Objective

"STRAINMON aims to develop and establish a methodology for the strain monitoring of composite fuselage stiffened panels using embedded and/or bonded Fiber-Optic Bragg Grating (FOBG) sensors and strain gauges. The proposed work-programme of STRAINMON is summarized as follows:
1. Definition of the FOBG system requirements and specifications based on the nature of the problem and the available technology using progressive damage modeling. The number of sensors will be decided and the network of sensors will be designed.
2. Description of the methodology for integration of sensors related to the autoclave manufacturing process by ensuring measurement capability of the sensors, integrity of sensors, and integrity of the parent composite material.
3. Design of the test plan and design and fabrication of the test-rig,
4. Execution of the series of the following tests to establish the proposed SHM methodology:
Field of science

/parametric/field engineering and technology/civil engineering/structural engineering/structural health monitoring

Programme(s)

Topic(s)

Call for proposal

SP1-JTI-CS-2011-01

Funding Scheme

JTI-CS - Joint Technology Initiatives - Clean Sky

Coordinator

VYZKUMNY A ZKUSEBNI LETECKY USTAV AS

Address
Letnany Beranovych 130
16000 Praha 18

Activity type
Research Organisations

EU contribution
€ 40 464,60

-Compression tests to failure on undamaged panels to characterize their reference compressive behavior,
- Low velocity impact tests on selected critical locations of the panel in order to create impact damage,
- Compression tests to failure on the impact-damaged panels to evaluate the residual stiffness and strength of the panels,
- Fatigue of impact-damage panels up to a certain number of cycles in order to create additional fatigue damage,
- Compression tests to failure of panels subjected to impact and fatigue to evaluate the residual stiffness and strength data of the impacted and fatigued panels.

After each test series, NDT inspection of the panels will be conducted in order to detect the type, extent and location of damage induced.
Each of the above tasks meet an activity of the topic.
A reliable and effective data acquisition system will be build to take sensor measurements at appropriate rates during the whole duration of the testing scheme and from all sensors placed on the panels simultaneously.

STRAINMON's consortium comprises VZLU (CZ) and UNIPatras (GR)."
Participants (1)

PANEPISTIMIO PATRON

Greece

EU contribution

€ 34 475,40

Address

University Campus Rio Patras
265 04 Rio Patras

Activity type

Higher or Secondary Education Establishments

Administrative Contact

Konstantinos Tserpes (Prof.)

Last update: 10 March 2015
Record number: 105391

Permalink: https://cordis.europa.eu/project/id/296514/

© European Union, 2020