Press Release

MALAGA, ZARAGOZA AND SANTANDER PARTICIPATE IN THE FIRST PILOTS OF THE *SMART CITIES* 2020 R&D&i PROJECT

- **The value of citizens as "sensors" is being tested in these cities through their use of infrastructures or social networks and by applying devices for monitoring the environment or parking spaces**

- **The objective of the CIUDAD 2020 project, which is led by Indra, is to develop a new, efficient and sustainable smart city model in which citizens play a central and active role**

- **The initial results of the project will be presented in Malaga at the Green Cities & Sustainability Fair and the Tikal Forum**

Malaga, Zaragoza and Santander are the first cities to join CIUDAD 2020, the R&D&i *smart cities* reference project that is led by Indra and includes the participation of the companies Ferrovial Agroman, Atos, Fagor Electrónica, GFI Informática, Fractalia, Daedalus, Tekia and iSOCO. The three cities are the scenario of the first developments and tests being undertaken in this project, which has the objective of developing a new, efficient and sustainable smart city model in which citizens play a central and active role.

One of the most innovative lines being worked on as part of the project is the concept of citizens as "sensors" that are capable of generating a large amount of data through their use of urban infrastructures (such as public transportation and car parks), mobile applications (which allow citizens to register incidents in a global platform) and social networks (that can be used to share user locations and multimedia content such as messages or photos).

For example, tests are being performed in Malaga and Zaragoza to locate the areas of each city with the most social activity and the points of interest in which to improve management processes using the information provided by social networks. Another aspect being tested is the creation of new services based on how residents use Twitter. By using the geo-positioning of messages and data mining algorithms, it is possible to identify the most active areas, and by analysing them together with the most common *hashtags*, routes, etc., the city's behaviour can be modelled. This study on social activity is performed with semantic message analysis by applying natural language processing techniques.

All of this information is incredibly valuable for city managers because it allows them to understand the preferences and opinions of residents, along with the polarity of the messages that are sent (very positive, positive, negative, very negative or neutral). This enables them to know the response to certain policies and actions in the city, and make decisions quickly.

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The information captured by the "citizen sensor" is integrated in CIUDAD 2020 with other more traditional sources for capturing data, such as wireless sensor networks (WSN).

Along these lines, a network of wireless nodes is being rolled out in the city of Santander in order to monitor environmental parameters (CO_2 or noise contamination levels, among others) that will make it possible to create innovative services (such as a contamination alert generation tool) based on prediction models. Work is also being done to roll out wireless monitoring networks in public buildings and spaces so as to improve the energy efficiency of these infrastructures and to promote the new energy efficiency regulation on a national level.

Smart mobility

In the field of urban mobility, CIUDAD 2020 is designing advanced services aimed at citizen needs and demands by integrating data from innovative sources, such as social networks, with the transportation data provided by the infrastructures themselves. The final objective of these efforts is to promote integrated urban transportation (intermodal) services in cities as well as a more efficient management of mobility through the intensive use of ICT (image processing techniques, data mining, etc.).

A number of pilots are already being rolled out in Santander, Malaga and Zaragoza in order to test these services and applications that promote a more sustainable and efficient concept of mobility. For example, a tool has been designed to calculate the best routes by combining different modes of public (bus, tram, public bicycle, etc.) and private transportation. A network of wireless sensors aimed at monitoring parking spaces is also being tested.

The new applications in the area of transport, energy and the environment, etc., that are being developed as part of CIUDAD 2020 will be offered to citizens within a reference framework that will act as an integrating element for new city services, in a personalised manner that is adapted to the profile of each citizen. In addition, depending on the various profiles, it will include recommendations from other services that may be of interest for improving citizen experiences in the city, such as personalised cultural calendars with all the events that match each profile.

Strong presence at the Green Cities & Sustainability Fair and the TIKAL Forum

The initial results of the CIUDAD 2020 project will be presented today and tomorrow in Malaga at the Green Cities & Sustainability Fair and the Tikal Forum.

The main lines of research will be presented during the fair's inauguration event at the *Smart Cities* round table, in which Indra will participate along with project representatives from Ferrovial Agroman, GFI Informática, Fagor Electrónica, Daedalus and Fractalia. The project also has an exhibit located in the central area of the Convention Centre.

The companies that represent the project will also participate in the TIKAL Forum, which is the first Latin American Technology, Innovation and Knowledge forum. It is held in parallel with the Green Cities & Sustainability Fair, and a large number of representatives from Latin American cities will present success cases in the field of *smart cities*. In this forum, CIUDAD 2020 participates in the round table of the inaugural conference, *Business Projects in the Area*

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of Smart Cities, where it will be explained how R&D&i initiatives like CIUDAD 2020 help drive innovative smart city solutions within companies.

Citizens, the central focus of CIUDAD 2020

The objective of the CIUDAD 2020 project is to develop a new smart city model that is ecologically and economically sustainable, in which the analysis of real citizen demands along with the communication opportunities offered by the Internet and the growing number of devices connected to the web, are the basis for offering public services that are adapted to user needs.

CIUDAD 2020 addresses the new model of *smart cities* that take advantage of the latest technologies from a multidisciplinary approach and is based on five fundamental pillars: the city connected to the Internet of the future; energy and efficiency; mobility and sustainable transportation through the application of intelligent transportation systems (ITS); environmental sustainability and well-being of citizens; and urban citizen behaviour and relationships with the city.

The project, with a €16.3 million budget, is one of the first research initiatives within the CDTI's INNPRONTA Programme. Indra, the top IT multinational in Spain and one of the leaders in Europe, is at the head of a consortium formed by the companies Ferrovial Agromán, Atos, Fagor Electrónica and GFI Informática, as well as the SMEs Fractalia, Daedalus, Tekia and iSOCO. The consortium also includes several research groups from the Universidad Politécnica de Madrid, Universidad de Alcalá de Henares, Universidad Carlos III, Universidad de Zaragoza, Universidad de Cantabria and Universidad de la Coruña, as well as the foundations Barcelona Digital and CI3 (Intelligent Infrastructure Innovation Centre).

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