



CASSANDRA

IMPROVING SECURITY THROUGH VISIBILITY

How to re-construct the supply chain from data



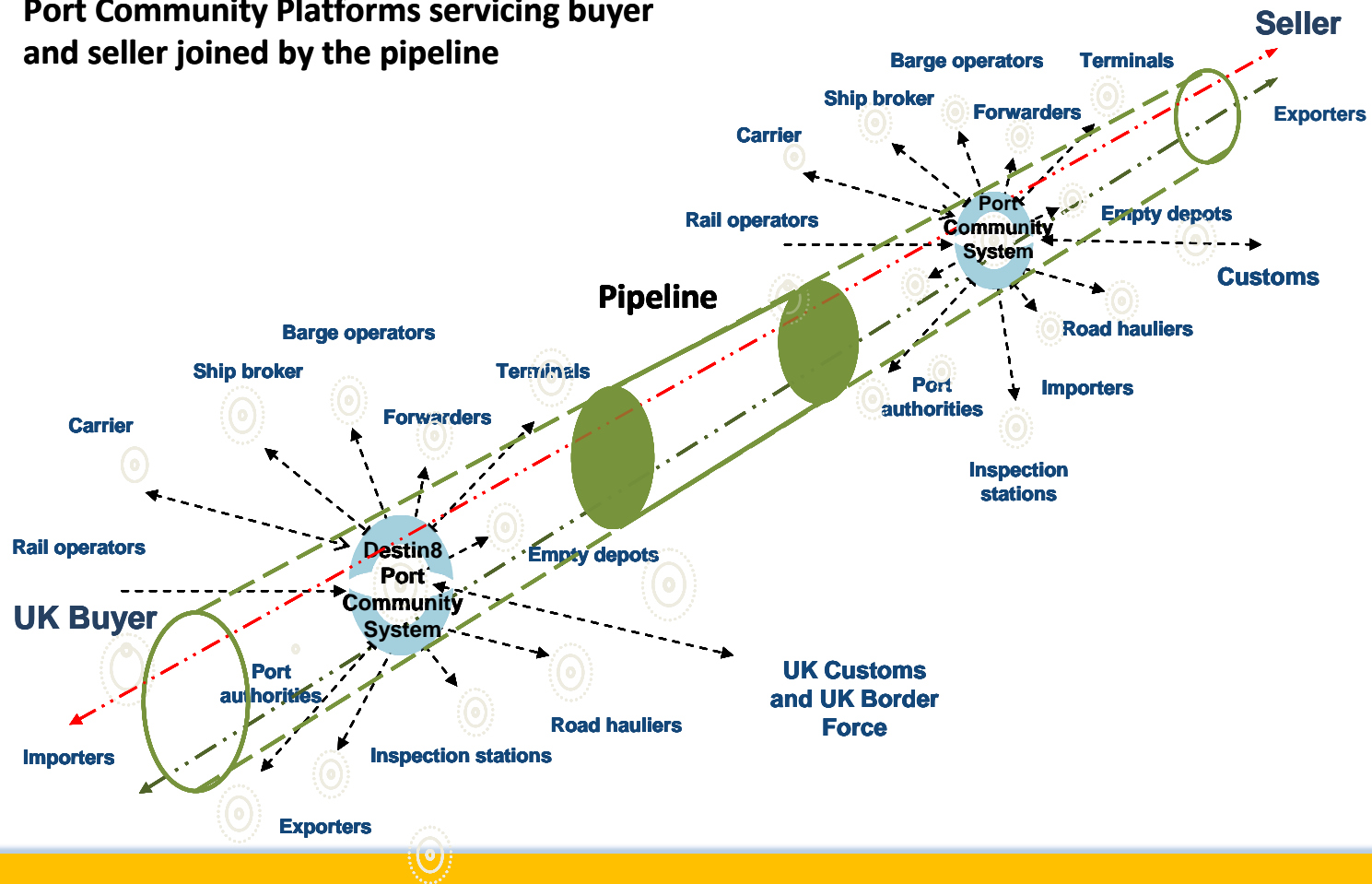
DESCARTES™

- CASSANDRA Business dashboard
- Technical challenges
- Demonstration in Living Lab
- First development results
- Business benefits & Future use

Business Dashboard

Customs Dashboard

Port Community Platforms servicing buyer and seller joined by the pipeline



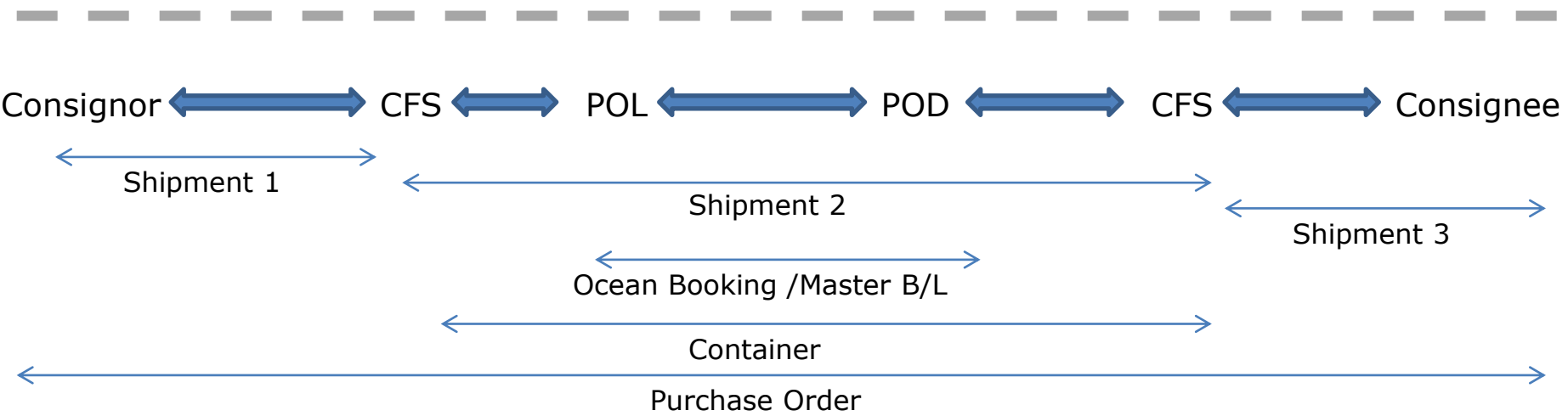
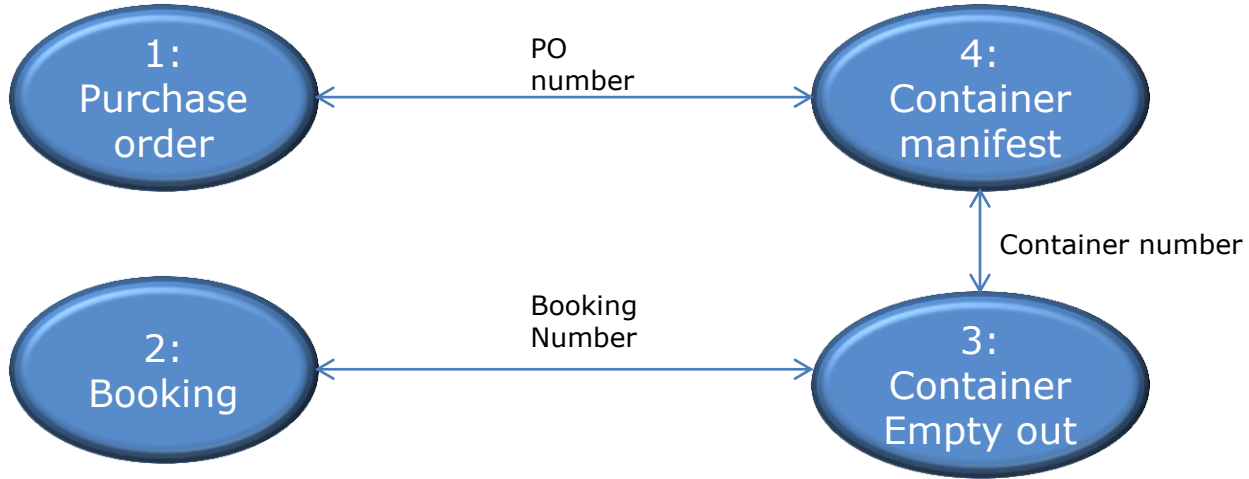
- Visualization for:
 - Container and consignment details and status monitoring
 - Full audit trail of the data sources and meta data
 - Supply chain actor information, roles and relations
- } **Data quality!**
- Collaborative multi-party environment where data can be shared:
 - Including a Security model based on user and company roles, relationships and transactions
 - Create “value added services”, e.g. pre-fill Customs declarations and pro-actively improve data quality

- Techniques to request data from data hubs
 - The goal is to get only the data you need instead of mass communication

- Define shipment and container lifecycle
 - Which part of the supply chain is covered by the same definition of a “shipment”?

- Identify the links between the various business documents/transactions
 - Many “n to m” relationships between for example purchase order, shipment, container, Bill of Lading and transport means
 - Dynamic way of constructing the supply chain: no fixed order
 - No single reference like UCR to track the whole supply chain

 - Need for different views on the data in the dashboard, which are “hyperlinked”

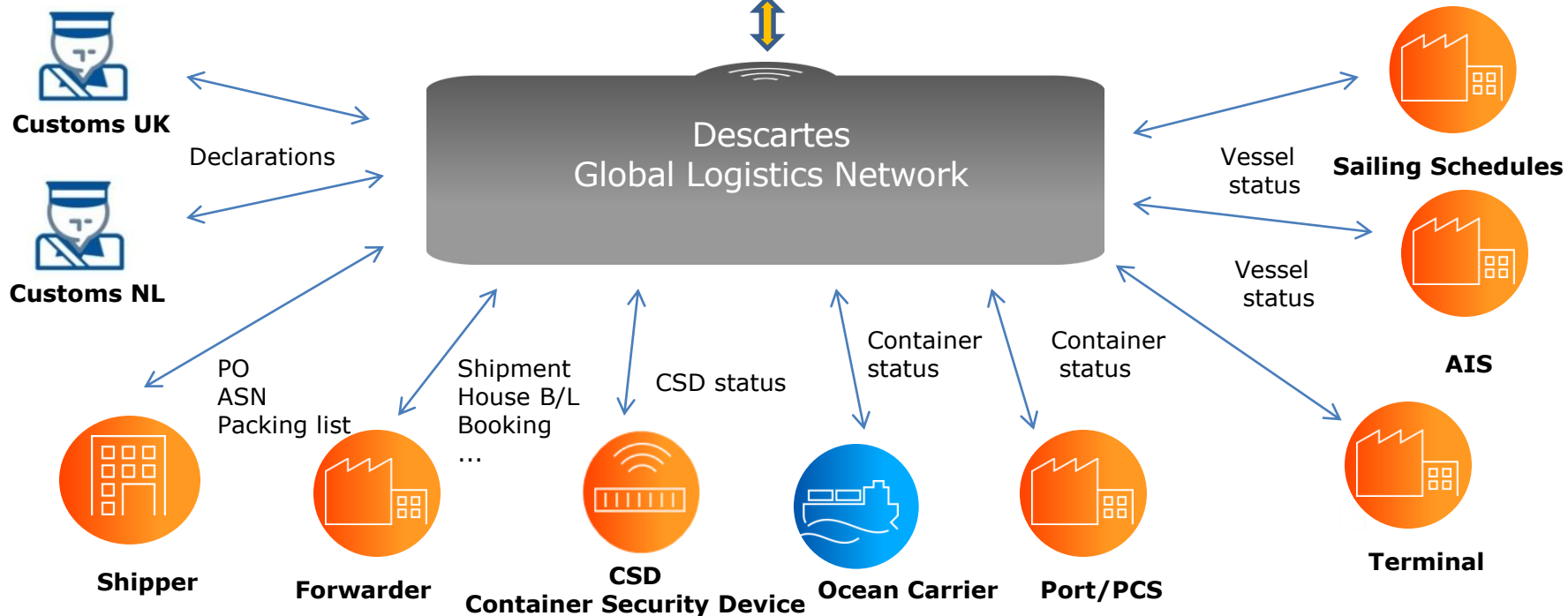


- Alignment of party addressing mechanism
 - Which addressing mechanisms are used? DUNS, EORI, proprietary, ...
 - How to address community systems and to identify true source
 - Alignment on supply chain roles: origin forwarder, ocean carrier, ...

- Data security model for sharing data
 - Fixed versus flexible company access rights



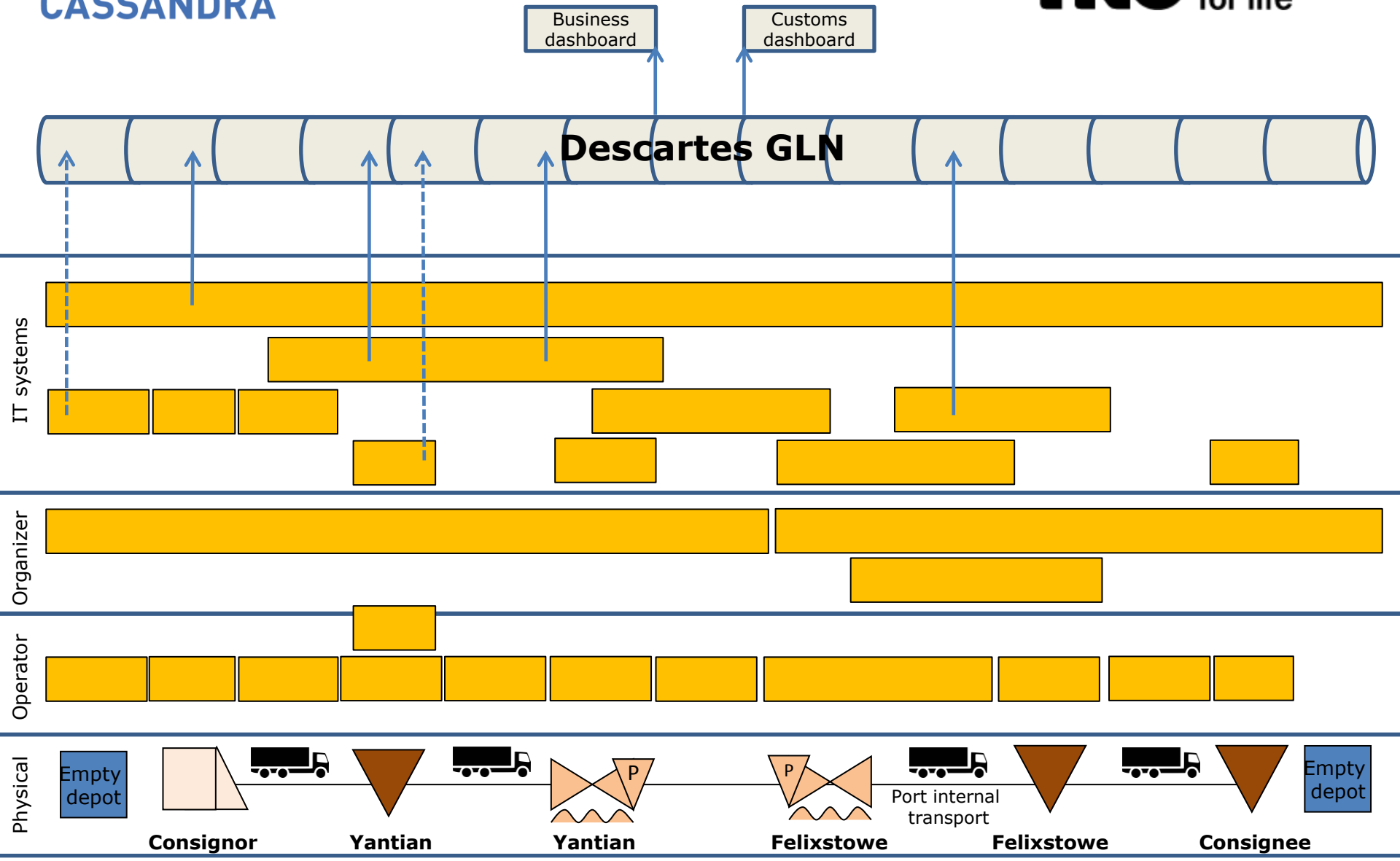
Cassandra backbone



- CASSANDRA has 3 Living Labs:
 - Asia – Europe
 - Europe – US
 - North Africa – South Europe

- Descartes supported case in Asia-Europe Living Lab

- Descartes delivers both data aggregation “pipeline” and business dashboard



Cassandra Summary - Windows Internet Explorer
 https://globalcompliancetest.descartes.com/Cassandra/Summary

Summary

Shipment Monitor

Active Containers:
Container Alerts:

| Key | Status | Location | Contact Details |
|-------------|---------|----------|-----------------|
| ADFG5566778 | Br | | |
| ABCD4455667 | N | | |
| DDFF9988776 | Damaged | Shenzhen | |

Displaying items 1 - 3 of 3

Tracing

Search:

Shipment number:

Purchase order reference:

Container number:

Master bill number:

House bill number:

Vessel name:

Quick Container Lane status lookup

Container Number:

Purchase Order:
Booking Confirmation:
CSD active:
Tracking status:
Alert Status:
Customs Security status:
Customs Clearance:

Vessels

| Name | IMO | Voyage Nr | Status | Description | Containers |
|-----------------|---------|-----------|------------------|-------------|-------------------------------------|
| MSC ALICANTE | 1234567 | 3EUE6 | Out-Of-Order | | <input type="button" value="List"/> |
| MSC MARIA LAURA | 1250275 | 3EUI9 | Container Breach | | <input type="button" value="List"/> |
| MSC CAPELLA | 1241299 | 3EUE7 | Container Breach | | <input type="button" value="List"/> |
| MSC CARACAS | 1242421 | 4EUI1 | Container Breach | | <input type="button" value="List"/> |
| MSC CLAUDIA | 1243543 | 3EUE8 | Container Breach | | <input type="button" value="List"/> |
| MSC CORDOBA | 1244665 | 7EUE1 | Delay | | <input type="button" value="List"/> |
| MSC CORINNA | 1245787 | 3EUE8 | Out of sync | | <input type="button" value="List"/> |
| MSC ANTONIA | 1235689 | 4EUI2 | OK | | <input type="button" value="List"/> |
| MSC ASLI | 1236811 | 3EUE9 | OK | | <input type="button" value="List"/> |
| MSC ASTRID | 1237933 | 7EUE2 | OK | | <input type="button" value="List"/> |

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Shipment Monitor Interface

Browser: Windows Internet Explorer
 URL: https://globalcompliancetest.descartes.com/Cassandra/ShipmentMonitor/Shipment

Navigation: Containers, Bill Of Lading, Shipments, Purchase Order, Vessels

Search Form:

Vessel Search: Loading Location: Clear

Status: Unloading Location: List

BL Number: Party: Shipper

House BL Nr: Container Nr:

PO Number: Shipment Nr:

| Shipment Number | Latest Status | House B/L | Origin | Destination | Eta Destination | Carrier | Country Of Origin | Details | Purchase Order(s) | Bills | Container Nr |
|-----------------|---------------|-----------|-----------|-------------|-----------------------|---------|-------------------|---------|-------------------|-------|--------------|
| 11125-456-896 | Booked | 455655555 | Hong Kong | Hamburg | 05/06/2012 2:00:00 PM | Maersk | CN | Show | List | List | List |
| 11125-456-897 | Booked | 455655557 | Rabat | Antwerp | 21/07/2012 2:00:00 AM | CMA CGM | MR | Show | List | List | List |
| 11125-456-898 | Booked | 455655559 | Shenzhen | Rotterdam | 04/09/2012 2:00:00 PM | CMA CGM | CN | Show | List | List | List |
| 11258-565-411 | Booked | 455655556 | Shenzhen | Antwerp | 28/06/2012 8:00:00 AM | MSC | CN | Show | List | List | List |
| 11258-565-412 | Booked | 455655558 | Shenzhen | Antwerp | 12/08/2012 8:00:00 PM | CMA CGM | CN | Show | List | List | List |

Displaying items 1 - 5 of 5

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Shipment - Windows Internet Explorer

https://globalcompliancest.descartes.com/Cassandra/ShipmentMonitor/PartiesDetailsTab/37?tab=LaneStatus

DESCARTES Specify title for ShipmentMonitor/PartiesDetailsTab. Applications egeerts

Summary Shipment Monitor

Actions: Containers, Bill Of Lading, Shipments, Purchase Order, Vessels

123456789

| | | | | | |
|----------------------------|-------------------|--------|------------------------|-------------|-------|
| House Bill Of Lading Order | 8856632548 | Pieces | 35 | Origin | USDR |
| Booking Numbers | 5445655456 | Weight | 1235 kg | Destination | BEANR |
| Export declaration number | 239900090 | Status | NO ICS filing occurred | | |
| Vessel IMO | 9855632 | | | | |
| Vessel Name | MSC Napoli | | | | |
| Documentation Status | Booking Confirmed | | | | |
| Shipper reference | 2342311GGFFD4 | | | | |
| Forwarder reference | 334-DSDC-9E3 | | | | |
| Carrier | MSC | | | | |
| Movement | CY-CFS | | | | |

Drag a column header and drop it here to group by that column

| Source | Code | Received Time | Type | Data | Pieces | Weight | Reference | Movement | Details | Comments |
|-------------|-----------|-----------------------|-----------|------|--------|--------|-----------|----------|---------|----------|
| BAP | House B/L | 30/05/2012 5:35:00 AM | Forwarder | PDF | 35 | 94000 | | CY-CFS | Details | |
| Supplier 01 | ASN | 25/05/2012 6:14:00 PM | Supplier | EDI | 40 | 95000 | | | Details | |

Displaying items 1 - 2 of 2

Drag a column header and drop it here to group by that column

| Item Nr | Package Count | Package Type | Hs Code | Goods Description | Gross Weight | Undg Code | Master B/L | Container Nr |
|---------|---------------|--------------|---------|-------------------|--------------|-----------|-------------|--------------|
| 1 | 20 | CT | 456765 | PRODUCT X | 34000.00 | | 12554863215 | A123456 |
| 2 | 10 | CS | 544565 | PRODUCT Y | 50000.00 | | 12554863215 | A123456 |
| 3 | 5 | PK | 544565 | PRODUCT Z | 10000.00 | | 12554863215 | A123456 |

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Purchase Orders
Applications - jvanbrempt - 0

Dashboard | Shipment Monitor

Containers


Bill Of Lading

Shipments

Purchase Order

Vessels

Actions



Search

| | | | | | |
|----------------|----------------------|---------------------|----------------------|---------|--------------------------------------|
| Vessel Search: | <input type="text"/> | Loading Location: | <input type="text"/> | | <input type="button" value="Clear"/> |
| Status: | <input type="text"/> | Unloading Location: | <input type="text"/> | | <input type="button" value="List"/> |
| BL Number: | <input type="text"/> | Party: | <input type="text"/> | Shipper | |
| House BL Nr: | <input type="text"/> | Container Nr: | <input type="text"/> | | |
| PO Number: | <input type="text"/> | Shipment Nr: | <input type="text"/> | | |

Drag a column header and drop it here to group by that column

| Purchase Order Number | Latest Status | Supplier | Buyer | Terms | Invoice number | Description | Quantity | Shipments | Bills | Container Nr | Details |
|-----------------------|---------------|------------|----------|-------|----------------|-------------|----------|-----------|-------|--------------|---------|
| 12ADF15335 | OK | Supplier 1 | Buyser 1 | | | | 10 | List | List | List | Show |
| 12ADF15336 | OK | Supplier 1 | Buyser 1 | | | | 10 | List | List | List | Show |
| 12ADFG1565 | OK | Supplier 1 | Buyser 1 | | | | 10 | List | List | List | Show |
| 12ADFG1566 | OK | Supplier 1 | Buyser 1 | | | | 10 | List | List | List | Show |

Displaying items 1 - 4 of 4

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Server: seconds
Role: Carrier

Browser address bar: <https://globalcompliancetest.descartes.com/Cassandra/ShipmentMonitor/Vessels>

Page Title: Vessels | Applications - jvanbrempt

Navigation: Dashboard | Shipment Monitor

Actions: Containers, Bill Of Lading, Shipments, Purchase Order, Vessels

Search

Name:

IMO:

Drag a column header and drop it here to group by that column

| Name | IMO | AIS / MMSI | Route | Vessel Status | Last Poc | Next Destination | Call Sign | Bills | Containers |
|-----------------|---------|------------------|-------------|------------------|-----------|------------------|-----------|-------------------------------------|-------------------------------------|
| MSC ALICANTE | 1234567 | 958645-8856FGH05 | USBAL-BEANR | Out-Of-Order | Shenzhen | Singapore | 3EUI7 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC MARIA LAURA | 1250275 | 958645-8856FGH12 | USNYC-BEANR | Container Breach | Hong Kong | Singapore | 3EUE5 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC CAPELLA | 1241299 | 958645-8856FGH08 | CNHKG-NLRTM | Container Breach | Hong Kong | Singapore | 3EUI8 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC CARACAS | 1242421 | 956845-3156HTR12 | CNHKG-BEANR | Container Breach | Hong Kong | Singapore | 3EUE6 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC CLAUDIA | 1243543 | 958645-8856FGH09 | CNHZE-BEANR | Container Breach | Hong Kong | Shenzhen | 3EUI9 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC CORDOBA | 1244665 | 956845-3156HTR13 | USNYC-BEANR | Delay | Baltimore | New York | 3EUE7 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC CORINNA | 1245787 | 958645-8856FGH10 | USBAL-BEANR | Out of sync | New York | Antwerp | 4EUI1 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC ANTONIA | 1235689 | 956845-3156HTR09 | CNHKG-NLRTM | OK | Shenzhen | Antwerp | 3EUE8 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC ASLI | 1236811 | 958645-8856FGH06 | CNHKG-BEANR | OK | Shenzhen | Rotterdam | 3EUI1 | <input type="button" value="List"/> | <input type="button" value="List"/> |
| MSC ASTRID | 1237933 | 956845-3156HTR10 | CNHZE-BEANR | OK | Shenzhen | Hong Kong | 6EUE9 | <input type="button" value="List"/> | <input type="button" value="List"/> |

Displaying items 1 - 10 of 14

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- Less errors because of better collaboration with supply chain partners
- Supply chain performance and data quality measurement
- Better “supply chain resilience” -> re-planning opportunities
- Better warehousing and hinterland planning
- Reduced safety stock
- Green lane opportunities -> simplified procedures and reduced Customs control
- Better risk management

- Roadmap for CASSANDRA:
 - Various enhancements based on user feedback
 - Cassandra backbone: integration with Customs dashboard
 - Multi-party access (security model)
 - Re-use functionality in other trade lanes

- Other extensions are also possible:
 - Further risk assessment & Alerting?
 - Reporting?
 - ...?

Thank you for your attention.

Any questions?

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