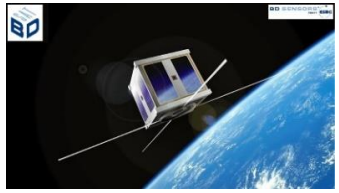
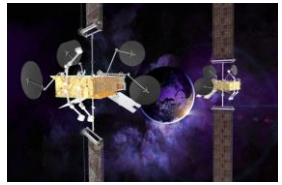
Present TOP 10 – Space Heritage & Projects

1994/*10* – 2017/*11*

Since 2017/*12*

No.	Project	Description	Photography
1	**I-HAB** Pressure Sensors Launch planned 12/2025	Development of the pressure sensors for the International Habitat Module (I-HAB), the ESA´ s contribution to the Cislunar Gateway infrastructure as the modular station designed to support the robotic and human exploration of lunar space; supporting its full habitability since the beginning of 2026. The company involvement covers complex pressure sensors development, design, analyses, manufacturing, testing, delivery and support in integration.	
2	**BDSAT** BD SENSORS' CubeSat Launch planned 4/2022	Complex solution for in-Orbit demonstration of the Pressure Sensors manufactured by BD SENSORS (BDS) as its long-term core-business production addressing all applications with pressure measurements. Functionality of the pressure sensors experiment is powered by Solar Arrays & Bank of Supercapacitors, as the second experiment of the BDSAT mission. All activities cover the BDSAT development, testing, integration, and support to launch including realisation of both the experiments based on own BDS products portfolio. BDSAT will launch with the Falcon 9 rocket.	
3	**METOP SG** Filter Wheel Controller Launched planned	BDS contribution includes complex Flight Hardware manufacturing of the Filter Wheel Controller including contribution to the design activities in the frame of the „METOP SECOND GENERATION, 3MI Instrument“, FPGA included. This activity includes also full design and MAIT realization of the EGSE FWC Unit Tester including complete Procurement.	
4	**BOSC** Banks of Supercaps Launched planned	The activities included complete electrical and mechanical development of the Banks of Supercapacitors, as the one of the very first Czech commercial space products ever with followed-up serial production. The BOSCs are addressed to the commercial space market for telecommunication satellites. This unit, replacing heavy and expensive batteries, is well applicable in any application when strong power impulse during a short period is required. Development included a complete set of the EGSE.	
5	**FSA Harness** & **EGSE** Flexible Solar Array Launched planned	In the frame of the FSA project the BDS contribution represents support to design and complete manufacturing of the Electrical Harness and EGSE for the Flexible Solar Array Subsystem. Hardware delivery includes Double Yoke Harness realized as the EM, EQM, and FM sets. The FSA project is realised in the frame of the Czech consortia called BSTG (Brno Space Technology Group = 5M, Frentech Aerospace, BD SENSORS and L.K.Engineering).	

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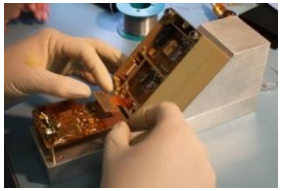
6	**PCBEA** Automat SMT PCB Assembly ECSS Qualified	The ECSS-based PCB Assembly is a core business activity since 1996 when CSRC, currently operating as the Space Division of BD SENSORS, has started this challenging manufacturing discipline as the very first private Czech company – a real pioneer in the Czech Republic (CZ). Flight PCB assembly with more than 25 years lasting Space Heritage includes various programs from INTEGRAL, XMM, METOP,…up to SOLAR ORBITER and JUICE. In addition, today BDS is the very first private company in CZ with its own automated SMT technology for PCB assembly for space applications in accordance with the ESA ECSS.	
7	**SPACE RIDER** MDE Launched planned	Contribution to the Space Rider / Mechanism Drive Electronics (MDE) is complex manufacturing of the EM, QM and FM boards including support to the design and testing activities. The MDE module controls a set of sophisticated stepper motors to manage opening/closing actions including status monitoring and Communication with the whole system.	
8	**HITPIX** Radiation Monitor Launch planned	The BDS role, as the industrial partner of the IEAP/CTUP, is to co-operate in development, manufacturing, testing of the Radiation Monitor System in a Package called HITPIX including delivery to ESA. It covers consolidate prototype design and manufacturing of the BB, EM, EQM and FM Units. HITPIX monitors the harmful radiation environment around spacecrafts including the flux of neutrons as they pose a significant damage hazard to electronics as well.	
9	**PEPE** Propulsion PEPE Rocket Engine Launch planned	Consortium BDS/CSRC and OteSpace has been co-operating in development of the Rocket Engine called PEPE (Peroxide Electric Propulsion Element) since 2016. The PEPE-1kN breadboard developed and tested. It includes bi-liquid rocket engine; storable eco-friendly & user-friendly propellants; electric pumps (simple, reliable, versatile); hypergolic ignition (reliable, repeated restart ability); after ignition the engine switches to a non-hypergolic fuel (enhanced safety and performance); regeneratively cooled chamber and nozzle (reusability); injector with variable wet area (throttling ability). The PEPE-10kN development is in progress.	
10	**EGSE** Design and MAIT Flight HW testing	Complex development including electrical & mechanical design, manufacturing, and testing is another element of the BDS core business. Typical EGSE units contain especially various power supplies, acquisition units, thermocouples, thermo-switches, thermistors, rack with relays, and many other components. Examples of successful EGSE realisation include Thermal Test Benches for NEOSAT AIT Application; Unit Testers for electrical testing of the METOP SG / 3MI / Filter Wheel Controller; testing Banks of Supercapacitors used in telecom spacecrafts; EGSE for controlling nominal and redundant deployment mechanisms for Solar Arrays.