

**FINAL REPORT**  
**ON DIGITAL ACCESSIBILITY AND ICT**  
**(COVERAGE AND USE) FOR THE OUTERMOST REGIONS**

**Philippe Baudouin**

**DISCLAIMER**

*The arguments expressed in this report are solely those of the authors, and do not reflect the opinion of any other party.*

# Expert group on 'Digital accessibility and ICT (coverage and use) for the Outermost regions (OR)

## REPORT ON DIGITAL ACCESSIBILITY AND ICT

### Table of content

Introduction .....	4
1 Regulatory framework .....	5
More visibility for OR in the review .....	5
Further issues.....	6
2 The accessibility to digital infrastructures and networks .....	7
State of play .....	7
Coverage .....	7
High and very high Internet penetration rate .....	8
Mobile telephony.....	9
Challenges.....	9
Local access.....	10
International bandwidth.....	11
Financing.....	12
3 The development of digital services .....	13
State of play .....	13
Challenges.....	16
Funding .....	16
Links between digital accessibility and digital services .....	17
ICT and enterprises .....	17
4 The development of digital skills and ICT sector. ....	18
State of play .....	18
Challenges.....	19
Digital skills .....	19
ICT sector .....	19
Annex 1: examples of digital services in OR .....	21
MARTINIQUE.....	21

BNPM Banque Numérique du Patrimoine / Martinique Heritage Database.....	21
GeoMartinique.....	21
REUNION.....	22
OiiS Océan Indien Innovation Santé .....	22
WI-RUN .....	22
GUADELOUPE.....	22
Cardiac ultrasound between Pointe-à-Pitre and Marie Galante .....	22
Digital platform of the regional tourist board .....	22
FRENCH GUIANA .....	23
NumLab.....	23
Telemedicine.....	23
MAYOTTE .....	23
Projects under consideration.....	23
MADEIRA.....	24
CIVITAS-DESTINATIONS.....	24
BEANSTALK.....	24
AZORES.....	25
RIAC - Integrated Citizen Support Network .....	25
Conception, development and commercialization of the Web and Mobile Platform - UrActive .	25
REDA – Open Platform of Digital Educational Resources .....	25
CANARY ISLANDS .....	26
INNOBONOS.....	26
MACBIOIDI PROJECT .....	26
Glossary.....	27
Annex 2: List of experts who participated in the Expert group on "Digital accessibility and ICT (coverage and use) for the Outermost regions (OR)" held in Brussels on 09/02/2017 .....	28

## Introduction

Due to their geographical situation (remoteness, insularity, smaller size, economic dependence on few products, difficult topography and climate), the outermost regions (OR) are faced with specific socio-economic problems. They have also plenty of potential and are an asset for Europe. In particular, the OR spread EU influence across their regions: the North-Eastern Atlantic, the Caribbean, Amazonia, and the Indian Ocean.

The situation of the OR is acknowledged in Article 349 of the Treaty on the Functioning of the European Union. Several specific measures were established in various policies to mitigate the existing handicaps, to support economic and social development, and to facilitate access to the benefits of the Single Market.

In its Communication from 2012, 'The outermost regions of the European Union: towards a partnership for smart, sustainable and inclusive growth', the Commission established five priority axes (accessibility, competitiveness, regional integration, reinforcement of the social dimension and addressing climate change) to bring the policy actions for the outermost regions in line with the Europe 2020 strategy. Digital accessibility was recognized as an important issue for OR' socio-economic development: *'eliminating the digital divide and increasing OR' access to the digital single market will be important. In order to create a well-functioning and effective digital single market, the OR dimension will be taken into account explicitly in all forthcoming regulatory proposals on the European digital single market.'* In spite of these commitments, the digital dimension of EU OR policy is yet underdeveloped.

Respecting the principles of equal opportunities of citizens irrespective of their place of residence is essential, especially as regards access to equipment and network but also to digital services, that usually refers to digital continuity issues.

Over the last years, the OR were very active to reduce the gap in digital accessibility and ICT use. Ambitious programmes at the national and regional level have been set up to support infrastructure deployment as well as the development of digital services. Moreover, the population is very keen to adopt new digital services such as mobile telephony. However, obstacles remain to ensure a full integration into the digital single market:

- The dependence on undersea cables;
- The extra costs of digital infrastructure roll-out;
- The limited size of their local markets which hinders private investment capacity and hampers the development of a local digital economy;
- The structure of the economic sector (very small enterprises) when considering ICT adoption;
- The difficulty to retain and attract digital skills.

In addition, OR are also facing important constraints on physical accessibility that could have a direct impact on digital services adoption, for instance the extra cost of e-commerce goods' delivery / shipping and in certain cases the OR' exclusion from delivery zones of major e-commerce players.

The expert group on digital accessibility and ICT use contributed to assessing the current situation and the key challenges for the future in the perspective of the renewed EU strategy. Contributions

from the OR were received on the basis of a questionnaire sent in early 2017 and an expert group meeting was organized on 9 February in Brussels.

The report addresses digital accessibility and ICT use under 4 main sections:

- The regulatory framework
- The accessibility to digital infrastructures and networks
- The development of digital services
- The development of digital skills and digital sector.

Each section provides elements of the state of play and points out the challenges to improve the digital accessibility and ICT use in OR in the future.

## 1 Regulatory framework

### More visibility for OR in the review

The European regulatory framework sets the common rules for the competitive environment in electronic communications markets across the 28 member states. In autumn 2016, the European Commission presented its proposals for a review of these rules and set new ambitious broadband targets beyond those of the Digital Agenda for Europe. One of the main objectives of the Commission's proposals is favouring infrastructure investments, including in less densely populated areas, for instance via co-investment schemes or 'open access' business models, where one player deploys the infrastructure and offers wholesale access on equal, non-discriminatory terms to all interested parties to provide retail services to end customers.

Experts representing the outermost regions stress the need of considering more explicitly the specificities and needs of outermost regions in the drafting of European regulations. For instance, there was no reference to outermost region in the latest impact assessment of the proposals for the Electronic Communications Code presented by the Commission in autumn 2016. However, the market conditions of outermost regions differ in many aspects from the mainland, including those of territories considered as "rural and isolated areas". These territories are facing specific and unique difficulties like geoblocking, high investment and maintenance cost due to their remoteness as well as other environmental and climatical conditions, the cost of international bandwidth that are not encountered in the same way by rural and isolated areas of mainland Europe. OR' differences with other regions are structural and permanent. OR should therefore be addressed in their own right and not be linked to "rural and isolated areas" in general. Thus, every single measure in the Digital Agenda and in the electronic communications regulatory framework should be assessed from the point of view of the specific characteristics of OR.

Likewise, when carrying out their market analyses, NRAs (national regulatory authorities) must clearly analyse OR separately due to factors like their dependence on long distance sub marine cables for their connectivity. The European framework certainly already gives NRAs leeway to intervene to address particular issues in an OR's local market, e.g. by means of geographically differentiated remedies in markets where sector-specific regulation is required. Portuguese NRA Anacom intervened to regulate the prices of capacity on submarine cables. In addition to the application of such generic provisions, a number of concrete measures can be envisaged to improve the alignment

of communications markets in the OR with the overall European regulatory framework. NRAs could be invited to carry out a dedicated analysis of local markets in OR. This has been done in Spain, where CNMC investigated the communications market in the Canary Islands in 2015. The NRA concluded the situation was “close to normal” and while continuing to monitor internally the situation in Canary Islands’ market it would only publish a new Report in case it noticed a significant change in the competitive situation or deviation in the services offer between Canarias and the rest of Spain. A regular review of communications markets in OR, e.g. aligned to the rhythm of the analyses of relevant markets could favour constant improvement of local market conditions and the integration of outermost regions in the wider digital single market.

### **Recommendations**

Experts suggest improving the EU regulatory approaches to outermost regions through the consideration of OR specificities in legislative impact assessments and monitoring of the application of regulation in OR.

The Commission could encourage the NRA to systematically consider the OR in their market analysis in order to detect specific constraints justifying an analysis of their situation.

The OR would also welcome a set of common guidelines for regulator dealing with their territories. These guidelines could be elaborated through the collaboration of the respective NRAs and other regulatory authorities.

### **Further issues**

Further issues have been identified. One of the key questions is that of accessibility of digital services and e-commerce in OR. Today, a number of e-commerce providers as well as digital content and application providers refuse to supply to customers located in outermost regions. High costs for shipping tangible goods to the OR are a main reason for this. However, this behaviour deprives residential customers and businesses in OR from the benefit in terms of choice and convenience these services may offer. Also, certain providers of digital content make some OR subject to geoblocking policies, which are not applied in the mainland. For instance, users from OR could not access the same catalogue of mobile app than users from mainland Europe. Such policies create a barrier for OR of full integration into the digital single market.

### **Recommendations**

Experts suggest an investigation into how far such practices might represent an undue discrimination.

## 2 The accessibility to digital infrastructures and networks

### State of play

The EU's Digital Agenda, launched in May 2010, forms one of the seven pillars of the Europe 2020 Strategy which sets objectives for the growth of the European Union by 2020. Its main objective is to develop a digital single market in order to generate smart, sustainable and inclusive growth in Europe.

The EU digital agenda 2020 has set up three targets for broadband roll out:

- Basic broadband for all by 2013;
- Fast broadband by 2020: broadband coverage at 30 Mbps or more for 100% of EU citizens;
- Ultra-fast broadband by 2020: 50% of European households should have subscriptions above 100 Mbps.

The Digital Agenda objectives remain valid up to 2020 but the European Commission has published in September 2016 a communication on 'connectivity for a Competitive Digital Single Market – Towards a European Gigabits Society'<sup>1</sup> to set up longer term objectives up to 2025, among which:

- Gigabit connectivity for all main socio-economic drivers such as schools, transport hubs and main providers of public services<sup>2</sup> as well as digitally intensive enterprises;
- All urban areas and all major terrestrial transport path to have uninterrupted 5G coverage;
- All European households, rural or urban, shall have access to Internet connectivity offering a downlink of at least 100 Mbps, upgradable to Gigabit speed.

### Coverage

By mid-2016<sup>3</sup>, basic broadband is available to all in the EU, when considering all major technologies (xDSL, cable, fibre to the premises (FTTP), WiMax, HSPA, LTE and Satellite), while fixed and fixed-wireless technologies cover 98 % of EU homes. NGA technologies (VDSL, Cable Docsis 3.0 and FTTP) capable of delivering at least 30 Mbps download are available to 76 %. 4G mobile (LTE) coverage reached 84 %. And coverage in rural areas is substantially lower for fixed technologies (93 %), and especially for NGA despite substantial growth (40 %, compared with 30% a year ago).

While the Azores are close to the EU average for broadband coverage of at least 30 Mbps, it should be noted that all OR are further below. In addition, except Guadeloupe and Martinique, all OR are below their respective national averages for this indicator. There are also non-negligible differences between the various OR, with French Guiana and Saint Martin sporting particularly low levels of NGA availability.

---

<sup>1</sup> Europe's Digital Progress Report 2017, <https://ec.europa.eu/digital-single-market/en/news/europes-digital-progress-report-2017>

<sup>2</sup> e.g. primary and secondary schools, train stations, ports and airports, local authority buildings, universities, research centres, doctors, surgeries, hospitals and stadiums.

<sup>3</sup> Europe's Digital Progress Report 2016

**Table 1: broadband coverage in OR and member states**

	Azores	Madeira	Canary Islands	French Guiana	Guadeloupe	Saint Martin	Martinique	Mayotte	Réunion
30-100 Mbps				12.3%	18.9%	21.6%	18.2%	19.4%	12.4%
100 Mbps+	71%	53%	58.2%	0%	35,1%	0%	33.2%	0%	22.4%
<b>Total 30 Mbps+</b>	71%	53%	61.8%	12.3%	54%	21.6%	51.4%	19.4%	34.8%

**Sources:**

French OR: Observatoire France Très Haut Débit March – % of total cabled dwellings and business premises - 2016

Portuguese OR: ANACOM estimate, INE - % of total cabled dwellings (FTTH or DOCSIS 3.0) - 2016

Spanish OR: Secretariat of State for the Information Society and the Digital Agenda - 2016

	Broadband coverage (>30 Mbps)*	Broadband coverage (>100Mbps)*
FR	47%	not available
PT	95%	not available
ES	81%	79.1%

**Sources:**

\* Source: Europe’s Digital Progress Report (EDPR) 2017

**High and very high Internet penetration rate**

Overall broadband penetration levels in the OR are relatively high, and generally close to or even above the respective national averages. The only noticeable outlier in this dimension is Mayotte, where broadband penetration is only half the national average. The high levels of broadband adoption may hint at the fact that due to the OR’ remoteness, Internet plays an even more important role for the local populations’ communications needs than in the mainland. Regarding very high speed internet connections of 100Mbps and more downstream, the situation is more diverse. In the Portuguese and Spanish OR the adoption of ultra-fast broadband is advanced compared to Europe as a whole and the national markets. This reflects for instance the widespread availability of cable TV networks and high fixed NGA coverage in the Azores as well as similar offers across the country (pricing, quality of service). Data for French territories is more scarce, but it is noteworthy that in three of six French OR, offers of 100Mbps are not yet available. Generally speaking, even if broadband penetration levels in the French OR are not alarmingly low, the services offered there are often of inferior quality in terms of bandwidth, response time and pricing compared to those marketed in mainland France.

Table 2: broadband penetration in OR and member states

	Azores	Madeira	Canary Islands	French Guiana	Guadeloupe	Saint Martin	Martinique	Mayotte	Réunion
Overall Internet penetration rate	70.3%	77.3%	78.6%	67%*	78%	65%	66%*	34.7%**	73%
100 Mbps+ penetration rate	43.9%	55.6%	13.4%	0%	5%	0%	not available	0%	not available

**Sources:**

French OR: questionnaires,\* Eurostat, \*\* estimates based on ARCEP and INSEE data, Guadeloupe Enquête sur la fracture numérique nov 2015

Portuguese OR: ANACOM estimate, INE - 2015

Spanish OR: Informe eCanarias 2015 (100Mbps+ penetration = HFC+FTTH)

	Broadband subscription	Fast broadband subscription >30 Mbps	Very fast broadband subscription >100Mbps
FR	72%	18%	not available
PT	68%	63%	not available
ES	71%	49%	22%
EU	74%	37%	8%

Source: Europe's Digital Progress Report 2017

## Mobile telephony

The 3G coverage of OR is globally satisfactory. The level of adoption is also globally good and even very good in some OR like Guadeloupe or Martinique that historically notice the need to be reachable and / or to join others easily as being part of remote territory. The adoption of smartphone as mobile terminal by the population is also globally good.

Some issues still remain when considering the next steps of mobile telephony. As 4G license are available in OR, the 4G infrastructure deployment is one of the issue, as it requires the connection of antennas with fiber optics networks. Such deployment is affected by extra costs in OR but also by the territorial fragmentation particularly for archipelago.

## Challenges

Significant improvements have been made over the last years in broadband roll out in OR and one might consider that the general digital accessibility, from the point of view of fixed and mobile infrastructure coverage is globally well-addressed in OR. There are, however, a number of remaining bottlenecks. As private initiatives to address these roadblocks has been lacking so far, certain public initiatives have been launched and others are currently being prepared. For both fixed and mobile broadband, affordable access and subscription costs is a real challenge to ensure a large adoption of broadband services by all.

## Local access

On the Canary Islands, for instance public operators have stepped in to alleviate the lack of terrestrial backhaul capacity. Dark fibre<sup>4</sup> has been deployed on the island, notably to facilitate the entry of alternative operators in the local market.

As has been mentioned above, the coverage of rural communities and white areas in general is an issue in outermost regions, as well. Contrary to satisfactory levels of broadband accessibility in dense areas, the situation is often much less favourable in areas that can be considered rural and isolated of the outermost regions. French OR have launched projects to build public initiative networks to cover such areas with high-speed broadband access. Local experts consider these networks an excellent opportunity to facilitate and support infrastructure deployments as well as improving competition by facilitating activities of local ISPs. The 2016 proposals for a revised code of electronic communications contain provisions that are quite similar to the model adopted in France. There is a concern over overbuild by private players in grey areas, though. Private players' decisions to build networks in grey areas that have been identified for the roll-out of public initiative networks may pre-empt the latter's deployment and thus makes it difficult for public initiatives to build a sustainable business case. In practice this may imply that public projects that were in advanced planning stages may have to go back to the drawing board and thus be delayed significantly.

Some OR face difficulties to increase the coverage of high capacity network in grey zones where basic NGA already exist. The Broadband State Aid Guidelines enable public funding for the deployment of networks offering substantial improvements over existing networks (step change) as recalled in COM (2016) 587 final and the Commission will take into account the long term demand for such network in assessing notification for such improvement.

Experts are therefore calling for a clarification of state aid guidelines with respect to grey areas and clearer guidelines to ensure a consistent public investment in favour of an equal access to broadband infrastructures.

### **Recommendations**

The OR and their Member State could take the opportunity offered in the Broadband State Aide Guidelines to increase the high speed connectivity in areas where the incumbent network cannot evolve to meet future needs.

The Commission could carry out a study clarifying the coherence between the telecommunication regulation and the Broadband State Aids guidelines and their implementation, with a specific focus on OR. In particular, it could clarify the rules referring to public intervention in grey zones to ensure an equal access to Broadband infrastructures.

A step forward would be to authorise state aid for broadband roll out in grey zone under the RGEC for the OR, based on article 349. The European Commission should study the feasibility of making such proposal to the Council and Parliament.

---

<sup>4</sup> A dark fibre network or simply dark network is a privately operated optical fiber network that is run directly by its operator over dark fibre leased or purchased from another supplier. This is in contrast to purchasing bandwidth or leased line capacity on an existing network. Dark fibre networks may be used for private networking, or as Internet access or infrastructure

## International bandwidth

Due to their remote geographic situation, OR are facing constraints in terms of international bandwidth. While on the continent multiple backbone infrastructures and operators are available to haul traffic from and to the main Internet exchange points, OR are dependent on costly submarine cable networks owned by a limited number of consortiums to connect themselves to the Internet. This access to international capacity remains an important bottleneck for the majority of the OR and is an obstacle to the evolution of usage patterns toward more bandwidth-intensive new services.

The different OR are affected to different degrees by this situation. While the Azores and Canary Islands (with the exception of El Hierro) generally benefit from reasonable levels of international connectivity, other regions clearly identify the availability of bandwidth as a major bottleneck for the development of the Digital Single Market. In the case of Portugal, intervention by the national regulator Anacom has brought some relief, as it significantly lowered the prices for capacity on submarine infrastructures connecting OR. French OR in association with ARCEP and the French government are currently working on a mechanism to compensate the extra cost generated by the submarine connectivity, which could propose digressive public subsidies of international bandwidth purchased by ISPs. This mechanism is not operational yet.

OR are also getting actively involved in the construction of submarine cables. One of the new submarine cables connecting the Canary Islands with the Mainland (Canalink) has a significant public participation. Madeira has announced a project aiming to build a connection to the new undersea cable that will link Brazil to Europe (Lisbon), which would be submitted to European Bank of Investment to be financed by the European Fund of Strategic Investments. French Guiana is looking into the construction of a new cable to alleviate the international bandwidth crunch. A call for tender was launched by the Region to support the creation of a second submarine cable that could complement the existing one Americas II. This project was defined in order to resolve the dependency on a submarine cable that routes to the US, considering the sensitive data that are produced by CNES and the spatial launch pad in French Guiana. However, the project is facing an issue with overbuild since Orange has announced a project of building a new submarine cable, which could put a risk on this project due to state aid rules.

### **Recommendations**

The Commission could carry out a study in collaboration of respective NRAs to assess and monitor the extra-cost of international broadband (submarine cable) and its impact on retail costs of Internet services in OR.

Geostationary telecom satellite Internet services are not a viable solution for OR, except for very remote areas where no other infrastructure can be rolled out such as in the Amazonian forest. In this case, the satellite station must be complemented by local fiber networks. Low earth orbit satellites could offer opportunities for some specific applications in research, health, earth monitoring tools as explored/experimented by the Canary astrophysics institute, the Spanish national space agency and the ESA .

## Financing

Public intervention and funding remain necessary to ensure a widespread roll out of broadband in OR. Experts from the OR recognize for instance the usefulness of ERDF funds as a tool in developing broadband projects. There are nevertheless a number of aspects of public funding that can be improved so that they can be applied more readily.

Regarding said ERDF funds, OR experts argue in favour of a better balance between additionality and subsidiarity for the application of ERDF rules in OR.

### **Recommendations**

Under certain conditions, to support specific broadband projects, ERDF could be made available in advance of national funding. Real and effective additionality of EU Structural and Investments Funds should be carefully overseen by the Commission.

Concerning the Juncker Plan, it is considered that funding under this plan is currently not attractive as market rates are lower than the ones offered under the initiative and not properly used (the 2 Spanish projects in the field are about digital transformation of companies and not solutions to increase connectivity). As for other EU digital programmes, some OR estimate that they are too much focussed on very specific thematic which don't fit the basic needs of most of the OR (for instance those supporting the Future of the Internet).

Another measure, WIFI4EU that originates in the package proposed by the Commission in 2016 is perceived as useful to improve the access to the Internet but raises questions about the capacity of local authorities in OR to ensure implementation, due to their lack of sufficient funding and resources.

### **Recommendations**

The Commission should consider that local authorities – municipalities may be not sufficiently solid to manage projects like the WIFI4EU initiative and allow larger local authorities such as regions and other subregional authorities as well as private actors to act on behalf of municipalities.

Generally speaking, experts feel that there is a need to get better guidelines for the management of state aids for broadband roll out. Furthermore, they would welcome clarification of the possibilities of public intervention in OR (loans, subsidies, direct investment...). In particular, funding instruments other than the ERDF are not sufficiently well known in OR.

Current state aid rules are perceived as too restrictive when giving priority to private investments. The overall coherence of the public intervention can be questioned and the economic viability of public intervention weakened, as illustrated by the above-mentioned cases of overbuild by a private operator.

## **Recommendations**

The Commission could improve communication on funding opportunities and instruments beyond ERDF that could be used to support broadband roll-out in OR (for instance, on the opportunities for OR to use the new Connecting Europe Broadband Fund announced in December 2016<sup>5</sup>).

## **3 The development of digital services**

### **State of play**

The Digital Agenda defines a number of targets with respect to usage of online services, including e-government and ecommerce services, among which:

- Promoting eCommerce: 50% of the population should be buying online by 2015
- eGovernment by 2015: 50% of citizens using eGovernment, with more than half of them returning filled in forms

Again, comparing Eurostat data for the OR and Member States delivers a diversified picture. At national level, Spain and France have virtually met or even surpassed the objective of 50% using e-gov services, Portugal was somewhat lagging behind. The difference between the national level and the Canary Islands is marginal with only 2 percentage points. In France, Guadeloupe is the only OR ahead of the national average, whereas particularly Martinique and French Guiana are trailing the national average. In the Azores and Madeira, fewer individuals interacted online with public authorities than nationwide. The situation is similar for ecommerce. Fewer users tend to buy online in the OR than in the mainland, with the exception of the Azores<sup>6</sup>.

Whereas for ecommerce one explaining element might be higher shipping cost of goods purchased online to the OR than to the mainland but also the geoblocking, this is not the case for e-government services. This might hint at lower levels of digital skills or trust in the OR than in the respective member states.

---

<sup>5</sup> The Connecting Europe Broadband Fund aims to invest in equity and quasi-equity, including mezzanine and subordinated debt, in some 7 to 12 broadband projects each year from 2017 to 2021. The Fund's investments will be of a size between €1 million and €30 million, for projects representing total costs of €150 million or less. Overall, the Fund is expected to unlock additional investments between €1 billion and €1.7 billion in broadband deployment in underserved areas, where very high-capacity networks are not deployed yet. The Fund aims to have invested in 20 countries by 2021.

<sup>6</sup> EDPR 2017 provides more recent figures at national level on eGovernment users. For France, 56% of internet users, for Portugal, 41% and for Spain, 40%.

Concerning eCommerce, ERDP 2017 provides figures on % of internet users that shop online; for France, 75%, for Portugal, 43% and for Spain, 54%.

**Table 3 : adoption of e-government and e-commerce services in member states and OR**

	Individuals who used the internet for interaction with public authorities		Individuals who ordered goods or services over the internet for private use	
	2014	2015	2014	2015
Spain	49	49	37	42
Canary Islands	43	47	27	31
France	64	63	59	62
Guadeloupe	53	67	not available	36
Martinique	43	41	not available	50
Mayotte	not available	not available	not available	not available
French Guiana	59	47	not available	36
La Reunion	49	50	not available	41
Portugal	41	43	26	31
Azores	37	36	30	33
Madeira	35	37	30	29

Source: Eurostat 2016 – regional statistics database

Most OR have elaborated a strategy for developing digital services. Part of this strategy and its associated projects are funded under ERDF 2014-2020 programmes. They generally cover the main field of public policies such as economic development, health, education, public administration, culture, tourism and environment.

**Table 4: ICT regional strategy in OR in favour of digital services<sup>7</sup>**

OR	Regional strategy	Field covered by the Digital Services regional strategy
Martinique	Schema Directeur Usages et Services Numeriques, dec 2012	Employment Health Education Public Administration Environment
Guadeloupe	Schema Directeur Usages et Services Numeriques, Nov 2016	Education and training e-health Culture, patrimony & tourism Public administration Economic development Digital sector Smart city and territory
La Reunion	Strategy to be elaborated in 2017	Digital inclusion Open data Public administration Smart city and territory
Azores	Digital Agenda 2014-2020	Digitization of society and economy Awareness raising and ICT diffusion Smart island
Canary Islands	eCanarias 2015 Smart Specialisation Strategy 2014-2020	Modernisation of public administration Digital growth

<sup>7</sup> No references to regional strategy in favour of digital services were identified for: French Guiana, Mayotte, Madeira.

Several difficulties are faced by OR when implementing public digital services projects. Most of them are not directly linked to ICT availability but to the lack of digital skills, human resources and funding. Public digital services projects are usually slowed down by the lack of adoption of new ICT opportunities by users. Moreover, the implementation of such projects require significant operating budgets that are difficult to obtain in a context of public budget restrictions, as well as a complex coordination between stakeholders and a transformation of existing organisations. One could also add that cultural barriers to use digital services remain for a part of the population attached to a direct contact with public services rather than accessing digitized services. This can be linked to a remaining high part of the population that does not use Internet (for Instance in Madeira, only 65% of citizens use the Internet on a regular basis and 28% of the population have never used it while in Guadeloupe 22% of households are not connected to the Internet).

Table 5: ICT projects in OR<sup>8</sup>

Field	Project	OR
Education	Digital Workspace	Guadeloupe
	Laptop equipment of high school student	La Reunion
Health	Telemedicine for remote islands	Guadeloupe
Employment	Public employment platform of the Regional Administration (BEP) Human resources management information system for the Regional Administration( SIGRHARA)	Azores
Public administration	Integrated Citizen Support Network (RIAC)	Azores
Tourism	Wifi hotspots implementation in key touristic spots	La Reunion
	Shared platform for tourist reservation	La Reunion
	CIVITAS Destination	Madeira, Canary Islands
Economic development	Voucher programme for SMEs	Canary Islands
	Brava Valley – technology based business ecosystem	Madeira
Inclusion	PIE News, a collective awareness platform about poverty support measures	Madeira

Besides public digital services projects, one concern in OR is about fostering ICT adoption by local enterprises. Commonly, OR’ economic sectors are composed by very small enterprises. The average size is lower than in Europe mainland. Accompanying the digital transformation of traditional economic sectors is key for OR in order to ensure competitiveness of their economy. However, the issue of human capital and its adaptation to ICT requirements constitutes a real constraint, which is addressed by some initiatives like the Voucher programme in Canary Islands. As for the public digital services projects targeting companies, the main concern is not about access to basic ICT equipment. Available figures show that for these criteria (computer equipment, mobile telephony equipment, Internet access), OR’ enterprises are on par with national average. The issue is about the use of advanced digital services (from e-commerce to new services like cloud services).

The Observatorio Canario de las Telecomunicaciones y la Societed de la Informacion (OCTSI) has published regular analysis on digital penetration in Canary Islands. Concerning ICT and enterprises,

<sup>8</sup> A questionnaire was sent to all OR at the beginning of the work. The projects indicated in the table come from the questionnaire.

the last publication (2015) outlines some interesting results illustrating the difference of ICT adoption by enterprises between Canary Islands and Spain:

- Enterprises (larger than 10 employees) buying through e-commerce: 21.8% (Canary Islands) – 32.1% (Spain)
- Enterprises (larger than 10 employees) with website : 65.8% (Canary Islands) – 76.2% (Spain)
- Enterprises (less than 10 employees) with web site: 19.5% (Canary Islands) – 27.8% (Spain)
- Enterprises (less than 10 employees) using social media: 19.5% (Canary Islands) – 27% (Spain)

These figures the difficulties encountered by OR enterprises (even the larger one – more than 10 employees) in fully integrating the Digital Single Market. Part of the difficulties is due to obstacles in digital accessibility, digital skills and human capital, and cost affordability but the other part is due to non-ICT reasons like availability of funding and investment, physical accessibility, fiscal and custom regime (in the case of Canary Islands).

## Challenges

### Funding

Experts estimate that public and private funding are insufficient to support the development of digital services in OR despite a relatively good adaptation of ERDF. Some reasons have been shared by the experts: the constraints of public budgets and notably those of OR public administrations; the size of the local markets, which is not sufficient to naturally attract private investments (the situation is not totally blocked as illustrated by a fab-lab project<sup>9</sup> supported by private investors – Orange, in La Reunion); the inappropriateness of public aids to support measures and projects involving a high level of operational costs essential in OR to provide long-term awareness-raising and digital mediation actions; multiplicity of potential funding partners and the lack of coordination between national and regional authorities.

Experts estimate that an effort is required to improve the level of information on funding instruments that could be used to finance projects in the field of digital services but also of infrastructure and networks.

### **Recommendations**

The Commission could improve communication on funding instruments dedicated to the support of digital services development (for instance on opportunities for OR to call for the European Fund for Strategic Investment<sup>10</sup>).

<sup>9</sup> A fab lab (fabrication laboratory) is a small-scale workshop offering (personal) digital fabrication - Menichinelli, Massimo. "Business Models for Fab Labs"

<sup>10</sup> The European Fund for Strategic Investment (EFSI) is one of the three pillars of the Investment Plan for Europe and aims to overcome current market failures by addressing market gaps and mobilising private investment. It helps to finance strategic investments in key areas such as infrastructure, research and innovation, education, renewable energy and energy efficiency as well as risk finance for small and medium-sized enterprises (SMEs).

## Links between digital accessibility and digital services

The situation of public schools' Internet connection is a good example of how the lack of infrastructure can lead to real constraints in developing digital services. Primary and secondary public schools with >2 Mbps access to Internet are 38% in Canary Islands while almost 80% are connected in mainland Spain. The difference is also significant when looking at >20 Mbps Internet access. Digital infrastructure scarcity and/or access at affordable costs are part of the reason of this situation. This is particularly relevant for remote areas (different from dense areas) of OR. Considering public schools' connectivity is important to avoid digital divide and ensure the development of digital services for education but also of digital skills among students. In order to tackle this shortcoming, the Spanish national government has promoted a national initiative to provide high speed broadband access to schools called 'Escuelas Conectadas' with special focus in rural areas. In the case of Canary Islands, the project has a funding of 12 million euros, which is 5% of the total national funding.

The example could be extended to other fields like health or public administration.

It is thus essential for OR to coordinate the management of infrastructure deployment and digital services in order to facilitate the development and adoption of new services when broadband infrastructures are rolled out. In this context an interesting initiative has been taken by Guadeloupe. The authority in charge of infrastructure deployment coordination (The Regional Advisory Commission on Digital Development) is also in charge of coordinating the development of digital services in accordance with the regional strategy on digital usage and services.

### **Recommendations**

Governance schemes differ across OR, competences for digital services development may be the responsibility of different authorities. The Commission in collaboration with the Member States should encourage exchange of good practices on the coordination of digital services development. One of the issue concerns the coherence between infrastructures deployment and digital services development.

## ICT and enterprises

This is a long term challenge that has to deal with supporting digital transformation in response to the specific profile of enterprises in OR (very small enterprises).

Awareness raising activities are essential to bring regional SMEs to take advantage of integrating ICTs in the development of their activities. In association with relevant stakeholders in charge of economic development, support to SMEs in their transformation would include pre diagnosis actions or innovation incentives.

Moreover, there is a need to consider and consolidate the development of the local ICT supply chain composed of the different services providers (IT services, developers, maintenance...). With the emergence of new ICT solutions like those based on cloud, there is a risk that the service will be provided to enterprises from outside OR.

## **Recommendations**

The Commission and the Member States should consider the specificities of OR' economic structure that requires a long-term support to accompany the digital transformation of enterprises by facilitating funding of awareness-raising programmes. These programmes require individual support.

Investing in the digital transformation of the traditional economy could have a positive impact on the local ICT sector by increasing the demand of equipment, maintenance and services.

## **4 The development of digital skills and ICT sector.**

### **State of play**

Even if OR successfully train a sufficiently large number of people in digital and ICT-related topics, it will be difficult for OR to retain those people in the local labour markets. Due to the sector's limited size in a given OR, career evolution opportunities for local workers are limited. Lower salary levels are a further reason for workers in the area to consider moving to continental Europe to make the next step in their professional career. If all OR consider digital sector or industry a key-area for economic development in the future, the assessment in terms of its composition and value added to the economy is not available everywhere.

- In Canary Islands there are 2,056 companies in the ICT sector representing 1.55% of total companies in the archipelago (Canary Islands Observatory for Telecommunications and the Information Society from data CCD, 2015). According to OCTSI, with data from INE 2014, there were 7.295 persons employed in the ICT sector, which amounts to 0.96% of the total employed population;
- In La Reunion, 583 companies have been identified as part of the ICT sector, totalling 3,500 direct jobs and 1.3 billion € of turnover (July 2014 – observatory of ICT sector);
- In Madeira, the ICT sector is composed by 206 companies, 800 direct jobs and generates 97 M€ turnover (INE 2016);
- In Azores: 187 companies are part of the ICT sector with 459 direct jobs and totaling 30 M€ turnover (INE 2016).

Madeira estimates lacking digital skills and highly qualified ITC people. At the regional level, specific actions to increase these skills were severely hampered because of the financial crisis. Training programmes for digital skills were cut from regional structural funds. Efforts are currently made by the region to set up a platform with the local university to act in providing requalification through vocational training to respond to ICT-related job opportunities. The Madeira Interactive Technology Institute is also an attempt to provide attractive resources to retain and attract talent on ICT matters.

La Reunion and Guadeloupe estimate that, due to uncertainty about the roll-out projects of fibre networks, there is a risk that digital infrastructure and service projects will not directly benefit local employment. Private companies in charge of these projects will prefer bringing in workers from the mainland to recruiting local workforce. This however, could be perceived by locals as a missed opportunity to create jobs. OR will have to evaluate their needs in terms of qualified workers and start training local workers or job market entrants accordingly. For local companies employing local

labour would be less costly, too, than recruiting someone from the mainland. Therefore, the roll-out of infrastructures can be an opportunity for the local labour force if the OR are in a position to rapidly adapt local training system.

### **Recommendations**

The OR and their Member States should support the creation of professional training through the Digital Skills and Job Coalition<sup>11</sup> to provide timely and appropriate training to improve digital skills in the OR.

## **Challenges**

### **Digital skills**

The adoption of ICTs can be a means to boost overall economic growth in OR. In order for the digital economy to unfold its full potential, OR must also be able to train, attract and retain sufficient amount of talent in the sector. For OR this task represents a real challenge. They should therefore strive to extend the connectivity of schools and to develop the dissemination of digital skills among students and the active labour force, they should also seek to support the development of a diversified local digital industry, for instance through facilitating access to funding or creating incubators for start-ups.

### **Recommendations**

OR should, with the support of the Commission and the Member State, promote the idea that 'doing ICT business is possible in OR'. This implies a mix of complementary actions ranging from structuring ICT sector to reinforce local ICT firms, supporting digital transition in enterprises, developing digital services by both public and private actors but also non-digital actions highlighting quality of life.

### **ICT sector**

Considering the digital sector, the main challenge is to succeed in structuring the sector composed of small companies with a limited market and facing competition from mainland's digital companies and service providers.

The local digital sector requires public support in accompanying innovation, financing experiments, accessing external markets. Better links between research and local digital sector should be supported as a means to retain ICT talent.

The limited size of local markets complicates the development of the local digital economy. The lack of a critical mass of users makes it more difficult to have sustainable business models.

However the availability of open infrastructures and open data could favour the development of local business models, e.g. in the sharing economy. The business models in small, low-density markets are

---

<sup>11</sup> The Digital Skills and Jobs Coalition brings together Member States, companies, social partners, non-profit organisations and education providers who take action to tackle the lack of digital skills in Europe. Member States can mobilise partners and form local, regional and national Digital Skills and Jobs Coalitions, which carry out actions in their countries to tackle the digital skills gap.

very different from metropolitan ones. Furthermore, with the development of "internet of things", new and inexpensive services can be designed e.g. to monitor diversity and the environment, the impact of tourism. There are some opportunities for OR to develop their own approach of the Internet of Things applications but they need a better support of research and funding.

Links to research in ICT are not sufficiently developed. In some cases, there is a lack of local research resources. Madeira is a good example of opportunities of developing research ICT projects (for instance in the health sector with African countries) but it still faces the difficulty to maintain/attract talents.

The specific geographical position of OR, close to developing countries, is a real opportunity to support the development and growth of the digital economy in OR. Making OR an outpost for the export of European excellence will require a deep understanding of how digital services are being used in Southern markets. However, prospecting new markets in the regional markets (Caribbean, Northern Africa, Indian Ocean...) is time-consuming and expensive for very small ICT companies (which is the general profile of ICT companies in OR). Collective actions supporting exportation of digital expertise is required, for instance, using the OR as the base for the digital dimension of EU development aid initiatives.

More generally speaking, developing a business from OR is a costly matter. Public aids for the development of local companies could be a remedy to this including support to export.

#### **Recommendations**

The Commission, Member States and OR should reinforce ICT research facilities in areas where OR have potentialities (biodiversity, ocean and maritime, climate change management...). OR could also promote their territories as living lab to experiment new solutions linked to their specificities.

Better information on public aids is required as the majority of ICT companies are not sufficiently aware of the opportunities to support their development.

## Annex 1: examples of digital services in OR

### MARTINIQUE

#### **BNPM Banque Numérique du Patrimoine / Martinique Heritage Database**

The Martinique Heritage Database is a portal giving access to documents on the cultural and historical heritage of Martinique, backed up by the Martinique geographical information system (SIGMA). It offers numerous search possibilities thanks to its user-friendly navigation and search engine based on the principle of interoperability between databases. It also allows users to cross-reference different types of data from different sources (documents on historical monuments or excavations, archival or bibliographical metadata, topic-based collections, manuscripts, printed documents, periodicals, plans, maps, engravings, drawings, audiovisual resources...), about different places (Fond Saint-Jacques, Vivé, Fort-de-France...), on different topics (slavery, sugar mills, rural architecture, craftsmanship...). Apart from very broad searches, it makes also available on-line publications on different topics (virtual exhibitions, educational documents, cultural directories...).

The Martinique Heritage Database intends to become a major player of digital mediation in the field of cultural heritage. Open to the public since the end of 2010, it has shown its usefulness to the general public (29,000 unique visitors to the portal in 2015).

The Martinique Heritage Database is a joint project managed by the local government of Martinique (Collectivité Territoriale de Martinique). It received financial support of ERDF.

WEB Link: [www.patrimoines-martinique.org/](http://www.patrimoines-martinique.org/)

#### **GeoMartinique**

GeoMartinique is an association that brings together all the players of geographical information of Martinique (Collectivité Territoriale de Martinique, Prefecture, State decentralized services, local authorities, the Chamber of Commerce of Martinique, research centers, and soon private). This structure notably includes the Geographic Data Infrastructure of Martinique and complies with the European directive INSPIRE<sup>12</sup> by implementing a geoportal for the citizens.

This tool is a major asset available to members of GeoMartinique, in the context of the production of data, their shared use, for the purposes of modernization, rationalization of territorial development. Crossing data relating to the environment, climatic or volcanic hazards for example, to the distribution of the population, infrastructures or economic, sanitary or social facilities and editing directly usable maps becomes an easy exercise with the geoportal. Involving the public directly in the realization or updating of the planning documents on the scale of Martinique should satisfy more than one. The current step to be taken by GeoMartinique is to welcome and support companies as full partners of the project.

GeoMartinique is a joint project managed by the local government of Martinique (Collectivité Territoriale de Martinique) since the beginning of 2016. It received financial support of ERDF.

---

<sup>12</sup> The INSPIRE Directive aims to create a European Union spatial data infrastructure for the purposes of EU environmental policies and policies or activities which may have an impact on the environment. This European Spatial Data Infrastructure will enable the sharing of environmental spatial information among public sector organisations, facilitate public access to spatial information across Europe and assist in policy-making across boundaries.

WEB Link: [www.geomartinique.fr](http://www.geomartinique.fr)

## REUNION

### **OiiS Océan Indien Innovation Santé**

OiiS programme aims at improving patient care pathway thanks to ICTs. In a first step, it provides a concrete answer to the challenge of management of chronic diseases by implementing a e-health platform. Four chronic diseases are addressed by the programme: diabetes, stroke, chronic kidney disease and chronic heart failure. More than 300 physicians, health professionals, carers and users have been involved in the programme's conception phase. The platform gives access to 3 main slots: OiiS Pro, a secured collaborative space to ensure coordination among health professionals; OiiS Appui, a support service for complex patient care; Ma Santé OiiS, a range of e-services for users. The evaluation of OiiS first step is expected in 2018.

OiiS is a joint project managed by the Agence de Santé Océan Indien and the health-care cooperation group TESIS. It has been funded by the Digital Health Territory national programme and is applying for ERDF funding including for its deployment to other Indian Ocean Territories (Interreg V).

WEB Link: [www.oiiS-programme.re](http://www.oiiS-programme.re)

### **WI-RUN**

Wi-Run aims to implement free access to Internet via Wifi hotspots in public areas throughout the territory. Currently 55 hotspots have been installed in touristic sites, cultural sites, training establishments and institutional sites.

Wi-run project is managed by Region Reunion and received ERDF funding.

WEB Link: [wirun.reunion.fr](http://wirun.reunion.fr)

## GUADELOUPE

### **Cardiac ultrasound between Pointe-à-Pitre and Marie Galante**

In December 2016, a cardiac ultrasound application has been deployed between the Regional Hospital in Pointe-à-Pitre and the hospital in Marie-Galante. The application is part of the heart failure management programme and allows detecting vulnerable patients, establishing a precise diagnosis and avoiding unnecessary health transfer for people living in remote areas.

A tele-ultrasound robot has been installed in Marie-Galante hospital. It is activated by the cardiologist in Pointe-a-Pitre. The patient is accompanied locally by a technician and can interact with the cardiologist via videoconference.

The project is derived from a R&D medical spatial project aiming to operate ultrasound with astronauts.

It is funded by the Health Regional Authority.

### **Digital platform of the regional tourist board**

The Guadeloupe regional tourist board has unveiled in March 2017 a new digital platform to improve the promotion of tourist activities. It offers a new experiential proposal that revisits the digital

journey for Internet users: immersive discovery of the destination, booking of all the stages of a trip, organization on the spot, tailor-made offers...

Tourists can access to an interactive and collaborative encyclopedia of Guadeloupe. They could also book and pay a range of activities (flight, car rental, accommodation, restaurants...).

Professional can access a market platform to present their activities.

WEB Link : [www.lesilesdeguadeloupe.com](http://www.lesilesdeguadeloupe.com)

## **FRENCH GUIANA**

### **NumLab**

NumLab is a Fablab dedicated to creation, innovation and service with strong digital orientation, design, and especially 3D. Like all FabLab, NumLab is open to all kind of publics: entrepreneurs, designers, artists, do-it-yourselfers, students... The project is managed by Guyane Developpement Innovation and part of "Scientific Culture in Guyana" regional project whose objectives aim to disseminate scientific, technical and industrial culture and promote equal opportunities.

NumLab is partly funded by Investment in the Future Programme (national French programme) and ERDF.

### **Telemedicine**

French Guiana is exposed to the challenge of providing equal access to care for the inhabitants especially for areas far from the coastal part of the territory. Since the beginning of 2015, telemedicine projects have been implemented managed by Guyane Developpement Innovation in partnership with the Regional Health Agency (ARS), the regional hospital, the Healthcare Cooperation Group (GCS) and CNES. Two projects can be outlined:

- A monitored tele-echography system was successfully tested in September 2015 by the team of the Andrée Rosemon Hospital Centre and Guyane Developpement Innovation (GDI) through a satellite connection to the Saul Health Center and a ground connection to the Maripasoula Health Center.
- An advanced medical rescue station: a humanitarian container equipped with emergency and space-based medical communication facilities used in the event of a natural, health, environmental or industrial disaster in the Caribbean and South America.

WEB Link : [www.ardi-gdi.fr/](http://www.ardi-gdi.fr/)

## **MAYOTTE**

### **Projects under consideration**

The Departemental Council of Mayotte is working with several partners (national center for public services – CNFPT, local authorities, public administrations...) to develop projects to promote the use of digital services. Three projects are currently under consideration addressing the following issues:

- illiteracy;
- access to public services;
- education.

## MADEIRA

### CIVITAS-DESTINATIONS

CIVITAS-DESTINATIONS is a four-year Innovative Actions project funded by the EU's Horizon 2020 Programme. It involves 28 partners from 9 countries, including a cooperation action with China. Its main aim is the integration of sustainable tourism and mobility strategies through the development of a series of innovative solutions in six European insular cities that experience significant influx of tourists that puts great pressures in the transport systems of the islands.

As of March 2017 (month 7) the project is on the Design and Specification phase for most measures. Prototyping started in some activities such as in Funchal's measure "2.2 - Smart metering / sensing and user generated content to improve planning and mobility services". Next phase in measure's progress is Demonstration/Implementation and, in most cases, begins in month 13.

Overall project coordinator partner is Horários do Funchal (from Funchal, Madeira, Portugal).

In Funchal (Madeira), Horários do Funchal submitted to ERDF the acquisition of electric buses, to be used within the scope of the project. Other such initiatives are expected from other partners.

WEB LINK: <http://civitas.eu/destinations>

### BEANSTALK

Beanstalk is a multidisciplinary project team working at the Madeira Interactive Technologies Institute, in partnership with the Associação de Promoção da Madeira (AP Madeira). The goal is to design and deliver research on the wide topics of tourism and new marketing trends. The project strives to build prototypes and test beds in order to gain a better understanding of what both locals and tourists visit, how and when – and further complement this with a transmedia experience that can potentially stimulate visits to the island and the local economy.

This project is divided into two components – the first of which focuses on the creation of a platform where it is possible to keep track of the flow of people in Madeira. The second component consists in the development of a location based storytelling experience, using everyday mobile devices, that capitalizes on the previously collected data.

This project is developed in partnership with the Madeira Interactive Technologies Institute (M-ITI), Instituto de Desenvolvimento Regional (IDR), Associação de Promoção da Região Autónoma da Madeira (AP Madeira), Câmara Municipal do Funchal (CMF) and Aeroportos e Navegação Aérea de Portugal (ANA).

Beanstalk is a MADEIRA 2014-2020 ERDF funded project, with the collaboration of the Madeira Promotion Bureau (AP Madeira).

WEB Link: [beanstalk.m-iti.org](http://beanstalk.m-iti.org)

## **AZORES**

### **RIAC - Integrated Citizen Support Network**

RIAC's mission is to rationalize, modernize and improve the service of the regional administration, with a view to improving its interaction with citizens, namely through the Citizen Service Shops, hereinafter called RIAC Stores, the Contact Center and the Porta

The concept underlying the RIAC Stores, creating a single point of contact, is embodied in the existence of a "customer assistant" who, in a multidisciplinary and personalized way, responds to diverse requests. These units began to be installed at parish level, specifically in the parish councils, having progressively multiplied quantitatively and geographically, being already established in the urban centers of the Autonomous Region.

Aware of the need to implement functionalities that increasingly facilitate the lives of citizens, RIAC has developed a new Portal with the aim of gradually providing more services online, allowing its users to access an ever wider range of services that are available, anywhere and anytime, offering more and more interactivity. This new Portal is a virtual RIAC store, where the citizen has access to a wide range of informative contents, inherent to the services provided in its scope, as well as the execution of online services. In the Portal the citizen will be able to follow the state of the process of the services, updating of his profile, and access to new means of communication with the Contact Center such as Voip and WebChat.

### **Conception, development and commercialization of the Web and Mobile Platform - UrActive**

This solution, aimed to be a support to all the experiences and activities of the enterprises of the tourism area: it allows not only the management of the offer from a back office point of view, but it also guarantees the online promotion of the activities, making them accessible to the final client. With this solution, the URA enterprise aims to provide a platform that allows the tour operator to adapt themselves to new market demands, giving them an optimization of their time and a better promotion of their activities.

The results of the projects lead to the development of an UrActive Solution – Management and Distribution of touristic activities System, accessible in the internet or through an App for smartphones. The public presentation of this solution occurred on December 2016.

This project was supported by ERDF.

WEB Link: [www.uractive.com](http://www.uractive.com)

### **REDA – Open Platform of Digital Educational Resources**

This platform was created by the Azorean Regional Directorate for Education in 2016 as a pedagogic and teaching support to teachers and students, offering a variety of educational resources. Its main goal is to publicize educational projects, practices, resources, as well as useful connections for students via for instance webinars and experience sharing. At the moment, there are already 434 pedagogic resources, 232 suggestions for pedagogical applications and 101 hints and tips. The platform also allows teachers to submit any resources they produced and want to share, as long as it is previously validated by the teaching team responsible for the REDA.

WEB Link: [www.reda.azores.gov.pt](http://www.reda.azores.gov.pt)

## **CANARY ISLANDS**

### **INNOBONOS**

INNOBONOS (Innovation Bonds Programme) is a voucher programme targeted to entities established in the Canary Islands to support development of innovation activities and improvement of their technological capacities. Areas such as e-commerce, online marketing, mobility solutions or web-based solutions for business are fully compatible with this support programme.

The programme is managed by the Canary Islands Agency for Research, Innovation and Information Society (ACIISI).

WEB Link: [sede.gobcan.es/sede/tramites/4344](http://sede.gobcan.es/sede/tramites/4344)

### **MACBIOIDI PROJECT**

The MACbioIDI Project aims to develop medical technology and educational programmes, which are usable in the participant territories. It has 31 partners in the Canary Islands, Madeira, Azores, Cape Verde, Mauritania, Senegal mainland Spain and the USA. The collaboration is carried out on an open source software platform 3D Slicer, which is in continuous evolution. Over the last 20 years, 3D Slicer has been developed by an international community led by the Surgical Planning Lab, at Harvard Medical School and Brigham and Women's Hospital, in Boston (USA), a MACbioIDI Project associate partner.

The MACbioIDI Project is co-funded by the European Union program INTERREG MAC, by means of the European Regional Development Fund – ERDF (85%). It has an ERDF grant of 2M€ for the period January 1, 2017, through December 31, 2019. It is coordinated by the University of Las Palmas de Gran Canaria, in the framework of its Medical Technology for Sustainable Development (MedTec4SusDev) initiative.

The MACbioIDI Project Wiki has detailed technical information, and it is frequently updated.

WEB link: <https://mt4sd.ulpgc.es/en/>

## Glossary

CNES : Centre national d'études spatiales - National Centre for Space Studies

CNMC: Comision National de los Mercados y la Competencia Spain- National Commission on Markets and Competition

DOCSIS: Data Over Cable Service Interface Specification is an international telecommunications standard that permits the addition of high-bandwidth data transfer to an existing cable TV (CATV) system. It is employed by many cable television operators to provide Internet access (see cable Internet) over their existing hybrid fiber-coaxial (HFC) infrastructure

ESA: European Space Agency

FOTP: fibre to the premises

ISP: Internet Service Provider

Black/Grey / White areas: Black, white and grey are useful conceptual tools used to distinguish between areas where no infrastructure exists (white) areas with only one infrastructure in place (grey) and areas where more than one network operator is present (black).

HSPA: High Speed Packet Access is an amalgamation of two mobile protocols, High Speed Downlink Packet Access (HSDPA) and High Speed Uplink Packet Access (HSUPA) that extends and improves the performance of existing 3G mobile telecommunication networks using the WCDMA protocols

LTE: Long-Term Evolution is a standard for high-speed wireless communication for mobile phones and data terminals

NGA: Next Generation Access describes a significant upgrade to the Broadband available by making a step change in speed and quality of the service

NRA: National Regulation Authority

VDSL: Very-high-bit-rate digital subscriber is digital subscriber line (DSL) technologies providing data transmission faster than asymmetric digital subscriber line (ADSL).

WIMAX: Worldwide Interoperability for Microwave Access is a family of wireless communication standards based on the IEEE 802.16 set of standards, which provide multiple physical layer (PHY) and Media Access Control (MAC) options

xDSL: refers to the different DSL technologies (ADSL, VDSL)

## Annex 2: List of experts who participated in the Expert group on "Digital accessibility and ICT (coverage and use) for the Outermost regions (OR)" held in Brussels on 09/02/2017

Name	Institution	Contact
Nuno NUNES	Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (ARDITI)	<a href="mailto:nunojnunes@me.com">nunojnunes@me.com</a>
Juán RUIZ ALZOLA	Universidad Las Palmas de Gran Canaria	<a href="mailto:juan.ruiz@ulpgc.es">juan.ruiz@ulpgc.es</a>
Monique APAT	Directrice du tourisme, des transports et du désenclavement numérique - Région Guadeloupe	<a href="mailto:monique.apat@cr-guadeloupe.fr">monique.apat@cr-guadeloupe.fr</a>
Marc BÉGUÉ	Sous-Directeur Entreprise Digitale Direction du Numérique de l'exploitation et des Opérations - CNES	<a href="mailto:marc.begue@cnes.fr">marc.begue@cnes.fr</a>
Emilio GARCÍA GARCÍA	Coordinador de Área de Relaciones Internacionales Gabinete del Secretario de Estado para la Sociedad de la Información y la Agenda Digital (Ministerio de Energía, Turismo y Agenda digital)	<a href="mailto:egarciag@minetad.es">egarciag@minetad.es</a>