

**National Institute for
Aviation Research,
(NIAR)**

The 4 -day Simcenter Ground Vibration Testing (GVT) Master Class USA will cover in detail the challenges and modern solutions for dynamic testing of full aircraft structures.

The master class rolls out an integrated approach to handle the test preparation, modal testing, modal analysis, numerical model correlation, model updating, and model exploitation. All attendees will participate in an actual full scale GVT on a grounded aircraft. In addition, during the hands-on sessions on the last day, participants will be able to rehearse the full process on a physical and virtual scale model.

Topics covered include:

- Structural dynamics: theory and specific challenges of GVT on small, medium and large aircrafts
- Test preparation and de-risking
- Instrumentation of the aircraft, including boundary conditions
- Measurement set up validation
- Phase separation (random, pseudo-random, stepped, swept sine excitations)
- Phase resonance techniques (normal modes testing)
- Modal analysis
- Finite element correlation and updating

We are pleased to welcome external speakers:

To supplement the structural dynamics training experience, we will invite experts from the aviation industry to share their experiences and present on specific technical topics. The list of experts will be determined as the agenda evolves.

What will the attendee learn?

- Learn how to run large scale structural dynamics tests and obtain validated modal models for conclusive certification dossiers
- Learn how to efficiently apply the full range of modal testing and identification techniques to obtain an in-depth knowledge of structural dynamics
- Experience the value of hybrid test/CAE technology that enables high interaction between test and simulation departments
- During the course, we also cover the basics of finite element model updating, non-linear system identification, flutter testing, limit cycle oscillation and structural mode interaction testing



Participation fee and registration

The early registration participation fee for the 4-day Simcenter GVT Master Class USA is \$2,250+ applicable taxes, \$2,750 after May 30th. It includes refreshments, lunch and training material. The number of participants is limited.

Venue:

National Center for Aviation Training, [\(NCAT\)](#)
National Center for Aviation Training
4004 N. Webb Road
Wichita, KS 67226

Guest Speakers:

To be announced

REGISTER NOW

About NIAR

Since its inception in 1985, National Institute for Aviation Research ([NIAR](#)) at [Wichita State University](#) has made a name for itself as the most capable university-based aviation research center in the United States, providing research, design, testing, certification and training to the aviation manufacturing industry, government agencies, educational entities and other clients that can benefit from our services. NIAR will host the Simcenter GVT Master Class at the [NCAT facility](#) with dedicated training facilities and grounded aircraft that will be used as test item for a full scale GVT. In addition to the full aircraft experience, there will be dedicated stations for detailed hands-on with small groups using a scaled model airplane.

References

Siemens PLM Software has worked extensively with aircraft and spacecraft manufacturers from all over the world. We developed a unique approach combining virtual simulation and physical testing to accelerate and optimize the full testing cycle – from test preparation and modal testing to modal analysis, numerical model correlation and model updating. References for Simcenter ground vibration and modal survey testing include Leonardo, Airbus Defense and Space, Bombardier, Cessna, DLR, Energia RKK, HAL, Honda Aircraft Company, KARI, Lockheed Martin, Mitsubishi Aircraft Corp, NAL (India), Onera, SAAB, Sikorsky, Sukhoi Civil Aircraft, Tsagi, Tupolev amongst many others.

Contact

For more information, please contact William Flynn
william.flynn@siemens.com Tel. 714.400.1930

Siemens PLM Software
www.siemens.com/plm

Americas +1 314 264 8499
Europe +44 (0) 1276 413200
Asia-Pacific +852 2230 3308

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