

# DESIGN AND STRATEGY FOR THE MONITORING CENTER FOR BRIDGES AND INTELLIGENT STRUCTURES OF MEXICO

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## ABSTRACT

Modernization of the transport sector in Mexico requires new technologies to guarantee efficiently the highway infrastructure conservation. As part of this transformation, the National Program for Bridge Safety of the *Secretaría de Comunicaciones y Transportes* (SCT), considers the installation of a Monitoring Center for Bridges and Intelligent Structures (CMPEI).

This project includes the instrumentation for remote permanent monitoring of the most important bridges; but also, a representative sample of the most common bridges in the Mexican inventory to develop parametric models to evaluate load capacity and useful life in a bridge management system to administrate efficiently their conservation.

For the monitoring it has been proposed the use of permanent instrumentation based on fiber Bragg Grating sensors; a local system for data acquisition and storage; a wide band communications system to link the bridge to the CMPEI; and a central system for data storage, management and analysis. From operation different information and alarm levels are considered to inform and initiate specific actions with the different areas involved and according to specific situation.

**Keywords:** Bridges, Structural Health Monitoring, Remote Monitoring