

Processes

Process versus flow

Processes

Process vs flow

- Purpose:
 - Gain understanding of the processes of a containerterminal
- We can identify:
 - Terminal Process
 - Terminal flows
 - Container flows
 - Terminalproducts

Processes

Primary process

- Mainstream we can identify two processes:
 - Primary process
supporting the core business
 - Secondary process
supporting the core business

Processes

Primary process

- Primary process has the following sub-processes:
 - Order process
 - Planning process
 - Scheduling
 - Execution
 - Reporting and Invoicing

Processes

Process vs flow

Secondary process is supporting to the core business:

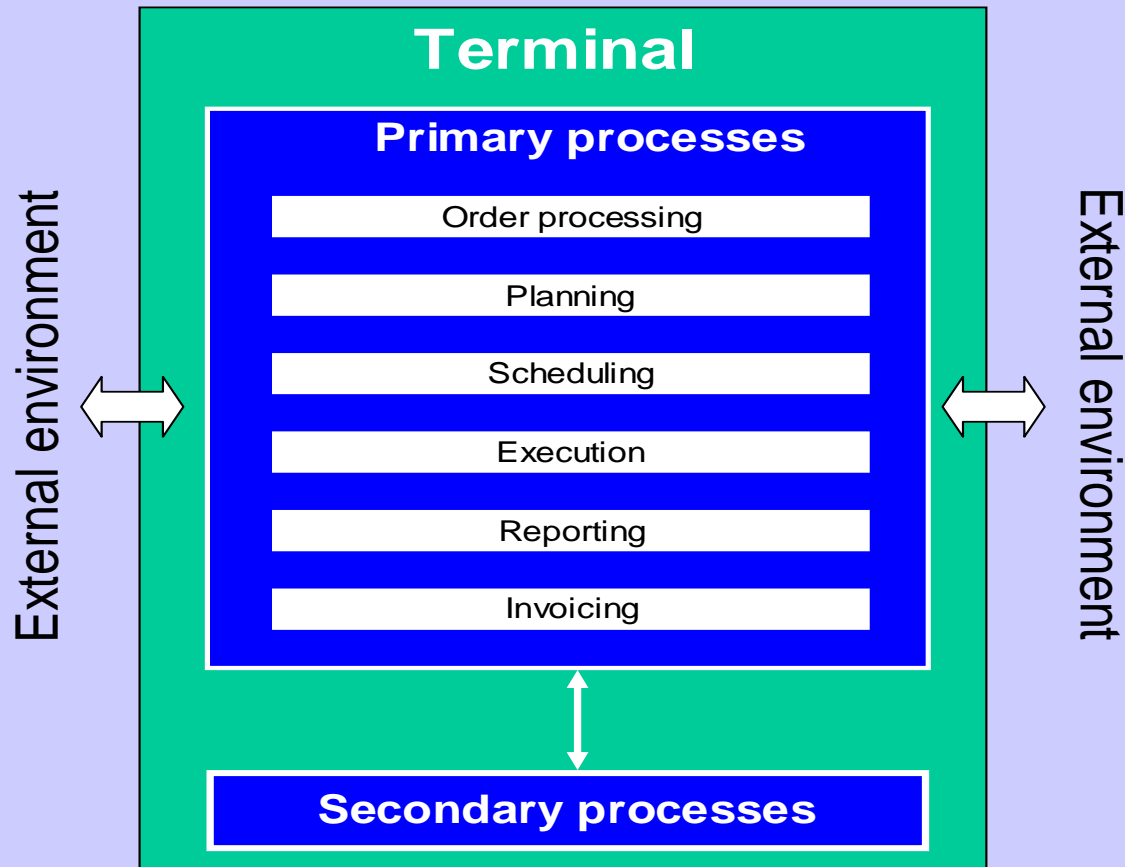
- Finance
- Sales and Marketing
- Procurement
- HRM
- ...

Each has it's own sub-processes

Processes

Process vs flow

Primary process



Processes

Process vs flow

processes

modality					
	Truck	Train	Barge	Vessel	Stack - Stack
Order processing	Order processing land			Order processing sea	Order processing miscellaneous
Planning		train inspection			
	Gate planning	Rail track plan.	Berth planning		Stack capacity planning
	Truck planning	Train planning	Vessel/ barge planning		
	Internal transport planning				
		Equipment planning			
	Human resource planning				
Scheduling	Container scheduling				
	RS scheduling	RMRC sch.	QC scheduling		RS scheduling
			AGV scheduling		
	ARMG scheduling				
		TT and TC scheduling			
	Stack scheduling				
	Transfer point scheduling				
	Execution	Container inspection			
Truck process		RMRC exec.	QC execution		Stack execution
			AGV execution		
ARMG execution					
Transfer point execution					
Reporting		Reporting			
Invoicing	Invoicing				

Processes

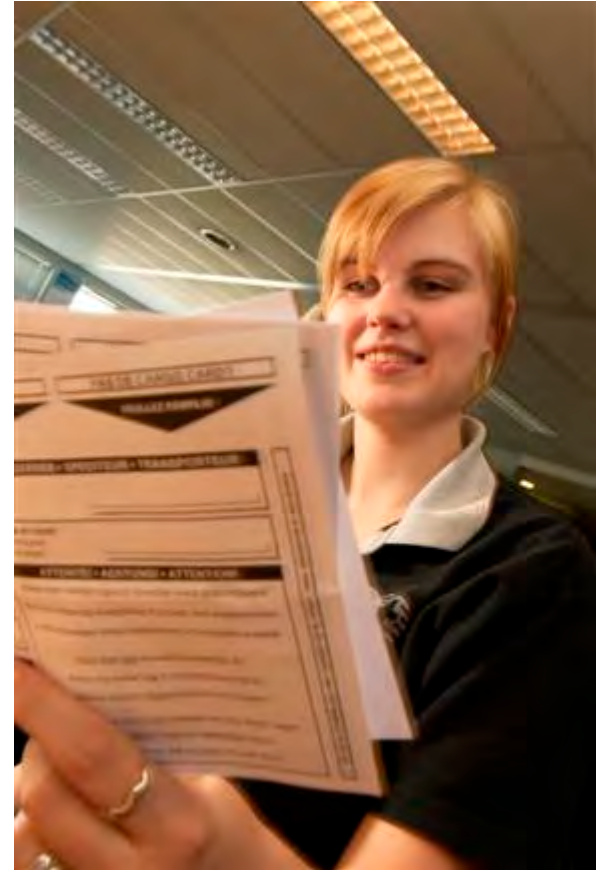
Order process

- The order process initiates a pre-defined operational process:
 - Customers send orders that can be linked to activities for vessels, trucks, trains, barges and feeders (the core activities)
 - Orders directly linked to terminal products like stuffing/stripping orders or (dis)connecting reefers
- The order process is booking reference or booking number oriented.

Processes

Order process

- The order process has following steps:
 - Receiving of orders
 - Checking of orders
 - Completeness
 - correctness
 - Registration of orders
 - Matching of orders with other orders or data



Processes

Order process

- Minimum information included in an order:
 - Containernummer
 - Size type
 - Reference number
 - Customer code
 - Modality

Processes

Order process

- Orders are received via:
 - EDI: electronic data interchange
 - Fax/phone
 - Web application
- Orders are transmitted by a number of parties and all times of day 24/7

Processes

Order process

EDI-handler: Software to receive EDI messages and feed the Terminal Operating System (TOS) system:

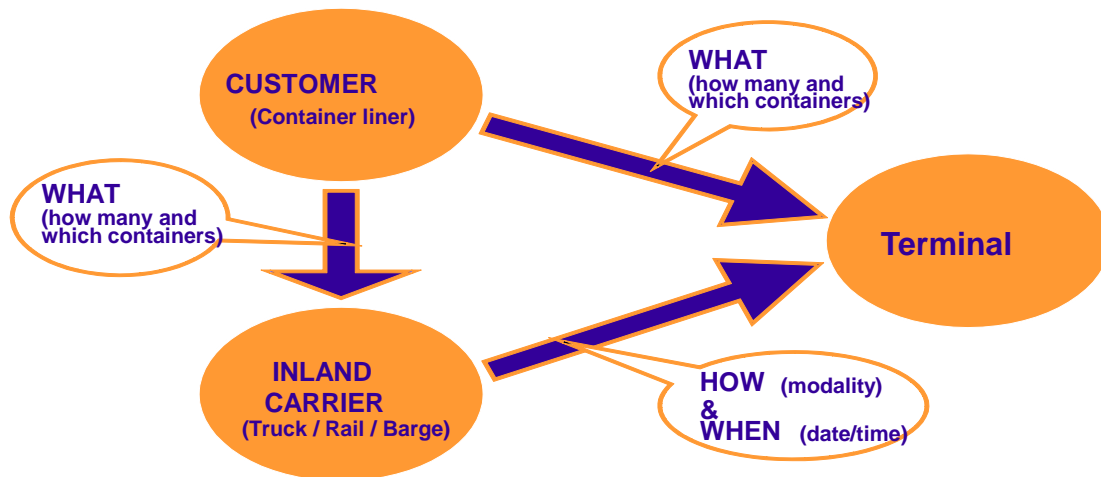
- Checking
- Registration
- Matching or Mapping
- Sequencing

Processes

Order processes

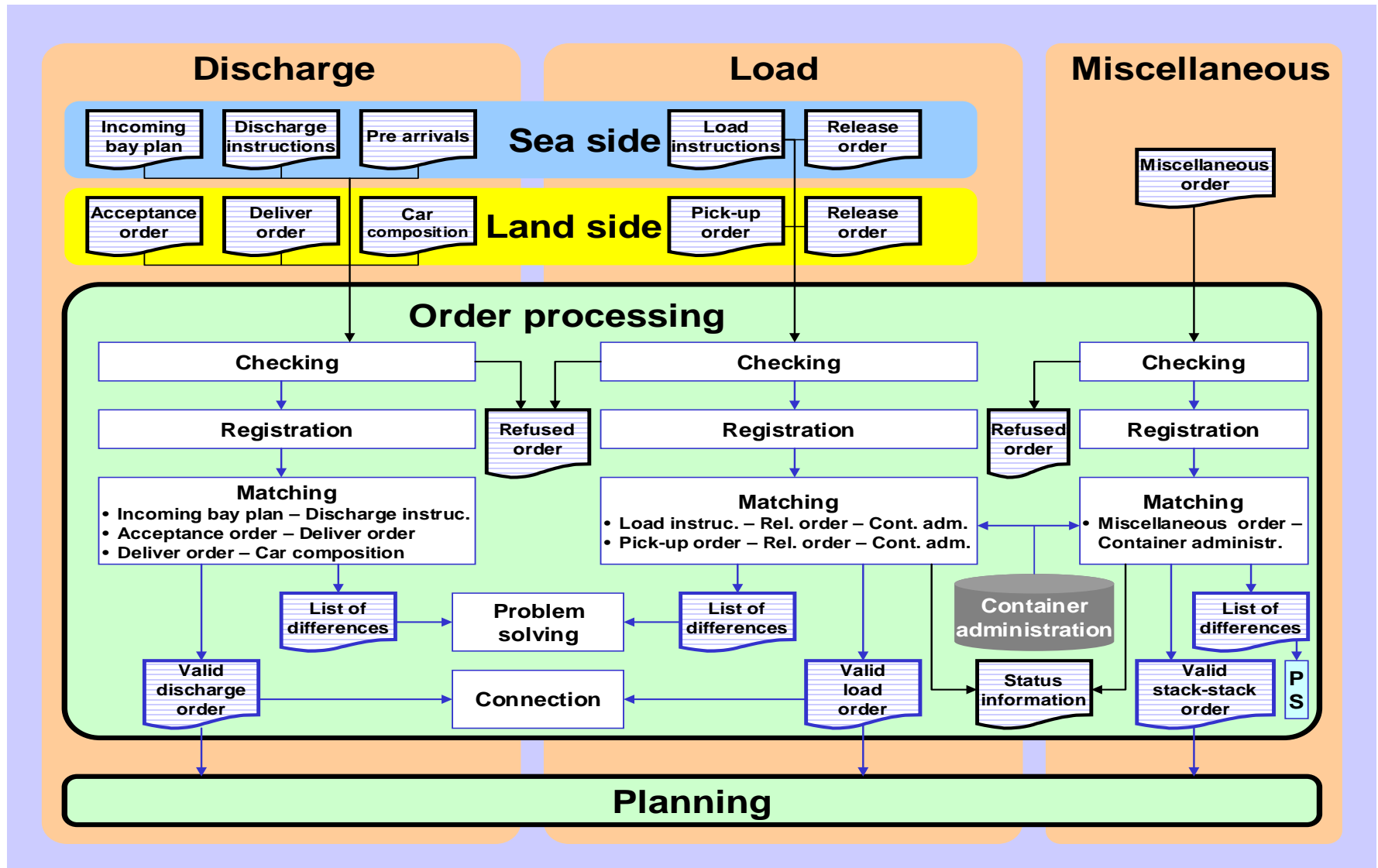
Orders examples

- Incoming Bay plan
- Discharge instructions
- **Acceptance order** <versus> **Deliver order**
- **Release order** <versus> **Pick up order**
- Release instructions
- Miscellaneous order



Processes

Order process



Processes

Order process

- **Baplie** = **Final Bay-plan**
- **Coprar-discharge** = **Final discharge list**
- **Coarri** = **Confirmation discharge**
- **Coreor/Coprar discharge** = **Release order**
- **Copino** = **Pick-up order**
- **Aperak** = **Availability information**
- **Codeco** = **Departured confirmation**
- **Coparn** = **Acceptance order**
- **Copino** = **Deliver order**
- **Codeco** = **Arrived confirmation**
- **Coprar-load** = **Load list**
- **Movins-load** = **Stowage instruction load**
- **Codepa** = **Load confirmation**

Processes

Planning process

B – Planning General

Planning:

Is the processing of information leading to decisions regarding the actions to be taken in the future to assist in ensuring that these actions are controlled

Why?

Deming:



Processes

Planning process

Why planning:

- For effective and efficient execution of the validated order, the orders have to be planned.
- Two levels of planning:
 - Capacity level: planning objects and resources
 - Individual level: container level and scheduling process

Processes

Planning process

Objects:

- Vessel
- Feeder
- Barge
- Train
- Truck



Processes

Planning process

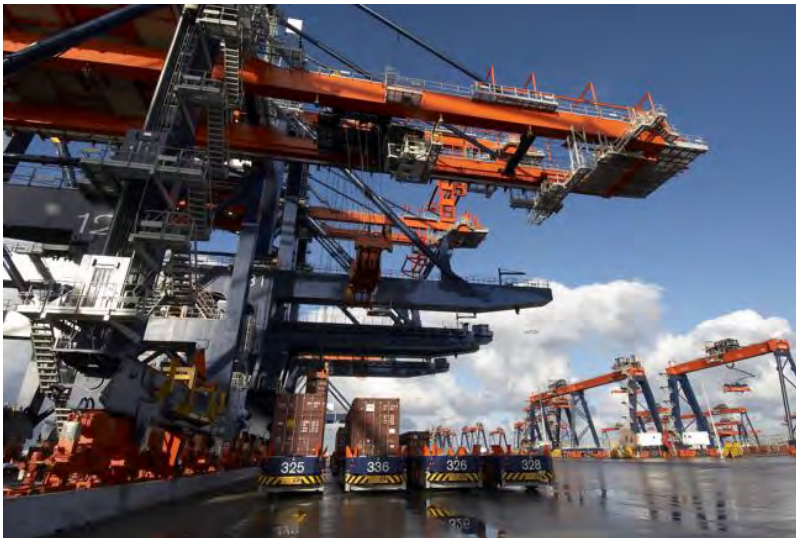
- Effective planning involves:
 1. Even spread of workload over available time to prevent peak loads during operations
 2. Resources are planned to execute the workload

Processes

Planning process

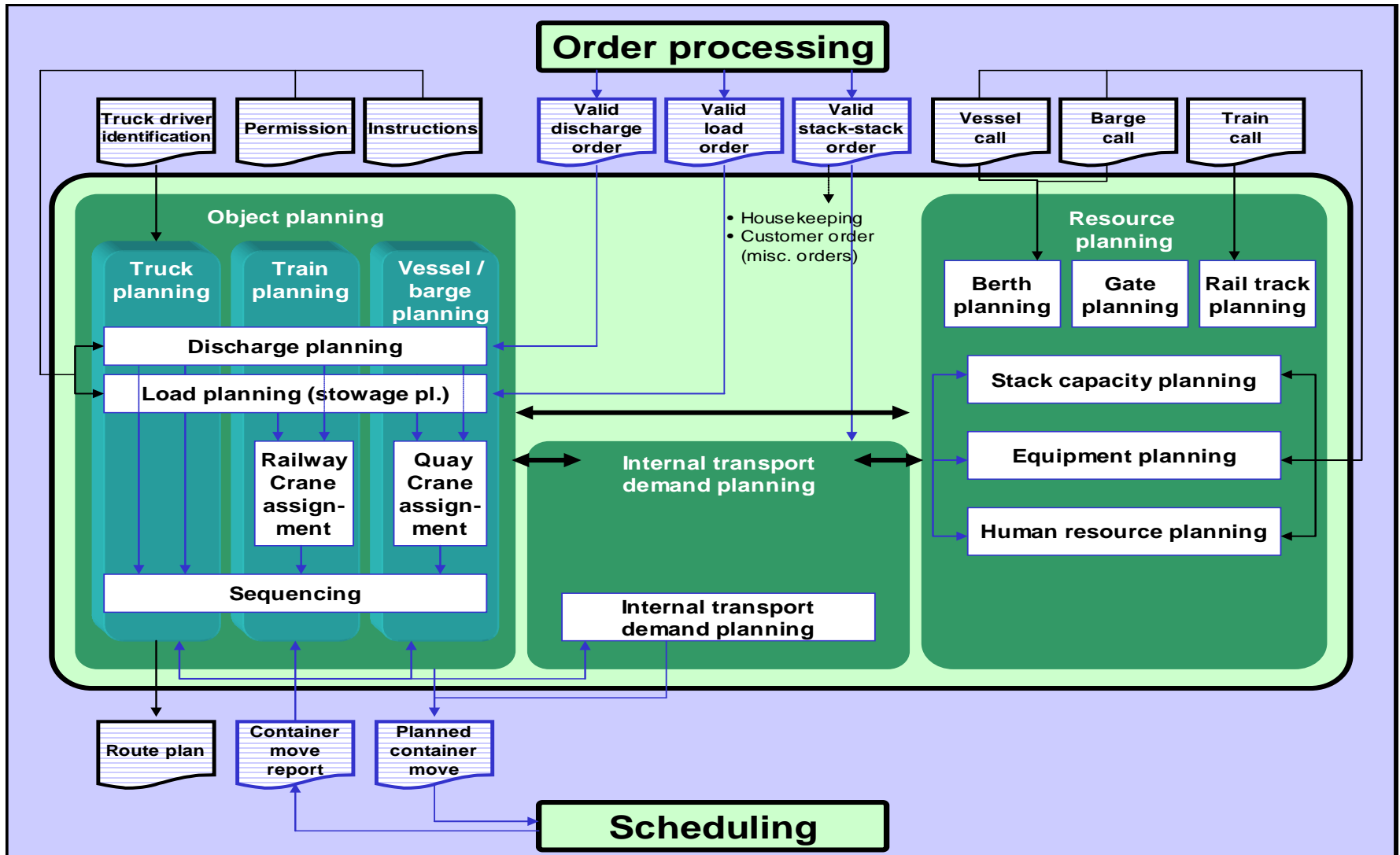
Resources:

- Space
- Equipment
- People



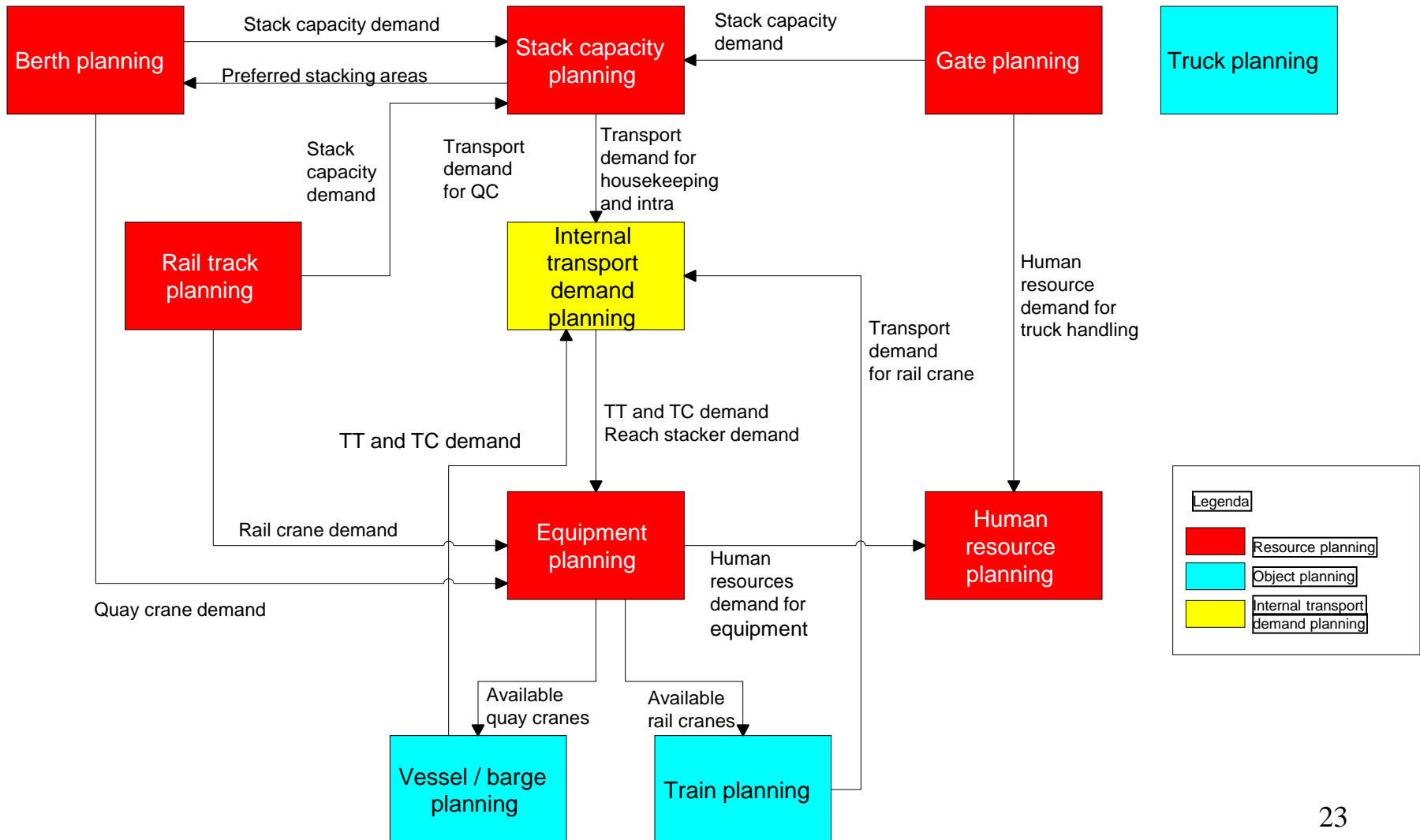
Processes

Planning process



Processes

Planning process



Processes

Scheduling process

Processes

Scheduling process

- From the planning a work sequence is being prepared: planned container moves
- If all container moves are planned, these will be released, for a defined period, for scheduling.
- Scheduling process:
 - Arranges for a container move to be translated into an equipment move
 - Allows for an efficient use of resources for a restricted period of time
 - Is always focused on the (near) future
- Moves can be cancelled

Processes

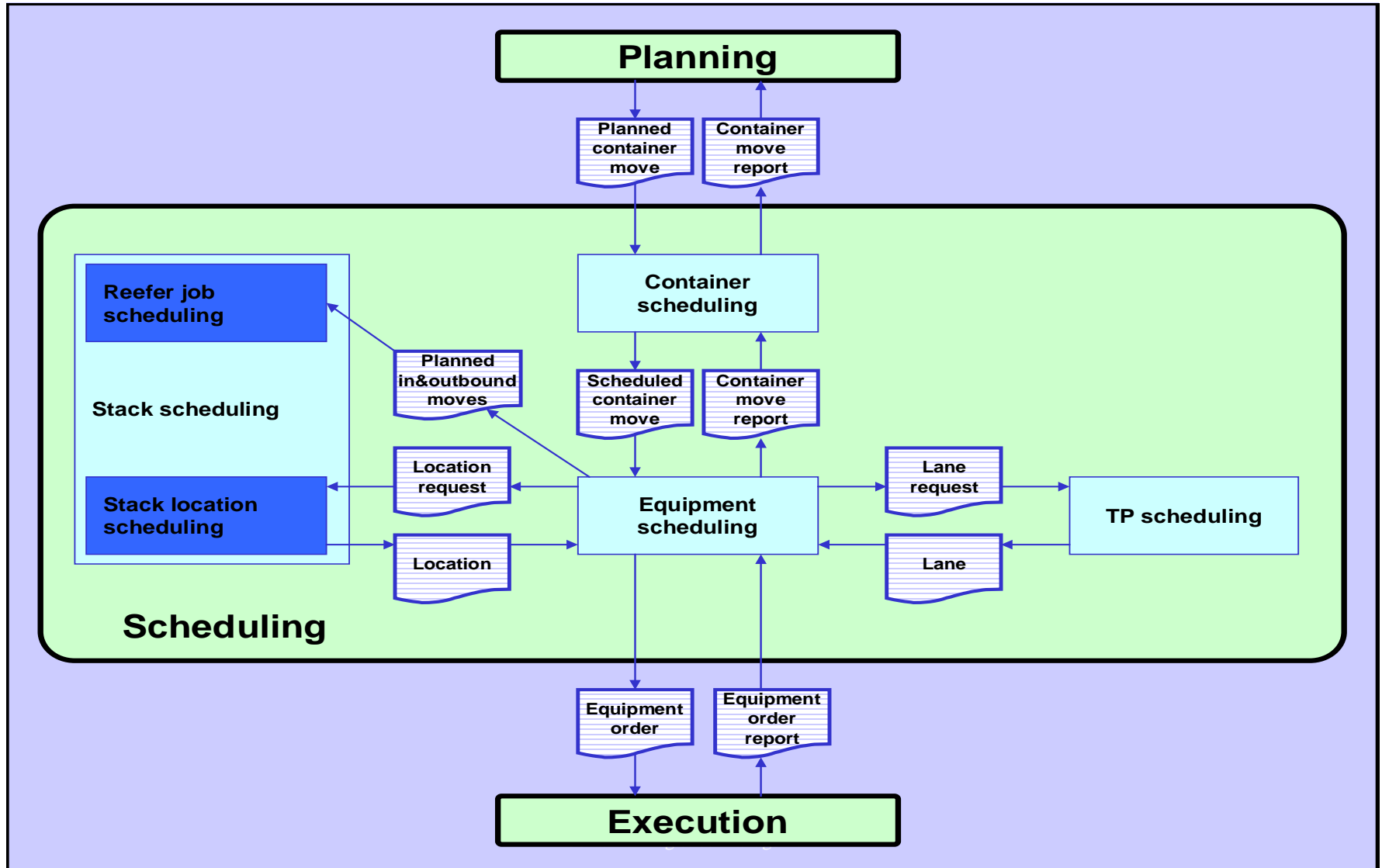
Scheduling process

We can identify following scheduling processes:

- ASC scheduling
- AGV scheduling
- RTG scheduling
- SC scheduling
- Reefer jobs scheduling
- ...

Processes

Scheduling process



Processes

Execution process

Processes

Execution process



disconnect and/or monitor

● ...



Processes

Execution process

- Container inspection:
 - Gate
 - Waterside



pection:

Processes

Execution process



Inspection of the container (1):

- Confirm container:
 - Prefix/number
 - Size type
 - Oversize measurements of out of gauge containers (length, width and height)

Processes

Execution process

Inspection of the container (2)

- Availability/validity of CSC plate
- IMO labeling
- Availability of top and/or bottom rail for tanktainers
- Seal-check and registration
- Damage check and control
- Door direction



Processes

Execution process

Object inspection:

- Minimizing of operational disruptions
- Minimizing claims



Processes

Execution process

- Train inspection:
 - Track number en position on the track
 - Direction of the train
 - Wagon composition (identification of the wagons and its sequence)
 - Fitting setting on the wagons
 - Position of the containers on the wagons (aft, centre, forward)
 - Door direction of the containers

Processes

Reporting process

Processes

Reporting process

Terminal Performance and Departure Report

Line or Group:	AES	Vessel Voy nr:	LIGB34E
Vessel:	LIONS GATE BRIDGE		
Vessel Operator:	KKK		

Expect

ETA:	08-JAN-08 16:15
ETD:	10-JAN-08 11:45
Berth prospect:	43:30
Agreed Sailing:	
Agr. Berthing Time:	

Arrival

Actual Arrival:	08-JAN-08 16:33
Actual Sailing:	10-JAN-08 06:00
Actual Berthing Time:	37:26

Vessel Operation Time

Start Vessel Operation:	08-JAN-08 17:06
Finish Vessel Operation:	10-JAN-08 06:00
Gross Operating Time:	36:53
Meal Breaks during Oper.:	3:20
Oper. Inter. during Oper.:	
Net Operating Time:	33:33

Vessel Handling Time

First Lift:	08-JAN-08 17:17
Last Lift:	10-JAN-08 05:59
Gross Handling Time:	36:42
Meal Breaks during Handling:	3:20
Oper. Inter. during Handling:	
Net Handling Time:	33:22

Moves

	<u>Standard</u>	<u>Off Standard</u>
Discharged:	1801	16
Loaded:	1269	
Shifted:		
Restowed Via Quay:	30	
Container Moves:	3100	16

Handlings

Total Container Moves:	3116
Hatch Covers:	56
Pcs Break Bulk:	4
Total Handlings:	3172

Production

Berth Productivity (BMPH):	92.3	Total handlings / (Last lift - ATA) - (Ext.inter./Average cranes)
Plan. berth prod.:	72.9	Total handlings / Berth prospect
Deviation:	+19.4	Berth prod. - Plan. berth prod.
Handling Productivity:	95.1	Total handlings / Net Handling Time
Crane Productivity:	25.4	Total handlings / (Gross Crane hrs. - Ext. inter. - Breaks)
Crane Split:	4.1	Gross Crane hrs / (Gross Operating time)

performances

adlists

led

rt

Processes

Invoice process

Processes

Invoice process

- All “billable” activities must be registred
- Input: contract details per customer and/or alliance
- Often specified:
 - 1ste waterside move
 - 2^{de} waterside move
 - Barge/ Rail/ Truck activity
 - Storage days
 - Special activities (non-core):
 - Stuffing /stripping
 - Transport
 - Reefer (dis)connect and monitoring

Processes

Terminal flows

Processes

Terminal flows

- Terminal flows are identified by:
 - Products on the terminal
 - Container flows.
- What is a product:
 - A service offered to the customer
- What are the products



Processes

Core activities

- Core products: derived from the modalities served by the terminal (Export, Import and Transshipment):

– Deepsea

– Feeder

– Barge

– Rail

– Truck

out / to	deepsea	feeder	barge	rail	road
In / from					
deepsea					
feeder					
barge					
rail					
road					

Processes

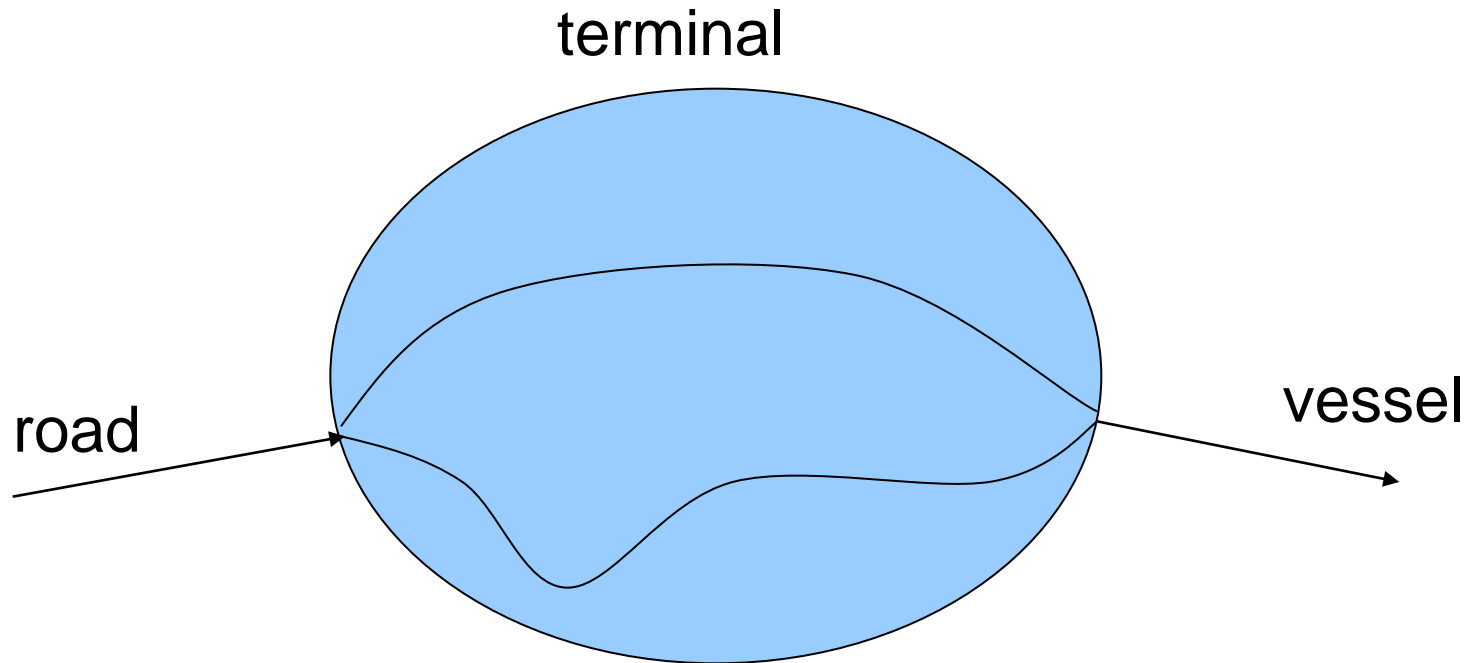
Non-core activities

- **Secondary products:**
 - **Storage of containers**
 - **Stuffing and stripping containers**
 - **Bundle and re-bundle flats**
 - **(Re)pack container**
 - **Physical Inspection of a container**
 - **IMO labeling**
 - **Weighing a container**
 - **Fumigation**
 - **Change container door direction**
 - **Inspection request by customer**
 - **Customs inspection**
 - **Restow and Shifting**

Processes

Method versus flow

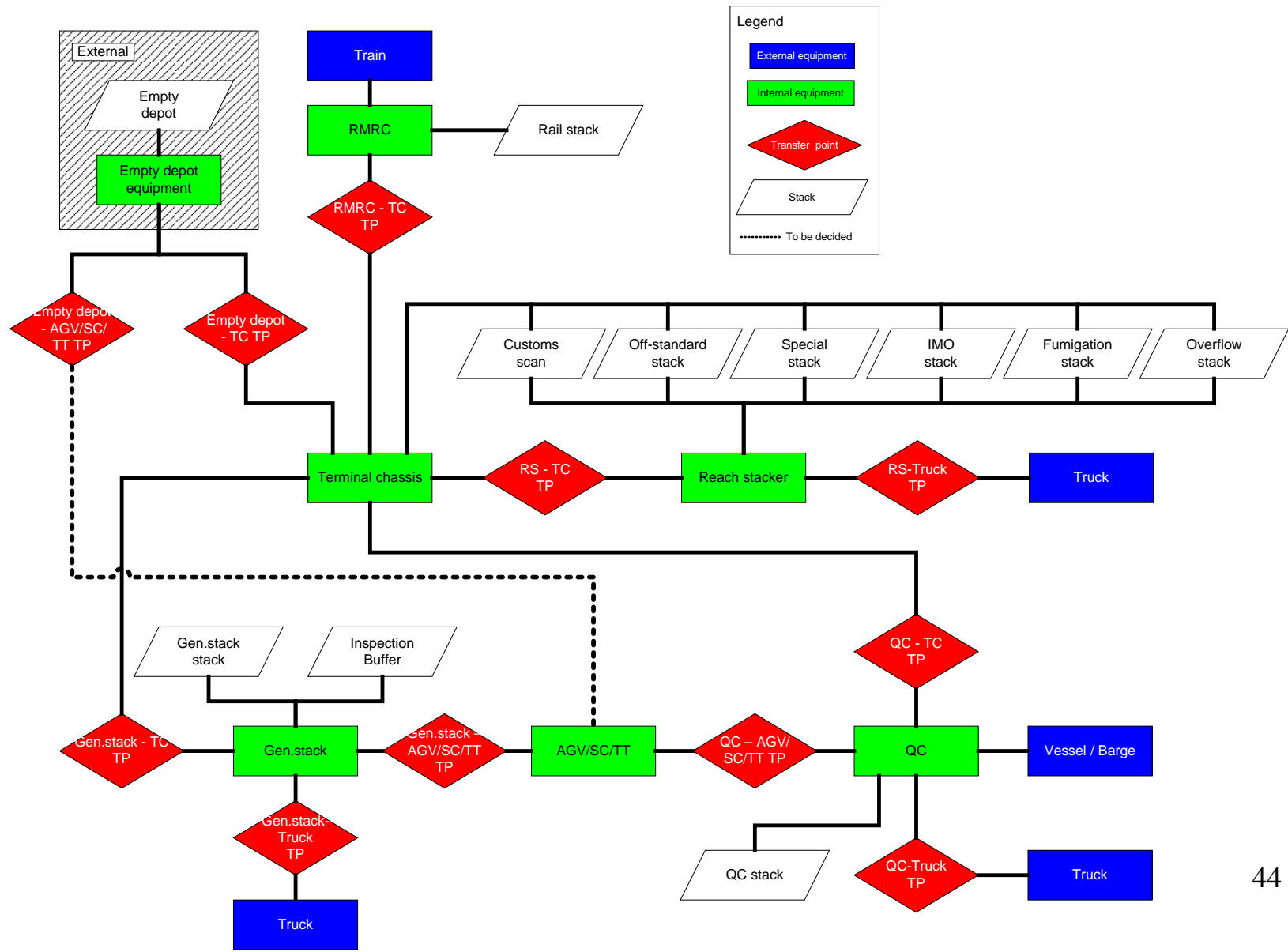
Method = de various ways of how a product can be executed



Different methods → different activities

Processes

Container flows





Processes

Product to resource

Excercise:

Describe the activities required for the following and indicate the resources required:

End to End flow:

- Products:
 - Discharge from Barge
 - Load on Deepsea vessel
- Method
 - For a standard 40ft container
 - Container is not damaged

Processes

Process vs flow

- **Activities: high level**
 - Discharge container from Barge
 - Inspection
 - Transport with AGV/SC/TT
 - Stacking
 - Transport with AGV/SC/TT
 - Inspection
 - Load container on vessel
- **Resources:**
 - **Per activity indicate which resources are required**

E.g.: discharge container

 - **Cranedriver, tally, radio, lashing**
 - **QC**
 - **Quay stack**