altice labs

Research, Development & Innovation

Project Portfolio

October, 2020

Executive Summary

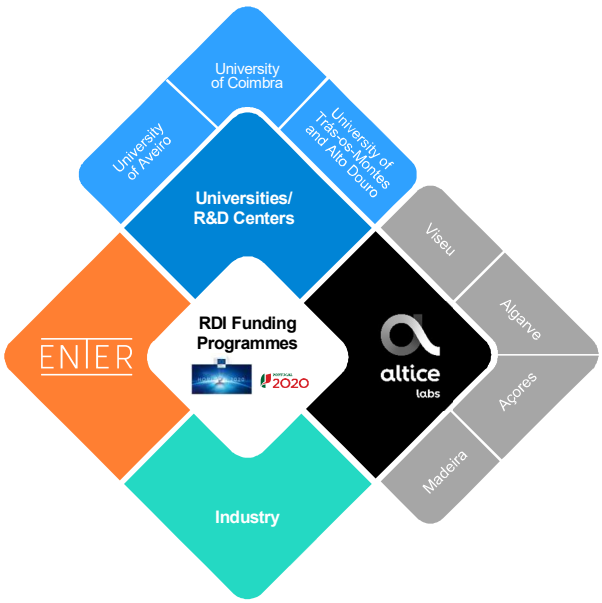
Altice Labs has systematically invested in RDI activities as a key success factor in the generation of knowledge and its transformation into innovative products, services, business models and optimized processes, which has largely contributed to make it a market leader.

This document presents the more relevant aspects that constitute Altice Labs' RDI (Research, Development and Innovation) process, methodology and vision:

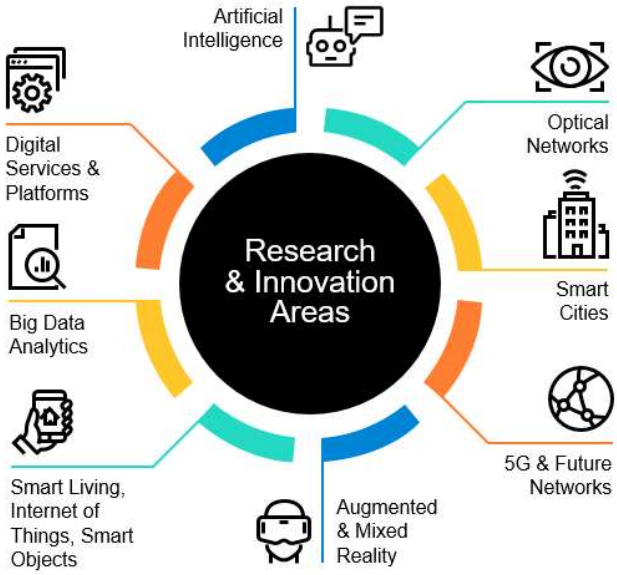
- Altice Labs' Innovation Model – a model that combines exploratory and innovation interfaces to align market and technological trends with the market needs as a means of differentiation and value creation. It also helps Altice Labs to constantly adapt its strategy;
- Periodic definition of the main RDI areas, elected as drivers of research and innovation investment, envisaging responses to the challenges faced by the Digital Service Providers;
- Collaborative instruments which are used to undertake RDI activities in partnership with world class universities, R&D-Industry interface Institutions, manufacturers and Clients;
- Participation in both National and European RDI funding programs, used as strategic tools to drive Altice Labs's knowledge acquisition and innovation roadmap, while ensuring alignment with the market's best practices and investment risk sharing, funding the development of new product lines and services, while opening the access to new markets through the involvement in large-scale pilots;
- Financial analysis of RDI investments and corresponding tax benefits;
- Summary description of the projects' portfolio and major RDI activities currently active in each RDI strategic area;

Innovation Ecosystem

We continuously engage in collaborative Research, Development and Innovation projects as part of our sustained strategy for technological leadership.



R&D and Innovation Areas



Strategic Product Lines of Altice Labs

Network Systems

- Optical Network Equipment
- FTTx Networks
- G.fast
- Certification and Interoperability Labs
- Cellular Planning and Optimization Services

Operations Support Systems

- Network Development and Inventory
- Service Fulfillment
- Service Assurance
- Customer Centric Operations

Network Control and Services Platforms

- Convergent services
- Charging and policy management
- Campaign and channel management
- M2M
- API Management

Digital, Internet and Television

- Interactive TV and OTT
- Wallet & Payments;
- Push&Pull advertising platforms
- Personal Cloud Storage
- eCare & eHealth

Professional engineering services, technological training and consulting

RDI and Innovation Instruments

European RDI Programmes

Projects under the European framework programmes (e.g. FP7, H2020 and in the following years the Horizon Europe) are usually developed in consortia with R&D partners as academia, industry research centres and innovative SMEs. This allows Altice Labs to work on state of the art themes together with other experts, while minimizing the financial risk of investing in emerging technologies. These projects also make possible the testing of new products, services and markets in large scale pilots.

National RDI Programmes

RDI projects funded by national programmes (e.g. QREN, P2020) are directly aligned with the short to mid-term product roadmap and planned innovation. These programmes are therefore used as direct funding for product line evolution.

RDI and Innovation Instruments

Industry Partnership and Startups

In areas where it would be ineffective to build products or components internally and to control the entire value chain, strategic technology partnerships are sought and established, both with mature SMEs and technology startups.

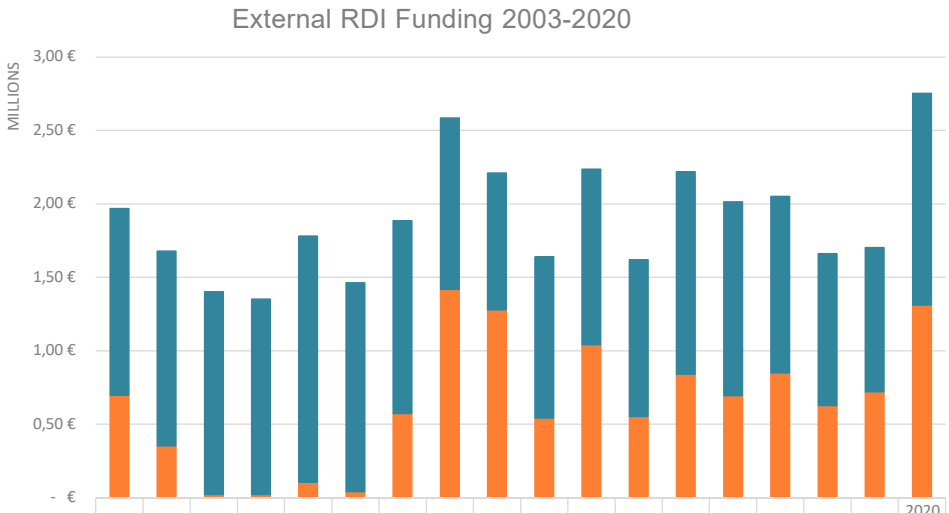
Direct Project Funding (Innovation Programme)

This programme poses challenges to the national scientific and technological system and aims to help Altice Labs solve complex technological product evolutions or exploratory themes which would be too expensive to address internally or take too long to produce results.

Based in a close collaboration with the Portuguese Universities and Industry Interface Units (R&D&I Institutes), it also includes the establishment of a common laboratory at a specific university named AlticeLabs@University_Name.

Severall projects run every year, either directly with the University, through AlticeLabs@University, or with the Interface Unit associated to the University.

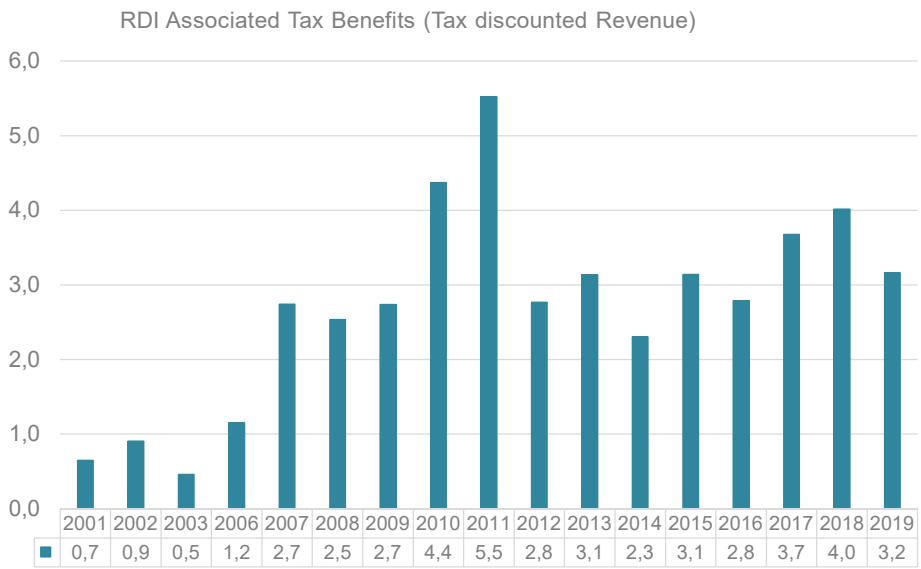
Financial Perspectives



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 (est)
EU FPs & H2020	1.27	1.32	1.38	1.33	1.67	1.42	1.31	1.16	930.	1.09	1.19	1.06	1.37	1.32	1.20	1.03	981.	1.44
QREN/P2020/FEDER	696.	353.	21.4	20.4	107.	41.1	573.	1.41	1.27	541.	1.04	551.	840.	694.	849.	628.	720.	1.31

With the EC H2020 Programme, Research projects are funded 100% for direct costs plus 25% overheads, while Research & Innovation projects are funded at 75% for direct costs plus 25% overheads.

Financial Perspectives



	2001	2002	2003	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	0,7	0,9	0,5	1,2	2,7	2,5	2,7	4,4	5,5	2,8	3,1	2,3	3,1	2,8	3,7	4,0	3,2

SIFIDE is a system created by the Portuguese government, aiming to encourage and promote RDI activities by business companies. It consists of a tax credit granted to companies that perform or contract RDI activities

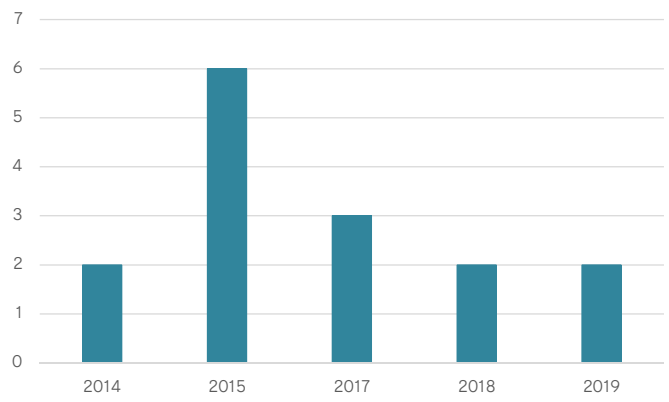
Altice Labs application for SIFIDE includes every year the incurred expenses invested in:

- RDI projects (typically executed together with national and international partners and with R&D and technology institutions)
- Product roadmap evolution projects which aim at the development of new products and the significant evolution of existing products.

Note: 2004/2005 – Not Applicable
2019 – Claim Submitted, under evaluation by ANI (Innovation Agency)

Overview of Altice Labs H2020 funding from 2014 to 2019

Participations by project signature year



H2020 signed grants

15 0,05% of H2020

H2020 EU contribution

6,32M 0,01% of H2020

Overview of Altice Labs H2020 funding from 2014 to 2019

H2020 Participations

Top Participants

Legal Name	Country	City	H2020 Participations	H2020 Net EU Contribution	H2020 EU Contribution	Organisation Profile
Totals			**1.113**	**€ 261.824.649**	**€ 259.766.379**	
EDP DISTRIBUICAO ENERGIA SA	PT - Portugal	LISBOA	13	€ 8.333.311	€ 8.261.836	Organisation Profile
SOCIEDADE PORTUGUESA DE INOVACAO CONSULTADORIA EMPRESARIAL E FOMENTO DA	PT - Portugal	PORTO	38	€ 7.606.356	€ 7.606.356	Organisation Profile
ALTICE LABS SA	PT - Portugal	AVEIRO	15	€ 6.316.570	€ 6.316.570	Organisation Profile
UNPARALLEL INNOVATION LDA	PT - Portugal	PORTIMAO				
CNET CENTRE FOR NEW ENERGY TECHNOLOGIES SA	PT - Portugal	SACAVEM E PRIOR VELHO LISBOA				
UBIWHERE LDA	PT - Portugal	AVEIRO				
DEIMOS ENGENHARIA SA	PT - Portugal	LISBOA	10	€ 4.247.531	€ 4.530.600	Organisation Profile
PDM E FC PROJECTO DESENVOLVIMENTO MANUTENCAO FORMACAO E	PT - Portugal	LISBOA	13	€ 3.868.450	€ 3.868.450	Organisation Profile
LABELEC - ESTUDOS, DESENVOLVIMENTO E ACTIVIDADES	PT - Portugal	SACAVÉM	5	€ 3.478.670	€ 3.728.820	Organisation Profile
INOVA+ - INNOVATION SERVICES, SA	PT - Portugal	MATOSINHOS	14	€ 3.692.166	€ 3.692.166	Organisation Profile

When analyzing funding by large Portuguese companies, **Altice Labs occupies the 3rd place** in funding volume in the EU H2020 Program (2014-2020).

Projects and Work Streams

5Go

5G Mobilizer – Components and Services for 5G Networks

5G seeks to provide differentiated services to different society sectors, interconnecting by a common core network, several access networks, wired and wireless. This project will design and validate a set of new products, able to become part and give services within the future 5G networks.
These products cover all functional areas of 5G networks: products for the access network (CRAN, CPE, probing), as well as products for network control and management (Policy, MANO, AAA / DNS, monitoring) and security (IDPS) will be specified and designed. The combination of these will support similar development activities for products and services in the areas of IoT (monitoring/control of energy distribution networks, railways and vital signs) and broadband multimedia systems (distribution/video streaming).
All products from all areas, will be integrated, validated, tested and demonstrated in an 5G-friendly ecosystem, which will support a realistic test environment (on an extended college campus).

Total Value: 9.719.662,19 €

2018 - 2021

Projects and Work Streams

5GROWTH

5GROWTH will empower verticals industries such as Industry 4.0, Transportation and Energy, with an AI-driven automated and sharable 5G end-to-end solution that will allow these industries to achieve key performance targets. 5GROWTH will impact vertical-oriented standards (e.g., EN50126 (IEC62278) for railway signaling), and influence ongoing 5G standardization on relevant SDOs. The main goals are:

- Perform a technical and business validation of 5G technologies from the verticals' points of view, following a field-trial-based approach on top of the 5G infrastructure and services built by the 5G-VINNI and 5G-EVE projects.
- Automate the process for supporting diverse industry verticals through:

A vertical portal interfacing verticals with the 5G end-to-end platforms, receiving their service requests and building the respective network slices;

- Closed-loop automation and SLA control for vertical services lifecycle management;

AI-driven end-to-end network solutions to jointly optimize access, transport, core and cloud, edge and fog resources, across multiple technologies and domains.

Total Value: 14.109.226,25 €

2019 - 2021

Projects and Work Streams

5G - TANGO

H2020

5G-TANGO: Development and validation platform for global industry-specific network services and Apps

The 5G-TANGO project will design and implement a Function Store with advanced validation and verification mechanisms, connecting a Software Development Kit (SDK), for Network Service developers, and a Service Platform (SP), service operators, supporting rapid service development and deployment, in an open and flexible manner, by following a micro-service and REST-based architecture and a DevOps approach.

Total Value: 8.920.139,38 €

2017 - 2020

Atos NEC HUAWEI Telefónica Alcatel-Lucent

Projects and Work Streams

5G-VINNI

H2020

5G-VINNI aims at deploying a testing infrastructure that is able to verify and validate 5G KPIs, able to deliver services for different business verticals and use cases over a common physical infrastructure. 5G-VINNI assembles an end to end facility of the latest 5G technologies for radio access, backhaul and core networks, leveraging the most advanced virtualisation technologies and optimisation algorithms, and then validates the outcome with demanding vertical sector driven applications and services. The main goals are:

- Design an advanced and accessible 5G end to end facility for verticals and ICT-19;
- Build eight interworking sites of the 5G-VINNI end to end facility;
- Provide user friendly zero-touch orchestration, operations and management systems for the 5G-VINNI facility;
- Validate the 5G KPIs and support the execution of E2E trial of vertical use cases for ICT-19 projects;
- Develop a viable business and ecosystem model to support the life of the 5G-VINNI facility during and beyond the span of the project for verticals and ICT-19;
- Demonstrate the value of 5G solutions to the 5G community.

Total Value: 19.997.733,78 €

2018 - 2021

altice labs Telefónica KEYSIGHT BT HUAWEI SAMSUNG SRS NOKIA ERICSSON EURESCOM EANTC CISCO Lime micro Fraunhofer FOKUS

Projects and Work Streams

5GZORRO

H2020

5G today is not yet at a stage of complete achievement of the promised performances and functions:

- different application profiles (eMBB, URLLC, mMTC) do not easily coexist in network slices;
- slicing is casted in various different forms;
- network analytics are not at end-to-end scope;
- services do not span yet multiple operator domains.

5GZORRO will evolve 5G to achieve production-level support of diverse Vertical applications, which coexist on a highly pervasive shared network infrastructure, through automated end-to-end network slicing, across multiple operators and infrastructure/resource providers, who can share heterogeneous types of resources (spectrum, virtualized radio access, virtualized edge/core).
The main goals of 5GZorro are: a) implement cognitive network orchestration and management with minimal manual intervention (Zero-Touch Automation), by using distributed Artificial Intelligence (AI); b) use Distributed Ledger Technologies (DLT) to implement flexible and efficient distributed security and trust across the various parties involved a 5G end-to-end service chain. With these, we can implement an evolved 5G Service Layer for Smart Contracts among multiple non-trusted parties, which allows SLA monitoring, spectrum sharing, intelligent and automated data-driven resource discovery and management.

Total Value: 4.999.965,00 €

2019 - 2022

altice labs | ubiwhere | Atos | Telefónica | •••

Projects and Work Streams

Altice Labs@UA

Cooperation protocol to support academic and research projects that prove to be of special and scientific interest and preferably with business potential, dealing with emerging web services, IPTV technology, digital content, app CX, collaborative or social experience systems and IoT applications.

Annual Value: 50.0000,00 €

2016 - present

altice labs | universidade de aveiro

Projects and Work Streams

ARANI

Augmented Reality and Natural Interaction for Smart Living

Objectives:
The key objective of this project is to explore Augmented Reality and Natural Interaction technologies for Smart Living applications, by prototyping a platform for experimentation with objects recognition based on computer vision, voice interaction and gesture interaction, addressing two demonstration use cases:

Results:
Use case 1 – Smart Mirror
AR functionality for trying out personal accessories such as tie, glasses, hairstyle, makeup, overlaid to person reflection on the mirror;
Object recognition, e.g. holding toothpaste, shampoo in front of the mirror to trigger order;

Use case 2 – Appliances Explorer
Use a mobile AR device (e.g Microsoft Hololens) for exploring a scenario of home appliances, to browse/visualize data (e.g. power consumption, temperature, get status) or to command (turn light on, adjust color, set volume, open/close blind);

Total Value: 20.000,00 €

2018 - 2019

altice labs | utad

Projects and Work Streams

AUGMANITY: Augmented Humanity

Cofinanciado por: COMPETE 2020 | PORTUGAL 2020 | UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

The Augmented Humanity project is essentially based on three main pillars/challenges, namely the improvement of efficiency in industrial processes, as well as the corresponding reduction of emissions, the development and adaptation of production processes, according to the characteristics of the active population and the preparation of human resources for a new industrial reality (industry 4.0).
In order to give this mentioned challenges an answer, through the technologies being developed, as well as the positive impact on the productivity of the industries, the project aims the development of products, processes and services in five main technological areas, which together will develop technologies to support the people operating in industrial environments: ergonomics and robotics; big data; connectivity, IoT and 5G; artificial vision and RA/RV and talents and contribution to the sustainability and attractiveness of the industry.

Total Value: 10.145.974,09 €

2020 - 2023

altice labs | tice.pt | Fraunhofer FOKUS | BOSCH | U.PORTO | •••

Projects and Work Streams

AVEIRO STEAM City

AVEIRO STEAM City

FEDER

Unprecedent challenges call for unprecedent actions. Aveiro is considered as a digital cluster and a territory of innovation, but now while the city prepares for a new technological revolution with the adoption of a 5G and IoT infrastructure that can drastically improve the local innovation ecosystem, it also faces unprecedent hurdles to its growth related with a shortage of digital skills. The challenge today is not about how to create more jobs, but how to improve the added-value and social and economic wealth produced by jobs created.
This project will help companies to rethink the resources they need to innovate, grow and establish means to attract a new range of talent – including artistic, creative and human sciences areas – to the new digital opportunities in a STEAM approach (adding the "A" for Arts and creativity to the domains of Science, Technology, Engineering and Maths). At the same time, the project will develop a first-mover strategy towards a radically new technological infrastructure. The city will become a trial city for 5G and will evolve into an economy based on knowledge, valorising the full range of talents, RD&I, open data and evelopment of new products & services for the growth of companies and creation of new jobs.

Total Value: 6.115.915,00 €

2018 - 2021

Projects and Work Streams

BotSchool, "From supervised to unsupervised Learning"

This project aims to explore and experiment different training methods for BOT, with the clear goal of reducing the three main vectors associated with the training of VA:

- Size of the dataset used to training VA;
- Training time;
- Human effort.

Total Value: 25.000,00 €

2019 - 2020

UNIVERSIDADE DE ÉVORA

Projects and Work Streams

CHIC Mobilizer Project

Cooperative Holistic View on Internet and Content

Cofinanciado por: COMPETE 2020 PORTUGAL 2020 UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

The main objectives of this project are:

- The development of a set of digital platforms, based on open formats and interoperable technologies that promote and increase the dynamics of Portuguese media content creation and its exchange between the different stakeholders of the associated value chain.
- The development of a national content based cluster capable of gathering enough resources and know-how (critical mass) necessary to develop and explore new systems, equipment and support services in a collaborative and cooperative way, especially through the creation of sustainable bridges between the creative industries and ICT.
- The articulation between this cluster and the research entities from the National Technologic and Scientific system.

Total Value: 9.553.151,98 €

2017 - 2020 altice labs U.PORTO medialabs universidade de aveiro utad isep UNIVERSIDADE ABERTA tice.pt ...

Projects and Work Streams

City Catalyst

Cofinanciado por: COMPETE 2020 PORTUGAL 2020 UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

The City Catalyst project aims to explore how technologies, in particular urban platforms, can contribute to improving the quality of life of people in urban environments and making cities smarter and more sustainable. Thus, this projects aims to promote an integrated, more efficient and effective urban management and catalyst for innovation and competitiveness. The project is promoted by a consortium of 22 entities bringing together scientific and business excellence at the national level to ensure the implementation of the activity plan and the pursuit of the defined goals.

Total Value: 9.869.493,82 €

2020 - 2023 altice labs tice.pt efacec ubiwhere SUITING THE FUTURE instituto de telecomunicações INESCTEC ...

Projects and Work Streams

CityAction – Integrated Platform for Smart City Operation

Cofinanciado por: COMPETE 2020 PORTUGAL 2020 UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

CityAction: Aveiro, Viseu and Castelo Branco

CityAction aims at the implementation of a logical architecture that brings together data flows within and across city systems and exploits modern technologies (sensors, cloud services, mobile devices, analytics, social media etc).
CityAction will provide the building blocks that enable cities to rapidly shift from fragmented operations to include predictive and effective operations, and novel ways of engaging and serving city stakeholders in order to transform, in a way that is tangible and measurable, outcomes at local level (e.g. increase energy efficiency, reduce traffic congestion and emissions, create (digital) innovation ecosystems).

In this context, the main objective of CityAction project is the design, development and testing of an integrated platform that combines data from different sources producing a set of treated information able to provide a better and efficient urban management, contributing to a better quality of life for citizens and a more sustainable environment.
The project's vision is to make the CityAction platform the basis of a true smart city operational management center. The CityAction aims to become an integrated and centralized management platform that uses city and citizens information, available in real time, converging into a single management point.

Total Value: 553.905,64 €

2017 - 2019 altice labs EXATRONIC innovation insights Instituto Politécnico de Castelo Branco allbesmart EVOX

Projects and Work Streams

CityIoTC – City IoT in the Cloud - II

ICT are changing the way cities are evolving and managing their resources and infrastructures. Digital transformation impacts city processes and procedures of different stakeholders. Information coming from sensors allows gathering city data in almost real time. This project will provide city managers with new tools to understand and actuate in city spaces based on the knowledge gathered from different context sources, easing the optimization of city processes. Evolving from the previous project - "IoTCityC –IoT City in the Cloud"- an IoT City proof of concept, the objectives of this new project are the following:
• Identification of the major end-to-end city processes in daily life with respect to the selected use cases
• Development of rules and actions engine to support an effective control and management
• Development of mechanisms for devices plug and play
• Refactoring of graphical user interface to improve customer experience
• Deployment of three working pilots integrating new sensors and APIs

Total Value: 20.000,00 €

2018 - 2019 altice labs it instituto de telecomunicações

Projects and Work Streams

CPE Security - the Client Side

This project aims to simulate attacks on a communications ecosystem, to be defined by Altice Labs, with the goal to identify possible vulnerabilities that affect the client side, and suggesting correction / mitigation of the identified problems.

Total Value: 12.000,00 €

2019 - 2020

CPE Security - the Operator Side

This project aims to simulate attacks on a communications ecosystem, to be defined by Altice Labs, with the goal to identify possible vulnerabilities that affect the provider side, and suggesting correction / mitigation of the identified problems.

Total Value: 12.000,00 €

2019 - 2020

Projects and Work Streams

CyberBullyng

The regulation of behavior through language

This project proposes to create a demonstrator which includes the development of an application that can help adolescents regulate their behavior in situations of cyberbullying through language. It addresses the regulation of behavior through language as the development of self-instruction strategies involving self-questioning, verbal communication strategies, and self-assertive behaviors and interpersonal problem.
As a first step, the project intends to collect, identify and categorize potentially aggressive language (words and sentence segments) in various online contexts. In order to execute this first task, the project needs to use two distinct methods of collection, including semi-structured interviews to Portuguese adolescents and an analysis of the language used in various online media, such as blogs, chats, social networks, etc. In a second step, it will perform a quasi-experimental study with one main group and a control group, where the collected and processed data from the first phase will be included in an application that can be used in different online media for users to regulate their behavior with messages that will be provided by the application. In a third phase, the project will conduct a multiple case study over a period of three months, where it will follow several adolescents in their regulation of online behavior with the help of the application. The aim is to provide help to adolescents in thinking before submitting potentially aggressive comments, but also to think before reacting to such comments.

2016 - 2019

Projects and Work Streams

Data visualization - Urban mobility study and data visualization

This project aims to find algorithms and technologies that allow studying mobility in urban spaces, using data that can be obtained from the use of an operator's mobile network.

Total Value: 25.000,00 €

2018 - 2019

Eno-Analytics

This project aims to build an intelligent system, eno-Analytics, capable of supporting the identification of grape varieties and predicting the quality of wine by using IoT, Machine Learning tools and heterogeneous data related with viticulture.

Total Value: 25.000,00 €

2020 - 2021

Projects and Work Streams

GoLocal

FCT Fundação para a Ciência e a Tecnologia

From monitoring global data streams to context-aware recommendations

This project proposes to advance big data technology for supporting the development of new information businesses and services. The long-term vision of the project aims at making big data economically useful, in applications such as tourism analytics, by realizing the full potential of large-scale data analysis technologies in the design of innovative services. An ecosystem of tools for big data, with several cutting edge technologies, will be released by the project consortium.

To realize this vision, GoLocal will leverage the real world needs and data from the nonacademic partners, namely the Lisbon City Council, MEO/SAPO and Priberam. In particular, these partners will provide realworld consumer data: both language and behavioral data will be captured in online services and mobile apps. Based on this data from real world use cases provided by the nonacademic partners, the project shall leverage media monitoring and context aware recommendation technologies.

2016 - 2019

Projects and Work Streams

IoT City II

City Governance Center Prototype

Objectives:
Evolving from the previous project - "IoTCityC –IoT City in the Cloud"- an IoT City proof of concept, the objectives of this new project are the following:

- Identification of major end-to-end city processes in daily life with respect to the selected use cases
- Development of rules and actions engine to support an effective control and management
- Development of mechanisms for devices plug and play
- Refactoring of graphical user interface to improve customer experience
- Deployment of three working pilots integrating new sensors and APIs

Results:

- City Governance Center for CityAction P2020 Project (3 use-cases)
- VISEU City Governance Center pilot (September 2019)

2018 - 2019

Projects and Work Streams

ML and AI use cases powered by colaboration

This is a colaboration protocol focused on the development of use cases to implement Machine Learning and Artificial Intelligence solutions to be used by MEO and Altice Labs. It includes three subprojects:

- identification of households and contact channel;
- Modeling mobility and places of interest;
- Consolidation and knowledge extraction from available address repositories.

Total Value: 120.000,00 €

2020 - 2021

Ngant@WIFI

This project aims to design and develop efficient antennas for the CPEs of Altice Labs (for example, Wi-Fi extenders). It also intends to integrate the antennas developed in a demonstrator using Altice Labs CPE for performance comparison using the antenna solution provided by third parties as a reference.

Total Value: 10.000,00 €

2019 - 2019

Projects and Work Streams

MobiView

Study and visualization of mobility in urban spaces

Objectives
This project intends to find algorithms and technologies that allow to study mobility in urban spaces, using data that can be obtained from the use of the mobile network of an operator (but not only), as well as to build libraries or web frameworks that allow the visualization and interaction with these routes, aiming at their use in web applications developed by Altice Labs.

Results
Demonstrator 1 - Analysis and Visualization of urban mobility flows in the region of Aveiro (week 28 / 12-3 / Jan) based on registrations in mobile network cells (13 / Feb / 2019) - with the possibility of changing parameters and configure the preview Demonstrator 2 – TBD Demonstrator 3 - TBD

Total Value: 1358 MM €

2018 - 2021 | altice labs | Universidade de Coimbra | AlticeLabs@UA

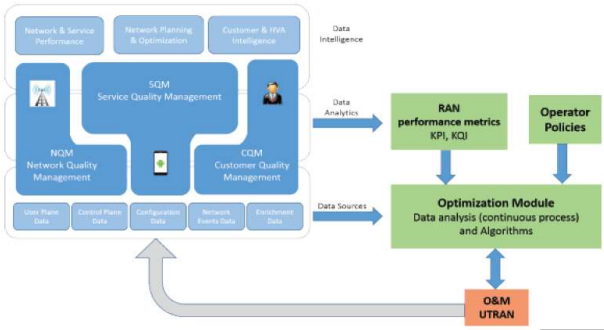
Projects and Work Streams

Muscles

CELTIC PLUS | PORTUGAL 2020

Mobile Ubiquitous Small Cells for Low-cost Energy and Spectrum efficient cloud service delivery

This project aims to: Perform R&D and product innovation on software platforms for the autonomous management of self-organizing LTE mobile networks networks, capable of detecting and solving network problems which are currently handled by human operators.



Total Value: 809.300,70 €

2016 - 2019 | proef eurico ferreira | it instituto de telecomunicações | Instituto Politécnico de Castelo Branco

Projects and Work Streams

Protege +

Cofinanciado por: COMPETE 2020 PORTUGAL 2020 UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

Protege + addresses an innovative response to the medium-term needs of the NHS related with the improving of COVID-19 screening and population monitoring services. This project will result in gains in efficiency in the care and screening of asymptomatic patients, enabling the effective monitoring of patients with mobility restrictions. The project's outputs will allow to reinforce the protection of patients and health professionals, minimizing the risks of infection in doctors' offices. Additionally, it will also contribute to an increase in knowledge about group immunity in the region covered.

Total Value: 446.379,10 €

2020 - 2020 | altice labs | js JORGE SILVA CLÍNICA MÉDICA | UNIVERSIDADE CATÓLICA PORTUGUESA

Projects and Work Streams

RESISTO

H2020

From monitoring global data streams to context-aware recommendations

The main objective of RESISTO is to improve risk control and resilience of modern Communication Infrastructures, against a wide variety of cyber-physical threats, including malicious attacks, natural disasters and unexpected faults. RESISTO will provide, experiment and assess a suite of innovative cyber/physical security solutions for prevention/protection, detection and reaction that can deliver unprecedented cost-effective performance in a holistic technology framework. RESISTO will support the progressive adoption path for the RESISTO platform and services through extensive validation, based on relevant use cases for Communication Infrastructure protection and addressing multiple technological environments, including current and future (5G) Telco Infrastructures.

Total Value: 10.531.803,71 €

2018 - 2021 | altice labs | LEONARDO INGENUITY AT YOUR SERVICE | BT | ERICSSON | TIM | orange | OTE GROUP OF COMPANIES | retevisión | INTEGRASYS | Fraunhofer EMI | treelogic | ATRE | ...

Projects and Work Streams

SHAR-LLM (Sharing Cities)

H2020

Sharing Cities, Lisbon, London, Milan

Sharing Cities has four key objectives. 1) To achieve scale in the European smart cities market by proving that properly designed smart city solutions, based around common needs, can be integrated in complex urban environments. This will be done in a way that exhibits their true potential and allows for the significant scale-up and consequent increase in social, economic and environmental value. 2) Adopt a digital first approach which proves the extent to which ICT integration can improve and connect up existing infrastructure, as well as the design and running of new city infrastructure. This will also allow for the creation of a new set of next stage digital services which will help citizens make better and beneficial choices around energy efficiency and mobility, which when scaled up will enhance the city's ability to hit key targets for mobility, housing, energy efficiency and resilience, and economic development. 3) Accelerate the market to understand, develop and trial business, investment and governance models, essential for the true aggregation and replication (through collaboration) of smart city solutions in cities of different sizes and maturities. In doing this, we intend to accelerate the pace by which we make transformative improvements, and enhance sustainability in communities. 4) Share and collaborate for society: to respond to increasing demand for participation; to enhance mechanisms for citizens' engagement; to improve local governments capacity for policy making and service delivery through collaboration and co-design; resulting in outcomes that are better for citizens, businesses and visitors. These will be delivered by a range of expert partners across 8 work packages.

Total Value: 27.897.235,95 €

2016 - 2020

altice labs · LISBOA · TÉCNICO LISBOA · e-redes distribuição · emel · GREATER LONDON AUTHORITY · Milano Comune di Milano · •••

Projects and Work Streams

SIGO Project

The main goal of this project is to be able to extract useful and relevant information from the various free writing fields of SIGO, more specifically from the TTK module. Weights must be assigned to the various phrases / words extracted, taking into account the possible existence of pre-existing typification. The existence of a considerable number of occurrences of phrases / words not yet registered may be the basis for further analysis to enrich the typification or simply to produce indicators.

Total Value: 25.000,00 €

2019 - 2020

altice labs · UNIVERSIDADE DE ÉVORA

Projects and Work Streams

SLICENET

The 5G Infrastructure Public Private Partnership

H2020

SLICENET: End-to-End Cognitive Network Slicing and Slice Management Framework in Virtualised Multi-Domain, Multi-Tenant 5G Networks

The SLICENET project will design, prototype and demonstrate an innovative, verticals-oriented, QoE-driven 5G network slicing framework focusing on cognitive network management and control for end-to-end slicing operation and slice-based/enabled services across multiple operator domains in SDN/NFV-enabled 5G networks.

Total Value: 7.979.030,00 €

2017 - 2020

altice labs | EURESCOM | ERICSSON | IBM | orange | DELL EMC | EURECOM | UNIVERSITY OF THE WEST OF SCOTLAND UWS | •••

Projects and Work Streams

Smartly

Second Screen Notifications

Objectives:
Mobile devices, by their very nature, can capture the attention of users very efficiently. However, although these potentialities are currently being widely exploited in different contexts, they are not yet efficiently explored in the TV ecosystem. The missing link appears to be an easy way to transfer context from a broadcast medium with wide reach but narrow personalization and difficult interaction interface (TV), to a highly personal, personalized and interactive medium (mobile device).
The purpose of this project is to develop a platform where the user can be notified on the big screen, that there is an interaction opportunity that he can pursuit in his mobile device in a more personal way.
For example, betting directly on TV is a pain, but it is very easy to do on a mobile device. The idea is during a game the user be notified that he can bet on this game, and thru a push notification to his smartphone the betting app will open deep-linked to that game, ready to place the bet. Another example is a supermarket chain that has different geographic promotions but has a single national TV promo spot. Using this technology, when the ad is broadcasted, the user will be notified on television that there is a promotion in a store near him and, to benefit from it, he should accept the coupon that has been sent to the mobile app.

Results:
The results of the project can be very differentiating among digital TV service providers, leading to the creation of communities with users and partners. It also opens the door to new monetization schemes.

2018 - 2019

altice labs | universidade de aveiro

Projects and Work Streams

SON+IA

Machine Learning Techniques Applied to Cognitive 5G Network Management

Objectives:
In this project we intend to build a prototype platform to infer, diagnose and solve potential anomalies in a 5G environment with virtualization support (NFV) and programmability (SDN) through the use of machine-learning techniques and algorithms. To this end, a platform for monitoring / collecting and aggregating network data (Assurance platform), essential to provide information to the machine-learning algorithms, and a platform to act / orchestrate (Fulfillment platform) the resolutions found by algorithms on the 5G network infrastructure.

Results:
- Acquisition of knowledge in AI / ML (Machine Learning), applied to the management of telecommunications networks
- Proofs of concept and demonstrators associated with the theme (in alignment with the Selfnet / Slicenet projects)
- Development of ML algorithms applied to the detection and correction of failures

Total Value: 20.000,00 €

2018 - 2019

altice labs

Universidade do Minho

Projects and Work Streams

TERRANOVA

5G PPP The 5G Infrastructure Public Private Partnership H2020

TERRANOVA: Terabit/s Wireless Connectivity by TeraHertz innovative technologies to deliver Optical Network Quality of Experience in Systems beyond 5G

TERRANOVA project intends to provide reliable connectivity of extremely high data rates in the Tbit/s regime and almost 'zero-latency' in networks beyond 5G, TERRANOVA proposes to extend the fibre-optic systems Quality of Experience and performance reliability to wireless, by exploiting frequencies above 275GHz for access and backhaul links.

Total Value: 2.996.775,00 €

2017 - 2019

UNIVERSITY OF OULU

Fraunhofer Gesellschaft

INTRACOM TELECOM

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Projects and Work Streams

Virtual Fiber Box

Virtual Fiber Box

Cofinanciado por:

This project aims:
To develop and integrate Altice Labs access solutions into a new network architecture that will improve the company competitiveness in the global market, through one new ecosystem that incorporates hardware and software components. The main objectives are, on one hand, to follow the trend of network functions virtualization (NFV) and software-defined networking (SDN) and, on the other hand, to evolve access technologies and platforms in terms of technical approach, simplifying hardware, reducing space, reducing power consumption and increasing the available interfaces rates. This project also aims to track, investigate and contribute to the evolution of optical access networks, through monitoring and intervention in standardization bodies, and also through the development of laboratory prototypes.

Total Value: 1.824.718,62 €

2018 - 2020

Projects and Work Streams

VoluntAge4Seniors 2.0

Digital Platform for Volunteer Senior Help

Objectives:
To develop a service that provides help to older or in some way handicapped adults in specific tasks such as a simple household maintenance or accompany in a visit to the doctor, by offering the support of a volunteer. The service combines the development of a TV Application to older adults with voice interaction and a web & mobile platform to manage the requests and the volunteers.

Results:
This platform may be directly integrated with the AlticeLabs Smart AL (Smart AL – Assisted Living) and the MEO TV solution, providing a richer and harder to recplicate experience to the MEO 3P solutions from Altice.
The project will perform a field pilot with actual users, social institutions and volunteers.

2018 - 2019

Key Takeaways

The existence and follow-up of a structured process encompassing the activities of research, development and innovation, which is aware of market needs and promotes the interaction and collaboration with its scientific and technologic environment, establishing partnerships with world class universities, R&D Institutions, suppliers and clients through RDI projects, based on a risk sharing model, taking advantage of external funding from the major national and international research and innovation support programs, while looking into the organization and seeking to foster a culture of innovation and creativity, in the end translates this innovation ecosystem in value creation and positive return to our shareholders and to the society.

- RDI track record in transforming know-how into value
- Access to National and European funding programs
- Connections to global RDI organizations and Industry

altice labs

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