UNIVERSITÄT SALZBURG

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Time-Triggered Embedded Fieldbus Systems

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This talk gives an introduction to the time-triggered distributed fieldbus system TTP/A. The Time-Triggered Fieldbus Protocol for SAE class A applications (TTP/A) is build around the conceptual model of a time-triggered communication and computation schedule where the communication interface are a memory mapped structure named Interface File System. The Interface File Systems represents the borderline between a local application in a node, e.g. the software that generates an actuator control signal and the global application that may span over several nodes in the network cluster.

Furthermore, the Interface File Systems is the standard interface for accessing data from the overall fieldbus application and for configuration and maintenance access.

At configuration and maintenance level, we propose the usage of semantically enhanced XML data for representing configuration information about the fieldbus cluster. As a case study, we have implemented a scheduling tool that creates a TTP/A communication schedule from the timing and communication specification of the application.

Speaker's Bio

Wilfried Elmenreich, born 1973, studied at the Engineering School for Electrotechnics and Control in Weiz, Styria and graduated at the Vienna University of Technology in Austria. He received a Master's degree in computer science in 1998 and a doctoral degree in technical sciences in 2002. His doctoral thesis addressed the sensor fusion problem in time-triggered systems and was supervised by Univ. Prof. Dr. Hermann Kopetz. In cooperation with his colleages, Wilfried Elmenreich has contributed significantly to the development of the TTP/A fieldbus protocol and the standardization of the OMG Smart Transducer Interface Standard. In the last five years, Wilfried Elmenreich has written 30 publications in the field of embedded real-time systems.

Where Jakob-Haringer-Straße 2, T05

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Host: Prof. Wolfgang Pree