BepiColombo – PF/PL architecture and interfaces

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BepiColombo is Europe's first mission to Mercury. The BepiColombo spacecraft is an assembly of 2 orbiters: the Mercury Planetary Orbiter (MPO) and the Mercury Magnetospheric Orbiter (MMO). The staging adds to the two orbiters a third module: the Mercury Transfer Module (MTM) in charge of the propulsion.

Whilst the MPO needs to be conceived to ideally perform its scientific mission, as little mass as possible should enter Mercury orbit. To this end, the mass and the power budget allocation to the MPO instruments is very constraining. An intensive mass, power and cost optimization exercise has been conducted for this orbiter and its outcome led to opt for a unique solution based on SpaceWire technology to address the payloads TM/TC interfaces.

The presentation will introduce the MPO Reference Payload/ Platform architecture and its related interface optimisation criteria. The presentation will show as well how the different functions of payload, platform and mass memory are interlinked.