

History TOP 10 – Space Heritage & Projects



BD SENSORS Space CSRC

Since 2017/12

No.	Project	Description	Photography
1	INTEGRAL PSAC Launched in 2001	Plastic Scintillator Anti-Coincidence Flight unit for photomultiplier high-voltage control, an experiment for the INTEGRAL (International Gamma Ray Astrophysics Laboratory) satellite for processing of the light emission caused by X ray particles covers development, design, analyses, manufacturing, testing, delivery and support in integration. The PSAC components are the High voltage power supply, the Low voltage power supply and the Electronic control box with the radiation hardened Actel 1280 FPGA.	
2	DEMETER I/V Converter Launched in 2001	Interface system for the Langmuir probe is an intelligent interface between the Langmuir probe and the ground system for scientific data acquisition when converting low-current of pA to μA range to voltage. Interface board operation is controlled by the software application with graphical user interface.	
3	SMART-1 EPDP Launched in 2002	Contribution to the first European mission to the Moon covered the design and development of the flight hardware and software for SMART1 satellite, implementation of CAN bus including analyses, manufacturing, testing, delivery and support in integration.	
4	PROBA 2 DSLP&TPMU Launched in 2006	The activities included complete delivery of the electrical and mechanical design including FPGA design, power supply design and all ESA requested tests, simulations and documentations. Two SLP probes (Segmented Langmuir Probe) are dedicated for surround satellite plasma measuring by means of the three TPMU (Thermal Plasma Measurement Unit) process sensors.	
5	SWARM Micro-accelerometer Launched in 2013	In the frame of the SWARM project the contribution represents all the cleanroom manufacturing activities of the scientific micro-accelerometer. The complete flight hardware includes the EM, EQM, PFM and FM sets, while each set consisted of a total number of 15 PCBs.	



History TOP 10 – Space Heritage & Projects



Since 2017/12

No.	Project	Description	Photography
6	PROBA-V SATRAM Launched in 2013	The objective was to launch technology demonstrator flight hardware based on a detector from TimePix family on the Proba-V satellite. The scope of this activity was to provide complex FM design & manufacturing related to the Space Application of TimePix-based Universal Radiation Monitor.	
7	SOLAR ORBITER RPW/STIX Launched in 2020	Contribution to both the RPW and the STIX scientific units was complex manufacturing of the EM, EQM and FM Power Supply Modules including support to the design and testing activities. The RPW powering subsystem consists of the Low-Voltages Power Supply (LVPS) and the Power Distribution Unit (PDU). The two units constitute one single module called LVPS-PDU, which is a commonly shared resource within RPW.	
8	ISS ACES-ELT Launch planned	Project ELT (European Laser Timing) is purely Czech contribution to important international experiment ACES (Atomic Clock Ensemble in Space). Its major goal is to verify performance of new generation of extremely precise atomic clock in microgravity and to perform independent time measurements on Earth and in space. The ELT device is going to be installed on board the ISS, particularly on the external platform of European Columbus laboratory module. The objective was to provide complex FM design and MAIT of the ELT Instrument including ground stations calibration in the frame of the ESA follow-up activity.	
9	JUICE APME Launch planned	The JUICE main mission will be to explore the huge planet's three largest icy moons in the hope of determining whether life is possible on these dwarf planets. The project aimed to provide the part procurement, the assembly, integration, and test of the APME / MGAMA for the JUICE Spacecraft. It included all the necessary support during design and development phase and analyses and design validation. It included manufacturing and testing of 34 boards that were integrated in the BBM, EM, EQM, FM, and FS models. Activity included also successful ESA certification for the SMD footprints.	
10	NEOSAT Thermal Test Benches EGSE	The main objective was to supply 10 pcs of the Thermal Test Benches for NEOSAT AIT Application covering all purchasing, prototyping, support to design and complete responsibility for MAIT activities. The thermal test benches contain various power-specific power supplies, acquisition units, thermocouples, thermo-switches, thermistors, rack with relays and an ACU-T function.	