

## Experience and Reference Projects of Celestia STS

Date	Project	Customer	Site	Delivered Equipment
2021	TRISHNA	Airbus Defence & Space	Toulouse	2x EGSE (Pwr and discrete signals) + CCS by Terma
2021	PLATiNO	Sitael	Bari	HSSL FEE (WizardLink Front End)
2020	Galileo FOC	Indra	Madrid	Hybrid Modem, PTS NDMU, 2x TTCP Modems with spares
2020	Apogee	Airbus Defence & Space	Toulouse	4x TMTC SCOE
2020	TTCP	BAE Systems	Chelmsford	2x TTCP Modem hardware elements
2020	PLATiNO	Sitael	Bari	2x TMTC Front End
2020	Theos-2	Airbus Defence & Space	Toulouse	RFX VHR SCOE Upgrade
2020	Unknown	Soletop	Daejeon	TMTC Front End
2020	Galileo FOC	Indra	Madrid	IOT NDMU refurbishment
2020	NAOS	OHB System	Milano	PL SCOE
2020	CO3D	Airbus Defence & Space	Toulouse	2 x RFX VHR SCOE
2020	CO3D	Airbus Defence & Space	Toulouse	1 x TMI SCOE
2019	Euclid	Thales Alenia Space	Turin	X & K-band Spacecraft Suitcase
2019	Commercial	SteelElectronique	Toulouse	RSEMU EGSE (WizardLink)
2019	TTCP	BAE Systems	Chelmsford	TTCP (Goonhilly)
2019	FLP2	Airbus Defence & Space	Friedrichshafen	TM/TC Front-End
2019	Ariane 6	Realtra Space Systems	Dublin	Independent Video Kit (VIKI) EGSE
2019	ExoMars	Thales Alenia Space	Turin	DH SCOE
2019	TNO	Optical Communication	Delft	Optical Digital Converter
2019	MetOp-SG	ATOS CVC	Vienna	1x TTC-IMBU
2019	JUICE	Airbus Defence & Space	Toulouse	1x TMTC FE
2019	EarthCare	Airbus Defence & Space	Friedrichshafen	PISA SCOE upgrade

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2018	Euclid	Thales Alenia Space	Turin	TM/TC Front-Ends
2018	Euclid	ATOS CVC	Vienna	TTC-IMBUs & High-rate Modems
2018	ExoMars RSP	Thales Alenia Space	Turin	DH SCOE & DCIS
2018	Apogee	Airbus Defence & Space	Toulouse	RFX VHR SCOE
2018	Unknown	Turkish Aerospace Industries	Ankara	TM/TC Front-Ends
2018	TTCP	BAE Systems	Chelmsford	Telemetry, Tracking and Command Processors (TTCP)
2018	Apogee	Airbus Defence & Space	Toulouse	RFX SCOE
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
2018	Apogee	Airbus Defence & Space	Toulouse	RFX VHR SCOE including 2x WizardLink Front-End units
2018	ABBM - ARTES	ESA	Noordwijk	Development of Advanced BaseBand Modem for Telecom Satellites
2018	Galileo FOC	Indra	Madrid	TM/TC Front-Ends, Hybrid Modems for TTC SCOE, Multi-channel C-Band Modems (NDMU) for PTS, S-Band RF Suitcase
2017	Sentinel-6	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2017	ExoMars RSP	Thales Alenia Space	Turin	TM/TC Front-Ends
2017	Galileo FOC	TESAT	Backnang	TTC Modems
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
2016	ExoMars RSP	Thales Alenia Space	Turin	Rover Vehicle Interface Simulators

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2016	Apogee	Airbus Defence & Space	Toulouse	TM/TC Front-Ends
2016	ExoMars RSP	AntwerpSpace	Antwerp	TTC-IMBU
2016	JUICE	Airbus Defence & Space	Toulouse	Spacecraft Instrument Interface Simulators Elements
2015	EDRS	Airbus Defence & Space	Ottobrun	EDTE Modem/Data Processors
2014	Grace Follow-on	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2014	Grace Follow-on	ATOS CVC	Vienna	GS IMBUs
2014	TTCP	BAE Systems	Chelmsford	TTCP Hardware/BSP
2014	Proba-V	Spacebel	Angleur	TTC/TMTC Hybrid Modems
2014	Solar Orbiter	Airbus Defence & Space	Stevenage	COMMS Platform Simulator
2014	NGSAR	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2013	Solar Orbiter	ATOS CVC	Vienna	Modems for TT&C SCOE's
2013	Lisa Pathfinder	Airbus Defence & Space	Stevenage	RF Suitcase
2012	ExoMars 2016	Thales Alenia Space	Turin	Data Handling SCOE's
2012	EarthCARE	Airbus Defence & Space	Friedrichshafen	Spacecraft Instrument Interface Simulators
2012	EarthCARE	ATOS CVC	Vienna	GS-IMBU
2012	Euclid	ATOS CVC	Vienna	TTC-IMBUs
2012	FlexSAT	Spacotech	Immenstadt	TM/TC Front-End
2012	ExoMars	ATOS CVC	Vienna	Modems for TT&C SCOE's
2012	Solar Orbiter	Airbus Defence & Space	Stevenage	Spacecraft Instrument Interface Simulators
2011	Astrium	Airbus Defence & Space	Toulouse	X-Band Front-Ends for commercial EO programmes (incl. AS250 platform)
2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	Spacecraft Instrument Interface Simulators
2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	Power Front-Ends
2011	BepiColombo	Airbus Defence & Space	Friedrichshafen	TM/TC Front-Ends
2011	EarthCARE	Syderal	Gals	Mass Memory EGSE
2011	EarthCARE	Airbus Defence & Space	Friedrichshafen	Simulation Front-Ends

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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
2010	Sentinel-1	Thales Alenia Space	Rome	RF Suitcase
2010	Sentinel-1	ATOS CVC	Vienna	GS-IMBUs for TTC SCOE
2010	Sentinel-3	ATOS CVC	Vienna	GS-IMBUs for TTC SCOE
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
2010	TTCP	BAE Systems	Chelmsford	Study for next generation TTCP replacement of IFMS incl. High-rate data support (hardware platform responsible)
2010	Galileo IOV/FOC	Indra	Madrid	TTCF Modem for Galileo IOV & FOC phases
2010	Sentinel-1	Thales Alenia Space	Rome	DSHA EGSE
2010	Sentinel-1	Thales Alenia Space	Rome	PDHT EGSE
2010	Gaia	ESOC	Darmstadt	RF Suitcase
2010	Galileo FOC	OHB	Bremen	Modems for Galileo FOC TT&C SCOE
2010	SeoSAR	Airbus Defence & Space	Madrid	TM/TC Front-Ends
2010	Galileo FOC	OHB	Bremen	RF Suitcase
2010	TerraSAR-X	Airbus Defence & Space	Friedrichshafen	Simulation Front-End and TM/TC Front-End
2009	Sentinel-2	Airbus Defence & Space	Toulouse	MSI EGSE Systems
2009	Sentinel-1	Airbus Defence & Space	Portsmouth	SES EGSE
2009	Sentinel-1	Airbus Defence & Space	Rome	TM/TC Front-Ends
2009	BepiColombo	ATOS CVC	Vienna	Dual-channel modem for RF SCOE
2009	Galileo IOV	ATOS CVC	Vienna	Multi-channel C-Band ULS Modem (NDMU) for In orbit Testing
2009	Galileo IOV	Thales Alenia Space	Charleroi	Securirt Unit EGSE

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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	Sentinel-3	Thales Alenia Space	Toulouse	Payload Test Systems (PTF-SS)
2008	Lisa Pathfinder	ATOS CVC	Vienna	GS-IMBU for TTC SCOE
2008	Lisa Pathfinder	Airbus Defence & Space	Friedrichshafen	Simulation Front-Ends & TM/TC Front-Ends
2008	SWARM	ATOS CVC	Vienna	GS-IMBU for RF SCOE
2008	Gaia	ATOS CVC	Vienna	GS-IMBU for TTC SCOE
2006	EROS A/B	ImageSat	Tel Aviv	ERSDEM-2.5 high-rate modems and integrated TM processing
2006	ESA	ESA	Noordwijk	SSET (Spacecraft Simulator for EMCS Testing) software for PUS compliant TM/TC simulation
2006	ESA - PSSmk3	ESOC	Darmstadt	ESA Portable Satellite Simulator Mk3
2006	Galileo IOV	Thales Alenia Space	Madrid	RF Suitcase
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
2004	Herschel/Planck	Thales Alenia Space	Turin	Payload Module Power SCOE, 2 x CDMU Data Front Ends
2004	Herschel/Planck	Thales Alenia Space	Turin	CDMU SCOE, 3 x TM/TC Front Ends & 2 x RF SCOE IF Transceivers
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
2003	TerraSAR-X	Airbus Defence & Space	Friedrichshafen	TTC-SCOE TM/TC baseband system