

## **INDRA IMPROVES EVACUATION MANAGEMENT IN LARGE INFRASTRUCTURES**

- **It reduces evacuation times by 23% in the first pilot of eVacuate -a European R&D&I project led by the company from the technical perspective- deployed last October in the Anoeta soccer stadium (San Sebastián)**
- **The company successfully applies its know-how on security and emergency management together with the use of Internet of Things and Big Data in the development of a comprehensive system capable of proposing, in real time, the safest alternatives for citizens in spaces like airports, stations or sport arenas**
- **The combination of iSAFETY -the Indra emergency management platform- and FEEP IoT&Big Data Platform Sofia2 -the solution by Minsait, Indra's digital transformation unit- comprises the basis for this pilot, facilitating the integration of all systems, the elaboration and sending of procedural rules to different connected devices, and the management of the evacuations' life cycle**

**Madrid, December 12, 2016.-** The solutions developed within the framework of eVacuate, an ambitious European R&D&I project under the technical leadership of Indra, has managed to reduce evacuation times by 23% in the project's first pilot, deployed last October in the Anoeta soccer stadium in San Sebastián.

The purpose of this project, which will come to an end next May, is to develop a comprehensive platform based on simulation and emergency management systems and Internet of Things and Big Data technologies to define, in real time, optimal routes for evacuation from large infrastructures, like subway stations, airports or sports arenas, among others, therefore improving security for citizens.

The technological platform that is the basis for eVacuate has been developed as of FEEP IoT&Big Data Platform Sofia2 (<http://sofia2.com>), the solution with real-time interoperability capabilities, Big Data and deployment in the Cloud of Minsait -Indra's digital transformation unit- upon which the necessary adaptations have been implemented for use in such a demanding environment and for its integrated operation with iSAFETY, the solution for comprehensive emergency management developed by the company.

A total of 120 volunteers participated last October 22 in the pilot, with the goal of defining, in real time, the ideal evacuation routes for mass concentrations of people, as occurs during a soccer game at the stadium of the Real Sociedad team. To achieve this, a large number of fans were brought together, and accessed the stadium through door 27 to be seated in the grandstand bleachers. Then, they followed the instructions of the operators and experienced, *in situ*, up to four types of evacuations under different circumstances. The announcements over the PA system, the opening of doors and the emergency situations varied for the purpose of creating four completely different cases. The results obtained in the various exercises proved that evacuation times were reduced by 23%, in relation to evacuation times without using the platform.

### **An "integrating brain"**

FEEP IoT&Big Data Platform Sofia2 facilitated the integration of the systems comprising the project in different areas: sensors for gathering data and generating alerts (for example, environmental sensors, analysis of multitudes for detecting unusual behavior or low-cost RIFD in tickets for the recount process, actuators for transmitting information to the public and security personnel and, finally, the COP (Common Operational Picture) visor located at the control center.

The COP, for which a 3D model of the pilot has been developed, displays the status of the facilities by presenting alerts and messages, real-time prediction of the required evacuation in accordance with the scenario's conditions and saturation, as well as the optimal route to be followed from each point.

The Minsait solution is considered the project's "integrating brain", given its capacity for managing large data volumes, establishing decision-making rules for action depending on different inputs and environmental conditions, and sending these to different connected devices.

The main contributions of the project include the development of new technologies for knowing the infrastructure's situation in real time, the presentation to operators of 3D data with a clear vision of what's happening at all times, and the possibility of having instant predictions of evacuation times and routes to detect the affected areas in the event of an emergency.

Likewise, the pilot also served to display different and innovative channels destined for the communication of evacuation-related messages. In the case of adaptive signals and multimedia that change according to the status of the evacuation and the route to be followed, apps for mobile devices or the sending of SMS using a MobiMesh platform. Furthermore, the demonstration also included other already existing resources, such as screens, PA systems and Building Management Systems.

The eVacuate project, with a budget of €13 million and a four-year execution period, will end next May, and counts with financing by the Research Executive Agency of the European Commission as part of the 7th Framework Programme for Research & Innovation. It is coordinated by the Greek company Exodus and counts with the participation, in addition to Indra, of diverse companies, like IK4-Tekniker (Spain), Diginext (France), Crowd Dynamics (United Kingdom), Telecom Italia (Italy), Vitrociset (Italy), Telesto (Greece) and HKV (Netherlands) and the Universities of Southampton (United Kingdom), Dresden (Germany), Chemnitz (Germany), Athens (Greece), Lovaina (Belgium) and Turin (Italy).

It includes the implementation of four pilots, of which the first has been completed in Anoeta. The airport of Athens, the Metro of Bilbao and a vessel of the STX cruiseship company on the French coast will be the upcoming scenarios at which project partners will carry out different exercises for evaluating the technologies developed.

### **Digital solutions for the cities of the future**

Indra combines in this project its broad experience in the development and implementation of systems for the comprehensive management of emergency situations and security-related incidents in cities with its commitment to developing new digital solutions that generate new business models through the application of new technological paradigms: Internet of Things, BigData, Cloud and Mobility.

The company has developed and implemented smart solutions that integrate the systems with different security forces through a single urban command and control center. These solutions have considerably reduced response times during incidents and increased security levels. Important smart security references include CEMELPA (Las Palmas de Gran Canaria Emergency Center), CISEM (Madrid Integrated Security and Emergency Center) and CUCC (Centralized Coordination and Control Center) in Buenos Aires. Mid-sized city councils and the 091 service rooms of Spain's National Police Department have also adopted it.

In addition, FEET IoT&Big Data Platform Sofia2, one of several products developed by Minsait, Indra's digital transformation unit, has driven the development of high value-added solutions for successful projects in fields such as Smart Cities (La Coruña urban platform) or Smart Health. Likewise, it has received the 2016 Open Digital Ecosystem Platform of the Year Award. Currently, FEET IoT&BigData Sofia2 is being used in fields like home automation, industry and retail, through solutions like Connected Home, Smart Cities and Industry 4.0, as well as others specific to the world of energy efficiency and sustainability of infrastructures.

### **About Indra**

Indra is one of the main global consulting and technology companies and the technological partner for the key operations of its clients' businesses throughout the world. It offers a comprehensive range of proprietary solutions and cutting-edge services with optimal technological capabilities, supported by a corporate culture

of reliability, flexibility and adaptation to customer requirements. Indra is a world leader in the development of comprehensive technology solutions in fields such as Defense & Security, Transport & Traffic, Energy and Industry, Telecommunications & Media, Financial Services and Public Administrations & Healthcare. Through its Minsait unit, it addresses the challenges posed by digital transformation. In 2015 it reported revenues of 2.85 billion euros, employed 37,000 professionals, had a local presence in 46 countries, and executed projects in more than 140 countries.