Research and innovation in the EU

The Institute for Advanced Architecture of Catalonia collaborates with and coordinates European projects that have received European Union funding from the **Horizon 2020**, **Creative Europe** and **Erasmus+** research programmes. Since its creation until today, the IAAC is part of **15 European consortiums** that have developed initiatives and innovations in the framework of architecture, urbanism, intelligent cities and citizen empowerment through technology. IAAC currently manages approximately **4 million euros** out of a total of **57 million euros** earmarked to finance the **15 projects**.

The total network of IAAC partners in European research consortia is almost 100, with 94 partners from EU countries. These collaborators include academic institutions, companies and associations of great relevance for their innovative contribution within the framework of the Europe 2020 Strategy which foresees intelligent and sustainable growth through the development of knowledge, innovation, social cohesion and competitiveness. Examples include the **Joint Research Center of the European Commission (JRC), Sony Europe, Centre Nationale de la Recherche Scientifique (CNRS), Food and Agriculture Organization of the United Nations (FAO), University College London (UCL), Humboldt Universität zu Berlin, University College Dublin (UCD)** and the **École Nationale Supérieure Architecture de Montpellier (ENSAM)**.

Horizon 2020

URBiNAT (Ongoing)

URBiNAT focuses on the regeneration and integration of disadvantaged neighbourhoods into urban development through innovative solutions based on nature. An inclusive urban nature that guarantees sustainability and mobilises the driving forces for social cohesion. The consortium brings together seven European cities that act as living laboratories, in which ecological, cultural, social and economic impacts will be evaluated.

Robotics for Microfarms - ROMI (Ongoing)

ROMI is developing an open, lightweight robotic platform for micro-farms. The aim of these projects is to help these farms in weed reduction and crop monitoring, and will reduce manual labor and increase productivity. Thanks to the ROMI robot, farmers will save 25% of their time on agricultural tasks. This technology also acquires detailed information about the sample plants and is combined with a remote-controlled drone to get more global information about the crop.

DSISCALE (Ongoing)

The DSISCALE project supports policy makers, digital social innovation (DSI) practitioners and collective awareness platforms (CAPs) to harness the potential of open data hardware in Europe. Building on existing initiatives, such as www.digitalsocial.eu, and with the aim of addressing some of the major societal challenges, it will develop Europe-wide innovation clusters focusing on collaboration and learning.

DO IT (Ongoing)

The DOIT project contributes to youth employment and the creation of new jobs in the social economy by encouraging active social innovation among young learners: entrepreneurial mindset, technical knowledge and digital skills. The project trains primary and secondary school pupils (aged 6-16) together with educators to apply open innovation methods, digital tools and collaborative skills in order to address social problems.

iScape (Ongoing)

The iSCAPE project integrates and promotes the monitoring of air quality and carbon emissions in European cities in the context of climate change. By developing sustainable and passive strategies to provide solutions to air pollution, the project proposes policy interventions and behaviour change initiatives.

Grow Observatory (Ongoing)

The GROW Observatory (GROW) creates a sustainable citizen platform and community to generate, share and use information on land, soil and water resources. The vision is to support intelligent and sustainable conservation of land and soil, while meeting the

demands of food production, and to respond to a long-term challenge to space science, namely the validation of soil moisture detection from satellites.

Innochain (Ongoing)

The InnoChain Network is a shared research training environment that examines how advances in digital design tools challenge construction. The goal of the network is to enable more sustainable, more informed and materially smarter design solutions and to train a new generation of interdisciplinary researchers with a strong industry focus who can make real changes in the way we think, design and build our physical environment.

OrganiCity (Ongoing)

OrganiCity pursues a European vision of digital cities focusing on citizens as the main architects of the creation of innovative and sustainable urban services. Three cities participate in the project and are recognised for their initiatives in using digital solutions in the urban environment (Santander, London and Aarhus). The consortium that composes OrganiCity develops in each participating city experimentation tests focused on the citizen, as well as technological tools that allow the co-creation of new services.

Making Sense (Completed)

Making Sense is a project that shows how open source software and hardware, digital manufacturing and open design can be used by local communities. In this way, citizens can appropriate their own technological detection tools, make sense of their environments and address urgent environmental problems in air, water, soil and sound pollution. To achieve this, the project will develop a Making Sense toolkit based on the Smart Citizen platform developed at Fab Lab Barcelona.

MAKE IT (Ongoing)

MAKE-IT studies communities of creators, through ten different case studies and innovative action research, to improve Collective Awareness Platforms (CAPS). CAPs support communities and networks of manufacturers to innovate, design and manufacture physical products based on collaboration and exchange. MAKE-IT drives the organization and governance of communities, their activities and their economic and social value and impact.

TCBL (Ongoing)

TCBL uses the European textile industry as a test bed for evolutionary co-design, dynamic optimisation and deployment of business models. Its objective is to increase the performance of a sector affected by global competitive pressure. TCBL provides a framework for business experimentation to explore variations in strategies linked to costs, products and services, and productivity. To this end, the project envisages the creation of a network of design, manufacturing and local business laboratories.

Creative Europe

Distributed Market Design Platform (Ongoing)

The main objective of this platform is to foster the development and recognition of the emerging European culture of Maker and Design. This supports the mobility of European creators and their works, improves the connections between creators, designers and the market and stimulates and develops a genuine European scale programming of creative activities in order to contribute to the development of Maker culture in the EU.

Active Public Space (Completed)

IAAC coordinates this European initiative which analyses the public spaces of European cities and how advanced technologies can contribute to their dynamisation. With the aim of contributing to social and urban cohesion, the development of architectural heritage and the protection of these spaces, solutions to the challenges of cities are proposed through an approach based on sustainable urban development, advanced architecture and intelligent technologies.

Made@EU (Completed)

IAAC was the coordinator of this project that promotes and disseminates 3D printing and scanning technologies as engines of innovation and development for creative sectors. Made@EU aims to reduce the "digital divide" that currently hampers the use of 3D printing and scanning technologies.

Erasmus +

KAAU (Ongoing)

IAAC coordinates the Knowledge Alliance of Advanced Urbanism (KAAU), aims to radically change the way we describe, understand and design cities by developing an education and training platform, together with academia and industry partners, challenging many fundamental assumptions of the city design and planning professions.