PROYECTO I+D+i

BUSINESS AREAS
Área Infraestructuras
COMSA, S.A.

DURATIÓN
2018-2020

BUDGET
369.632,27 €

KEYWORDS
Torres, SHM, Vibración, Monitorización, Estructuras, Frecuencia, Nodos, Mantenimiento, Predictivo

COORDINADOR
Guillermo Reyes

Title of the project

Remote inspection system for electrical and telecommunications towers based on an IoT platform

Acronym

NETTOWER

Content of the project

Project with file number RD17-1-0105, approved in the Nuclis Call for industrial research and experimental development framed in the RIS3CAT and in the PO FEDER of Catalonia from 2014 - 2020. Funded by the Agency for the Competitiveness of the Company ACCIÒ and co-financed by the European Regional Development Fund of the European Union within the framework of the ERDF Operational Program of Catalonia 2014-2020 through ERDF funds

General objectives

The general objective of the project is the development of a new system based on an IoT (Internet of Things) platform to assess autonomously, remotely and in real time, the structural integrity of electrical and telecommunications towers based on their vibrational behavior

Work Packages

Project management and coordination
Structural safety assessment by correlating the spectral vibration pattern.
Design of a system based on an IoT platform for the autonomous evaluation of structural integrity
Validation of the system in an electrical or telecommunications tower Analysis of requirements for certification

Results and conclusions

Several towers have been remotely monitored, with correlations discovered between numerous environmental conditions and the structural health of the structures. It has been discovered that there is a discernible variation in the inclination of the towers, which can be linked to both winds and temperature. The results were made available on a portal that allowed for easy data access. Despite the fact that the project still has to be modified and fed with more data, particularly considering potential damage, it has progressed to the point where it is not far from commercial feasibility.