

## Experience and Reference Projects of Celestia-STS

Date	Project	Customer	Site	Delivered Equipment
2002 - 2004	Herschel/Planck	Thales Alenia Space	Turin	Payload Module Power SCOE, 2 x CDMU Data Front Ends
2002 - 2004	Herschel/Planck	Thales Alenia Space	Turin	CDMU SCOE, 3 x TM/TC Front Ends & 2 x RF SCOE IF Transceivers
2003	TerraSAR-X	Airbus Defence & Space	Friedrichshafen	TTC-SCOE TM/TC baseband system
2004	ADM/Aeolus	Airbus Defence & Space	Friedrichshafen	GMFE and TM/TC FE systems
2004	Cryosat X-Band	Airbus Defence & Space	Friedrichshafen	ERSDEM-2.5 high-rate modem for X-band reference system
2004 - 2006	EROS A/B	ImageSat	Tel Aviv	ERSDEM-2.5 high-rate modems and integrated TM processing
2004 - 2006	ESA	ESA	Noordwijk	SSET (Spacecraft Simulator for EMCS Testing) software for PUS compliant TM/TC simulation
2003 - 2009	ESA - PSSmk3	ESOC	Darmstadt	ESA Portable Satellite Simulator Mk3
2004 - 2005	ESA	ESOC	Darmstadt	Provision of different NDIU-lite TM/TC baseband processors
2005	Commercial	SAAB/RUAG	Gothenburg	TM/TC BBE, IMBU/IPU for AIT, SVT purposes
2005	MetOp	ESA	Noordwijk	METOP SDC&FAT X-band in-orbit science data checking and archiving/distribution system (placed in SVALBARD station)
2005	Commercial	ITR	Adelaide	High-Rate TM ingestion and processing systems for EO data
2006 - 2017	Galileo IOV/FOC	Indra	Madrid	TTCF Modem for Galileo IOV & FOC phases
2006	Galileo IOV	Thales Alenia Space	Madrid	RF Suitcase
2007 - 2008	Lisa Pathfinder	ATOS CVC	Vienna	GS-IMBU for TTC SCOE
2007 - 2008	Lisa Pathfinder	Airbus Defence & Space	Friedrichshafen	Simulation Front-Ends & TM/TC Front-Ends
2007 - 2009	Galileo IOV	Thales Alenia Space	Charleroi	Securirt Unit EGSE
2007 - 2008	SWARM	ATOS CVC	Vienna	GS-IMBU for RF SCOE
2007 - 2008	Gaia	ATOS CVC	Vienna	GS-IMBU for TTC SCOE
2008 - 2009	BepiColombo	ATOS CVC	Vienna	Dual-channel modem for RF SCOE
2008 - 2009	Galileo IOV	ATOS CVC	Vienna	Multi-channel C-Band ULS Modem (NDMU) for In orbit Testing

Date	Project	Customer	Site	Delivered Equipment
2009	Commercial	ITR	Adelaide	ERSDEM-3 modems
2009	Commercial	ITR	Adelaide	X-band data ingestion & processing station (4-channel)
2009	Sentinel-2	Airbus Defence & Space	Friedrichshafen	TM/TC FE
2009	Sentinel-2	Airbus Defence & Space	Friedrichshafen	Simulation FE
2009 - 2010	Sentinel-1	Thales Alenia Space	Rome	RF Suitcase
2009 - 2010	Sentinel-1	ATOS CVC	Vienna	GS-IMBUs for TTC SCOE
2009 - 2018	Sentinel-1	Airbus Defence & Space	Portsmouth	SES EGSE
2009 - 2018	Sentinel-1	Airbus Defence & Space	Rome	TM/TC Front-Ends
2009 - 2010	Sentinel-3	ATOS CVC	Vienna	GS-IMBUs for TTC SCOE
2009	Sentinel-3	Thales Alenia Space	Toulouse	Payload Test Systems (PTF-SS)
2009 - 2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	Spacecraft Instrument Interface Simulators
2009 - 2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	Spacecraft Instrument Interface Simulators
2009 - 2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	Power Front-Ends
2009 - 2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	Simulation Front-Ends
2009 - 2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2009 - 2010	Sentinel-2	ATOS CVC	Vienna	GS-IMBUs for S-Band SCOE and ERSDEM-2.5 high-rate modems & X-band data ingestion & processing station for X-Band SCOE
2009 - 2010	TTCP	BAE Systems	Chelmsford	Study for next generation TTCP replacement of IFMS incl. High-rate data support (hardware platform responsible)
2009 - 2016	Apogee	Airbus Defence & Space	Toulouse	TM/TC Front-Ends
2010 - 2012	EarthCARE	Airbus Defence & Space	Friedrichshafen	Spacecraft Instrument Interface Simulators
2010 - 2017	Galileo FOC	TESAT	Backnang	TTC Modems
2010 - 2018	Sentinel-2	Airbus Defence & Space	Toulouse	MSI EGSE Systems
2010	Sentinel-1	Thales Alenia Space	Rome	DSHA EGSE
2010	Sentinel-1	Thales Alenia Space	Rome	PDHT EGSE
2010	Gaia	ESOC	Darmstadt	RF Suitcase

Date	Project	Customer	Site	Delivered Equipment
2010	Galileo FOC	OHB	Bremen	Modems for Galileo FOC TT&C SCOE
2010	SeoSAR	Airbus Defence & Space	Madrid	TM/TC Front-Ends
2010 - 2011	Astrium	Airbus Defence & Space	Toulouse	X-Band Front-Ends for commercial EO programmes (incl. AS250 platform)
2010 - 2016	Apogee	Airbus Defence & Space	Toulouse	RFX SCOE
2010	Galileo FOC	OHB	Bremen	RF Suitcase
2010	TerraSAR-X	Airbus Defence & Space	Friedrichshafen	Simulation Front-End and TM/TC Front-End
2011	EarthCARE	Syderal	Gals	Mass Memory EGSE
2012	EarthCARE	ATOS CVC	Vienna	GS-IMBU
2011	EarthCARE	Airbus Defence & Space	Friedrichshafen	Simulation Front-Ends
2011	EarthCARE	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2011	EarthCARE	Airbus Defence & Space	Friedrichshafen	Power Front-Ends
2011	SeoSAT	Airbus Defence & Space	Madrid	X-Band SCOE
2011	Flying Laptop	Stuttgart University	Stuttgart	TM/TC FE and TTC-IMBU
2011 - 2012	ExoMars 2016	Thales Alenia Space	Turin	Data Handling SCOE
2012	Euclid	ATOS CVC	Vienna	TTC-IMBUs
2012	FlexSAT	Spacotech	Immenstadt	TM/TC Front-End
2012 - 2018	TTCP	BAE Systems	Chelmsford	Telemetry, Tracking and Command Processors (TTCP)
2012 - 2018	TTCP	BAE Systems	Chelmsford	TTCP Hardware/BSP
2012	ExoMars	ATOS CVC	Vienna	Modems for TT&C SCOE
2012	Solar Orbiter	Airbus Defence & Space	Stevenage	Spacecraft Instrument Interface Simulators
2013	Solar Orbiter	ATOS CVC	Vienna	Modems for TT&C SCOE
2013	Lisa Pathfinder	Airbus Defence & Space	Stevenage	RF Suitcase
2013 - 2015	EDRS	Airbus Defence & Space	Ottobrun	EDTE Modem/Data Processors
2013 - 2014	Grace Follow-on	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2013 - 2014	Grace Follow-on	ATOS CVC	Vienna	GS IMBUs
2014	Proba-V	Spacebel	Angleur	TTC/TMTC Hybrid Modems

Date	Project	Customer	Site	Delivered Equipment
2014	Solar Orbiter	Airbus Defence & Space	Stevenage	COMMS Platform Simulator
2014	NGSAR	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2015 - 2018	Unknown	Turkish Aerospace Industries	Ankara	TM/TC Front-Ends
2015 - 2016	ExoMars RSP	Thales Alenia Space	Turin	Rover Vehicle Interface Simulators
2016 - 2018	Euclid	Thales Alenia Space	Turin	TM/TC Front-Ends
2016 - 2018	Euclid	ATOS CVC	Vienna	TTC-IMBUs & High-rate Modems
2016 - 2018	ExoMars RSP	Thales Alenia Space	Turin	DH SCOE's & DCIS
2016 - 2017	Sentinel-6	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2016	ExoMars RSP	AntwerpSpace	Antwerp	TTC-IMBU
2016	JUICE	Airbus Defence & Space	Toulouse	Spacecraft Instrument Interface Simulators Elements
2016 - 2017	ExoMars RSP	Thales Alenia Space	Turin	TM/TC Front-Ends
2016 - 2018	Apogee	Airbus Defence & Space	Toulouse	RFX VHR SCOE
2017	ExoMars RSP	Orbital Systems	Madrid	TM/TC Front-Ends
2017	ExoMars RSP	Airbus Defence & Space	Stevenage	TM/TC Front-Ends
2017	Euclid	ATOS CVC	Vienna	X & K-Band TTC-IMBUs
2017	JUICE	AntwerpSpace	Antwerp	COMS Platform and RF SCOE TTC-IMBUs
2017	Sentinel-6/Jason CS	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2018	JUICE	Airbus Defence & Space	Toulouse	TM/TC Front-Ends (via Celestia Portugal)
2018	Euclid	Thales Alenia Space	Turin	Spacecraft Suitcase
2018	Sentinel-6/Jason CS	Thales Alenia Space	Toulouse	Payload Test Systems (PTF-SS) - Elements
2018	MetOP-SG	ATOS CVC	Vienna	TTC-IMBUs