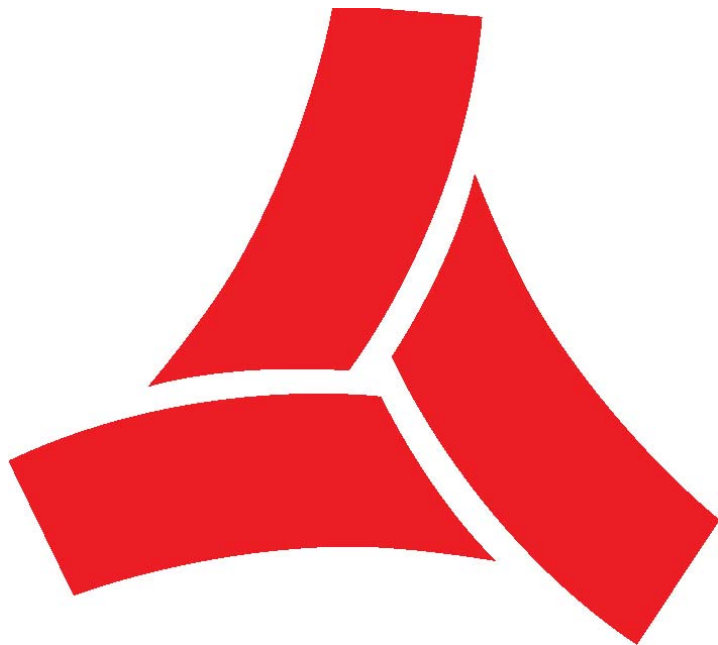


Improving European Railways

Collaborative Planning in Rail transport

Delft, September 2008
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retrack

An Integrated EU-Project

SOPTIM AG Profile



SOPTIM AG, founded 1971



Locations: Aachen, Essen

Employees: 200

Experiences over 36 years!

More than 1800 successful projects

- Business process analysis and
- Business process development
- Consultancy in IT and logistic
- IT-application development and specialist counseling
- System integration

Customers

- Power industry
- Recycling and waste management
- Industry and Logistics

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Project Background RETRACK



- RETRACK Goals and Objectives
 - Improving the competitiveness of small and medium-sized European railway undertakings (time, cost, service quality)
 - Improving the interoperability between railway undertakings
 - Braking down communication barriers
 - Enhancing collaborative SCM
 - Creating a virtual European Train Control Centre

- Central Challenge: The railway undertakings need to cooperate!

- Need for IT based data exchange (Orders, planning data, production data)
 - in real-time
 - on a strategic, tactical and executive level

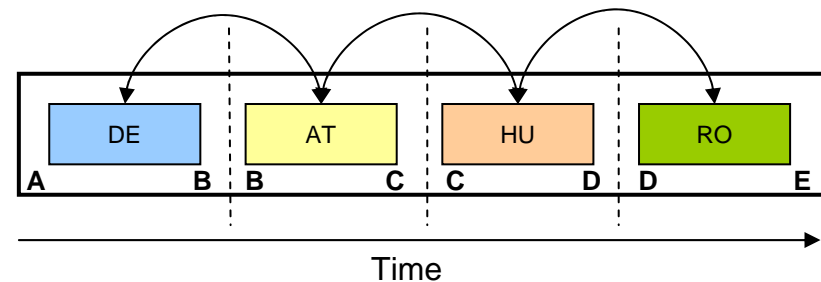
IT-Focus ReTrack



- ▲ Improving IT based intra-corporate railway operations processes
- ▲ Providing seamless IT services based on best practice railway operations processes
 - ▲ Order-to-delivery process
 - ▲ Planning and Scheduling
 - ▲ Real-Time Management
- ▲ Connecting railway undertakings
 - ▲ Providing an IT integration platform for distributed systems
 - ▲ Configurable communication services for intra-corporate
 - ▲ Services for collaborative Supply Chain Planning and Execution
- ▲ Creating value added services for rail freight customers
 - ▲ Customer Information Centre (Information on demand)
 - ▲ Proactive Messaging Services (in cases of delays, conflicts)
 - ▲ with configurable communication services and a loose linking of IT-Systems with according protocols

State-of-the-Art in European collaborative planning

- State-of-the-Art in European collaborative planning
 - Today European railway undertakings plan and control border crossing trains mostly only bilateral via E-Mail, Fax, Fon



- Challenges:
 - No continuous data base based order-to-delivery process
 - Different Excel environments for planning processes
 - Inconsistent plan and production data
 - No transparency above plan and production data
 - No IT interfaces for structured data exchange
- Coopetition Situation (Cooperation vs. Competition)
 - Competitors are not willing to exchange/share all plan and production data with their Supply Chain Partners

Definition “Roles and Responsibilities”



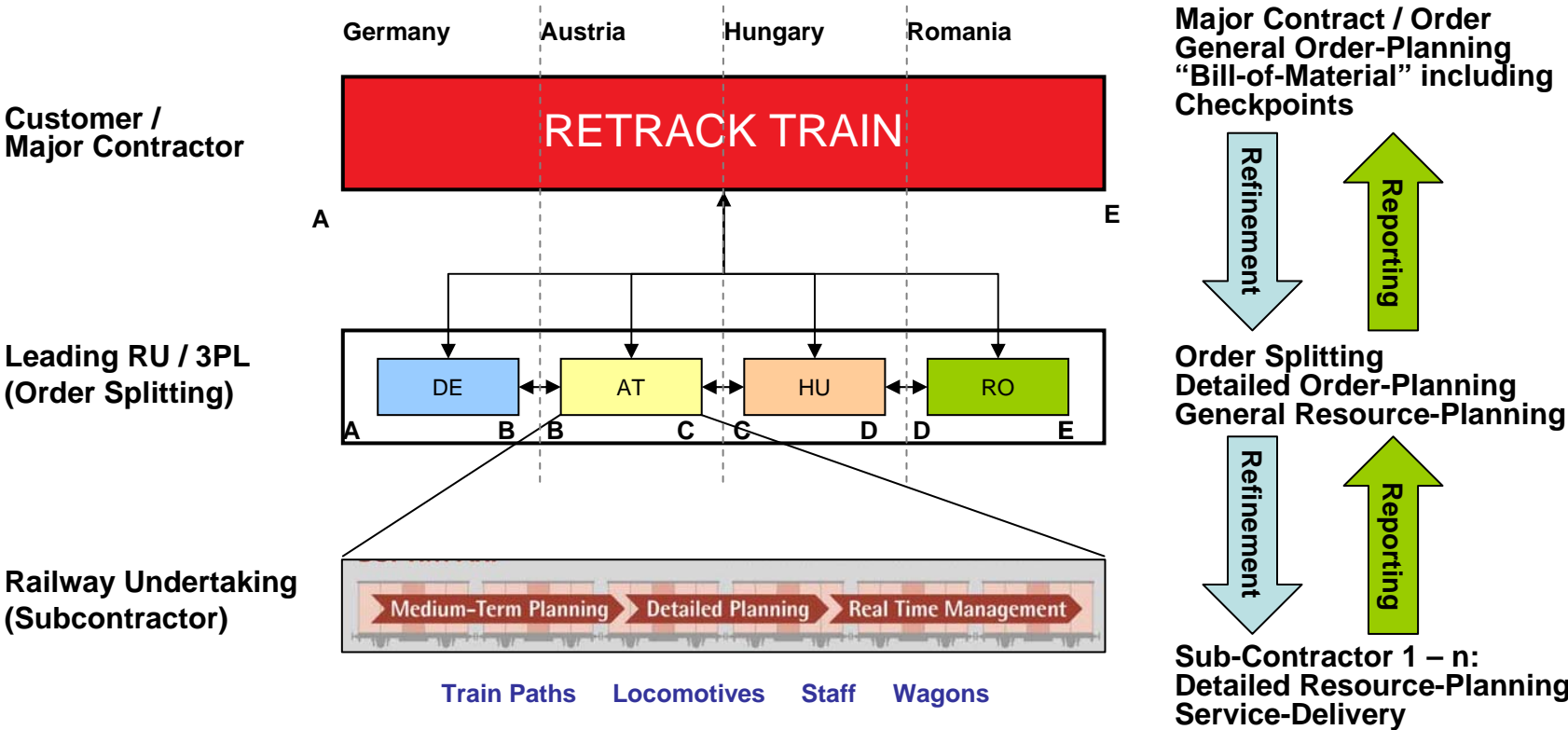
- ▲ Customer
 - ▲ One or more customers for the ReTrack–Train
 - ▲ Orders a unit Rail–Freight
 - ▲ Information demand concerning the state of their order (Track&Trace)
- ▲ Major Contractor
 - ▲ Plans the train and defines the general logistics activities
 - ▲ Schedules the general route and the Hubs
 - ▲ Carries out the commercial responsibility
 - ▲ Information demand along the whole transport chain
- ▲ Leading Railway Undertaking
 - ▲ Coordinating the operations processes of the Transport–Chain
 - ▲ Optionally he’s also a part of this chain
 - ▲ Provides/manages resources for his (part) services
 - ▲ Information demand concerning his transport part and along the whole transport chain
- ▲ Railway Undertakings
 - ▲ Provides resources for their part and services
 - ▲ Information demand concerning their transport and the fore– and after going train runs (esp. Handover at the border)
- ▲ Each partner can carry out one or more roles

Contract Structure and Decomposition to the Partners involved in the Process



Main element: Common Order Structure

All partners (Customer/MC/LRU/RU) work together in an overall Supply-Chain, therefore a common view on the order structure is needed.



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Why collaborative Planning is a Key-Performance-Factor

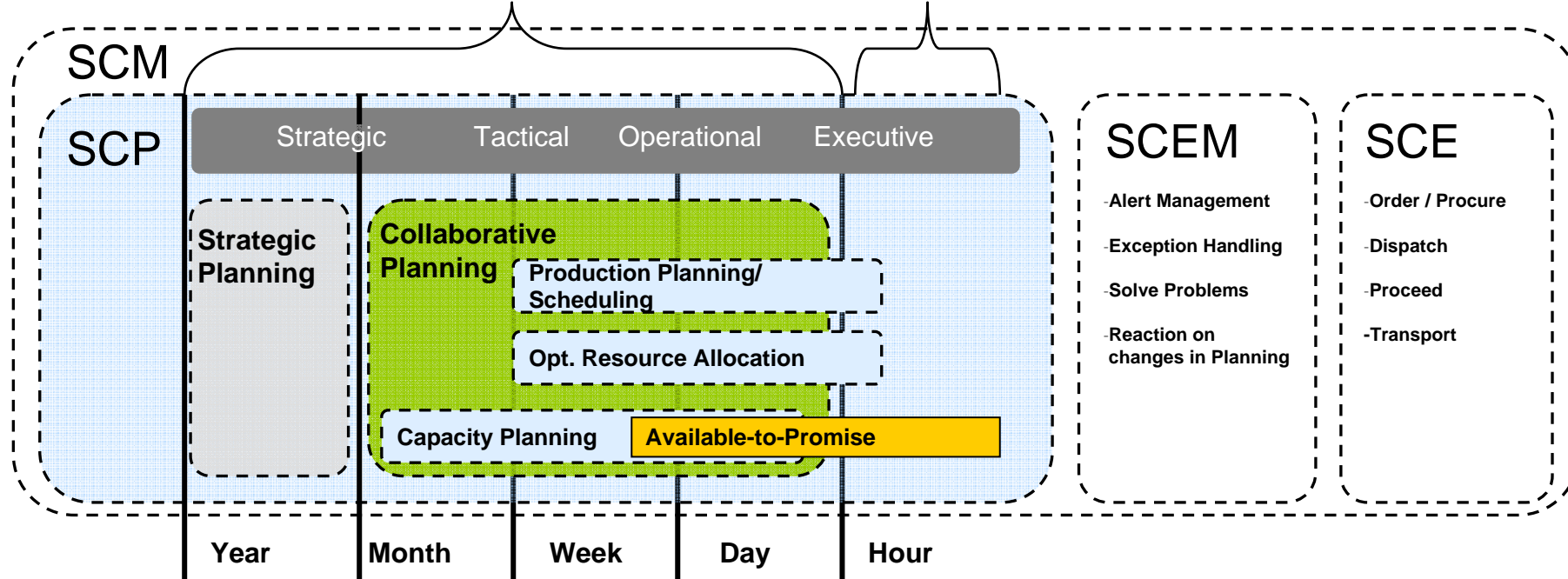


Earn or loose money
Strong Influence on Profitability

- Capacity Utilization
- optimal allocation of resources
- optimal plan adjustment
- Minimize light runnings

Loose money
Minor/No Influence on Profitability

- Accidents
- Delays
- Interruptions
- Cancelations



SCM = Supply Chain Management
 SCEM = Supply Chain Event Management

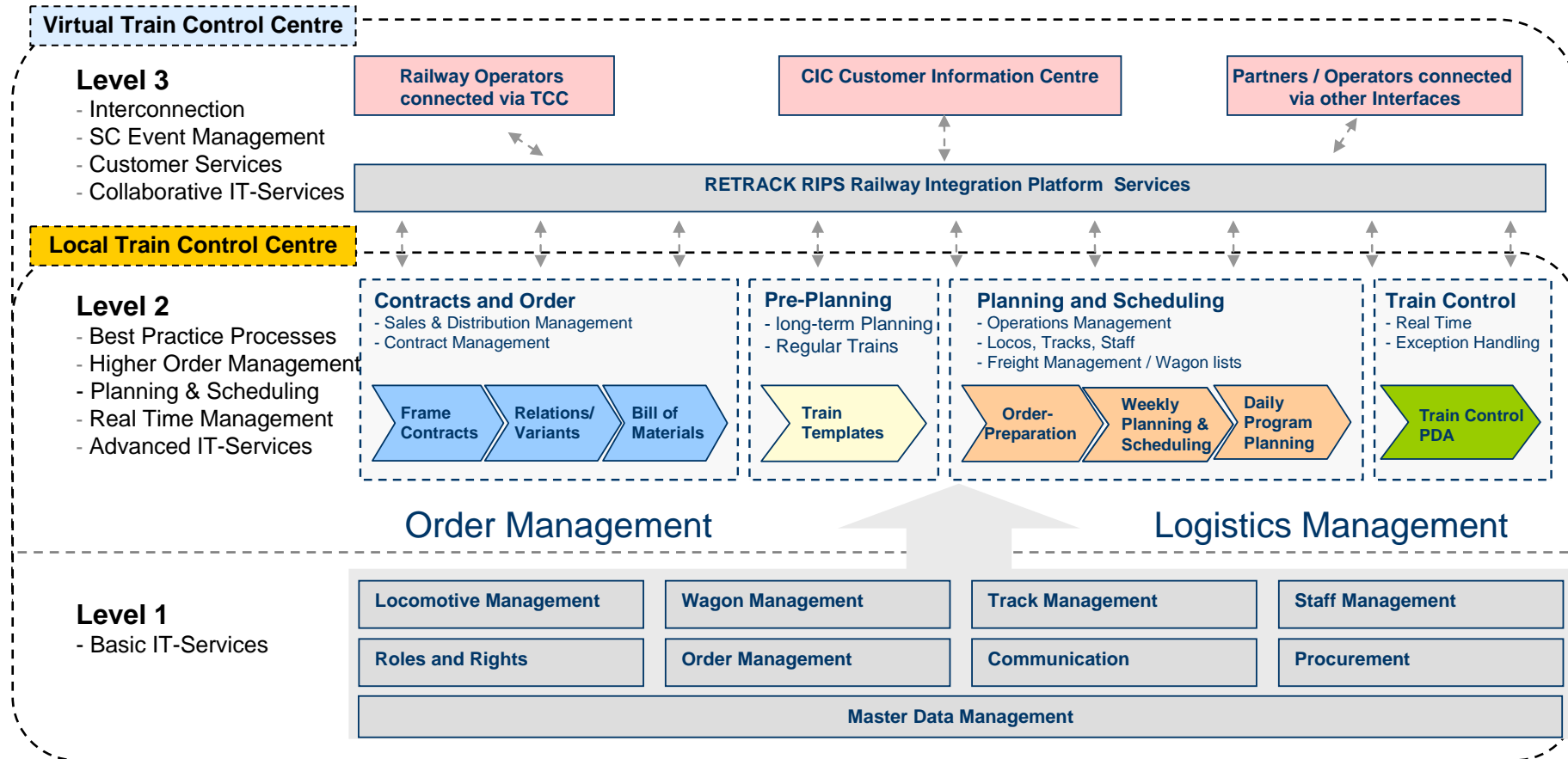
SCP = Supply Chain Planning
 SCE = Supply Chain Execution

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Structure of Train-Control-Center

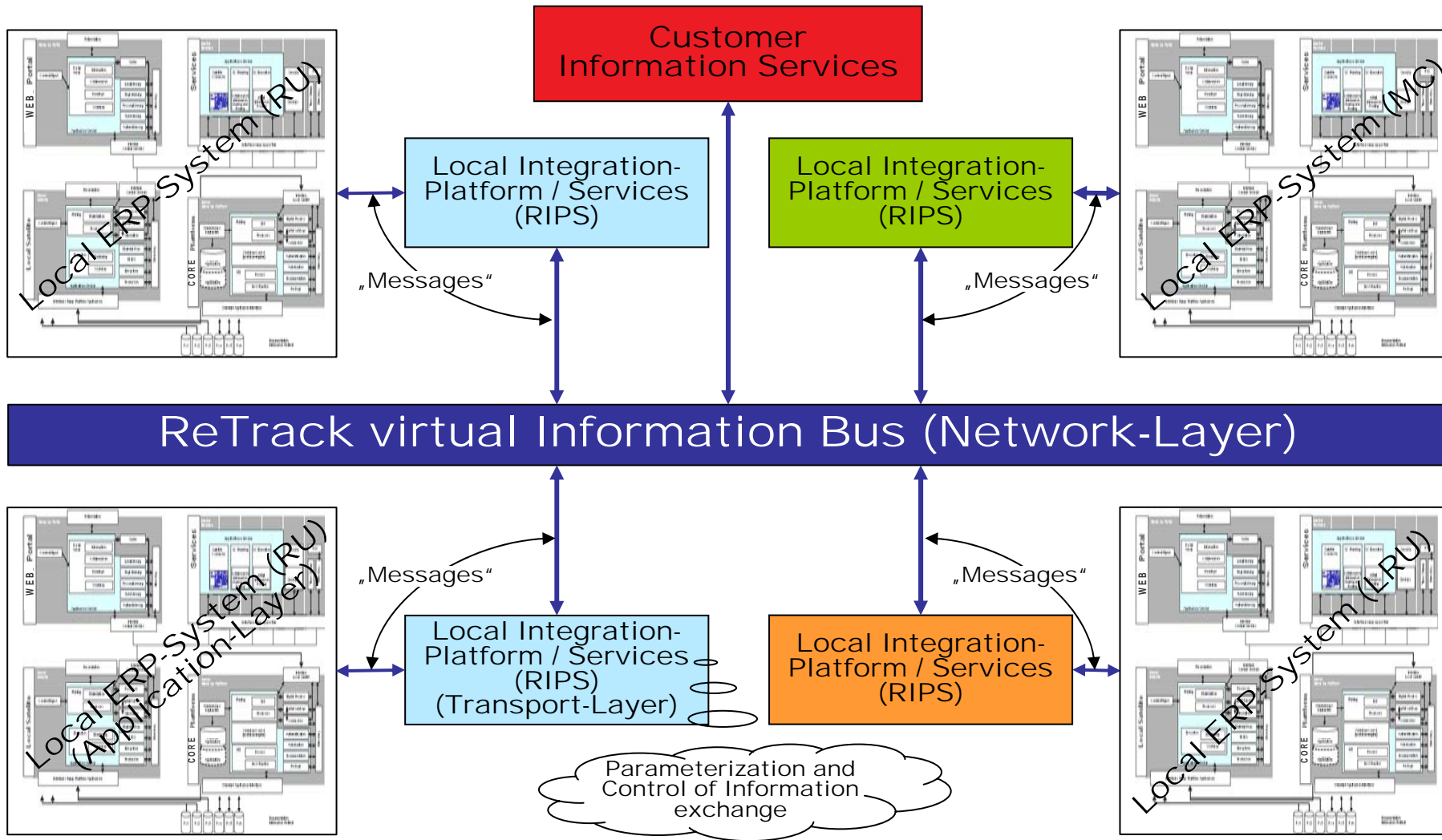


3 Level Approach (Process-Steps and specific Tasks)



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Architectural Approach for coupling distributed Systems via standardized Communication Services



Summary

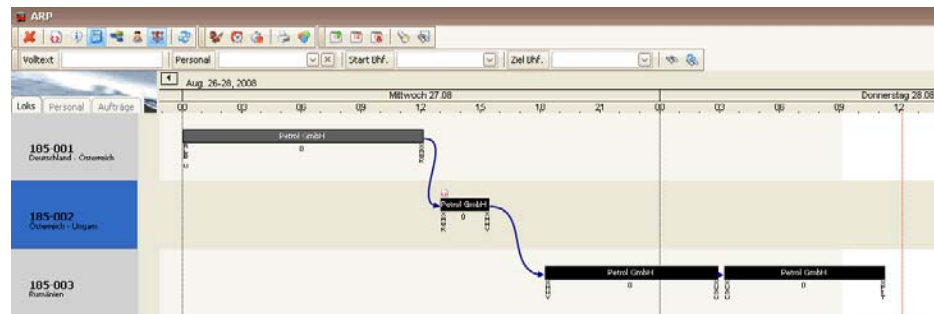
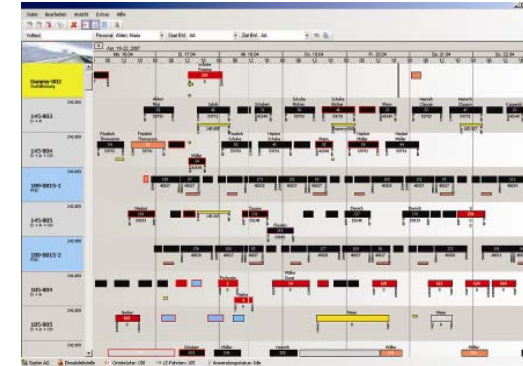
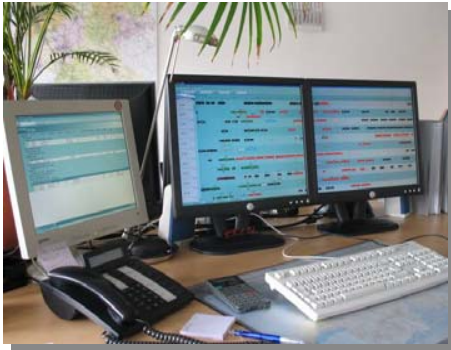


- ✚ To establish integrated Collaborative Planning & Execution IT processes with a Big Bang model is almost impossible today

- ✚ Barriers
 - ✚ The fewest European railway undertakings have integrated IT services for their operations processes
 - ✚ Missing common order structures
 - ✚ Missing IT based Long-Term-, Medium-Term- and detailed Planning
 - ✚ Missing IT based production data acquisition in real time
 - ✚ Missing structured/standardized data exchange

- ✚ ReTrack IT Approach:
 - ✚ Implementation of seamless IT services into Best Practice railway operations Processes
 - ✚ Base Services (Master-Data Management/ Resource Management, ...)
 - ✚ Contract & Order Management
 - ✚ Services for Planning, Scheduling and Execution
 - ✚ Data Exchange via distributed configurable communication systems
 - ✚ Establishing a virtual European Train Control Centre

Screenhots



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Thank you for your attention!



- ⚡ Thank you for your attention!
- ⚡ Any questions?

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