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Signalling Protocol for PARITy

The goal of this study was to evaluate new concepts for the renewal of the operational communications system Public Address - Radio - Intercom - Telephony (PARITy) of the company INFO MANAGEMENT SYSTEMS AG (ims AG). The solutions had to be rated and checked for their feasibility by implementing critical parts as a prototype.

The current system PARITy Release 3 (PARITy R3) has been in use for over 10 years. In this period the system has been continuously extended on the defined architecture. This has led to a protocol and language diversity, as well as a complex configuration which complicated training of system administrators at the customer site.

Ongoing technical development, new requirements and habits of users required to consider new concepts and ideas. PARITy Release 4 (PARITy R4) has to meet the requirements of a distributed system with automated service discovery, load balancing, data synchronization and the use of standardized well known technologies such as Bonjour, DNS, vCard, SSL / TLS.

This bachelor thesis showed that a new operational communications system can be realized with many advantages on the basis of these new concepts. Both customers and ims AG benefit a lot of this solution.

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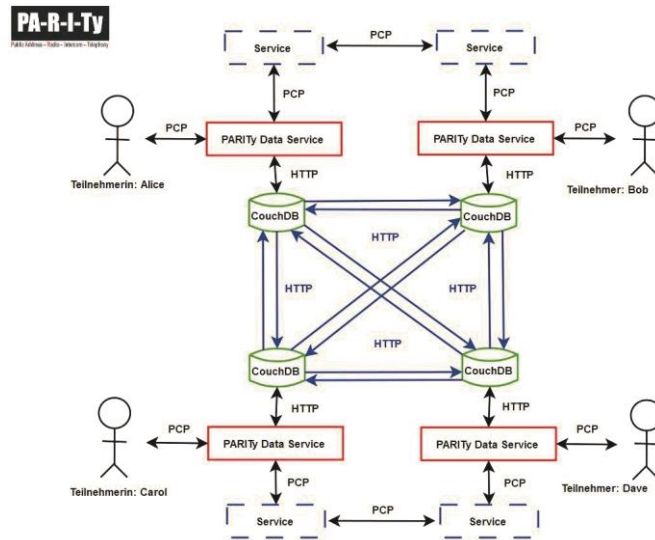
Developed basic concept of PARITy R4: Replicated, document-oriented database, redundant service availability, service-oriented architecture (SOA) as well as a automated service discovery. Communication between actors with the self developed PCP, which is a TCP and JSON based protocol.