



The Bimillenari bridge is a singular infrastructure in the city of Elche. Concluded in July 2000, it is an author's bridge whose project won an international competition. It is a 208m long suspension bridge with a 23m wide mixed deck.

It is a landmark of the city, but functionally its importance is even bigger. By overcoming the deep cut of the Vinalopó river, it becomes the union element of union and continuity of the northern part of the city. This bridge is part of a supra-municipal backbone that is used by more than 25,000 vehicles daily. Its strategic value from the road point of view is, therefore, evident, as it is obligatory to keep it in service or, in other words, any incident that prevents its normal operation must be immediately detected and resolved.

It is within this context that from the Elche City Council we had started researching solutions that helped improve the safety and mobility dynamics of the bridge, and in general, of our urban area. During this investigation, we came across METALESA's PLUG&META® solution. After some conversations, it was decided that this leading-edge technology, embedded into a new CE marked urban barrier, was the perfect solution to reach the city goal, to increase the safety and quality of use of this emblematic road for drivers and pedestrians with an intelligent parapet that provided active road safety.

The current safety barrier is passive in nature, that is, only in the event of an accident does it generate a physical response, always reactive. It is intended to replace this barrier with a new one that guarantees the containment of any vehicle and that also provides an interactive and rapid response.

The Elche City Council expects to achieve the following results with the execution of this project:

- Guarantee the safety of the occupants of the vehicle and vulnerable users (pedestrians, cyclists and others) who travel along the side pavements when there is a road exit:
 - Thanks to the placement of a parapet with CE marking in accordance with UNE EN 1317, and that has been tested with a 1,500kg vehicle at a speed of 80km/h, much higher than the speed allowed on the bridge.
 - Thanks to the minimal deformation of the barrier demonstrated in a full-scale test, W1.
- Minimize the number of incidents (accidents and run overs) on the viaduct and reduce their severity:
 - Thanks to its intelligent risk detection system (excessive speed, people in pedestrian crossings, signalling in certain busy time slots, signalling for maintenance work or sports events...).
 - Thanks to the integrated adaptive LED signalling that warns drivers and vulnerable users of these risks.
- Minimize the time in which incidents are resolved:
 - Thanks to its real time alert system to the authority when impacts against the parapet and other risk events.
- Collection of useful data for administration
 - Thanks to its continuous record of risk events that the council can evaluate to adopt better traffic control measures.



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- Thanks to its ability to measure data on air quality, temperature, humidity or user count.
- Advance social awareness in road safety regarding vulnerable users and the humanization of roads:
 - Thanks to an innovative project where the population of Elche will perceive a dynamic municipality that incorporates the best solutions and the latest technologies into its roads to improve quality and safety for all.

The Elche City Council and METALESA are proud to be working together on this pioneering project worldwide that will offer a modern and leadership image of the city, the company and the Valencian Community abroad.

We hope to be the best project in the *Urban Road Safety Award* category of the European *Excellence in Road Safety Awards*.

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