IBM Newsroom

Autostrade per l'Italia and IBM Announce an Innovative Autostrade "IOT" Solution to Monitor and Manage Infrastructure in Real-Time Based on IBM Maximo

New solution integrates IBM artificial intelligence and will be deployed as a pilot by end of year with total coverage anticipated by 2020

ARMONK, N.Y., Dec. 4, 2019 /PRNewswire/ -- Autostrade per l'Italia (ASPI) today announced a new solution that integrates the latest IBM (NYSE: IBM) infrastructure monitoring and management technology designed to support operators in monitoring the condition of civil infrastructure, both in real-time and throughout the lifecycle of structures such as bridges, roads and tunnels.

The new digital platform will integrate inspection, structural monitoring and maintenance activities to allow for continuous monitoring of critical infrastructure. Mobile devices connected to the system will provide technicians who perform inspections with insights about the infrastructure they are managing, combined with access to project documentation that can help operators determine if and when maintenance should be performed. Automated workflow processes can be set up to track whether required activities have been successfully completed and required approvals have been given—allowing operators to manage the infrastructure and associated information in a shared and transparent way.

"Our intention is to create one of the most advanced infrastructure monitoring and maintenance systems in Europe, in line with the smart road principle defined by the Ministry of Transport," said Autostrade per l'Italia managing director Roberto Tomasi. "With the most advanced technologies—and the investment in research by our subsidiary Autostrade Tech—we aim to make efficiency and transparency the cornerstones to our mission of enhancing the security of critical infrastructure."

"We all know how important bridges, tunnels and roads are for the daily life of every citizen. Many of these structures have been built at different times and with different materials. That's why IBM has decided to invest and leverage its advanced Artificial Intelligence and IoT technologies to help Autostrade per l'Italia improve the way these structures are monitored and managed," said Enrico Cereda, CEO of IBM Italy. "Autostrade per l'Italia's industry expertise combined with IBM's experience and investment in technology and research can be used to help improve maintenance processes and infrastructure management activities, assisting with the management, maintenance and control of critical infrastructure."

The system combines 3D models of the monitored infrastructure with images taken in the field by technicians processed by AI, to classify which sections may require maintenance and suggest additional checks and physical inspections for the operator to evaluate.

The monitoring platform will communicate in real time with sensors installed on infrastructure, the number of which will grow progressively. This Internet of Things (IoT) technology will make it possible to create a centralized digital database containing all the regularly updated information on approximately 4,300 structures (bridges, viaducts, flyovers and tunnels) which are part of the network managed by ASPI.

The new system will be launched in Italy on a trial basis before the end of the year and will initially be tested on three viaducts: the Bisagno, on the A12 motorway in Liguria, the Romano and the Corvi, both on the A16

motorway in Puglia. The goal is for the technology to be implemented on all 1,943 major network structures by the end of 2020.

The second phase of the project, set to begin in mid-2020, is designed to support infrastructure maintenance activities—from design to operations, and from testing to execution—to flow through a single dashboard, giving operators a fully integrated view of activities.

The new ASPI system has been designed to immediately communicate with the "Ainop" database, the interface used by the Ministry of Infrastructure and Transport for monitoring the safety status of all Italian infrastructure. As part of this collaboration, IBM - including IBM Research - will develop the solution in accordance with Autostrade Tech's instructions, based on IBM Maximo Enterprise Asset Management and Maximo Asset Monitor.

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