SCHENKER
Stinnes Logistics

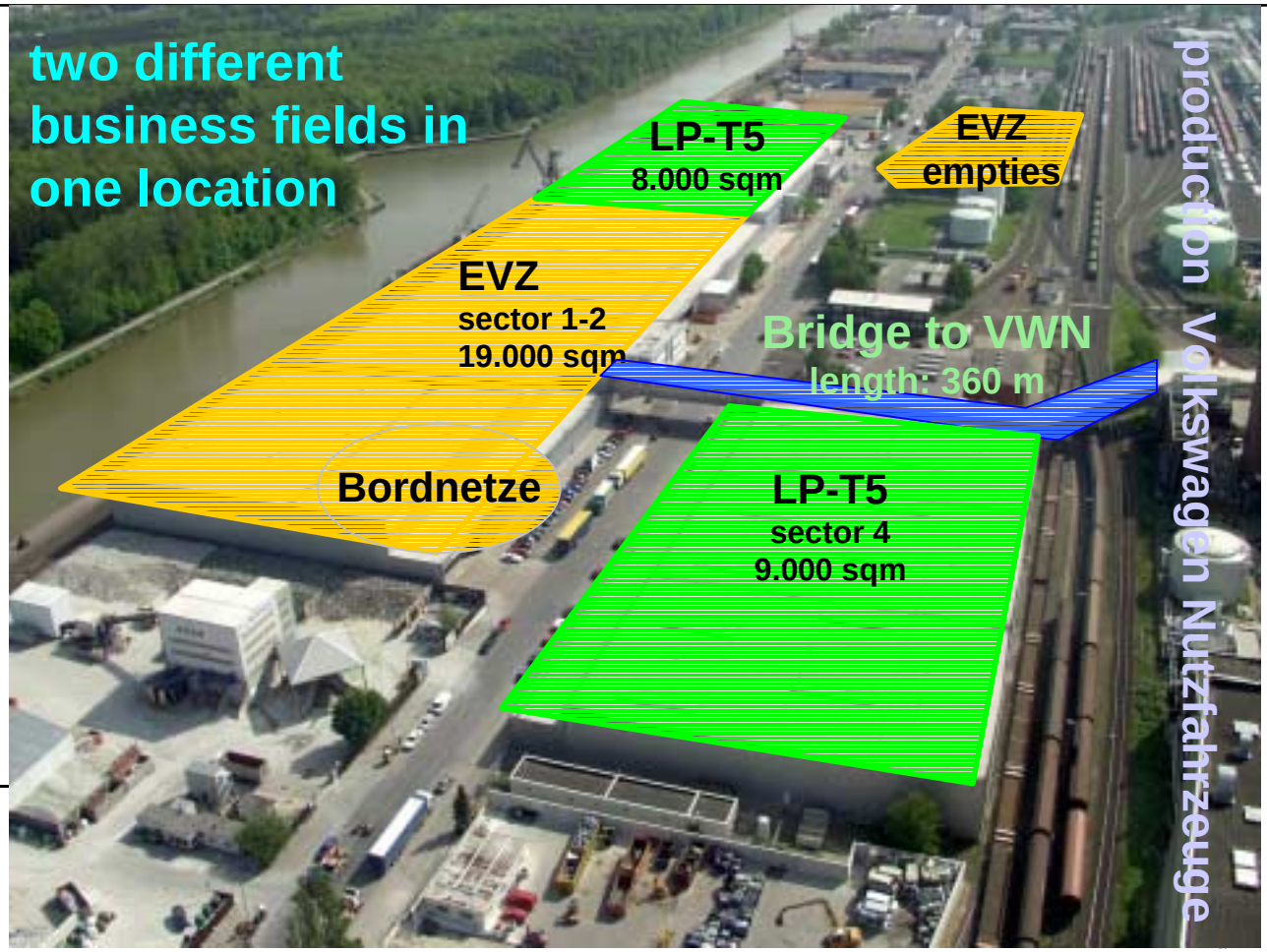
Schenker Logistics

Schenker Supplier Parks

30.11.2004

DB

over view



EVZ / external purchase part center

19.000 m²

One logistic provider for VWN to manage the external purchase part center using VWN-systems

(GLT/KLT, body parts and empties)

Supplier park

(LP-T5)

18.500 sqm

One logistic provider for all jis-supplier (actual 15) using own systems (here SAP)

Supplier Park has benefits for both VWN and Schenker

VWN

+ new chances to supply the production line by service providers directly
+ higher process reliability caused by minimizing the transports by truck on the VWN area
+ possibilities to shorten order frequencies
+ potentials to save costs in the internal material flow
+ potentials to optimize processes in the supply chain

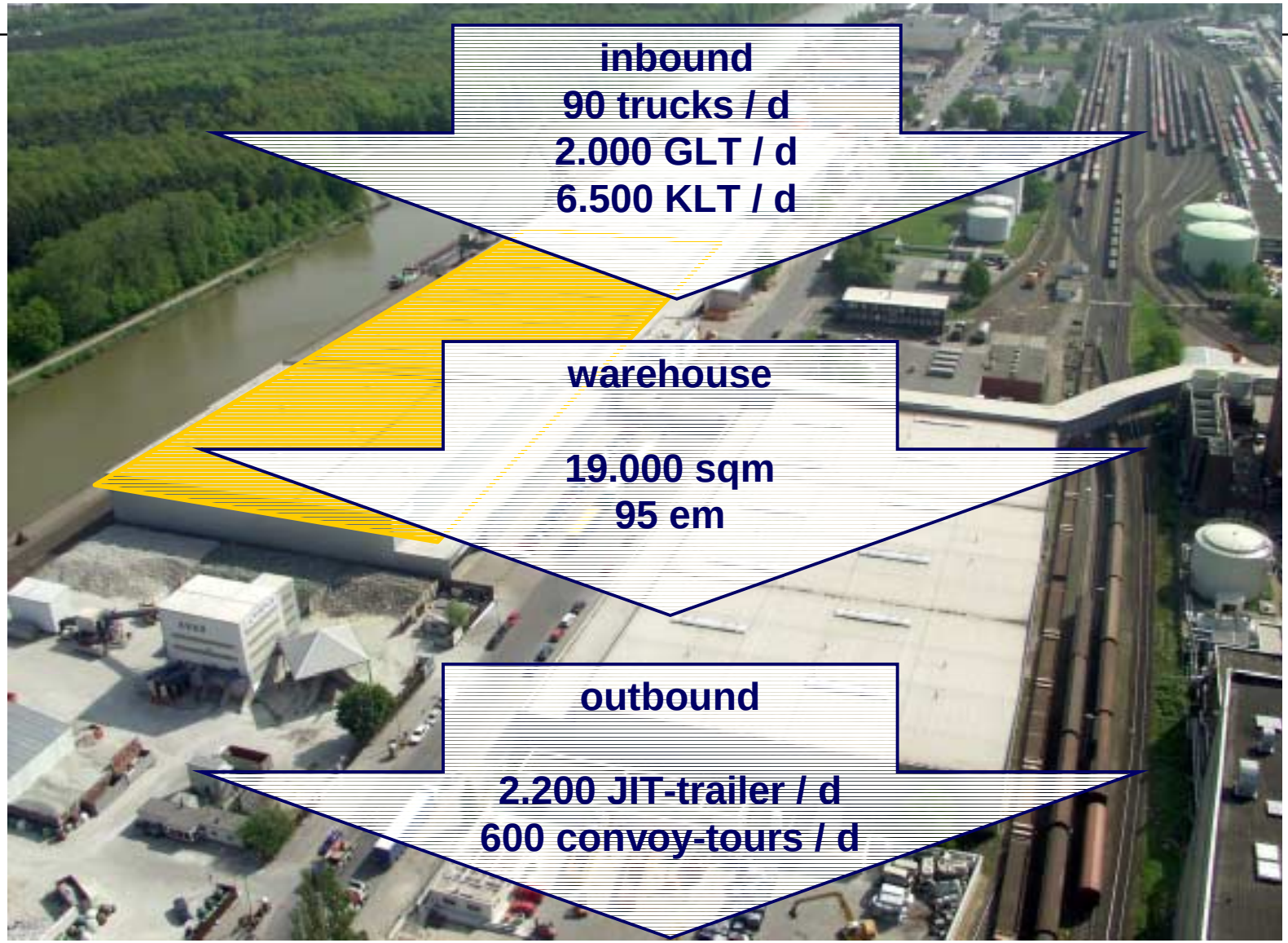
Schenker

+ possibility of all traffic modes (trucks, ships, railway)
+ direct connection to VWN by the bridge
+ fulfillment of all quality requirements (f.e. unloading without influence of the weather)
+ competitive edge by realizing the supply concept by bridge
+ good chances to enlarge the used area for new projects

External purchase part center (EVZ)

VW Nutzfahrzeuge T5/LT2

metrics EVZ


inbound
90 trucks / d
2.000 GLT / d
6.500 KLT / d
warehouse
19.000 sqm
95 em
outbound
2.200 JIT-trailer / d
600 convoy-tours / d

technical equipment

small part shelving system EVZ

1.000 sqm area

47m x 21m x 12m

construction of storage systems

10 shelving rows

113.940 boxes capacity

ca. 24.300 VDA 6428

ca. 19.800 VDA 4328

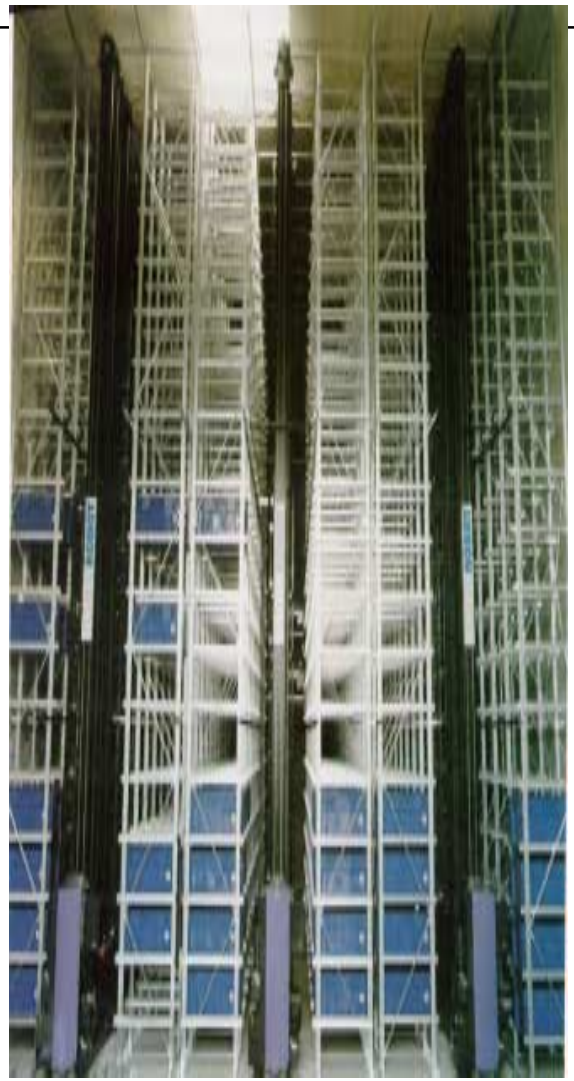
ca. 9.360 VDA 4314

ca. 60.480 VDA 3214

Storage and disbursement

9 storage and retrieval machines

- 540 boxes per h
- 6.000 boxes per day



shelving system „Bordnetze“

540 sqm area

57m x 9,5m x 12m

construction of storage system

4 shelving rows

20.000 boxes capacity

13.000 VDA 6428

7.000 VDA 6420

Storage and disbursement

3 storage and retrieval machines

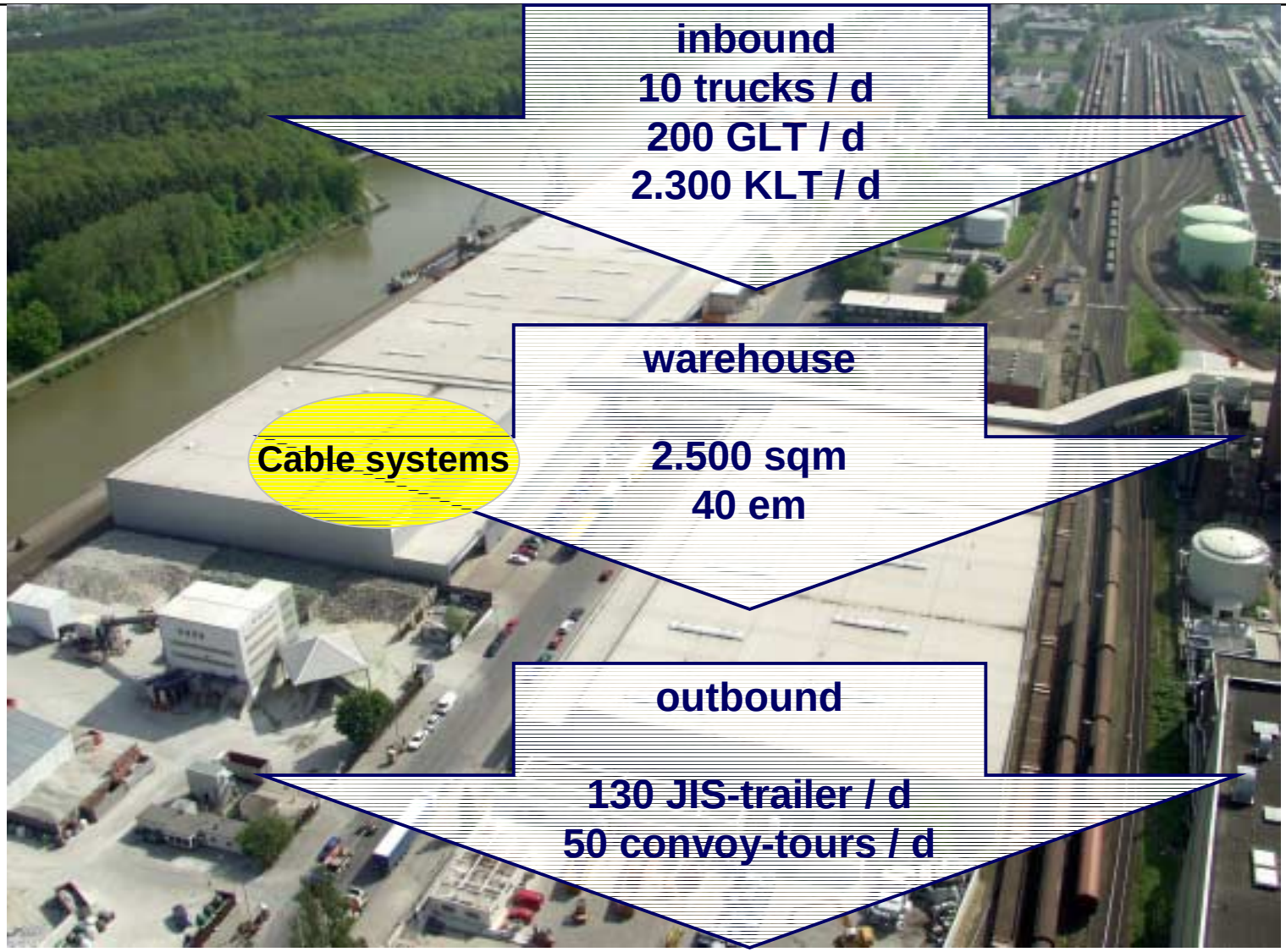
- 200 boxes per h
- 4.800 boxes per day

Bordnetze T5

cable systems

VW Nutzfahrzeuge T5

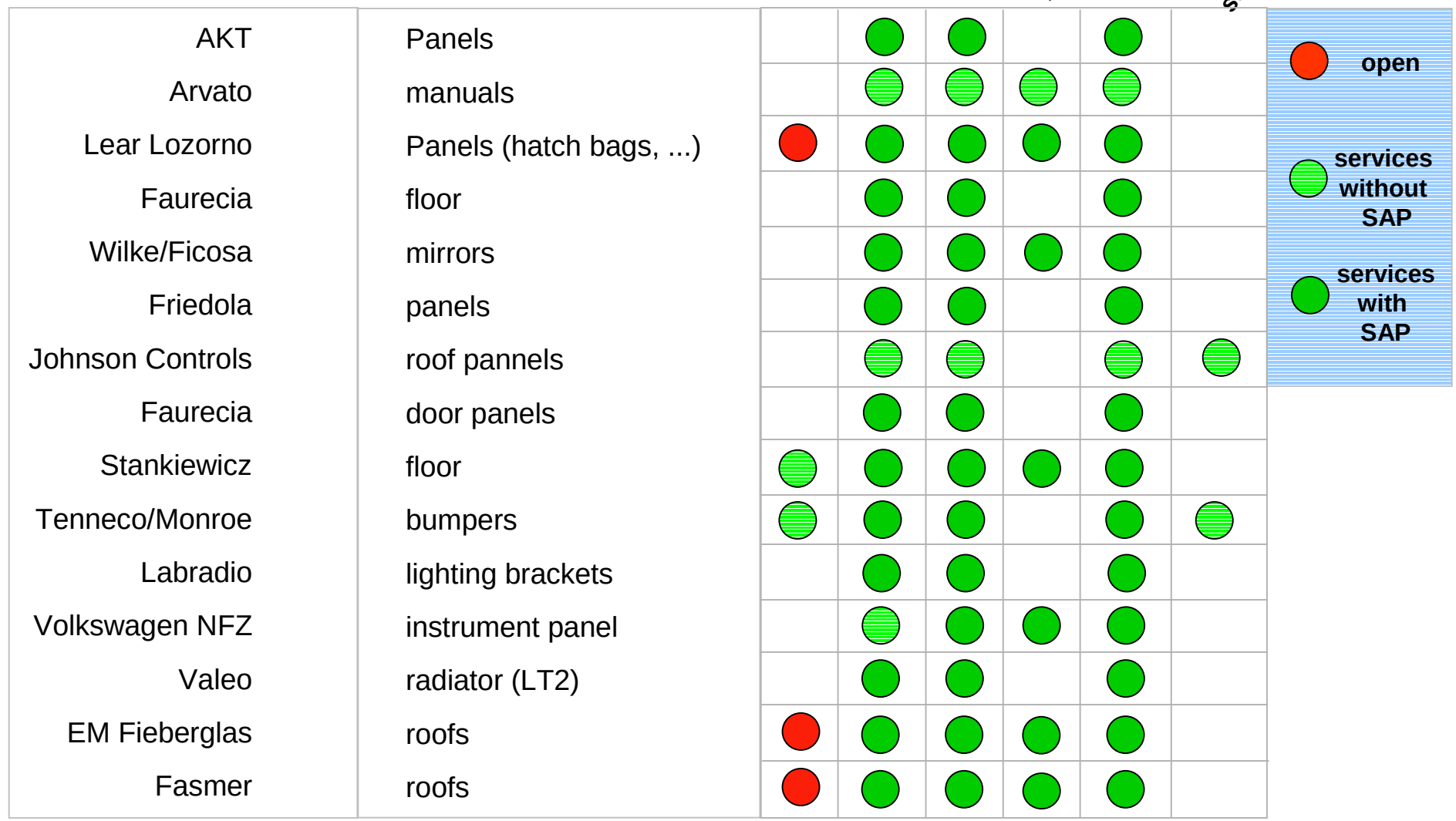
metrics Bordnetze



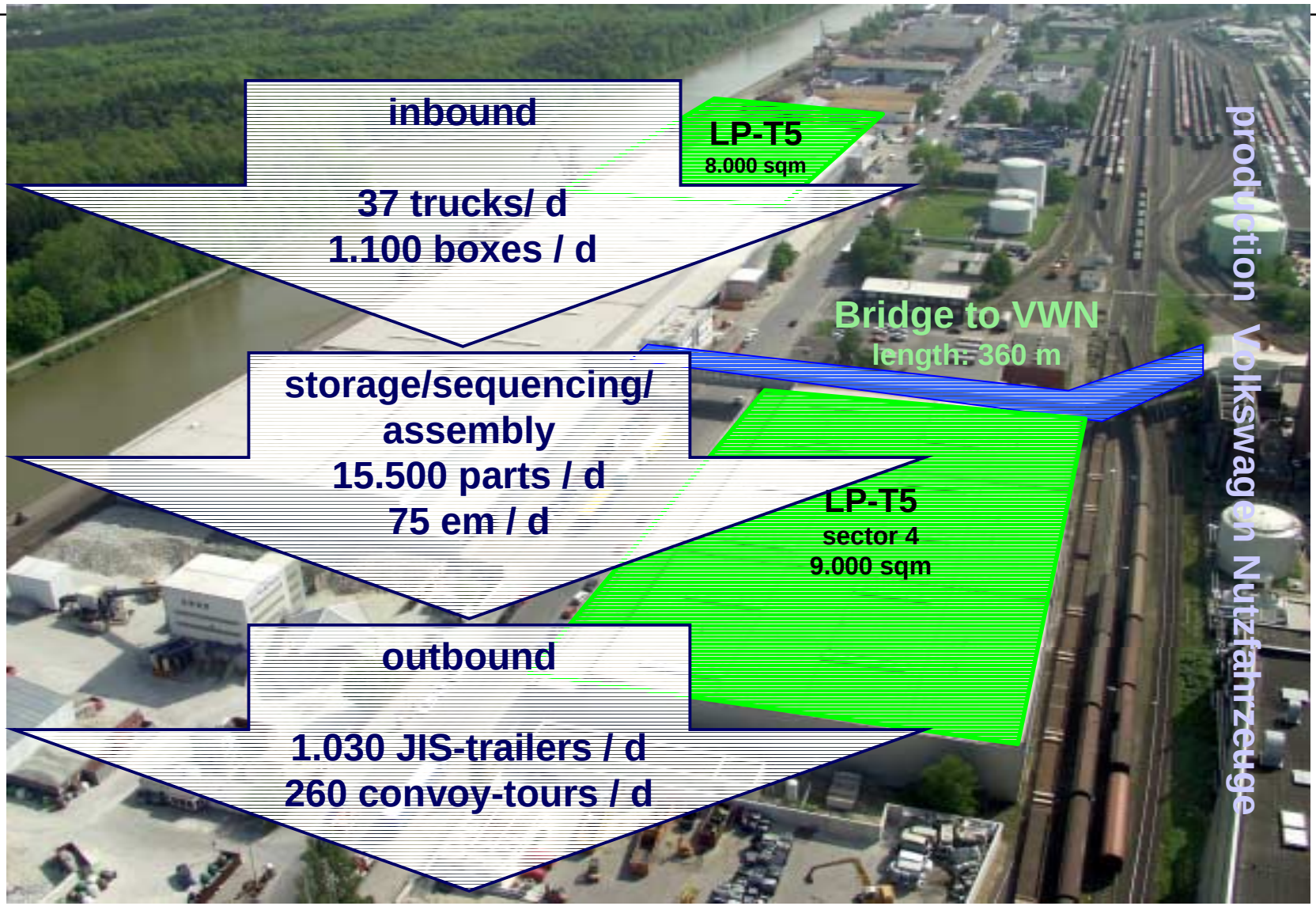
Supplier park

VW Nutzfahrzeuge T5/LT2

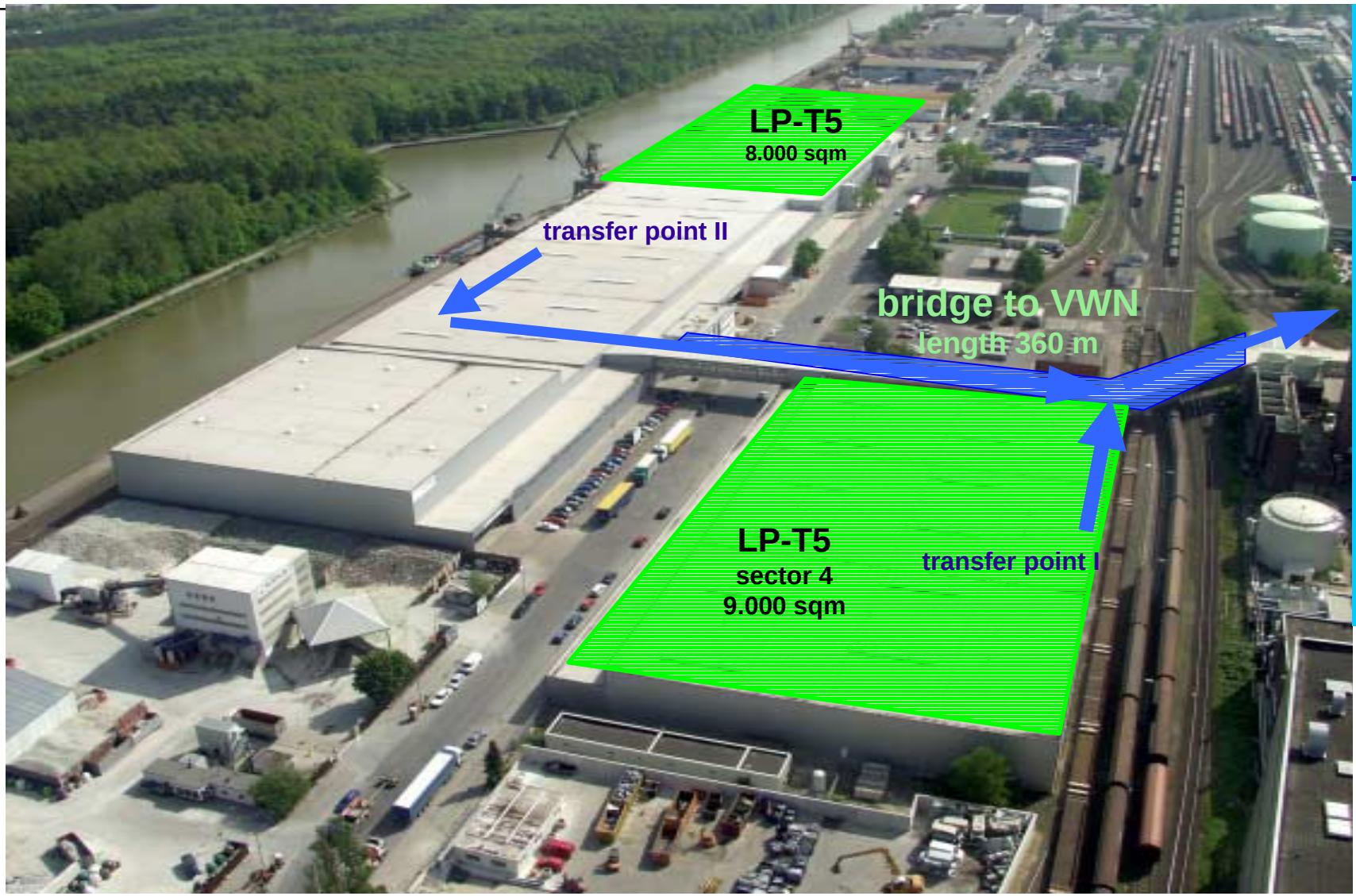
supplier & modules & services



metrics supplier park



material flow JIS-modules

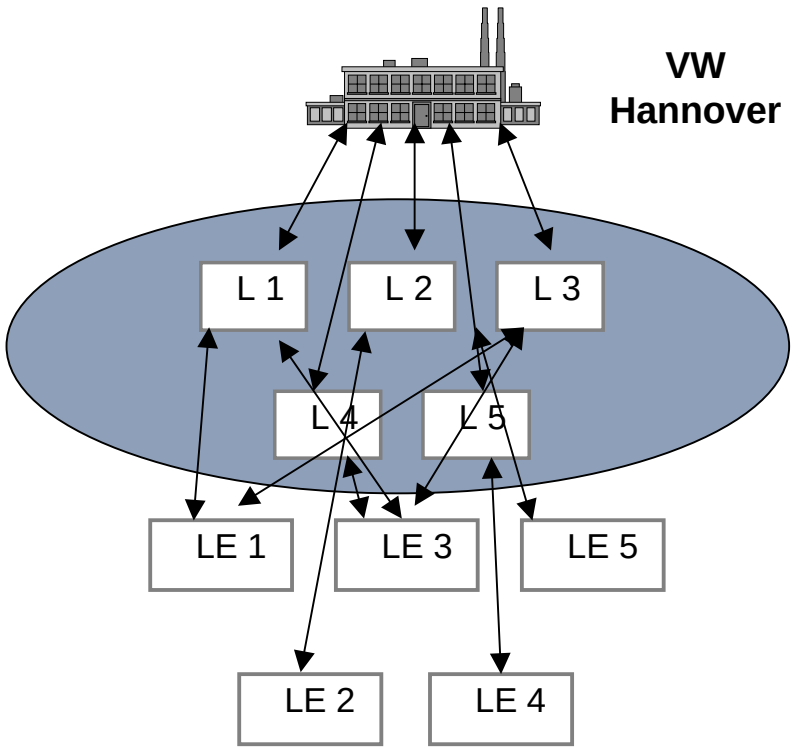


IT- concept

VW Nutzfahrzeuge T5

IT Service Provider – actual situation 2001

Each supplier needs his own world of IT (server, hardware, ...)



uncoordinated systems and deliveries

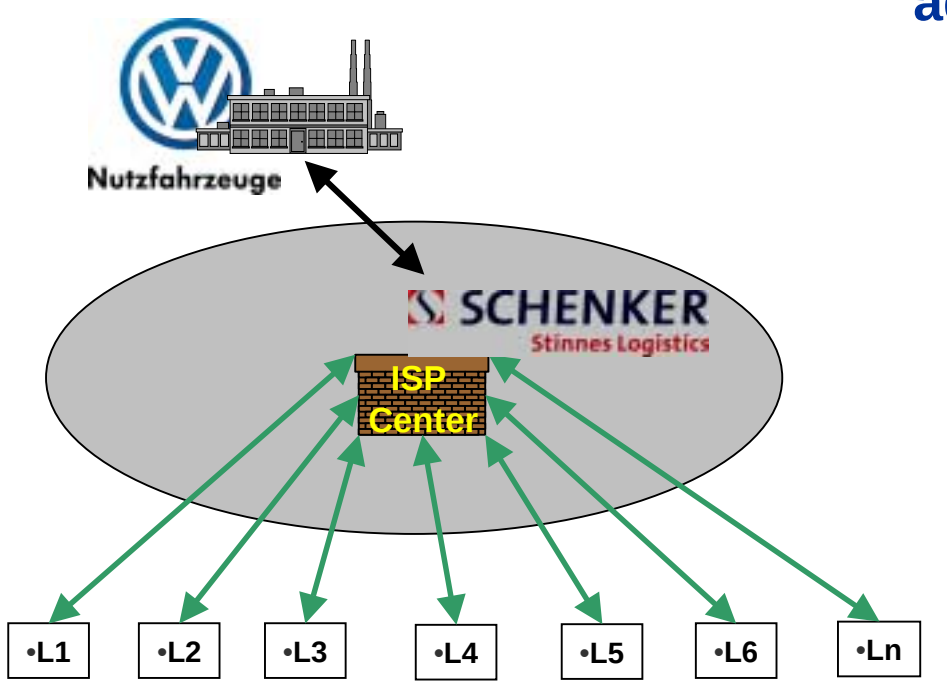
consequences

- n x logistics provider IT
- n x server-hardware
- n x personnel (staff)
- n x different solutions
- n x projects
- n x partner (contacts) to VWN
- n x standards of quality requirements

n „group solutions“ by higher costs

IT Service Provider from 2002

Schenker as an central IT- provider for supplier



advantages

- lower IT- costs
- direct persons to turn to
- no IT staff of suppliers
- one point of delivery
- available hard- and software
- support
- one emergency programm

minimizing costs by utilization Schenker ISP

Quality management
VW Nutzfahrzeuge T5

quality management / kinds of audit

system audit

- analyzing the stipulated elements of the quality management systems
- analyzing the company organization structure
- stage of using the existing documentations (QMH, QMV, QMA)
- evidence of fulfillment of the requirements

process audit

- verification of process capability
- evaluation of the process referring to iterative results
- assessment of management methods to improve and control the processes

product audit

- verification of process capability regarding one product
- evaluation of the process referring to iterative results
- assessment of conformity of processed product and planned product

quality management / method to avoid errors

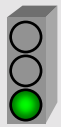
FMEA (Failure Mode and Effects Analysis)

- ***analytical method to list all potential errors regarding stages of planning and processing***
- ***avoidance of potential errors at the earliest moment***

quality concepts / certificates

- sequenzing
- assembly services
- external production supplying
- just-in-time delivery
- process FMEA
  (Failure Mode and Effects Analysis)
- process audit by VWN
- product audit by customer/VWN

QM automotive – process audit VWN

	Prozessaudit Ergebnis	NQ-F QS-Fahrzeugfertigung 2002-03-08 Seite 1 von 2
Thema: Materialfluß vom Wareneingang bis zum Verbauort Bereich: Lager 22 u. 26, I-Punkt Halle 1		Berichts-Nr.: PAS 1.2
Grund und Umfang des Audits: Planmäßige Nachbegehung des ereignisorientierten Prozessaudits aufgrund von Qualitätsbeanstandungen		
Gesamterfüllungsgrad: 94% Prozess erfüllt Grüne Ampel Ziel: > 90%		

Kurzergebnis:

Positive Punkte:

- Systematische und engagierte Abarbeitung der Verbesserungspotentiale (NP-F7 und Fa. Schenker)
- Vorbildliche Vorbereitung und Information der Mitarbeiter von NP-F7 hinsichtlich des Prozeßaudits (Aushänge, Flyer)
- Einrichtung eines EDV-gestützten Schichtbuches (NP-F7)
- Ordentlicher und sauberer Gesamteindruck (NP-F7 und Fa. Schenker)
- Durchgängiges Sperrverfahren für beschädigte Behälter (NP-F7 und Fa. Schenker)
- Deutliche Verringerung des Teilebeschädigungsrisikos durch Einsatz neuer Spezialgestelle

Verbesserungspotentiale:

- Einsatz eines Gabelstaplers mit erheblichen Mängeln (Fa. Schenker)
- LT-Radhausschalen unterliegen bei derzeitigem Lagerungszustand weiterhin einem Beschädigungsrisiko (NP-F7)
- T4-Seiten- bzw. Dachverkleidungen sind entgegen Verpackungsverordnung nicht gegen Verschmutzung geschützt (Fa. Schenker)
- Hohes Beschädigungsrisiko bei T4-Cupholdern: Mehrere Kartons z. T. stark beschädigt. Überlagerung des Palettenbodens. (Fa. Schenker)

Verantwortlich	Auditor/en:	Zuständig: siehe "Verantwortliche" im **Einzelergebnis-Bericht**, abrufbar **unter \\Devwaghad49001\NQF\Leitung\ Berichte\Prozeßaudits\Materialbereitstellung**		
P. Quickert **Koordinatorin**	P. Quickert K. Brüggemann	**Verteiler:**		
Dr. Flor **Abteilungsleiter**		H. Schramm H. Dieckhoff H. Kleinschmidt H. Kazmierczak H. Brinschwitz H. Hesse H. Gödecke H. Buch Fr. Dr. Colla	NP-F NB-L NQ NQ NQ-F NP-F7 NP-F7 Fa. Schenker NB-L3	z. Kts. z. Kts. z. Kts. z. Kts. z. Kts.

Successfull audits VDA 6.3

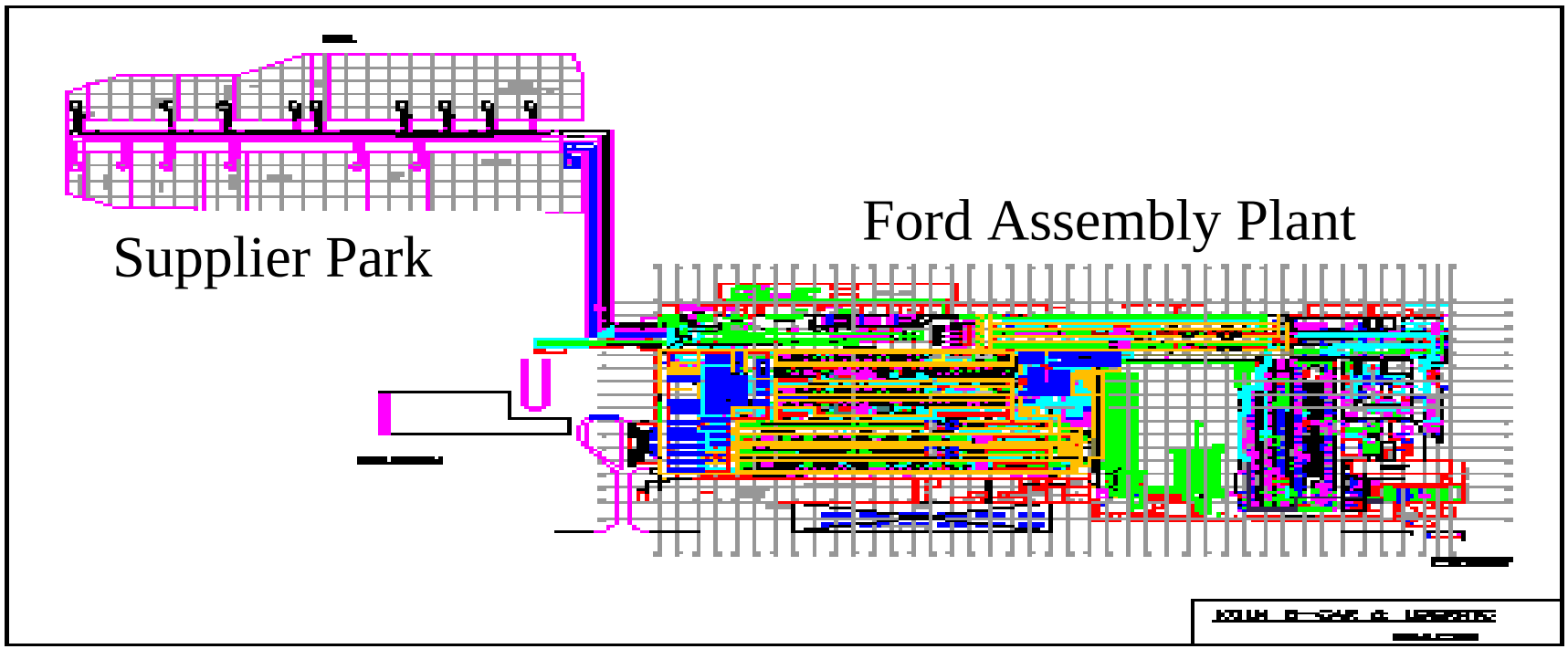
in regional sites of VW:

- **Hanover and**
- **Brunswick**

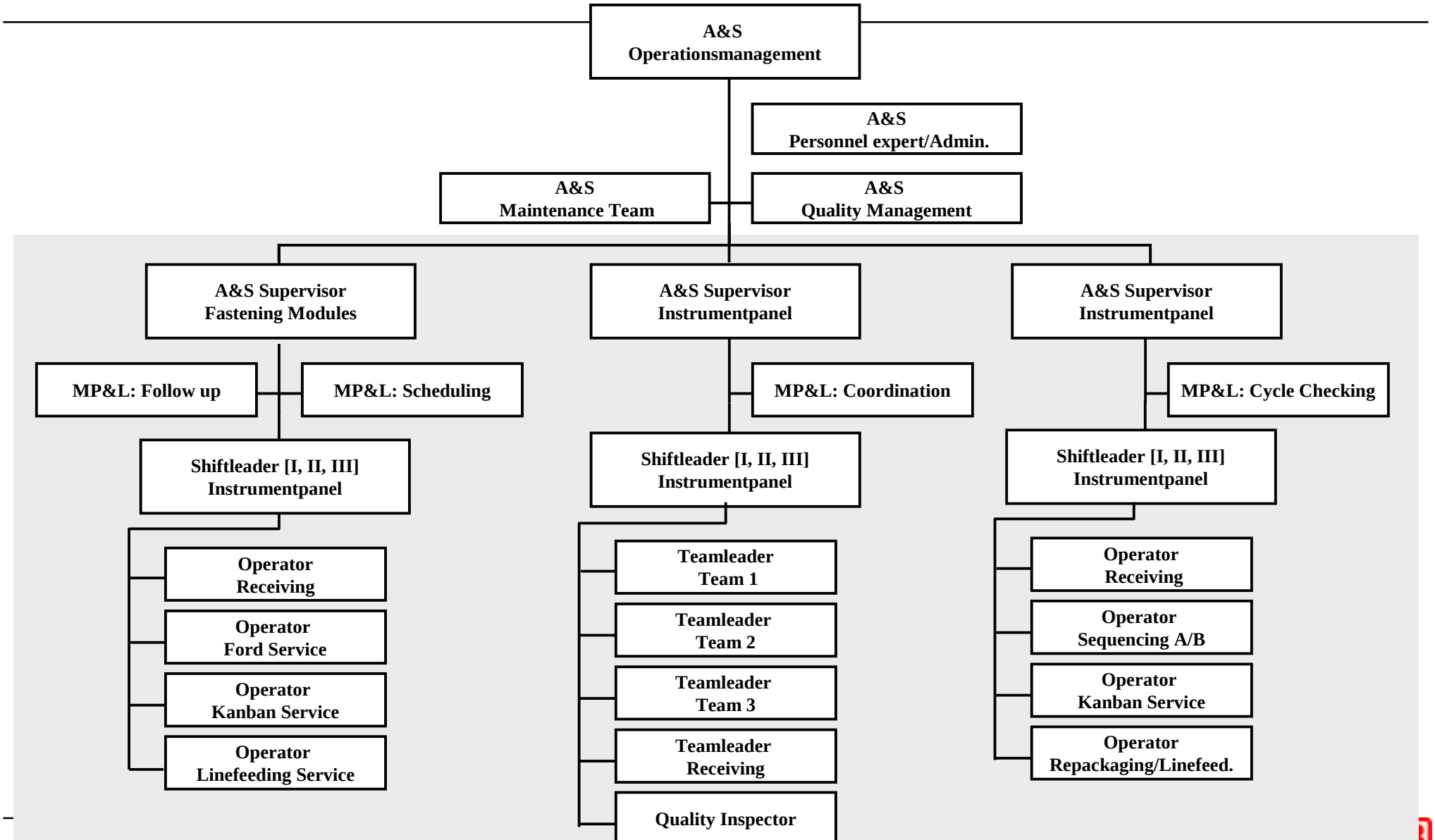
Ford Supplier Park

Supplier Park Ford Cologne

Layout Ford Plant 1Y/ Supplier Park



Organisation
Supplier Park Operations



Supplier Park

Products: **Fiesta, Fusion**

Production: **400.000 cars per annum**
1.800 day (3 shifts)

Location: **800 m to the point of fit**

Transportation-system: **Conveyor System (total lengths 11km)**

Modules:

	Instrumentpanel:	**Collins & Aikman**
-	Looms:	Siemens Yazaki
-	Fastening Systems:	Textron Fastening Systems

Supplier Park Instrumentpanel

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Employees:	**180**
Components:	**250** e.g. IP, Air condition, Radio, Airbags, Steering module
Tact time:	**39 sec, 90 min time between ordering and assembly**
Plant area:	**5.767 m²**
Inbound deliveries	**50 Trucks/day**
Responsibilities:	**- Assembly** **- Maintenance** **- Quality Control** **- Receiving/ Linefeeding**

Supplier Park
Wiring Harnesses

SCHENKER
Stinnes Logistics

Employees:	**20**
Articles:	**267 e.g.** Main-, Door-,Engine Looms
Tact time:	**39 Sec, 26 min time between ordering and assembly**
Plant area:	**3.000 m²**
Receiving Volume:	**200 Pallets/day**
Responsibilities:	**- Sequence delivery of Main looms** **- Linefeeding, Door Looms** **- Kanban delivery service within SP** **- Stock control**

Supplier Park
Fastening Systems

SCHENKER
Stinnes Logistics

Employees:	17
Articles:	400 e.g. screws,clips, nuts, rivets
Time Window:	Delivery cycle 20 min
Space Capacity:	2.043 m², 2.000 pallets capacity
Turn over:	2.200 Klt's / day
Responsibilities:	- Organization European Transports **(Inbound)** - Follow up + stock control + scheduling - File and system maintenance warehouse system - Delivery Service to Ford + Supplier Park (Kanban) - Linefeeding Instrumentpanel

Roles & Responsilities

1st Tier Supplier

- Contractor to OEM
- Engineering
- Product Quality Components
- Purchase parts

SCM-FUNCTION

Logistics Provider

- Projektmanagement Operations (Launchphase, CIP)
- Management Ressources (Personnel+Assets)
- Day to Day Management (Ensure supply of parts)
- Inventory- & Complexity-Management

Planning Assumptions

Volume data

- 405.000 vehicles/year
- 1.800 verhicles/day
- 3-shifts on 5 workingdays
- 39 sec. tacttime
- 3 carlines, Programm data

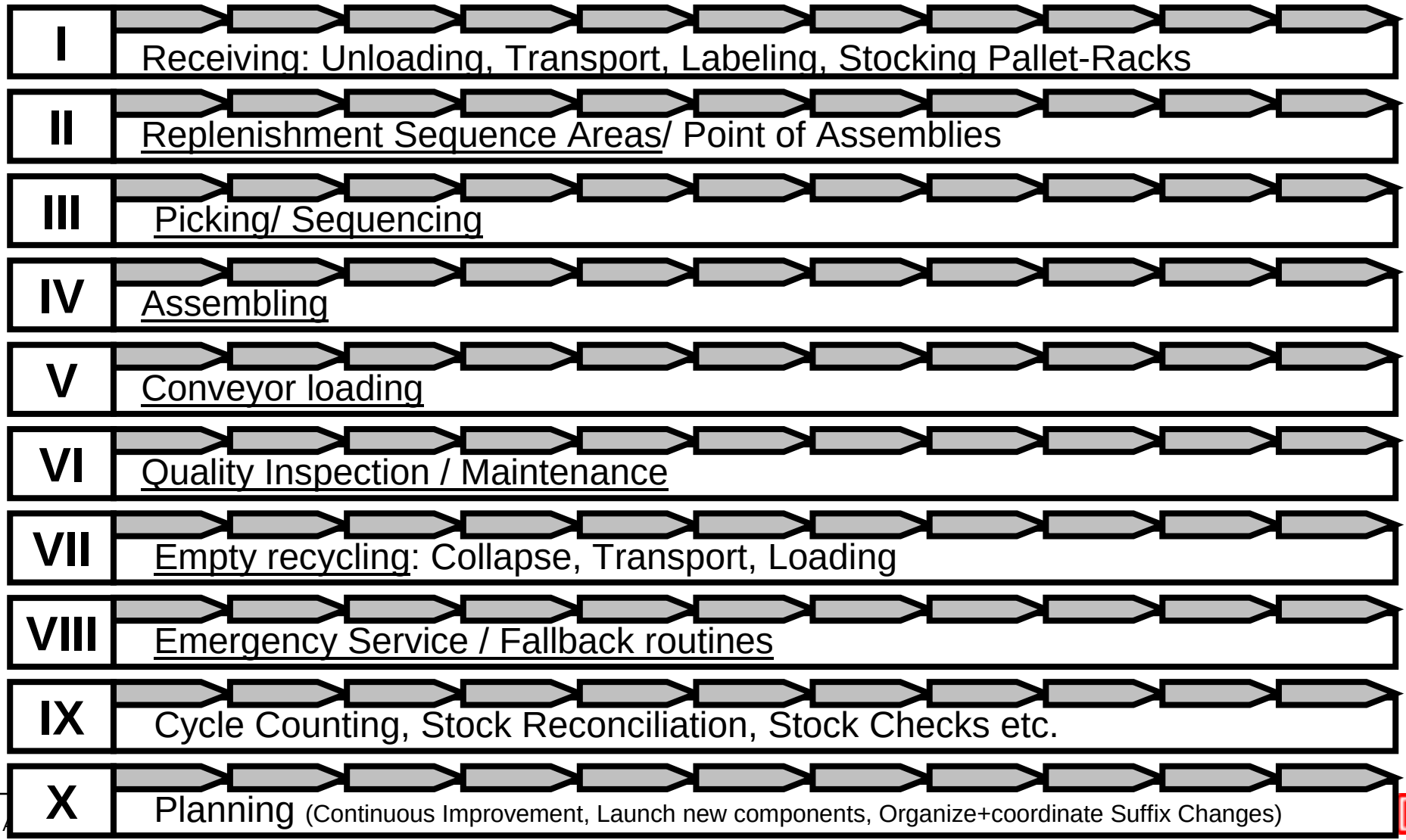
Technical data

- Drawings (Modules)
- Packaging data (Modules)
- Complexity
- Facility ground plan
- Conveyor system description

Timing

- Pre Prodcution phases
- Ramp up

Core Processes



Complexity
B-car Programm Cologne

SCHENKER
Stinnes Logistics

3 Carlines

- Left-/Right Drive
- Countryspecific Features
- Engine Type
- Feature Packages
- Options

Challenge
Change Management

In addition to the regular running engineering changes there are deadline related changes of most of the partnumbers during running production

- Organisation receipts of new partnumbers (space, labeling, etc.)
- Organisation of additional warehouses
- Preparation IT-Systems
- Coordination “time of usage”
- Coordination obsolete parts
- Training & Sensitization of employees

Target
Extend the service level

SCHENKER Stinnes Logistics

Customer Requirement	Service Offering	Service Description
Transport material to plant to agreed Quality, Cost & Delivery	Transport Services	Deliver to Plant
Reduce capital stock of material.	Just in Time Services	Scheduled Deliveries to plant (max. 1 day production stock)
Reduce administration and material handling costs	Sequencing of complete modules	IT- Connection to customers 'BOM and delivery in tact time deliveries
Eliminate planning and administration costs	Supply chain service	Follow up from 6 month EDI forecast to point of fit delivery
Reduce administration, material handling and production costs	Assembly of complete modules	Combining production and logistics services into a formal customer program
Supply of commodity items at market prices	Engineering Services Purchasing	• Engineering &BOM Management • Quality Management • Application Engineering • Automation

Current Service New Services to be developed Service out of scope

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Stinnes Logistics

Schenker Logistics

Thank you for your attention