Orbital systems
Launchers
Satellites
Transversal competencies

InterAC
Ingénierie Technique & Recherche en Acoustique
Technical Engineering & Research in Acoustics

InterAC offers high-tech engineering services in numerical vibro-acoustic and in methodology in various domains as aerospace, automotive, building, defence, energy, mechanical, railway.

COMPETENCIES & CAPABILITIES

- Predicting studies and numerical optimization of dynamic systems.

- Software development dedicated to experimental and analytical SEA (Statistical Energy Analysis). Introducing Virtual SEA (VSEA) technology in the design phase leads to cost reduction in prototyping and testing, VSEA enhances SEA modelling of complex structures by using Finite Element (FE) model to perform vibrational tests, improving models reliability.

- Participation to research projects.

- Training for engineers: calculation and measurements on SEA method.
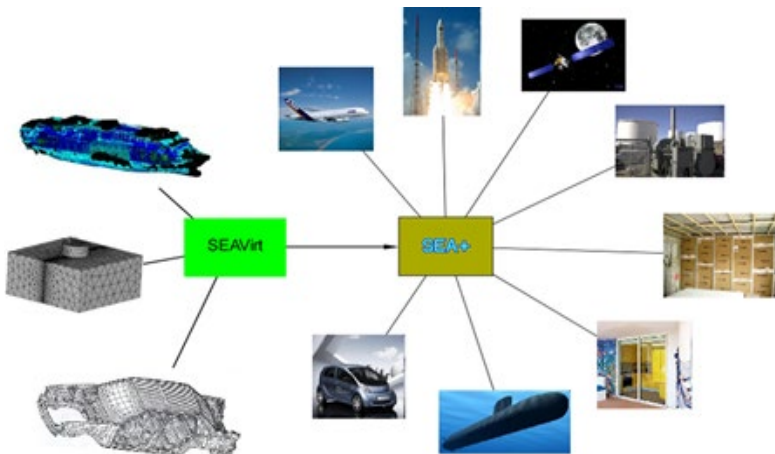
InterAC

PRODUCTS & SERVICES

SEA+ (basic module):
- Object-oriented Software for engineers to predict Noise and Vibration (N&V) design process

Four optional modules:
- SEAVirt: allows engineers to more effectively interpret Finite Element (FE) prediction for the N&V design process
- SEA-Shock: is designed to successfully predict Shock Response Spectra (SRS) from transient loads applied to SEA models of dynamical systems. For aerospace applications, SEA-Shock includes source models for pyrozip and clampband separation events.
- SEA-Foam: multiplies the capability of SEA+ by creation of acoustic trims connected to structural and/or acoustic subsystems for predicting interior or radiated noise
- SEA-Cyl: integrates a spectral method for the vibroacoustic modeling of multilayered cylindrical systems

MAJOR SPACE PROJECTS & REFERENCES

- SEA model of payloads for random acoustic responses, for pyroshock responses (CNES).
- FE and SEA models of Ariane 4 & 5 for pyroshock response prediction
- Shock synthesis using SEA (CNES).
- Identification of vibrational sources and quantification of associated injected powers from acceleration measurements (CNES).
- SEAMIC: Use of Statistical Energy Analysis for MICro-Vibration Analysis (ESTEC/CNES).
- METAMIC: METhodology for analysis of structure borne MICro-vibration (ESTEC/CNES).
- Development of an acoustic device for lift-off qualification of the cryogenic engine of Ariane 5 and Acoustical improvement of the ground test facilities for Vulcain acoustic qualification at lift-off (SNECMA).

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SPACE TURNOVER 0.1 M€
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