WORKSHOP

Sana Malhoa Hotel, Lisboa
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A nova regulação do espectro radioeléctrico

Prospects for Pan-European Wireless Networks

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Pan-European network attributes

- Consistent services and tariffs across EU, in line with single market
- Ubiquitous network coverage even in remote rural areas
- Full range of voice, messaging and data services
- Transparent access to home-based services and content whilst travelling

Analogy with US market

- 4 national carriers covering all states (but less in percentage population terms than Europe)
- Competitive US-wide voice and data tariffs
  - Typically 10-20 ¢/min or \$30 - \$50 for unlimited data access

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Current situation in EU

- All terrestrial networks operate on a national basis (with roaming for international use)
- Operators focus on “home” markets
- Several networks have multinational coverage but this is regional rather than Pan-European

Vodafone

Orange

T-Mobile

Telia

National focus has pros and cons

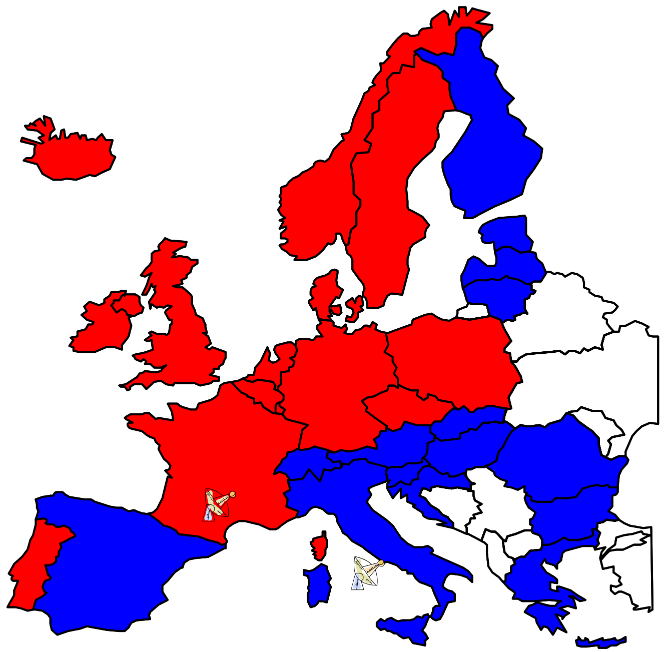
- Population coverage (GSM) close to 100%, even in rural areas (but 3G much more limited)
- Competitive national tariffs have driven penetration beyond 100%
- But EU travellers not so well served:
  – Recently mandated roaming caps still leave travellers disadvantaged compared to other major regional markets such as the US
  – Access to high speed data services and mobile content outside home area are limited and/or expensive
  – No true single market in mobile telecoms

Industry and Regulatory initiatives

- Vodafone “Passport”
  - Per-call surcharge (99 c) extends home tariff to all EU countries (for voice calls)
- “FreeMove” alliance
  - Orange / T-Mobile / TIM / Telia
  - Simplified access and special rates for large users
  - Not all EU covered (e.g. excludes Portugal)
- EU Roaming cap
  - Introduced 2007, caps fees for outgoing and incoming calls within EU
- But still much costlier outside Home State than in US

Satellite provides an alternative

- But still not really a single market
- Individual national licences often required, especially for gateway stations
- Capacity, indoor coverage and data rates are limited
- Roaming charges still an issue – e.g. Globalstar:



Globalstar gateway: *unlimited voice / data tariff available, no roaming charges*

Elsacom Gateway: *roaming charges apply*

- Still not Pan-European in the true sense

- Coverage essentially outdoor unless roam onto GSM

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How the New Framework can help

- Creates first opportunity for pan-European Authorisation
  - Aimed at satellite based services that are inherently suited to multinational coverage
  - Allows use of ground based components to allow service akin to terrestrial networks
- Easier access to spectrum through trading
  - Could facilitate further consolidation in European mobile market, akin to US?

Proposed EU Mobile Satellite Licence

- Uses readily available spectrum (2 x 30 MHz already designated for satellite 3G services)
- Technology and service neutral
- Hybrid satellite / terrestrial network
  - Can provide coverage fill-in outside range of terrestrial mobile networks
  - But also enables similar service quality and network capacity to terrestrial networks
- Several potential market players
  - Based on responses to EU consultation

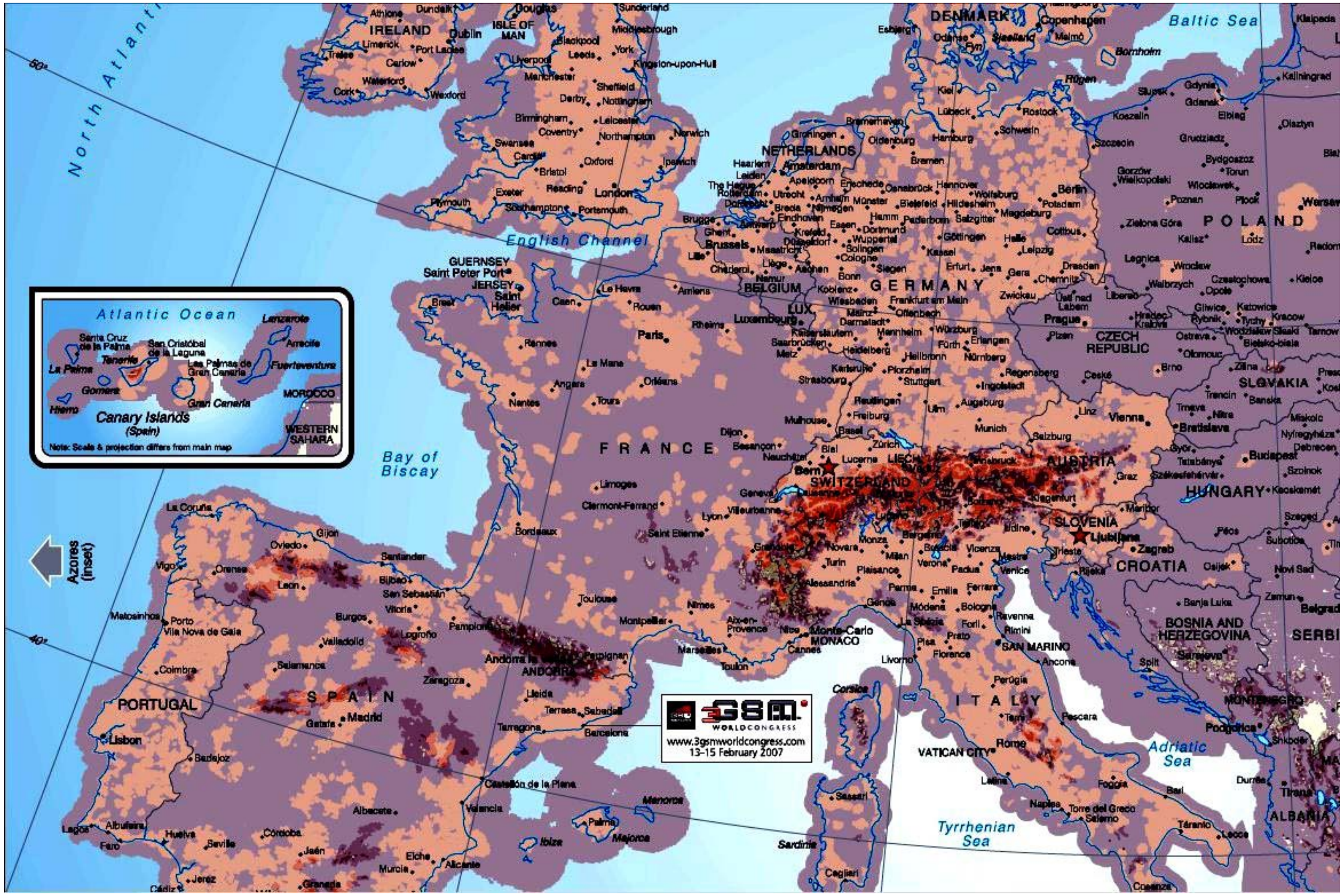
Why this new approach?

- Launching satellites is expensive and risky
- Addressable market historically limited by capacity of space segment
- Coverage constrained by satellite link budget – essentially outdoor only
- National licensing increases cost, uncertainty and administrative burden
- EU-wide authorisation and complementary ground networks makes much stronger business case

The Case for Mobile Satellite?

- Terrestrial 3G coverage of remote areas (<20 inhabitants / sq km) unlikely to be economic
- Suggests upper limit of c. 98% coverage in EU
- Remaining 2% could be served by satellite, if service can be provided at an affordable price
- Always considered part of 3G vision

European GSM / 3G coverage



3GSM Coverage

Source:
GSM Association

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Conclusions (1)

- A Pan-European Mobile Satellite Network could:
  - Extend 3G coverage beyond terrestrial reach
  - Provide travellers with access to home-based content and services
  - Provide simpler and lower international voice and data tariffs within EU
  - Provide economies of scale in serving rural areas
  - Enable existing national / regional operators to concentrate on core markets
- Create a true single market in mobile communications

Conclusions (2)

- Extension of trading and technology / service neutrality provisions could facilitate market consolidation across EU (as happened in US)
- Establishment of a pan-European satellite network should lead to greater competition in international services / tariffs
- Scope for pan-European licensing (beyond satellite based networks) less clear
  - Need to balance individual Member States' requirements against potential benefit to single market

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