Jacobsen Declaration Exhibit AJ

Introduction of ROSA™ Railroad Open System Architecture

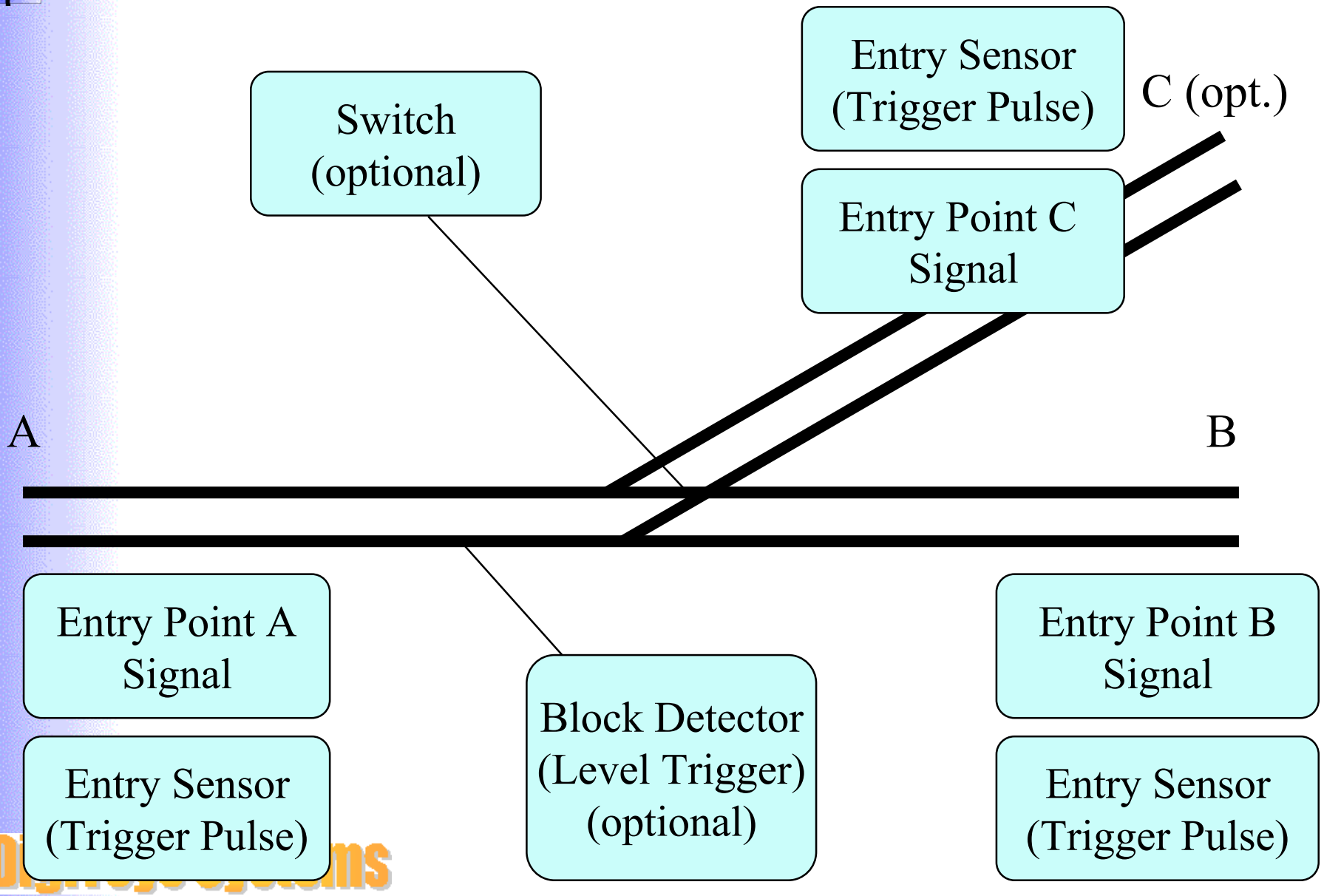
Presentation of Goals and Principles

DCC Working Group Meeting

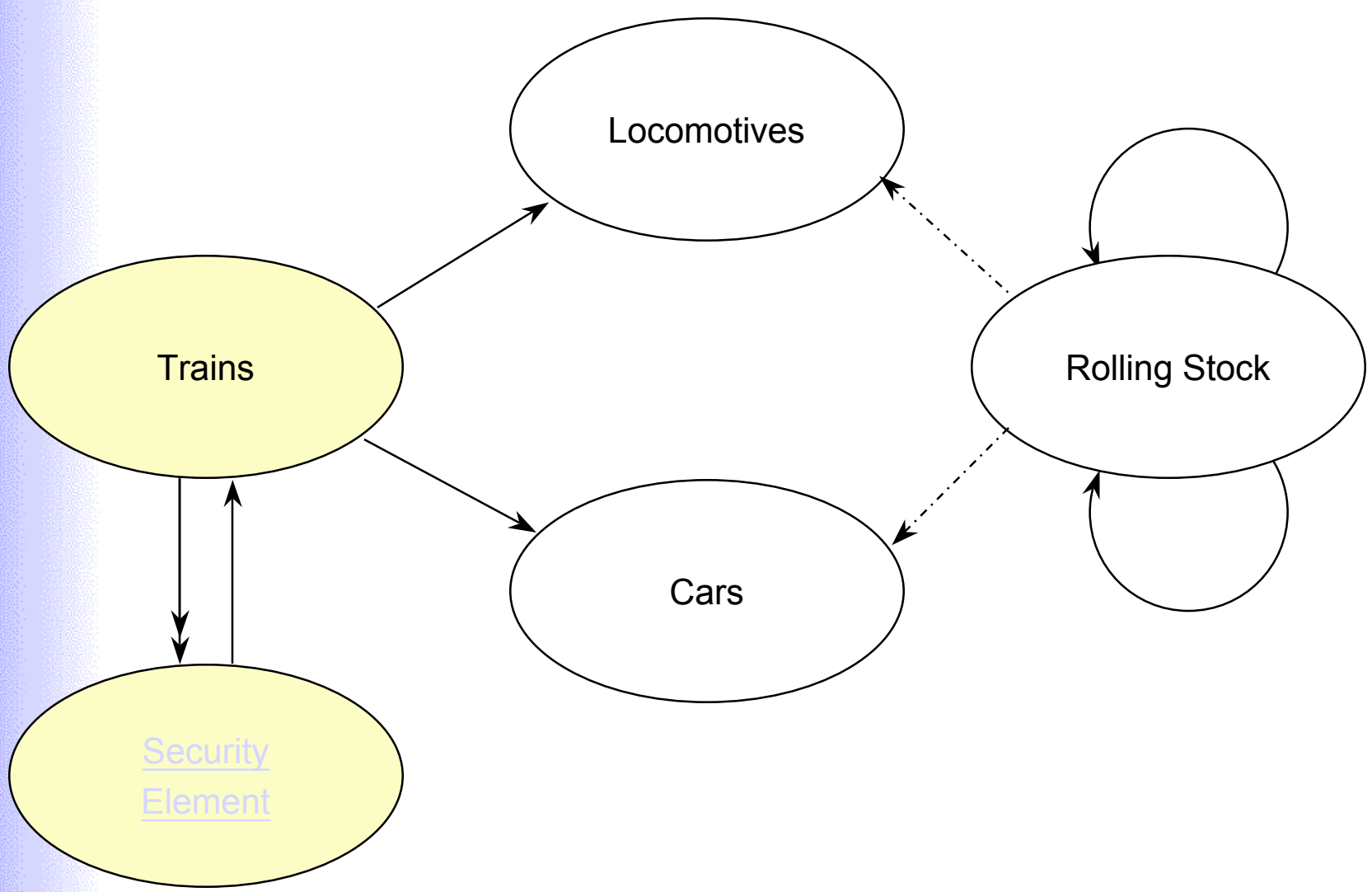
ROSA Goals

- 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



ROSA Data Structure I



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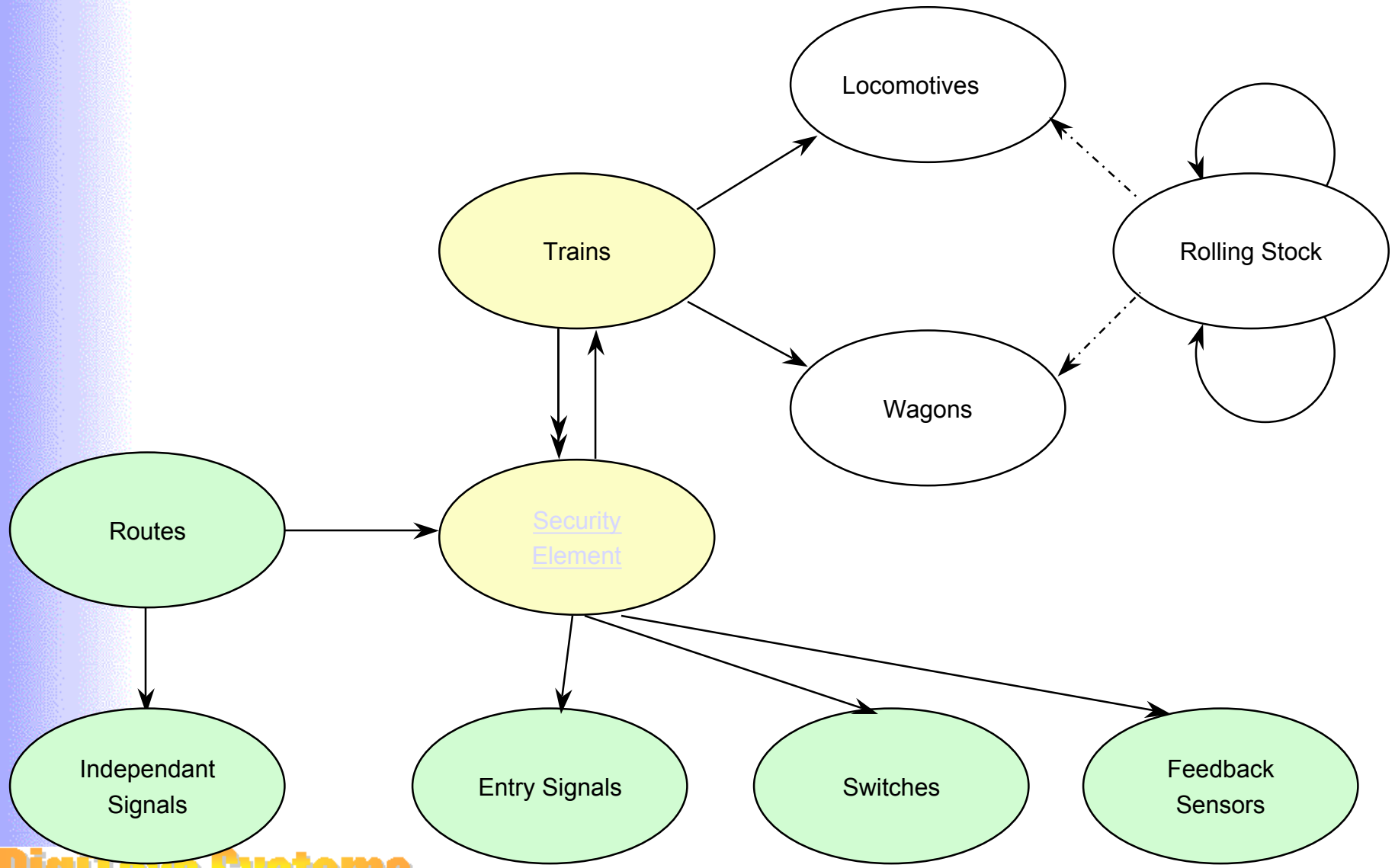
Kompetenz und Sicherheit für Digital-Modellbahner

ROSA Data Structure II



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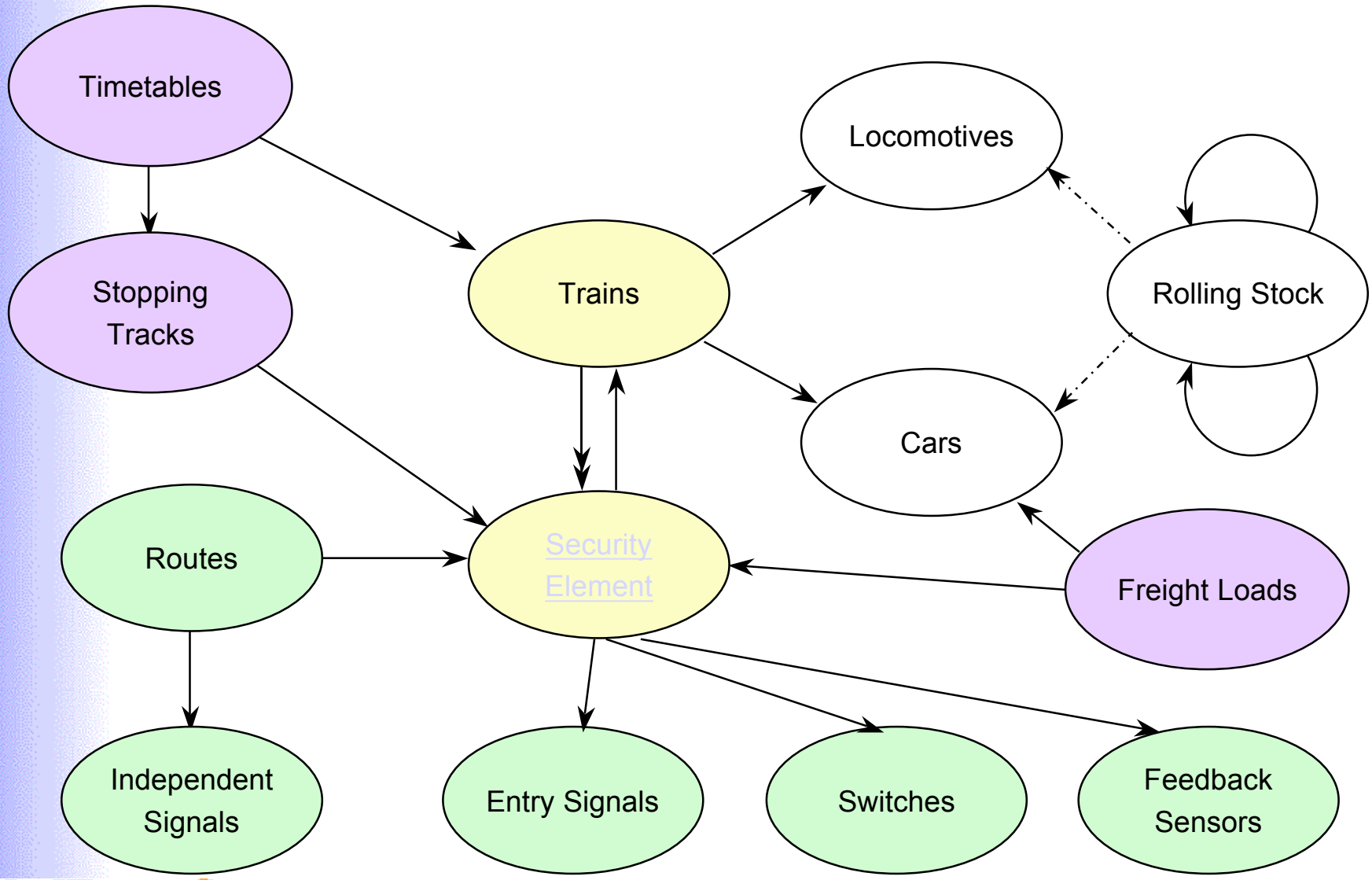
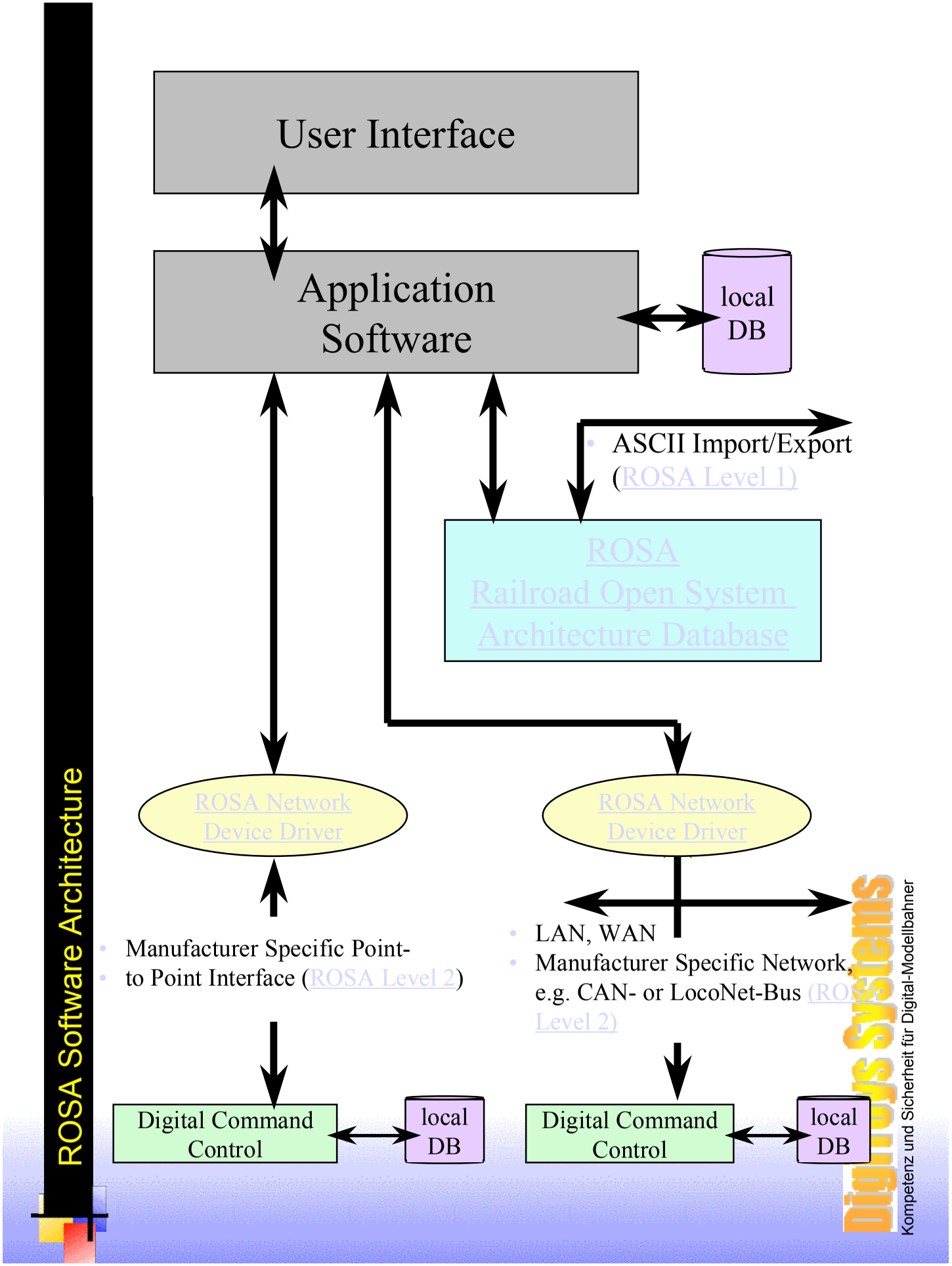
ROSA Data Structure III




ROSA Software Architecture
User Interface
Application Software
local DB
ASCII Import/Export (ROSA Level 1)
ROSA Railroad Open System Architecture Database
ROSA Network Device Driver
ROSA Network Device Driver
Manufacturer Specific Point-to Point Interface (ROSA Level 2)
LAN, WAN
Manufacturer Specific Network, e.g. CAN- or LocoNet-Bus (ROSA Level 2)
Digital Command Control
local DB
Digital Command Control
local DB
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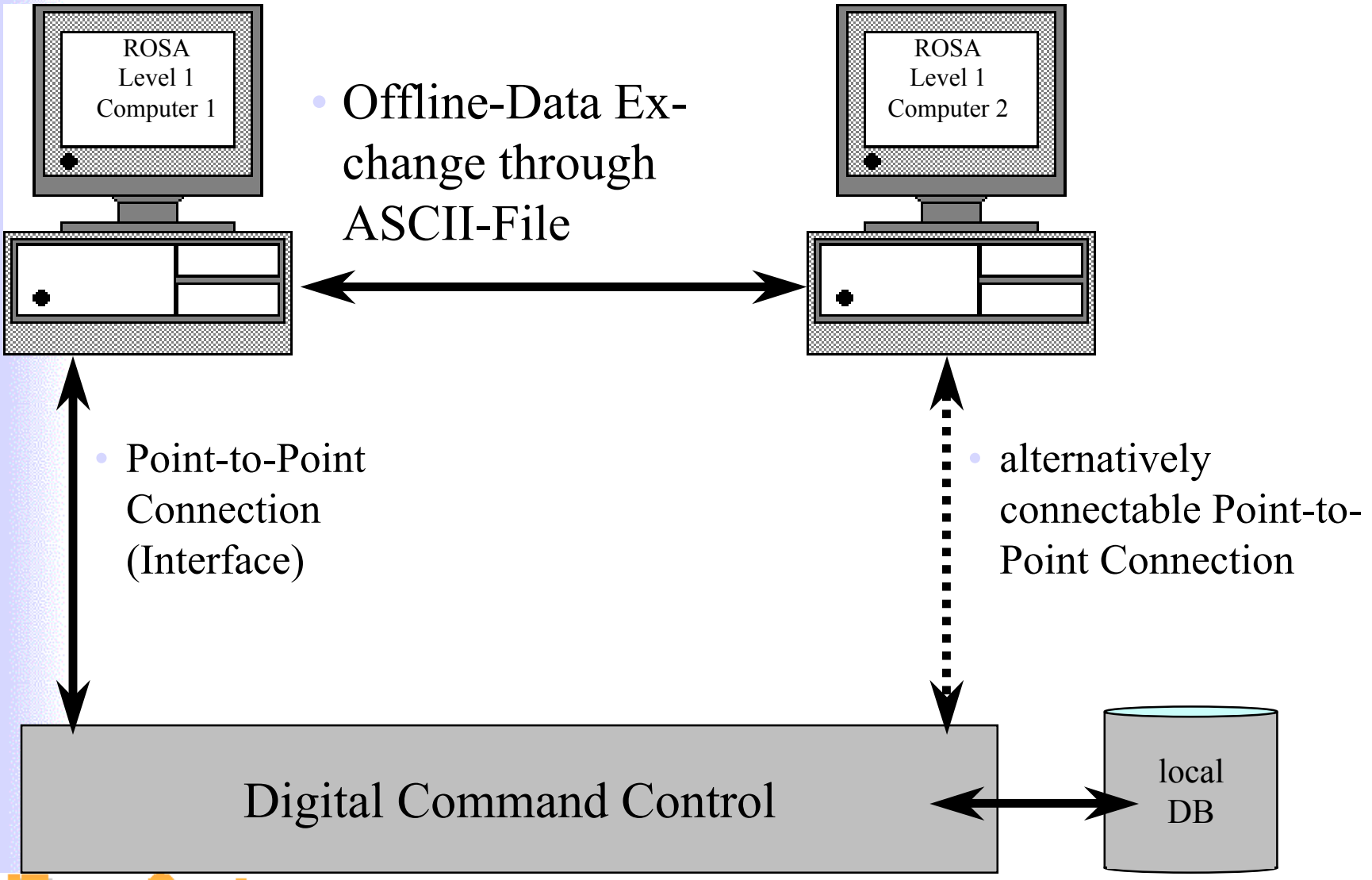
ROSA Level 1 Application



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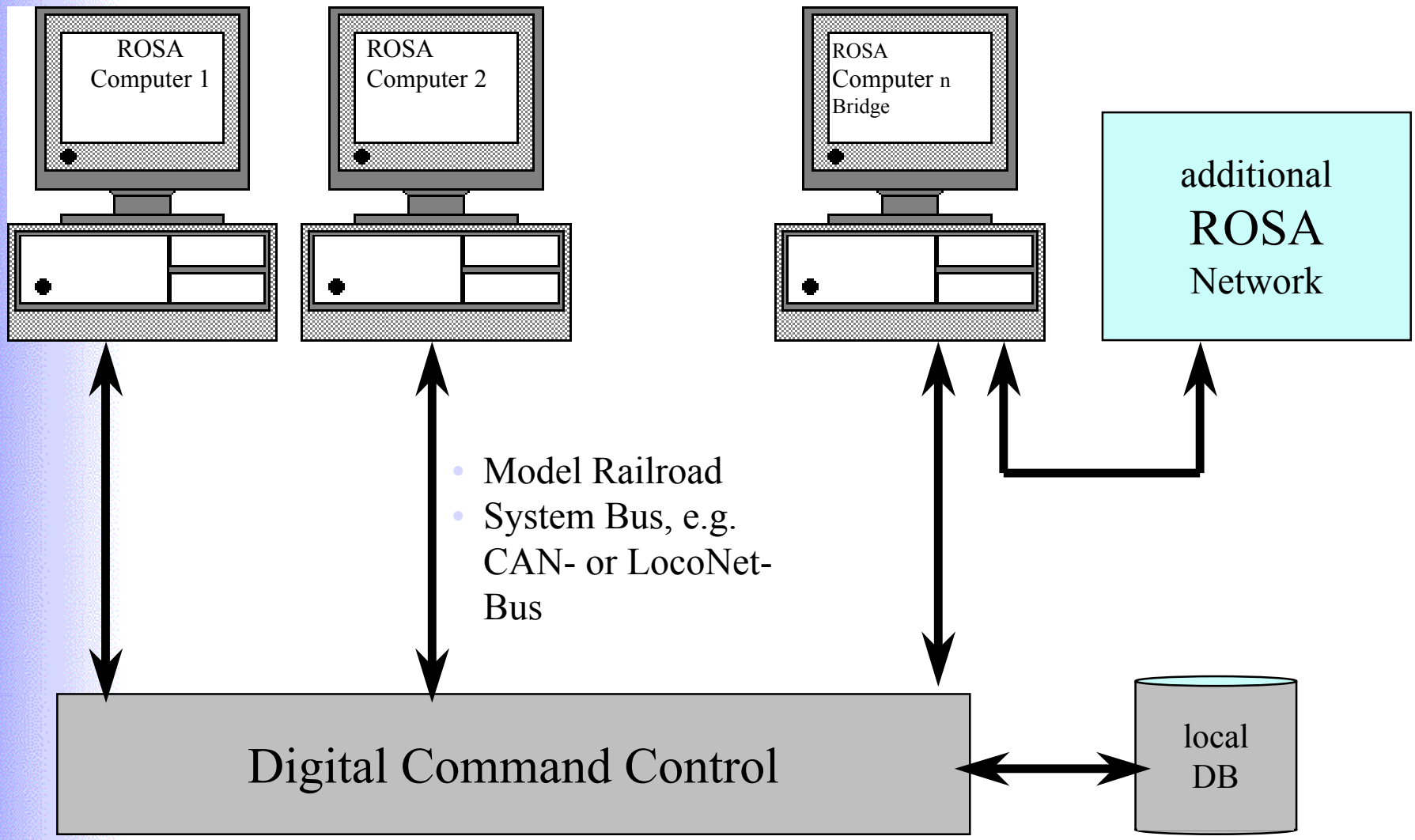
ROSA Level 2 Application with Model Railroad Network



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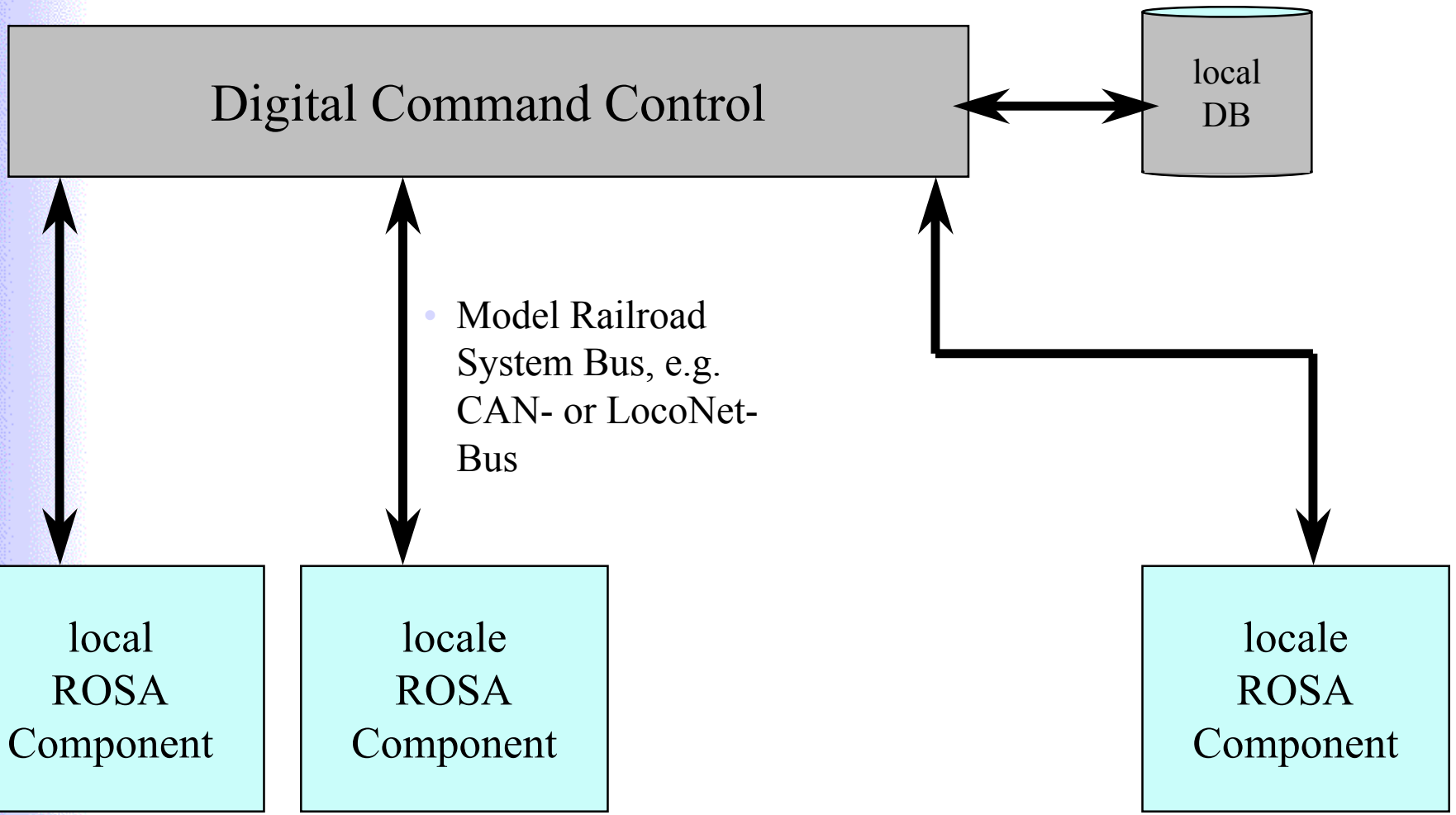
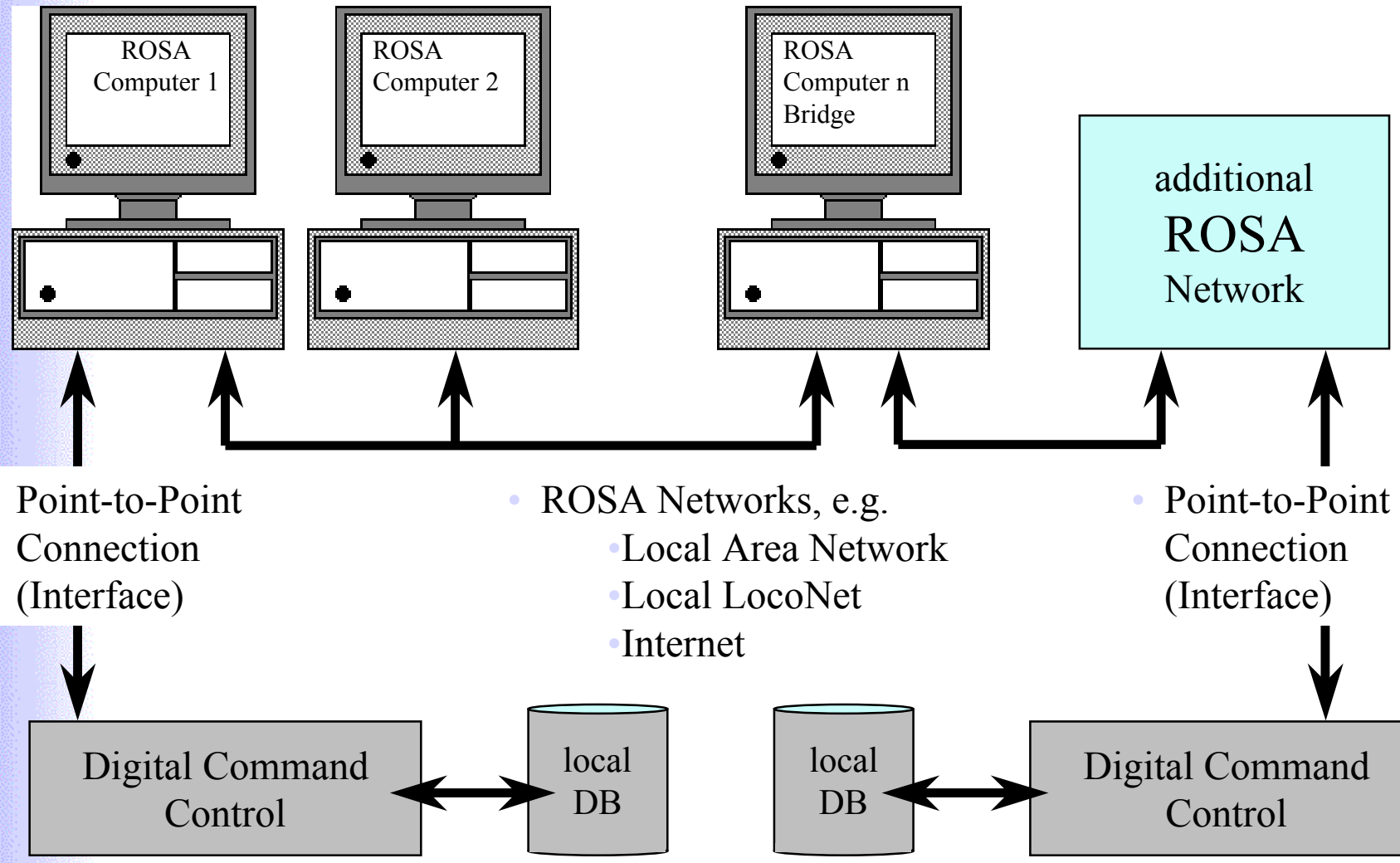
ROSA Level 2 Application within DCC Equipment



ROSA Level 2 Application with use of Multiple Network



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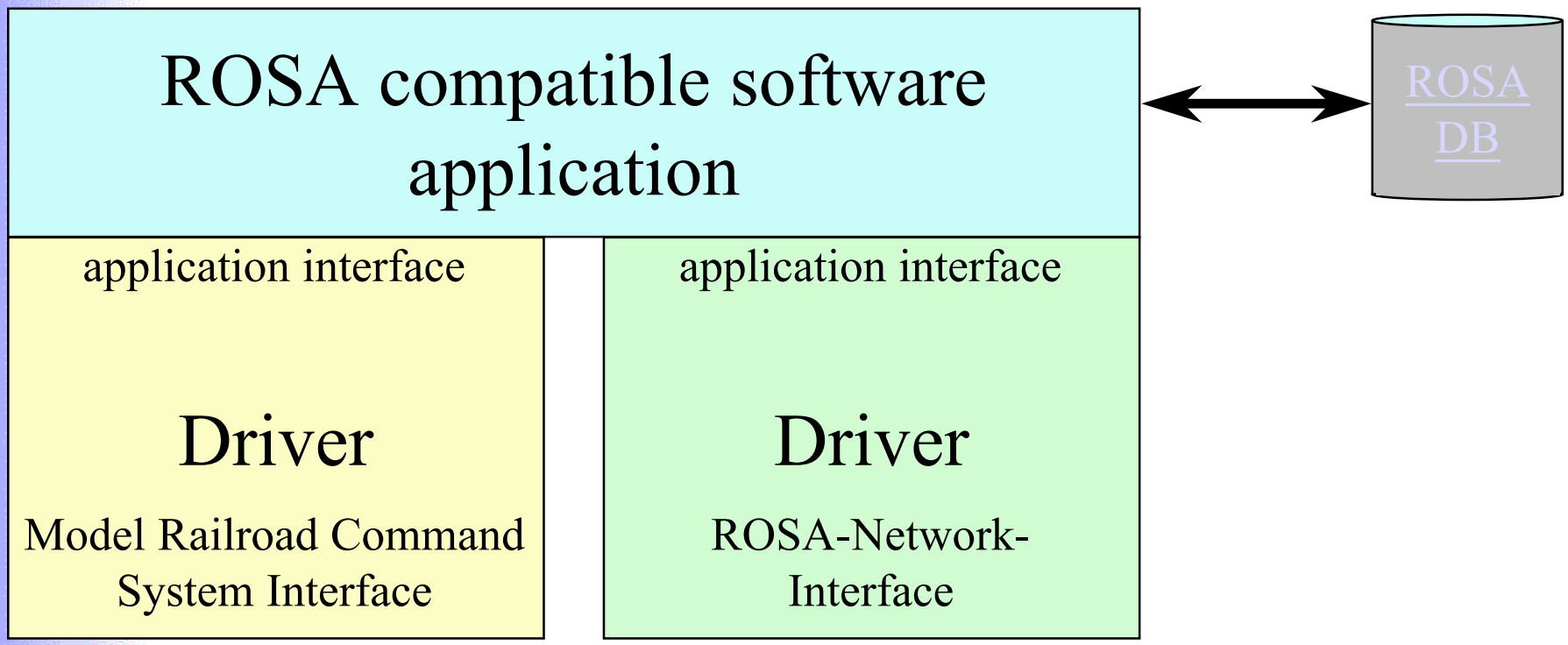
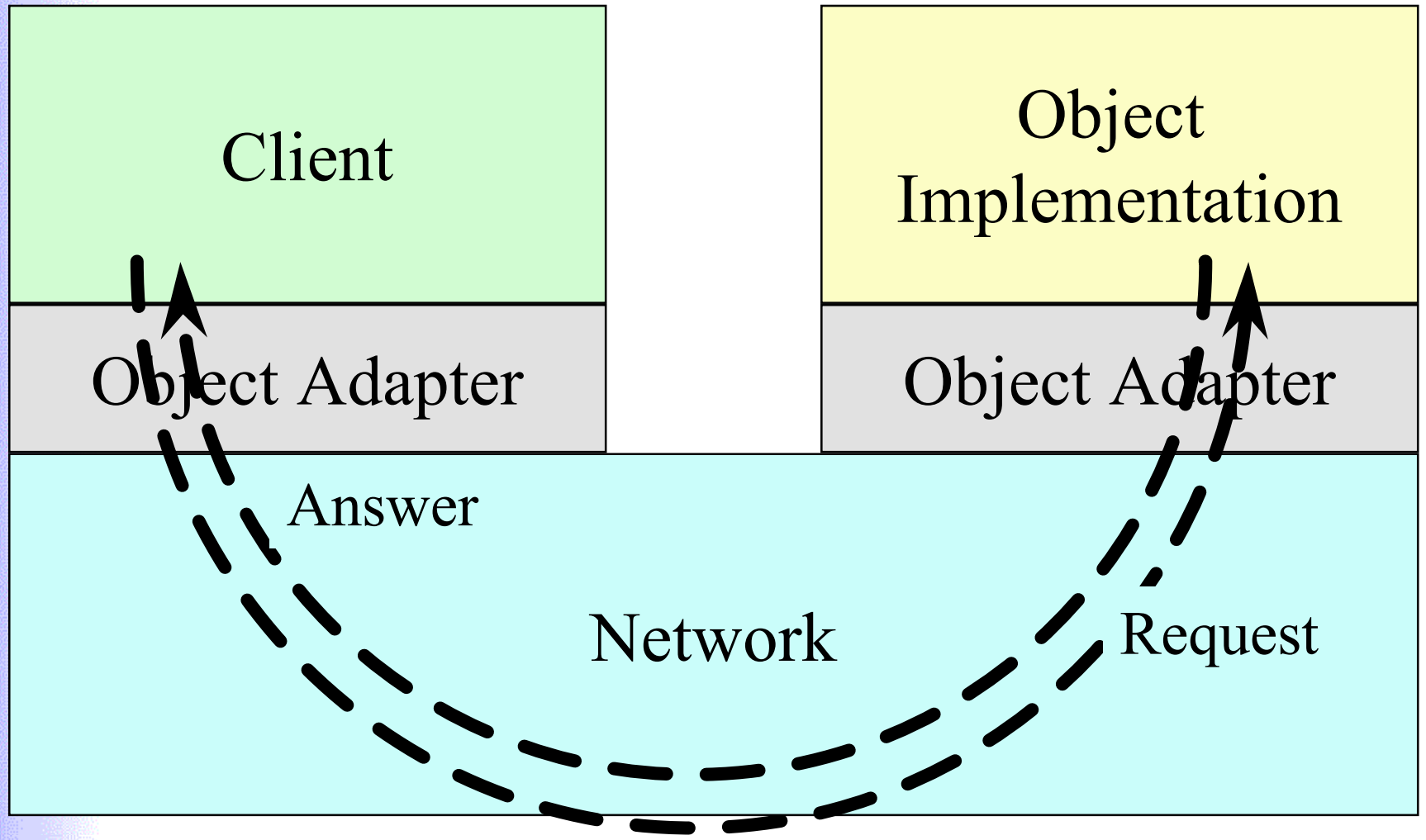
ROSA Interface Concept



Object based communication within ROSA Networks



ROSA Extracts

- 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