Work Package 2
Early Analysis & Guidelines

Deliverable 3:

Regional / National satellite broadband implementation case studies

ICTPSP
Communications Networks, Content and Technology
European Commission Directorate General
DG CONNECT

SABER
cut the digital divide

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ICTPSP

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SABER (Satellite Broadband for European Regions) is a CIP ICT PSP co-funded Thematic Network

For more info see: http://www.project-saber.eu/

Disclaimer:

Please note that these guidelines are the result of SABER partner contributions.
The European Commission is evaluating the compliance of the document within the current ERDF and EARDF 2006-2013 regulations. A new official version will be published including the

European Commission review when available.

Table of Contents

1. Executive summary

Deliverable 3 is divided into two parts: the review and analysis of National Broadband Plans and the review and analytical synthesis of relevant past and ongoing satellite broadband implementation cases.

SABER partners analysed Member State broadband strategies through four indicators and consider them against the same elements contained in the DAE, namely:

- targeted basic broadband speed;
- current percentage of population covered by basic broadband;
- targeted basic broadband coverage;
- scheduled achievement of the basic broadband coverage target.

It appears from this analysis that:

- there is no harmonisation in the targets and in the inclusion of satellite technology in the NBP
- complete basic broadband coverage is far from being reached in many countries, especially in the most recent EU members.

From the review of the broadband strategies, SABER partners highlighted common features and good practices that can be deployed in future National Broadband Plans.
To illustrate concretely the analysis; extracts from the official documents are set out.
Based on these elements, SABER partners produced some recommendations for future broadband strategies concerning the recognition of satellite technology among all available technologies that provide broadband.
SABER partners also highlighted eight relevant regional cases where satellite broadband was deployed all around Europe: Norway (Agder), Greece (Trikala), UK (Devon, Wales, Northern Ireland), France (Auvergne), Spain (Galicia) and Italy (Bolzano).
Based on the analysis of these case studies, SABER partners came to a classification of implementation models, namely:

- direct subsidy to end-users (Wales);
- qualification of multiple ISPs by a call-off procedure (Auvergne, Galicia);
- selection of a single ISP by a call for tender (Devon, Northern Ireland);
- selection of a single ISP for the provisioning of 100% broadband coverage with a multi-technology approach through a call for tender (Northern Ireland, Trikala).

Each model is described in depth, leading to a pros and cons analysis table. From all these elements, SABER partners express some recommendations and suggestions:

- the qualification of multiple ISPs model is the most effective;
- set up of a registration portal, through a regional database and mapping of the households;
- planning multiple calls for grant application of limited duration;
- communication on satellite capabilities must be open and honest.

2. Introduction

The main objective of this deliverable is to present good practice case studies and to analyse Member States' National Broadband Plans in order to identify the elements to be taken into account to successfully achieve further deployment of satellite broadband in the EU.

This document is the result of the active collaboration of all SABER partners with the specific contribution of the experienced regions that shared their experience in deploying satellite solutions with the other members.

All the information, analysis and recommendations included in the deliverable are the outcome of SABER partners' extensive intelligence gathering, Specifically:

- research and review of Member State national broadband plans
- Collation of best practice of satellite broadband services deployments in the EU
- Review and synthesis of relevant past partner projects
- Specific discussion on the deliverable subjects in 2 Workshops (Cork and Brussels) to iteratively review, and validate the network's findings and good practice case studies.

Final review of the document on the basis of partners comments, analysis and discussion.

3. Review of Member States (national) broadband plans

According to Action 46 of the Digital Agenda for Europe "Member States to develop national broadband plans", the Member States should develop national broadband plans to be operational by 2012. National Broadband Plans (NBPs) are the legislative frameworks aimed at improving broadband Internet access for citizens and business. These documents specify different sets of indicators, policies and a range of targets, defined on the basis of the DAE objectives. The Commission reports annually on progress as part of the Digital Agenda governance through "Broadband Coverage in Europe" Reports.

3.1 General presentation of the review

3.1.1. Chosen indicators for the analysis

Most of the Member States' broadband strategies focus on complete coverage for basic broadband to achieve the 2013 Digital Agenda Target.

The EU Commission analysis on the ongoing process, underlines that there is a lack of clear operational measures to achieve the target especially in terms of timing and funding.

In this review SABER partners selected five main indicators to analyse the issue:

- targeted basic broadband speed (download);
- current percentage of the population covered by basic broadband (i.e. the measure of broadband gap);
- targeted basic broadband coverage;
- scheduled achievement of the basic broadband coverage target;
- inclusion of satellite technology in the NBPs (essential to reach a real 100% coverage to the EU).

3.1.2. DAE indicators

All these indicators from national levels have to be considered against the same indicators contained in the DAE, respectively:

- targeted basic broadband speed (download): 2 Mbps (EU official definition of basic broadband is currently of 144 kbps);
- current percentage of the population covered by basic broadband: 95.7%[1];
- targeted basic broadband coverage: 100%;
- scheduled achievement of the basic broadband coverage target: 2013;
- inclusion of satellite: YES

[1] COMMUNICATIONS COMMITTEE Working Document - Broadband lines in the EU: situation at 1 July 2012 - 18/02/2013

Extract of the table (see the whole table in Annex):

Country	*Basic broadband speed (download)*	*Population covered by basic broadband (measure of broadband gap)*[2]	*Basic Broadband targeted coverage*	*Basic broadband coverage timing scheduled in the national broadband plan*	*Satellite included in the national broadband plan*
DAE	**2 Mbps**	**95.7% (July 2012)**	**100%**	**2013**	**satellite included**
Austria	1 Mbps	95%		2013	
Belgium	2 Mbps	100%	100%	2013	NO
Bulgaria	1 Mbps	91.50%	98% (only 50% for the remote and rural areas)	2015	YES
Cyprus	2 Mbps	100%	100%	2013	
Czech Republic	2 Mbps	94.50%	100%	2013	YES
Denmark	2 Mbps	99%	100%	2013	NO
Estonia		95%	100%	2013	NO
Finland	1 Mbps	97.80%	100%	2010	NO
France	512 kbps	99.30%	100%	2017	YES
Germany	1 Mbps	95.30%	100%		YES
Greece	DAE objective	98.50%	DAE objective	DAE objective	NO
Hungary	DAE objective	93.20%	DAE objective	DAE objective	NO
Ireland	1.2 Mbps	97.10%	DAE objective	DAE objective	NO
Italy	2 Mbps	98.50%	100%	2012	YES
Latvia		89.60%		2008	NO
Lithuania	512 kbps	88.40%	98%	2010	NO
Luxemburg	2 Mbps	100%	100%	2010	YES
Malta	4 Mbps	100.00%	100%		
Netherlands		100%	100%		YES
(Norway)	*640 kbps*	*95.90%*	*99.80%*	*2008*	*YES*
Poland	2 Mbps	72.20%	100%	2013	YES
Portugal	DAE objective	99.50%	DAE objective	DAE objective	

[2] Broadband coverage in Europe in 2011,European Commission, DG Communications Networks, Content & Technology http://ec.europa.eu/digital-agenda/en/news/study-broadband-coverage-2011

Romania	1 Mbps	91.70%	DAE objective	2015	
Slovakia	1 Mbps	91.40%	100%	2013	YES
Slovenia	2 Mbps	90.10%	98%	2012	YES
Spain	1 Mbps	96.90%	100%	2012	NO
Sweden	1 Mbps	98.60%	100%	2013	YES
United Kingdom	2 Mbps	100%[3]	100%	2015	YES

[3] Please note that the figure is justified by the fact that all UK telephone exchanges are enabled for DSL, however the Broadband coverage report itself (e.g. see p.159) admits that this is not performance based and therefore coverage at 2Mb will be <100%

3.1.3. Results

Based on the review of the National Broadband Plans, it transpires that out of the 23 documents found (out of 28 studied countries):

- More than 55% of the countries explicitly include satellite technology in their NBP (13 out of 23): Bulgaria, Czech Republic, France, Germany, Italy, Luxemburg, the Netherlands, Norway, Poland, Slovakia, Slovenia, Sweden and the UK;
- a minority do not explicitly include satellite in their broadband strategy (10 out of 23): Belgium, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Latvia, Lithuania and Spain.

The "Broadband coverage in Europe in 2011" report from the European Commission assumes that six countries have already achieved the 100% coverage objective by now.
It appears that three of these countries, namely Luxemburg, the Netherlands and the UK, explicitly include satellite in their NBP. Belgium, where also 100% of the population is covered by broadband, does not mention satellite in its national broadband strategy. Concerning the two other countries (Malta and Cyprus), no information on their NBP were found.

Therefore, at least 50% of the countries that have achieved 100% before the 2013 deadline considered satellite in their mix of technology.

3.2 Analysis of the results

3.2.1. General outcomes

Based on the NBPs that include satellite in their mix of technologies, some general features can be highlighted:

- necessity of adopting a **mix of technologies** that implement the **use of ALL the available technologies** *(France and the UK)*;
- inclusion **of satellite among the technologies that provide basic broadband** *(Bulgaria, Germany, the Netherlands and Slovakia)*;
- recognition of the **universal coverage of satellite broadband**, that is **independent from the density of population** of the territory; thus, acknowledgment that satellite is an **important means to reach the 100% coverage** target *(Czech Republic, Germany, Luxembourg, Poland, Slovenia, Sweden and the UK)*.

Even in countries that do not include satellite in their NBP, the necessity to include this technology is put forward, as for instance in Spain. Indeed, although Spanish NBP does not mention satellite, a Report for Digital Agenda for Spain[4] from the Spanish Government recommends in its section on "how to improve the deployment of networks" to include satellite solutions in order to reach the 100% coverage objective, especially for areas where deployment of terrestrial technologies is non-profitable for private operators.

3.2.2. Specific features

Besides, the outcomes of the review of the NBPs emphasize specific elements on satellite broadband that some Member States consider essential to pursue the European Digital Agenda Targets. In this case the principles of technology neutrality and the one of the cost effectiveness of the use of public funds are completely respected.

[4] Informe de recomendaciones del Grupo de Expertos de Alto Nivel para la Agenda Digital para España, Ministerio de industria, energia y turismo, Gobierno de España, 22 de junio de 2012 http://www.minetur.gob.es/telecomunicaciones/es-ES/Novedades/Documents/informe-recomendaciones-ade.pdf

To be more precise, particular attention is given to:

- the description of the **satellite broadband architecture and features, that, thanks to its specific and unique features, confirm that "***Satellite is a viable option for the most remote users and for those in some other not-spots. It will need to be part of any solution aiming at universal coverage.***"**[5]

- the Use of satellite Broadband for the outside interconnected areas[6]:
- the **eligibility of satellite and satellite terminals to public funds7**

- the **link between satellite broadband and rural and/or sparsely populated areas where there is no investment from private operators**[8]

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5 Britain's Superfast Broadband Future, Department for Business, Innovation & Skills, Department for culture, media and sport, December 2010, p.18

6 The Federal Government's broadband strategy, Federal Ministry of Economics and Technology, February 2009, p. 24. Internet is primarily an option for locations that do not have access to terrestrial broadband, in particular those outside interconnected settlement areas. However, its benefits – widespread, immediate access – are compromised by certain technological restrictions in terms of capacity and by high monthly charges. In particular, the upload rate via satellite Internet is very low and, because it takes a relatively long time for the radio signals to be sent and received (latency period), this broadband technology has limited suitability for real-time-critical applications. Nevertheless, download rates of 1–2 Mb/s and higher ensure access to all core Internet services (excluding online gaming). Existing capacity restrictions, which currently enable simultaneous usage by just 10,000 users nationwide, are expected to increase significantly as of 2010, once the planned use of spot beam technology to provide satellite broadband services has been implemented."

7 NARODOWY PLAN SZEROKOPASMOWY, Departament Telekomunikacji MI, Ministerstwo Infrastruktury, March 2011, p. 14 "Funds from the implementation of operational programs may also serve as a source of financing for user equipment. This aspect was pointed out by satellite service providers operating within the Satellite Working Group Roundtable. They pointed out the need to develop system solutions that allow the use of the axis 8 of the Group Roundtable. They pointed out the need to develop system solutions that allow the use of the axis 8 of the Operational Programme Innovative Economy to finance subsidies for the purchase and installation of the terminal equipment This technology can effectively help with the elimination of white and grey spots covering broadband telecommunications network and can be an effective tool in the fight against the digital divide. According, satellite service providers, there is a need to:

- Determining the eligibility rules and funding of satellite solutions in the specified location,
- Provide telephone and online application process for financing equipment and installations
- The emergence of satellite distributors that meet the established criteria and offering services in accordance with established criteria."

8 Broadband network development strategy in the Republic of Slovenia, Government of the Republic of Slovenia, July 2008, p. 10

"Satellite broadband connections are becoming interesting due to the powerful way they integrate capacities, in particular for remote and less accessible areas. The idea of capacity integration is based on the fact that the satellite beam non-selectively covers a vast geographical area, and thus a critical concentration of users in a narrow geographical area is not required. With organisational methods, it is possible to virtually integrate individual users who are otherwise geographically dispersed and who, together, represent for the satellite services provider demand sufficient for particular services to generate acceptable prices for such services."

- **The cost-efficiency and easy set-up of satellite broadband**[9]

Apart from those positive elements stated in some NBPs, it has to be noted that those statements were not always and homogeneously ensued in all the EU countries. For instance, in Slovenia satellite broadband is not included as a solution in the call for tenders within ERDF and EASRDF funds; in Poland it struggled to be implemented (see SABER deliverable 4, chapter on "Initial review of non-technological roadblocks").

3.3 Recommendations

To conclude, some recommendations can be offered from these observations:

- the mix of technologies should not exclude explicitly any available technology, in compliance with the principle of technological neutrality;
- recognising at least satellite among the technologies providing basic broadband access; and as a consequence, explicitly recognising satellite as a complement to the terrestrial technologies;
- mentioning the ubiquity of satellite broadband coverage, regardless geographic location nor density of population;
- inserting a dedicated section in the NBP on satellite technology to highlight its specificities, from a cost-benefit perspective;
- expressing eligibility of satellite for public funds and State aid mechanisms in full compliance with the EC rules and regulations;
- recognising the role of satellite in remote areas, especially rural areas with low population density, that are un-served or suffer from slow speeds because of the cost of terrestrial infrastructure; as a consequence explicitly recognising that in these areas satellite is not a complement but the only solution to provide broadband in a cost-efficient way;

[9] Stratégie nationale pour les réseaux à « ultra-haut » débit - L'« ultra-haut » débit pour tous, Ministry of Economics and External Trade, Ministry of Media and Communications, Government of Grand Duchy of Luxembourg, April 2010, p. 11: *« 3. Satellite Le satellite est une solution économique, rapidement disponible et qui peut couvrir toute une région en haut débit indépendamment de sa topographie. C'est donc un moyen idéal pour arriver à un taux de couverture de 100% puisqu'il permet d'atteindre des endroits éloignés ou peu peuplées qui ne justifient pas le déploiement d'un réseau en fibre optique sur le plan économique. Le gouvernement soutient le développement d'offres haut débit par satellite par la mise en place d'un cadre réglementaire adapté. »*

- recognising that satellite is a solution that provides immediate connectivity (easy and fast deployment).

The non-inclusion of satellite broadband in NBPs may risk leading to the non-achievement of the DAE 2013 objective of broadband for all and to disregarding the principles of technology neutrality and cost-effectiveness of the use of public funds.

4. Introduction to Case studies

4.1 Implementation models: classification and description

A variety of public schemes were implemented directly or indirectly addressing the provisioning of satellite broadband access; taking into account the specificities of each measure, four main models are identified from the analysis of partners' experiences and external cases:

A) direct subsidy to end-users beyond the reach of existing terrestrial networks; open scheme

B) qualification of multiple providers of (satellite) broadband; call-off procedure

C) selection of a single provider of (satellite) broadband; call for tender

D) selection of a single provider for the provisioning of 100% broadband coverage (multi-technologies); call for tender

A. DIRECT SUBSIDY to end-users beyond the reach of existing terrestrial networks.

Typical steps of the open scheme:

1. the Public Administration ("PA") issues a call for end-users applications, having defined the eligible beneficiaries and areas, minimum data rate requirements, and max subsidy per applicant
2. the willing user submits the application enclosing 2 minimum quotations by ISPs of his/her choice
3. the Implementing Authority validates the request and issues an Offer Letter to the applicant
4. the end-user subscribes the selected ISP
5. the ISP installs and activates the agreed broadband solution
6. the subscriber pays the ISP
7. the subscriber claims back the agreed eligible expenses from the PA, providing the

appropriate evidences

(e.g.: Welsh Broadband Support Scheme)

***B.* QUALIFICATION OF MULTIPLE PROVIDERS** of (satellite) broadband

Typical steps of the call-off procedure:

1. the PA qualifies multiple providers able to provide the service (having set eligible beneficiaries and areas, minimum data rate, maximum subsidy), signing an appropriate agreement with each ISP
2. each ISP puts in place an agreed communication plan (endorsed by the PA)
3. the willing user chooses his/her preferred offer from a qualified ISP
4. the ISP cooperates with PA to validate eligibility and confirms to user
5. the ISP installs and activates the subscribed service
6. the ISP (typically) manages the administration process with the PA to recover the subsidy on behalf of the end-user, discounting it with the first invoice

(e.g.: Auvergne, Galicia)

C. SELECTION OF A SINGLE PROVIDER of (satellite) broadband

Typical steps of the procedure:

1. the PA issues and assigns a tender for the provisioning of dedicated services (having set eligible beneficiaries and areas, minimum data rate, overall budget)
2. the winning ISP commits to maintain the awarded offer available for subscription for the agreed duration
3. a fix subsidy per installation to cover eligible costs is typically agreed between IA and the ISP, pre-discounted in the offer to subscribers
4. the ISP puts in place an agreed communication plan (endorsed by the PA)
5. the ISP commercializes the agreed solution, directly managing with the PA any administrative process relevant to the subsidies

(e.g.: Devon & Somerset, RBS Northern Ireland)

D. SELECTION OF A SINGLE PROVIDER FOR THE PROVISIONING OF 100% BROADBAND COVERAGE (multi-technologies)

Typical steps of the procedure:

1. the PA issues and assigns a competitive procedure for the provisioning of dedicated services to 100% of its citizens/businesses (having set eligible beneficiaries and areas, minimum data rate, overall budget)
2. the awarded ISP commits to build/complete the infrastructure and maintain the offer available for subscription for the agreed duration
3. an overall co-financing of the infrastructure/s is typically awarded
4. service provisioning for the Public Administration's own use may be foreseen
5. the ISP puts in place the agreed communication plan (endorsed by the PA)
6. the ISP implements and commercializes the agreed solution

(e.g.: Bolzano Province, Agder, ~Trikala)

4.2 *Lessons Learned (Pros/Cons analysis)*

MODEL		PROS	CONS
A	**Direct subsidy to end-users in digital divide**	Max degree of choice for the recipient Competing offers available	The recipient anticipates the expenditure, as the subsidy is paid in arrears
			Demanding administrative workload
			Proactive attitude of the recipient is needed
B	**Qualification of multiple (sat) broadband providers**	Possible aggregation (by ISP) of the administrative procedures	Careful definition of the administrative process shall take place, duly considering funds expenditure rules Slightly demanding administrative workload
		Competing offers available	
		Takes full advantage of offers evolution	
C	**Selection of a single provider of satellite broadband**	Single administrative interface (the selected ISP)	Lengthy approval process – may account for delays on satellite broadband deployment
		With the appropriate mechanisms, can still benefit of potential service/offer improvements	"frozen" services may quickly become not competitive due to improved offers on the market
D	**Selection of a single provider for the provisioning of 100% broadband coverage (multi-technologies)**	The ISP is committed to provide broadband access to any citizen / business within the eligible area	Lengthy approval process – may account for delays on overall deployment
			Large scale - complex management - appropriate budget needed
			the solution for the "last x%" is not the priority - this can lead to a lower quality and less cost-effective service
			The selected ISP may have scarce experience in satellite services

Please not that the table doesn't include the state impact of pros and cons being independent from the models analysed.

4.3 Recommendations

With reference to satellite broadband implementation schemes, in recent times the most frequent and effective experiences analyzed were those applying the **Qualification of Multiple ISPs Model**, followed by the Selection of a Single Satellite ISP Model.

This seems justified by favorable pros/cons balances, and represents the main input for the early guidelines.

Additional suggestions

- the setup of a registration portal (possibly geo-referenced) for willing users is becoming more and more a common practice; it helps to build a valuable database to determine the actual needs of the community and enables targeted communication regarding any plans or measures for the reduction of digital divide
- this registration portal, through a regional database of the households located in white areas, can help to develop a targeted marketing towards specific users
- where appropriate, consider planning for multiple calls for grant application, of limited duration, to overcome the potential indecision of willing users in adopting a non-traditional solution (waiting for the «soon-coming» wireline broadband)
- when dealing with communication on satellite capabilities, there is a strong need for openness and honesty. Citizens confidence in the satellite technology is required for the take-up of satellite broadband.

4.4 Case studies – Relevant past and ongoing partner projects

4.4.1. Region of Agder

Two counties and 30 municipalities

in the south of Norway

Overview:

The county administration of Agder was the project owner, on behalf of the 30 municipalities and the two counties of Agder. The project was named "The Digital Agder" Bykle og Hovden Vekst AS (BHV) was hired as the project manager.

Timeline:

"The Digital Agder" started in 2001 and is an on-going project.

The milestones of the project to give broadband to all households:

2006: The main project for guaranteed broadband to all residents started. 2007: The contract was signed.

2008: The delivery was accepted as completed. (Nearly one year delayed)

2012: Contract bringing indoor mobile coverage up to 99.2 % (mobile coverage at least 3G) within 2015.

2013: The guarantee of broadband ended by 2013.02.01. It has now been prolonged to 2015.

Main objective:

The vision: “Everybody always on in Agder”

Objective: Guarantee of broadband to every resident that requested it. The provider was allowed to offer broadband to 160 customers using satellite technology.

Awarded company:

After the evaluation, TDC AS was chosen as broadband provider (lowest price for guaranteeing broadband to all residents.)

Scheme Overview:

Strategic frameworks for broadband development, including legal bases

In 2001 the project “The Digitale Agder” signed a contract that should bring broadband by fibre optic cable to all town halls in the two counties. This contract also secured some more offers of DSL.

At 2005 the Ministry of local government and regional development had established a support scheme for broadband rollout. Applicants could receive up to 40 % of the total costs. Broadband coverage was in 2006 90 % and the aim of the government was to bring this up to 98 %. The definition of broadband was 0,6 Mbit/s download. The total fund was small, compared to the application mass. The scheme was technology independent, and good projects with high results of coverage were given priority.

The counties could use their own financial resources, but in Agder they had no specific budgets for broadband. The municipalities had neither fund that was required to use for broadband rollout.

Specific objective

The ambition of the government was that giving some economic support, the counties and the providers should together make a cost-sharing that should give good results. The expected results was to bring up the coverage of broadband to 98 % at a speed of at least 0,6 Mb/s download.

Target areas

The support scheme that Ministry of local government and regional development established should be used all over the country.

The Digital Agder focused on the 30 municipalities in the two counties of Agder.

Scheme description:

Scheme design

The municipalities in Agder were eager to get better broadband to the residents and the Digitale Agder/BHV was hired for the project. At that time about 20 000 residents had no offer of broadband. After some workshops the project formulated the vision "Everybody always on in Agder" First the project ordered an analysis from "Teleplan Globe AS" that should consider the possibility of extending broadband to all residents. This was considered possible, by using WiMax technology, but at high costs. The fund that the government had established encouraged working with development of broadband. Possibility of connection to broadband was seen as an important strategy for the development and growth in the region, and the municipalities and the two counties gave promise of financial support to accomplish the vision.

The steering committee for the project decided to try to achieve economic cost-sharing and procure broadband for all residents, and broadband capacity and telephony for all municipalities and the two counties. The large cash flow from broadband and telephony should give better price for the rollout of broadband to all residents.

The Digitale Agder outlined a large procurement project. Here the different deliveries were outlined. There was set milestones for each of the deliveries. The provider desirable to select should do all the broadband rollout and be the contract partner to the resident end user.

The plan was that all deliveries should be ready by the end of 2007.

Beneficiaries:

The project made all the applications and agreements with the contributors. All the contributors transferred the money to the county of Aust-Agder, which paid contributions to the selected supplier.

The residents got no payment, but got a guarantee that they should never pay more than the best prices of DSL in the region, and the establishment charge should never be more than € 130. These conditions should apply to both DSL and broadband given by satellite.

Procurement:

The project used **a** competitive dialogue procurement approach.

After advertising, interested providers got a descriptive document for the procurement. When a review of all companies that had expressed interest was carried out, the project selected three providers for the dialog process.

Through the dialogue process with the three providers, the details of delivery were designed.

The providers competed to receive a construction contribution, to complete delivery specification.

Selection criteria:

The project outlined a detailed description of the criteria that the provider had to meet. There were fixed specifications for telephony and broadband to the municipalities. For broadband to the residents everybody had to guarantee offering broadband to all that ordered. After discussions in the dialogue process, the providers were allowed to use broadband via satellite for up to 160 households. With this exception there were no limits in technology to the private market.

The main competition was about the level of the contribution from the project. There were also criteria about the speed of broadband to residents. Everybody had to offer at least 1 Mb/s, but they were awarded if they could guarantee higher speed.

Budget and financing instruments:

The project raised a total budget at € 6.800.000. In addition it was stipulated that the provider would use at least € 3.000.000.

By the support scheme that the Ministry of local government and regional development had established, the project got € 2.700.000. This was the largest grant from the scheme. The Ministry also added on about € 700.000 to the procurement.

The competition for the contract was hard, and the contribution to the provider became € 3.700.000. This was far less than expected, and the project used about € 5.200.000 prepaying the costs for broadband to the municipalities for the next four years. In addition the provider got a daily penalty for late delivery of ca. € 270.000.

The contract with TDC AS had duration of four years, after the delivery was completed.

Awarded value

Evaluation of the project shows high value. Feedback from the municipalities,

government, residents and external company that evaluated the results is positive. Public sector got broadband at very good prices, and no other region in Norway had a guarantee of broadband to all residents. The plan to create a large and demanding customer gave good results.

The support scheme from the ministry made it much easier to get the municipalities engaged in the project and increased willingness to contribute financially.

Most of the complaints are caused by those that have broadband via satellite. The fair use policy and problems by getting the promised speed has been the most common complaints. Both the project and the supplier had little knowledge about broadband via satellite, and this caused probably some of the problems. (01.04.2013 a new supplier takes over the delivery of broadband by satellite).

Monitoring:

The delivery phase was more difficult than anticipated, and there had to be allocated more resources to this field.

During the implementation the project had one person monitoring the progress. Every month there was a meeting in a group with representatives from the project and the supplier. The delivery process was carefully monitored and deviations were promptly responded to. This had a good effect, because the contract had rather severe penalties for not maintaining the progress.

Project communication and promotional activities

During the project phase there were regular information letters to the municipalities, presentations in meetings and coverage in newspapers. The project also had a homepage and produced leaflets. The contract said that the supplier had to use about € 600.000 advertising the offer of broadband to every resident.

Because of the guarantee of broadband and the large scale of the project, it has been presented to many different groups in the ministry and in different conferences.

Ex-post results

The results from the project made it much easier to start a new project, based on an economic cost-sharing model. This has especially shown in the project for building up mobile coverage, and a new project with the ambition of building broadband coverage with fibre optic cables for about € 7.000.000.

4.4.2. Trikala (Greece)

Overview: Satellite internet infrastructure in the mountainous region of the Prefecture of Trikala

Public Administration in charge of the scheme:

Municipality of Trikala

Timeline:

2008 - 2010

Main objective:

Broadband access to the remote areas of the Prefecture of Trikala

Awarded company:

e – Trikala in cooperation with the Hellenic Aerospace Industry

Scheme Overview:

Strategic frameworks for broadband development, including legal bases:

The framework was defined by the need to provide broadband connection to the citizens for several reasons and to make people more familiar with ICT. The first step towards this objective was to cover urban regions through the development of the Wi-Fi hotspots through which citizens are connected with their free-of-charge credentials. Along with the urban regions, internet connectivity had to be given to suburban and mountainous regions of the Prefecture. At that time, Satellite internet was the one and only solution in order to provide internet coverage to remote areas and to decrease in this way the Digital gap.

Specific objective

Trikala is situated in the centre of Greece and is mainly a mountainous region with a population of 150938 spread in an area of 3389km^2. Accordingly, the mountainous region spans 2236km^2 which sets the 66%. 5 spots of the mountainous and semi mountainous part of Trikala benefited from the deployment of Satellite Broadband among them the village of Gardiki and the well-known ski resort of Seli. The satellite equipment was first deployed 5 years ago in 2008 and the Contention Ratio was defined at 30 to 50 while the Download/Upload speed was 2048/256kbps. The main equipment was provided by the Hellenic Aerospace Industry.

Target areas

Place	Altitude	Geoinformation
Gardiki	*1100 metres*	
Summer resortElati	*950 metres*	
Mountainous villagePertouli	*1150 metres*	
Snow sport	*1500 metres*	

Scheme description:

Scheme design

As it was previously mentioned the main objective of this initiative was to offer broadband services to the citizens of the Prefecture of Trikala. Apart from recreation, internet access was also needed in order to use several e – government and telecare and telemedicine services. For the mountainous region that offers many natural landmarks which attract many tourists but the lack of the Internet access discouraged people from visiting these places.

At this point e-Trikala, the development company of the Municipality of Trikala in cooperation with the Hellenic Aerospace Company deployed satellite infrastructure in this mountainous region. Hellenic Aerospace Company provides the satellite equipment and internet access. e-Trikala deployed satellite internet through the use of Wi-Fi antennas in order to decrease the cost as each satellite antenna was too expensive.

Beneficiaries:

- final recipient: Citizens of the Mountainous regions and the Public administration as well in the case of semi – mountainous village Xiloparoiko and
- final beneficiary: the entity responsible for carrying out the co-financed operations, in the technical point of view was e-Trikala SA and the payment of the corresponding expense was the Public administration (Municipality).

Procurement:

E-Trikala is a Development company of the Municipality of Trikala and as it is defined in the internal operation of the company can cooperate with other Municipalities with the use of a contractual agreement without an open tender.

Selection criteria:

E-Trikala had to deploy the satellite infrastructure in the predefined places being also responsible for the maintenance of the equipment.

Budget and financing instruments:

2300€ per satellite antenna * 7 places / 25000€ Wi-Fi hotspots / 2220€ total price for the 7 places interconnection speed cost

The financing model was structured by local and regional funds of the Municipalities.

Duration of the scheme – 3 years

Monitoring:

The project was reviewed by the Planning and Programming department of the Municipality. More specifically, there are two committees, the Monitoring committee, which monitors the construction and deployment of the project and the Finalization Committee which inspects the proper delivery of the project. The contractual agreement was split into two phases, a pre-financing and the final payoff of the project. Additionally, these payments are monitored and approved/rejected by a Finance Commissioner which is defined by the Independent Authority "Supreme Council for Personnel Selection (ASEP)".

Project communication and promotional activities

The project was primarily promoted though a major conference "Digital cities 2008" that was organized by e-Trikala and took place in Trikala. Additionally, an advertisement campaign was set up to promote the project through the media.

Ex-post results

The service ran successfully for approximately 3 years at the mountainous region of Trikala. Citizens used the Municipal internet access in order to check their emails, use the Municipal services for telecare and e – Government. There were several connectivity problems especially during bad weather conditions which deteriorated the quality of the connection.

4.4.3. Auvergne (FRANCE)

Overview:

Région Auvergne is composed of 4 départements and six urban areas. 1.3 million inhabitants live in this predominantly mountainous region, mainly composed of rural and sparsely populated areas (around 60% of the region).

Région Auvergne decided to intervene to deploy broadband access, as a means to strengthen the competitiveness and the attractiveness of its territory. The regional broadband programme is based on a mix of technologies.

Public Administration in charge of the scheme:

Auvergne Regional Council in partnership with 4 local authorities (départements).

Timeline:

- December 2nd 2005: Agreement for the reduction of the white areas unserved by broadband ("Convention en vue de la résorption des zones blanches non desservies en haut débit")
- 2007: Public-private Partnership *Auvergne haut debit* for 10 years (first PPP related to broadband infrastructures in Europe and in France)

Main objective:

100% basic broadband coverage (512 kbps)

Budget and financing instruments:

The total budget for the basic broadband was €38.5 million to fund the provision of 338 cities located in white areas.

Distribution of the origin of the funds:

French Government (Fonds National pour l'Aménagement et de la Développement du Territoire): €4.8 million

EU (ERDF): €10 million

Region Auvergne: €11.85 million

Départements (Allier, Cantal, Haute-Loire, Puy-de-Dôme): €11.85 million.

Main solution: Deployment of fibre backhaul infrastructure:

The Auvergne project qualified for state aid as its main aim was to provide at least 512kbit/s internet access in white areas (4% of the territory and 353 communes) in which an affordable and efficient internet access service was unavailable.

Auvergne is an example of the public outsourcing model. This model leverages the expertise of the private sector, while ownership remains in the public sector.

The chosen financial model is a Partnership Public-Private (PPP) between Région Auvergne and the private operator, France Telecom, selected in the frame of a competitive public tender.

Région Auvergne provides the funding for the required infrastructure paying the operator for a 10-year contractual period. France Telecom has designed the network and now operates and commercialises it on behalf of Région Auvergne. This scheme allows the sharing of risks since France Telecom takes some of the risk and responsibility, especially in terms of technical implementation.

The passive infrastructure is provided by France Telecom which also provides active wholesale bitstream services. Local loop unbundling passive access is also available. However, competition is respected since citizens can choose their operator/ provider.

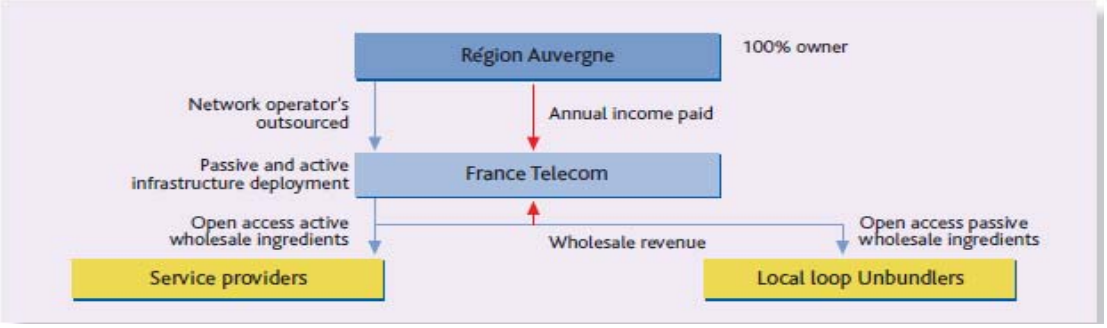

Figure 1 Broadband - Delivering next generation access through PPP, European PPP Expertise Center for the EIB, April 2012, p.35

The project was identified as meeting the requirements of Service of General Economic Interest (SGEI).

The intervention of Région Auvergne falls within its general mission of developing and opening-up its territories. Indeed, the French law entrusts the regions with a "mission of general interest" to make high-speed broadband internet accessible to the largest possible number of end users[10]. The regions are authorised to cover and organise, under supervisory control, the building and operation of electronic communication infrastructure and networks.

Network architecture:

The winning technology was NRA-ZO ("new subscriber node in a shadow zone"), where a 'shadow zone' is an area with no DSL service.

The technology uses the France Telecom's existing copper network, but reduces the length of the copper loops by running fibre to a cabinet or small building nearer to subscribers, known as a very small technical site. This decreases copper loop length and enables higher speed DSL services.

Results:

The project resulted in 14 400 new lines eligible for DSL, 860 km of fiber optics that will be re-used for VHS broadband and 36 000 lines that benefited from an increase in broadband.

99.6% of the households from Region Auvergne get at least a 512 Kb/s offer in 2009, 85% a 2Mb/s offer, 47% a 8 Mb/s offer and 30% a 20 Mb/s offer.

Complementary solution: financing satellite user access to bridge the Digital Divide

Despite the excellent regional broadband deployment with terrestrial technologies, 0.4% of the population (a couple of thousands households) was not served by basic broadband. To complete the broadband coverage and to reach the 100%, a measure to favour satellite solution was considered in the general regional scheme.

[10] article L 1425-1 du Code Général des collectivités territoriales

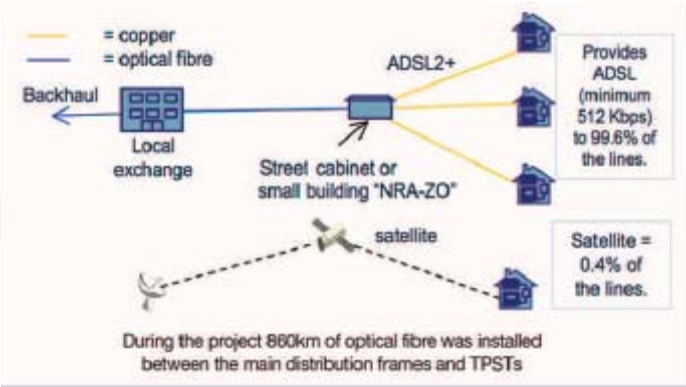

Figure 2: Broadband - Delivering next generation access through PPP, European PPP Expertise Center for the EIB, April 2012, p.3

Target areas

The measure focuses on white areas, where private operators are unable or unwilling to invest in broadband infrastructures. The target is the 3000 households ineligible for any terrestrial technologies.

Scheme description

Scheme design:

Demand-side mechanism was implemented to favour satellite broadband provision and penetration.

Thus, Region Auvergne granted €600 in vouchers to subsidise the acquisition and installation of the satellite equipment: one €400 voucher for the purchase and another one of €200 for the installation.

Beneficiaries:

- final recipient: citizens ineligible to DSL
- final beneficiaries: ISP. They are the intermediaries between citizens and administrative bodies

Selected companies:

Five satellite broadband providers (connexion verte[11], sat2way[1], alsatis[1], nordnet[12],

[11] Eutelsat

[12] SES

viveole[2]). Competition is guaranteed, citizens can choose among these companies, the relevant satellite operators and services.

Procurement:

As, only households that are ineligible to DSL received subsidies, the Auvergne Regional Council provides a test of eligibility on the regional broadband PPP website, just by entering a phone line number.

Once citizens know if they are eligible for satellite broadband vouchers, they can ask for the subsidies online. Then, they will receive the 2 vouchers with a declaration of honour to fulfill. In addition to the declaration of ineligibility to DSL, citizens must declare that they did not benefit already in the past from a subsidy for satellite broadband and that the satellite equipment will be for a personal use, not a professional one.

Citizens just need to contact a satellite ISP, chosen between the 5 partners mentioned above, to buy the satellite equipment (modem and antenna). Once purchased with the €400 voucher, the equipment can be installed by the citizens themselves or they can decide to call on an installer. In that case, users of satellite broadband will give to the partner company the €200 voucher that will be deducted from the bill.

Selection criteria:

ISP able to provide services of minimum 512 kbps.

Awarded value

From 2009 to 2012, more than 1000 households (around 38% of the ineligible to DSL lines) got equipped with satellite broadband equipment through vouchers, i.e. a budget €600 000 dedicated to satellite into 3 years.

Project communication and promotional activities

- information from the PPP to local authorities
- information and assistance from the PPP to citizens:
  - hotline on the process, agenda, project details, providers available
  - website to present the project, informing the inhabitants on progress, the commercial opening dates and the internet providers available: www.auvergnehautdebit.fr
- information from ISP websites on the available subsidies by Departments, the conditions and process to get them:

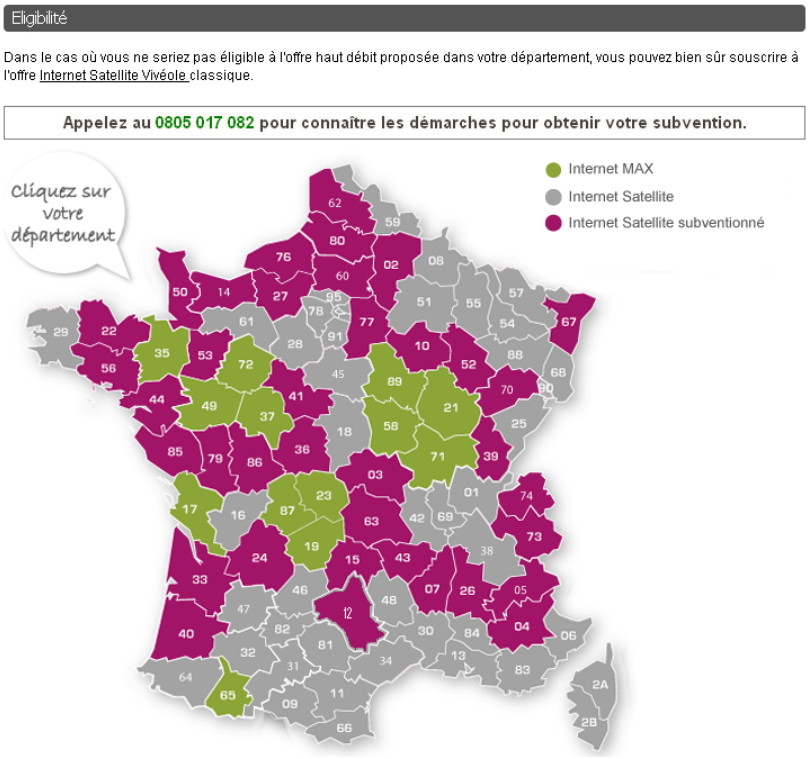

Figure 3 Source: http://www.viveole.fr/eligibilite-subventions-internet-satellite-wimax

Ex-post results

Since 2009, 100% of the Auvergne population can have access to basic broadband (512 kbps): 99.6% by terrestrial technologies and 0.4% by satellite.

For reaching the target of 100% high broadband coverage of the households, the region received in 2010 the Regio Star Awards from DG REGIO of the European Commission.

4.4.4. Devon County Council (working with Somerset County Council)

Overview:

Public Administration in charge of the scheme:

Devon County Council

Timeline:

2011 – end 2013

Main objective:

To provide improved connectivity speeds in very rural upland areas of Devon and Somerset that currently receive speeds less than 2 Mbp/s

Awarded company:

Satellite Solutions Worldwide (using tooWaydirect service /Eutelsat satellite).

Scheme Overview:

Strategic frameworks for broadband development, including legal bases:

The scheme supports the UK Government target of providing the Universal Service Commitment of at least 2 Mbp/s for every user and 'best broadband networks in Europe by 2015' aim.

Specific

The original scheme aimed to provide a 5 Mbp/s synchronous upload/download speed to beneficiaries. Due to improved speeds now possible through Eutelsat, this has been exceeded (20 Mbps download and 8 Mbps upload).

Target areas

The scheme operates in 4 defined areas of Devon and Somerset:

- Axminster – Dunkeswell area
- Rural Tiverton
- Rural South Molton
- Wheddon Cross, Exmoor National Park.

Scheme description:

Scheme design

The scheme provides grant funding to fund the purchase of the satellite dish/antenna and installation fees in 4 defined areas of Devon and Somerset. In addition, beneficiaries can

receive up to 8 hours training and support on ICT/using broadband more efficiently via a 'Digital Mentor' operator which Devon County Council has contracted alongside the service operator.

Beneficiaries:

- final recipient (the end beneficiary of the assistance e.g. Citizen, SME, Public Administration, NGO, others) and
- final beneficiary (the entity responsible for carrying out the co-financed operations and the payment of the corresponding expense e.g. Public Administration, ISP, others) The final recipients are anyone or any business/SME located within a specific post code range. These have been pre-defined as areas that were receiving very poor broadband service.

Procurement:

A fully open tender procedure was adopted; compliant with OJEU standards and procedures for a service operator who could provide an end to end service – sales ordering, customer management, billing, installation and maintenance.

Selection criteria:

- Minimum upload and download speeds of 5 Mbps
- 99.95% service availability
- Business hours and weekend maintenance/fault handling service
- Full customer service management
- Private sector match funding and marketing contributions
- Willingness to work with the County Councils and Digital Mentor agent to promote the use of broadband service use throughout the project.

Budget and financing instruments:

550,000 GBP from EU RDPE funding.

Duration of the scheme: November 2011 – December 2013.

Awarded value

Maximum of 350,000 GPB for equipment subsidy and service operation – payment is based on actual take-up.

Monitoring

Targets were agreed for support of SMEs – so far, 70 out of 75 target SMEs have received

the training and support service.

Over 100 satellite hardware equipment sets have been deployed; however no targets were agreed for actual deployment.

Project communication and promotional activities

A range of activities have been undertaken to promote the service and to increase residents and SMEs' use of ICT in their everyday lives/business operations:

- Workshops delivered in very rural locations such as Village Halls and Community Centres with different audience groups (e.g. Parish Councils, Women's groups, local community organisations) to promote the use of social media, digital photography, website search optimisation.
- Work with the DEFRA Rural Payment Agency to encourage farmers to complete their Single Payment Application online.
- 1 to 1 diagnostic sessions and follow up support to SMEs on any aspect of ICT or using broadband to tackle any problems encountered.
- A range of case studies on people who have taken up the service have been produced. These have recently been used by DEFRA to produce a technology neutral video to promote the benefits of using broadband and online services: http://www.youtube.com/watch?v=lQE-DOZnTY8
- A range of promotional materials such as banners, flyers, posters and brochures on the service have been produced to promote the service and IT support.

Ex-post results

The full results of the scheme will be written up as an evaluation report post December 2013. These will be disseminated through our funder, DEFRA and used as best practice to inform further Programmes.

4.4.5. Wales (UK), Broadband Support Scheme [13]

Cronfa Amaethyddol Ewrop ar gyfer Datblygu Gwledig: Ewrop yn Buddsoddi mewn Ardaloedd Gwledig
The European Agricultural Fund for Rural Development: Europe Investing in Rural Areas

Overview:

Public Administration in charge of the scheme:

the Welsh Assembly Government

Timeline:

launched July 2010 - ongoing

Main objective:

to cover the upfront costs of purchasing a broadband solution where existing providers have been unable to provide a service

Awarded company:

direct subsidy to end-users

Scheme Overview:

> **Specific objective:** "The Broadband Support Scheme is aimed at those individuals, businesses and 3rd sector organisations in rural communities that do not have access to broadband, these are known as broadband notspots (*ed: extended to slowspots from 2011, see definitions hereunder*). The scheme will provide funding to cover the upfront costs of purchasing a broadband solution where existing providers have been unable to provide a

[13] http://wales.gov.uk/topics/businessandeconomy/broadbandandict/broadband/bbss/?lang=en

service.

The scheme is technology neutral.

The scheme will allow individuals and businesses to discuss options with a range of service providers to provide a solution that works best for your needs."

Target areas: any Broadband Notspot either Slowspot in Wales

"A Broadband Notspot is defined as any premises occupied as a single residential dwelling house or a single business/3rd sector organisation premises in Wales which cannot receive a broadband connection via any fixed line technology – ADSL or cable or;

any premises in Wales which can only receive a broadband connection with a consistent download speed of less than 512Kbps."

In case the download broadband connection is consistently more than 512Kbps but less than 2Mbps, the premises are defined as Broadband Slowspots.

A web-based registration tool has been made available to notify Notspot and Slowspot premises [14]; the provided information will help to shape future broadband initiatives with the UK Government and ensure everyone in the UK has access to a minimum connection speed of 2Mbps, which is the Universal Service Commitment.

Scheme description

Scheme design:

The beneficiary is requested to submit 2 quotes from his/her chosen ISP.

The reimbursement of eligible costs (customer premises equipment, survey and installation fees, shared infrastructure equipment where applicable, and alike) to the subscriber is made by the Welsh Assembly Government after completion of the installation and activation of the broadband service in accordance with the Offer Letter for funding, and submission of appropriate evidences and Claim Form.

Beneficiaries:

Individual Households, Communities, Small & Medium Businesses SMEs, 3rd Sector Organisations

Procurement:

direct subsidy to end-users, paid in arrears.

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14 http://wales.gov.uk/topics/businessandeconomy/broadbandandict/broadband/?lang=en

Selection criteria:

The beneficiary is requested to submit 2 quotes from his/her chosen ISP for the implementation of broadband connections consistently equal or higher than 2Mbps.

Budget and financing instruments:

"Initial funding of around £2 million has been allocated, …. with the support of Welsh Assembly Government funding."

Duration of the scheme:

ongoing, currently open to new applications until 30th September 2013.

Awarded value:

"Funding will be made available to you directly and will cover the upfront costs for the installation of a broadband solution for your premise or your contribution to a community scheme. This will be limited to a maximum up to £1,000 per applicant or 100% of the total eligible cost, whichever is lower."

Ex-post results:

"To date (*02.02.2012*) **2,038** applications have been approved, which includes funding for sixteen community schemes covering 918 homes, representing a financial commitment of £1,662,709.

A further 232 applications are currently being assessed with interest from another ten community schemes (covering **1,055** potential applicants)." [15]

[15] « Edwina Hart *(Ed. : Minister for Business, Enterprise, Technology & Science*) announces extension to Broadband Support Scheme. »
http://wales.gov.uk/newsroom/businessandeconomy/2012/120202bss/?lang=en

4.4.6. Northern Ireland (UK), Remote Broadband Services Northern Ireland

Overview:

Public Administration in charge of the scheme:

the Department of Enterprise, Trade and Investment of Northern Ireland (DETI)

Timeline:

tender launched October 2011, awarded February 2012

Main objective:

to provide at least three broadband Retail Service Offerings in all remote areas of Northern Ireland

Awarded company:

Onwave Ltd

Scheme Overview:

Strategic frameworks for broadband development, including legal bases

In September 2010, the European Digital Agenda outlined a target to bring internet connections of "30 Mbps or above for all Europeans by 2020 with half European households subscribing to connections of 100 Mbps or higher".

Britain's Superfast Broadband Future (or 'Broadband UK') published in December 2010 outlined the Coalition Government's objectives for next steps in broadband provision across the UK. Broadband UK has a vision for the UK to have the 'best superfast broadband network in Europe by 2015', with the ultimate aim of achieving broadband

speeds of 2MB (i.e. 4 times the minimum speed of 512kbps) to the entire population and ensuring high-quality broadband to mobile devices.

The 2011-15 Northern Ireland Budget and the DETI and Invest NI strategies all highlight the requirement to develop the telecoms infrastructure within NI i.e. the implementation of PSA 1: Objective 3 - Ensure a modern sustainable economic infrastructure to support business.

Two keys proposals within the DETI TPU Telecommunications Action Plan 2011-2015 are to work with industry to "ensure the continuing provision of access to a broadband service in Northern Ireland, regardless of where you live or do business" and "increase superfast broadband coverage in Northern Ireland in line with the UK Coalition Government's commitment to deliver the best superfast broadband network in Europe by 2015."

Specific objective:

"The Department is seeking to put in place a contract with a suitable broadband service provider to provide at least three broadband Retail Service Offerings – a Consumer Service, a Small Business Service and a Small & Medium Business Service. These offerings are to be made available to all Eligible Retail Customers in Northern Ireland."

Target areas:

"These offerings are to be made available in all remote areas of Northern Ireland, where there are difficulties in obtaining access to broadband services of 512Kbps or more via wireline technology."

For information purposes only, a list of 765 Post Codes believed to be particularly problematic to deliver wire-line based services was provided by DETI; each Tenderer being requested to make its own determination as to where services will be required.

Figure 4 Areas served only by satellite (Q2 2011, for information purposes only)

Scheme description

Scheme design:

The Irish Government, through DETI, grants since 2005 broadband access to any users throughout Northern Ireland, subsidizing coverage in remote areas. A previous tender (2009) was awarded to Avanti Telecommunications, providing the service to 1101 end-users at summer 2011.

Beneficiaries:

Consumers, Small Businesses and SMEs throughout Northern Ireland out of reach of 512 kbps wire-line broadband

Procurement:

competitive open tender

Selection criteria:

The most economically advantageous offer; evaluated against seven main award criteria as follows (in descending order of importance/weight:

a) Pricing; b) Risk Management, Business Continuity Planning and Marketing; c) Technical d) Retail Customer Support Services e) Service Specifications of the Retails Service Offerings f) Cost to Department (Retail Customer Fee)

Minimum Service requirements:

- Consumer: 2/0.5 Mbps, CR 55:1, 4W volume allowance 3 GB
- Small Business: 4/1 Mbps, CR 55:1, 4W volume allowance 6 GB
- SME: 8/1 Mbps, CR 20:1, 4W volume allowance 12 GB, intelligent Gateway package, advanced high security firewall.
- All: Volume Booster, Internet access, ability to send and receive email, upload and download files, 99.5% yearly availability

Services actually offered by the awarded proposal[16]:

- Consumer: 6/1 Mbps, 4GB/month, max 34.95 GBP/month, installation max 99.95 GBP
- Small Business: 8/2 Mbps, 6GB/month, max 44.95 GBP/month, installation max 99.95 GBP
- SMEs: 10/4 Mbps, 16GB/month, max 109.95 GBP/month, free installation

Budget and financing instruments:

"The Department intends to use funding of up to £250,000 (exclusive of VAT) to contract for the delivery of the broadband services in remote areas of Northern Ireland."

Duration of the scheme:

3 years

Awarded value:

the value of the subsidy per installation (where agreed) is not available

Ex-post results:

Ongoing scheme, current results not available. An early notice (April 2012, only 2 months after the tender award) mentioned 44 subsidies granted.

16 http://www.niassembly.gov.uk/Documents/RaISe/Deposited-Papers/2012/dp947.pdf

4.4.7. Galicia (ES), "nuevas conexiones a internet de banda ancha a través de tecnología satélite bidireccional en medio rural" [17]

Overview:

Public Administration in charge of the scheme:

Axencia Galega de Desenvolvemento Rural (AGADER).

Timeline:

ISPs selection launched July 2012, completed September 2012.

Main objective:

the purpose of the call is to enable quality internet access to 3% of the population, which due to its high dispersion or its location, cannot have access to quality broadband of at least 2Mbps through other technology.

Selected ISPs:

Duo Telecomunicaciones, Eurona Wireless Telecom, Intermax Technology, Mira Novas Tecnoloxías, Operadora Tripla, Quantis Global [18]

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17 http://www.xunta.es/dog/Publicados/2012/20120704/AnuncioO90-280612-0001_es.html

18 http://www.xunta.es/dog/Publicados/2012/20120919/AnuncioO90-120912-0001_es.html

Scheme Overview:

After the selection of the appropriate ISPs and the signature of the relevant agreements, a public call was open from late September until November 2012 for citizens and businesses in Galicia out of reach of terrestrial broadband, to apply for a subsidy for satellite bidirectional internet access. The subsidy covers installation expenses and the cost of user equipment, up to a maximum amount of 500 euros.

All the administrative processes related to the subsidy are directly managed by the ISP in place of the subscriber, so allowing to the Managing Authority to simplify the measure management and control.

It is worthwhile mentioning that the Xunta de Galicia has implemented a specific web tool to register requests for broadband service from users in digital divide [19], so gathering a valuable database to dimension the actual needs of its community and allowing targeted communication for any measure for the reduction of such digital divide.

Strategic frameworks for broadband development, including legal bases:

"This action corresponds to the sixth and last line of the Broadband Plan and the Board is bound to areas of the community more isolated, scattered and complicated terrain, where Internet access is possible only via satellite. This assistance will be summoned again in 2013 and 2014."

Target areas:

the whole of Galicia, except areas included in urban perimeters defined as such in the current urban planning of the city of Ferrol, Lugo, Ourense, Pontevedra, Santiago de Compostela, A Coruña and Vigo.

Scheme description

Beneficiaries: Final recipients: these grants are aimed at those families and businesses with address in Galicia who may not have access to broadband of at least 2Mbps, using other technology.

Final beneficiary: the selected ISPs

Procurement:

selection of multiple providers

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19 http://cobertura-pdbl.xunta.es/

Selection criteria:

min 2 Mbps download, min 2GB/month, always-on service

Budget and financing instruments:

"The investment this year (2012) exceeded 335,000 euros and the total budget up to 2014 is 1.077 million euros. This aid program is possible thanks to the agreement signed last April between the Agency for Technological Modernization of Galicia (Amtega) and the Ministry for Rural Affairs and the Sea, which through Agadir, will bring the total amount of euros in aid period 2012 to 2014."

This investment is 57.56% co-financed by the European Agricultural Fund for Rural Development (EAFRD) under measure 321 Axis 3 "Improving the quality of life in rural areas and diversification of the rural economy", of the Rural Development Program of Galicia 2007-2013.

Duration of the scheme:

the scheme is planned in three calls for applications from final recipients, once per year from 2012 to 2014

Awarded value:

The subsidy covers installation expenses and the cost of user equipment, up to a maximum amount of 500 euros, conditioned upon remaining in service for a year. The first month of service was free of charge.

The eligible subscriber is not requested to anticipate the expenses for installation and activation of the service, providing he/she concedes the ISP the rights of recovery as a recipient of the aid.

Ex-post results:

A total of 676 households and businesses applied within one month to aid the Board to hire the service of internet connection via satellite.

Most applicants, 87%, hired internet service 8 Mbps downstream, 8% chose for a 2 Mbps service and the remaining 5% opted connections 4Mbps speed. In addition, 71% of recipients also contracted phone service.

Of the 676 requests made, the majority (305) correspond to the municipalities of Corunna, were held from 264 municipalities in Lugo and Pontevedra and Ourense concentrated to lower demand with high 67 and 65 respectively.

The areas with the greatest demand is concentrated in the regions of Lugo, the Earth and Tea Sarria in Lugo, Orders, and Arzúa Walls in Corunna, Castro Caldelas in Ourense and A Estrada, Lalin and Forcarei in Pontevedra. 20

20 http://imit.xunta.es/portal/actualidade/novas/2012_12_21_internet_via_satelite.html

4.4.8. Bolzano Province (IT), "Messa a disposizione di connessioni a banda larga in Alto Adige"

Overview

Public Administration in charge of the scheme:

Radiotelevisione Azienda Speciale

Timeline:

ISP selection launched in August 2007 (44 municipalities), further extended in 2009 (46 communities in 21 municipalities)

Main objective:

the purpose of the call was to enable broadband internet access to businesses and households in digital divided areas of the Province.

Selected ISP:

Broadband 44+ [21]

Scheme Overview:

The development of broadband connectivity in the territory of Alto Adige (autonomous province of Bolzano) was uneven. The territory is mainly Alpine: 85.9% is above 1 000 metres. Although

[21] http://www.broadband44.net/

around 80% of the population of Alto Adige had access to ADSL connections, the service was less available (*before scheme implementation*) in mountainous areas where investment costs are higher than in densely populated areas. Therefore, the Provincial Council set out the objective to have broadband connections available for 90% of the population, 95% of enterprises with three workers or less and all enterprises with more than three workers by 2009.

The scheme foresees the selection of an operator to build, own and operate the broadband infrastructure. The financial incentive intends to bring the break-even point of the investment made by the network operator within allegedly sustainable terms so that, in practice, the break-even is reached within 36 months from the supply of the service. [22]

Strategic frameworks for broadband development, including legal bases:

The measure is based on the Legislative Decree of 1 August 2003 n.259: "Codice delle comunicazioni elettroniche", law L.P. 33/1982 "Provvedimenti in materia di informatica nella Provincia di Bolzano", the Deliberation n° 646 of 7 March 2005 of the Provincial Council: "Programma operativo per lo sviluppo della Società per l'Informazione in Alto Adige e-Südtirol 2004 - 2008 con particolare riferimento agli obiettivi per la messa a disposizione di una offerta di banda larga a copertura dell'Alto Adige"

Target areas: "The project is aimed at 44 communes of Alto Adige, in which the infrastructure shall ensure fulfilment of the coverage objectives above. In 40 of these, there is no broadband service at all at present. None of the communes or areas in question is populated in excess of 3 600 households."

Scheme description:

Scheme design The measure supports primarily regional development objectives. The objectives are pursued through support to a procurement contract for the construction and operation of infrastructure to provide access to broadband services in determined communes of Alto Adige. Such services shall be supplied to business and residential customers.

Beneficiary: the selected ISP

Procurement: call for tender (selection of a single provider)

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22 http://ec.europa.eu/eu_law/state_aids/comp-2007/n473-07.pdf

Selection criteria: The most economically advantageous tender; the selection criteria included the public co-financing value, service fees to end users, and a detailed technical evaluation.

Minimum requisites (main): "basic" profile: 640/256 kbps, CR 10:1 ; "plus" profile: 1/1 Mbps, CR 5:1

Budget and financing instruments:

Up to EUR 7 000 000, payable to the selected operator from funds from the Autonomous Province of Bolzano.

Duration of the scheme: The contract with the successful bidder has ten years duration.

Awarded value

The 2007 measure was awarded € 6.069.930; the 2009 extension additional € 1.957.422.

Ex-post results: "*7,000 households and businesses now use the internet services of Broadband 44 +. …. Four out of five BB44 subscriptions are taken by households, companies account for about 20 per cent of the connections*". (03.12.2012) [23]

A breakdown among the different technologies exploited (specifically satellite, introduced among others with the 2009 extension) is not available.

[23] http://www.broadband44.net/news/single-view/article/7000-surfen-mit-bb44.html?tx_ttnews%5BbackPid%5D=1&cHash=edd6c81dc5