

With broad experience in the seismic testing field, ARIES has supplied dynamic test equipment and simulation technology to the top manufacturers and research institutes across the globe.

ARIES Seismic Simulation Systems accurately reproduce true earthquake conditions, allowing civil engineering researchers to evaluate the behaviour of any test specimen, from small structural components to full-scale structures, under these excitation conditions.

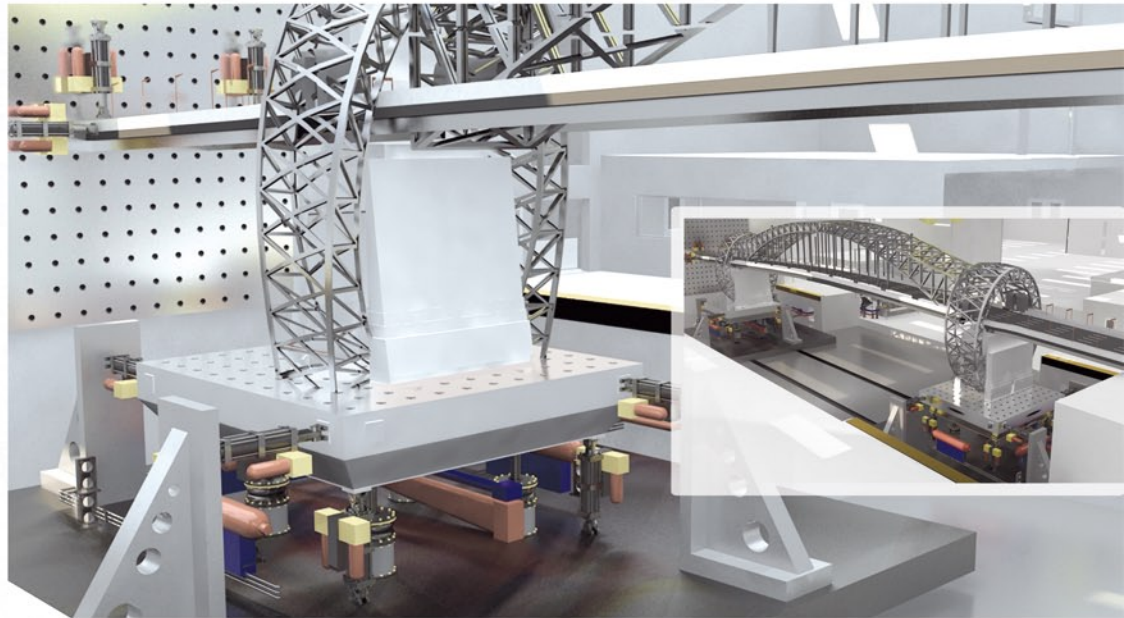
TEST SYSTEMS DIVISION

1	+20V
2	GND 20V
3	S1IND
4	S2IND
5	S3IND
6	S4IND

SEISMIC TEST LABORATORIES

ARIES designs and supplies solutions specially developed to fit each customer needs, including full service scope; from civil work definition, system hardware or control upgrades, to a turn-key complete Seismic Test Laboratory containing Multi Axis Shake Tables, Reaction Walls and GeoCentrifuges. **ARIES** integrates all the elements of the testing laboratory to help ensure your testing success.

The testing facility highlights for being versatile, having the possibility to be upgraded or extended according to future laboratory needs, and keeping compatibility with information sharing to allow networking. Furthermore it enables structure testing to validate designs under the **EUROCODE 8** and other civil specifications.



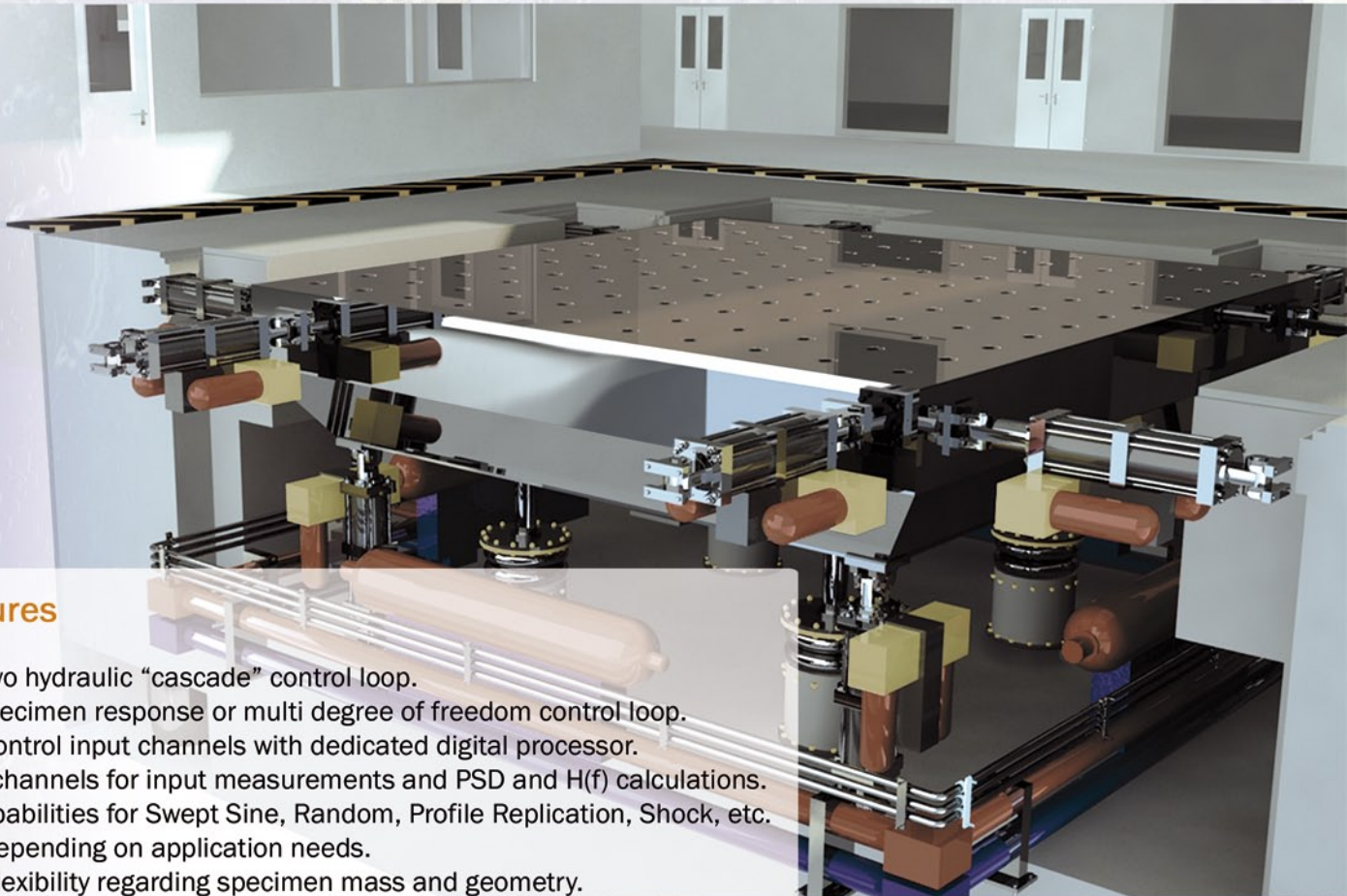
MULTI AXIS SHAKE TABLE (MAST)

MAST systems allow test specimens to be excited under vibration controlled simulations with up to 6 Degrees of Freedom (DOF).

The range of systems that **ARIES** offers enables the replica of seismic events - with different degrees of freedom, and a wide range of performances in relation to specimen mass and dimensions, as well as system frequencies, accelerations, velocities or displacements.

Key Features

- Digital Servo hydraulic “cascade” control loop.
- External specimen response or multi degree of freedom control loop.
- Up to 98 control input channels with dedicated digital processor.
- Unlimited channels for input measurements and PSD and H(f) calculations.
- Control capabilities for Swept Sine, Random, Profile Replication, Shock, etc.
- 1-6 DOF, depending on application needs.
- Very high flexibility regarding specimen mass and geometry.
- Flexible facility layout design.
- Sub-systems control & supervision features.
- Real-Time Adaptive Control.



Technical Specifications

ARIES tailors the shaking table according to your particular needs, meeting the specimen size and dynamic motion requirements. The system technical specifications are:

- Degrees of Freedom: from 1 to 6
- Frequency: up to 150 Hz
- Max. Acceleration: up to 10g
- Max. Payload: up to 200 T
- Peak to Peak displacement: up to 500 mm

Please note that other system specifications can be made under request.

The Core Brain of Our System

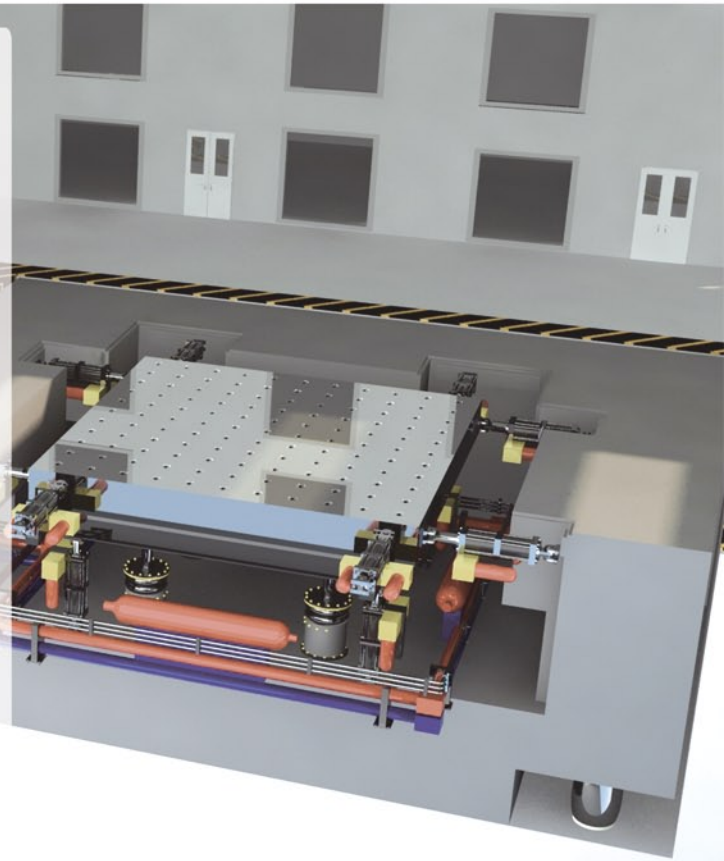
The **ARIES** Multi Axis Shake Table (**MAST**) control system is a state-of-the-art seismic controller that enables extremely accurate replica of earthquake conditions, assured by the use of the market's best outer-loop multi axis controller (worldwide recognition) and the latest generation digital hardware.

The Real-Time Adaptive Control works with a true closed loop which updates the System Identification Matrix (SID) every loop to assure control of even nonlinear responses rather than only updating the SID at the beginning and end of the test.

Benefits

The technical characteristics of **ARIES** Multi Axis Shake Table (**MAST**) allow:

- Several shaking tables working synchronised, for example to have multi earthquake excitation for testing great-span bridges.
- Underwater seismic tests.
- Possibility of taking the whole structure collapse, registering test data until the end.
- Hybrid simulation, combining test-based experiments of substructures with real-time computer simulations of the remainder of the structure.



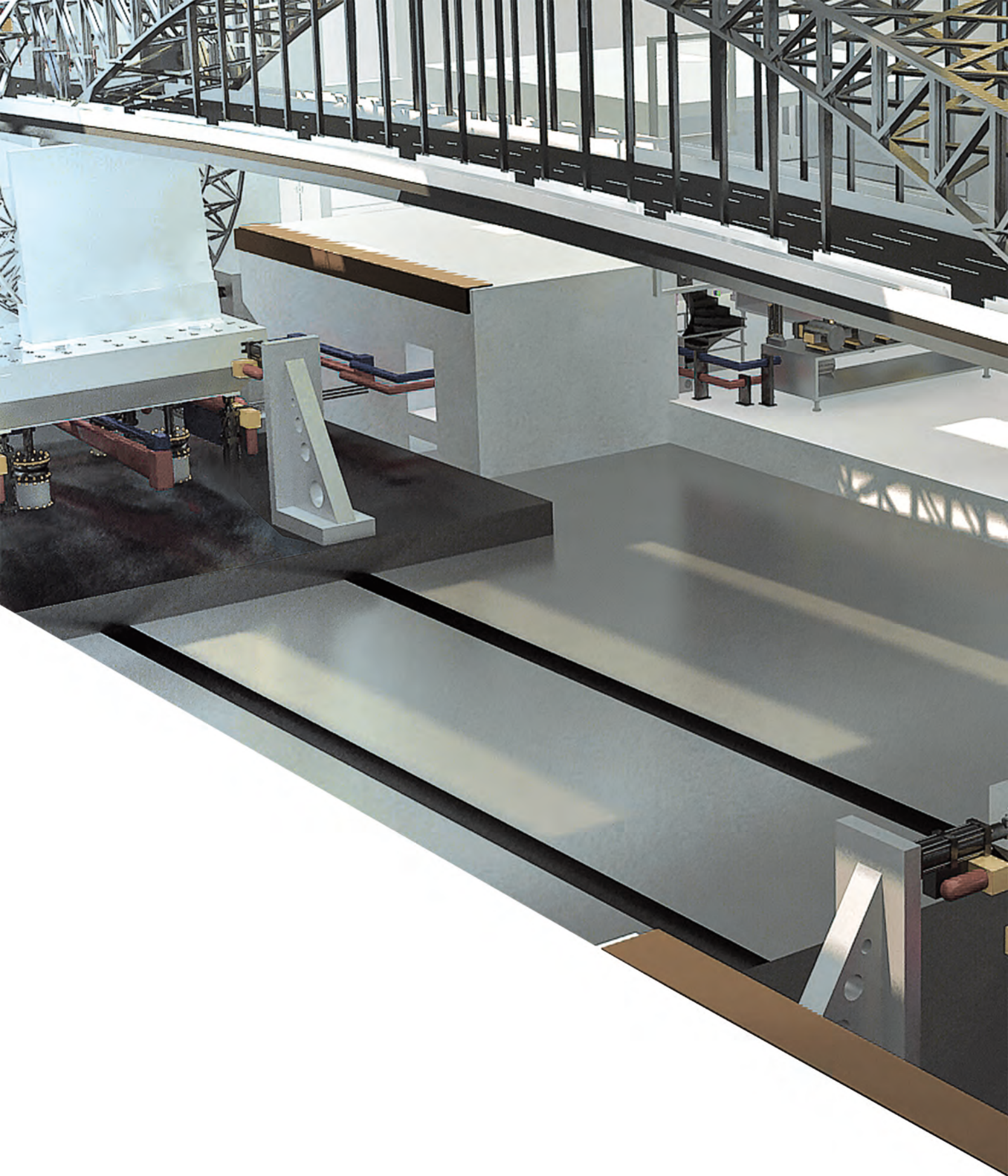
OTHER SYSTEMS FOR STRUCTURAL TESTING

Additionally to Shaking Tables, **ARIES** broad experience in the seismic field allows us to design and tender other test systems to provide any seismic laboratory with all the test equipment they could need such as:

- Seismic Simulation Using the Pseudodynamic Method
- Geocentrifuge
- Wave Generators

ARIES

SIMULABOR SISMICO



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