

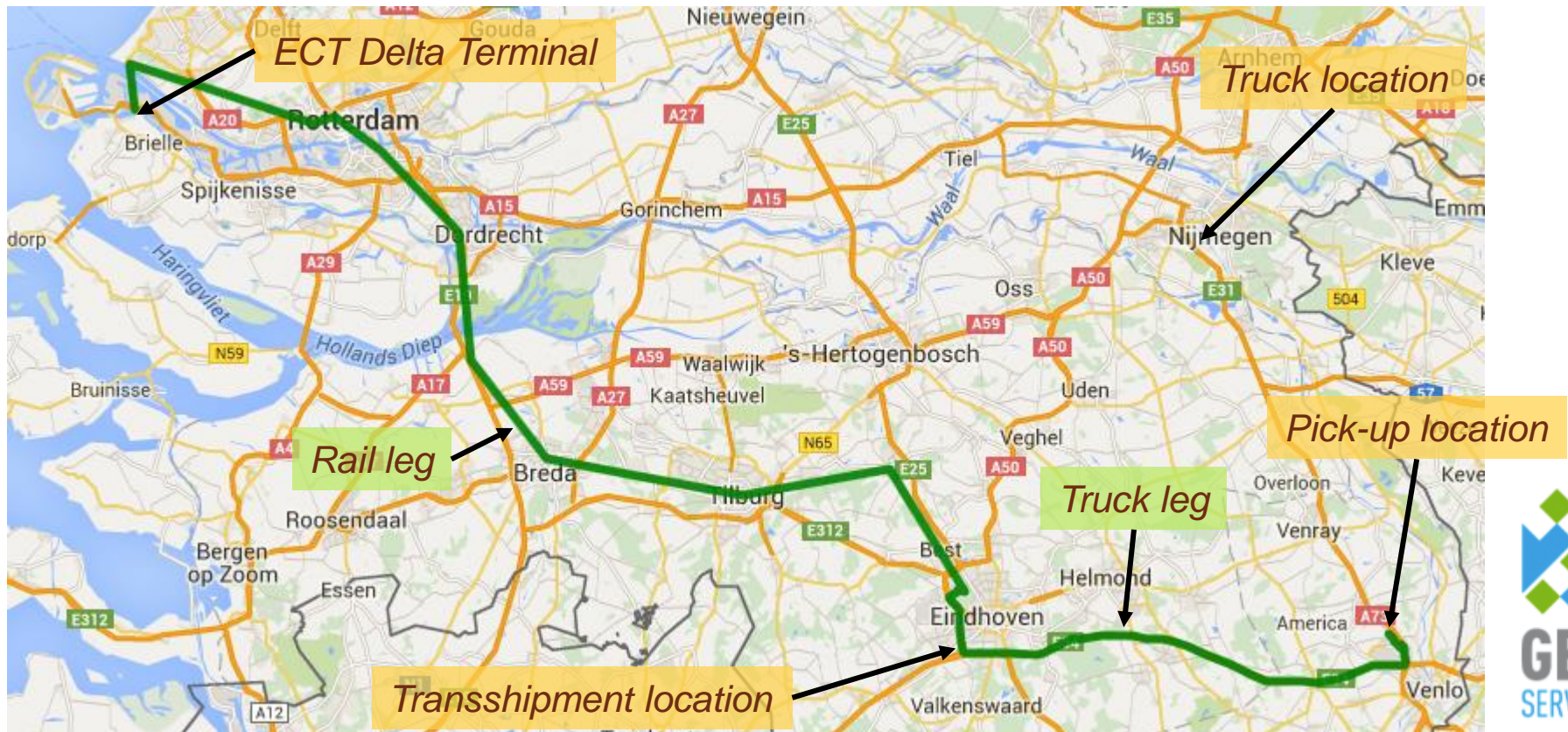


FREIGHT EXPORT



SCENARIO

- Exporting freight in container via port of Rotterdam
- Use multi-modal route
- Disruption of plan due to road congestion



MULTIMODAL PLANNING



- Encourage the use of **less CO2** intensive modalities
- Tool shows emissions per route as well as other cost measures

CONTINUOUS MONITORING AND CONTROL

Event Status

Live map for Case 200

Asset Status

Task Handler

Name	Status
Drive to pick empty container	FUTURE
Pick empty container	COMPLETED
Drive to warehouse	EXECUTING
Load goods	FUTURE
Transport by truck	FUTURE
Transship	FUTURE
Send documents	FUTURE
Transport by train	FUTURE
Send documents	FUTURE
Reserve truck	COMPLETED
Confirm truck	COMPLETED
Receive documents	FUTURE
Reserve train	EXECUTING
Confirm train	FUTURE
Receive documents	FUTURE

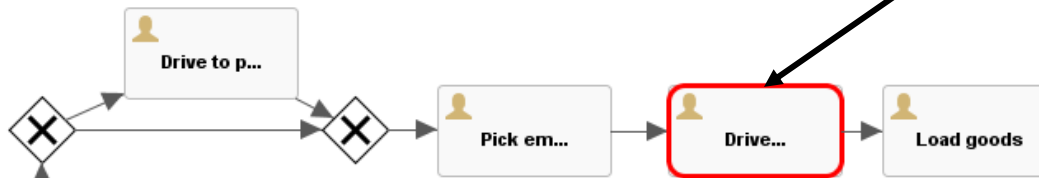
Process/Task Status

Message Center

[DEADLINE VIOLATION] Predicted delay is 30 minutes, Remaining Distance is 0 and ETA is null

Congestion on route Get Service Demo Route detected. Length: 1040, delay: 30.0 minutes.

Vehicle 57011 left transport node. Wijnen Logistics B.V.

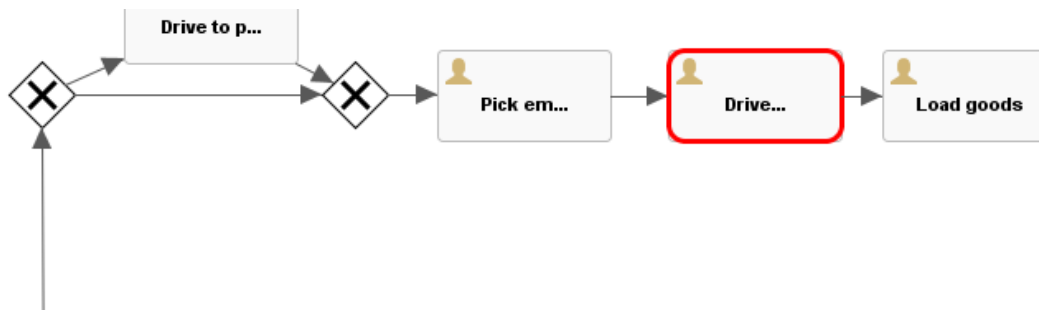


Process description drives monitoring + control and supports automation

CONTINUOUS MONITORING AND CONTROL

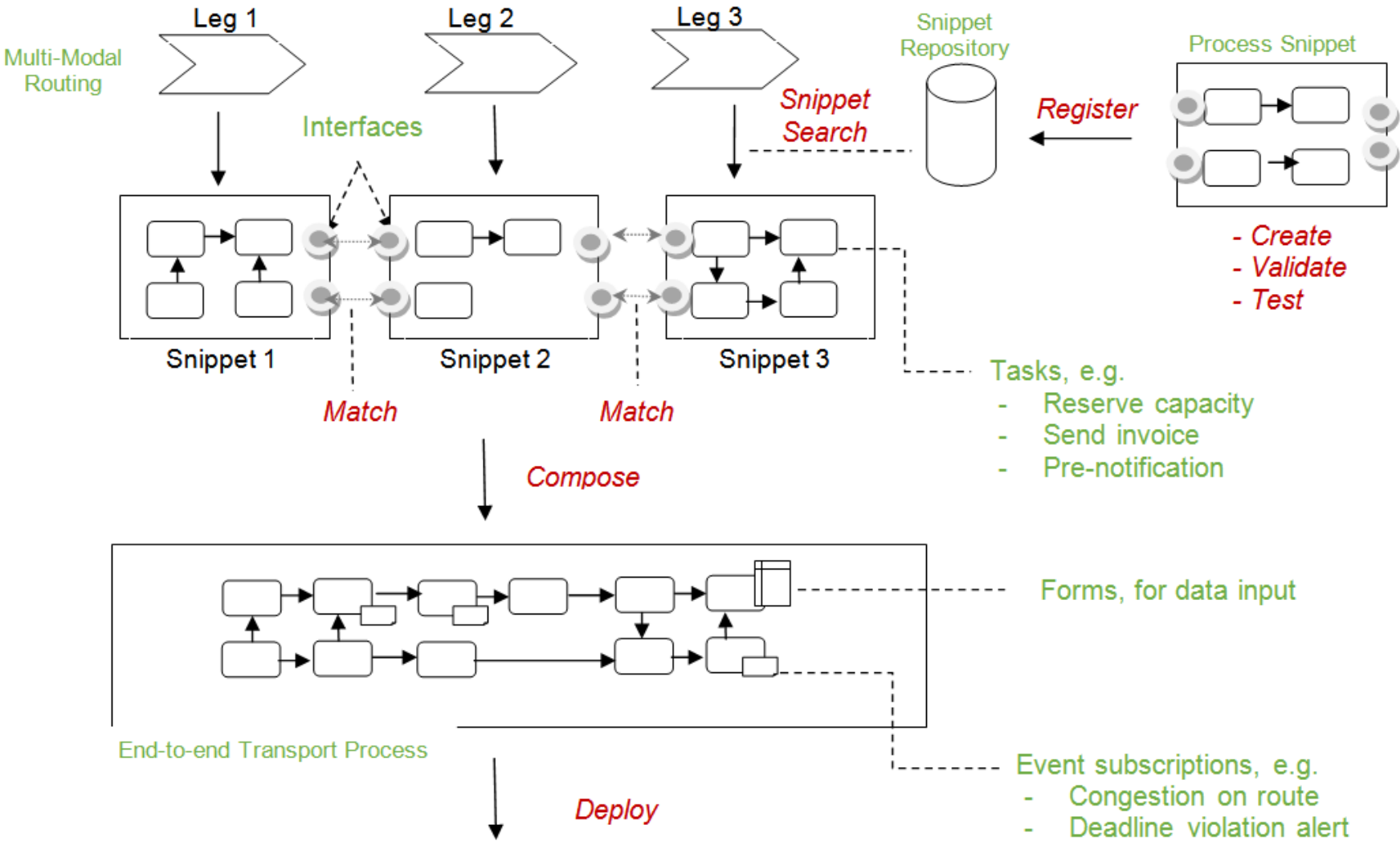
Benefits

- Increased visibility into status reduces stress
 - Aggregated real-time info allows planner to **react more quickly** to unexpected events
 - Events are shown **only when relevant** for the case
- Automation reduces human error and cost



Handler	
	Status
	FUTURE
	COMPLETED
	EXECUTING
	FUTURE
	FUTURE
	FUTURE
	FUTURE
	FUTURE
	FUTURE
	COMPLETED
	COMPLETED
Confirm truck	COMPLETED
Receive documents	FUTURE
Reserve train	EXECUTING
Confirm train	FUTURE
Receive documents	FUTURE

AUTOMATED GENERATION OF PROCESS DESCRIPTION



SELECTION OF CLOSEST TRUCK



- Planner can select the available truck closest to pick-up location
 - **Reduce CO2** by reduce empty miles driven

DYNAMIC ADAPTATION OF PROCESS

- **Rapid automated response to disruption**
 - Suspend current case
 - Re-plan and generate new process description
 - Automated migration of status onto new process
 - Generates cancel/compensate tasks for some suspended tasks

The screenshot shows a web interface titled "Update Case". It features a table with the following data:

Select	Case	Reason
<input checked="" type="checkbox"/>	Case 109	The Deadline has been violated.

Below the table, there are several interactive elements:

- An "Update Transport Plan" button.
- A text area containing: "TotalCost":0,"Name":"Re-Planned Scenario 1","TotalTravelTime":0,"TotalDistance":0,"Transfers":0
- An "Add compensatory tasks to:" label followed by a dropdown menu showing "Running Tasks".
- An "Upload File" label.
- An "Update Transport Process" button.
- A "Search Repository" label followed by a text input field containing "process_pool1:4:108" and a dropdown arrow.
- A "Remove Case" button.
- Two small icons (a refresh icon and a play icon) are located to the right of the search field.

Encourages planner to use multi-modal route even if prone to risk of disruption

- further improves modal split

DEMO

CONCLUSION

- **Multi-modal routes**
 - Are facilitated by **multi-modal planning**
 - Can be taken even when prone to *risk of disruption*
 - *Reduce CO2 emissions*