

Equipment for Smart Cities



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Sector: Electronics

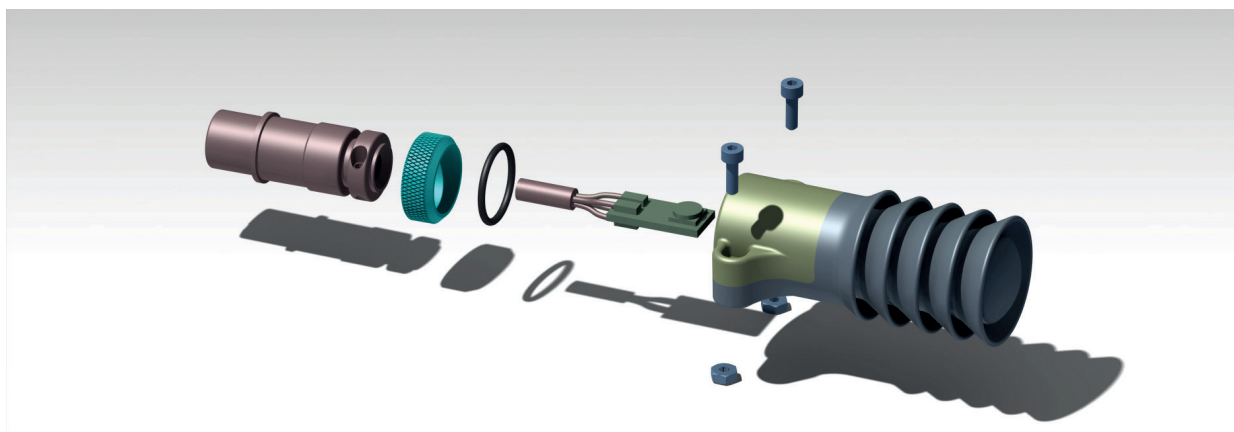
Challenge: Undo Prototipos together with Hop Ubiquitous have undertaken the objective of creating a equipment for enviromental analysis for Smart Cities

Solution: Using additive manufacturing technologies, the design, simulation, analysis and manufacture of functional equipment for housing outdoor enviromental sensors have been carried out.

CHALLENGE

The objective was to create a standalone equipment to measure the different environmental parameters in cities, controlling in real time different variables such as air quality, luminosity or ambient noise. For this, it was necessary to design a device that contained inside the electronics and the different sensors, allowing the

different data to be captured. These equipment's are installed outdoors so they suffer various environmental in clemencies. In addition, they are not equipment that will be manufactured in series, thus ruling out traditional manufacturing methods.



3D design of environmental sensors

SOLUTION

The manufacturing is framed in the Amable Project of the European Union and is initially proposed as the creation of a functional and developed equipment to be manufactured with additive manufacturing technologies. All the plastic parts that support the electronic components and allow air flow to the different sensors, are manufactured using 3D printing. Some of the pieces that are out in the open are treated to make them resistant to temperature, humidity and wear due to environmental conditions.

The design of the different pieces has been carried out taking into account their manufacturing method, so it has been possible to optimize the functionality, without limitations in terms of the geometry of the pieces or requirements of conventional manufacturing.

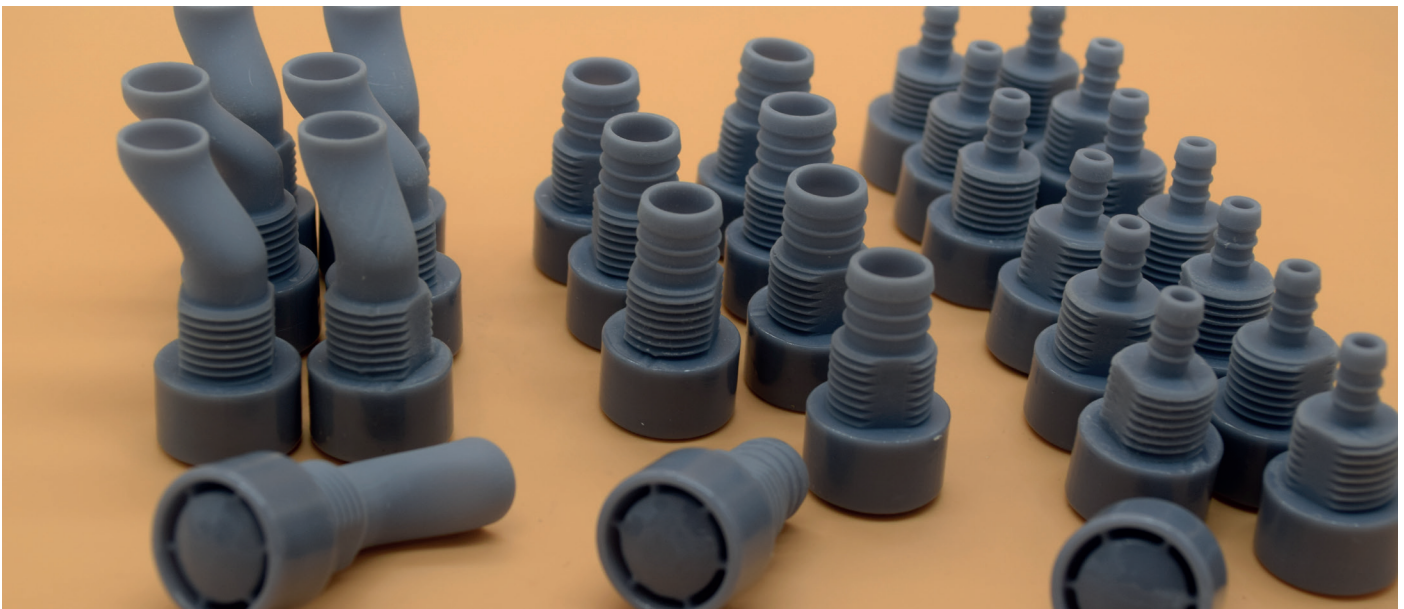


Sensor functionality test

ADVANTAGES

By using additive manufacturing techniques, the creation of tools or molds has been avoided, which entails significant savings since a large number of different plastic parts have been made. The freedom when it comes to designing the different pieces allows for more complex solutions to be sought without complicating their

manufacture. The installed equipment has demonstrated a perfect functioning of the sensors and internal electronics. With these equipments installed in cities, we will be able to have total control of environmental conditions and predict problems that would affect the health of citizens.



Additive Manufacturing