



Laboratory for
Verification and
Validation

EPSRC

Engineering and Physical Sciences
Research Council



EUROPEAN UNION
European Regional
Development Fund



The
University
Of
Sheffield.



The Laboratory for Verification & Validation (LVV) is a unique facility enabling research into the Verification & Validation (V&V) of engineering models across test scales and in all environments.

Model validation refers to the process of building credibility in the predictions of computer models based on comparison with experimental data. The development of new validation methods and test protocols will allow significantly larger portions of the structural design and test cycle to be carried out in a virtual/computational context, providing engineering companies with many key benefits including significant cost savings.

The LVV, part funded by the Engineering and Physical Sciences Research Council (EPSRC) and by the European Regional Development Fund (ERDF), will enable programmes of testing and research that will drive advances in V&V

technology in the field of structural dynamics and beyond. **It will be larger and more versatile than any facility of its kind currently available for open academic and industrial use.**

Led by the Dynamics Research Group (DRG) in the University's Department of Mechanical Engineering, the laboratory will offer significant benefits across a range of industrial sectors including energy, aerospace, automotive, renewables and medical engineering. The DRG is already one of the largest specialist groups in the world; the LVV will drive forward collaborative research and cement Sheffield's position as a world leader in structural dynamics.



Laboratory for
Verification and
Validation

Technical Capability Overview

The LVV will comprise of:

- Three large environmental chambers (h x w x d):
 - 3m x 5m x 8m (Room 1)
 - 3m x 5m x 9m (Room 2)
 - 3m x 5m x 5m (Room 3)
- 3m x 2m Multi-Axis Shaker Table (MAST) system in Room 2
- Each climatically controlled with temperatures available between -55°C to +50°C and humidity between 10 to 80% RH
- Rain simulation available in each chamber
- Wind simulation up to 50mph in Room 1
- Large electro-dynamic shakers (100kN) allow a flexible range of testing to be conducted both within and outside the climatic test rooms.
- A precision glass-sided wave tank with double flap wave generator (12m long, 1.5m deep) enabling simulation of deep water conditions.
- A strong floor (16m long x 3.5m wide) and wall (3m tall x 3.5m wide) enabling testing of large components and structures in a range of mounting configurations.
- Flexible laboratory space suitable for a broad range of dynamic testing at ambient temperatures (approx. 12m x 12m).



For further details please contact Charlie Field,
LVV Business Development Manager directly at
c.w.field@sheffield.ac.uk or **+44 (0) 7872112252**

Alternatively, please visit
www.lvv.ac.uk

