Technology Systems Programme

23.) Intelligent Remote Health Monitoring for Bridge Systems

Structural Health monitoring is gaining importance, to assess the structural health and to ascertain the safety and integrity of major civil infrastructure. The project aims at the development of state-of-the-art technology in structural health monitoring application, involving multidisciplinary approach, and reaps the advantages of rapid developments in electronics, sensors, communication and information technology for efficient bridge health monitoring and decision support systems. In particular, the application of latest technology, involving a variety of sensors – strain gages, MEMS, WSN, vision, etc., data acquisition cards, computer based data analysis, has increased. This indeed is advancement when compared to the conventional methods commonly in use, for infrastructure monitoring. IRHM scheme provides self-diagnosis and self-calibration capabilities with optimum bandwidth and power requirements. Efficient structural condition assessment using multi-mode communication between civil structure sensor nodes to remote health monitoring system and disseminate the critical information through Web based network management to the responsible authorities for necessary action. Savings in time and cost can be achieved as the developed methodologies are scalable and can be used for health monitoring of structures located geographically at different locations. Developed methodologies with indigenous development of sensing techniques using latest wireless technologies, thereby reducing the cost of monitoring and improving the efficiency.

Proposed IRHM scheme

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