

MOBILE WORLD CONGRESS 2018

Cellnex Telecom presents its connectivity solution for high-demand areas, paving the way for the roll-out of 5G in Europe

- The Mobile World Congress will take place between the 26th of February and 1st of March at Fira Barcelona
 - Cellnex Telecom will be present at stand CS64-Congress Square, between pavilions 4 and 5
 - Cellnex will present its multi-operator solution for the Wanda Metropolitano Stadium in Madrid, which provides high quality mobile broadband connectivity to spectators
 - Cellnex has a portfolio of more than 24,000 sites in Europe. It currently operates in six countries: Spain, Italy, Netherlands, France, the United Kingdom and Switzerland
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Barcelona, 13 February 2018. At this year's Mobile World Congress, the world's largest gathering for the mobile industry, Cellnex Telecom, Europe's leading wireless telecommunications infrastructure operator, will set out its positioning in the roll-out of 5G networks and showcase its significant presence in Europe.

The conference will take place from the 26th of February to the 1st of March at Fira Barcelona, and Cellnex will be present at **stand CS64-Congress Square**, between pavilions 4 and 5. The Company has participated in every edition of MWC over the past 12 years.

Cellnex designs, installs and manages infrastructures based on Small Cells and DAS (Distributed Antenna System) that allow all mobile operators to offer mobile broadband connectivity in areas with high footfall and equally high demands for coverage, such as football stadiums, shopping centres, underground lines and city centres.

Forecasts in Europe indicate that the five most populous countries in the European Union, which include Spain, are to roll out between 200,000 to 500,000 small cells up to 2020. In Spain, this figure will range from 30,000 to 75,000.

Cellnex connects the Wanda Metropolitano and prepares it for 5G

In July 2017, the new Atlético de Madrid stadium became the first multi-operator and multiband stadium in Spain. Cellnex rolled out a DAS (Distributed Antenna System), a network of shareable small-cells, at the stadium which allows all mobile operators to offer high-quality, high-capacity mobile broadband connectivity to all their customers.

The roll-out of this infrastructure in the football stadium improves user experience and avoids the outages in capacity and communication that usually occur in areas of high connectivity demand due to the large number of simultaneous users.

The Wanda Metropolitano stadium project is a flexible and neutral solution for voice and data operators operating in Spain. It is also scalable and therefore is prepared to respond to future demand for increased data traffic. Through a single shared network of antennas and equipment, Cellnex Telecom offers 2G, 3G and 4G coverage to all operators wishing to offer this real broadband and mobile service to their customers.

The individual infrastructure of each of the operators is received and managed in Cellnex's "Technical Room", which is responsible for distributing it via the network of small cells to offer full coverage in the infrastructure - stands, boxes, corridors - and the surrounding areas, providing supporters with effective connectivity before they enter the stadium.

To this end, Cellnex has installed more than 200 antennas, camouflaged in the stadium fittings and around 90 remote units, plus more than ten kilometres of optical fibre.

The solution model developed by Cellnex for the Club Atlético de Madrid is replicable to all facilities or areas with a high demand for connectivity, such as hospitals, shopping centres, office buildings or high footfall urban areas.

In this sector, Cellnex already offers this type of service in Milan's San Siro and Turin's Juventus football stadiums; the Milan, Genoa and Brescia underground; Milan Malpensa airport; high-speed tunnels; and Milan's historical centre.

Cellnex, leading 5G development in Europe

Cellnex is a benchmark in the development of 5G in Europe, as evidenced by its leading role in several European projects related to this technology:

5G-City: a project funded by the European Commission within the Horizon 2020 programme that aims to evaluate 5G technologies through very specific pilot projects in European cities such as Barcelona, Bristol and Lucca. The idea is to validate different usage cases provided by a neutral operator.

FLEXNET: a European Celtic-Plus project coordinated by Cellnex and funded by CDTI, oriented towards surveillance and emergencies, which will develop specific applications for border control, security of port areas and location of people, among others.

LEAN: a European Celtic-Plus project funded by the Ministry of Energy, Tourism and Digital Agenda that aims to use 5G technologies to define an architecture that is sufficiently flexible to be deployed under ultra-low cost requirements while simultaneously offering access to Broadband Internet in rural areas in emerging countries.

Veo5G: a project coordinated by Cellnex and funded by CDTI, which aims to provide the basis for a neutral operator or infrastructure provider to be able to supply their 5G infrastructure (access network, core

network, management, etc.) to third parties, to facilitate the creation of new instances of virtualised services to devices of neutral operators. Cellnex will perform technical demonstrations of the development of this project at the Mobile World Congress, in collaboration with the University of Vigo.

5GON: a project funded by the Generalitat de Catalunya to develop a 5G multi-operator solution for validating services in the Neutral Operator field.

RESISTO: a European H2020 project aiming to protect critical telecommunications infrastructures in terms of prevention, detection, mitigation and response. Cellnex leads the working group analysing security in future 5G networks with "advisory" support from the Spanish Civil Guard.

V2XArch: a project funded by the Ministry of Energy, Tourism and Digital Agenda for designing a complete autonomous connected vehicle platform, including a validation trial in the field.

Eskala 4.0: a project financed by the Basque Government that aims to analyse vehicle-to-vehicle and vehicle-to-infrastructure technologies in the airport environment.

Solare 2RF: a project funded by the Basque Government that aims to search for energy efficiency solutions in the company's telecommunications sites.

Smart/IoT solutions and latest advances in 4K

At Mobile World Congress, Cellnex will also hold various demonstrations of its range of solutions developed for the smart city environment, through its Internet of Things network, such as remote reading of meters, manhole covers or control of parking spaces.

In the audiovisual field, Cellnex is working to develop services and technical solutions around 4K and on this occasion will not only broadcast content through its test channel, but will also show HbbTV applications in the field of spectator interaction (voting, Start Over, etc.).

M4Social project with Third Sector organisations

Cellnex and the Third Social Sector Board of Catalonia are joining forces to present the development of the *m4Social* project at the Mobile World Capital (Congress Square, CS40). The project aims to equip social housing with sensors that collect data on energy consumption and efficiency. By monitoring the data, it will be possible to anticipate the response to possible risk situations and optimise the use of resources in these "connected" homes.

Under the agreement signed last December between Cellnex and the entities of the Third Sector of Catalonia, a total of six homes will be equipped for groups at risk of social exclusion, configuring an Internet of Things platform to monitor data and make it possible to take decisions quickly.

Representatives from Cellnex and the entities of the Third Social Sector Board will present the next steps to be taken in this project that facilitates the efficient use of resources and their sustainable management.

About Cellnex Telecom

Cellnex Telecom is Europe's leading operator of wireless telecommunications and broadcasting infrastructures with a total portfolio of more than 24,000 sites all over Europe. The company operates in six countries: Spain, Italy, Netherlands, France, the United Kingdom and Switzerland.

Cellnex structures its activities into four main areas: telecommunication infrastructures services; audio-visual broadcasting networks; security and emergency service networks and solutions for smart urban infrastructure and services management (smart cities and the "Internet of Things" (IoT)).

Cellnex is listed on the continuous market of the Spanish Stock Exchange and is part of the selective IBEX 35 and EuroStoxx 600 indexes. It is also part of the FTSE4GOOD and CDP (Carbon Disclosure Project) sustainability indexes and has recently been included in the Standard Ethics index.

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