



Supply chain description

October 2015

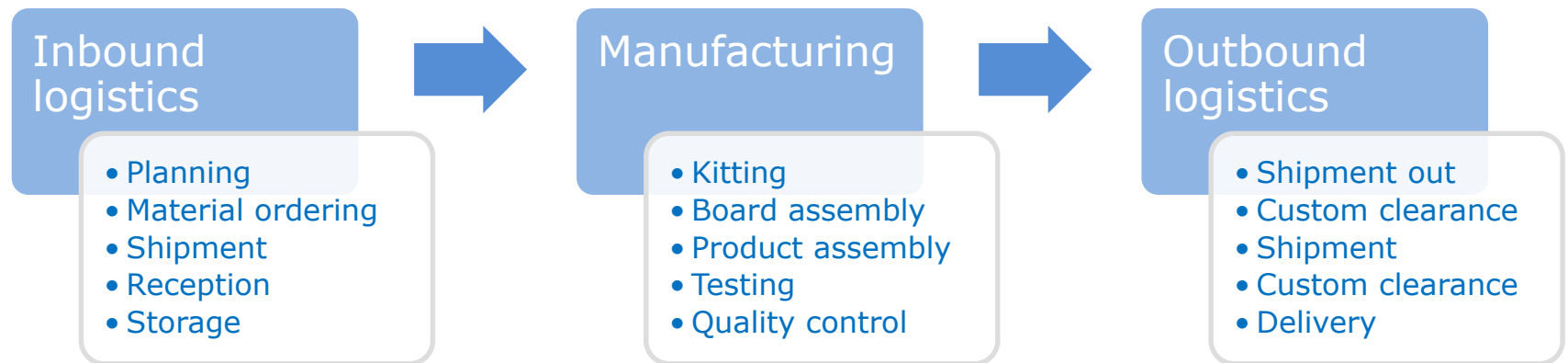


Introduction

- This short presentation aims at giving an overview of the overall logistics process in CE industry (High-volume electronics)
- It gives a brief explanation of the different steps needed between the purchase order received from the customer to the final delivery
- It gives typical example of sea freight and air freight solutions and leadtimes for product shipment between China factories to Europe places

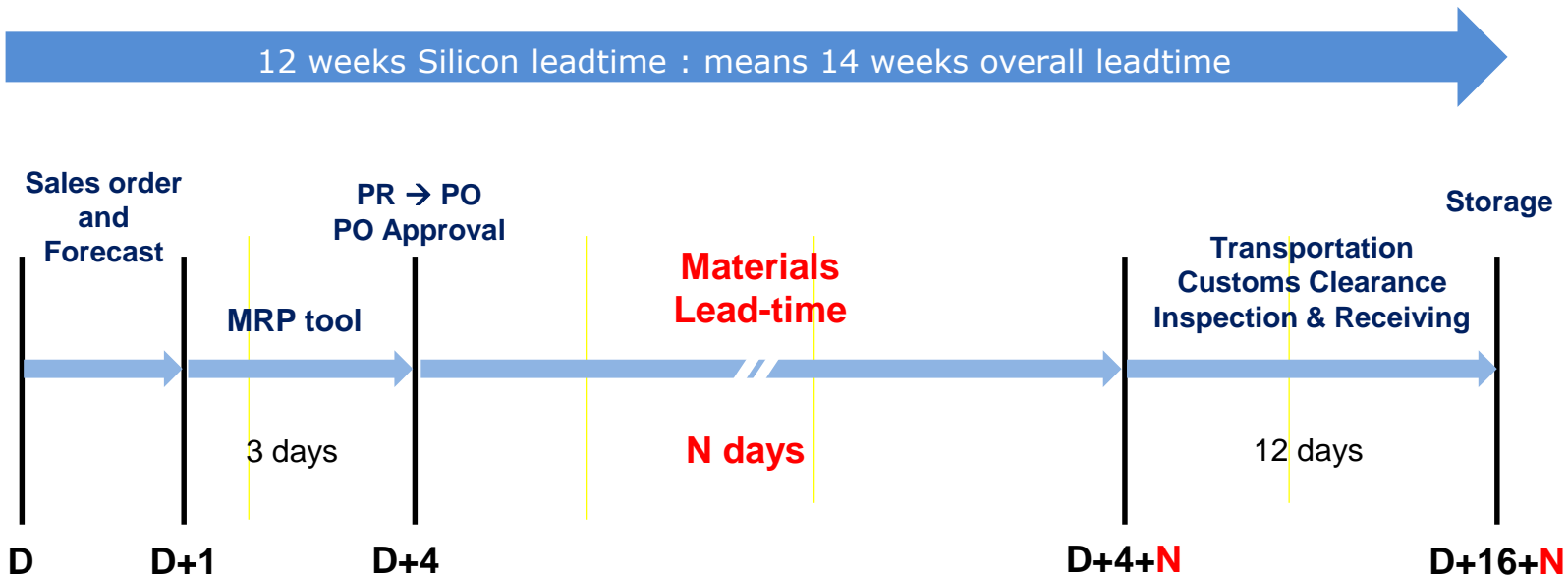


Supply chain : 3 sub-processes



- Total supply chain is divided into 3 steps : inbound logistics, manufacturing and outbound logistics
- The longest step in our industry is the usually inbound logistics, due silicon components that are usually the longest leadtime (typically 12 to 19 weeks for the main chipsets)
- This can even be worse in case of component under allocation

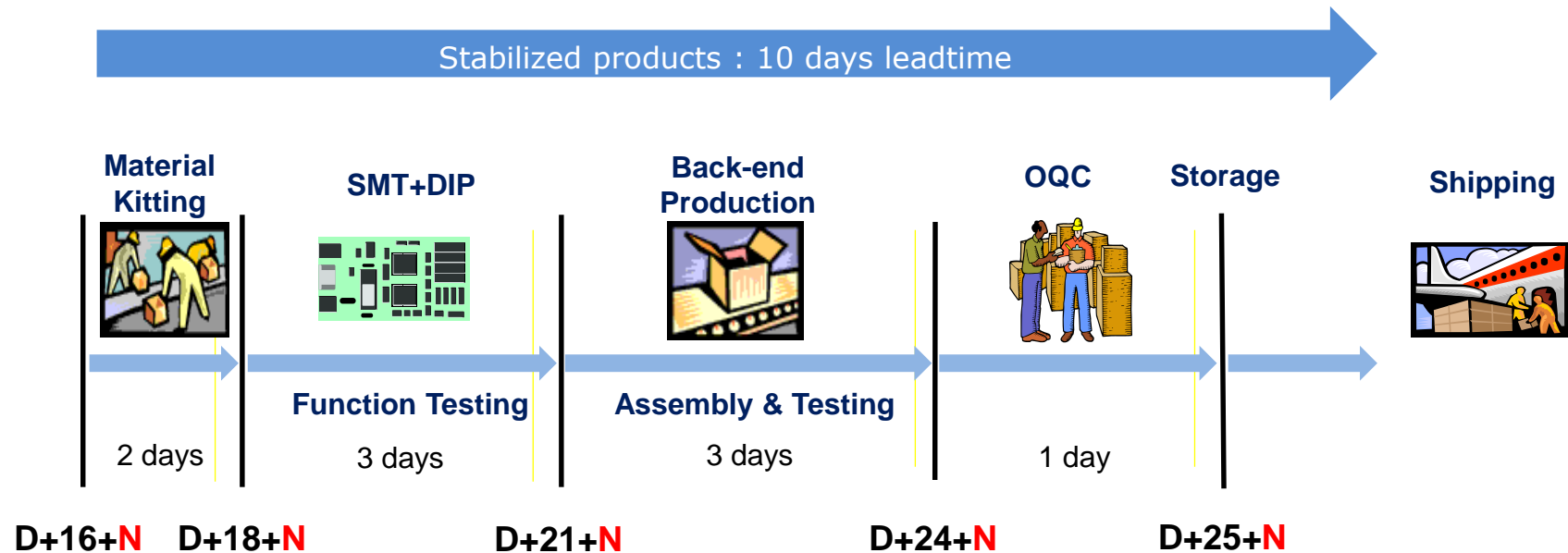
Inbound logistics sub-process



- Sales order and forecast from customers are processed every week. A MRP (*Material Resource Planning*) tool is used for overall consolidation, leading to weekly PO's to suppliers
- This process is critical for specific or high value components
- Additional « rush » purchase orders can be issued manually
- Leadtime is depending on the component : typically 12 to 19 weeks for silicon
- Incoming inspection is critical for overall product quality achievement
- Storage duration has a limit (quality constraint and financial rules)



Manufacturing sub-process



- Material preparation is specific to industrial equipment
- SMT+DIP : individual board manufacturing and testing
- Assembly & testing : final product assembly, and calibration and functional testing
- OQC (Outgoing Quality Control) : 100% for new products then by sampling
- Shipping: usually very limited inventory – shipping same day or next day(s)
- For **new product introduction** : longer throughput time, typically 3 weeks, is required for process optimisation. Total ramp-up duration can be from 1 to 2 months

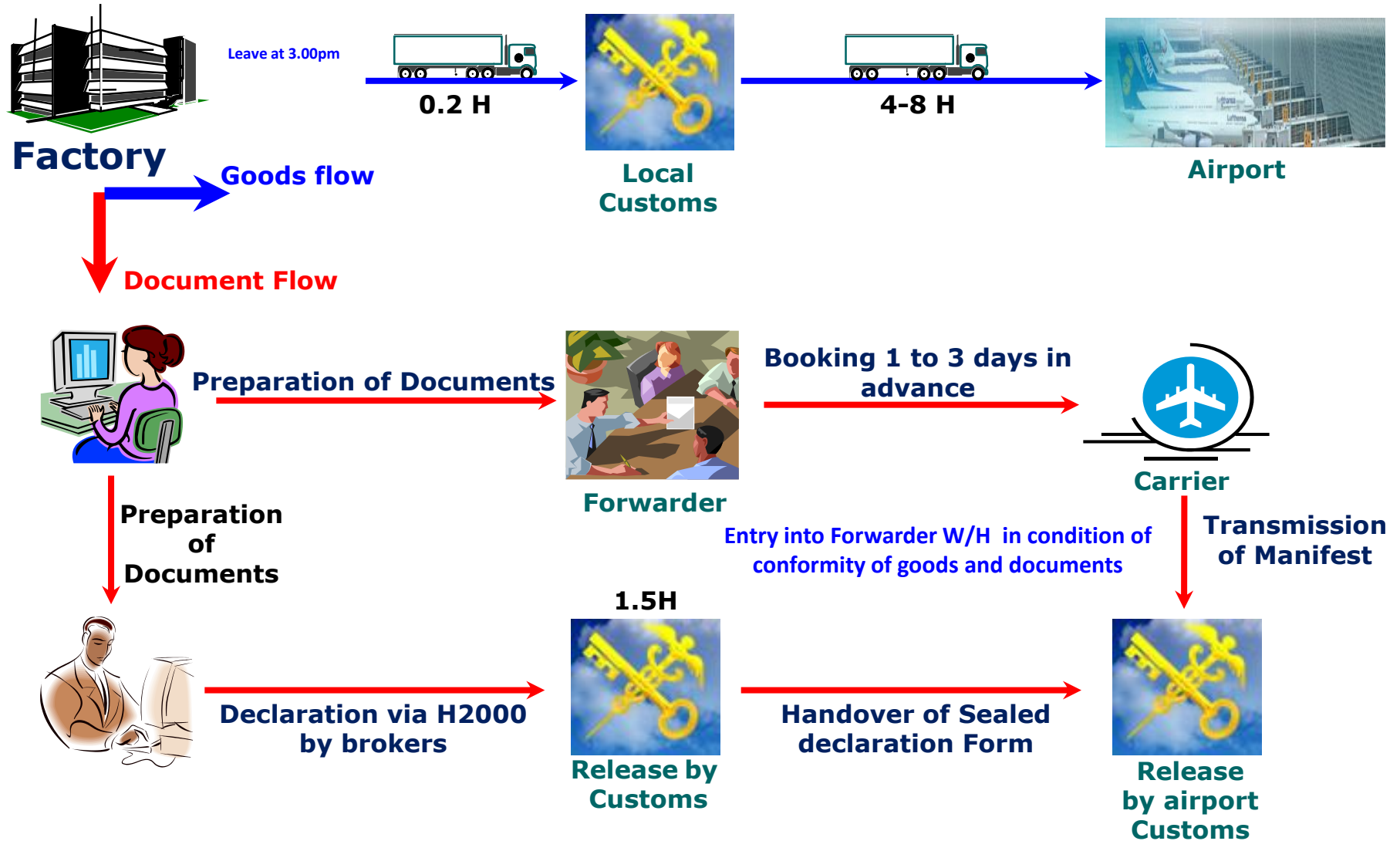


Outbound logistics sub-process

- For goods manufactured in Asia, two main processes are available : air freight and sea freight
- Air freight is usually used for express shipment or at the beginning of product lifecycle, to reduce time-to-market
 - ▶ Air freight is far more expensive : typically about US\$10 for Asia-Europe for a STB, compared to US\$1.5 or US\$2.0 by sea
 - ▶ Duration is typically 7 days for Asia-Europe, compared to 4 to 6 weeks by sea
 - ▶ Capacity is usually limited (especially during holiday period)
 - ▶ Air freight leadtime is mainly due to custom process
- A key step in this process (not described here) is the acceptance process usually required by the end customer



Outbound logistics sub-process – Air freight





Outbound logistics sub-process – Air freight

Example : shipment to Europe (Switzerland)



SWISS : daily flight from SHANGHAI – ZURICH

- Flight departure 9.50 AM / arrival 3.40 PM ZURICH
- Custom Clearance day after : (B)
- Transit Zurich - Zurich day C
- Transit Zurich – Bern day C

Constraints

- Passenger flight limited number of goods
- Unloading due to passenger luggage
- Pallet is limited to 150 cm high

Total time EXW to DDP : 4 working days

CARGOLUX : daily flight from SHANGHAI – LUXEMBOURG

- Flight transit SHANGHAI Luxembourg 4 days
- Custom Clearance in Zurich day : E
- Transit Zurich - Zurich day E or F
- Transit Zurich – Bern day E or F

Constraints

- Truck from LXB to Zurich need to wait until truck is completed (additional cost for dedicated truck)
- Pallet is limited to 195 cm high

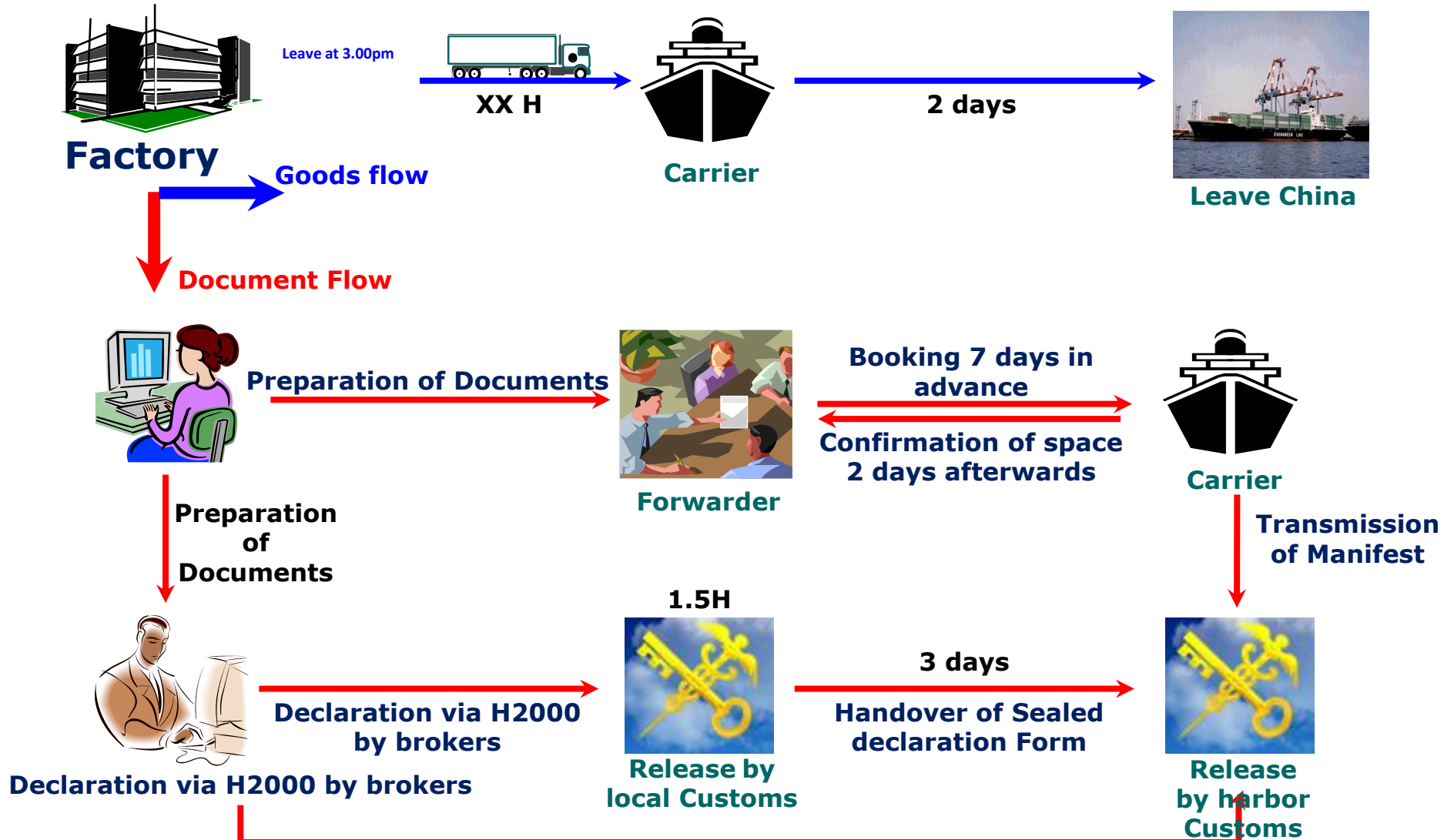
Total time EXW to DDP : 7 working days



Similar process
With KLM



Outbound logistics sub-process – Sea freight





Outbound logistics sub-process – Sea freight

Example : shipment to Europe (Switzerland)



CMA CGM : SHANGHAI - ZEEBRUGE

- Every Wednesday
- SEA : 29 to 30 Days
- Ground transportation ZEEBRUGE – ZURICH 1 Day
- Custom Clearance in Zurich 1 Day

Constraints

- Full container 35 Days
- Partial container need to add 2 to 3 days

Total time EXW to DDP : 36 days

CHINA SHIPPING : SHANGHAI – ZEEBRUGE

- Every Sunday
- SEA : 35 Days
- Ground Transportation ZEEBRUGE – ZURICH 1 Day
- Custom Clearance in Zurich 1 day

Constraints

- Full container : 40 Days
- Partial container need to add 2 to 3 Days

Total time EXW to DDP : 41 Days





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Thank you