



TESTING, SIMULATION, MEASUREMENT FOR MISSION-CRITICAL SYSTEMS

DYNAMIC

CLIMATIC

FLUID FLOW

EMI - EMC

NOISE & VIBRATION

SIMULATION & ANALYSIS

CALIBRATION

1 What We Do

Environmental testing, EMI/ EMC testing, noise and vibration measurement, engineering simulation and instrument calibration — in one facility.

2 Why It Matters

One plan, one lab, one report pack. No shipping hardware between vendors, no gaps between suppliers and reports, no surprises at inspection.

3 Who We Work With

Navy and Coast Guard programmes, defence PSUs and their vendors, and private manufacturers qualifying equipment for the first time.

 **800+**

Customers served across the Asia-Pacific region

 **75+**

Years of leadership experience in defence, aerospace & marine

 **2017**

Years of consulting in defence testing and simulation services

 **2023**

Operations unified under DSRI Labs Private Limited

Leadership



A Prasant Gopal

MANAGING DIRECTOR

MIT (Boston) and IIIT Hyderabad research background, with prior engineering roles at Amazon and Google before returning to setup DSRI's R&D, facility design and test operations.



A V S Chari

TECHNICAL DIRECTOR

Former Scientist 'G' & Associate Director at DRDO's Naval Science & Technological Laboratory, with earlier service at the ISRO & SHAR — a career built on naval vessel design, development and qualification.

Eight capabilities under one roof



Dynamic Testing → p.03

Motion simulators, acceleration, vibration, shock, bump & tilt testing under dynamic conditions.



Noise & Vibration Measurement → p.03

Motion simulators, acceleration, vibration, shock, bump and tilt testing under dynamic conditions.



Climatic Testing → p.04

Temperature, humidity, thermal cycling, salt spray, ingress protection & solar radiation.



Fluid Flow Testing → p.05

Burst, pneumatic & hydraulic tests, flow coefficient, life cycle & pipe wracking for valves & fluid systems.



Calibration Inspection → p.05

Calibration for accelerometers, pressure sensors & climatic chambers.



Material Testing → p.06

Tension, compression, fatigue & crack growth on materials, couplers, fasteners & isolators.



EMI/EMC Testing → p.07

Emissions & susceptibility testing, with a semi-anechoic chamber for radiated & conducted work.



Simulation & Analysis → p.08

Finite Element Analysis & Computational Fluid Dynamics on your model — before production.

Dynamic Testing

Shock, Vibration and Motion to 30,000g

Every naval, defence and railway qualification schedule run to specification — fixture design and instrumentation handled in-house, so your platform clears acceptance the first time.



TEST	CAPABILITY	PRINCIPAL STANDARDS
Sine, Random & Sine-on-Random Vibration	Electrodynamic shakers	IEC 60068-2-6 · JSS 55555 (Test 28) · MIL-STD-810 (F/G/H) · IEC 61373 · IS 2175
Shock Test	up to 30,000 g	JSS 55555 (Test 24) · MIL-STD-810 (F/G/H) · IEC 60068-2-27 · IN Shock Grade A · NSS I / NSS II · ISO 16750-4
Bump Test	3 g – 60 g	JSS 55555 (Test 5) · IS 10236 (Part 10) · IEC 60255-21-2 · JSS 50101
Acceleration Test	1 g – 100 g	JSS 55555 (Test 1) · MIL-STD-810 (F/H) · JSS 0256-01 (Test 16) · JSG 0102:1984 (Test 22.U)
Motion Simulator / Ship Motion	Six-axis platform	MIL-STD-167-1A · JSS 55555 (Test 28) · JSS 0256-01 (Test 15) · IS 9000 (Part XIII)
Tilt / Inclination Test	0° – 45°	JSS 55555 · JSS 5855-11 · Customer-specified schedules
Environmental Stress Screening (ESS)	Combined regimes	MIL-HDBK-344A · MIL-HDBK-2164A · JSG 0613:2010 · DQAN/SDG/1001/ESS



Noise & Vibration Measurement

Airborne (ABN) and structure-borne (SBN) noise and vibration measurement on machinery and installed systems, on our floor or at your site — reported against your platform's acceptance grades.

MEASUREMENT	PRINCIPAL STANDARDS
Airborne Noise (ABN)	ISO 3744 · MIL-STD-1474E · additional standards on request
Structure-Borne Noise (SBN)	MIL-STD-740-2 · additional standards on request



Climatic Testing

Environments from -70 °C to +180 °C

Reliability under the conditions your platform will actually face — heat, cold, humidity, salt, dust and solar load, proven before it ever deploys. Chambers run from bench units to walk-in volumes, so a full sub-system goes in exactly as it will operate in the field.

TEST	CAPABILITY	PRINCIPAL STANDARDS
Low Temperature	Down to -70°C	JSS 55555 (Test 10) · IEC 60068-2-1 · IS 9000 (Part IV) · MIL-STD-810 · QM 333
High Temperature	Up to +180°C	JSS 55555 (Test 17) · IEC 60068-2-2 · IEC 60571 · MIL-STD-810 (F/G/H) · JSG 0102
Humidity / Damp Heat	Up to 98% RH	JSS 55555 (Test 12) · IEC 60068-2-30/78 · IS 9000 (Part V) · QM 333 (Test 14)
Thermal Cycling & Thermal Shock	15°C/min	IEC 60068-2-14 · JSS 55555 (Test 22) · IEC 60068-2-38 · IS 9000 (Part 6) · MIL-STD-810
Salt Spray	Continuous / cyclic	ASTM B117 · JSS 55555 (Test 9) · JSS 0256-01 (Test 12) · MIL-STD-810 (G/H) · JSS 5855-11
Dust Test	IP 5X, IP 6X	IEC / IS 60529 · JSS 55555 (Test 12) · QM 333 (Test 14)
Water Ingress, Drip & Driving Rain	IP X1 - X8	IEC 60529 · JSS 55555 (Test 14/21) · MIL-STD-810H · IS 9000 (Part X)
Solar Radiation	Cyclic exposure	JSS 55555 (Test 27) · JSS 0256-01 (Test 4) · QM 333 (Test 3) · MIL-STD-810
Mould / Fungus Growth	28-day exposure	JSS 55555 (Test 11) · IEC 60068-2-10 · JSS 5855-11
Tropical Exposure & Contamination	Long duration	JSS 55555 · JSS 5855-11 · Customer-specified schedules

Fluid Flow Testing

Full-bore pressure to teardown inspection

Valve and piping qualification to naval and process standards: pressure containment, endurance and flow characterisation, with strip-down inspection after test.



TEST	PRINCIPAL STANDARDS
Burst, Pneumatic & Hydraulic Test	NES 375 • BS 4368 • ASME F1387 • BS EN 12266-1, 2 • IS 10103
Flow Coefficient & Life Cycle Test	ANSI/ISA-S75.01, S75.02 • ANSI/AWWA C504 • DME Spec 463 • NES 375
Dismantling, Re-assembly & Pipe Wracking	ASME F1387 • BS 4368 • IS 10103 • Customer-specified schedules
Fire-Type Testing (valves)	BS 6755 Part 2 • ISO 10497



Calibration & Inspection

Traceable measurement, without the outside wait

In-house calibration keeps every measurement in DSRI's own test chain traceable to national standards — and the same rigour is available to customers who need audit-ready calibration without the turnaround of sending instruments off-site.

DISCIPLINE	EQUIPMENT CALIBRATED	RANGE
Thermal	Climatic chambers & ovens	–70°C to 250°C
Accelerometer / Vibration	Amplitude response	"5–5000 Hz, 0.1g–1g"
Pressure	Hydraulic pressure sensors	0–700 bar
Electro-Technical	Multimeters, DAQ systems, oscilloscopes, vibration controllers	—

Material Testing

Five load frames, one closed-loop lab

Five hydraulic and electro-servo-hydraulic test systems under one roof — two of them biaxial, loading a specimen vertically and laterally at the same time, each axis in its own closed loop. Data acquisition runs at 10 kHz per channel, 24-bit, with LVDT stroke resolution $\leq 1 \mu\text{m}$. From 1 Hz to 100 Hz the lab qualifies a specimen in S-N, e-N and da/dN.



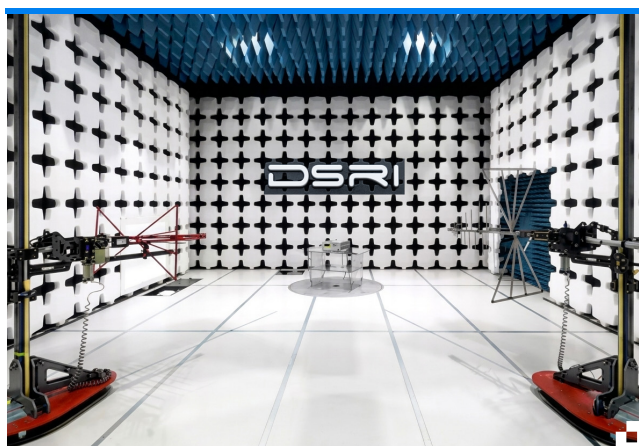
2500 kN UTS 2500 - servo-hydraulic Biaxial 2500 / 250 kN 0.01–100 Hz · $\pm 75 \text{ mm}$	250 kN Servo-hydraulic Biaxial 250 / 100 kN Multi-station control	75 kN Servo-hydraulic $\pm 25 \text{ kN}$ cell, high resolution 0.01–40 Hz · $\pm 80 \text{ mm}$	2000 kN Universal - tension, compression Coupler slip extensometer Bend, re-bend and bolt fixtures	1250 kN Universal - servo drive 1200 × 1200 mm test space 400 mm stroke
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TEST	CAPABILITY	PRINCIPAL STANDARDS
Tension, Compression & Stiffness	To 2500 kN · 1200 mm daylight	ISO 6892-1 · ASTM E8/E8M · IS 1608 · ISO 7500-1 · ISO 9513 · ASTM E4
Fatigue & Durability	"0.01–100 Hz, force/strain/stroke control"	ISO 1099 · ASTM E466 · ISO 12106 · ASTM E606 · ISO 4965-1, 2
Reinforcement Couplers & Splices	To bar failure · slip, cyclic, bend and re-bend	IS 16172 · ISO 15835-1, 2, 3 · ASTM A1034 · IS 1786 · ACI 318 ch.18
Fasteners & Anchors	Proof, wedge tensile, torque-clamp force to M64	ISO 898-1 · ISO 16047 · ASTM F606/F606M · ASTM F3125 · IS 1367 · ISO 3506-1
Elastomers & Rubber Specimens	Dynamic modulus, compression set, hardness, ageing	ASTM D575 · ASTM D395 · ASTM D2240 · ASTM D1329 · ASTM D412 · ASTM D624
Aerospace & Precision Fasteners	Fatigue, ultimate tensile and yield strength	ISO 7961 (aerospace bolts) · ISO 3800 · ASTM F606
Crack Growth, Fracture & Seismic / Marine Qualification*	da/dN, K _{IC} , J-integral · bearings, isolators, mounts	Capability available on select customer programmes — scope extension planned

EMI - EMC Testing

Electromagnetic interference and compatibility

Emissions and susceptibility testing to the MIL-STD-461 series, run by engineers who have taken naval and defence equipment through qualification themselves.



METHOD	WHAT IT VERIFIES	RANGE	STATUS
CE101	Conducted emissions, power leads	30 Hz – 10 kHz	Live
CE102	Conducted emissions, power leads	10 kHz – 10 MHz	Live
CS101	Conducted susceptibility, power leads	30 Hz – 150 kHz	Live
CS114 / CS115 / CS116	Bulk cable injection, impulse & damped transients	10 kHz – 200 MHz	Live
RE101 / RS101	Radiated emissions & susceptibility, magnetic field	30 Hz – 100 kHz	Live
RE102 / RS103	Radiated emissions & susceptibility, electric field	10 kHz – 18 GHz	Coming Soon

DEFENCE & NAVAL

MIL-STD-461 (E/F/G) · MIL-STD-464 · JSS 55555 (Test 30) · IEC 60533 (marine)

COMMERCIAL & INDUSTRIAL

CISPR 11 · CISPR 16 · CISPR 25 · CISPR 32 · IEC 61000-6 series

IMMUNITY

IEC 61000-4-2 ESD · -4-3 RF field · -4-4 burst · -4-5 surge · -4-6 conducted RF · -4-8 magnetic · -4-11 dips

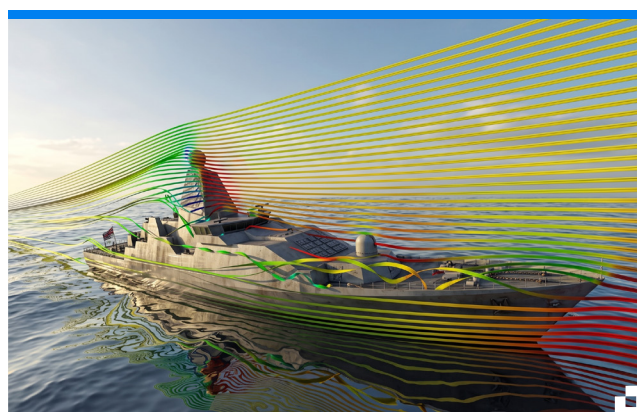
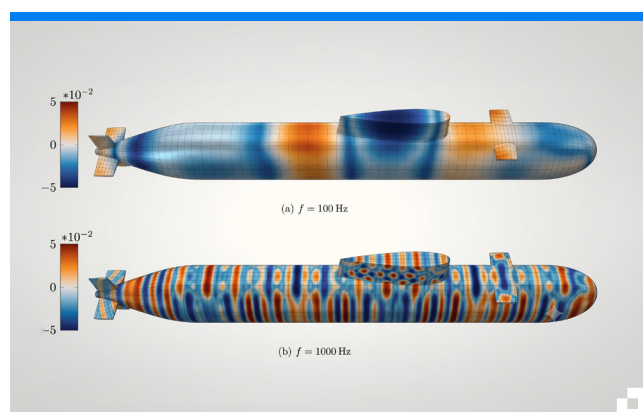


Simulation & Analysis

Engineering validated before hardware is cut

Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD) run alongside DSRI's physical test programmes — the same engineers, the same facility, one qualification timeline. Structural strength, modal and shock response, flow and thermal behaviour are worked through on screen, then correlated against DSRI's own material, dynamic and climatic test data, so a design's weak point is known before it ever reaches a rig.

ANALYSIS	WHAT IT ANSWERS	TYPICAL INPUTS
Structural (Static & Linear FEA)	Stress, deflection, factor of safety	CAD geometry, loads, boundary conditions
Modal & Harmonic Response	Natural frequencies, resonance risk	Mass, stiffness and damping data
Shock & Random Vibration (FEA)	Peak stress under shock and vibration spectra	MIL-STD-810 / JSS test profiles
Fatigue & Durability	Cycles to failure, crack initiation life	S-N / e-N data from DSRI's material lab
CFD – Flow & Pressure Drop	Flow coefficient, pressure loss, cavitation risk	Geometry, fluid properties, boundary flow rates
CFD – Thermal & Conjugate Heat Transfer	Hotspot temperatures, cooling adequacy	Heat loads, ambient conditions
Hydrodynamic & Aerodynamic Loads	Drag, lift, added mass	Vessel / airframe geometry, sea state or flight envelope



Fixture sized
before hardware
arrives

Mode known
failure mode predicted,
then confirmed on test

Fewer iterations
design changes proven
on screen first

One team
the analysts sit with
the test engineers

More than 800 customers across the Asia-Pacific region

We serve the navy, defence, space, railways and energy sectors — from platform authorities and shipyards to private OEMs qualifying equipment for the first time.

Sectors We Serve



MARINE



AEROSPACE



DEFENCE



RAILWAYS



ENERGY



CIVIL



AUTOMOTIVE

01-Share the schedule

Send the test schedule, drawings and EUT details. We confirm scope, standards and fixture needs.

02 - Plan and quote

You receive a sequenced plan across dynamic, climatic and fluid flow, with slot dates and a fixed quote.

03-Test and report

Witnessed testing where required, with NABL-endorsed reports issued as one consolidated pack.



Ready to qualify your next platform?

Share your test schedule — get a scoped plan and fixed quote within 3 business days.

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**DSRI****DESIGN
TEST · MEASURE**

ONE FACILITY. EVERY QUALIFICATION MILESTONE.

Built in Hyderabad. Trusted from the shipyard to the launch pad.

Design, test and measure — under one roof, one report pack, and engineers who have taken naval and defence equipment through qualification themselves. That is what 800+ customers across the Asia-Pacific region have relied on for over a decade.



TESTING CERTIFICATE
TC-12060

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CALIBRATION CERTIFICATE
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