



# Roadmap for ICT solutions for Rural Areas and Maritime Regions

IST-2001-39107

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## 1.- Objectives (1/3)

- ✍ To **build a strategic RTD roadmap** developing a Information and Communication Technologies **vision** which will ensure the **economically and technically** feasible deployment of information and communications solutions for **rural areas** (including also maritime regions and islands).
- ✍ The project has analysed: **trends in technology development** of equipment needed and foreseen; **deployment of services** which integrate the equipment; and **knowledge management development** which will allow the integration of the above for the globalised rural work and life environment.

## 1.- Objectives (2/3)

- ✍ The Thematic Network has **analyse** different scenarios of joint **public and private** initiatives and **business models** to be constituted in the near future. RURAL WINS solution will lower the **discriminatory gap** nowadays existing between rural and urban areas as regards broadband accessibility and applications deployment.
- ✍ Three communities with different business objectives: Technology providers, Operators, Local Development Agents (representing end users).
- ✍ As a result, a broad constituency has been formed around the proposed Information Society business models.

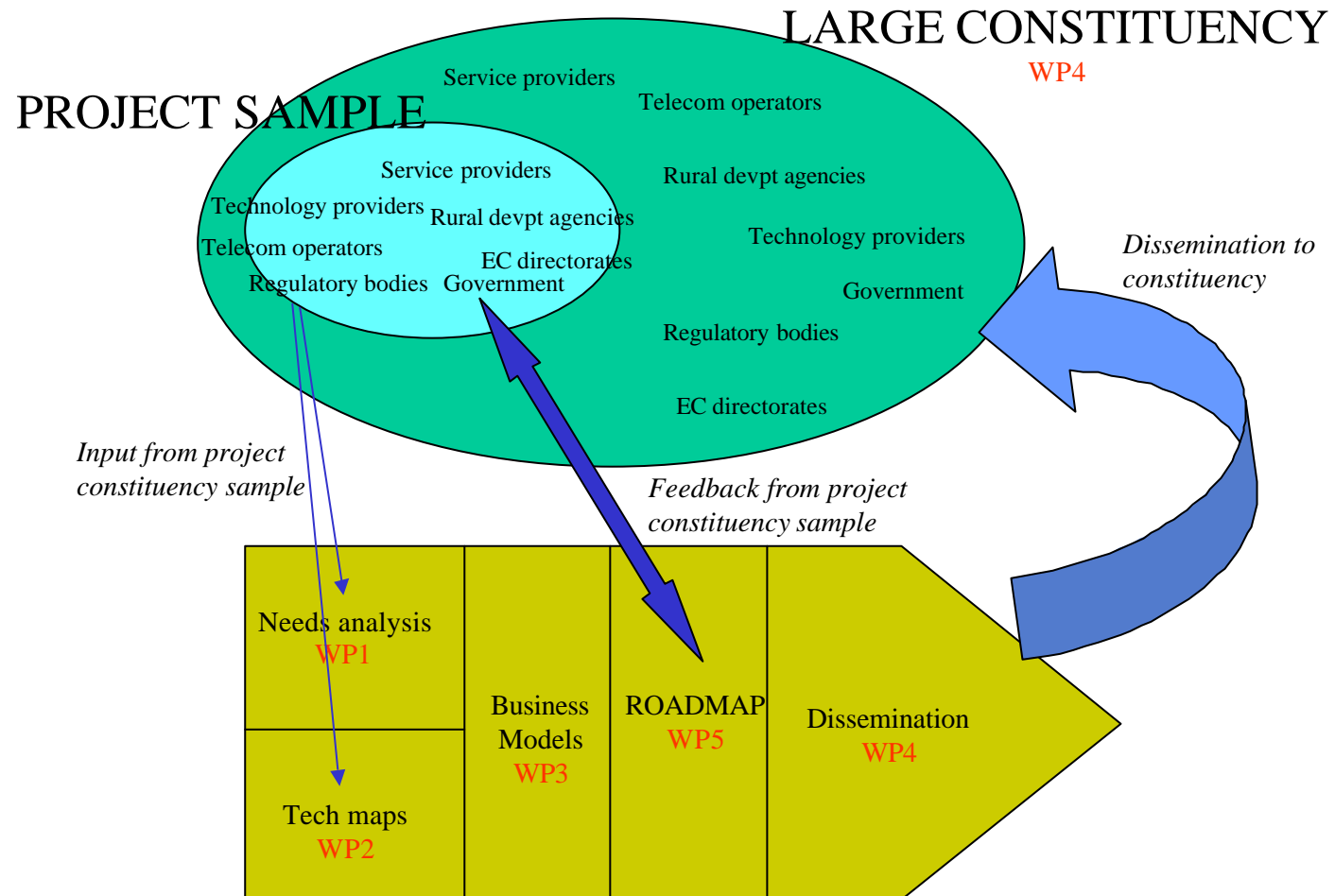
**eRural Policy !!!!!!!!!!!**

# 1.- Objectives (3/3) - Participants

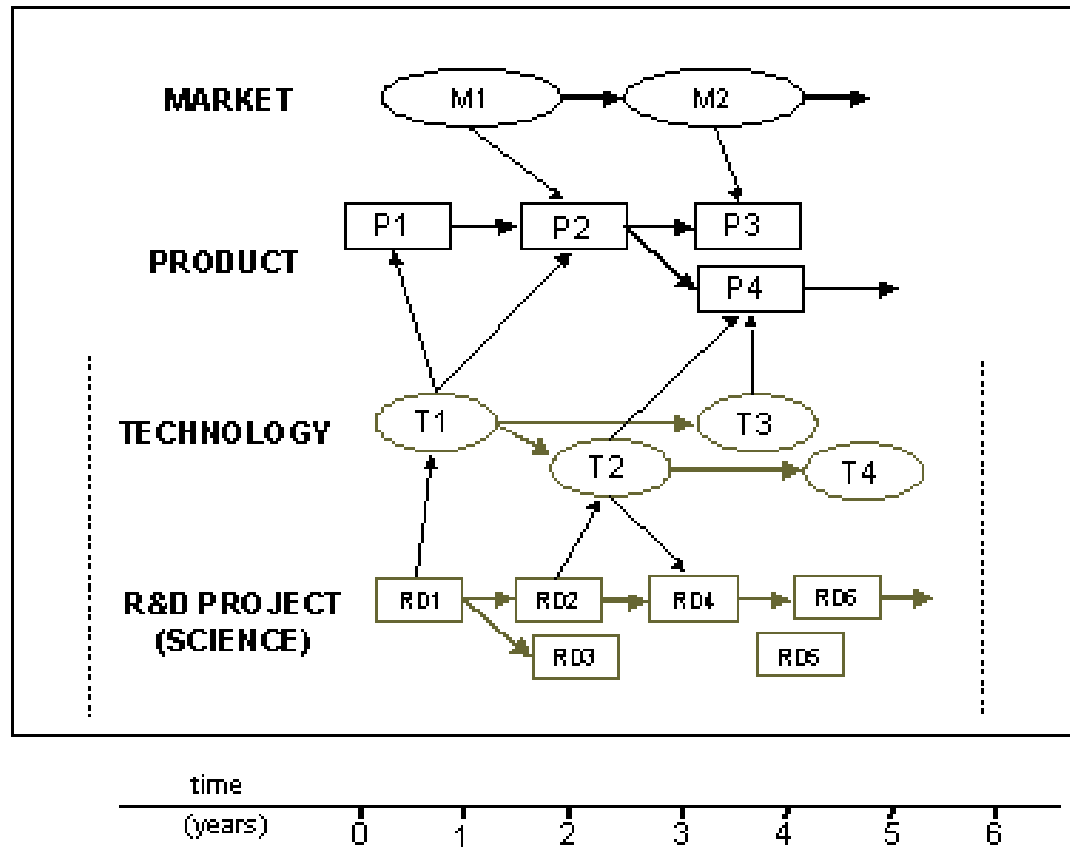


Organisation	Co	Activity	Skills	Input to Rural Wins
EUSKALTEL	E	Regional Telecom operator (mobile, fixed, cable)	Rural pilot site with fixed wireless. Business model development	Coordination. Local Business model development. Contact to telcos.
SES-Astra	LUX	Satellite based network operator	Satellite systems for rural areas Business model development	Technology foresight. Global Business model development
SZTAKI	HU	Computer science academy	Technology development and monitoring	Technology foresight. NAS members position.
POWERLAKE	S	Strategy and Industrial Liaison	Socio-economic and financial issues	Socio-economic and financial aspects in rural Sweden.
STEPIM	I	Local Development consultancy	Rural municipalities socio-economic development. Business model development	Socio-economic development issues. Southern Rural Business model development
MAC	IE	ICT technology centre	Technology development and monitoring	Technology foresight
KEMI-TORNIO	FI	Technology Academia	Technology development and monitoring	Technology foresight
NWLABS	IE	Rural Tech. dvpt consultancy	Technology consultancy for public sector	Technology and Development compromise
FAGOR ELECTRONICA	E	Telecom equipment manufacturer	Systems technology	Rural homes oriented systems
Kommunförbundet Sörmland	S	Association of municipalities	Procurement and administration of Broadband	Local administration demands and offers
Västerbottens länsstyrelse	S	Extreme rural County	Introduction of Broadband in rural areas	Marginal rural area demands
CCSS	CZ	Association of industrial partners	Rural development, IST Business model development	Knowledge management and economical models
IPACRI	RO	Chamber of Commerce	Rural municipalities socio-economic development.	Rural socio-economic issues. Balkan position
MOVIQUITY	E	Mobile development	Technology development and monitoring	Technology foresight
IBS	D	Consultant office	e-work. Collaborative projects.	New technological models
IQSOFT	HU	Product and applications system	Technology development and monitoring	Technology foresight
RTS	I	Regional development	Rural municipalities socio-economic development.	Rural socio-economic issues. / Mediterranean Island model
ERA	PL	Telecom operator	Technology consultancy for public sector	Technology foresight
BIBA	D	Technology Centre	Technology development and monitoring	Technology foresight
GOBCAN	E	Archipelago Government	Rural development, IST Business model development	Rural socio-economic issues. / Atlantic Island model
CERTH/ HIT	GR	Technology Centre	Technology development and monitoring	Technology foresight
SfBW	D	Regional Government	Educational policy	Local administration demands and offers
MARSEILLE	FI	Port Municipality	Business model development	Rural socio-economic issues. / Port model
ALFAMICRO	P	Technology Broker	Technology development and monitoring	Technology foresight
SER	P	Island Government	Business model development	Rural socio-economic issues. / Atlantic Island model
CATANIA	I	Port Municipality	Business model development	Rural socio-economic issues. / Port model
ITCC	GR	Technology Centre	Technology development and monitoring	Technology foresight
MU- HYD	GR	Port Municipality	Rural municipalities socio-economic development.	Rural socio-economic issues. / Port model
DAEZ	GR	Port Municipality	Rural municipalities socio-economic development.	Rural socio-economic issues. / Port model
OLTHSA	GR	Port Authority	Rural municipalities socio-economic development.	Rural socio-economic issues. / Port model

## 2.- Methodology (1/2)



## 2.- Methodology (2/2)



### Markets – Rural/Maritime

- Integrated Regions
- Intermediate Regions
- Remote Regions

### Products

- Services to meet user needs

### Technology

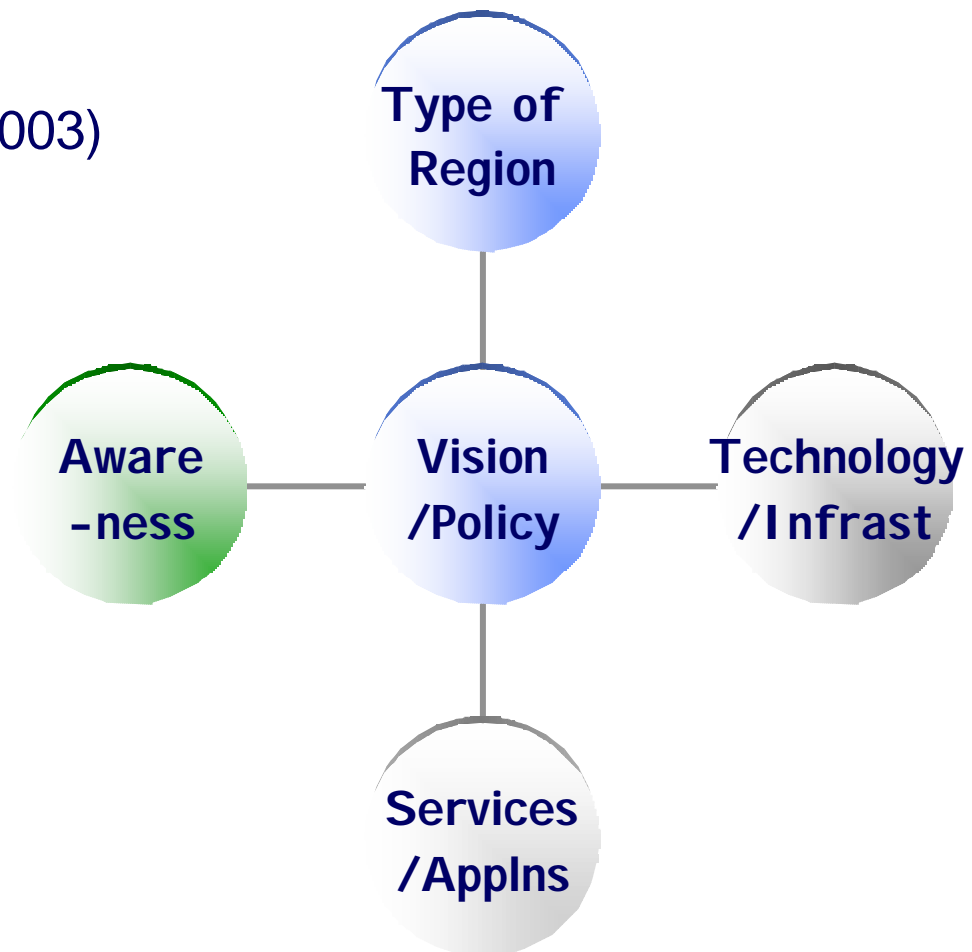
- Targeted Projects to address specific needs of rural areas

### RTD Lines

- Strategic Objectives to be included in FP6.

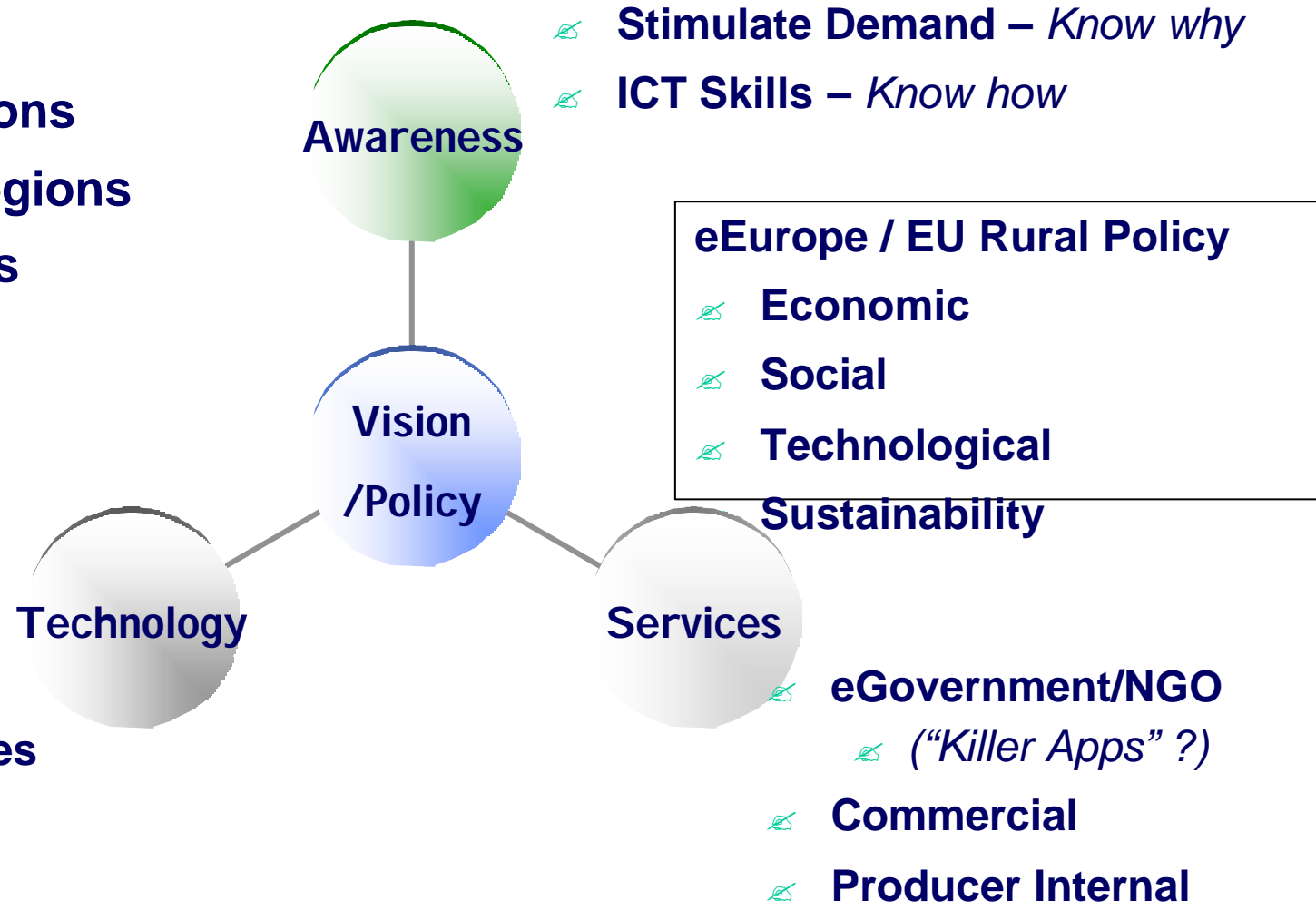
## 3.- Results

- ✍ From Valencia Declaration (Feb 2003)
- ✍ In the context of
  - ✍ User Requirements
  - ✍ Technological Developments
  - ✍ Regulatory Environment
- ✍ Map along 5 Dimensions
- ✍ Roadmap
  - ✍ We are “here”
  - ✍ We want to get “there”
  - ✍ Timescale: by 2005, by 2010
  - ✍ Simple easily understood format



# 3.- Results

- ✍ **Integrated Regions**
- ✍ **Intermediate Regions**
- ✍ **Remote Regions**



- ✍ **Access Technologies**
- ✍ **User Technologies**
- ✍ **Regulatory**

## Barriers to be addressed by Rural Broadband ICTs

-  Distance
-  Economic
-  Social
-  Information

## Requires a Vision/Policy for

-  Integrated Regions
-  Intermediate Regions
-  Remote Regions

## & recommend ICT RTD&D actions covering

-  Awareness
-  Technology
-  Services

## From Work carried out during the project:

### ✍ **Current Status of Technologies**

- ✍ Internet is the ultimate distributed system
- ✍ Convergence towards mobility and intelligence “anywhere/anytime”
- ✍ Broadband not being provided to rural areas.
  - ✍ Rural & Maritime areas are disadvantaged
  - ✍ Commercial market alone cannot not deliver

### ✍ **Current Business Models challenges**

- ✍ ICT Services have been designed based on urban business models
- ✍ Providers short-term focus operate against rural areas.

### ✍ **Alternative Business Models to achieve Universal Broadband Access**

- ✍ Public/Private Partnerships
- ✍ Public-funding/support of both Supply & Demand (slow take-up).
- ✍ New access technologies

# eRural Strategic Access Technologies

## ✍ Patchwork of Fixed & Mobile access technologies

✍ cost-effective delivery to dispersed users

## ✍ “Standard” fibre/cable, copper & mobile (GPRS/3G)

## ✍ Satellite (DVB RCS)

✍ Particularly important

## ✍ “Final Mile” – “First Mile”

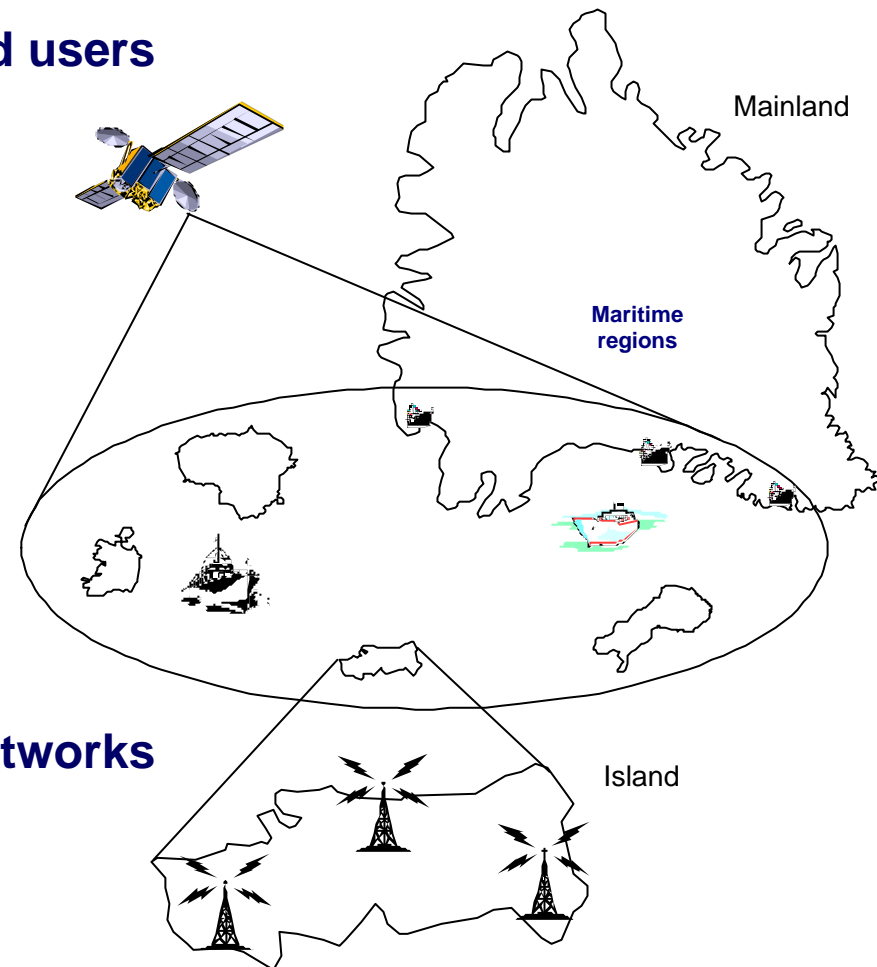
✍ Satellite direct

✍ WLAN – WiFi Community Mesh Networks

✍ Power Line Transmission

✍ WLL

✍ etc



## Future Situation – Urban/Rural Divide will Grow



Timeframe	Axis	Urban areas	Integrated Areas	Intermediate Areas	Remote Areas
<b>Short/Medium Term</b>	<b>Vision / Policy</b>	<b>2Mbps fixed &amp; 0.4Mbps mobile available &amp; affordable</b>	<b>Same</b>	<b>Same</b>	<b>Same</b>
<b>(Next 5 Years)</b>	<b>Awareness</b>	Medium	Medium	Low	Very Low
	<b>Technology / Infrastructure</b>	Reasonably available.	Same	Patchy availability	Some pockets of availability.
	<b>Services / Applications</b>	Mainstream online services	Similar.	Patchy availability.	Very Low usage.
<b>Long Term</b>	<b>Vision / Policy</b>	<b>20Mbps fixed &amp; 5Mbps mobile available &amp; affordable</b>	<b>Same</b>	<b>Better</b>	<b>Better</b>
<b>(6 to 10 Years)</b>	<b>Awareness</b>	Medium	Medium	Low	Very Low
	<b>Technology / Infrastructure</b>	Reasonably available.	Same	Patchy availability	Very limited availability.
	<b>Services / Applications.</b>	Mainstream online broadband services	Similar.	Patchy availability.	Very Low usage.





Areas	Integrated Regions	
	Intermediate Regions	
	Remote Regions.	
Services/ Applications	eGov Services	
	eBusiness for SMEs	
	eHealth	
	eLearning - education/training & Lifelong Learning.	
	eAgriculture - Food Safety/Traceability	
	eForestry	
	eCulture & eRural Tourism	
	eWorking	
	Telecottages	
	GIS/LBS	
	Smart Devices	
	Technology/ Infrastructure	Low-cost Satellite DVB-RCS → Satellite Dynamic Spot Beams.
		WLANs → Mesh Networks
PL-LANs → Mesh Networks		
WLL/FWA/LMDS → Universal Ambient Intelligence		
GSM/GPRS → Universal Ambient Intelligence		
ISDN → Universal Ambient Intelligence		
3G/UMTS → Universal Ambient Intelligence		
4G → Universal Ambient Intelligence		
ADSL → Rural xDSL		
CATV → Rural xDSL		
FSC → Rural xDSL		
Dark Fibre → Rural xDSL		
eRural IP		
Universal Ambient Intelligence		
RTD Actions in IST/FP6	Awareness - Best Practice	
	Awareness - Training	
	eRural Strategic Objective No Urban/Rural Digital Divide	
	EU Framework 6 Programme	
	EU Framework 7 Programme	
	2003	
	2004	
	2005	
	2006	
	2007	
	2008	
	2009	
	2010	

✍ Eliminate Urban/Rural Digital Divide by 2010


✍ Maps to IST (FP6 & FP7).

✍ Refined by user constituency feedback.

## Integrated Areas

-  *ICT Needs* – similar to urban.
-  *Recommended* – “standard” fibre/wired/mobile/WLAN
-  *Objectives* – full parity and use with Urban areas
-  *Implementation* – Commercial

## Intermediate Areas



-  *ICT Needs* – distributed “economies of scope”
-  *Recommended* – some fibre/wire/mobile/WLAN to towns, Satellite elsewhere
-  *Objectives* – competitive SMEs & access by all to all services
-  *Implementation* – Public/Private Partnerships


## Remote Areas



-  *ICT Needs* – part of integrated regional economic, social & cultural development
-  *Recommended* – Satellite/WLAN - new access approaches are required
-  *Objectives* – ubiquitous fixed & mobile services to overcome Barriers
-  *Implementation* – Public funding, Public/Private & Community Partnerships

- ✍ **Needs an eRural Strategic Objective in IST/FP6 & FP7**
  - ✍ **To eliminate the Urban/Rural Digital Divide by 2010**
- ✍ **First Step - an IP with the following characteristics:**
  - ✍ **One coherent Integrated Project to deliver “eRural” Information Society policy for Rural Areas in the FP6 Programme**
  - ✍ **Promote the special ICT needs of Rural Areas**
    - ✍ In & across all relevant Strategic Objectives & RTD Lines of the FP6 Program
    - ✍ Create the “ideal rural ICT environment” (not an adaption of urban solutions)
  - ✍ **Cover all RTD&D to eliminate the Urban/Rural Digital Divide**
    - ✍ Across the whole value chain from Technology to Services & Awareness
  - ✍ **An Integrated & Multidisciplinary approach**
  - ✍ **Critical Mass of Rural/Maritime Actors, Effort & Public-Private-Partnerships (PPPs) across Europe**

## “eRural” element of the eEurope Action Plan

-  Make Rural Europe a proactive integral part of the “most competitive & dynamic knowledge-based economy by 2010”
-  Equal access for all - everywhere

 **By 2010** the **IST eRural SO** will have researched, developed & demonstrated cost-effective

-  Distributed fixed & mobile Broadband and Multi-platform ICT access (e.g. Satellite, WLL, WLAN, Mesh Networks, Peer-Peer, Powerline, 4G, CATV, etc)
-  Delivery of ALL ICT Applications, Services & User Technologies

**To ALL of Europe’s rural remote areas**

**– eliminating the “Urban/Rural Digital Divide”.**



# Technology



**Euskaltel**  
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