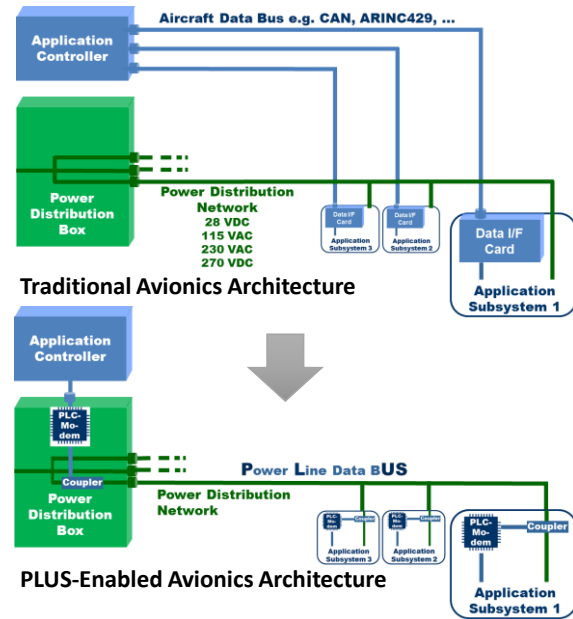


# PLUS (Power Line data bUS) Avionics

Power PLUS Data over the same Aircraft Wiring -  
Reducing Wiring Weight, Volume and Complexity

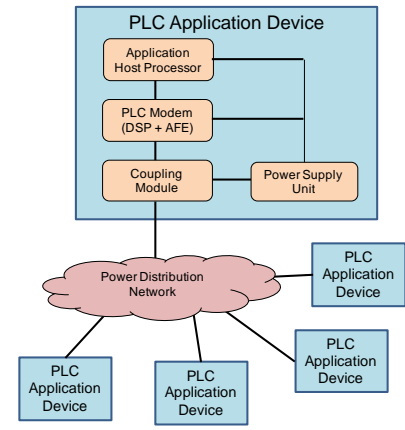
## PLUS for Avionics

- Dedicated **Power Line Communications (PLC)** solution for avionics applications
- Data transmission independent of the underlying power distribution network
- Operates over all types of power networks
- Supports high current and/or high voltage applications
- Standards-based solution:
  - Proven standard from other industries for the physical layer (IEEE 1901)
  - Proven avionics standard for bus arbitration (ARINC 629)
- Support for design assurance compliance according to RTCA DO-254 and DO-178



## PLUS Features

- Robust transmission with physical data rates up to several 10's of Mbps
- Multi-carrier configurable OFDM physical layer
- Advanced forward error correction
- State-of-the-art multi-layer error detection scheme
- Peer-to-peer architecture with no single point-of-failure
- Deterministic Media Access Control (MAC) scheduling
- Zero network setup time
- Multiplexing of multiple data services onto a single bus
- Signal transmission techniques designed to minimize emissions and improve susceptibility



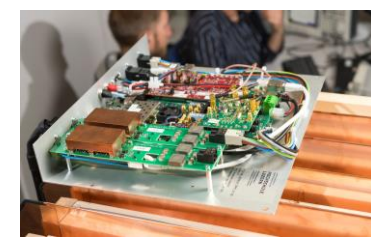
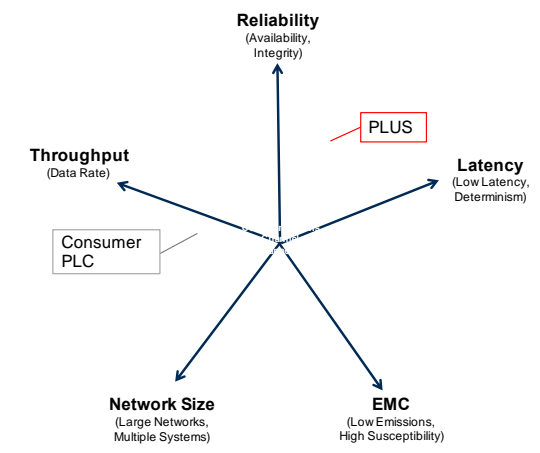
## PLUS in ASHLEY

**PLUS is enabling communications without the need for a dedicated data network for the ventilation control system**

- Three PLC prototypes have been developed for the ventilation control system
- PLC signal transmitted on 3-phase 115VAC/230VAC system (up to 10A per phase)
- CAN bus data transmitted transparently over the power distribution network using PLC

## PLUS for ASHLEY Advanced Studies

- ASHLEY partner AGI has performed EMC emissions and susceptibility testing with the ASHLEY PLUS prototypes as part of the advanced studies work package
- Testing on a differential wiring architecture passed with a comfortable margin
- Testing also showed that with further optimization, PLUS could provide a solution for the challenging single wire architecture



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