# Modular General Purpose RTU supporting advanced low speed and medium speed serial busses

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# NTRACT DETAILS

**et + Program:** 800k GSTP
**ed Duration:** 18 months
**l Duration:** 56 months
Giorgio Magistrati
**nical Support:** Mariel Triggianese (TEC-EP)
**E OF THE WORK:**
jective of this activity is to design, develop and qualify (EQM level) a Modular RTU.
ne ESA/IPC(2010)52 Paris, 16 June 2010 : *"By applying in an extensive way ECSS compliant interfaces E-ST-50-12C, ECSS-E-ST-50-13C, ECSS-E-ST-50-14C, draft ECSS-E-ST-50-15C, ECSS-E-ST-50-51C, E-ST-50-52C) instead of the proprietary ones that are often used today, the opportunity is open for ent suppliers willing to develop modular and upgradeable RTU/RIU units than can be used across nt missions. This is exactly in line with the building block approach and philosophy.*
*rity and upgradeability are the key characteristics of the proposed unit to be developed; the unit has to ceived as an assembly of different modules/slices with standardized mechanical and internal electrical ces..."*
**ng Year:** 2012

# Modular RTU

| Contractor(s): CRISA | | | | ESA Budget: | 800 k€ |
|---|---|---|---|---|---|
| | | | | GSTP G521-001ED | |
| TRL | Initial: 4 | Current: 6 | YoC: 2017 | TO: G.Magistrati(TEC-EDD) | |

**Background and justification:** The SAVOIR/SAG identified the modular RTU as a high priority building block. This is one of the key avionics building blocks as the provided functionality is required by the majority of ESA missions

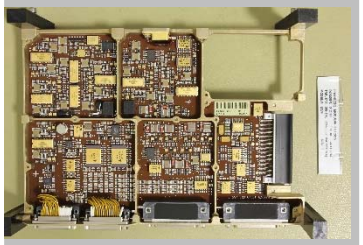
**Objective(s):** By applying in an extensive way ECSS compliant interfaces (ECSS-E-ST-50-12C, ECSS-E-ST-50-13C, ECSS-E-ST-50-14C, draft ECSS-E-ST-50-15C, ECSS-E-ST-50-51C, ECSS-E-ST-50-52C) instead of the proprietary ones that are often used today, the opportunity is open for equipment suppliers willing to develop modular and upgradeable RTU/RIU units than can be used across different missions. This is exactly in line with the building block approach and philosophy.
Modularity and upgradeability are the key characteristics of the proposed unit to be developed; the unit has to be conceived as an assembly of different modules/slices with standardized mechanical and internal electrical interfaces

**Achievements and status:**
An EQM has been developed and validated. FR in June/July 2017. EQM Test completed!. The EQM will be used as EM of the Proba3 IEU and it has been used to qualify the design of the IEU of Proba3. EQM campaign concluded and the unit is going to be delivered to Proba3.

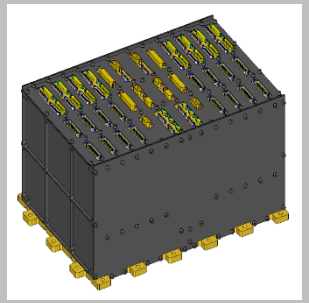
**Benefits:** The RTU is generally applicable to all spacecraft avionics systems. CRS has developed a modular design of a RTU/RIU in a reduced form factor wrt their current products.

**Next steps:** Production of FMS for Proba-3. in term of R&D develop a new control board based on a uC

**Target TRL: 9 Date: 2019**



Modular RTU: Digital I/O module



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