Awards ceremony

ENAIRE invests in Open Innovation

- ENAIRE rewards business ideas and technological challenges involving air traffic management through a new edition of the Open Innovation programme of its R&D subsidiary, CRIDA

- The idea to introduce air navigation to the youngest audience, *AirEmpires: Sky Management*, won the Business Ideas Competition, worth 10,000 euros

- The Machine Learning and Quantum Computing Group at the Autonomous University of Madrid have won the Technological Challenges Competition, earning them an 18-month research contract and 60,000 euros

- Enrique Maurer, CEO: "By presenting these awards, we are consolidating ENAIRE's decision to invest in open innovation for yet another year"

Madrid, 10 July 2024

Yesterday, ENAIRE, the national air navigation service provider, presented the awards for the second edition of its Business Ideas Competition and the third edition of the Technological Challenges Competition. Both were managed through the Open Innovation programme of CRIDA, its research, development and innovation (R&D) subsidiary.

The second edition of the Business Ideas Competition incubated five shortlisted ideas, with the winner being *AirEmpires: Sky Management*, a real-time strategy game available on the website that merges air traffic management with construction and expansion, *Age of Empires* style, and whose goal is to introduce the air navigation system to the youngest audience.

The winner of the third edition of the Technological Challenges Competition was the Machine Learning and Quantum Computing Group at the Autonomous University of Madrid, with their *Quantum Reservoir Computing* solution, which addresses the challenge of exploring how quantum computing can transform the ability to analyse multiple operational scenarios simultaneously and efficiently.

ENAIRE, as part of its commitment to a strategy of open innovation, has launched several initiatives through CRIDA to progressively attract innovative talent and create an ecosystem around air traffic management: Business Ideas Competition, Technological Challenges Competition and Acceleration Competition (startup accelerator). These competitions seek to capture ideas and solutions at different stages of maturity.

At the award ceremony, Enrique Maurer, ENAIRE's CEO, said: "By presenting these awards, we are consolidating ENAIRE's decision to invest in open innovation yet again this year, an initiative through which we seek to find ideas and potential businesses to improve the service that ENAIRE provides to society".

Business Ideas Competition

The aim of the Business Ideas competition is to bolster entrepreneurship and help transform business ideas into real solutions.

Intended for undergraduates, doctoral students, professors or future entrepreneurs, the competition played out over two phases. During the first phase, five ideas were short-listed to undergo a three-month of incubation period to mature their business plan, with the idea with the best business plan being selected in the second phase.

The winner in the second phase was *AirEmpires: Sky Management*, a real-time strategy game that can be played on the website that combines air traffic management with construction and expansion, *Age of Empires* style, in an effort to disseminate the air navigation system to the youngest audience. Francisco Javier Rodríguez Martínez, Lorena Otero Cerdeira, Rubén Fernández Boullón, Manuel Alonso Carracedo and Antonio Adrián González Pedrouzo were the creators of the winning idea, for which they received a

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prize worth 10,000 euros. Over the last three months of the incubation, they were guided in weekly sessions by several mentors appointed by ENAIRE.

Technological Challenges Competition

The aim of the Technological Challenges competition is to find medium- and long-term solutions to technological challenges in the field of air transport by using technologies from other areas.

The contest proved to be very popular, receiving nearly 30 proposals from prestigious universities, research centres and private companies.

The winner was the Machine Learning and Quantum Computing group at the Autonomous University of Madrid, with their solution "*Quantum Reservoir Computing*: a tool to improve air traffic", which addresses the challenge of exploring the quantum frontier to redefine efficiency in planning European airspace resources.

They propose using the recent *Machine Learning* technique known as *Reservoir Computing* (RC), which relies on using a recursive neural network in the middle layer to apply it to the prediction of air traffic, especially by anticipating crises and detecting the factors that affect it in real time.

Florentino Borondo Rodríguez, professor of Quantum Chemistry at the Autonomous University of Madrid, leads the team made up of Javier Borondo Benito, professor of Data Science at the Universidad Pontificia de Comillas-ICAI and CEO of the startup *Agrowingdata*, and Mar Grande Toledano, a professor at the UTAD University (Madrid) and a senior scientist at *Agrowingdata*.

Their participation demonstrates the commitment and experience of this university to the search for cutting-edge solutions. The prize consists of an 18-month research agreement and a financial reward of 60,000 euros.

About CRIDA

CRIDA A.I.E. is a non-profit group set up by ENAIRE, the Polytechnic University of Madrid (UPM) and Ingeniería y Economía del Transporte, S.A. (INECO).

Its mission is to improve the efficiency and performance of Spain's air traffic management system by developing R&D ideas and projects that provide quantifiable solutions through system performance indicators, while considering the Spanish system as an integral part of a global system.

To do this, it must analyse the system's benefits quantitatively and systematically, diagnose problems and identify their causes, propose and design innovative alternatives, identify and validate the optimal alternatives, and actively collaborate in the process of implementing the selected solution.

The system must be analysed in direct collaboration with ENAIRE, as the main partner, thereby contributing to its mission of providing air navigation services safely while ensuring quality, efficiency and respect for the environment.

About ENAIRE

ENAIRE is the air navigation service provider in Spain.

As a company of the Ministry of Sustainable Transport and Mobility, it provides en route control services for all flights and overflights from five control centres in Madrid, Barcelona, Seville, Gran Canaria and Palma, as well as approach services to every airport in the country.

In addition, 46 airports receive communication, navigation and surveillance services from ENAIRE, which also maintains their air traffic control systems, and 21 of them, including the country's busiest airports, rely on its aerodrome air traffic control services.

ENAIRE is Europe's fourth largest air traffic manager and participates in the A6 Alliance, a coalition of air navigation providers responsible for over 80% of European air traffic, and which is seeking to modernise the air traffic management system. It is also a member of other international alliances promoting the Single European sky, such as SESAR Joint Undertaking, SESAR Deployment Manager, iTEC, CANSO and ICAO.

ENAIRE, as the responsible agency identified by the Ministry of Sustainable Transport and Mobility to implement the U-Space system in Spain, will, through its digital platform, provide the Common Information Services (CIS),

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which are essential to facilitate U-space services to drones and Urban Air Mobility in cooperation with local air traffic services, so that all types of aircraft can fly safely in the same airspace.

ENAIRE has received the highest score in Europe on the aviation safety key performance indicator for four years in a row. It has also been awarded the EFQM 500 Seal for its safe, efficient, innovative and sustainable management of air navigation services.

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