

# SHM in Action: How SHM works in practice?

A Special Session at the  
International Workshop on Structural Health Monitoring 2011

Participate to win:  
The Most Practical SHM Solution for Aerospace Award\*  
The Most Practical SHM Solution for Civil Infrastructures Award\*



## Objective:

To show how a structural health monitoring (SHM) system practically works. If you are working with SHM systems and would like to show in a short presentation how they practically work, then you shall participate. This presentation can be additional to exhibits or oral presentations and is specifically targeted to underline the practical aspect of the SHM.

## Who can participate:

- Workshop Exhibitors,
- Workshop Presenters and,
- Workshop Participants.

## Motivation:

There is a significant progress in SHM technology recently for a variety of applications. This presentation shall focus on how these SHM systems work in practice in terms of installation, handling, interpretation, and robustness for the following applications:

- Operational loads monitoring,
- Damage detection,
- Health monitoring,
- Life-cycle management.

## The session targets at:

- Showing the audience how SHM works in practical applications,
- Better understanding the practical issues of different SHM systems,
- Getting further feedback and requirements expressed from current and potential SHM users,
- SHM users to share their experience.

## Procedure:

The session intends to show as much of demonstration cases as possible, addressing as many of the aspects mentioned below:

- The way the monitoring system and the test is operated;
- Type of sensors and actuators (if required) and their way of attachment to components, linkage to the signal generation and acquisition unit, etc;
- Signal generation and acquisition unit as a hardware and how it operates;
- The way input data are entered and sensor data are received and how the result is presented during the test;
- Procedure for sensor signal processing;
- The 'man-machine interface' such as data input and output display;
- Component(s) tested, area/volume to be monitored, loading procedure and the damage initially observed by conventional means of non-destructive testing;
- Characteristics of the system such as weight, size, volume, reliability, cost, etc.

Each presentation is allowed for no more than 5 minutes through **a video, internet or a hardware live demonstration only**, which will be directly displayed to the audience on a large screen. It is mandatory that the SHM system must be shown in action. **Static displays are not acceptable**. Each presentation will be followed by a brief Q&A session where the SHM demonstrators must answer questions from the audiences.

The test cases being presented can be either based on self-developed or purchased SHM systems. The source of the SHM hardware is eligible to be mentioned but no further advertisement from or about the supplier of the SHM system will be accepted.

Any detailed background of the SHM system and the testing can be provided through the manuscript in the workshop proceedings. Provision of a manuscript in the proceedings is however not mandatory. Exhibitors can provide a direct video link to their booth at the workshop such that demonstrations can be made from there and can be directly transmitted to the audience via a screen.

A panel of experts will be assembled to select two winners from the demonstrators for following two awards:

- 1) The Most Practical SHM Solution for Aerospace Award sponsored by **Airbus**
- 2) The Most Practical SHM Solution for Civil Infrastructures Award sponsored by **IWSHM**.

**SHM in Action** will be held during a plenary session. If your organization is interested in participating, please email [IWSHM-Exhibition@structure.stanford.edu](mailto:IWSHM-Exhibition@structure.stanford.edu) with a short description of the demo as soon as possible.

\* **Airbus is proud to sponsor a prize of \$1000USD for the “Most Practical SHM Solution for Aerospace” to be demonstrated in the SHM in Action.**



\* **IWSHM will sponsor the “Most Practical SHM Solution for Civil Infrastructures” to be demonstrated in the SHM in Action.**

