

Structural Health Monitoring for Condition-Based Maintenance

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Structural health monitoring is the backbone technology for the industrial internet of things (IIOT) that would provide potentially on-demand or real-time solutions for the integrity and reliability of the next generation industry solution. A new set of “smart” sensor data will need to be generated that are essential for predictive and condition-based maintenance. Lack of adequate and standardized data and methods for validation and verification of the data-driven technology is a major challenge for implementation of SHM technology. A review of current efforts among aircraft OEMs, airlines, regulatory agencies, technology suppliers, and research institutes on SHM implementation for commercial aircraft will be presented and the link of the quantified SHM data to predictive maintenance will also be illustrated through actual test results.