Waterways serving urban areas thanks to data-driven decision making

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(Multitel)

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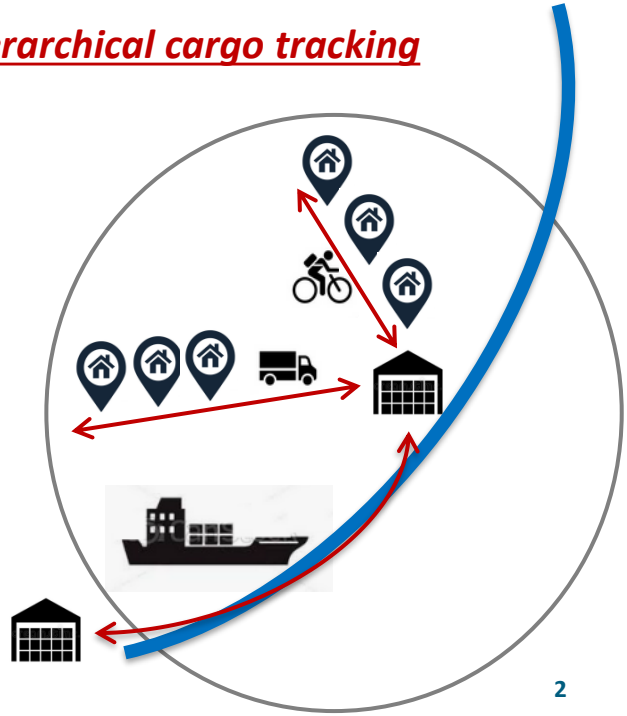
AS1a scenario: transportation of goods into dense urban areas

⇨ Increasing IWT efficiency thanks to reactive data-driven decision making

- based on real-time tracking data availability:
  - with embedded IoT sensors for an end-to-end ***real-time hierarchical cargo tracking***
- enabling to choose the ***optimal multimodal route***
  - optimal planning & allocation of residual capacities
  - using Revenue Management technology
- paving the way for ***synchro-modality***



Scenario stakeholders

⇨ Technical partners implementing IW-Net solutions:

- Hierarchical tracking (EPCIS – IoT): **IT-Optics**, **NGS** & **Multitel**
- Revenue management optimization & data analytics : **UPHF** & **ICCS**
- Block Chain : **Inlecom**

⇨ Logistics partners testing IW-Net solutions:

- **Sogestran** & **Blue Line Logistics** with :
  - Zulu and its on board crane (small barge dedicated to pallets transportation)
  - FlexiMalle, a terrestrial container dedicated to urban logistics
- **Port of Brussels**
  - with its Brussels Consolidation Construction Centre (BCCC),

  a multimodal urban hub located at the water edge operated by Shipit
  - with Urbike, helping to implement interconnexion between IWT and urban last mile delivery

Real-time tracking data availability …

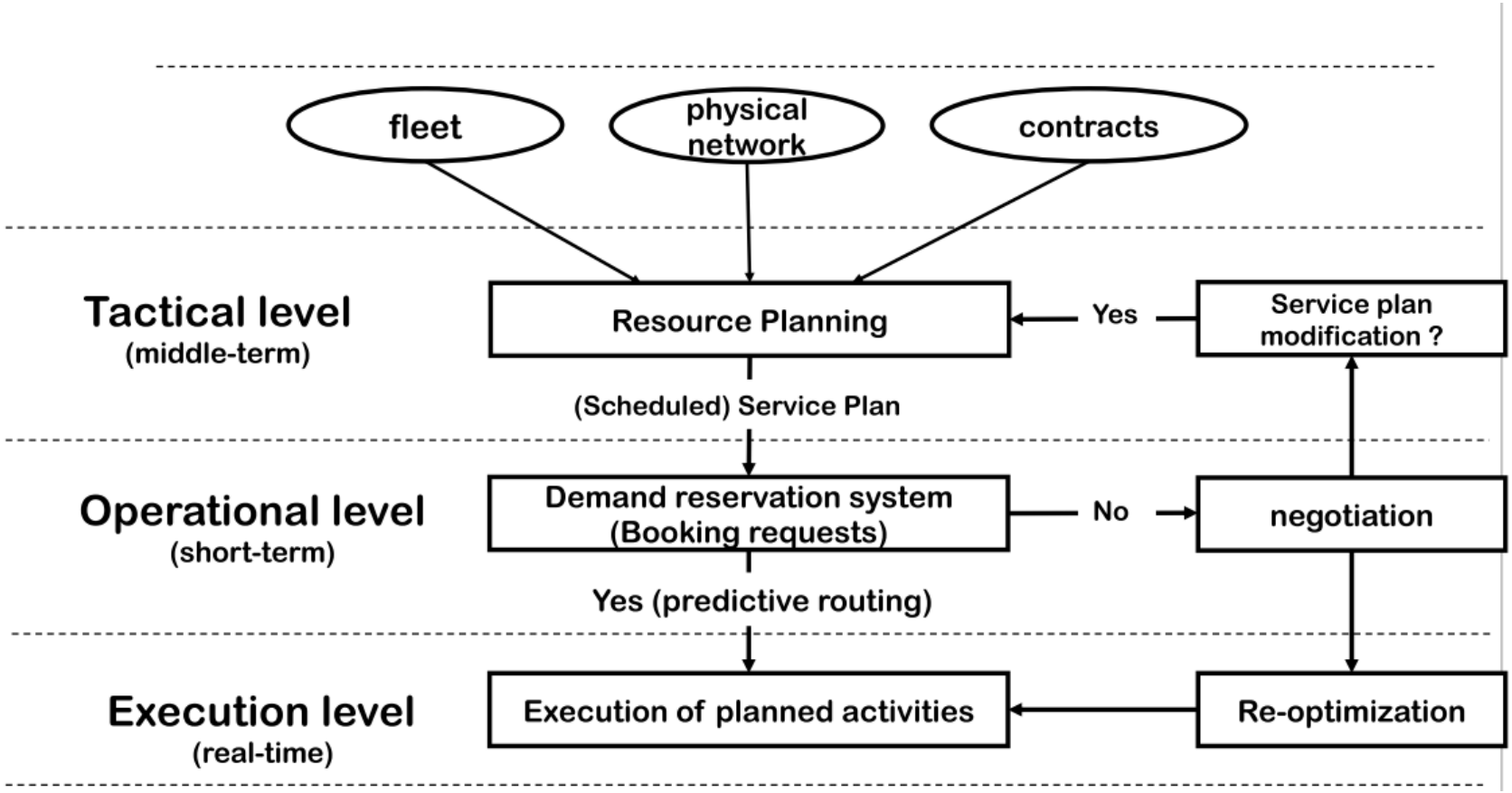
⇨ **linking tracking data from fragmented sources:**

- with embedded IoT sensors
  - last known location of logistics units (pallets …)
  - hierarchical cargo tracking in multimodal environment:
    - what pallet in what vessel, in what truck?

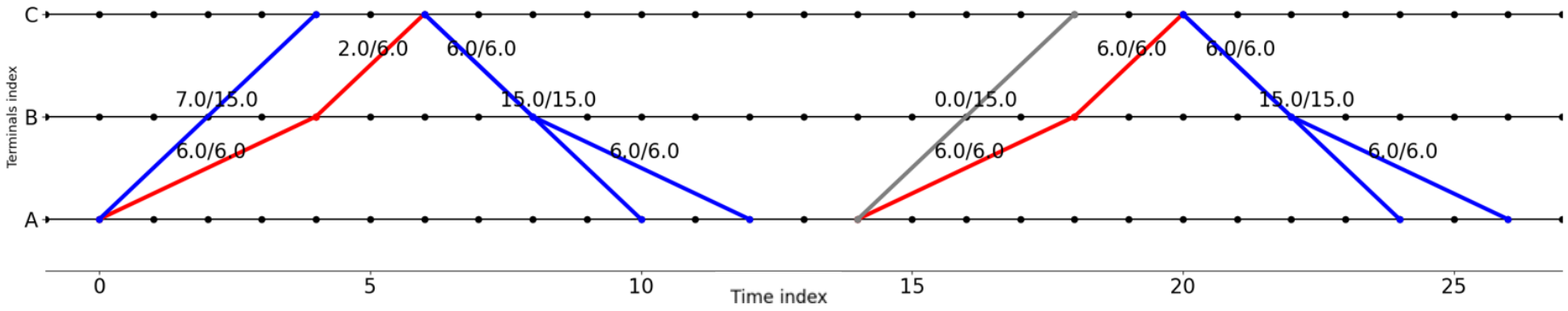
⇨ **proposing real time follow-up of shipment:**

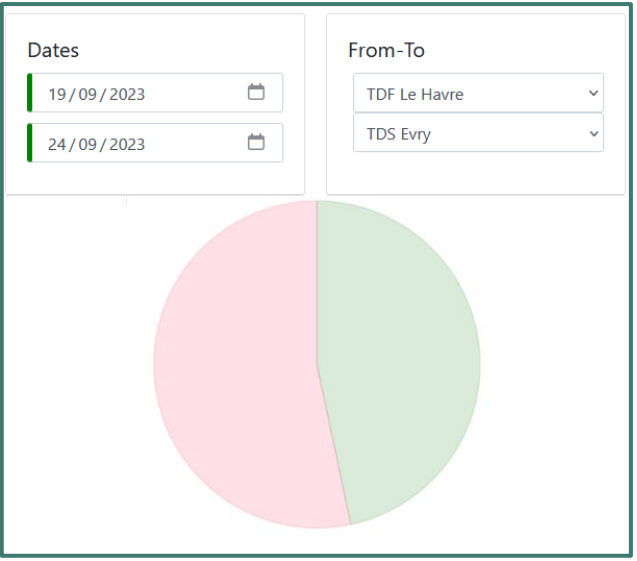
- end to end seamless visibility
- synchronization between IWT & urban logistics actors

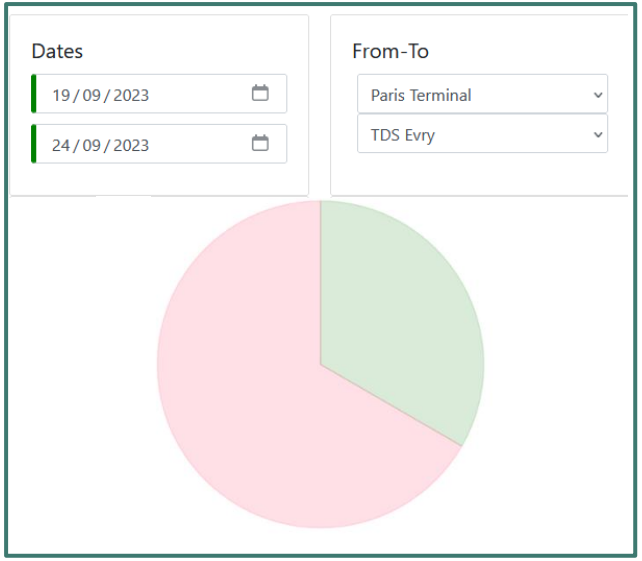
… enabling to choose the optimal multimodal route

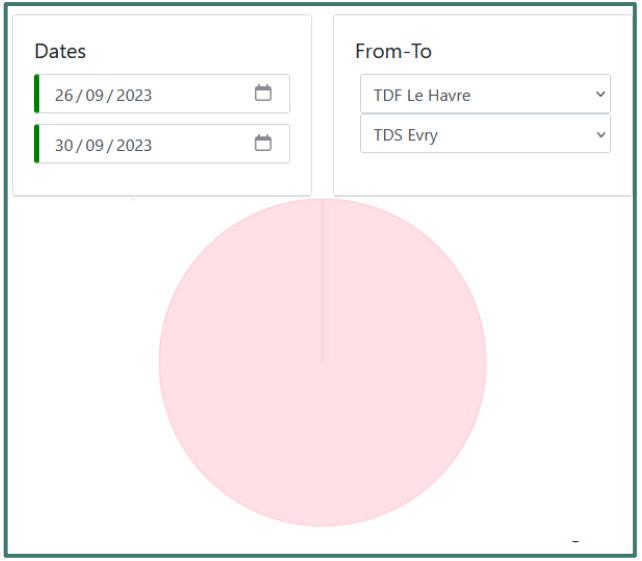


Revenue Management optimization: initial status

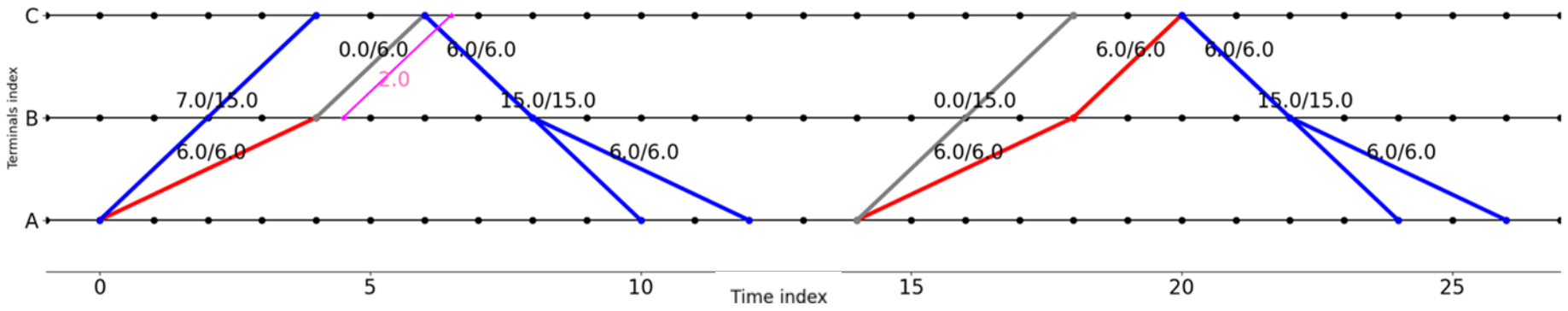


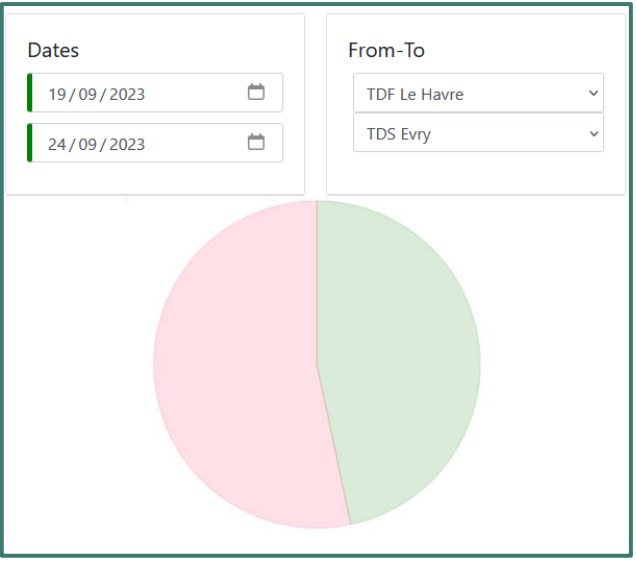


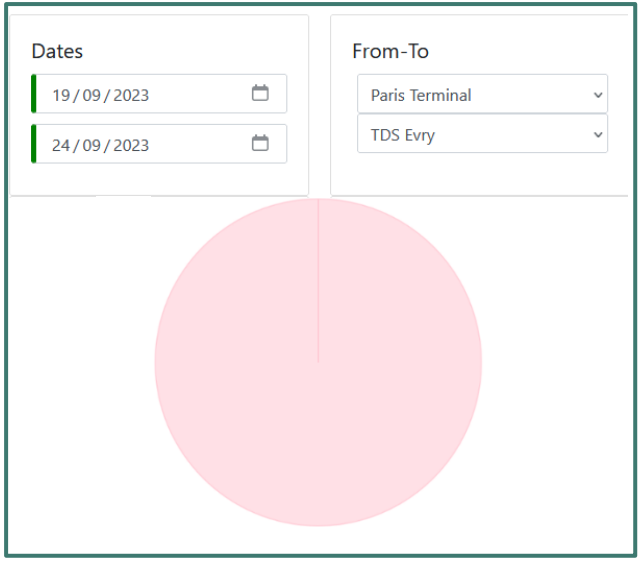


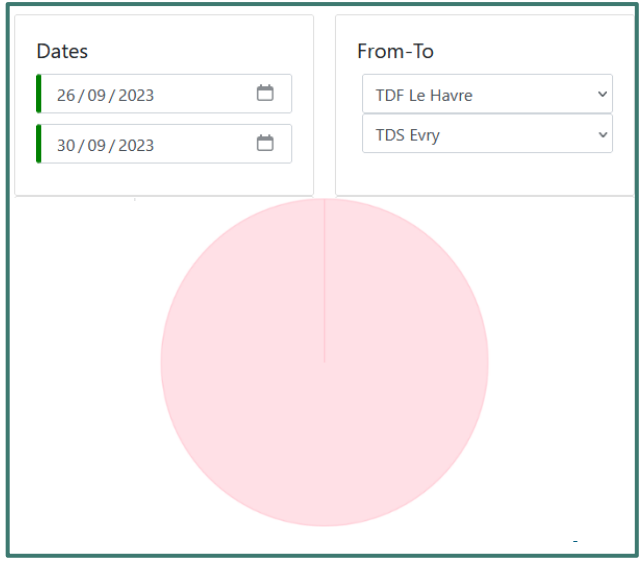


Revenue Management optimization: next status



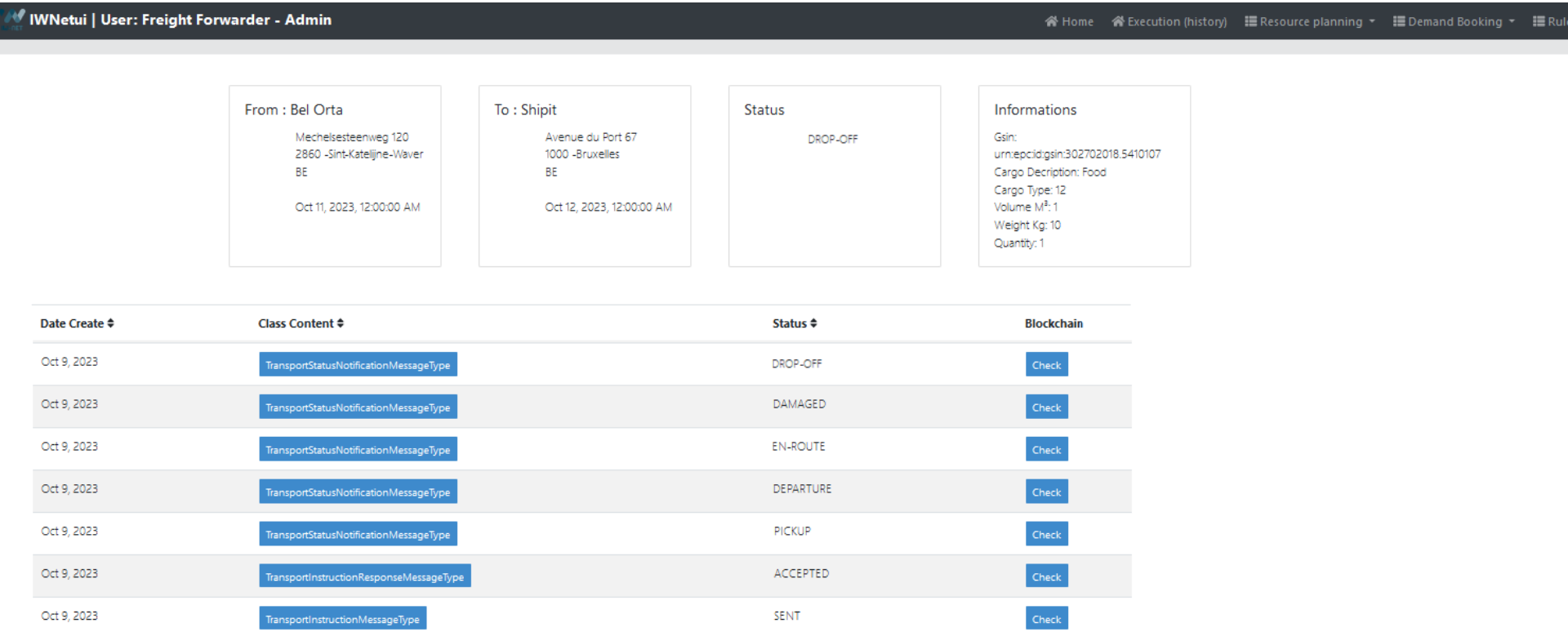






Data harmonization

- Enabling ***interoperability*** between IWT platform and external information systems
- Data exchanges based on ***worldwide GS1 standards*** (EDI XML, EPCIS …)



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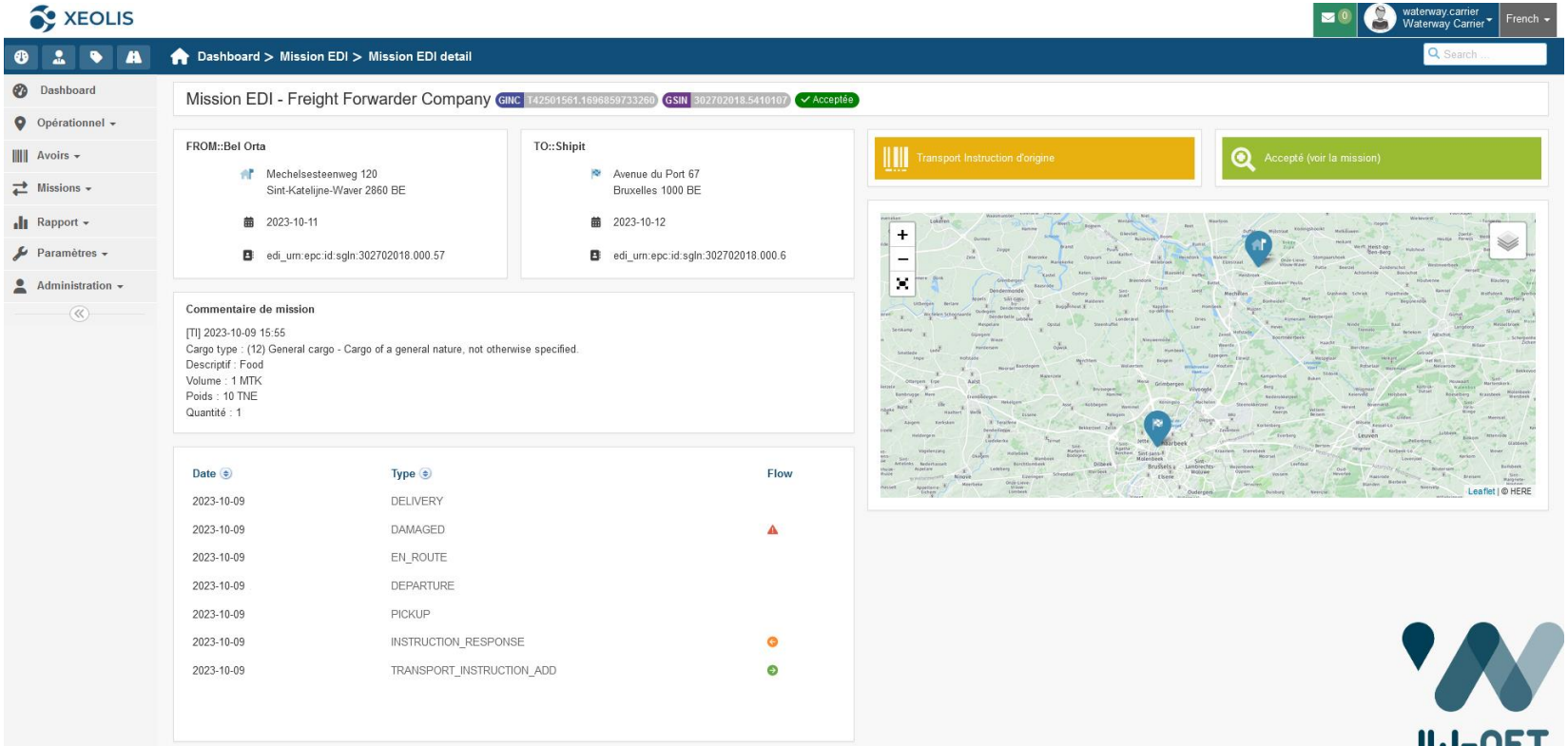

Data security

⇨ Objective:

- Build data exchanges based on ***trust between stakeholders***.

⇨ Thanks to:

- Unforgeable record of all of the transactions across the network,
- ***Using Block Chain technologies***

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<transportStatusNotification>
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  <transportStatusNotificationShipment>
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      <transportStatusReasonCode>51E</transportStatusReasonCode>
    </transportStatus>
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        <logisticLocation>
```

Home | Execution (history) | Resource planning | Demand Booking | Rules Parameters

urn:epc:id:gsin:302702018.5100967	DAMAGED	BlockChain [CHECK_SUCCESS] [f6f38e6c4829196a546b2188329984bbb66cc515b1834465f8a4bc93a5a1095e]

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```
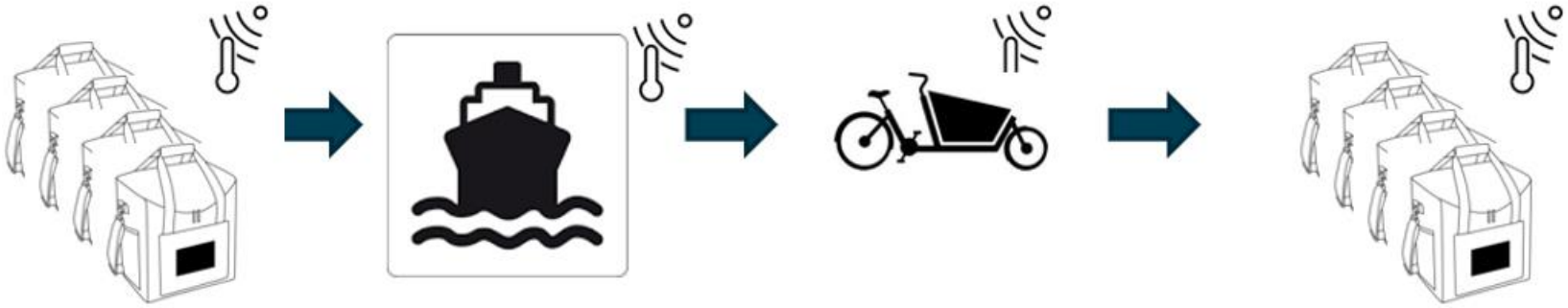

Scenario outline, played on 31/08 in Brussels

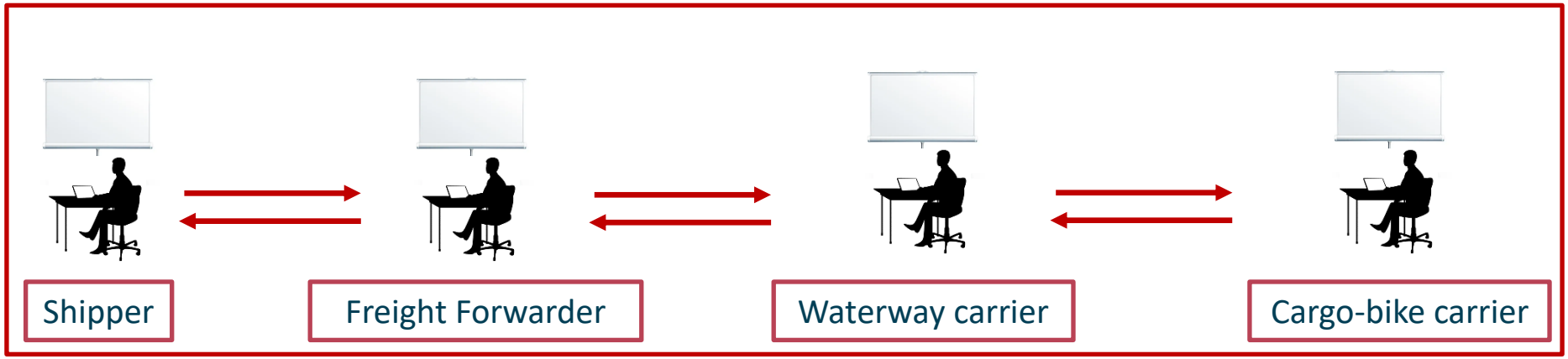


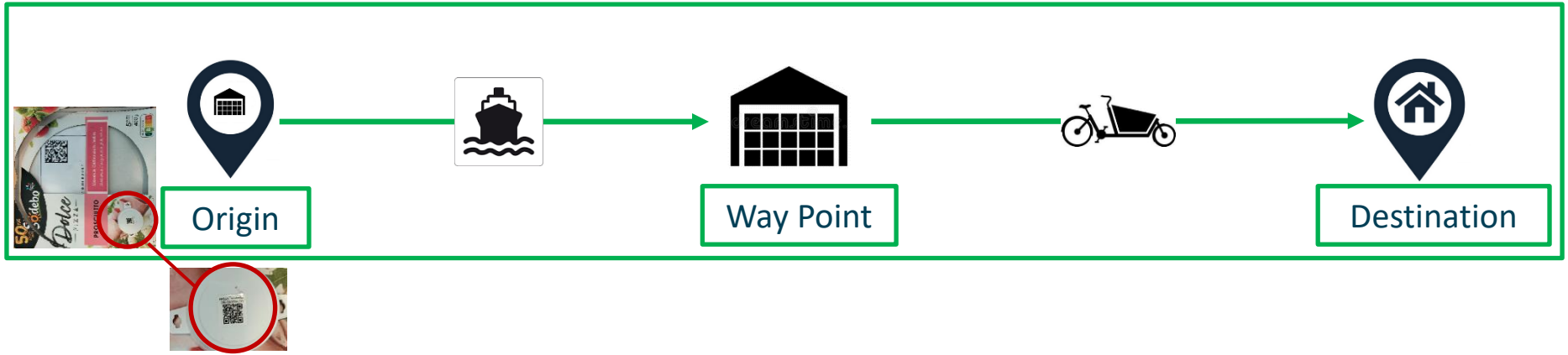
→ A shipper sends an end-to-end transport instruction to a freight forwarder (FF)

→ The FF organizes this mission in a multimodal way:
- → A first leg by waterway
- → A second leg (last mile) by cargo cycle

→ Logistics units are tracked during each leg of this multimodal voyage :
- → Tracking at different hierarchical level (box, container, vehicle)
- → Tracing with alerts (shock or break in the cold chain)

Real-time presentation showing interoperability between modes





Thank you for your attention!