

# MultiStrat: Multimodal Strategies for greener and more resilient wood supply

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## 1 Scientific Consortium

- Norwegian Institut of Bioeconomy Research (Dag Fjeld)
- Skogforsk (Aron Davidsson, Petrus Jönsson, Karin Westlund)
- BOKU (Peter Rauch, Christoph Kogler)

funding: EU ERA-Net Flagship Call 2015 (01.07.2016 – 30.09.2018)

## 2 Industry Partner

	Austria	Sweden	Norway
industry partner	Austrian Federal Forest	Norra Skogsägarna	Allskog
type of organization	stock company	forest owners association	forest owners association
turnover (€/y)	231 000 000	138 366 500	86 444 000
volume (m <sup>3</sup> /y)	1 527 000	2 027 000	1 170 000
forest area (ha)	339 000	1 102 000	536 000
employees	1096	152	77
harvesting personnel	110 workers	49 teams	39 teams

## 3 Objective

*“The objective of the project is to establish an integrated framework for testing multimodal strategies for greener and more resilient wood supply in Northern and Central Europe, delivered as a supply chain simulation model for participatory evaluation and implementation of results.”*

## 4 Workpages

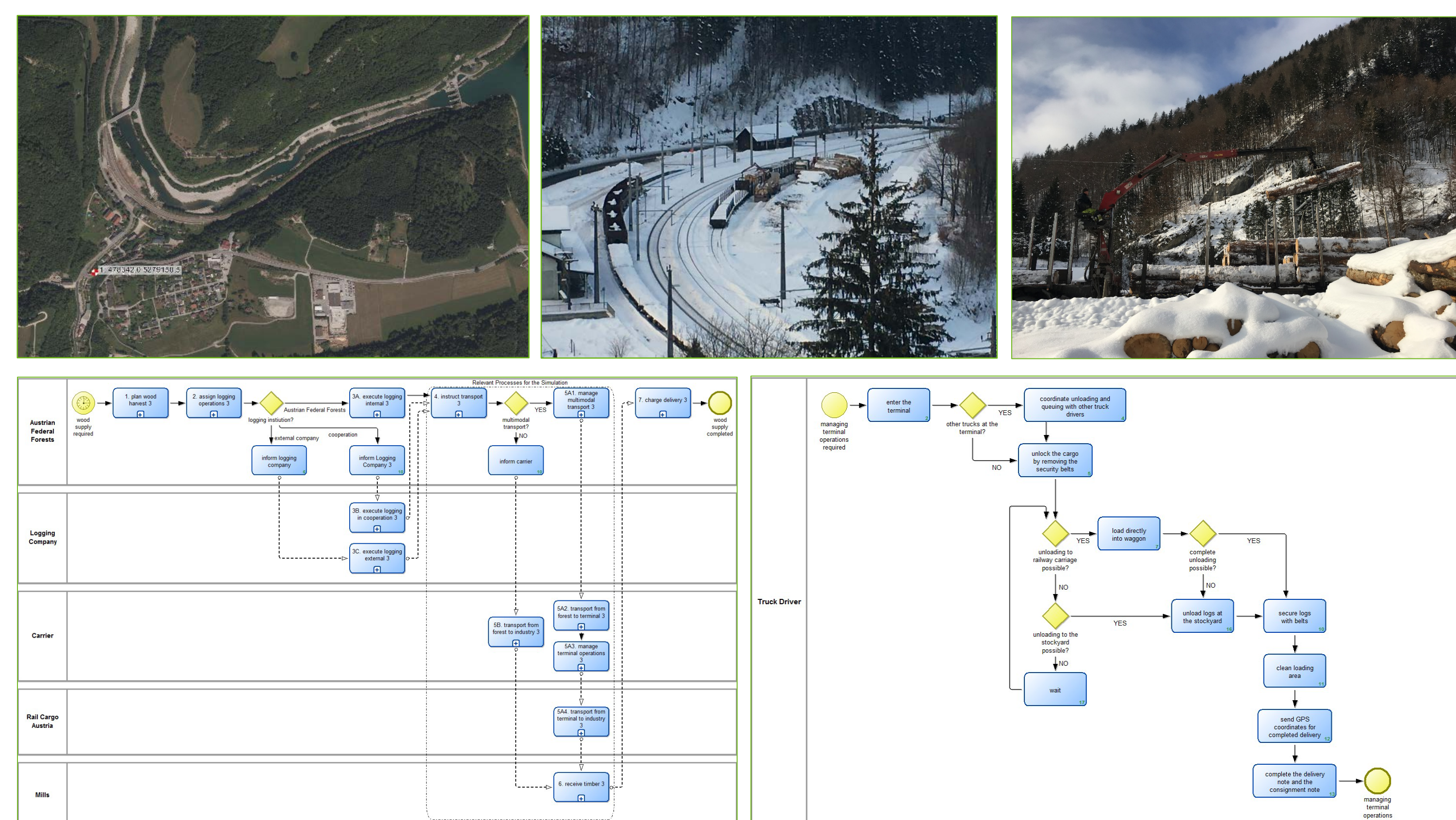
WP1: Establishing a common understanding of sector challenges in the respective regions. General frameworks of wood supply management processes, functions and risks.

WP2: Data collection and analysis. Driving factors behind variation in production and (multimodal) transport capacities.

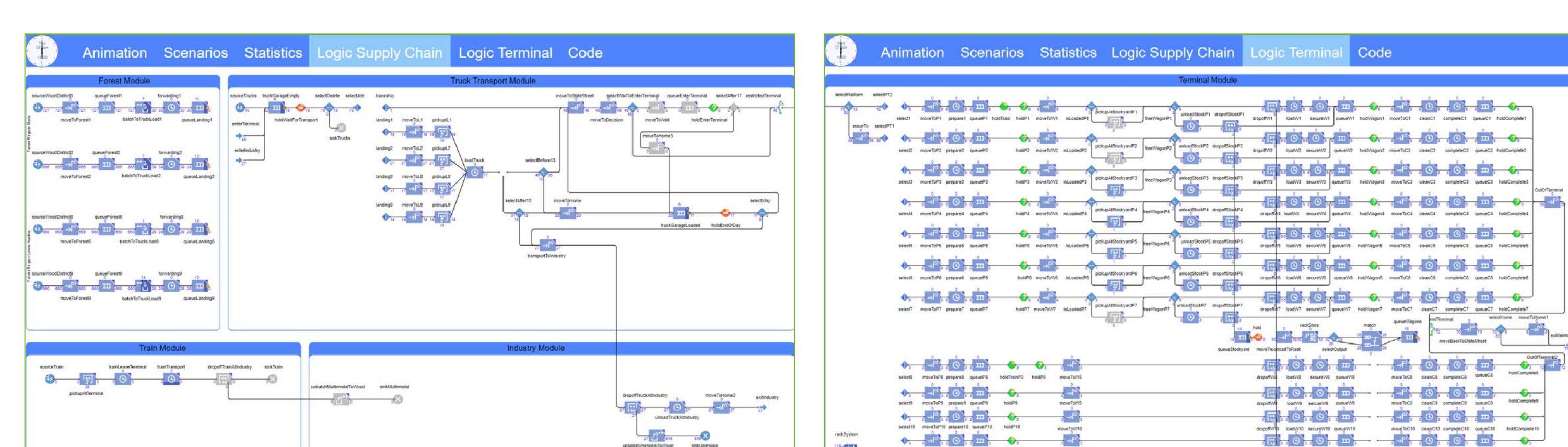
WP3: Virtual environment for simulating wood flows from forest to mill to compare strategies and give decision support (AnyLogic / Java Simulation Model).

## 5 Austrian Case Study

- four forest districts directly supply the terminal Großreifling (Styria)
- once (twice) a day a locomotive picks up the wagons
- four railroad tracks (two are electrified)
- nine wagons can be loaded simultaneously
- stockyard for 10 000 m<sup>3</sup> wood
- three regional carriers transport 2000 m<sup>3</sup> wood per month (up to 30 000 after wind throws)



## 6 Simulation Model



Compare performance of actual strategies of the logistic management to new ones pushing multimodal transport

What are right system configurations according to the KPI for...business as usual / big risk events / increasing rail transport / increasing allowable truck load?

Where is the bottleneck when risks occur?

### Key Performance Indicators:

costs, value, lead time, utilization, stock level, CO<sub>2</sub> emissions, network capacity, delivery precision