

ID	Facility / Asset	Host organisation	Site / Location	Country	Category	Sub-category / test type	What can be tested	Example tests / parameters	Access model	Source URL	Keywords
TF-001	Beyond Gravity environmental simulation & test centre	Beyond Gravity	Zurich / Switzerland (exact test-site contact to verify)	Switzerland	Environmental / TVAC	Vibration, shock, thermal, TVAC, EMC, centrifuge	Space-grade environmental simulation for components, subsystems and assemblies.	Vibration/shock incl. large shaker, pyroshock; centrifuge, climatic chambers; thermal shock; altitudelow pressure; thermal-vacuum chambers; EMC-shielded chambers.	External service / industrial collaboration	https://www.beyondgravity.com/en/launchers/testing-services	TVAC; thermal vacuum; vibration; shock; pyroshock; centrifuge; climatic; EMC; cleanroom; space
TF-002	RUAG Test Center for Environmental Simulation	RUAG	Thun, Switzerland	Switzerland	Environmental / TVAC	Environmental simulation, vibration, shock, climate, ingress	Accredited environmental simulation for equipment under national/international standards and custom requirements.	Vibration; mechanical shock; salt; temperature/humidity; salt spray; ingress protection; negative pressure; packaging/storage/transport incl. batteries.	External accredited lab / service	https://www.ruag.ch/en/our-competences/additional-services-products/testcenter/environmental-simulation	vibration; shock; temperature; humidity; salt spray; ingress; IP; negative pressure; batteries; RTCA; MIL-STD; AECTP
TF-003	RUAG EMC Test Center	RUAG	Thun, Switzerland	Switzerland	EMC / magnetic / RF	EMC, EMI, ESD, shielding, non-ionising radiation	Accredited EMC/EMI testing and consulting for radiated/conducted emissions and immunity.	Radiated and conducted emission/immunity; ESD; RF shielding; NIR safety; large EUT handling up to 75 t.	External accredited lab / service	https://www.ruag.ch/en/our-competences/additional-services-products/testcenter/electromagnetic-compatibility-emc	EMC; EMI; radiated emissions; conducted emissions; immunity; ESD; RF shielding; CISPR; IEC; MIL-STD
TF-004	RUAG Materials Testing	RUAG	Thun, Switzerland	Switzerland	Materials / failure analysis	Destructive testing, NDT, metallography	Mechanical/material testing and non-destructive inspection for metals and structures.	Tensile, impact, pressure, bend, hardness, spectral analysis; penetrant, magnetic, ultrasonic and visual inspection; metallography.	External accredited lab / service	https://www.ruag.ch/en/our-competences/additional-services-products/testcenter/materials-testing	materials; tensile; impact; hardness; NDT; ultrasonic; penetrant; metallography; failure analysis
TF-005	EMC-Testcenter AG	EMC-Testcenter AG	Regensdorf, Zurich, Switzerland	Switzerland	EMC / magnetic / RF	EMC, radio, electrical safety	Independent accredited EMC laboratory with aerospace/defence-relevant standards.	3 m and 10 m accredited test sites; anechoic chambers; emissions/susceptibility approx. 16 Hz to 44 GHz; RTCA DO-160, MIL-STD-461 and IECEN coverage.	External accredited lab / service	https://www.emc-testcenter.com/leistungen/ernv/	EMC; EMI; RTCA DO-160; MIL-STD-461; anechoic chamber; radiated; conducted; susceptibility
TF-006	Safety-Testcenter GmbH	Safety-Testcenter GmbH / EMC-Testcenter partner network	Zurich area / Regensdorf partner facilities	Switzerland	EMC / magnetic / RF	EMC, electrical safety, radio, RED, laser/photobiological safety	Testing and coordination services for EMC, environmental, electrical, photobiological and wireless testing.	EMC and safety testing via partner labs: WLAN/LE/GSM/RP/DNFC; RED; photobiological and laser classification.	External service / partner network	https://www.safety-testcenter.com/en/	EMC; safety; RED; wireless; photobiological; laser; compliance
TF-007	TEA AG environmental testing & test engineering	TEA AG	Wetzikon, Switzerland	Switzerland	Environmental / TVAC	Temperature, humidity, vibration, shock, IP, EMC/ESD	Product testing under specific load conditions and combined environmental stress.	Temperature/climate chambers up to 1000 L; -75°C to +300°C; 10–98% RH; temperature change rates; electrodynamic vibration up to 40 kg; IP; water/dust.	External service / industrial test engineering	https://www.tea-ag.ch/en-gb/environmental-testing-testingengineering	temperature; humidity; vibration; shock; IP; dust; water; ESD; EMC
TF-008	PAConsult Swiss environmental simulation	PAConsult Swiss GmbH	Neuhausen am Rheinfall, Switzerland	Switzerland	Mechanical / vibration / shock	Vibration, shock, transport and environmental simulation	Accredited environmental and transport-simulation lab with standards-based vibration/shock tests.	Electrodynamic shakers; vibration and shock; transport simulation; references include RTCA DO-160, MIL-STD-810, AECTP 400 and IECEN 60068.	External accredited lab / service	https://paconsult.ch/en/services/environmental-simulation-vibration-and-shock-test/	vibration; shock; transport; RTCA DO-160; MIL-STD-810; AECTP; IEC 60068
TF-009	QUNEL AG EMC and environmental simulation	QUNEL AG	Perlen, Lucerne, Switzerland	Switzerland	EMC / magnetic / RF	EMC, environmental simulation, product safety, calibration	Accredited Swiss testing lab for electronics, EMC, environmental simulation and product safety.	EMC emissions/immunity; ESD; burst/surge, voltage dips, harmonical/ricker; climate, mechanical tests, flammability; SVU listing includes vibration, shock, underpressure, temperature shock, salt spray and shielding.	External accredited lab / service	https://www.qunel.ch/	EMC; ESD; surge; burst; environmental simulation; vibration; shock; temperature; salt spray; product safety
TF-010	Eurofins Electric & Electronic Product Testing AG	Eurofins E&E Switzerland	Fehraltorf / Neuenhof / Rossens, Switzerland	Switzerland	EMC / magnetic / RF	EMC, radio, safety, electronic devices across EMC/radio, safety and environmental simulations.	Accredited test laboratory for electrical and electronic devices across EMC/radio, safety and environmental simulations.	EMC/radio testing; safety testing; explosion protection; medical/lab equipment; automation; environmental simulations; certification/approval support in many countries.	External accredited lab / service	https://www.eurofins.ch/en/electrical-and-electronics/services/testing/	EMC; radio; safety; environmental simulation; certification; approvals; electronics
TF-011	CTS-QS Technik / SVU environmental simulation provider	CTS-QS Technik AG	Volketswil, Switzerland	Switzerland	Environmental / TVAC	Environmental chambers, temperature, humidity, light, pollution, ozone, sand, dust, rain	Swiss provider linked to environmental simulation equipment and SVU network, may help identify or configure relevant chambers.	CTS chambers include temperature/climate, thermal shock, HAST, special chambers and combined environmental parameters; SVU catalogue lists Swiss test providers.	Equipment/service provider / contact route	https://cts-qstechnik.ch/	environmental simulation; temperature; humidity; thermal shock; HAST; dust; rain; ozone
TF-012	DTC Dynamic Test Center AG	DTC Dynamic Test Center AG	Vaulfen / Biel-Bienne, Switzerland	Switzerland	Mechanical / vibration / shock	Vibration, component tests, dynamic tests, safety	Development and dynamic testing centre with vibration and component-test capabilities.	Vibration tests using electrodynamic or hydraulic shakers; component/service-life tests; dynamic material tests; impact/energy absorption tests.	External service / applied testing	https://www.dtc-ag.ch/en/professional-services/active-safety-development-test	vibration; component test; service life; dynamics testing; shock; impact
TF-013	Eurofins Qualitec AG	Eurofins Qualitec AG	Winterthur / Mägenwil, Switzerland	Switzerland	Materials / failure analysis	Materials testing, NDT, CT, material analysis	Accredited testing centre with NDT, industrial CT and materials-analysis services.	Industrial computed tomography, NDT, material analysis; SAS accreditation; Nadcap mentioned by local listing.	External accredited lab / service	https://qualitec.ch/?lang=en	NDT; CT; materials; failure analysis; inspection; accreditation; Nadcap
TF-014	University of Bern Space Research infrastructure overview	University of Bern, Space Research & Planetary Sciences	Bern, Switzerland	Switzerland	Environmental / TVAC	Space environmental test infrastructure overview	Umbrella entry for Bern's specialist space-research facilities.	Public list includes CASYMS, CASYMR, MEFISTO, ILENA, Vibration Test Ring, CLEOPATRA, CHEOPS Chamber and Thermal Vacuum Chamber.	Academic collaboration / project-based access	https://www.space.unibe.ch/research/space_research_planetary_sciences/infrastructure/index_eng.html	Bern; TVAC; vibration; calibration; space instruments; ion beams; vacuum
TF-015	University of Bern Thermal Vacuum Chamber	University of Bern, Space Research & Planetary Sciences	Bern, Switzerland	Switzerland	Environmental / TVAC	Thermal vacuum	Thermal-vacuum facility for simulating the thermal environment in space.	Vacuum plus thermal conditioning for space-environment simulation, exact chamber envelope to validate with facility.	Academic collaboration / project-based access	https://www.space.unibe.ch/research/space_research_planetary_sciences/infrastructure/thermal_vacuum_chamber/index_eng.html	TVAC; thermal vacuum; vacuum; thermal cycling; space environment
TF-016	University of Bern CHEOPS Chamber	University of Bern / CHEOPS infrastructure	Bern, Switzerland	Switzerland	Environmental / TVAC	Large thermal-vacuum / calibration chamber	Large space-instrument calibration and qualification chamber used for CHEOPS-related testing.	Thermal system described publicly around -80°C to +160°C; vacuum chamber used to qualify/calibrate CHEOPS under space conditions.	Academic collaboration / strategic project access	https://www.unibe.ch/news/media_news/media_relations_almedia_releases/2015_elbrith_of_a_space_telescope/index_eng.html	CHEOPS; thermal vacuum; calibration; optics; payload; space instrument
TF-017	University of Bern Vibration Test Ring	University of Bern, Space Research & Planetary Sciences	Bern, Switzerland	Switzerland	Mechanical / vibration / shock	Vibration and shock	Space-related vibration facility with published specifications.	Vibration Test Ring; vertical/horizontal setups; published shaker specs in facility documentation.	Academic collaboration / project-based access	https://www.space.unibe.ch/research/space_research_planetary_sciences/infrastructure/vibration_test_ring/index_eng.html	vibration; shock; shaker; launch loads; space instrument
TF-018	University of Bern CASYMS	University of Bern, Space Research & Planetary Sciences	Bern, Switzerland	Switzerland	Radiation / particle beam	Ion beam calibration	Calibration system for satellite and rocket-borne ion mass spectrometers.	Uniform ion beam; energy range publicly listed around 5 eV/q to 100 keV/q; UHV chamber around 10 ⁻⁸ Torr.	Academic collaboration / project-based access	https://www.space.unibe.ch/research/space_research_planetary_sciences/infrastructure/casym/sin dex_eng.html	ion beam; mass spectrometer; calibration; UHV; satellite instruments
TF-019	University of Bern CASYMR	University of Bern, Space Research & Planetary Sciences	Bern, Switzerland	Switzerland	Environmental / TVAC	Vacuum / molecular beam calibration	Calibration chamber for mass spectrometers and gas-analysis instruments.	High-vacuum system; supersonic molecular beam; static calibration around 10 ⁻⁶ to 10 ⁻¹⁰ mbar.	Academic collaboration / project-based access	https://www.space.unibe.ch/research/space_research_planetary_sciences/infrastructure/casym/rindex_eng.html	vacuum; molecular beam; mass spectrometer; ROSNA; calibration; gas
TF-020	University of Bern MEFISTO	University of Bern, Space Research & Planetary Sciences	Bern, Switzerland	Switzerland	Radiation / particle beam	Solar-wind ion instrumentation calibration	Calibration facility for solar-wind instrumentation.	ECR ion source, highly charged ions, vacuum chamber and post-acceleration up to 100 kV.	Academic collaboration / project-based access	https://www.space.unibe.ch/research/space_research_planetary_sciences/infrastructure/mefisto/index_eng.html	solar wind; ion source; ECR; plasma; detector; calibration
TF-021	PMOD/WRC Vacuum Laboratory	PMOD/WRC	Davos Dorf, Switzerland	Switzerland	Environmental / TVAC	Vacuum, bake-out, cleanliness, thermal conditioning	Vacuum lab for assessing, testing or qualifying instruments/components under vacuum conditions.	Three vacuum chambers; bake-out for space-experiment cleanliness; heating/cooling systems for qualification/test temperatures.	Research collaboration / specialist service	https://www.pmodwrc.ch/en/research-development/rd-facilities/vacuum-lab/	vacuum; bake-out; cleanliness; thermal; space experiments; Davos
TF-022	Diamond SA Test & Calibration Laboratory incl. TVAC	Diamond SA	Losone, Ticino, Switzerland	Switzerland	Environmental / TVAC	Thermal vacuum, mechanical/environmental testing, calibration	Test and calibration lab supporting high-reliability testing in electronics, devices and detector systems.	Thermal vacuum chamber for high vacuum/extreme temperatures; mechanical and environmental testing; ISO/IEC 17025 accredited calibration/testing context.	Third-party/project-specific lab	https://www.diamond-fs.com/en/test-calibration-lab/	TVAC; thermal vacuum; photonics; fibre optics; calibration; high reliability; space
TF-023	PSI Proton Irradiation Facility (PIF)	Paul Scherrer Institute (PSI)	Villigen, Switzerland	Switzerland	Radiation / particle beam	Proton irradiation / radiation effects	Facility for radiation-induced effects research and testing in electronics, devices and detector systems.	Realistic space proton environment; mono-energetic beams; space community/industry/space-agency use; ESA-PSI heritage.	User facility / beamtime service	https://www.psi.ch/en/pif	radiation; proton; SEE; TID; space proton; electronics; detector; ECIF
TF-024	PSI SLS - Swiss Light Source	Paul Scherrer Institute (PSI)	Villigen, Switzerland	Switzerland	Materials / failure analysis	Synchrotron X-ray analytics	Large-scale synchrotron facility for X-ray-based material and device characterization.	X-ray diffraction, spectroscopy, imaging and other beamline-specific techniques for material properties and failure mechanisms.	User facility / industrial access via PSISLS Techno Trans route	https://www.psi.ch/en/sls	synchrotron; X-ray; diffraction; spectroscopy; imaging; materials; failure analysis
TF-025	SLS Techno Trans industrial access to SLS	SLS Techno Trans AG / PSI ecosystem	Villigen, Switzerland	Switzerland	Materials / failure analysis	Industrial synchrotron access	Commercial/industrial access route for standard measurements at Swiss Light Source beamlines.	Standard measurement can often be scheduled after first contact; technique selection and industrial project support.	Industrial service / access facilitator	https://synchrotron-analysis.ch/services-for-industry/swiss-light-source	industry access; SLS; synchrotron; material characterization; SME
TF-026	PSI SINQ / NEUTRA neutron imaging	Paul Scherrer Institute (PSI)	Villigen, Switzerland	Switzerland	Materials / failure analysis	Neutron radiography/tomography	Neutron imaging of medium to large objects using the thermal neutron spectrum.	NEUTRA provides neutron radiography/tomography; dual modality with 320 kV X-ray tube; special setup for radioactive materials.	User facility / collaboration	https://www.psi.ch/en/sinq/neutra	neutron imaging; radiography; tomography; NDT; hydrogen; materials; PSI
TF-027	PSI SwissFEL	Paul Scherrer Institute (PSI)	Villigen, Switzerland	Switzerland	Materials / failure analysis	Ultrafast X-ray laser imaging/spectroscopy	X-ray free-electron laser for extremely intense ultrashort X-ray pulses.	Femtosecond-to-attosecond X-ray pulses; unique imaging and spectroscopy capabilities for ultrafast processes.	User facility / research collaboration	https://www.psi.ch/en/swisfel	SwissFEL; X-ray FEL; ultrafast; spectroscopy; imaging; materials
TF-028	CSEM microvibration testing facility	CSEM	Neuchâtel, Switzerland	Switzerland	Mechanical / vibration / shock	Microvibration characterization	Dedicated microvibration test facility for characterizing mechanisms/actuators and susceptibility of sensitive devices.	Exported microvibration characterization; susceptibility characterization; vibration isolation and damping solutions.	Shared / industrial service	https://www.csem.ch/fr/services-sur-mesure/microvibration-testing/	microvibration; mechanisms; reaction wheels; damping; isolation; optical payload
TF-029	CSEM vibration and shock testing	CSEM	Neuchâtel, Switzerland	Switzerland	Mechanical / vibration / shock	Vibration/shock survivability	Vibration and shock testing captured in the uploaded CSEM facility sheet.	Uploaded workbook lists 5 g to 5000 g survivability qualification capacity.	Shared / industrial service	User uploaded workbook: Testing Facilities CH_TB01.xlsx	CSEM; vibration; shock; survivability; launch; compact devices
TF-030	CSEM environmental chambers and thermal cycling	CSEM	Neuchâtel, Switzerland	Switzerland	Environmental / TVAC	Environmental chambers / thermal cycling	Environmental chambers and thermal cycling capability captured in the uploaded CSEM facility sheet.	Uploaded workbook lists -65°C to +200°C and 30–95% relative humidity.	Shared / industrial service	User uploaded workbook: Testing Facilities CH_TB01.xlsx	CSEM; thermal cycling; humidity; environmental chamber; temperature
TF-031	CSEM HASS	CSEM	Neuchâtel, Switzerland	Switzerland	Reliability / screening	Highly Accelerated Stress Screening	Accelerated stress system for early-life failure discovery and robustness screening.	Temperature, humidity and pressure stress screening as captured in uploaded CSEM sheet.	Shared / industrial service	User uploaded workbook: Testing Facilities CH_TB01.xlsx	HASS; accelerated stress; reliability; humidity; pressure; temperature
TF-032	CSEM mechanical testing facilities	CSEM	Neuchâtel, Switzerland	Switzerland	Materials / failure analysis	Mechanical testing / DIC / hardness	Mechanical testing facilities captured in uploaded CSEM sheet.	Fatigue, digital image correlation, nanomicrohardness.	Shared / industrial service	User uploaded workbook: Testing Facilities CH_TB01.xlsx	mechanical testing; fatigue; DIC; hardness; CSEM
TF-033	CSEM thermal analysis facilities	CSEM	Neuchâtel, Switzerland	Switzerland	Materials / failure analysis	DSC / TGA thermal analysis	Thermal analysis facilities captured in uploaded CSEM sheet.	DSC -150°C to +725°C; TGA up to +950°C.	Shared / industrial service	User uploaded workbook: Testing Facilities CH_TB01.xlsx	DSC; TGA; thermal analysis; materials; CSEM
TF-034	CSEM materials and microstructure characterization	CSEM	Neuchâtel, Switzerland	Switzerland	Materials / failure analysis	TEM, FIB-SEM, Raman, FTIR, XRD	Material and microstructure analytics for qualification support and failure analysis.	TEM FIB-SEM, Raman, FTIR and XRD as captured in uploaded CSEM sheet.	Shared / industrial service	User uploaded workbook: Testing Facilities CH_TB01.xlsx	TEM FIB-SEM; Raman; FTIR; XRD; failure analysis; CSEM
TF-035	CSEM cleanroom and MEMS processes	CSEM	Neuchâtel, Switzerland	Switzerland	Manufacturing / proto-qualification	Cleanroom, MEMS, optical/process prototyping	Prototype fabrication and process development platform for MEMS, optics and integrated devices.	Uploaded workbook lists 700 m ² ISO 5–6 cleanroom, 6-inch wafers, DRIE, UV LIGA, SiC and glass processes.	Shared / industrial service / collaboration	User uploaded workbook: Testing Facilities CH_TB01.xlsx	cleanroom; MEMS; DRIE; UV LIGA; SiC; optics; prototype

TF-036	Empa Electronics and Reliability Center	Empa	Dübendorf / St. Gallen / Thun, Switzerland	Switzerland	Reliability / screening	Reliability engineering, qualification, failure analysis	Knowledge and equipment pool for research, tests and inspections for industry, academia and public authorities	Physical qualification; reliability investigations; non-destructive testing; materials/components/systems analysis	Service / cooperation / applied research	https://www.empa.ch/web/s498	reliability; qualification; NDT; failure analysis; electronics; Empa
TF-037	Empa Center for X-ray Analytics	Empa	Dübendorf / St. Gallen, Switzerland	Switzerland	Materials / failure analysis	X-ray CT, phase contrast, XRD, SAXS/WAXS	X-ray-based imaging and diffraction/scattering centre for materials and technology.	Nano/micro X-ray CT; 2D/3D/4D imaging; XRD/HRXRD; SAXS/WAXS; equipment for samples from millimetres to metres and resolution below one micrometre on some setups.	Service / collaboration	https://www.empa.ch/web/s499	X-ray CT; XRD; SAXS; WAXS; phase contrast; materials; defect; NDT
TF-038	Empa Electron Microscopy Center	Empa	Dübendorf, Switzerland	Switzerland	Materials / failure analysis	Electron microscopy / sample preparation	Electron microscopy services for internal and external R&D partners.	Efficient characterization service for functional and structural materials; access for external researchers from industry and academia.	Service / external user access	https://www.empa.ch/web/s299	electron microscopy; SEM; TEM; FIB; materials; failure analysis; industry access
TF-039	ETH Zurich ScopeM	ETH Zurich	Zurich, Switzerland	Switzerland	Materials / failure analysis	Optical, electron and ion microscopy	Central ETH scientific platform providing resources and services in light, electron and ion microscopy.	High-end microscopy infrastructure. Focused Ion Beam microscopy and expertise; industry access referenced in MERIL record.	User platform / expert-supported access	https://scopem.ethz.ch/	microscopy; electron microscopy; FIB; optical microscopy; materials; failure analysis; ETH
TF-040	EPFL CIME industrial electron microscopy service	EPFL	Lausanne, Switzerland	Switzerland	Materials / failure analysis	Electron microscopy / industrial services	Central EPFL electron microscopy facility dedicated to solid-state physics, materials science and life sciences.	Industrial electron microscopy services with operator support; wide set of observation techniques.	Industrial service / platform access	https://www.epfl.ch/research/facilities/cime/electr-on-microscopy/service-and-training/Industrial-analysis	electron microscopy; industrial service; materials; microstructure; EPFL; failure analysis
TF-041	ANAXAM materials analytics with neutrons and X-rays	ANAXAM	Villigen / PSI ecosystem, Switzerland	Switzerland	Materials / failure analysis	Industrial neutron and synchrotron analytics	Technology transfer centre providing industry access to neutron and synchrotron-radiation methods.	Applied materials analysis with neutron and synchrotron X-rays, primarily at PSI. Non-destructive material testing and industrial seminars/training.	Industrial service / technology-transfer centre	https://www.anaxam.ch/en	ANAXAM; neutron; synchrotron; X-ray; industrial access; NDT; materials
TF-042	METAS EMC Laboratory	Federal Institute of Metrology METAS	Wabern near Bern, Switzerland	Switzerland	EMC / magnetic / RF	EMC references, tests, calibration, consulting	National metrology laboratory supporting EMC references, testing and calibration	EMC tests; calibration of field measuring instruments and instruments for EMC testing; EMC consulting; expertise in mobile base-station measurements.	National metrology / service / consulting	https://www.metas.ch/metas/en/home/fabelektromagnetische-vertraeglichkeit.html	METAS; EMC; calibration; metrology; field measurement; traceability
TF-043	METAS RF & Microwave Laboratory	Federal Institute of Metrology METAS	Wabern near Bern, Switzerland	Switzerland	EMC / magnetic / RF	RF and microwave metrology	RF and microwave laboratory for national measurement base and calibration/measurement expertise.	RF/microwave services and R&D; VNA tools, uncertainty tools and contact route for RF/microwave metrology.	National metrology / service / consulting	https://www.metas.ch/metas/en/home/fabe/hochfrequenz.html	RF; microwave; calibration; metrology; VNA; uncertainty
TF-044	BFH High Voltage and EMC Laboratory	Bern University of Applied Sciences (BFH)	Bern area, Switzerland	Switzerland	EMC / magnetic / RF	High voltage, lightning, conducted immunity	Competence centre for high-voltage technology, strong electric/magnetic fields and EMC.	Lightning current tests; impulse voltage up to 750 kV; material insulation testing; partial discharge; conducted immunity.	Academic / applied research collaboration	https://www.bfh.ch/en/research/research-areas/high-voltage-systems-lab/	high voltage; EMC; lightning; impulse; partial discharge; conducted immunity
TF-045	Alpes Lasers shock and vibration testing	Alpes Lasers SA	St-Blaise, Switzerland	Switzerland	Mechanical / vibration / shock	Niche photonics vibration/shock	Shock and vibration testing service originally developed for laser device qualification.	Random vibrations; sawtooth shocks; half-sine shocks; MIL-STD-810H; flight and space qualification mentioned.	Service / niche collaboration	https://www.alpeslasers.ch/shock-and-vibration-testing/3/	laser; photonics; vibration; shock; MIL-STD-810H; flight qualification; space qualification
TF-046	armasuisse Science and Technology testing / operational evaluation	armasuisse S+T	Thun / Bure / other Swiss test environments	Switzerland	Field / operational testing	Operational tests, sensor evaluation, protection systems, defence-grade trials	Government technology centre researching, developing and testing technologies for Swiss Armed Forces capability development and mission support.	Sensor performance across electromagnetic spectrum; weapons/protection test centre; ballistic/explosive protection; realistic field testing such as Thun/Bure trials.	Government collaboration / project-specific	https://www.ar.admin.ch/en/armasuisse-science-and-technology	operational testing; field trials; sensors; defence; Thun; Bure; protection; electromagnetic spectrum
TF-047	armasuisse Weapon Test Center	armasuisse S+T	Thun, Switzerland	Switzerland	Field / operational testing	Ballistic/explosive protection and weapon-system tests	Instrumented underground systems for ballistic tests and trials under controlled conditions.	Noise protection structures; instrumented systems with lengths between 30 m and 500 m; ballistic tests for permitted calibres and ammunition.	Government collaboration / restricted access	https://www.ar.admin.ch/en/test-center	ballistic; impact; protection; explosive; shielding; armasuisse; Thun
TF-048	Cryogenic measurement laboratories / PSI-ETH quantum ecosystem	ETH Zurich / PSI-ETH hub	Zurich / Villigen, Switzerland	Switzerland	Thermal / cryogenic / power	Cryogenic testing / dilution refrigerators	Cryogenic measurement infrastructure for quantum devices and low-temperature electronics.	Dilution refrigerators and low-temperature measurement setups from uploaded workbook contact; exact public access route to validate.	Shared / research collaboration	User uploaded workbook: Testing Facilities CH_TB01.xlsx	cryogenic; dilution refrigerator; quantum; low temperature; sensors
TF-049	ESA access to laboratories / TPA route	European Space Agency (ESA)	ESA-wide; main labs at ESTEC, Noordwijk	Netherlands / ESA Member States	Access / consultancy	Lab access, testing requests, training, consultancy	Formal access route to ESA laboratories for Member-State companies, SMEs, start-ups, mid-caps, institutes and universities.	Request lab access, testing, training or consultancy via ESA third-party activities; access route from full ESA lab list and facility contacts.	ESA Third Party Activities / contact route	https://technology.esa.int/page/access-to-laboratories	ESA access; laboratories; TPA; SME; startup; consultancy; testing; ESTEC
TF-050	ESA Consultancy & Testing page	European Space Agency (ESA)	ESA-wide; TEC Directorate	ESA / Europe	Access / consultancy	Testing, laboratory access, training, expert consultancy	ESA page explaining how external users can request ESA lab testing, access, training and consultancy.	Process: request, proposal/contract, training/support, activity closure; available to industry, academia and institutions.	ESA Third Party Activities / consultancy	https://technology.esa.int/page/consultancy-testing	ESA; consultancy; testing; training; laboratory access; TPA; TEC
TF-051	ESA Laboratories catalogue	European Space Agency (ESA)	ESTEC Noordwijk plus ESA partner labs	Netherlands / ESA	Access / consultancy	Catalogue of 35 ESA labs and 22 external strategic partner labs	ESA overview of lab domains available to European space and non-space companies.	Public catalogue with 10 domains and labs such as antenna, robotics, cybersecurity, microelectronics, EMC, propulsion, power, GNC, materials, mechanical, microwave, navigation, optics, software and space environments.	ESA laboratory catalogue	https://technology.esa.int/labs	ESA labs; lab catalogue; ESTEC; partner labs; non-space companies; SME
TF-052	ESTEC Test Centre umbrella	European Space Agency / European Test Services (ETS)	ESTEC, Noordwijk, Netherlands	Netherlands	Environmental / TVAC	Integrated spacecraft/environmental test centre	Europe's large ESA environmental test centre for vibration, acoustic, thermal-vacuum, EMC and related spacecraft tests.	6000 m ² cleanroom complex; major infrastructure includes large vacuum chamber, acoustic system and hydraulic shaker; qualified for environmental testing vibration/acoustic/EMC/thermal-vacuum.	ESA/ETS test service; third-party activity route	https://technology.esa.int/lab/test-centre	ESTEC; Test Centre; environmental; TVAC; acoustic; vibration; EMC; spacecraft
TF-053	European Test Services (ETS) at ESTEC	European Test Services B.V.	ESTEC, Noordwijk, Netherlands	Netherlands	Environmental / TVAC	Operator for ESA Test Centre	ETS maintains and operates the ESA Test Centre and provides environmental test services.	Shock, vibration, acoustic noise, thermal vacuum, space simulation and EMC under one roof in ISO-class cleanrooms.	External service / ESTEC operator	https://european-test-services.net/about/	ETS; ESTEC; environmental testing; shock; vibration; acoustic; thermal vacuum; EMC; cleanroom
TF-054	80 kN Shaker Facility	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Small satellite/subsystem vibration	Electrodynamic shaker for small components through small spacecraft subsystems.	Capacity publicly listed around 900 kg vertical / 2000 kg horizontal; 3 Hz to 2500 Hz; sine, random, transient and shock modes; many controller/response channels.	ESA/ETS test service	https://technology.esa.int/lab/80kn-shaker-facility	80 kN shaker; vibration; shock; sine; random; transient; ESTEC
TF-055	320 kN Shaker	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Large electrodynamic vibration facilities.	High-force shaker listed in ESTEC Test Centre vibration facilities.	320 kN class shaker; exact payload envelope to validate from current ESA/ETS contact.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	320 kN shaker; vibration; launch loads; ESTEC
TF-056	640 kN Shaker	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Very large electrodynamic vibration	High-force shaker listed in ESTEC Test Centre vibration facilities.	640 kN class shaker; exact payload envelope to validate from current ESA/ETS contact.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	640 kN shaker; vibration; launch loads; ESTEC
TF-057	HYDRA multi-axis shaker	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	6-DOF hydraulic shaker	Multi-axis hydraulic vibration facility for realistic multi-directional dynamic loading.	HYDRA 6-degree-of-freedom shaker listed among Test Centre vibration facilities.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	HYDRA; 6-DOF; multi-axis; vibration; dynamic; ESTEC
TF-058	Large European Acoustic Facility (LEAF)	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Acoustic / vibro-acoustic	Acoustic noise qualification	Large acoustic chamber for launch acoustic-noise simulation.	LEAF listed as ESTEC acoustic test facility; used for high acoustic pressure launch-environment tests.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	LEAF; acoustic; launch noise; vibro-acoustic; ESTEC
TF-059	ESTEC Shock Bench	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Shock and high-speed imaging	Shock testing facility for launch/deployment shock environments.	Shock Bench and high-speed imaging listed among ESTEC Test Centre shock facilities.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	shock; pyroshock; high-speed imaging; deployment; launch; ESTEC
TF-060	ESTEC Microvibration Characterisation Facility	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Microvibration	Facility for characterising tiny disturbance forces and vibration sensitivity.	Microvibration characterisation listed by ESTEC Test Centre.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	microvibration; disturbance; pointing; precision; mechanisms; ESTEC
TF-061	ESTEC mass properties facilities	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Mass properties / balancing	Facilities for mass, centre-of-gravity, moments of inertia and dynamic balancing.	WM 506, M80 MPMA, WR12, M1, weight scales and ES/BS dynamic balancing listed by ESA Test Centre.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	mass properties; centre of gravity; inertia; balancing; spacecraft; ESTEC
TF-062	Large Space Simulator (LSS)	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Environmental / TVAC	Large thermal-vacuum / solar simulation	Europe's large space-simulation facility recreating vacuum, thermal and solar conditions.	Public page lists vacuum down to space-relevant levels, solar beam up to 2600 W/m ² and max test-object mass around 5000 kg; thermal balance, R radiation, deployment and videogrammetry applications.	ESA/ETS test service	https://technology.esa.int/lab/large-space-simulator	LSS; thermal vacuum; solar simulation; TVAC; thermal balance; deployment; ESTEC
TF-063	Phenix Thermal Vacuum Facility	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Environmental / TVAC	Thermal vacuum	Thermal-vacuum facility listed by the ESTEC Test Centre.	Phenix TV facility; exact test envelope to confirm with ESA/ETS.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	Phenix thermal vacuum; TVAC; ESTEC
TF-064	VTC 1.5 Space Simulator	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Environmental / TVAC	Thermal vacuum / space simulator	Smaller space-simulation chamber listed by the ESTEC Test Centre.	VTC 1.5 space simulator; exact test envelope to confirm with ESA/ETS.	ESA/ETS test service	https://technology.esa.int/lab/test-centre	VTC 1.5; space simulator; thermal vacuum; TVAC; ESTEC
TF-065	Maxwell EMC Facility	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	EMC / magnetic / RF	Large EMC and ESD testing	EMC/ESD facility for small to large test articles.	Conducted/radiated emissions and immunity; chamber around 17 x 12.5 x 12 m; frequency coverage publicly listed from low frequency to tens of GHz; large pallet/hoist handling.	ESA/ETS test service	https://technology.esa.int/lab/maxwell-emc-facility	Maxwell; EMC; ESD; radiated; conducted; immunity; emissions; ESTEC
TF-066	AC Magnetic Facility	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	EMC / magnetic / RF	Magnetic cleanliness / AC magnetic testing	Magnetic test facility listed by the ESTEC Test Centre.	AC magnetic facility; exact details to validate with ESA/ETS or EMC lab contacts.	ESA/ETS / ESA lab service	https://technology.esa.int/lab/test-centre	magnetic; magnetic cleanliness; AC magnetic; EMC; ESTEC
TF-067	Antenna Laboratory / HERTZ / Compact Payload Test Range	ESA Antenna Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Optics / photonics / antenna	Antenna and payload RF measurements	Antenna and radiated payload/platform test facilities supporting external customers including SMEs.	Radiation pattern, gain, phase centre, group delay, end-to-end payload/platform radiated signals; frequency range from hundreds of MHz to THz; facilities for large objects up to spacecraft-scale.	ESA lab access / service	https://technology.esa.int/lab/antenna-laboratory	antenna; HERTZ; CPTR; RF; radiation pattern; gain; phase centre; payload; ESTEC
TF-068	ESA EMC Laboratory	ESA EMC Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	EMC / magnetic / RF	EMC troubleshooting, pre-compliance, magnetic cleanliness	ESA lab for EMC measurements, magnetic cleanliness and customized tests.	Pre-compliance testing on breadboards/development models; troubleshooting; EMC chamber DC-40 GHz; magnetic facilities such as MCF/MMF/AC magnetic.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/electromagnetic-compatibility-laboratory	ESA EMC lab; pre-compliance; magnetic cleanliness; DC-40GHz; troubleshooting
TF-069	ESA Space Power Laboratory	ESA Space Power Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Thermal / cryogenic / power	Space power, batteries, solar generators, HV power	Laboratory testing satellite power systems, power components, batteries, solar cells/arrays and high-voltage equipment.	Power components/breadboards; failure investigation; thermal cycling/leak tests of solar coupons; battery long-term testing; high-voltage tests in ambient/partial pressure/vacuum; solar simulation.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/esa-space-power-laboratory	space power; battery; solar array; high voltage; thermal cycling; life test; ESTEC
TF-070	Battery and Life Test Facility (BLTF)	ESA Space Power Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Thermal / cryogenic / power	Battery and long-term life testing	Facility for automated long-term battery life testing within ESA Space Power Laboratory.	Vacuum chambers, thermal chambers roughly -70°C to +190°C; high-current/high-voltage supplies and abuse/life-test capability per ESA page.	ESA lab access / service laboratory	https://technology.esa.int/lab/esa-space-power-laboratory	battery; life test; vacuum; thermal chamber; power; ESTEC
TF-071	Solar Generator Characterisation Facility	ESA Space Power Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Thermal / cryogenic / power	Solar cells, coupons, arrays	Facility for solar generator, solar cell and coupon inspection/characterisation under simulated sun and environmental conditions.	Pulsed/steady solar simulators; spectral response and thermal conditions; supports solar array/cell inspections.	ESA lab access / service laboratory	https://technology.esa.int/lab/esa-space-power-laboratory	solar generator; solar cells; solar simulator; spectral response; power; ESTEC

TF-072	ESA Propulsion Laboratory	ESA Propulsion Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Propulsion / fluids	Chemical, electric and cold-gas propulsion testing	ESTEC propulsion testing support for chemical, electric and advanced propulsion plus aerothermodynamics.	Electric and cold-gas thruster/component measurements; thrust, mass flow, electrical parameters; endurance campaigns; plume diagnostics; multiple vacuum chambers and thrust balances.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/esa-propulsion-laboratory	propulsion; thruster; electric propulsion; cold gas; vacuum; plume; thrust balance
TF-073	Data Systems and Microelectronics Laboratory	ESA Data Systems & Microelectronics Lab	ESTEC, Noordwijk, Netherlands	Netherlands	Electronics / data / software	On-board computers, avionics, ASIC/FPGA/IP cores	Lab for data-handling systems and microelectronics facilities/test benches.	DHS hardware/software test and validation; ASIC/FPGA/IP-core support; beneficial test benches for SMEs; interfaces and avionics validation.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/data-systems-and-microelectronics-laboratory	data handling; microelectronics; ASIC; FPGA; avionics; embedded; ESTEC
TF-074	On-Board Interfaces Facility	ESA Data Systems & Microelectronics Lab	ESTEC, Noordwijk, Netherlands	Netherlands	Electronics / data / software	Spacecraft data interfaces and communication buses.	Facility supporting spacecraft onboard interfaces and communication buses.	Interfaces listed include MIL-STD-1553B, SpaceWire, SpaceFibre, CAN/CANopen, TT/Ethernet, TSN and wireless.	ESA lab access / service	https://technology.esa.int/lab/data-systems-and-microelectronics-laboratory	MIL-STD-1553; SpaceWire; SpaceFibre; CAN; CANopen; TT/Ethernet; TSN
TF-075	RASTA flight avionics facility	ESA Data Systems & Microelectronics Lab	ESTEC, Noordwijk, Netherlands	Netherlands	Electronics / data / software	Reference avionics test bench	Reference flight-avionics facility within ESA data-systems lab ecosystem.	RASTA flight avionics listed by ESA lab page.	ESA lab access / service	https://technology.esa.int/lab/data-systems-and-microelectronics-laboratory	RASTA; avionics; OBC; payload data handling; flight avionics; ESTEC
TF-076	Materials and Electrical Components Laboratory	ESA Materials and Electrical Components Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Materials / failure analysis	Materials, processes, EEE components, failure investigation	ESA lab with many experimental facilities for materials, electrical components and failure investigation.	ESA lab list describes more than 20 experimental facilities for materials/components and failure investigation.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/materials-and-electrical-components-laboratory	materials; EEE components; failure investigation; coatings; processes; ESTEC
TF-077	Mechanical Systems Laboratory	ESA Mechanical Systems Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Mechanical / vibration / shock	Mechanical and thermal testing for equipment/payloads	ESA lab supporting mechanical systems and small equipment/payload testing.	ESA lab list identifies thermal/mechanical testing of small equipment and payloads.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/mechanical-systems-laboratory	mechanical systems; payload; equipment; thermal mechanical; mechanisms; ESTEC
TF-078	Microwave Laboratory	ESA Microwave Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	EMC / magnetic / RF	RF/microwave testing and life tests	ESA microwave lab for RF testing, precision time/frequency, GNSS payload and microwave technologies.	RF testing/R&D; precision time/frequency; RF life tests; GNSS payload support; microwave testing up to high GHz range according to ESA lab list.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/microwave-laboratory	microwave; RF; GNSS; precision timing; life test; payload; ESTEC
TF-079	Navigation Laboratory	ESA Navigation Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Optics / photonics / antenna	GNSS/navigation test and measurement	Engineering tool and test/measurement facility for navigation systems.	ESA lab list identifies navigation engineering tools, test and measurement facility.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/navigation-laboratory	navigation; GNSS; PNT; timing; measurement; ESTEC
TF-080	Optics and Opto-Electronics Laboratory	ESA Optics and Opto-Electronics Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Optics / photonics / antenna	Optics, opto-electronics, photonics	ESA state-of-the-art lab for optics and opto-electronics.	Optical/optoelectronic test and expertise capabilities; exact services should be scoped with lab contact.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/optics-and-opto-electronics-laboratory	optics; photonics; optoelectronics; laser; detector; ESTEC
TF-081	Remote Sensing Laboratory	ESA Remote Sensing Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Optics / photonics / antenna	Remote-sensing instrument support	ESA lab for remote-sensing technology support.	Remote-sensing technology testing/support and instrument-related expertise listed in ESA lab catalogue.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/remote-sensing-laboratory	remote sensing; instruments; sensors; payload; ESTEC
TF-082	Software Systems Laboratory	ESA Software Systems Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Electronics / data / software	Software engineering and validation	ESA lab for software systems engineering, validation and tooling.	Software systems facilities listed in ESA lab catalogue; use for space software quality, architectures and validation discussions.	ESA lab access / consultancy	https://technology.esa.int/lab/software-systems-laboratory	software; validation; onboard software; ground software; ESTEC
TF-083	Space Environments and Effects Facility	ESA Space Environments and Effects Facility	ESTEC, Noordwijk, Netherlands	Netherlands	Radiation / particle beam	Space environment modelling, radiation/plasma/microparticle/scontamination effects	ESA computational/facility support for space-environment effects.	ESA lab catalogue mentions radiation, plasmas, micro-particles and contamination effects.	ESA lab access / consultancy / modelling	https://technology.esa.int/lab/space-environments-and-effects-facility	space environment; radiation; plasma; microparticles; contamination; modelling
TF-084	Automation and Robotics Laboratory	ESA Automation & Robotics Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Robotics / GNC / autonomy	Robotics, automation, in-orbit servicing/assembly concepts	ESA lab supporting automation and robotics research and testing.	Robotics testbeds and expertise listed in ESA lab catalogue; exact capabilities should be scoped with lab contact.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/automation-and-robotics-laboratory	robotics; automation; autonomy; mechanisms; in-orbit servicing; ESTEC
TF-085	GNC, AOCS and Pointing Laboratory	ESA GNC/AOCS/Pointing Lab	ESTEC, Noordwijk, Netherlands	Netherlands	Robotics / GNC / autonomy	Guidance, navigation, control and pointing	ESA lab for GNC, AOCS and pointing technologies.	GNCAOCS/pointing lab listed in ESA catalogue; relevant to hardware-in-the-loop, algorithms and pointing performance discussions.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/gnc-aocs-and-pointing-laboratory	GNC; AOCS; pointing; navigation; hardware-in-the-loop; ESTEC
TF-086	Communication and TT&C Laboratory	ESA Communication and TT&C Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	EMC / magnetic / RF	Telecommunication, TT&C and RF systems	ESA lab for communication and telemetry/telecommand technology support.	Communication and TT&C lab listed in ESA catalogue.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/communication-and-ttc-laboratory	communication; TT&C; RF; telemetry; telecommand; ESTEC
TF-087	Cybersecurity Laboratory	ESA Cybersecurity Laboratory	ESTEC, Noordwijk, Netherlands	Netherlands	Electronics / data / software	Cybersecurity evaluation and hardening	ESA lab supporting cybersecurity aspects of space systems.	Cybersecurity lab listed in ESA catalogue; use for security assessment and secure architecture	ESA lab access / consultancy	https://technology.esa.int/lab/cybersecurity-laboratory	cybersecurity; secure systems; space data; software; ESTEC
TF-088	Concurrent Design Facility (CDF)	ESA CDF	ESTEC, Noordwijk, Netherlands	Netherlands	Access / consultancy	Concurrent engineering / mission and system design	ESA facility for concurrent design and early system-level maturation.	CDF listed in ESA lab catalogue; supports integrated design scenarios rather than environmental testing.	ESA facility / consultancy	https://technology.esa.int/lab/concurrent-design-facility	CDF; concurrent design; system engineering; requirements; TRL roadmap
TF-089	Life Support and Physical Sciences Instrumentation Laboratory	ESA Life Support & Physical Sciences Instrumentation Lab	ESTEC, Noordwijk, Netherlands	Netherlands	Environmental / TVAC	Life support and physical-sciences instrumentation	ESA lab for life-support and physical-sciences instrumentation.	ESA catalogue lists life support and physical sciences instrumentation lab; exact test environments to scope with contact.	ESA lab access / consultancy/test service	https://technology.esa.int/lab/life-support-and-physical-sciences-instrumentation-laboratory	life support; physical sciences; instrumentation; payload; ESTEC
TF-090	High Power RF and Materials Laboratory	ESA High Power RF & Materials Laboratory	ESA-VSC / Valencia, Spain (ESA partner/lab context)	Spain	EMC / magnetic / RF	High-power RF, materials under RF exposure	ESA high-power RF and materials lab listed in the ESA lab ecosystem.	Useful for high-power RF testing, multipactor/RF material issues and RF component support; exact current access route should be confirmed.	ESA lab/partner access	https://technology.esa.int/lab/high-power-rf-and-materials-laboratory	high-power RF; materials; multipactor; RF payload; ESA Valencia
TF-091	Thermography and deformation measurement support	ESA ESTEC Test Centre / Advanced Metrology	ESTEC, Noordwijk, Netherlands	Netherlands	Metrology / calibration	Thermography, deformation, optical metrology	Advanced metrology capabilities supporting environmental and structural tests.	ESA Test Centre lists thermography, deformation measurement, high-speed imaging, contactless dimensional measurement, sun irradiance and surface-properties support.	ESA/ETS test support	https://technology.esa.int/lab/test-centre	thermography; deformation; metrology; high-speed imaging; dimensional measurement; ESTEC
TF-092	ESTEC cleanrooms and clean tents	ESA ESTEC Test Centre	ESTEC, Noordwijk, Netherlands	Netherlands	Contamination / cleanliness	Cleanroom infrastructure	Cleanrooms and clean tents supporting test preparation and clean handling.	ESA Test Centre infrastructure includes ISO 5 clean tent, small cleanroom and cleanroom complex.	ESA/ETS test support	https://technology.esa.int/lab/test-centre	cleanroom; contamination; clean tent; ISO 5; flight hardware; ESTEC
TF-093	FHNW IPPE Space Test Laboratory (Labor für Raumfahrt am IPPE)	Fachhochschule Nordwestschweiz (FHNW), Institut für Produkt- und Produktionsengineering (IPPE)	Windisch (Brugg/Windisch campus), Switzerland	Switzerland	Environmental / TVAC	Space environmental test infrastructure (vibration, shock, thermal-vacuum, cleanroom)	Assembly, integration and mechanical/thermal qualification of space components and subsystems for ESA/NASA science payloads and for industry and academic partners.	Vibration, shock and fatigue tests, life tests in vacuum; ISO 7 cleanroom with ISO 5 flow box; contamination control (TQCM bake-out, MOC samples, black-light inspection). Hermetic SMILE SXI cryo-radiator, EnVision VenSpec-H, ARRAKHS.	Academic collaboration / service for industry and academic partners	https://www.fhnw.ch/en/engineering-environment/research-services/researchfields/aerospace	FHNW; IPPE; space; vibration; shock; thermal vacuum; cleanroom; qualification; Windisch; Brugg
TF-094	FHNW IPPE Electrodynamic Vibration Facility	FHNW / Institut für Produkt- und Produktionsengineering (IPPE)	Windisch, Switzerland	Switzerland	Mechanical / vibration / shock	Sine and random vibration and subsystems.	Launch vibration qualification of space components and subsystems.	Electrodynamic shaker up to 100 g sine/random; sine and random profiles per ESA/launcher specifications (SMILE SXI heritage: sine up to 40 g, random 32 gRMS).	Academic collaboration / service	https://www.fhnw.ch/en/engineering-environment/research-services/researchfields/aerospace	FHNW; vibration; shaker; sine; random; launch loads; space; qualification
TF-095	FHNW IPPE Shock Test Facility	FHNW / Institut für Produkt- und Produktionsengineering (IPPE)	Windisch, Switzerland	Switzerland	Mechanical / vibration / shock	Shock response spectrum (SR5)	Shock qualification for launch and separation/deployment events.	Shock test facility applying shock response spectrum (SR5) up to 1000 g; SMILE SXI heritage: 20 g at 100 Hz, 500 g at 1000-10000 Hz, tolerance -3 dB / +6 dB.	Academic collaboration / service	https://www.fhnw.ch/en/engineering-environment/research-services/researchfields/aerospace	FHNW; shock; SR5; pyroshock; separation; deployment; launch; space
TF-096	FHNW IPPE Thermal-Vacuum Chamber	FHNW / Institut für Produkt- und Produktionsengineering (IPPE)	Windisch, Switzerland	Switzerland	Environmental / TVAC	Thermal vacuum, bake-out, outgassing, contamination	Thermal-vacuum qualification, thermal-model validation and contamination control for space hardware.	Thermal-vacuum chamber with heating/cooling plate - 80°C to +120°C; pressure < 1e-5 mbar; TQCM and RGA; vacuum bake-out and molecular contamination (MOC) sampling. SMILE SXI TVAC ran +80°C / -65°C.	Academic collaboration / service	https://www.fhnw.ch/en/engineering-environment/research-services/researchfields/aerospace	FHNW; thermal vacuum; TVAC; bake-out; outgassing; TQCM; RGA; contamination; space
TF-097	FHNW IPPE Cleanroom	FHNW / Institut für Produkt- und Produktionsengineering (IPPE)	Windisch, Switzerland	Switzerland	Contamination / cleanliness	Cleanroom assembly, integration and inspection	Clean assembly, integration and inspection of space hardware.	27 m² ISO 7 cleanroom with ISO 5 flow box; MLJ (multi-layer insulation) installation, harnessing of heaters/temperature sensors, black-light inspection and final cleaning.	Academic collaboration / service	https://www.fhnw.ch/en/engineering-environment/research-services/researchfields/aerospace	FHNW; cleanroom; ISO 7; ISO 5; flow box; MLJ; integration; contamination; space
TF-098	APCO Technologies environmental test facility	APCO Technologies SA	Aigle, Vaud, Switzerland	Switzerland	Environmental / TVAC	Thermal vacuum, vibration, micro-vibration, cleanroom	In-house development testing of space structures, mechanisms and thermal subsystems; testing offered to customers for flexibility and reactivity.	Thermal-vacuum chamber useful volume 650 x 650 x 650 mm, -83°C to +125°C (lifetime, thermal cycling, bake out); vibration test systems; unique micro-vibration management/analysis; ISO 5 to ISO 8 cleanrooms; mechanisms qualified -160°C to +155°C up to 500'000 cycles.	Project-specific / subcontract service	https://www.apco-technologies.eu/premises/	APCO; thermal vacuum; vibration; micro-vibration; cleanroom; mechanisms; Aigle; space structures; EN 9100
TF-099	ZHAW IMPE materials testing and characterization	ZHAW School of Engineering, Institute of Materials and Process Engineering (IMPE)	Winterthur, Switzerland	Switzerland	Materials / failure analysis	Materials, surfaces and coatings testing/characterization	Testing, analysis and characterization of materials, surfaces and coatings, plus process engineering; supported SMILE SXI as the Swiss materials & processes (M&P) partner.	Six laboratory areas with state-of-the-art infrastructure for materials/surface/coating testing, analysis and characterization; available to research partners.	Academic collaboration / research partner service	https://www.zhaw.ch/en/engineering/institutes-centres/impe/testing-analysis-and-characterization-of-materials-and-surfaces	ZHAW; IMPE; materials; surfaces; coatings; characterization; M&P; failure analysis; Winterthur
TF-100	CERN CHARM mixed-field irradiation facility	CERN (European Organization for Nuclear Research)	Meyrin, Geneva, Switzerland	Switzerland	Radiation / particle beam	Mixed-field radiation / SEE / TID / system-level	Radiation-hardness testing and qualification of electronic components, boards and full systems in space-representative mixed radiation field.	24 GeV/c proton beam on a metal target generating a mixed field (protons, neutrons, pions, muons, photons, etc.); irradiation room ~7 x 5 x 2 m; movable shielding to tune the field; batch screening of components/boards up to medium-sized satellites; hosted first full-satellite system-level test (CELESTA CubeSat).	User facility / aerospace-community access via CERN Knowledge Transfer	https://knowledge.transfer.web.cern.ch/technology/es/charm-mixed-fields	CERN; CHARM; radiation; mixed field; SEE; TID; protons; neutrons; pions; muons; photons; electronics; satellite; space qualification

TF-101	CERN VESPER high-energy electron facility	CERN (European Organization for Nuclear Research)	Meyrin, Geneva, Switzerland	Switzerland	Radiation / particle beam	High-energy electron irradiation (space)	Radiation testing of electronics and components for space and planetary-exploration missions in harsh radiative environments.	Very energetic Electron facility for Space Planetary Exploration missions in harsh Radiative environments (VESPER); high-energy electron beamline in the CLEAR/CTF3 area used for radiation testing.	User facility / beamtime via CERN	https://irradiation-facilities.web.cern.ch/	CERN; VESPER; electron beam; radiation; space; planetary; high-energy electrons; qualification
TF-102	CERN IRRAD proton irradiation facility	CERN (European Organization for Nuclear Research)	Meyrin, Geneva, Switzerland	Switzerland	Radiation / particle beam	Proton irradiation / displacement damage / TID	Proton irradiation of detectors, electronic components and materials for radiation-hardness qualification.	24 GeV/c proton beam in the PS East Area (T8 beam-line), upstream of CHARM; component-level proton irradiation for high-energy-physics and aerospace users.	User facility / beamtime via CERN	https://irradiation-facilities.web.cern.ch/	CERN; IRRAD; proton; irradiation; displacement damage; TID; detectors; components
TF-103	CERN CC60 cobalt-60 gamma facility	CERN (European Organization for Nuclear Research)	Meyrin, Geneva, Switzerland	Switzerland	Radiation / particle beam	Total Ionizing Dose (TID) gamma irradiation	TID qualification of electronic components using a cobalt-60 gamma source.	CC60 uses a 60Co source for qualification of components against Total Ionizing Dose (TID) effects; housed in CERN's irradiation building alongside CALLAB.	User facility / access via CERN	https://irradiation-facilities.web.cern.ch/	CERN; CC60; cobalt-60; gamma; TID; total ionizing dose; component qualification