

Annual report of activity and indicators

Research, development
and innovation

2021



UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH



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Introduction

Some thoughts on RDI activities in 2021.



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RDI in the UPC

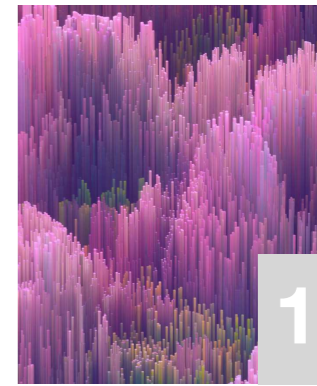
The teams that make RDI possible at our University.



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Explore the interactive graphics
rdi.upc.edu/en/2021-annual-report



Introduction

Message from the vice-rector for Research, Professor Jordi Llorca, and the vice-rector for Transfer, Innovation and Entrepreneurship, Professor Climent Molins.



Robotic arm at the Institute of Industrial and Control Engineering (IOC).

One more year putting RDI at the service of social progress

The year 2021 meant the adoption of the new normal in our lives, after the turmoil caused by the COVID-19 pandemic. While the university community, in the hands of society, was gradually returning to attendance, RDI activity did not diminish.

On the contrary, during 2021 the number of projects and the income generated by scientific activity at the UPC increased significantly. Thanks to the efforts of professors and researchers and the team of people involved in the production and management of RDI, **revenues increased by 28%**, reaching over **70 million euros**.

Beyond the numbers, the entire RDI value chain was enriched. The funding made it possible to generate knowledge and real solutions to social and economic challenges, and we disseminated the RDI activity of the UPC to generate synergies and complicities with citizens, companies and institutions.

In addition, we are a benchmark in areas that are fundamental to the progress of society, such as **sustainability, telecommunications, health technologies** and the **energy transition**.

The projects achieved in 2021 make this clear, such as participation in the European network of **UNITE!** universities, the awards of the national call for **scientific and technical equipment** and the creation of the **Specific Hydrogen Research Centre**.

We invite you to discover the activities that put the UPC at the service of social progress in 2021.

The number of projects and revenues generated by scientific activity at the UPC has grown during the year 2021.

We are the leading Catalan university in H2020 fundraising, and the Spanish university that generates most patents.



Jordi Llorca
Vice-Rector for Research



Climent Molins
Vice-Rector for Transfer, Innovation and Entrepreneurship

RDI at the UPC

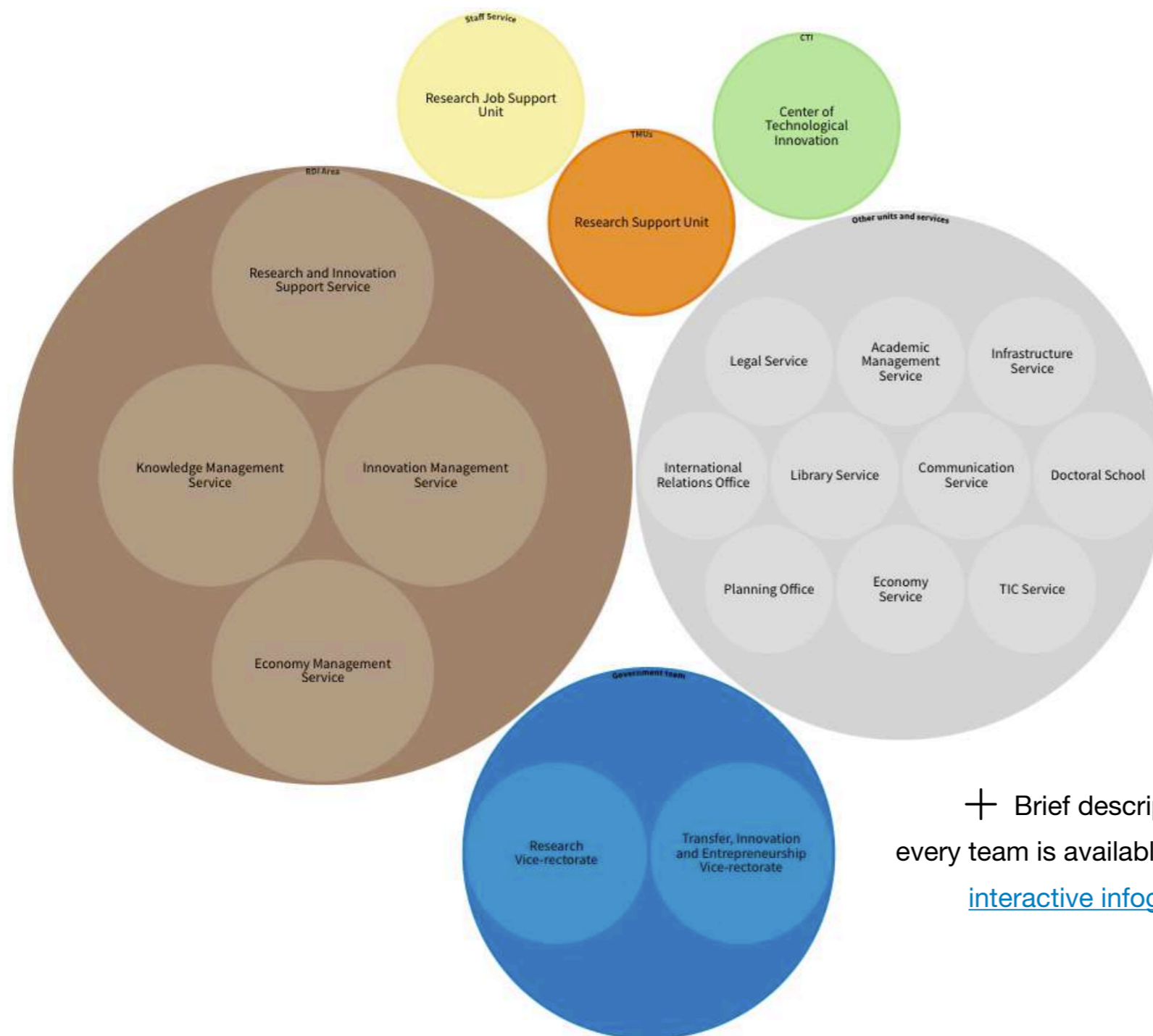
The Research, Development and Innovation Area collaborates with a wide range of teams within the University to foster RDI and apply the guidelines of the Office of the Vice-Rector for Research and the Office of the Vice-Rector for Transfer, Innovation and Entrepreneurship.



Canal of the Maritime Engineering Laboratory, located on Campus Nord of the UPC.

Wide range of human teams to foster RDI

More than 80 people shape the four main services in the UPC's Research, Development and Innovation Area. The management team sets the next steps to be taken in close collaboration with the rest of the UPC's units and services. Teams that have direct contact with teaching staff in schools (front office) make up the management and support units.



The Personnel Service plays a key role through the Research Employment Advice and Support Unit. The Innovation and Technology Centre carries out an important task of marketing and dissemination that contributes to the valorisation of technologies and the attraction of business and companies.

+ Brief description of every team is available in the [interactive infographic](#).

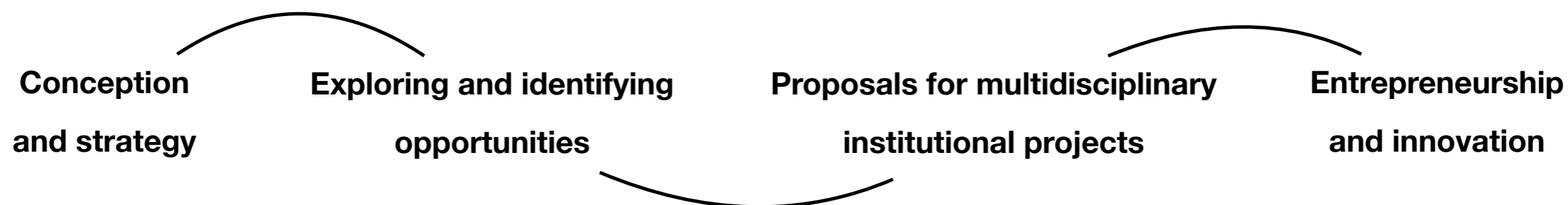
2021 Summary

Lots of actions were taken in 2021 in all stages of the RDI value chain.



Researchers working in the Bioprocesses Laboratory of the UPC.

With the objective of transforming knowledge into RDI results that have a high value for society, the productive fabric and the academic community, the activities we do cover the four steps in the RDI value chain.



From a well-thought-out strategy for deploying actions that promote RDI, we move on to accurate opportunity foresight and identification for project funding and growth. We then devote resources to preparing high-quality proposals at the institutional level. Lastly, we manage the exploitation of the results of the entire process, converted into patents, licences and technology-based companies thanks to the various innovation and valorisation strategies.

The work of the UPC's RDI service in all these stages allowed RDI activity to continue to grow another year in 2021. All of this was done in close collaboration with companies and with an increasing role to be played by citizens and by enhancing the capacities of our staff and our research infrastructure.



For more on the RDI activity of the UPC, see the [UPC 2021 annual management report](#).

Conception and strategy

+ Calls for applications for grants

- Promotion of research
- Support for the UPC's research institutes
- Organisation of conferences
- Editing and publishing of digital journals
- UPC trainee research staff
- Intensification of research
- Participation in networks and patents
- Filing and extension of patents

+ Start of the implementation of the SAQRA research quality assurance system

+ Development of the new regulations for associated research entities

+ Project manager gRDI

In 2021, the gRDI project management system was connected to the new human resources management system by redesigning various data connections, and improvements were made to the information on contracts, notifications, performance and usability.

+ Study of the partially owned spin-off portfolio

+ Drafting the UPC Code of Ethics and Research Integrity Code

+ Study and identification of emerging strategic areas

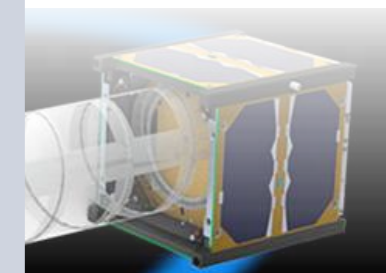
**Blue economy
and sustainability**



Hydrogen



**Aerospace
technologies**



**Agrotech
and hemp**



Cybersecurity



**Sustainable
architecture and
construction**



Exploring and identifying opportunities

+ **Searching for opportunities and promoting participation in calls for proposals**

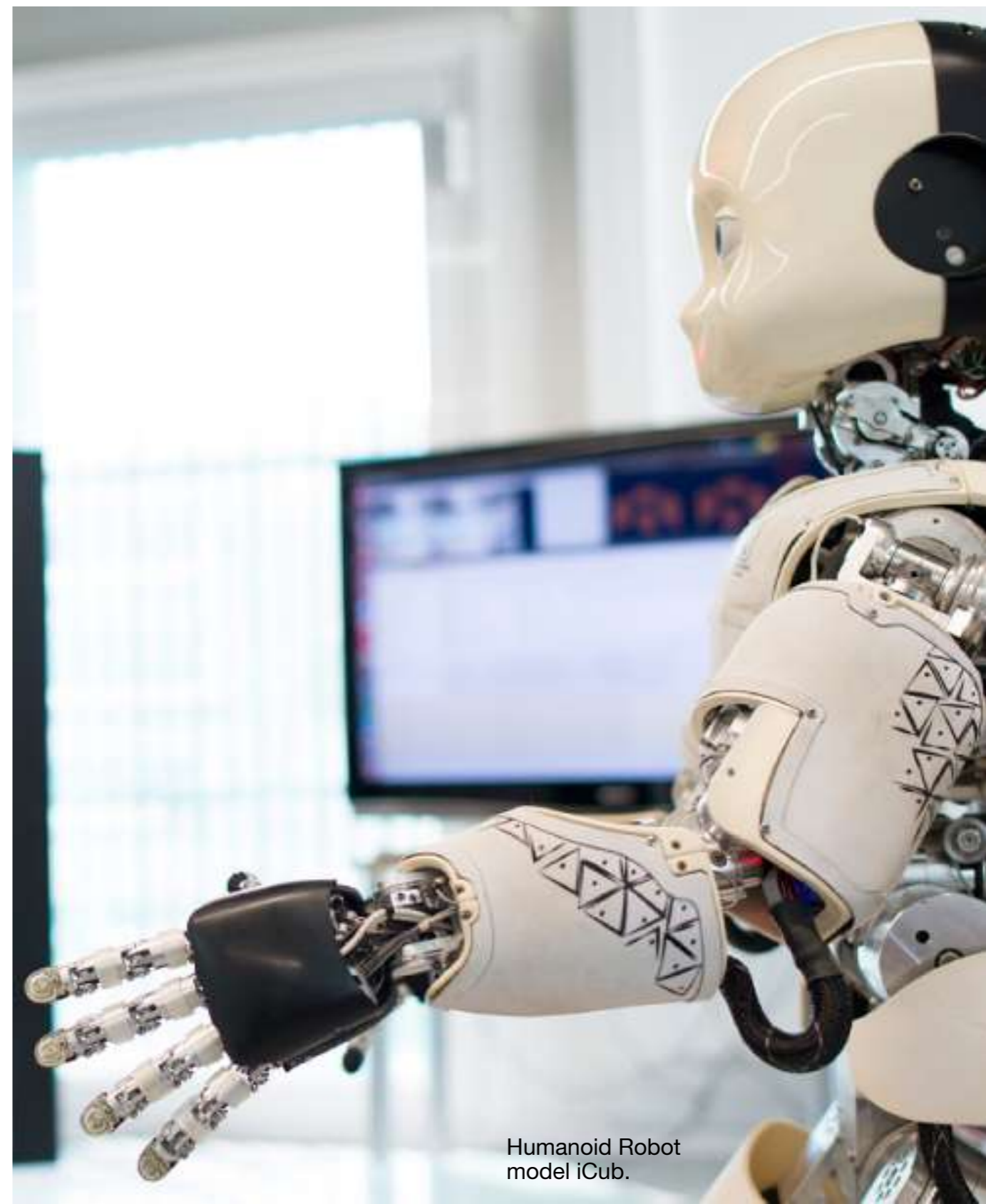
- Next Generation Europe, Horizon Europe 2021-2027
- National Plan for Scientific and Technical Research and Innovation 2021-2023
- Recovery, Transformation and Resilience Plan
- Erasmus+ 2021-2027

+ **Workshops, presentations and courses on the preparation of proposal submissions**

European Research Council, Marie Skłodowska Curie Doctoral Networks, Projects 2021 Knowledge Generation AEI, Public-Private Collaboration AEI.

+ **Application for ethical review of research projects**

A tool to support the ethical review of research projects with criteria of rigour, reliability and confidentiality was developed by adapting the Open Journal System (OJS) software.



Humanoid Robot
model iCub.

Proposals for multidisciplinary institutional projects

+ Preparation and presentation of project proposals

Participation in conceiving, drafting and presenting more than 10 expressions of interest in research proposals in the framework of Next Generation Europe and 2 proposals in the framework of the European Digital Innovation Hub.

+ Support in the preparation of territorial promotion proposals

- Automotive Professional Training Centre
- Fàbrica Nova-Projecte Fàbrica Nova-Hub d'Innovació Tecnològica de la Catalunya Central project

+ Completion of the project **UPC Transfer Acceleration Plan**

+ Active participation in the field of research and transfer in the **UNITE! alliance**

+ Joint work with outstanding networks

XAFIR (Industry 4.0), XARTEC (biohealth) and BLUENETCAT (maritime).

+ Creation of **DEEP TECH NODE (Barcelona Activa -UB-UAB-UPC-UPF-UOC)**

+ Participation in the **Mobile World Congress and 4YFN**

Presentation of 12 entrepreneurial projects of the UPC ecosystem.



UPC Stand at 4 Years From Now (4YFN) 2021.

Entrepreneurship and innovation

+ Consolidation of **ESPAI EMPRÈN**

Advice given on 92 projects in 2021 and 11 start-up companies created.

+ **INCUBACIÓ** activity

In the framework of the training and capacity-building programme, 11 seminars were organised by the UPC and 15 in coordination with other institutions.

+ **EIT Urban Mobility (Southern Europe) acceleration programme**

Led by the UPC, batches 2 and 3 of the programme were been developed, for which 129 proposals from international companies were received.

+ Consolidation of innovation hubs

Huawei, Damm, Port de Barcelona, Innomads and Valenveras.

+ Representation of **UPC** research groups at trade fairs and conferences

Seastainable Ventures, Summit4Oceans, European Blockchain Convention, Foro Transfiere, Mobile World congress, Smart City World Congres.

+ Participation in clusters and sectoral platforms

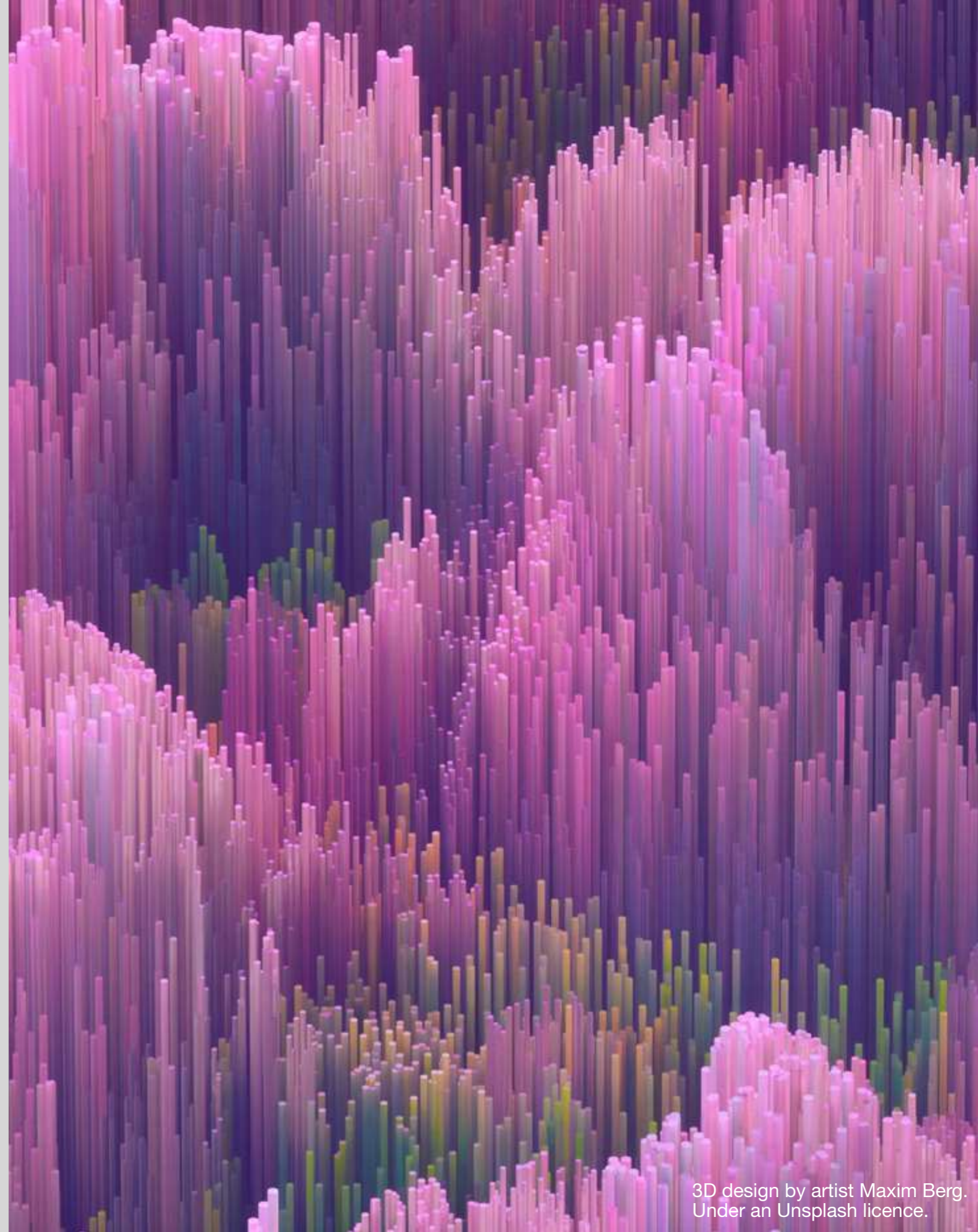
CIAC, Cluster Moto, Clúster Foodservice, Clúster Qualitat de l'Aire Interior, Clúster Innovati, Clúster IN-Move, Clúster Audiovisual, Clúster Materials Avançats and Plataforma enerTIC.

+ Extension of **PTC** protection to 21 patents



Main indicators

The data that allow us to monitor the status of RDI activity every year are general indicators on income and contracting, national and international projects, innovation, valorisation and scientific output.



2021 at a glance

In 2021, RDI at the UPC generated an income of **€70,200,057.23** and contracting worth **€68.997.398,27** thanks to participation in **1,854 projects** and the signing of **1,236 contracts**.

- National project income doubled compared to 2020.
- The capital raised by spin-offs and start-ups is already €15,8 million, and in 2021, 19 new patents were obtained and 14 tech-based companies were created: 11 start-ups and 3 spin-offs..
- The UPC consolidated itself as the top Catalan university in H2020 fund raising.

General indicators

M€ 70,2 **1,854**
Income Projects

M€ 68,9 **1,236**
Contracting Contracts

International projects

M€ 16,8 **23**
Income from coordinated Projects coordinated

M€ 14,7 **219**
Income from participated Projects participated in

National projects

M€ 19,4 **M€ 4,4**
Income from projects For scientific and technical equipment

548 **M€ 4,1**
Active projects Research project on 5G and 6G

Agreements, contracts and services with companies and institutions

M€ 10,3 **543**
Income from contracts Contracts

M€ 2,6 **101**
Income from donations and grants Donations and grants

Innovation and valorisation

M€ 15,8 **k€ 391**
Capital raised by spin-offs and starts-up Increase from licences and spin-offs

19 **13**
Patents Tech start-ups and spin-offs

Scientific production

5.089 **2.637**
Publications Journal articles

206 **3,459**
Research groups Teaching and research staff

Clarification

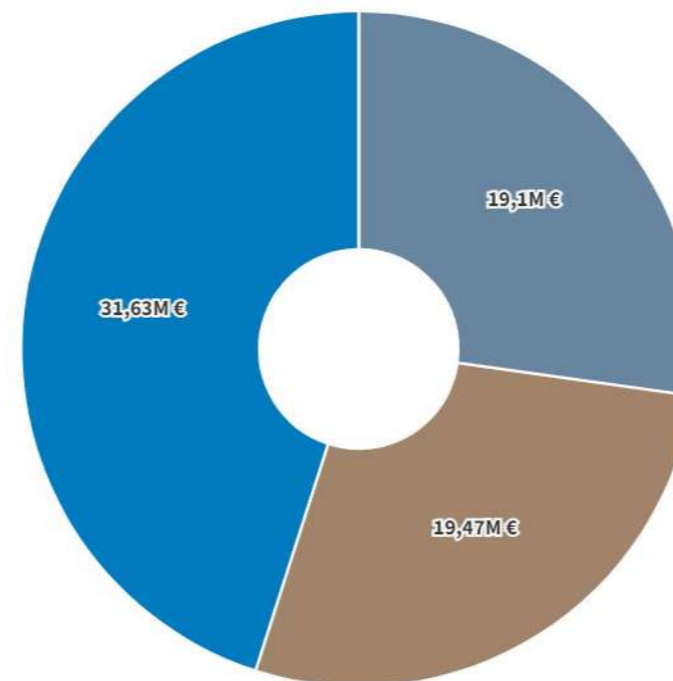
General indicators

+ Income by item

- [International projects](#) (p.18) are the main source of RDI income: **€31.628.004,97**.
- However, if we exclude the part that is redistributed to partners in coordinated projects (€16.863.312,30), [national projects](#) (p.20) are the main source with an income of **€19.468.400,44**.
- [Collaboration with companies and entities](#) (p.22) have resulted in an income of **€19.103.651,82**.

M€ 70,2
Income

■ International projects ■ National projects ■ Collaboration with companies and entities



Collaborations with companies and entities are projects that generate income from non-competitive sources. They are divided into:

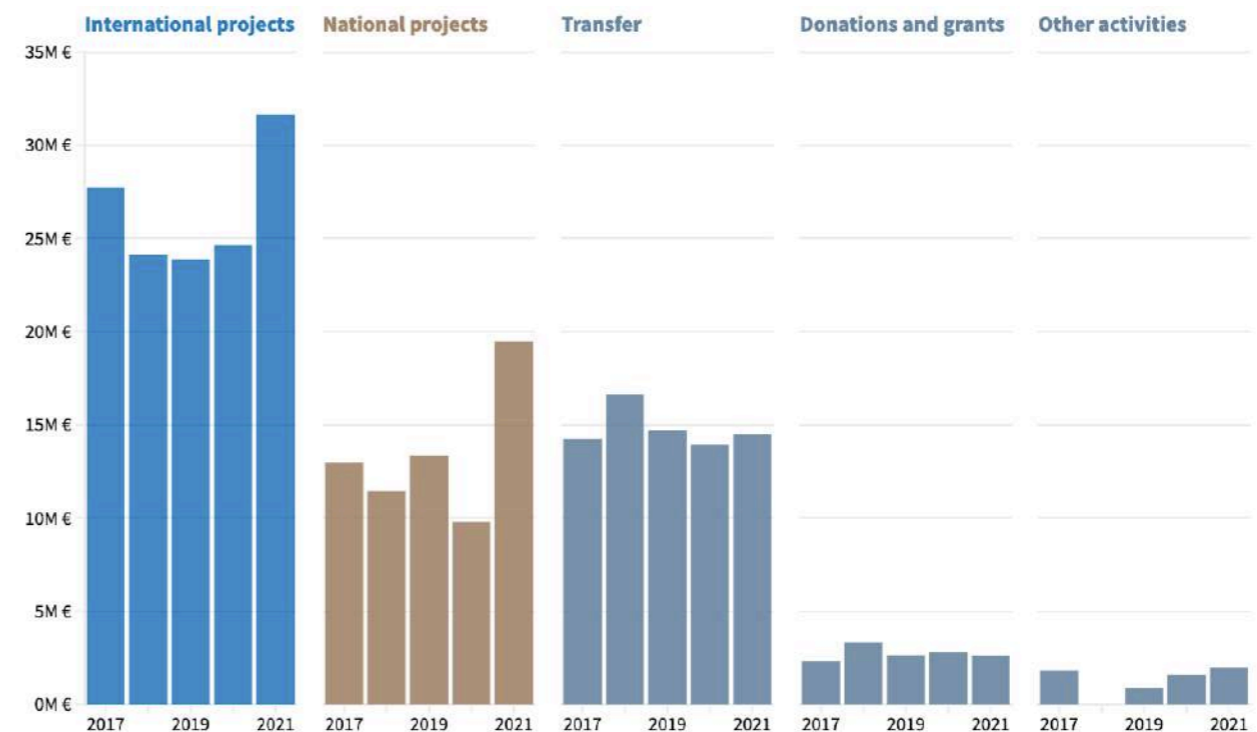
- Transfer
- Donations and grants
- Other activities

As far as **transfer** is concerned, the activities are divided into:

- Agreements/Contracts
- Intellectual and industrial property
- Services
- Training

+ Annual evolution of income

- **Income growth** compared to 2020.
- Income from **national projects grew by 98%** with respect to 2020, the income item that experienced the greatest growth. This was mainly due to the UPC's participation in calls such as Equipamientos Científicotécnicos and UNICO 5G I+D, projects worth an approximate total of 8 million euros.
- Income from **international projects also grew considerably (28%)** compared to 2020. This was mostly thanks to the income from coordinated projects (from 9 million in 2020 to 16 million in 2021).



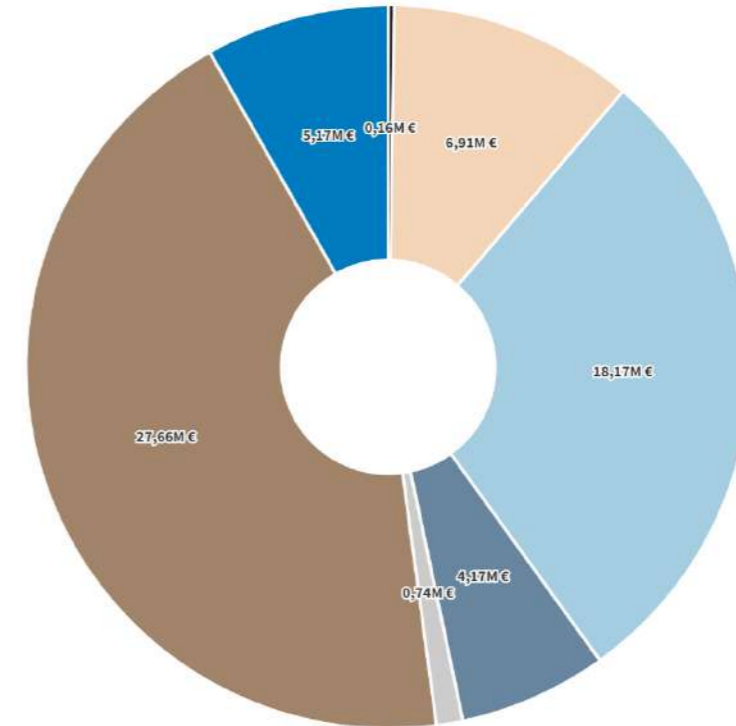
General Indicators

+ Expenditure by item

- Total expenditure was **€62.989.931,63**.
- The items with the highest expenditure were **Staff**, with a total of €28.405.954,23; and regular **Transfer and Grants**, with a total of €18.174.577,78.

M€ 62,9
Expenditure

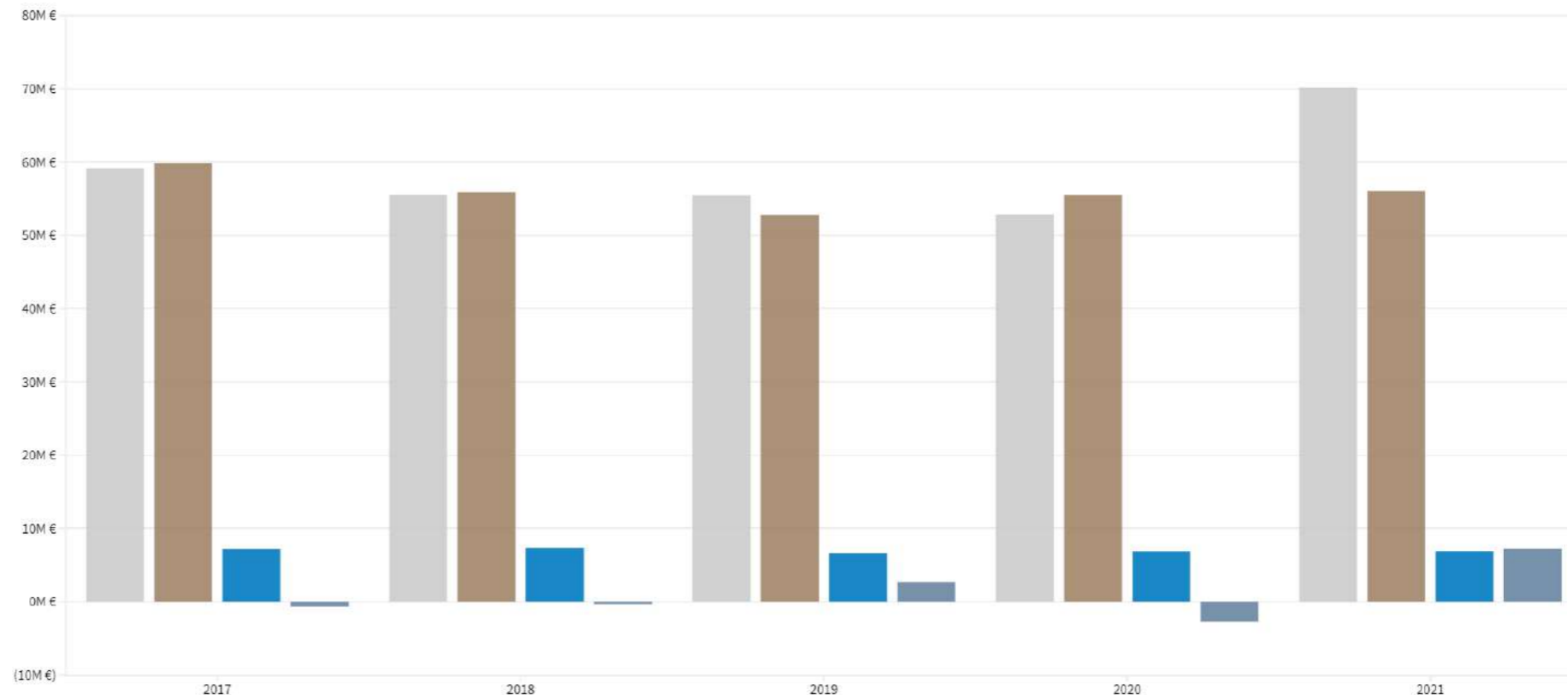
■ Purchase ■ Staff ■ Travel costs ■ External services ■ Transfers and grants ■ Clean overhead ■ Other expenditures



+ Annual evolution of income and expenditure

- Compared to 2020, income increased by 33%, while expenditure remained almost the same (a slight increase of 1%).
- This generated a **carryover of 7.210.125,60 €**.

■ Income ■ Expenditure ■ Overhead ■ Balance

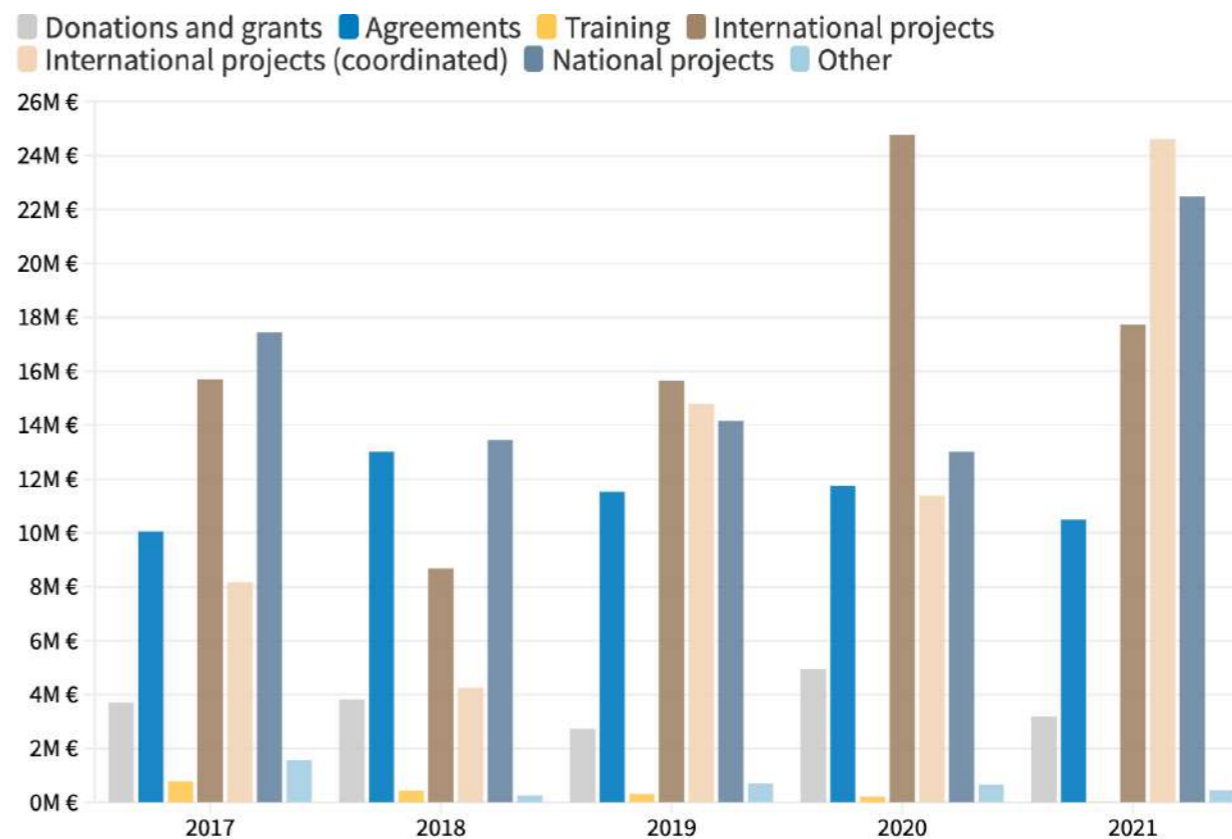


General indicators

+ Annual evolution of contracting

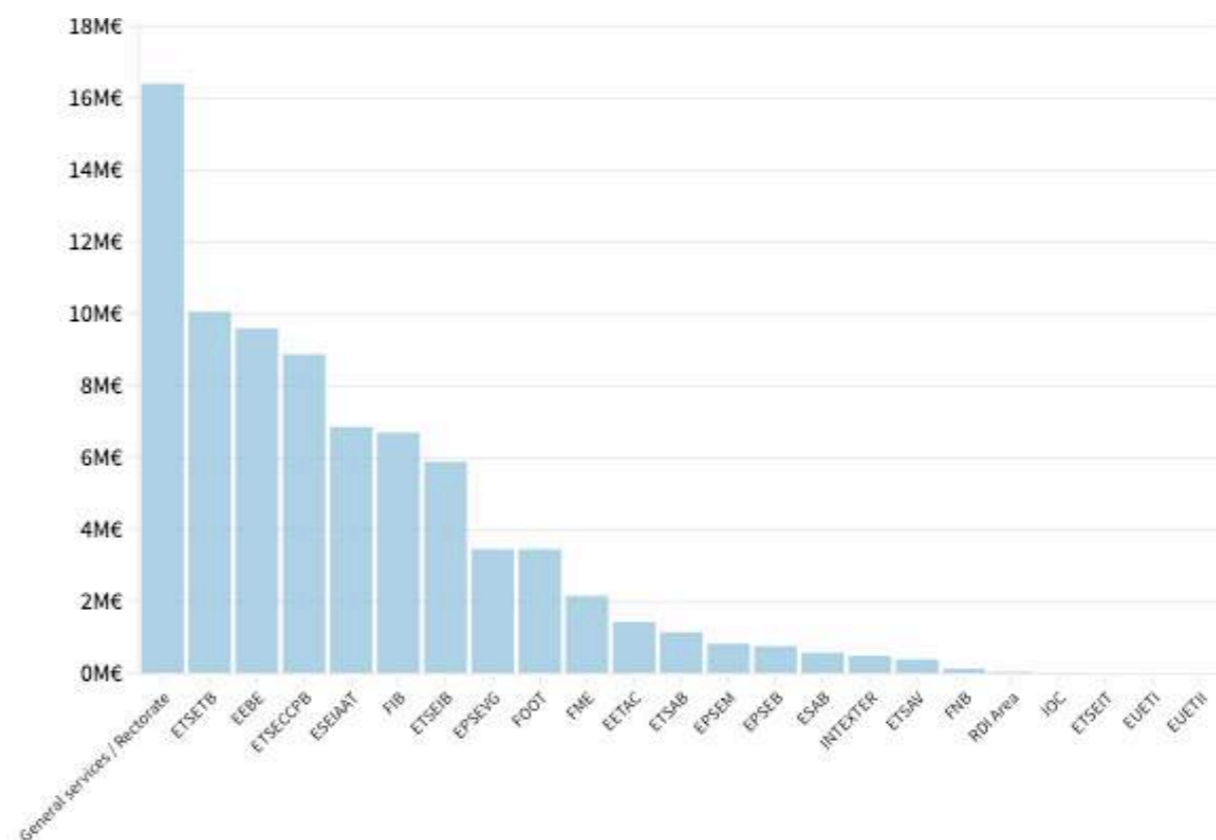
- International projects were also the main source of RDI contracting: **€29,122,973.87**.
- As with income, because coordinated projects make up €18,524,712.99 of the contracting, national projects really are the main source, with a total contracting of **€21,710,580.18**.

M€ 68,9
Contracting



+ Contracting by Schools

- The **ICT Management and Support Unit** (made up by the ETSETB and the FIB) was again the unit that generated the greatest amount of contracting, with a total of **€10,937,053.95**.
- The school that generated most contracting is the ETSETB, as in 2020. The second was the EEBE, which this year surpassed the ESEIAAT (2nd in 2020).

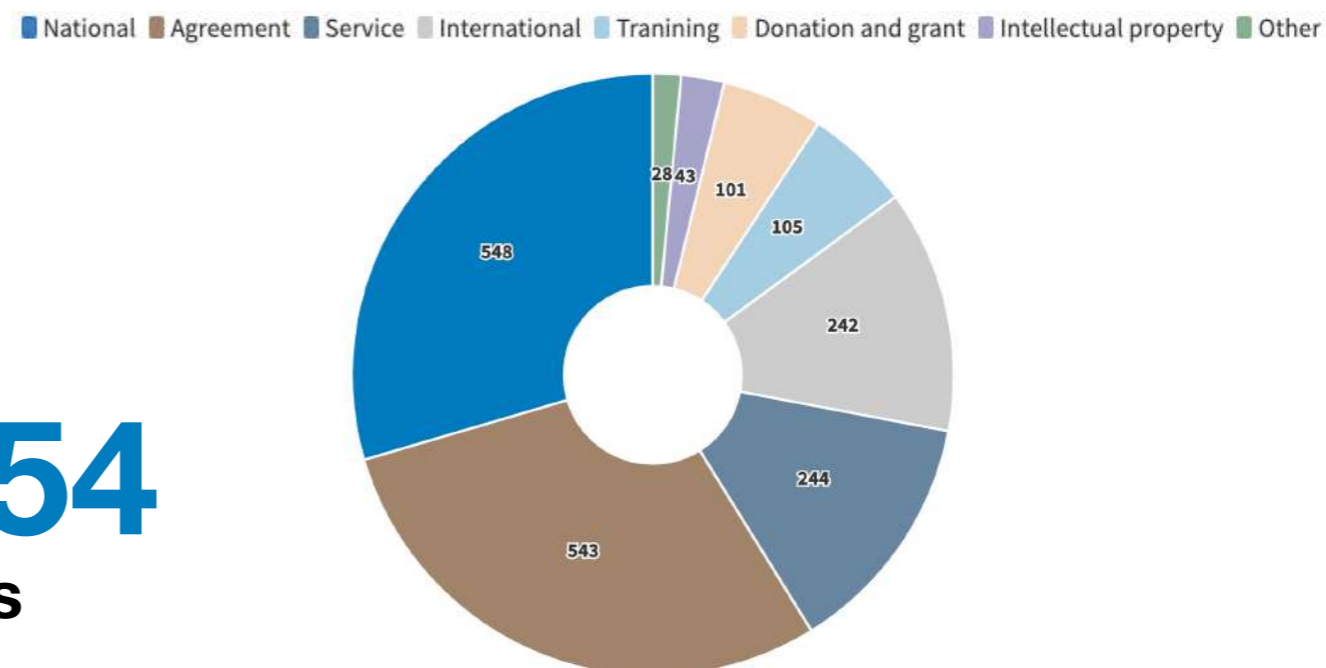


General indicators

+ Number of projects¹

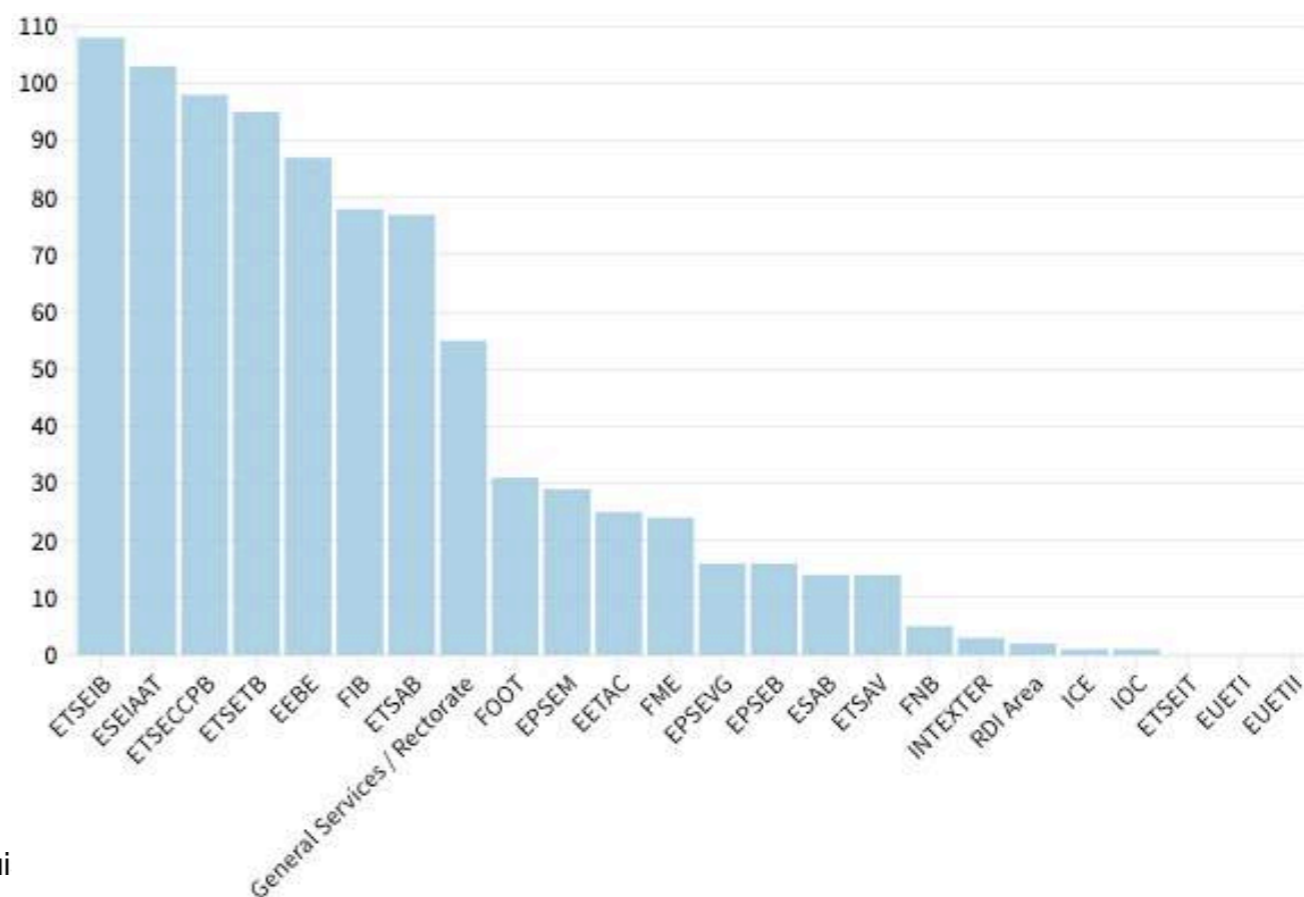
- The most numerous projects were **national projects (548)**, followed by agreements (543), services (244) and international projects (242).

1.854
Projects



+ Number of projects by School

- The school with the most active projects in 2021 was the **ETSEIB**, with **108 active projects**.
- The management and support unit with the most active projects in 2021 was the same as the one that generated the most income, the **ICT Management and Support Unit** (made up by the ETSETB and the FIB), with a total of **173 active projects**.



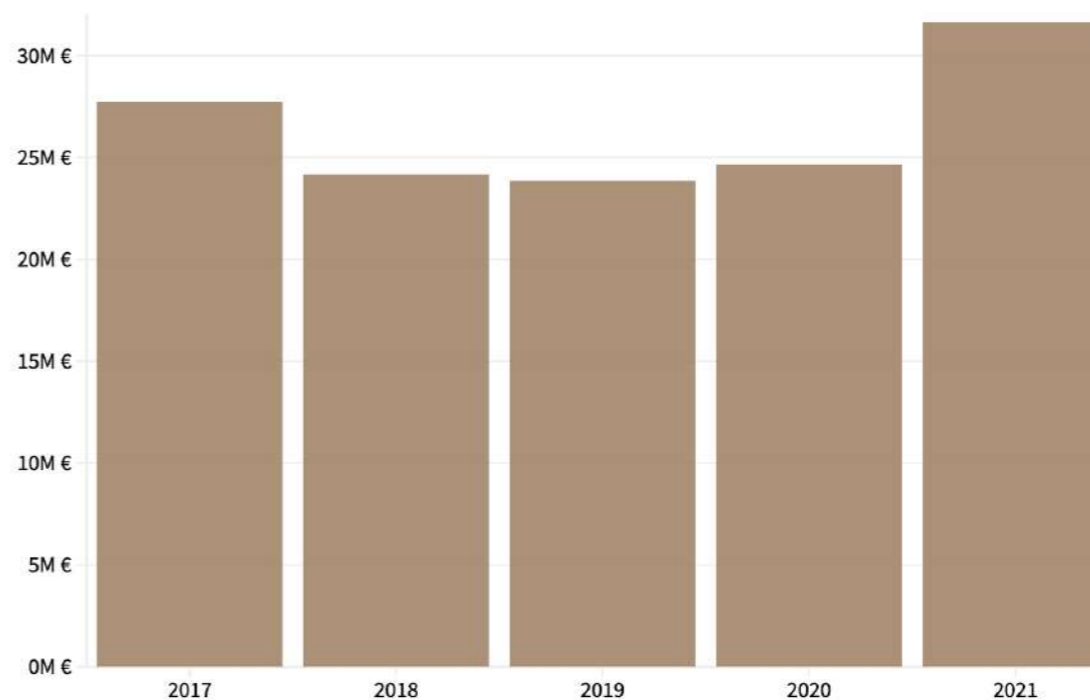
¹ Of the active projects that generated income in 2021 (which must be distinguished from those contracted, as they might not yet have generated income this year).

International projects

+ Income from international projects

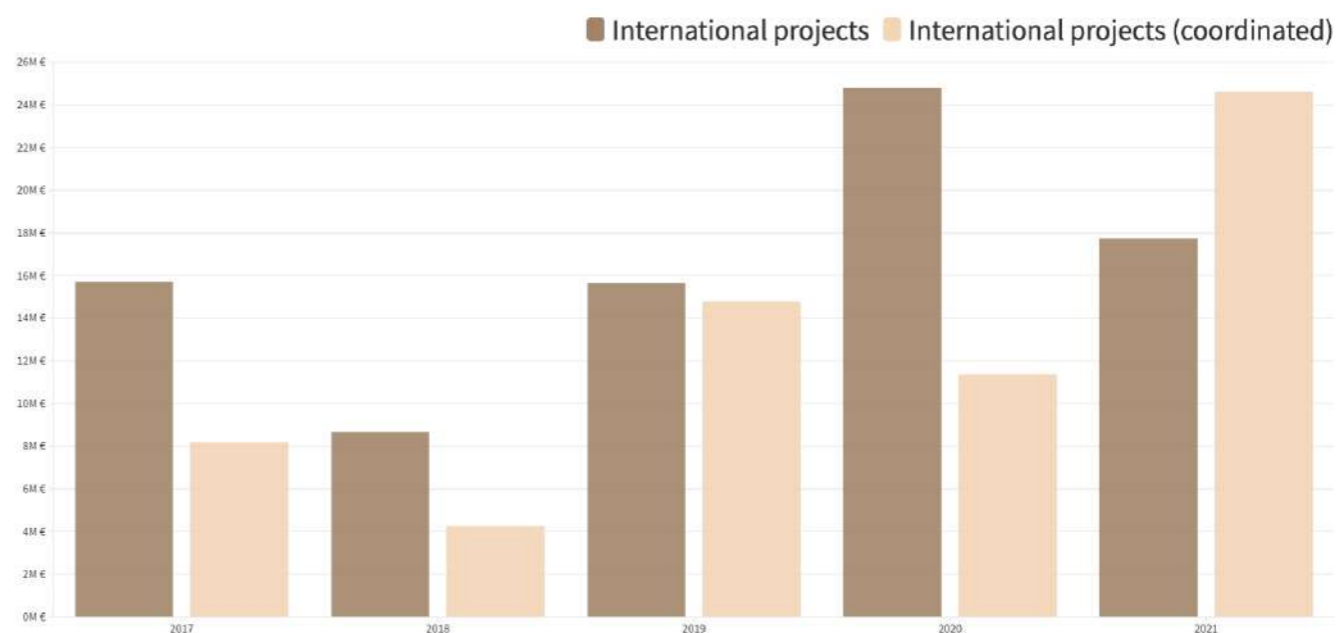
- In 2021, the 242 active international projects achieved the highest income of the last five years, generating a total of **€31,628,004.97**.

M€ 31,6
Income



+ Contracting for international projects

- The total contracting for international projects grew and was **€42,343,134.01** in 2021, 6 million euros more than in 2020 (€36,153,590.82).
- The contracting for coordinated international projects **grew by 116%** compared to 2020, going from €11,373,958.82 to €24,614,082.10..



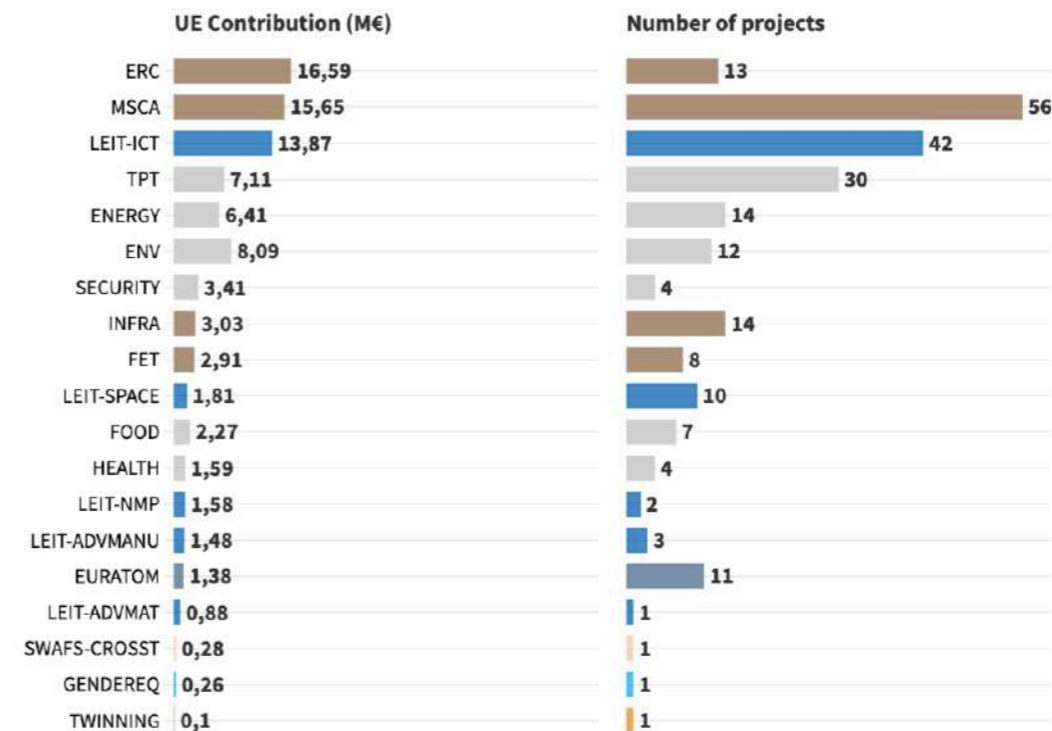
International projects

+ Participation of the UPC in the H2020 framework program

- The UPC participated in a total of 234 projects in the Horizon 2020 framework programme, which resulted in an income of **€88,026,887.20**.
- The pillar that generated the most income was *Excellent Science*, which is mainly made up of **European Research Council (ERC)** calls for proposals: 13 projects with a value of 16.59 million euros; **Marie Skłodowska-Curie Actions (MSCA)**: 56 projects with a value of 15.65 million euros.

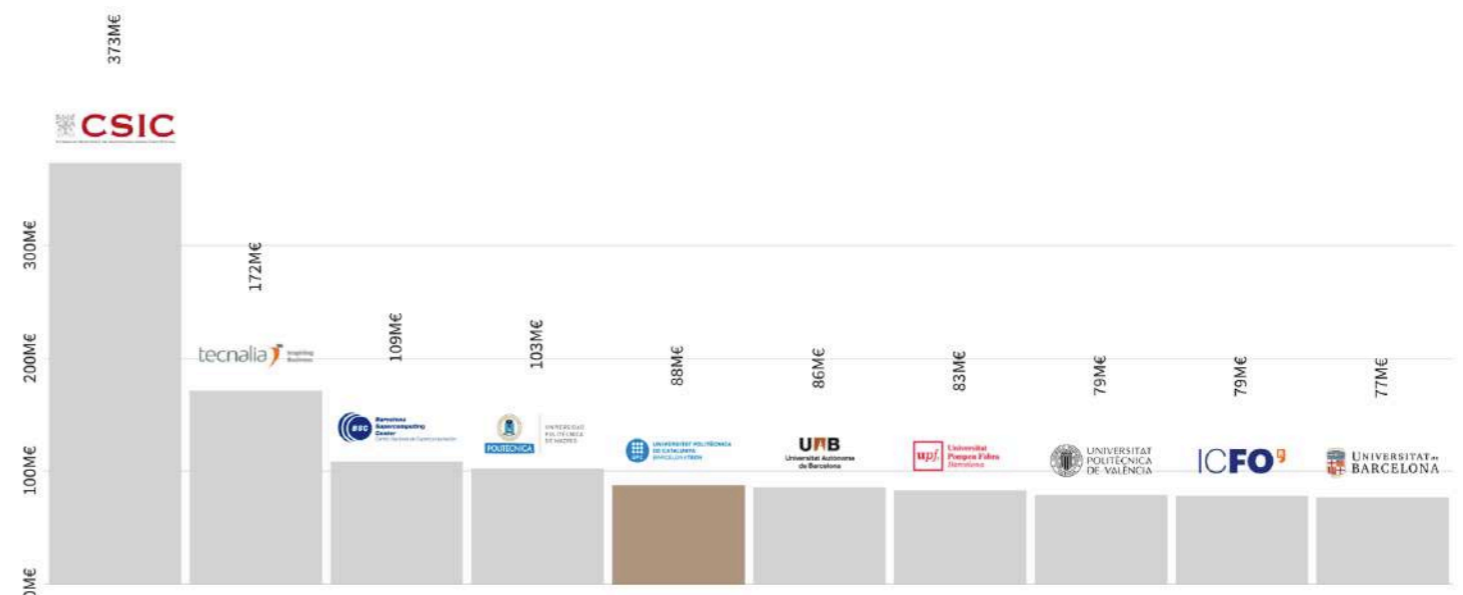
M€ 88

H2020 income



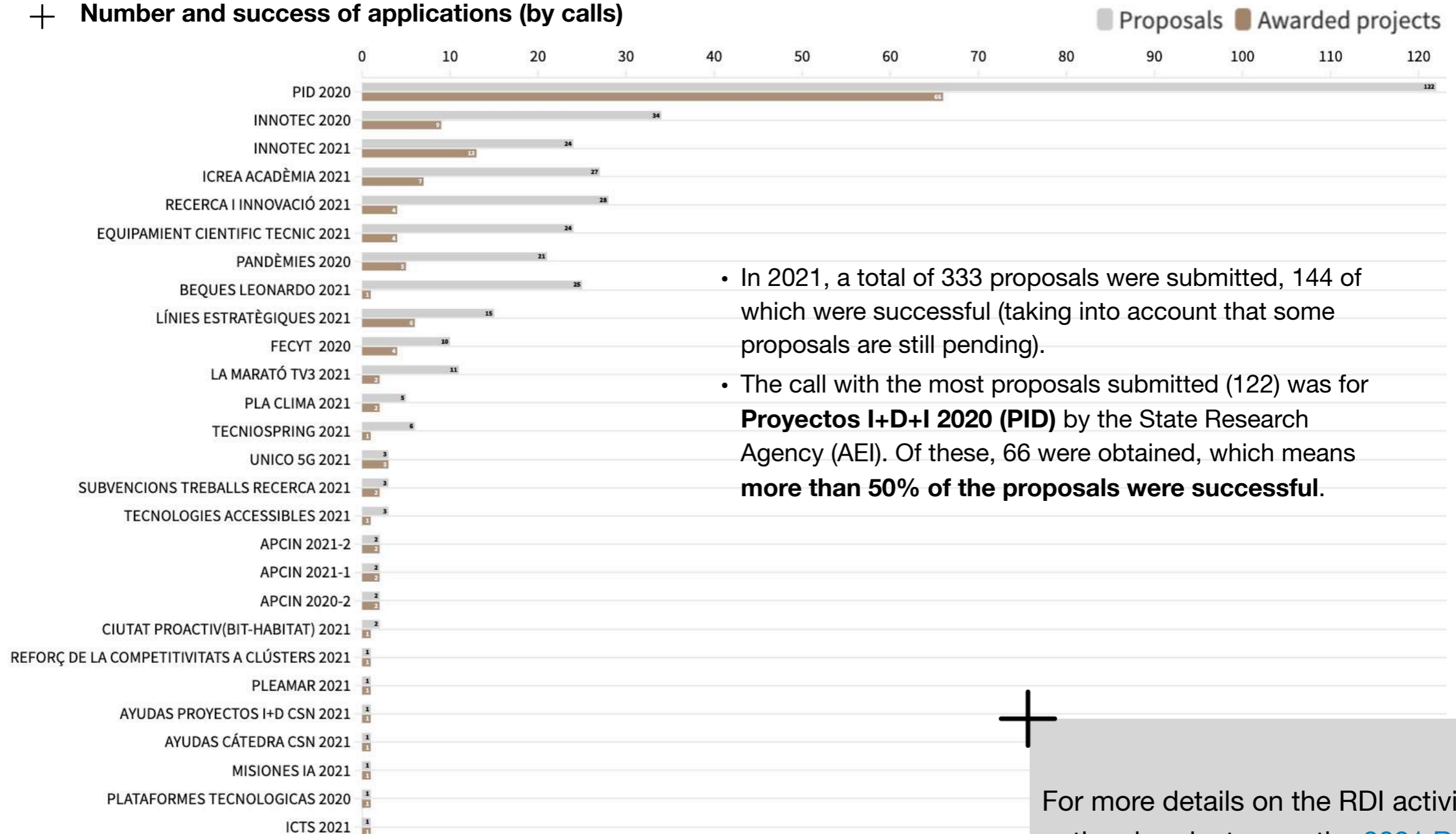
+ Comparison between the UPC and RDI national entities in the H2020 framework programme

- The UPC is the 2nd university in Spain, the **1st in Catalonia** and the 5th RDI entity in Spain in terms of raising funds from the H2020 framework programme.



National projects

+ Number and success of applications (by calls)



- In 2021, a total of 333 proposals were submitted, 144 of which were successful (taking into account that some proposals are still pending).
- The call with the most proposals submitted (122) was for **Proyectos I+D+I 2020 (PID)** by the State Research Agency (AEI). Of these, 66 were obtained, which means **more than 50% of the proposals were successful.**

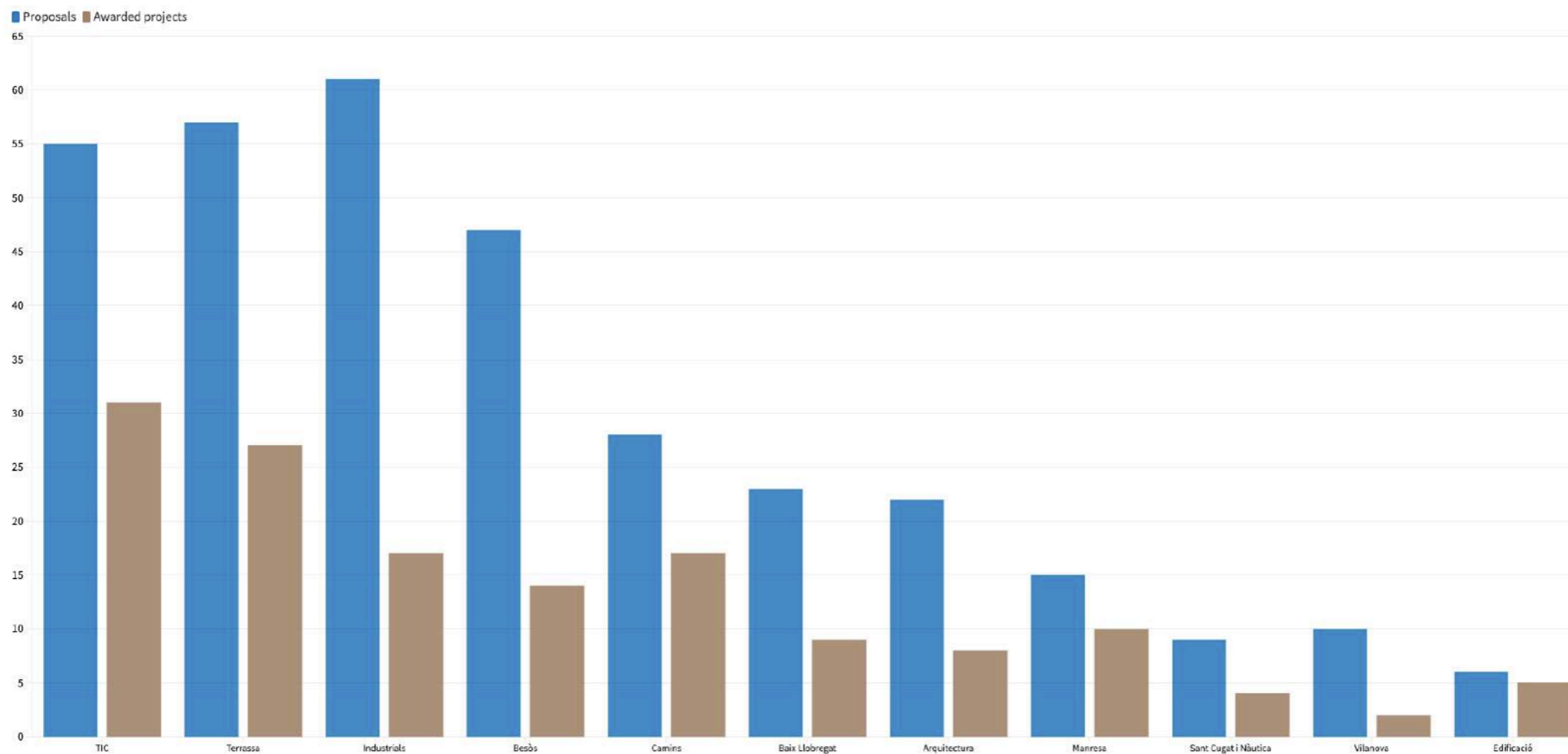


For more details on the RDI activity of national projects, see the [2021 Report of the National Projects Unit](#).

National projects

+ Success of applications and funds raised (by management and support unit)

- The management and support units did a great job of submitting and managing applications and, in total, they applied for projects worth 66 million euros, of which **more than 26 million euros were granted** (without taking into account the calls that are still pending and that will be resolved in 2022).
- The management and support unit that submitted the most applications was the Industrial Engineering Management and Support Unit (61 applications submitted), and the one with the greatest number of successful applications was the ICT Management and Support Unit (31 projects granted).



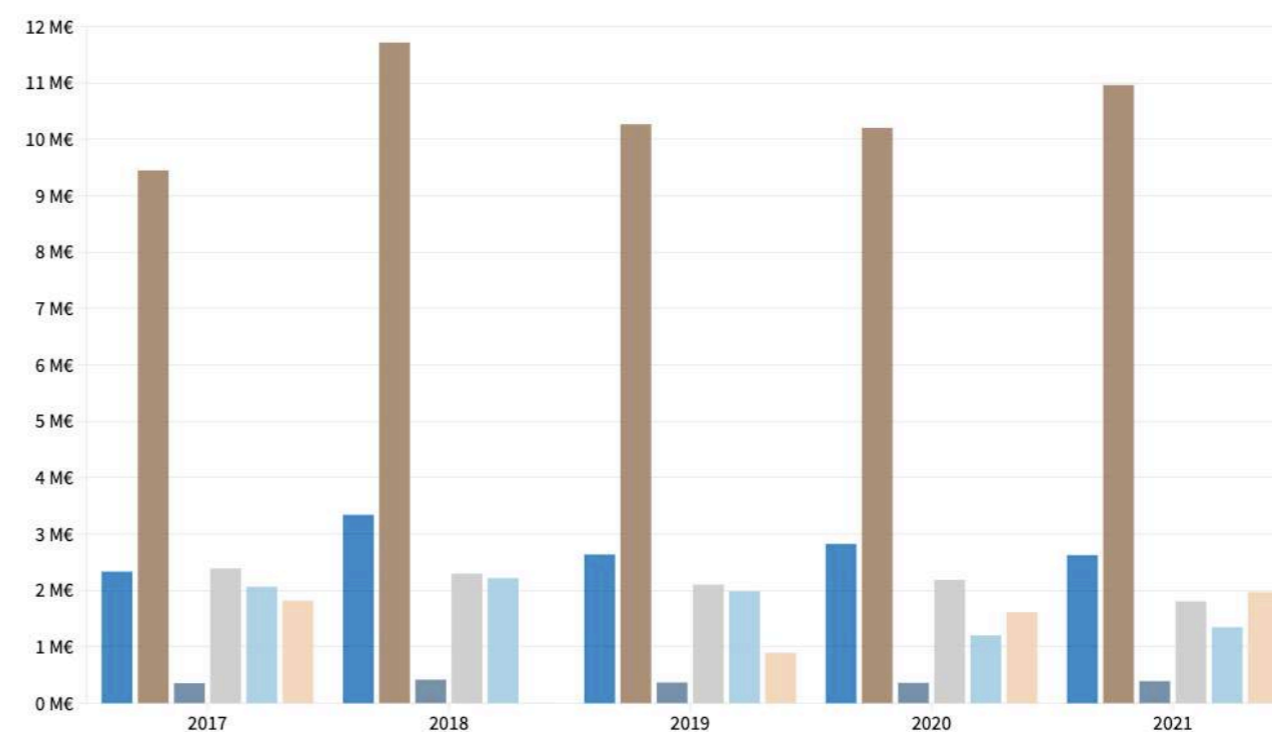
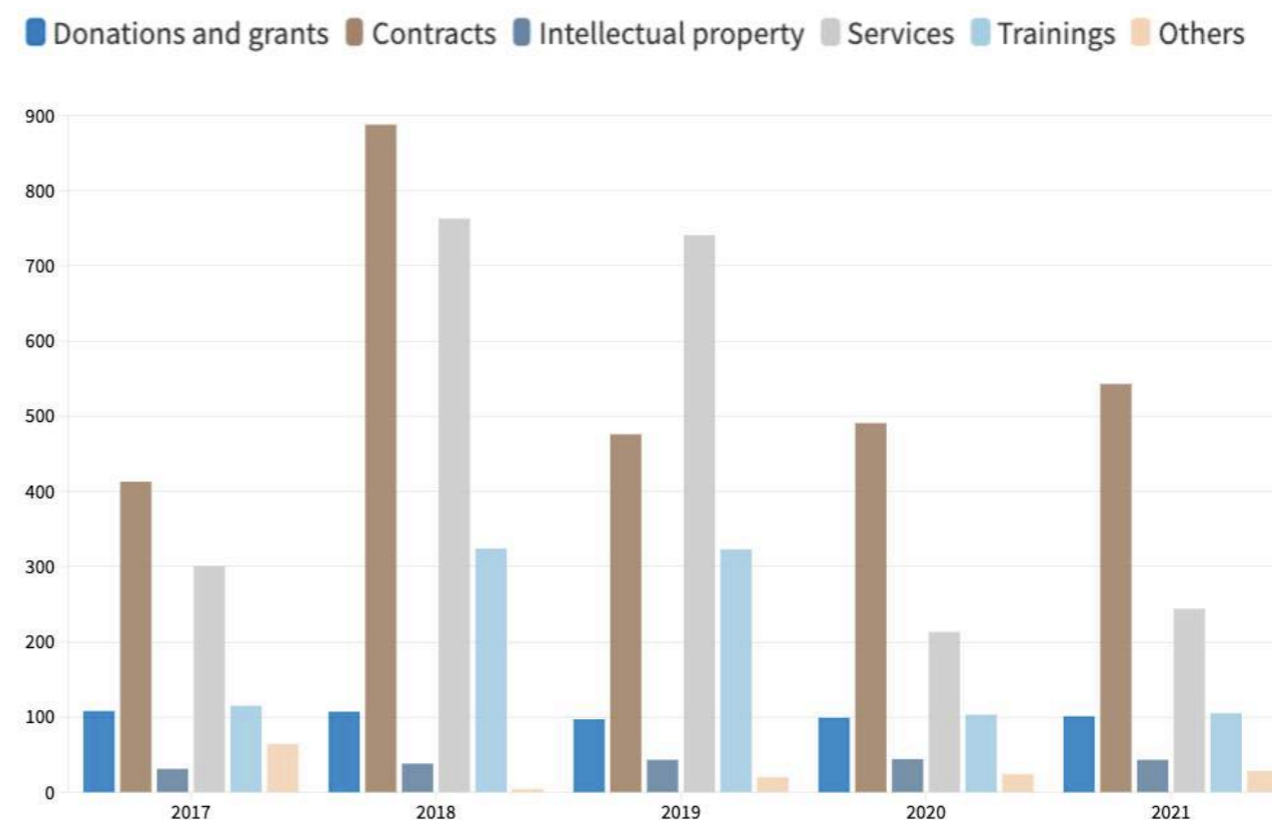
Agreements, contracts and services with companies and institutions that have a non-competitive source

+ Number of non-competitive projects (companies and entities)

- In 2021, up to **1.064 non-competitive projects** were developed.
- Of these, the majority were contracts (543), followed by services (244), training (105), donations and grants (101), intellectual and industrial property (43) and other projects (28).

+ Income from non-competitive sources

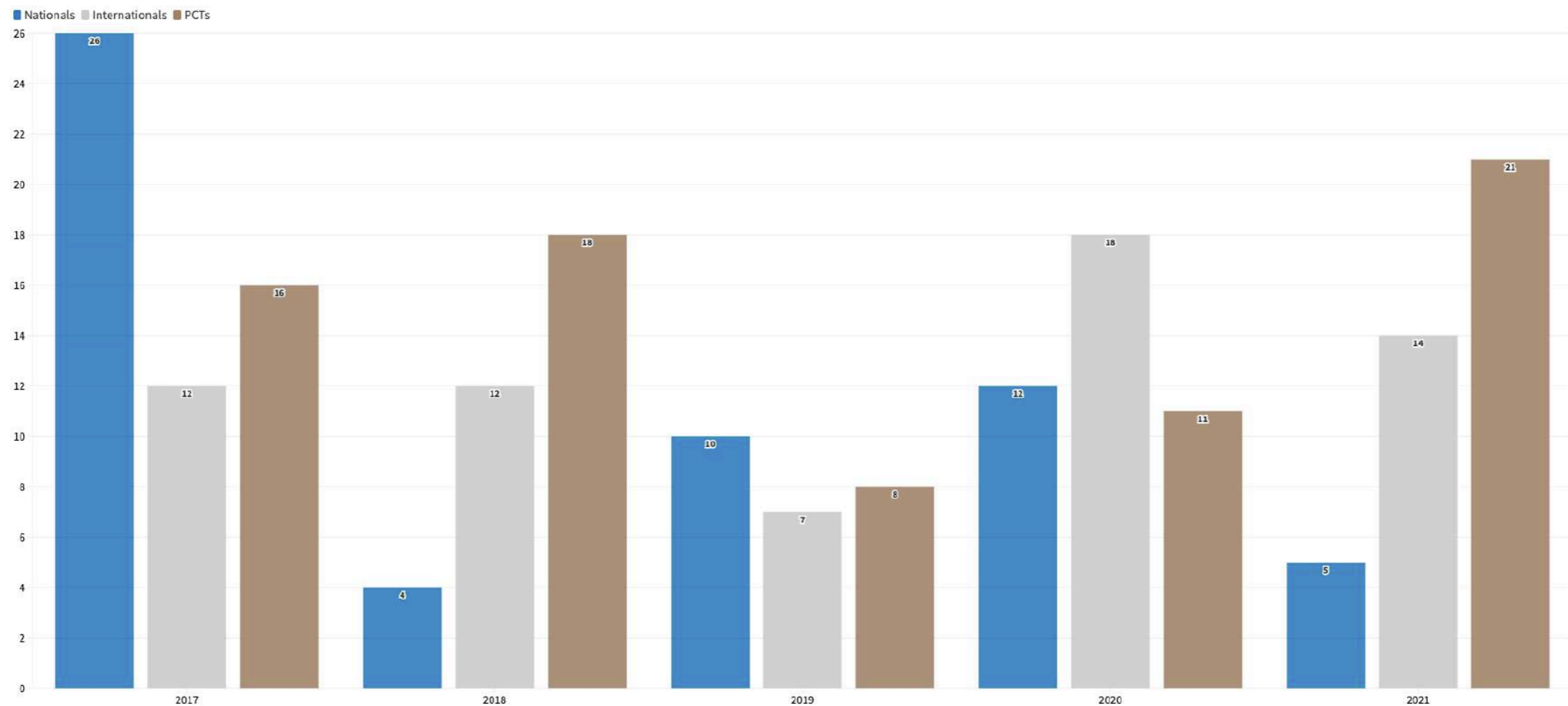
- The income from projects with non-competitive sources has been **€19.103.651,82**.
- The ones that generated the most were the contracts (€10,963,948.91), which increased slightly compared to 2020.



Innovation and valorisation

+ Number of patents

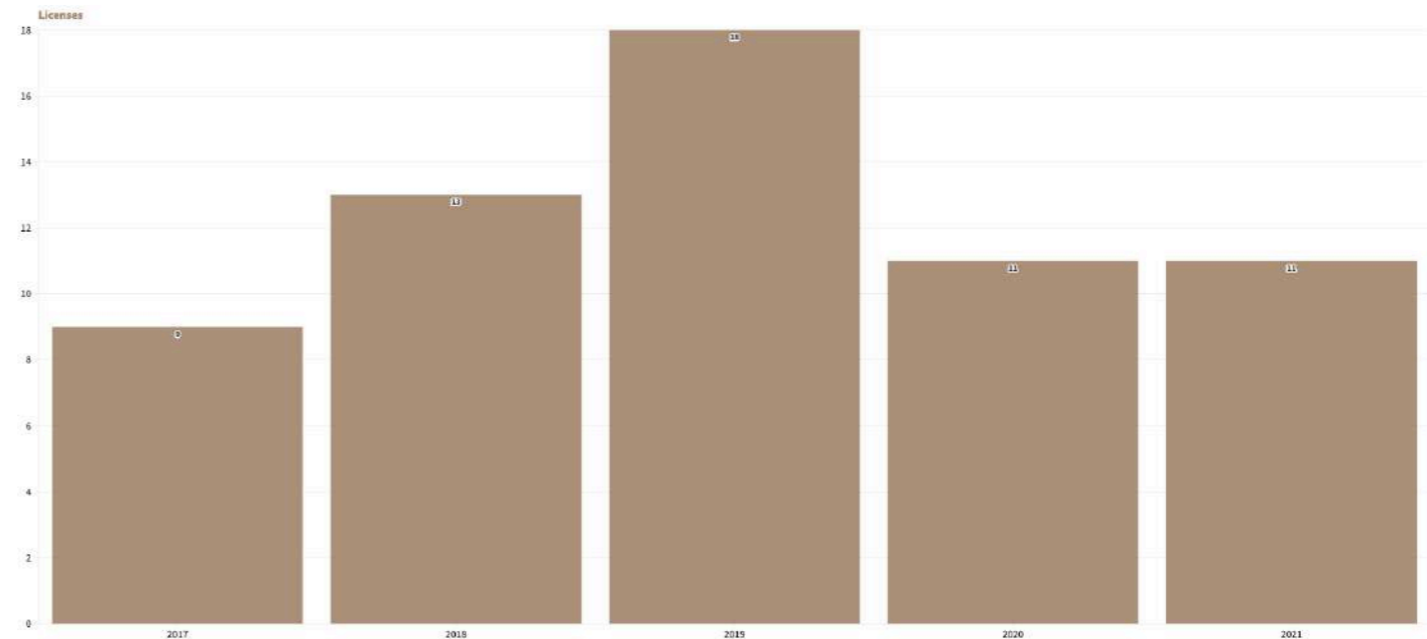
- With regard to industrial property indicators, the UPC has achieved:
 - 5 patents and utility models with Spanish priority
 - 14 international priority patents (10 European, 1 direct PCT, 1 to United States and 2 to Colombia).
 - 21 patents applied for under the Patent Cooperation Treaty (PCT), almost the double than in 2020.



Innovation and valorisation

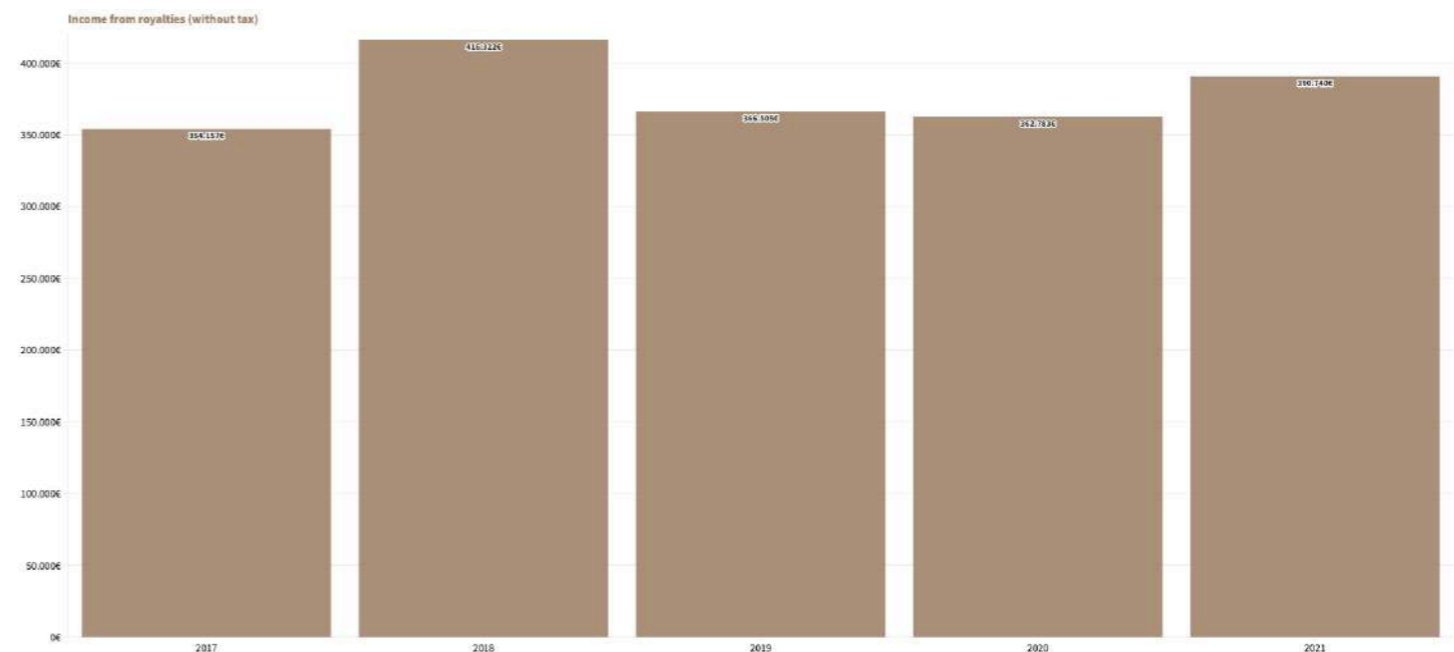
+ Number of licences

- In 2021, 11 **licensing agreements** were concluded.
- **12 patent co-ownership agreements** were also concluded.



+ Income from royalties

- The income from royalties or exploitation of licences represented a total of **€390.740**.



Innovation and valorisation

+ Other valorisation indicators

€ 7.906.600

Invoicing of participated spin-offs during 2020

€ 15.809.380

Investment capitalised by UPC technology-based companies (TBCs)

+ Entrepreneurship: EMPREN UPC programme

92

Projects advised

11

Start-ups created

30

Training sessions

500

Impact in no. of students

+ Business incubation: Parc UPC

11

UPC seminars

545

Attendees

15

Seminars co-organised

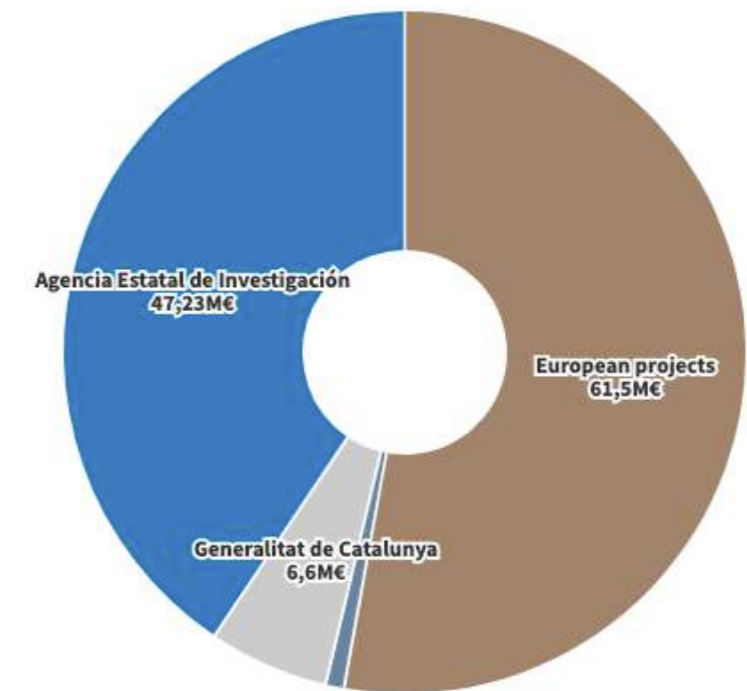


For more details on the RDI activity in innovation and valorisation, see the [2021 Report of the Innovation Management Service](#).

Economic management

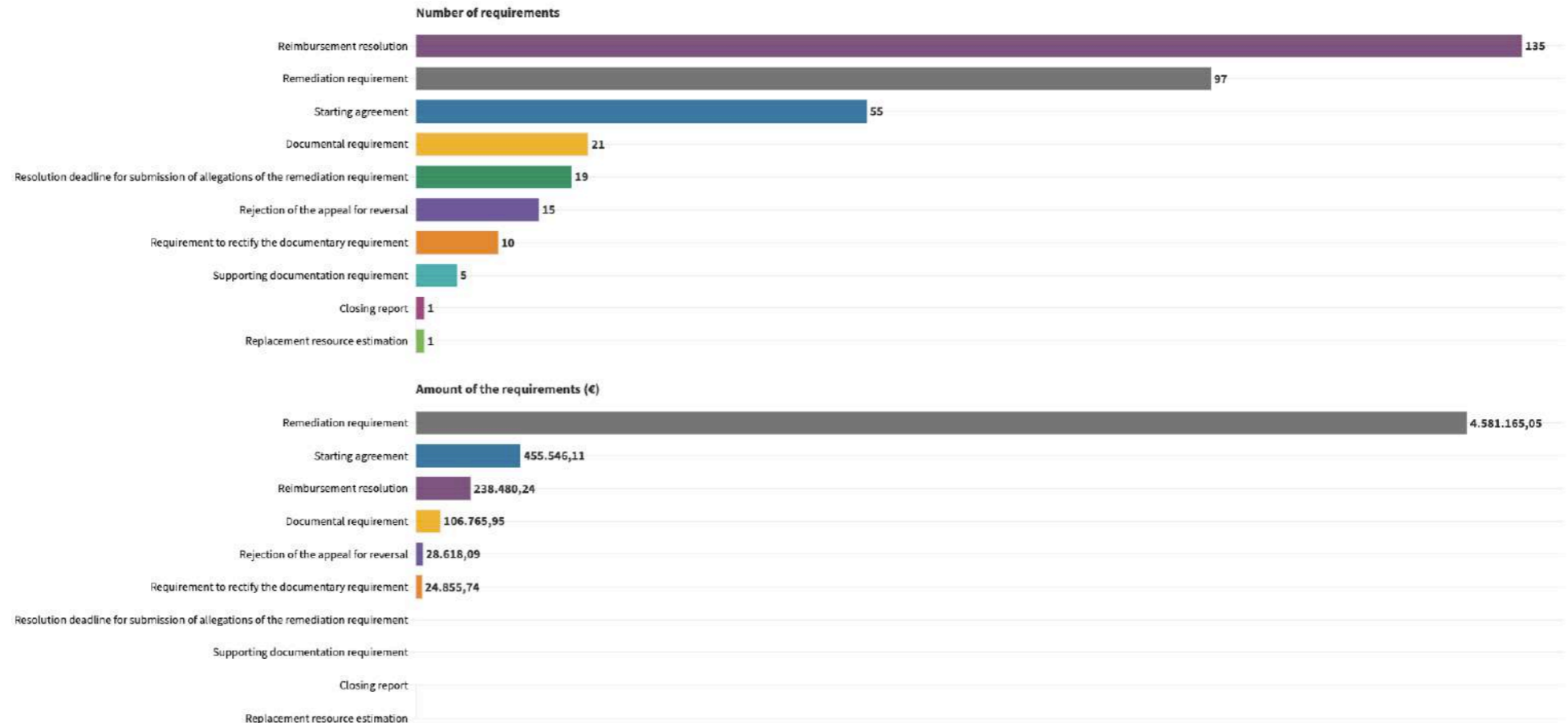
+ Justification of research projects

- A total of **€116,356,964.08** were justified, from **596 research projects**.
- The **156 European projects** represented €61,503,943.41 of the justifications, more than half.
- Of **440 national projects**, which accounted for €54,853,020.67 of the justifications, the majority were from the State Research Agency, with 375 research projects with a justified value of €47,234,097.12.



+ Requirements of funding agencies

- In 2021, a total of **359 requests** were answered for a total amount of **€5,435,431.18**.

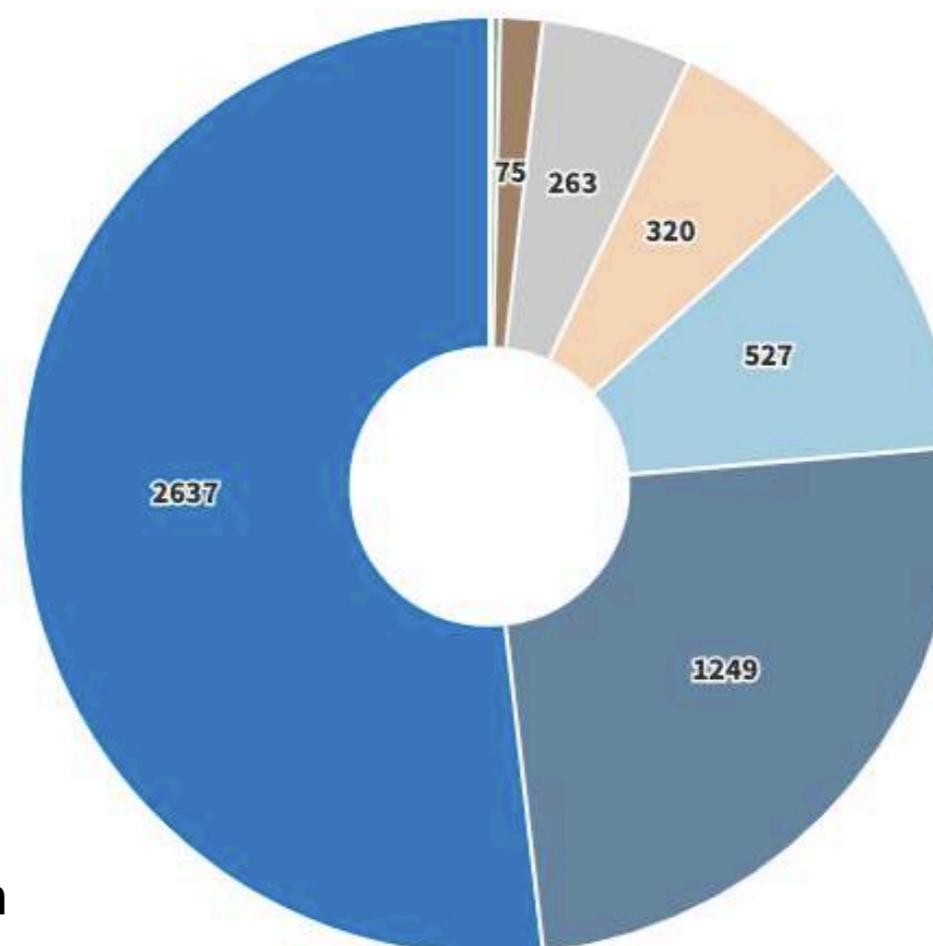


Scientific output

+ Publications

- The UPC's teaching and research staff produced a total of **5,089 publications** in 2021.

Journal article Book Presentation of work at congresses Book chapter Scientificotechnical document
 Doctoral thesis Edition of exhibition catalog Book of conference proceedings Exhibition catalog chapter



+ Research community

206

Research groups

3.459

Teaching and research staff

351

PhDs

2.038

PhD students

Relevant projects

Research excellence at the national and international level, creation of technology-based companies, participation in and coordination of large reference networks and the creation of the new Specific Hydrogen Research Centre.



International research projects

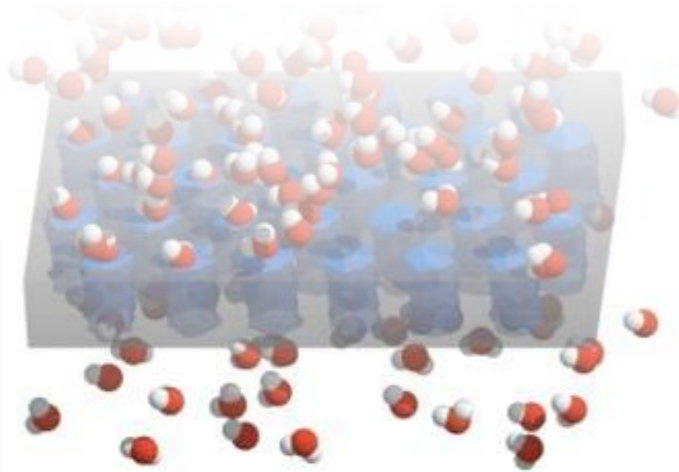
The UPC coordinates large research projects, environmental restoration and institutional alliances at an international level.

+ [EHAWEDRY](#)

Innovative conversion concept based on the combination of charging and discharging cycles of electrochemical supercapacitors with drying and wetting of their nanoporous electrodes.

UPC person in charge: **Dr Andriy Yaroshchuk**

Aid granted: **556 thousand euros**



+ [REST-COAST](#)

Restoring the coast and adapting it to the effects of climate change. A four-year action plan including projects in the Delta de l'Ebre, other Mediterranean places, the Baltic, the Black Sea and the North Sea.

UPC person in charge: **Dr Agustín Sánchez-Arcilla**

Aid granted: **2.36 million euros**



+ [UNITE!](#)

Addressing the future of the universities in the research and innovation alliance in Europe. Developing a common R&D agenda focusing on interdisciplinarity and multidisciplinary.

UPC person in charge: **Dr Juan Jesús Pérez**

Aid granted: **2 million euros**



Improving scientific and technical infrastructures

The State Research Agency (AEI) organises the call for applications to provide specialised and efficient scientific and technical equipment to improve the research services of RDI entities. The UPC obtained funding for four equipment applications for a total of 4.4 million euros.

+ High resolution electronic microscope

Acquisition of a new high-resolution multi-detector electron microscope

UPC person in charge: **Dr. José Maria Manero**

Management unit: **Diagonal - Besòs**

Aid granted: **1,5 million euros**

+ Three-dimensional lightning map

Renewal of eLMA sensors and other instruments to improve the coverage and accuracy of lightning location.

UPC person in charge: **Dr. Joan Montanyà**

Management unit: **Terrassa**

Aid granted: **985 thousand euros**

+ Optical and photonic devices (PHOTON-FAB)

UPC person in charge: **Dr. Santiago Royo**

Management unit: **Terrassa**

Aid granted: **750 thousand euros**

+ LATEM 4.0

UPC person in charge: **Dr. Luca Pelà**

Management unit: **Civil Engineering**

Aid granted: **1,2 million euros**



Cutting-edge research into the future of telecommunications

The UNICO 5G I+D grants are awarded by the Spanish Government from Next Generation Europe funds (Recovery, Transformation and Resilience Plan) to develop RDI actions in advanced 5G and 6G technologies and facilitate the digital and green transition of our economy.

+ OPTIMAIX

In order to design a 5G network test environment, OPTIMAIX will develop a digital network twin to support advanced 5G/6G service planning (NDT sub-project) integrated with a planning aid tool (OaaS sub-project).

UPC person in charge: **Dr Oriol Sallent**

Aid granted: **1.7 million euros**

+ TALENT 6G

To create an exciting training environment for young Spanish and international people with talent and motivation for the design of new architectures, systems, algorithms and applications to build the next-generation mobile communications system.

UPC person in charge: Dr Josep Vidal, with the EETAC and the ETSEB
Aid granted: **250 thousand euros**

+ TIMING

To develop a smart and efficient telecommunications infrastructure that meets the current and future needs of the industry. TIMING is divided into three sub-projects in order to achieve its objectives in a more precise way.

UPC person in charge: **Dr Luís Velasco**

Aid granted: **2.2 million euros**



Specific Hydrogen Research Centre of the UPC (CER-H2)

The [Specific Hydrogen Research Centre of the UPC \(CER-H2\)](#) brings together the activities of various university groups that research and develop hydrogen-related technology. CER-H2 was created with the aim of becoming an international reference centre and contributing to the advancement of knowledge in the field of hydrogen and making it viable as an energy vector.

We contributed to:

- Coordination between research groups.
- Writing the statutes in accordance with internal regulations.
- Construction of the webpage and the internal communication mechanisms.



A researcher from the NEMEN research group, running one of the devices in the Catalysis and Energy Laboratory

Support for the creation of technology-based companies

The UPC is a pioneer in the creation of technology-based companies as a result of the knowledge generated by its researchers. During 2021, two new companies were created with support from the RDI Area, which also gave support to other two companies created in 2020. Two more companies (Dracsys and Nimble) are scheduled to be incorporated in 2022.

+ [Bio2Coat, S.L.](#)

Food protection technology using a semi-permeable layer.

Polyfunctional Polymeric Materials (Poly2) research group of the UPC.



+ [Mapsi Photonics, S.L.](#)

Infrared optical components for spectroscopic sensing.

Micro and Nanotechnologies Research Group of the UPC.



+ [ProcessTalks, S.L.](#)

Improving business process modelling tools.

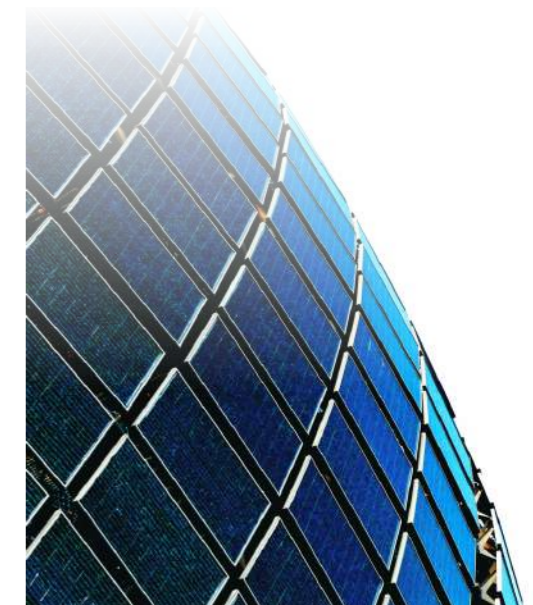
Departments of Computer Architecture and Computer Science and the FIB (Barcelona School of Informatics).



+ [Vitsolc Technologies S.L.](#)

Transparent photovoltaic modules for the automotive industry.

Organic Photovoltaic Nanostructures Group of the ICFO.



The fight against COVID-19 continues

The call for applications for grants PANDÈMIES 2020 of the Agency for Management of University and Research Grants recognised five [UPC projects to fight pandemics](#) in 2021. They will be developed within a maximum period of 18 months, and they propose new measures, models and lines of action that contribute to overcoming the consequences of pandemics and defining new preventive models of analysis and treatment. They represent a total funding of €560,000.

+ **DIVINE**

Identify the risk factors that affect the prognosis and the transitions between states (admission, ICU, medical discharge, death) that a patient hospitalised for COVID-19 may go through.

+ **Barcelona, fragile city**

Mapping the fragile city, an alternative map of the impact of the pandemic in Barcelona that can be superimposed on and compared to the conventional map.

+ **Drones against COVID-19**

Control of gauging in crowded events using drone technology as a suitable measure for its limited body and the possibility of flying at low altitude.

+ **ComMit-20**

Determining the impact of COVID-19 has led to energy consumption in buildings, as well as changes in usage patterns and environmental quality requirements.

+ **Resilient towns**

Resilient In pandemics, through the nexus of local agriculture, energy, water and waste. From the pilot project to the town.



Reference networks

The UPC coordinates three of the seven reference networks for RDI of the Government of Catalonia. The networks aim to create a consortium of research groups and centres that respond to the needs of technology transfer and scientific development. The UPC participates in a total of [152 institutional RDI networks](#).

+ BlueNetCat

[Catalan Network for Blue Innovation](#)

Contact point for the entire blue economy sector in Catalonia, both public and private, to transfer knowledge.



+ XaFIR

[Fourth Industrial Revolution Network](#)

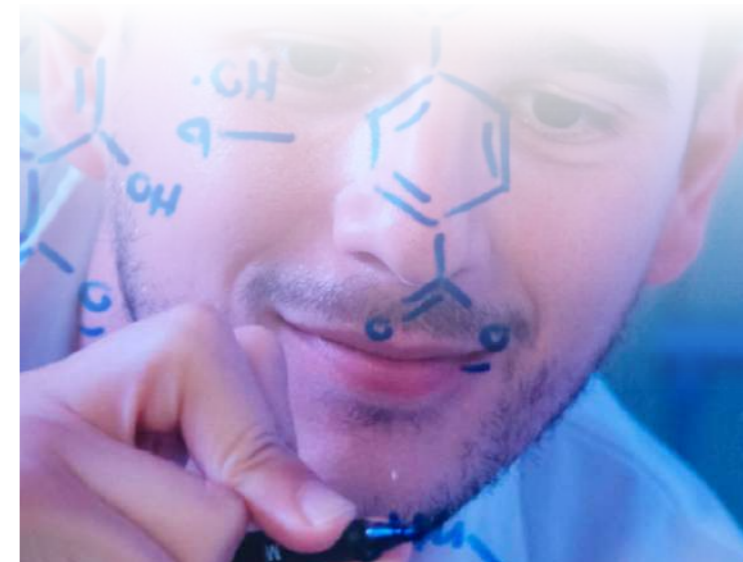
It brings together the most important actors in research and development in the field of Industry 4.0 in Catalonia.



+ XarTEC SALUT

[RDI network in Health Technologies](#)

47 research groups from 17 institutions. It aims to be a catalyst for RDI in the field of health technology.



Communication

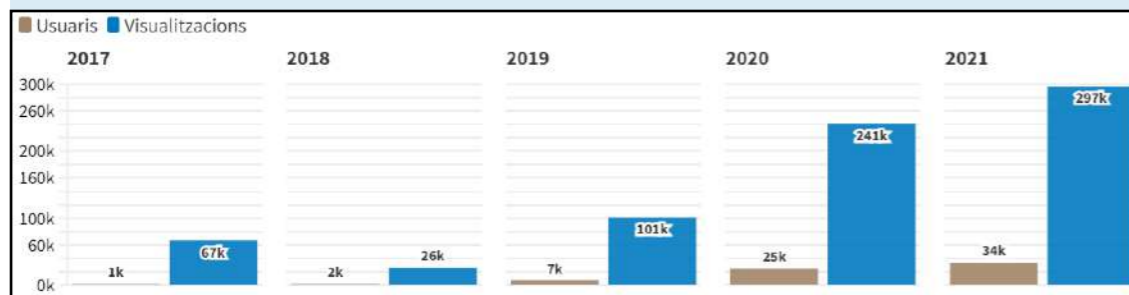
We continued disseminating our activity by addressing the various groups in the quadruple helix:

- Administration
- Citizens
- Companies
- Universities



RDI Area Website

In 2021, RDI staff created a great deal of content on the [RDI Area website](#). Our research and innovation specialists regularly shared up-to-date information on calls (especially in the [Observatory of Funding Opportunities](#)), research regulations, resources and project guides, as well as RDI management tools.



RDI projects communication tool

The [RDI projects communication tool](#) includes requirements and advice from funding agencies on project communication, as well as templates for the communication and dissemination section of proposals and also drafts of communication and dissemination plans for RDI projects.

Eina de comunicació de projectes

Consells, plantilles i recursos per a la comunicació efectiva dels vostres projectes de recerca, desenvolupament i innovació.

Continguts

- 0. Redactar la proposta
- 1. Preparar el pla de comunicació



@RDI_UPC Twitter

The [@RDI_UPC](#) Twitter profile was our main communication channel on social media. The number of followers doubled compared to 2020, exceeding 2,000 users. In 2021, 391 tweets were published and the profile received more than 20,000 visits.

UPC Citizen Science Portal

The [UPC Citizen Science Portal](#) was presented on 26 January 2021, at the event "50 years of Science with Consciousness". The Portal has brought together the research initiatives at the UPC that require citizen participation, such as Bosc i Sostenibilitat, Patí Científic, the OBSEA and the project Co-design and co-manufacture of solutions in the Raval.



50 anys de Ciència amb Consciència

L'aposta de la Ciència Oberta i Ciutadana a la UPC.
Reconeixements i Premis del Consell Social.

26 de gener de 2021

Media appearances

Among the various publications written by the RDI Area of the UPC in 2021, three articles stand out: one published in a high-impact digital medium and two published on the website of a major funding body:

- Publication in the El País newspaper of the article [¿Y si las politécnicas se aliaran con las pymes para liderar la I+D? \[What if polytechnic universities allied with SMEs to lead R&D?\]](#), in which we used the example of a small industrial and commercial cooling company to explain a strategic proposal with which, thanks to the Next Generation EU fund, the University could act as a catalyst for European investment in small and medium-sized enterprises.
- Articles on the website of the Ministry of Universities and Research of the Generalitat de Catalunya:
 - [XaFIR with 400 researchers to promote Industry 4.0 in Catalonia](#)
 - [The Diagonal-Besòs Campus of the Polytechnic University of Catalonia, a unique project of the FEDER 2014-2020](#)

RDI dissemination events

- 11 incubation seminars were organised and 15 more were co-organised with institutions such as the Association of Science and Technology Parks of Spain (APTE) and the Network of Science and Technology Parks of Catalonia (XPECAT).
- Webinars on national and international calls.
- The Energy Transition and Industry Study, prepared by UPC teaching and administrative staff, was presented.
- Participation in the closing of the Territorial Specialization and Competitiveness Project (PECT) for the Besòs coastline



EL PAÍS Educación SUSCRIBETE INICIAR SESION

¿Y si las politécnicas se aliaran con las pymes para liderar la I+D?

Los rectores de las cuatro universidades tecnológicas públicas explican cómo aumentar en gran medida las colaboraciones con pequeñas y medianas empresas

FRANCESC TORRES FRANCISCO JOSÉ MORA GUILLERMO CISNEROS BEATRIZ MIGUEL

17 MAR 2021 - 10:08 | Actualizado: 17 MAR 2021 - 10:18 CET

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Future

The year 2021 ended with great news for RDI at the UPC. In 2022, the actions carried out must be consolidated and the priorities that will guide our next steps must be established with a vision for the future.

Image of the European Space Agency's Vega rocket. The UPC incorporated the CubeCat-5 / A and 3Cat-5 / B CubeSats to study the polar regions and provide images of the Earth using artificial intelligence.

Source: Arianespace



Collaboration and coordination

An essential pillar in the action of the RDI management teams of our university lies in coordination and collaboration. It is necessary to extend these to all levels and move towards a service model that has the capacity to offer an agile, fast and flexible response to the various campuses and areas.

The coordination must not just take place between the services of the RDI Area itself, but also between them and other university services. We all work together to lead the University in a common direction, with an eye on the horizon of research, development and innovation that creates better contributions for science and society year after year.

"We all work together to lead the University in a common direction"

Lastly, collaboration with other socioeconomic actors involved in the RDI value chain must continue to grow. We need to promote mutual benefits and companies need to find a leading technology partner in the UPC's RDI services.

"Companies need to find a leading technology partner within the UPC's RDI services"

Competitiveness

In order to be more competitive in our proposals, we need to focus on the various areas of RDI. We need to encourage the participation of younger researchers and to improve aspects as important as impact, innovation and the management of research data.

We want to intensify the UPC's participation in calls for excellent research. Therefore, it will be necessary to train researchers and to improve the interrelation of knowledge between the UPC and the socioeconomic agents of the territory.

"Improve the interrelation of knowledge between UPC and the socioeconomic agents of the territory"

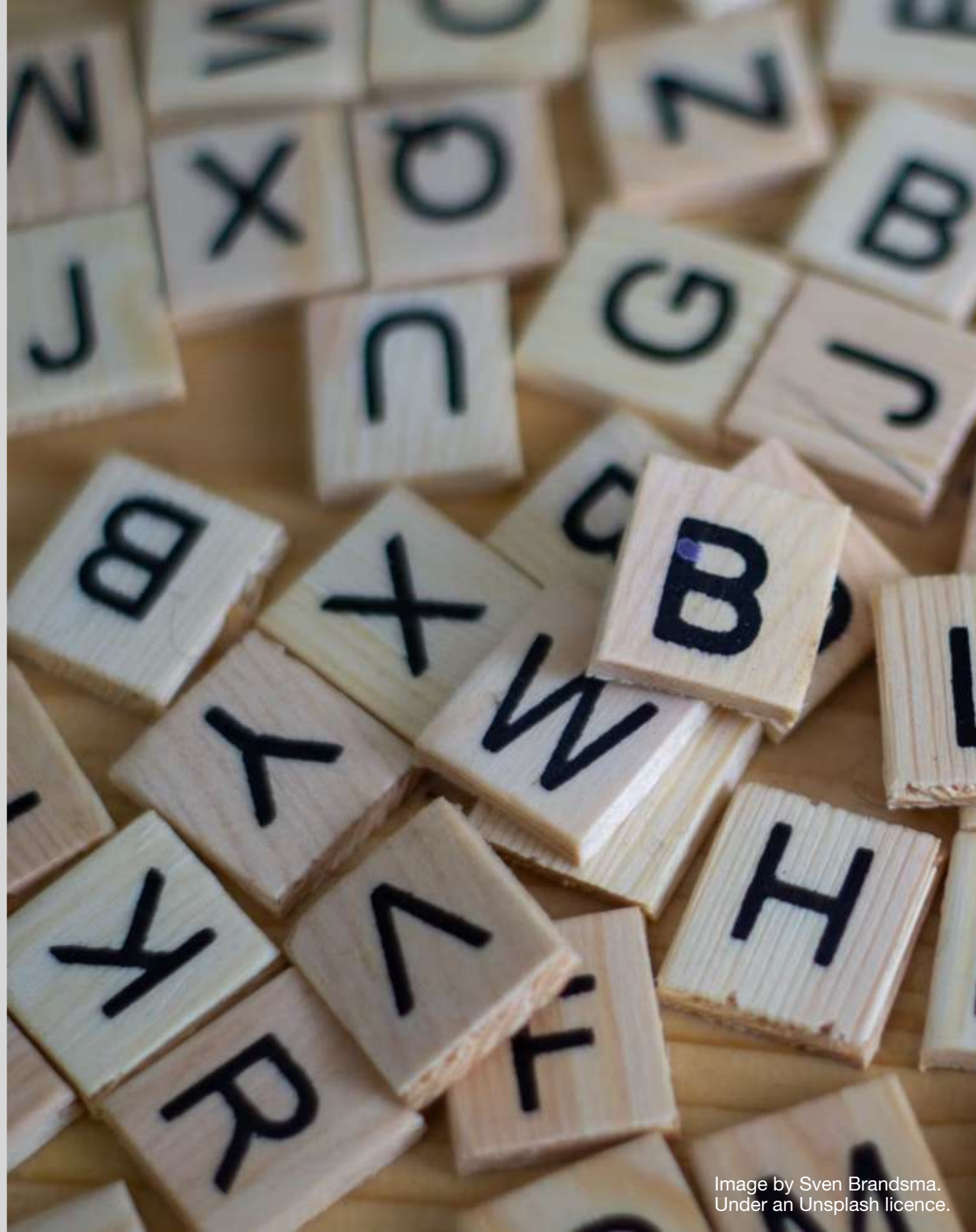
Visibility

Finally, RDI management services must give more visibility to their activity, both inside and outside the University. Our message generates valuable exchanges with society and the academic community, which enrich our services and bring us closer to our targets.

"Our message generates valuable exchanges"

Glossary

Acronyms and jargon
to better
understand the
vocabulary used by research,
development and innovation
teams at the UPC.



Back office

Sections of the company or organism that don't work on the client side, as opposed to the front office.

Contest

Open competition among several people or institutions that are in equal conditions to choose the better one(s).

Call

Open presentation of proposals that need funding for executing a project.

Front office

Sections of the company or organism that work on the client side, as opposed to the back office.

Licence agreement

Contract by which the licensee receives from the licensor, in exchange for financial compensation, the authorization to exercise the right of use over their assets, usually of a non-tangible or intellectual nature.

LRE

Acronym of Linked Research Entities. UPC's LRE are:

- [Barcelona Supercomputing Center](#) (BSC)
- [Water Technology Center](#) (CETAQUA)
- [International Coastal Resources Research Center](#) (CIIRC)
- [International Center for Numerical Methods in Engineering](#) (CIMNE)
- [Center for Research in Economics and Agri-Food Development](#) (CREDA)
- [Mathematical Research Center](#) (CRM)
- [Telecommunications Technology Center of Catalonia](#) (CTTC)
- [Technological Center of Catalonia](#) (Eurecat)
- [Miquel Agustí Foundation](#) (FMA)
- [Catalan Internet Research Center](#) (i2Cat)
- [Institute for Bioengineering of Catalonia](#) (IBEC)
- [Institute of Photonic Sciences](#) (ICFO)
- [Institute of Space Sciences of Catalonia](#) (IEEC)
- [Energy Research Institute of Catalonia](#) (IREC)

Patent

It is a title that recognizes the right to exploit the patented invention exclusively, preventing others from its manufacture, sale or use without the consent of the holder during its period of validity.

PCT

Patent Cooperation Treaty.

Pre-award/post-award project stage

Stages before and after the concession.

Quadruple helix

Administration, citizens, companies and universities.

Reskilling

Professional retraining of workers by updating their knowledge of the field.

Royalty

Financial consideration paid by the licensee to the licensor for the exercise of the right of use and commercial exploitation on a patent, software or knowledge, owned by the licensor. It is calculated as a

percentage of the turnover that the licensee has obtained from the exploitation of the licensed industrial and intellectual property rights.

Spin-off

A new entity created from within an institution.

Start-up

A company that comes up with an innovative idea but does not do so from within any institution.

TBC

Technology-based company.

Tender

Procedure for awarding a service to the one who offers the best price.

Upskilling

Professional training that workers need in other subjects to do their job in a better or more updated way.

Research, Development and Innovation Area



[@RDI UPC](#)



[Recerca, Desenvolupament i Innovació UPC](#)



[rdi.upc.edu](#)



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