to 2 Mbps: ADSL
- None

Factors affecting broadband market demand:

- Penetration: strong correlation with population density
- Coverage: generally urban areas well served
- Prices: competing technologies will be limited in low pop. density areas; resulting in higher prices
- Speed: DSL Broadband speed is inversely proportional to the distance from the exchange

Potential of Different Technologies to Bridge the Digital Gap

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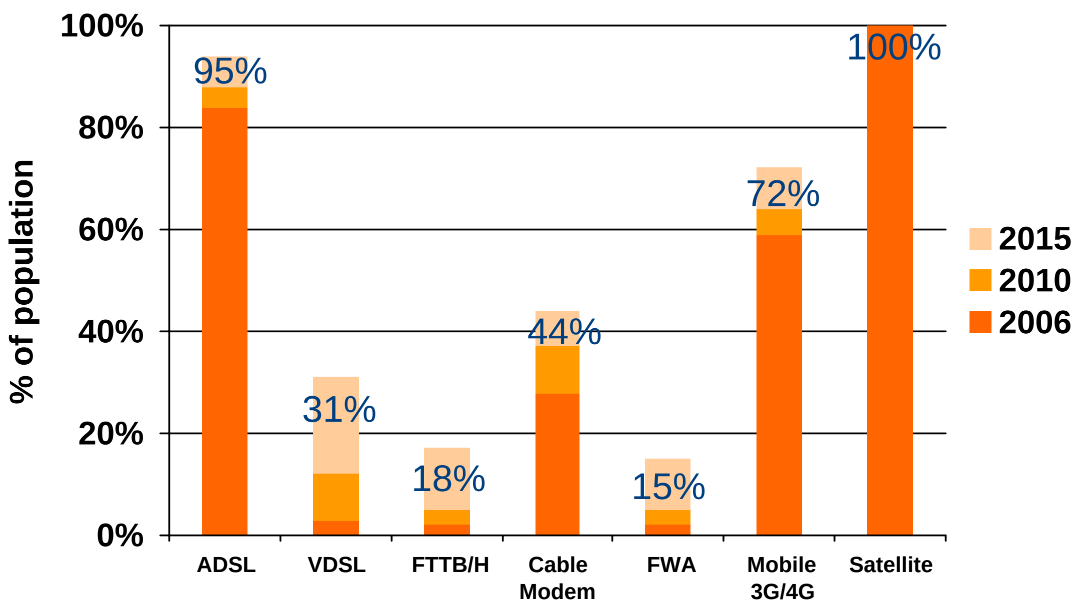
Broadband coverage in the EU27 by 2015



Source: EC commissioned MICUS 'The Impact of Broadband on Growth and Productivity' 2008

Observations on EC Study Conclusions:

- The figures include expected governmental programs related to broadband
- DSL coverage is overstated: it includes those people (households or businesses) that are located too far from any upgraded Local Exchange switches to be able to purchase a DSL connection even if they wanted to do so

Even with continued investment in ground infrastructure, only satellite technology can provide 100% coverage of the EU population

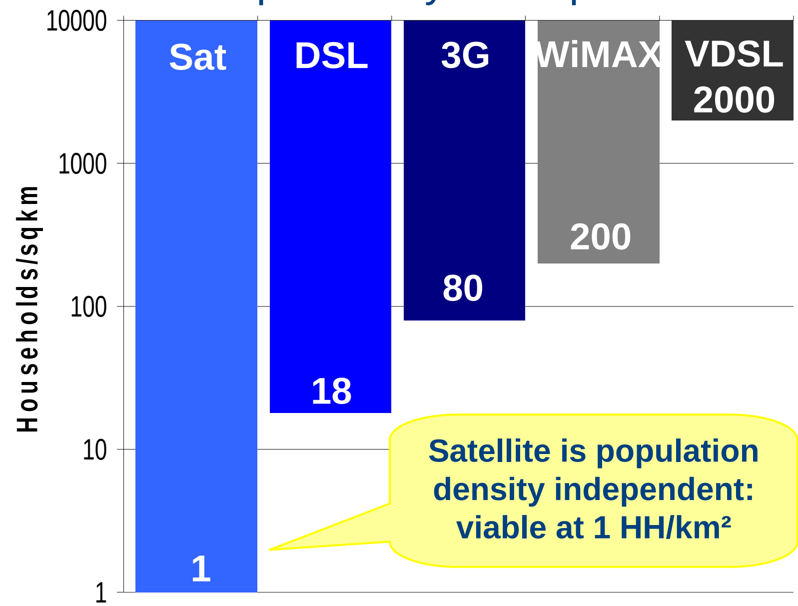
NGN deployment takes Time & Money

Fibre (FTTH, FTTC, FTTN), VDSL, WiMAX:

- NGN not considered for national roll-out: beyond 80% coverage deemed uneconomical
- Low coverage in rural/ remote areas
- High CAPEX per home passed: €400 - €5000 depending on technology & deployment area
- Total CAPEX to reach all EU HH via NGN: > €300bn;
- Time horizon for roll-out up to economic limit: 20-25 years

Satellite complements terrestrial networks in order to deliver triple-play offers, while closing the digital divide

Pop. Density Breakpoints



Rural CAPEX Requirements by Technology	CAPEX Requirements Per HH	'000's HH per 1bn in CAPEX
Wimax*	1,380	725
FTTC*	1,120	893
FTTH*	3,000	333
HSPA*	1,800	556
Satellite	300	3,333

**Assumes viable population density; satellite is not affected by population density*

Source: Idate Q4 2008, Analysys Q2 2008

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Mechanisms for Funding BB Projects

Important points concerning public support for satellite BB:

- Funds enable the purchase & installation of equipment (antenna & modem unit)
- Funds are injected into local user community:
  - Directly to users *(via service providers)*
  - SMEs
  - Local governments
- Usually, areas that receive public support for BB are areas which suffer from a “market failure” - too remote to attract private investment in providing BB services, so without public support, they would remain un-served

Example 1 - Aggregation of Demand Model
As was implemented in Scotland

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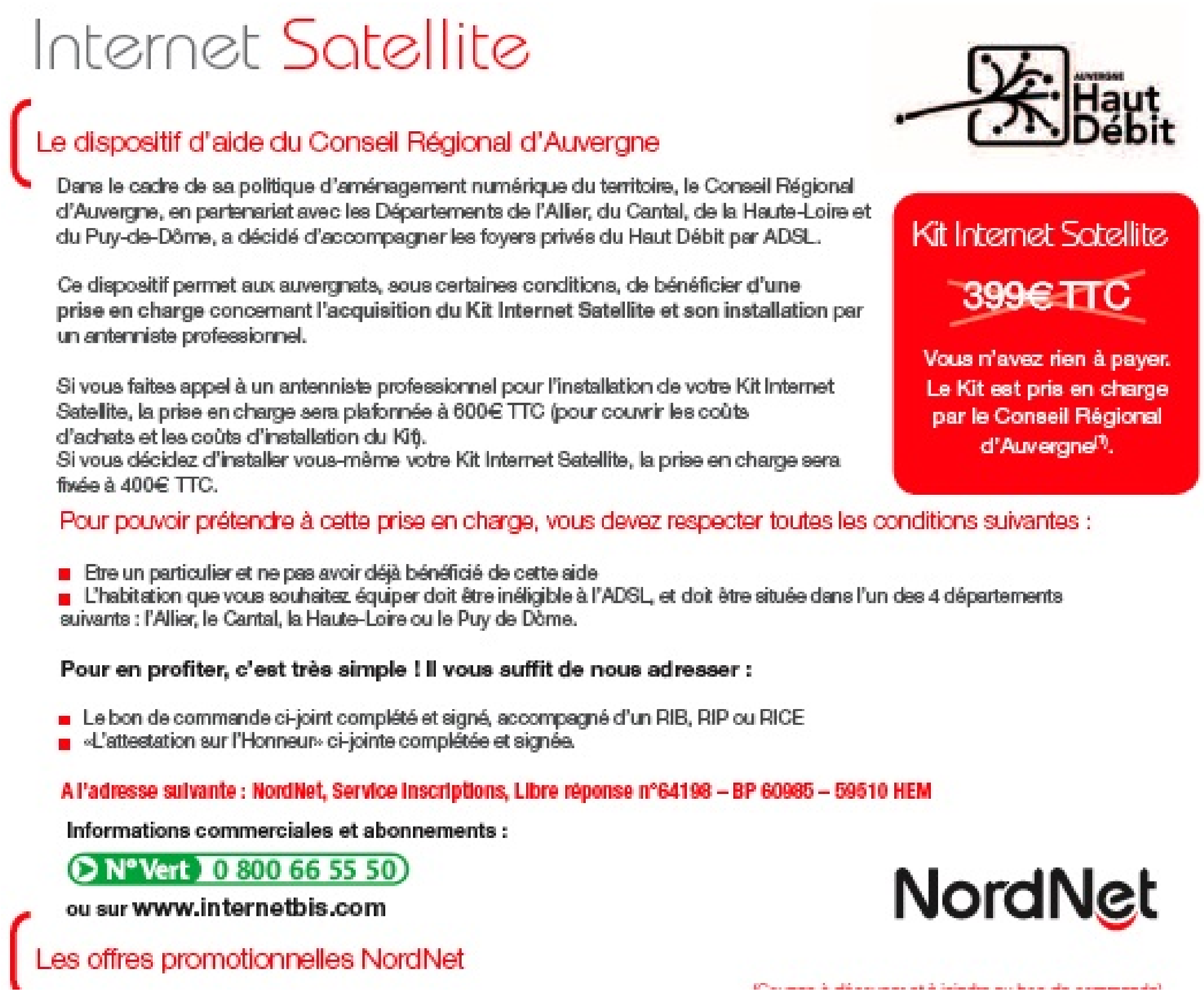
- Local or regional government/ authority invites its residents to register on a list if they have no access to BB but wish to have it
- Once list compiled, competitive tender e.g. “to supply broadband services ranging from 512kbps to 3Mbps to X end-users in Y villages/ regions ” is launched
- Bids collected and winner selected. Government pays fully for equipment & installation costs
- *Is competitive tender & a transparent process sufficient to make the public support acceptable?*

Example 2 - Voucher Model
As can be seen in parts of France

- Local or regional government/ authority issues a voucher which covers the cost of a satellite terminal & its installation for “eligible users” in certain identified areas

- Interested beneficiary completes application form making statements about his (i) geographical location (ii) his eligibility (that his telephone line does not allow & (iii) his use of the equipment (that he does not already receive other types of public support related to his work)



Internet Satellite

Auvergne Haut Débit

Le dispositif d’aide du Conseil Régional d’Auvergne

Dans le cadre de sa politique d’aménagement numérique du territoire, le Conseil Régional d’Auvergne, en partenariat avec les Départements de l’Allier, du Cantal, de la Haute-Loire et du Puy-de-Dôme, a décidé d’accompagner les foyers privés du Haut Débit par ADSL.

Ce dispositif permet aux auvergnats, sous certaines conditions, de bénéficier d’une **prise en charge concernant l’acquisition du Kit Internet Satellite et son installation** par un antenniste professionnel.

Si vous faites appel à un antenniste professionnel pour l’installation de votre Kit Internet Satellite, la prise en charge sera plafonnée à 600€ TTC (pour couvrir les coûts d’achats et les coûts d’installation du Kit).
Si vous décidez d’installer vous-même votre Kit Internet Satellite, la prise en charge sera fixée à 400€ TTC.

Kit Internet Satellite
~~399€ TTC~~
Vous n’avez rien à payer. Le Kit est pris en charge par le Conseil Régional d’Auvergne(1).

Pour pouvoir prétendre à cette prise en charge, vous devez respecter toutes les conditions suivantes :

- Etre un particulier et ne pas avoir déjà bénéficié de cette aide
- L’habitation que vous souhaitez équiper doit être inéligible à l’ADSL, et doit être située dans l’un des 4 départements suivants : l’Allier, le Cantal, la Haute-Loire ou le Puy de Dôme.

Pour en profiter, c’est très simple ! Il vous suffit de nous adresser :

- Le bon de commande ci-joint complété et signé, accompagné d’un RIB, RIP ou RICE
- «L’attestation sur l’Honneur» ci-jointe complétée et signée.

A l’adresse suivante : NordNet, Service Inscriptions, Libre réponse n°64198 – BP 60985 – 59510 HEM

Informations commerciales et abonnements :

N°Vert 0 800 66 55 50

ou sur **www.internetbis.com**

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Example Voucher

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Example 3 - LRA Distribution Model

- Often EC regulations refer to “passive” infrastructure which brings with it the connotation of public ownership
- This can also be translated into a model for distributing satellite BB ground equipment
- A LRA could itself invest in e.g. 500 terminals and distribute them to “eligible users” based on those who need & want BB signing a similar Declaration of Honour that they have no other means of accessing BB
- The terminals could then remain the “public” property of the LRA

- Full Members - Satellite Operators:

- Supporting members:
  - Launchers: Arianespace
  - Future operators: Avanti Communications, Solaris Mobile
  - Satellite Manufacturers: Astrium Satellites, Thales Alenia Space
  - Equipment Manufacturers: Newtec
  - Space Brokers: ISB, Willis
  - Regulatory Companies: Mansat