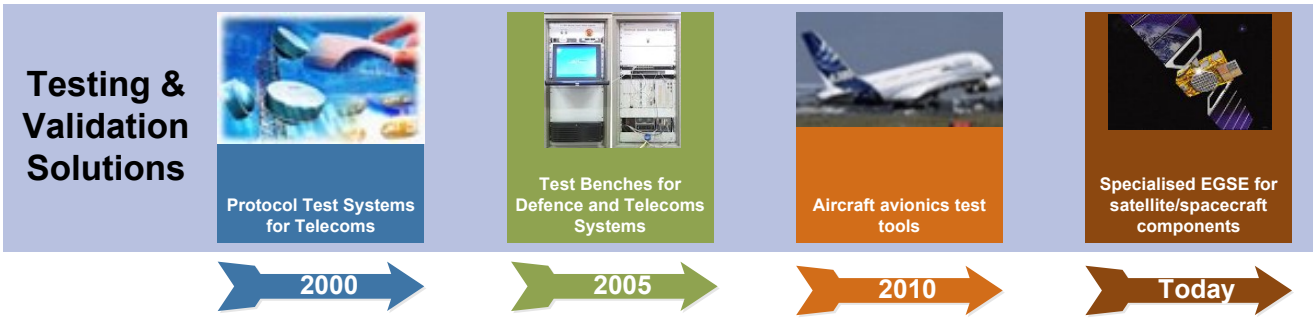
Electrical Ground Support Equipment (EGSE)
Specialised Spacecraft Check-Out Systems

TELETEL, founded in 1995, is a private Greek software and hardware, design and development company with a long history in providing development services and products in the Space, Defense and Aeronautics sectors.

TELETEL works very closely with the European industry and has provided software and hardware solutions to AIRBUS DEFENCE & SPACE, THALES ALENIA SPACE, EUROPEAN SPACE AGENCY (ESA), THALES AIR DEFENCE, DASSAULT, SYDERAL, SPACEBEL, TERMA, NEC SPACE and many other customers.

TELETEL is a leader in Europe in the areas of testing and validation, having delivered solutions for various communication networks (legacy telecoms, radar & missile communications, avionics communications, space on-board & ground communications, etc.) and having developed various physical interfaces, communication protocols, integrated test benches, simulators, etc.



iSAFT Product Line

Since Greece's membership to ESA (2005), TELETEL invests in space technologies at an accelerating pace, being today one of the most successful Greek industries in the space market.

TELETEL has developed its own product series (i.e. iSAFT Product Line) to address the needs of various mission EGSE, SCOE or DFE configurations:

- The iSAFT SpaceWire/MIL-STD-1553/CAN Recorder
- The iSAFT SpaceWire/MIL-STD-1553/CAN Simulator

Specific instances of these products have been installed and validated in mission EGSE testbeds around Europe (SOLAR ORBITER, GAIA, EUCLID, IASI-NG etc.).

The iSAFT products can form the core part of various EGSEs and they can specifically be used as EGSE controllers, SpaceWire, MIL-STD-1553, CAN Data Front Ends, data recording equipment, etc. They are fully certified for connection to flight equipment (FMEA, etc.)

iSAFT SpaceWire/MIL-STD-1553/CAN Recorder

iSAFT SpaceWire/MIL-STD-1553/CAN Simulator

Specialised EGSE

Building on over 22 years of expertise in testing & validation systems and with its iSAFT Product Line, TELETEL provides a comprehensive set of products and services related to customer-tailored Electrical Ground Support Equipment (EGSE) and specialised Spacecraft Check-Out Systems including:

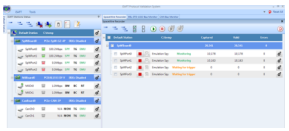
- Spacecraft Interface Simulator
- Payload/Instrument EGSE
- CDMS EGSE, MMU EGSE
- Mechanism Drive Electronics EGSE
- Custom Simulators/SCOEs
- Simulator Data Front End Equipment (SpaceWire, MIL-STD-1553, CAN)
- Network / Link Monitor and Recording Equipment (SpaceWire, MIL-STD-1553, CAN)
- EGSE controllers

EUCLID ADPME EGSE

EGSE components

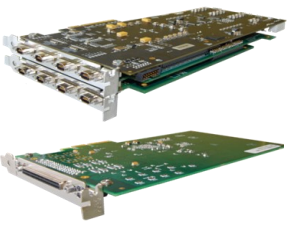
EGSE Controller

- Built on iSAFT application SW framework (iSAFT RTE).
- Monitoring, Control & Simulation functions, Scripts/Test Execution.
- Local MMI based on the iSAFT graphical tool chain.
- Interfaces with Central Checkout System (C&C CCSDS, EDEN, other).



Data Front Ends

- Built on iSAFT Simulator & Recorder.
- Support of various protocols including RMAP, CPTP, NDCP for SpaceWire, ECSS-E-ST-50-13C services for MIL-STD-1553, ECSS CAN / CANopen etc.
- Combination of various interfaces/ number of ports on the same platform (SpW, 1553, CAN, other) with IRIG & trigger timestamping / synchronization (FMEA available).
- COTS boards by TELETEL (e.g. SpW) or other suppliers (e.g. AltaDT, ESD).



Downlink Telemetry Front End

- Built on TELETEL's PCIe TM/TC interface boards providing up to 72 channels.
- IRIG interface for common timestamping / synchronization with other front ends.
- Support for LVDS, RS422/485, TTL electrical levels.
- Reception & processing of telemetry downlink data by the iSAFT Processing Module (CADU synchronisation, decoding *(RS, BCH etc.)*, decryption, reassembly).

Discrete interfaces & I/O Front End

- Built on TELETEL's Digital I/O interface board or other COTS boards (e.g. National Instruments).
- Generation / acquisition of all ECSS-E-ST-50-14C discretes (SHP/BSM, ASM, TSM, BDM etc.).
- Controlled by the iSAFT Discrete Interfaces Acquisition and Control engine SW, through the EGSE controller.
- IRIG interface, protection against internal failures with μs reaction time.

Power Front End

- Built on TELETEL's Latching Current Limiters with programmable reaction and trip-off time.
- COTS Power Supply systems (e.g. Keysight, TTI, etc.).
- Control & monitoring by the iSAFT Power Supply Distribution & Control engine SW (ON/OFF, error status, voltage / current measurements etc.), through the EGSE controller.

Automated Test & Simulation

- Graphical test preparation and execution environment.
- Automated execution of test suites.
- Test scripting support (Python).
- Parallel test suites execution.

DEVELOPMENT SERVICES FOR EGSEs

- Customisation of EGSEs or EGSE components
- Integration of COTS hardware components (i.e. power, I/Os, etc.)
- Development, Rehosting & Adaptation of Test Suites
- Development of custom Test SW Applications
- Development of Interface Adapters, Cables & Fixtures
- Installation, training, support, evolutive maintenance

CONTACT INFORMATION

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