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Benefits and Management of a second backplane in MTCA.4 systems (upcoming MTCA.4.1 standard)

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Driven by the need to merge an analogue (RF) and a digital system into one single chassis DESY invented another backplane next to the AMC backplane for their MicroTCA.4 systems. In strong cooperation with other institutes and industrial partners this idea was extended and turned into a draft standard, submitted to PICMG as MTCA.4.1.

This presentation will show how the original idea of a second backplane got extended by additional features and new components, such as Rear Power Modules (RPMs), extended RTMs (eRTMs) and management.

Also several application examples and use cases for MicroTCA.4.1 are given, i.e.

LLRF concept for RTM backplane for sensitive analogue signals, additional power to µRTMs and eRTMs, interconnecting µRTMs and eRTMs
industrial concepts of RTM backplane for SDR and eNodeB

Summary

This presentation informs about the basic concept and the new features and components of MicroTCA.4.1 and how easy these can be integrated into existing MicroTCA.4 architectures. Different use cases will illustrate how these enhancements can be utilized and why encouraging system designers to create tailored solutions is beneficial.

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