Tanner Declaration Exhibit D



ROSA: Railroad Open System Architecture

Introduction of ROSATM Railroad Open System Architecture

Presentation of Goals and Principles

DCC Working Group Meeting



ROSA Goals

- Realistic Model Railroad Operations
- International Compatibility
- Data Exchange between Applications (ROSA Level 1)
- ◆ Cooperation of several Applications in Networks (ROSA Level 2)



ROSA Basic Concept: Security Element

Switch
(optional)

Entry Sensor
(Trigger Pulse)

C (opt.)

Entry Point C
Signal

Entry Point A Signal

A

Entry Sensor (Trigger Pulse)

Block Detector (Level Trigger) (optional) Entry Point B Signal

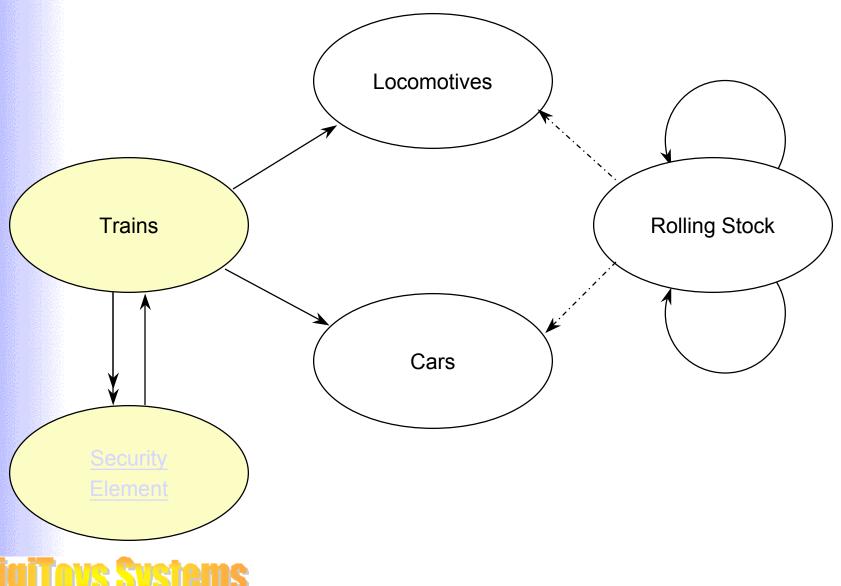
B

Entry Sensor (Trigger Pulse)

Kompetenz und Sicherheit für Digital-Modellbahner

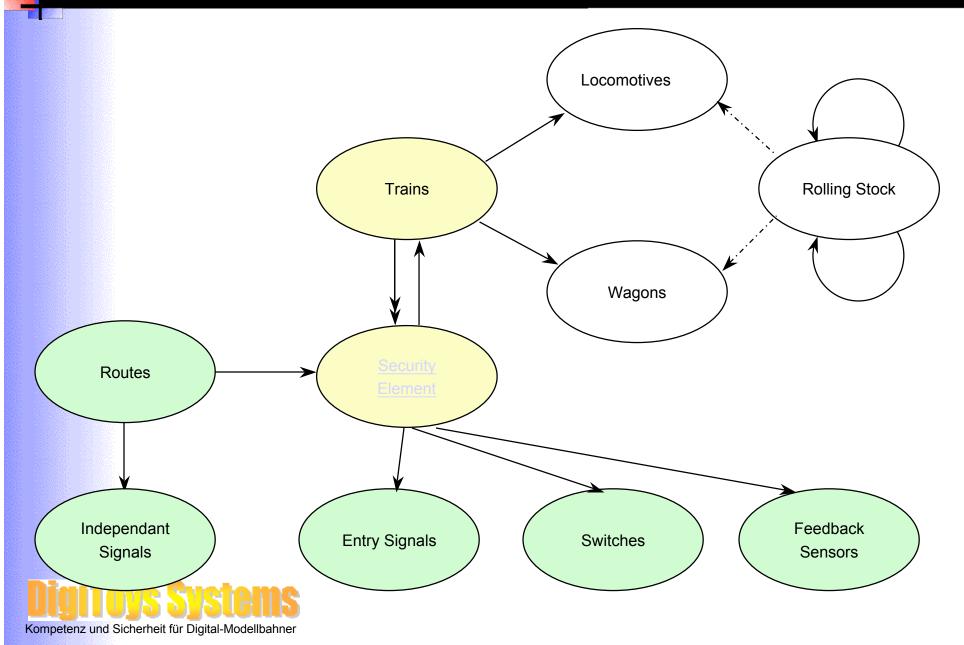


ROSA Data Structure I

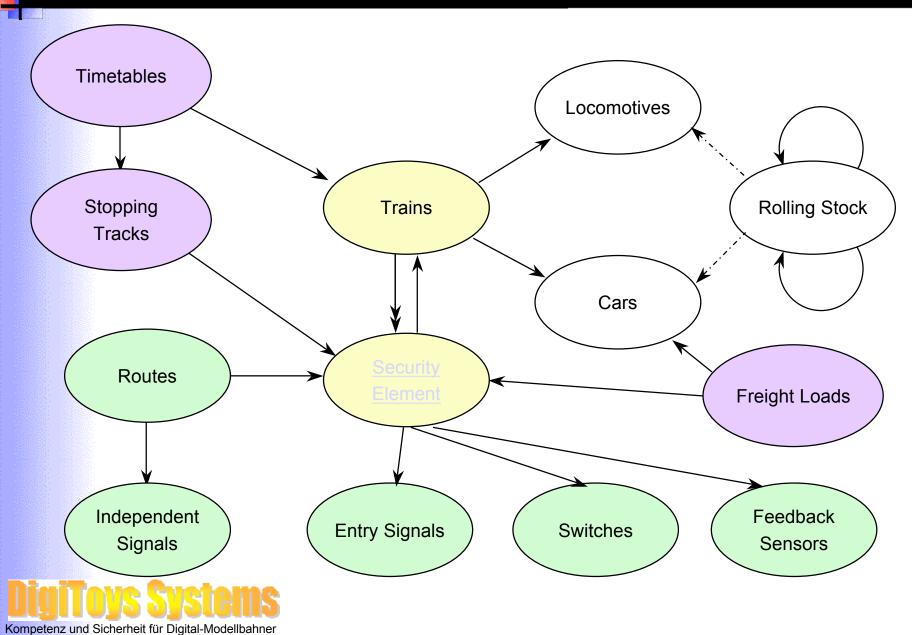


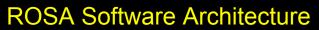
Kompetenz und Sicherheit für Digital-Modellbahner

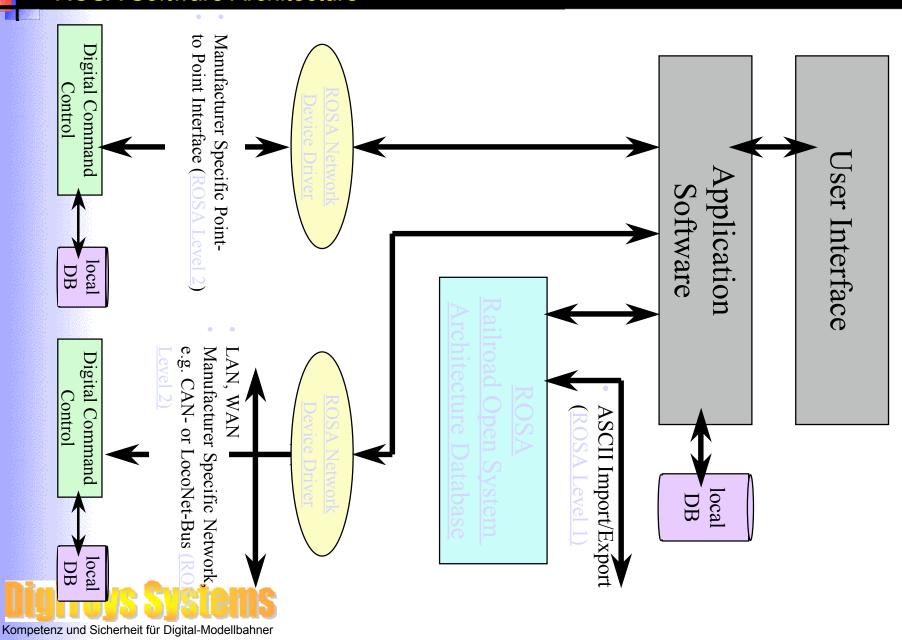
ROSA Data Structure II



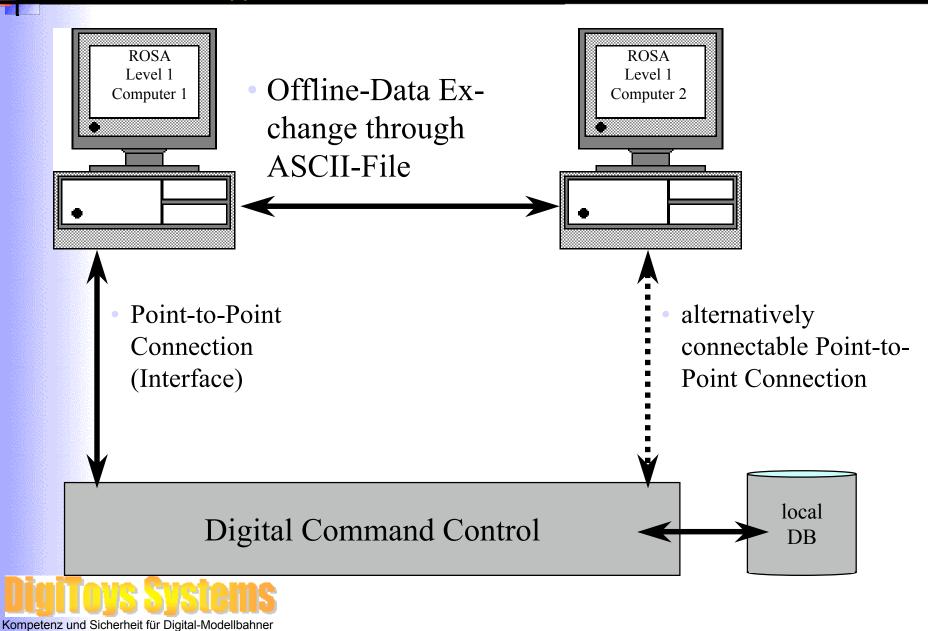
ROSA Data Structure III



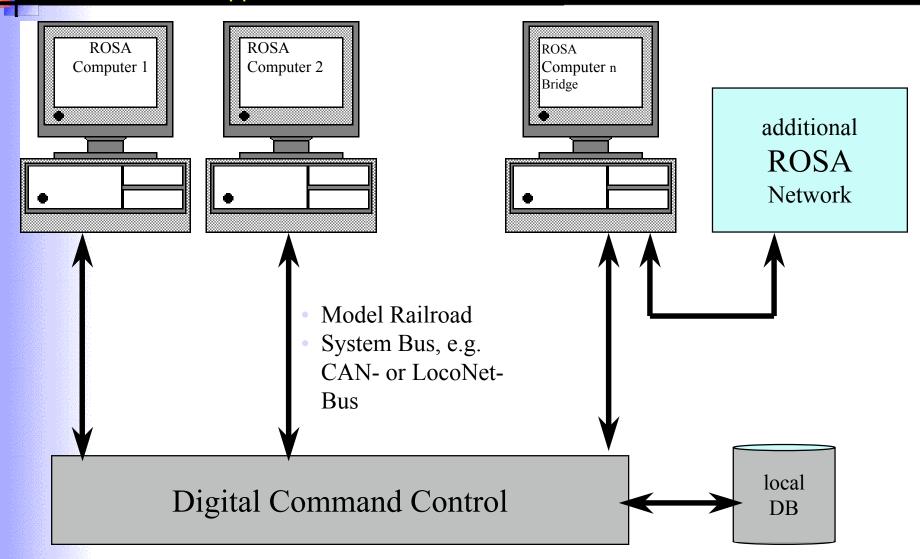








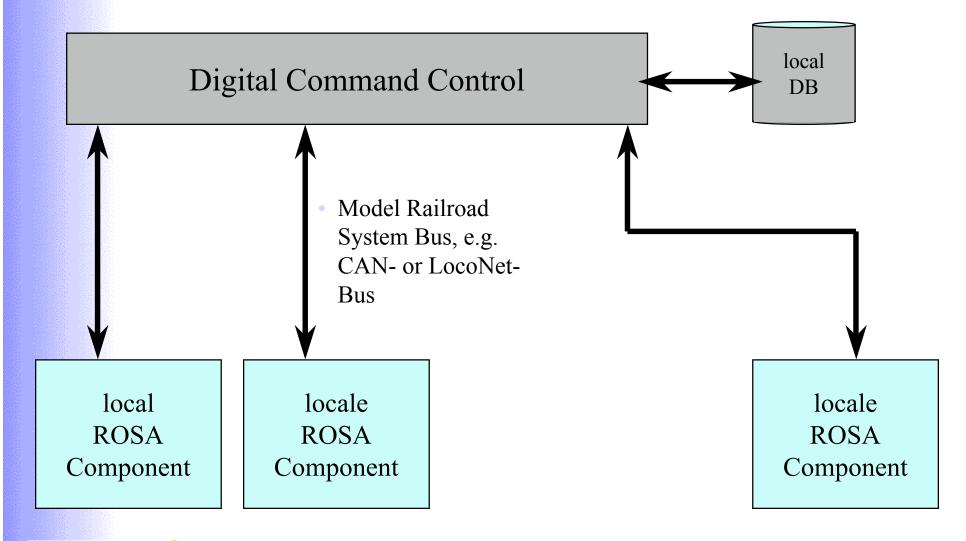
ROSA Level 2 Application with Model Railroad Network





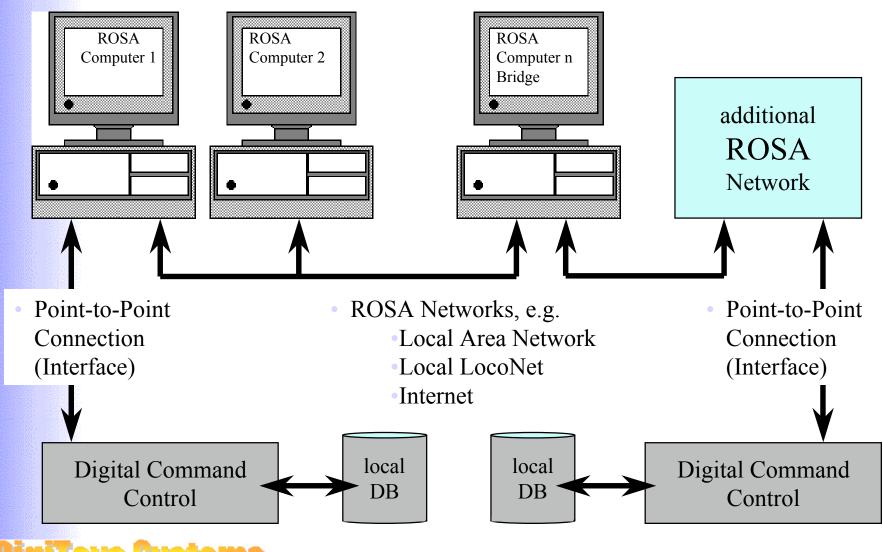


ROSA Level 2 Application within DCC Equipment





ROSA Level 2 Application with use of Multiple Network



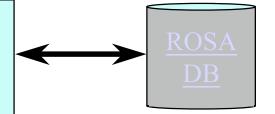
DigiToys Systems

Kompetenz und Sicherheit für Digital-Modellbahner



ROSA Interface Concept

ROSA compatible software application



application interface

Driver

Model Railroad Command System Interface application interface

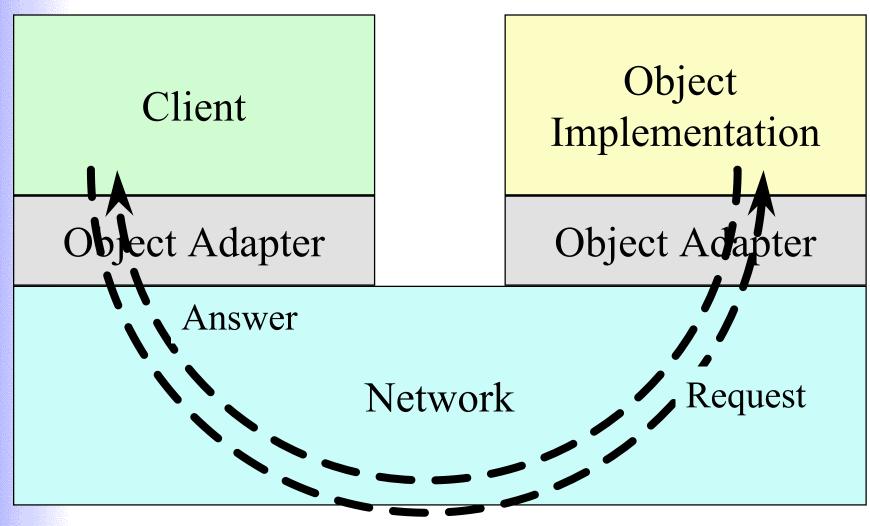
Driver

ROSA-Network-Interface





Object based communication within ROSA Networks







ROSA implements

- Data Exchange between software applications of different manufacturers
- Standardized Data Structures and Driver Interfaces

ROSA allows

- realistic Model Railroad Operations with stand alone computers as well as in Networks
- Dynamic Data Exchange between Software Applications and hardware based modules in the model railroad framework

