Connecting EU
*insights*

Circle
Group

# OPTIM*easy*

The easiest way to optimize your decisions

# TEBETS

Technological Boost for Efficient port Terminal
operations following Safety related events

Competence center START 4.0

Veronica Asta

OPTIMeasy, Founder

veronica.asta@optimeasyway.com

December 16th, 2021

# OPTIMeasy

PROVIDES AN **EASY** APPROACH

TO OBTAIN **DECISION SUPPORT SYSTEMS** FOR A CONSISTENT COMPETITIVE EDGE

USING **OPERATION RESEARCH** AND **OPTIMIZATION** TECHNIQUES

OPTIMeasy TAKES ADVANTAGE FROM THE INTEGRATION OF TRANSVERSAL SKILLS



MATHEMATICS · LOGISTICS · ECONOMICS

OPTIMIZATION · TRANSPORTS

FOR A HOLISTIC APPROACH TO REAL PROBLEMS

Partnership agreements for exploiting complementary skills

# LOB OPTIMIZATION 4.0

Control room prototype for a multipurpose port terminal

with the goal of proposing actions capable of stemming dangerous situations

thanks to the use of virtual and increased reality,
Artificial Intelligence, Machine Learning and Big Data

# DIGITAL TWIN

Decision support tool
for efficient management of multipurpose Terminal operations
following safety-related events
through the visualization and the simulation
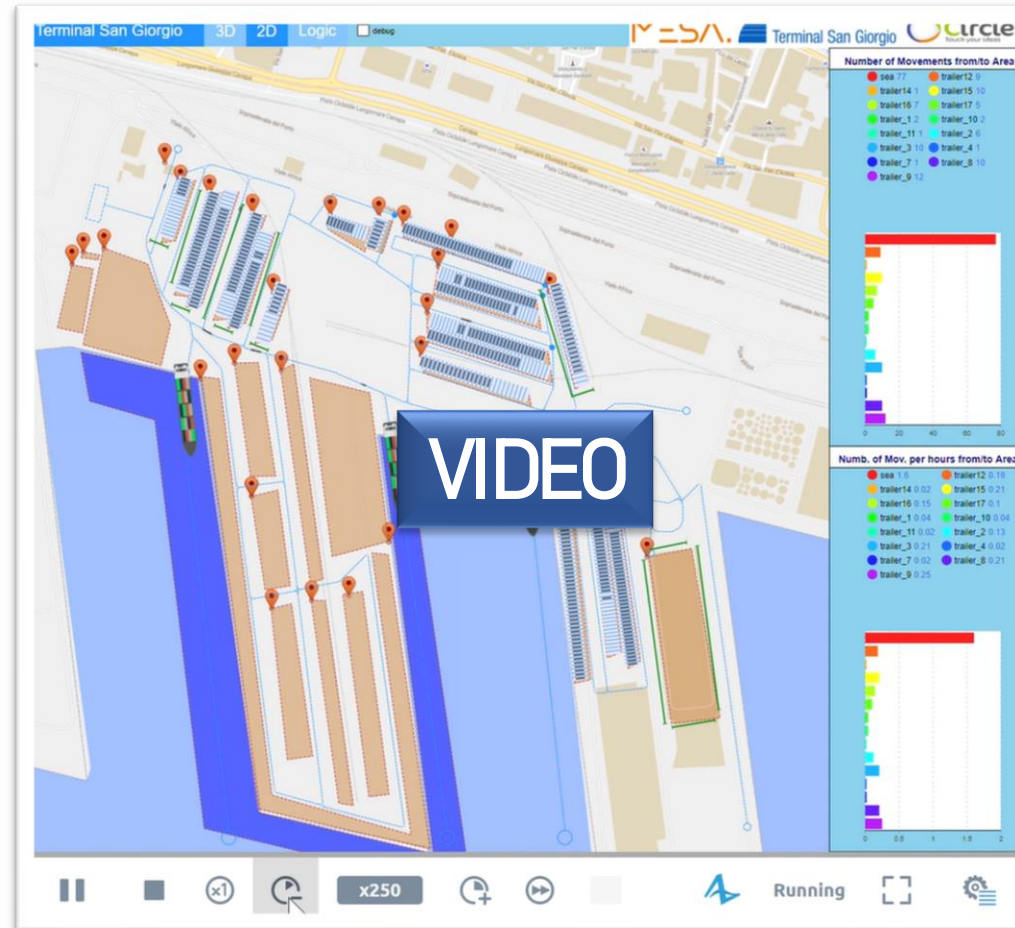of port area activities
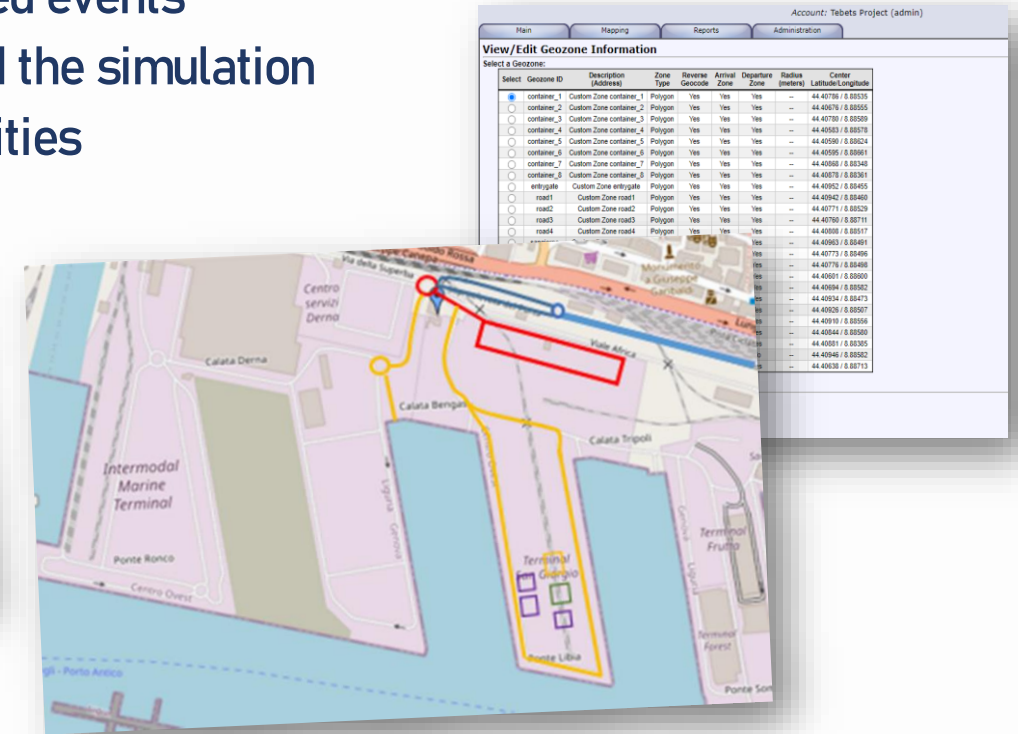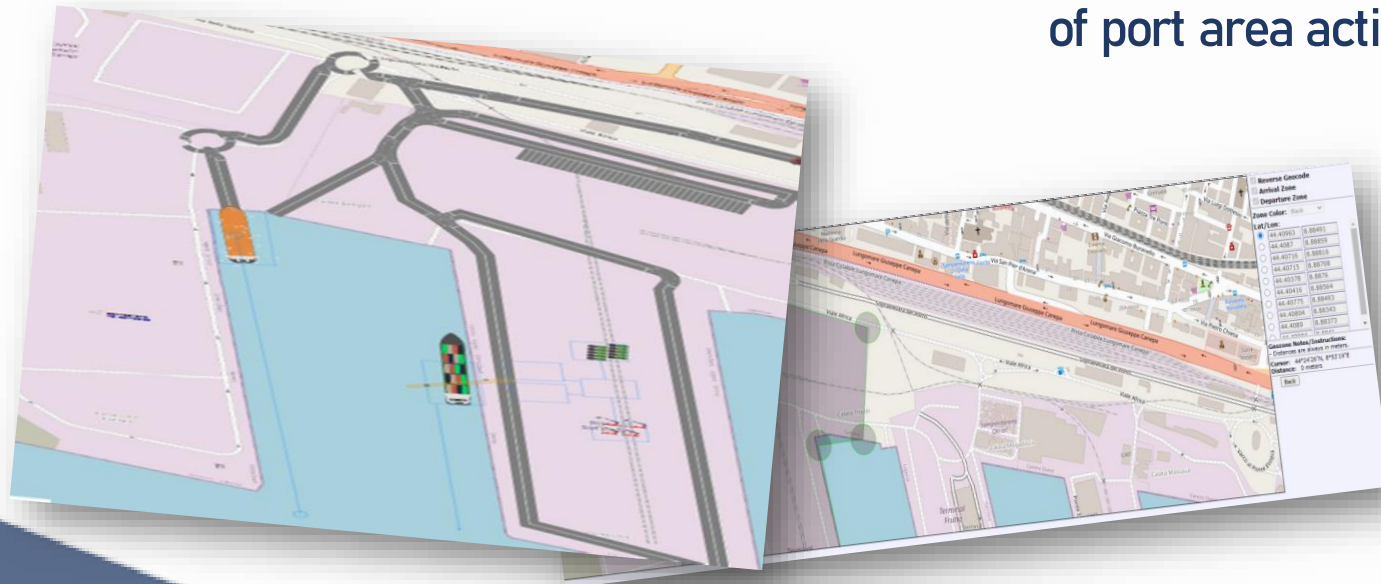
# DIGITAL TWIN
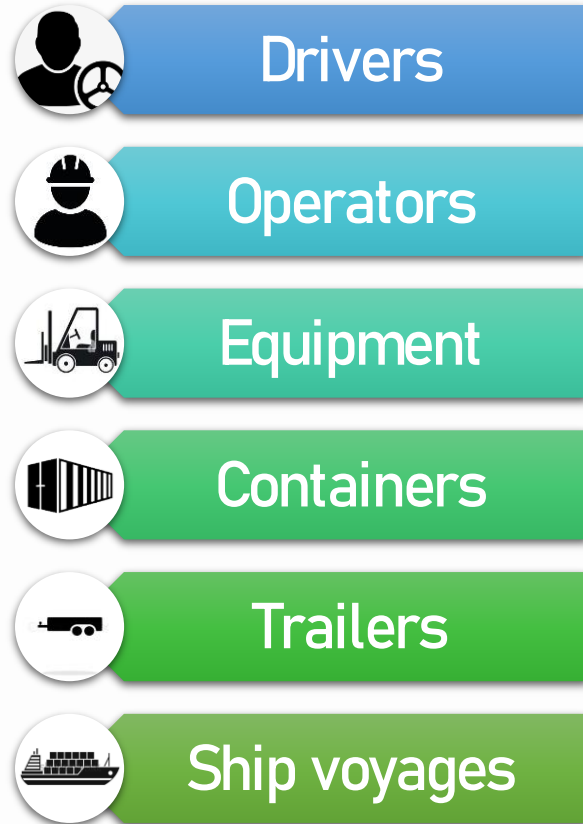
# DIGITAL TWIN

The Digital Twin has been integrated to both a tracking system (OpenGTS) and an AI platform (Bonsai)

in order to test different sperimentations:

1) Fire simulation scenario

2) Tracking and alert system

3) Parking Optimization

# FIRE SIMULATION



In the fire simulation scenario, all the flows of operators and drivers has been directed towards safe areas avoiding the dangerous ones through "minimum risk" paths which are identified by artificial intelligence algorithms. The paths can be communicated directly to the operators and to the drivers through the tracking platform and its integrated messaging system (SMS, What's-up, e-mail).
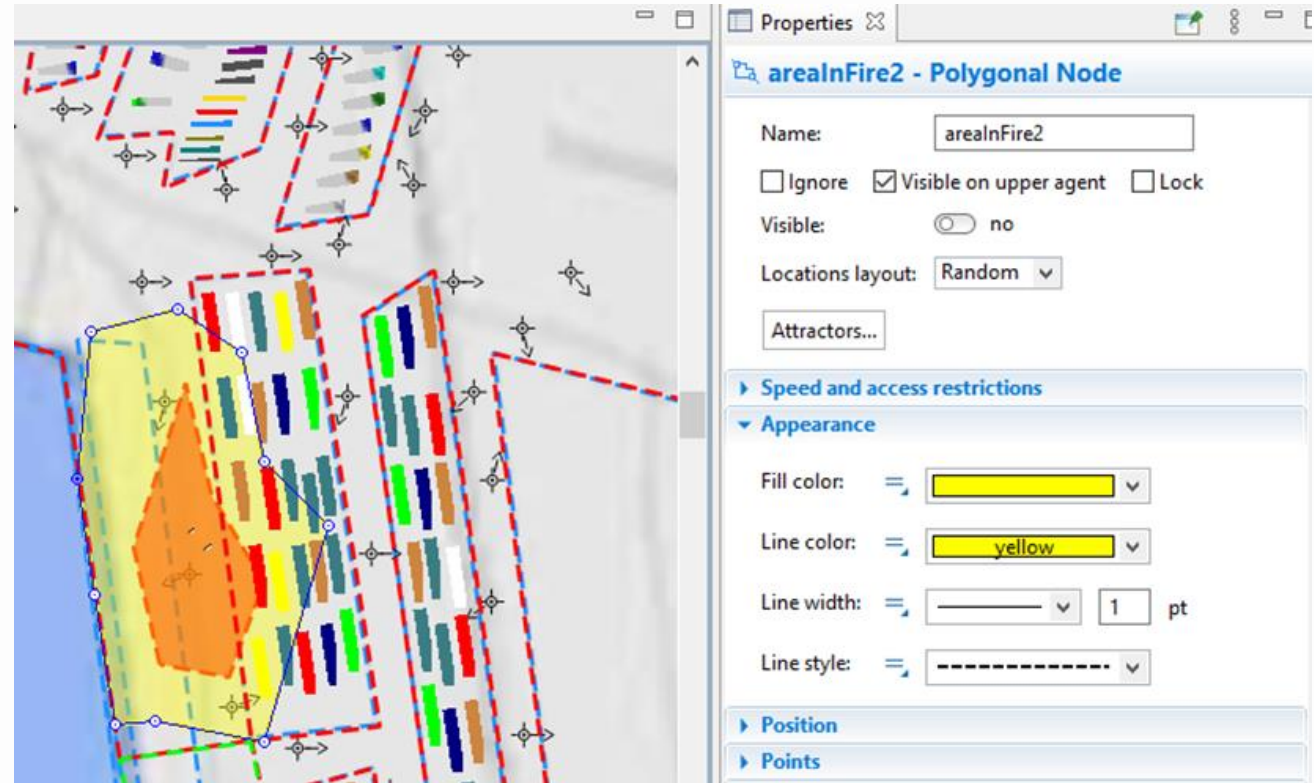
# TRACKING AND ALERT SYSTEM
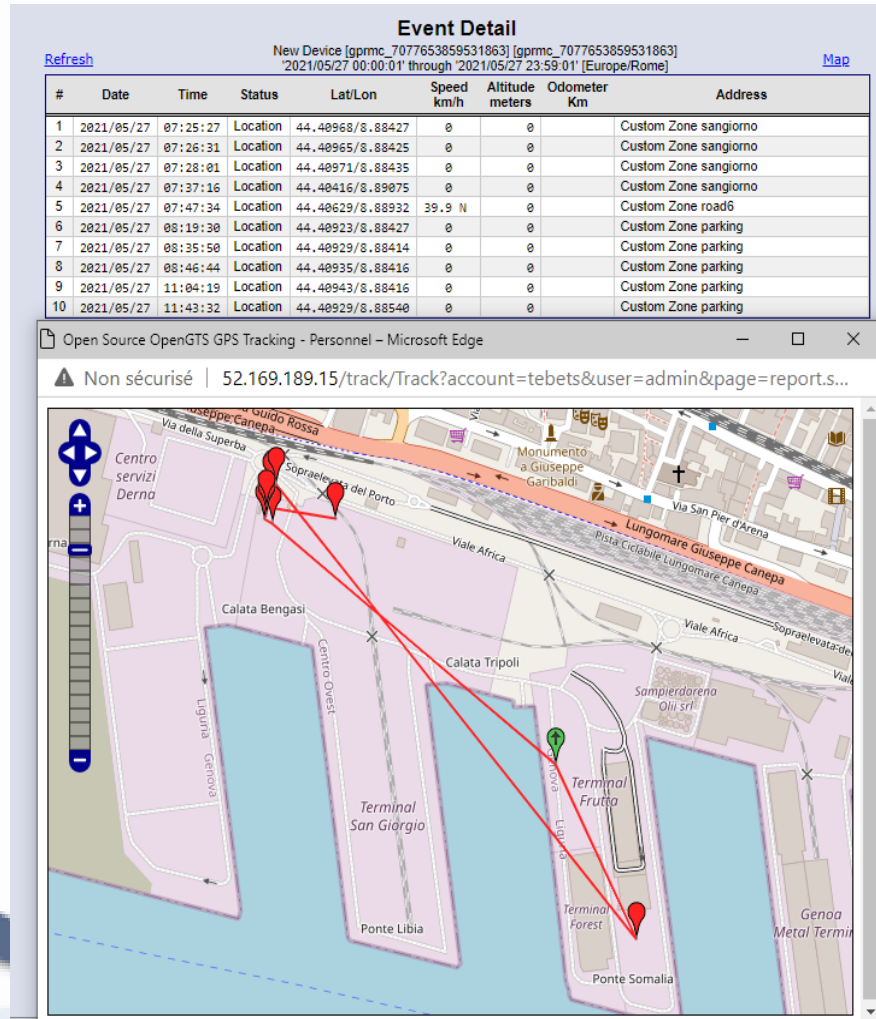


The tracking system is able to perform "Reverse Geocoding" and locate the sector of any moving entity, hence it can determine a sequence of automatic actions using an ITTT (If This Than That) logic. A "Rule Engine" function was introduced to link actions sequences to the right conditions.

# PARKING OPTIMIZATION

Knowing the system status and the equipment position allow the simulation of the terminal evolution and gives the AI model the possibility to identify the best choice each time.

For istance, given the event 'trailer arival at gate', the AI model can determine the best parking spot in order to:

- ensure better performances of the import/export process (throughput increase, demurrage recrease, etc.)

- reduction of collision risks

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ○ | trailer_1 | Custom Zone trailer_1 | Polygon | Yes | Yes | Yes | -- | 44.40934 / 8.88473 |
| ○ | trailer_10 | Custom Zone trailer_10 | Polygon | Yes | Yes | Yes | -- | 44.40909 / 8.88646 |
| ○ | trailer_11 | Custom Zone trailer_11 | Polygon | Yes | Yes | Yes | -- | 44.40908 / 8.88701 |
| ○ | trailer_2 | Custom Zone trailer_2 | Polygon | Yes | Yes | Yes | -- | 44.40926 / 8.88507 |
| ○ | trailer_3 | Custom Zone trailer_3 | Polygon | Yes | Yes | Yes | -- | 44.40910 / 8.88556 |
| ○ | trailer_4 | Custom Zone trailer_4 | Polygon | Yes | Yes | Yes | -- | 44.40844 / 8.88580 |
| ○ | trailer_5 | Custom Zone trailer_5 | Polygon | Yes | Yes | Yes | -- | 44.40881 / 8.88385 |
| ○ | trailer_6 | Custom Zone trailer_6 | Polygon | Yes | Yes | Yes | -- | 44.40869 / 8.88690 |
| ○ | trailer_7 | Custom Zone trailer_7 | Polygon | Yes | Yes | Yes | -- | 44.40792 / 8.88750 |
| ○ | trailer_8 | Custom Zone trailer_8 | Polygon | Yes | Yes | Yes | -- | 44.40828 / 8.88757 |
| ○ | trailer_9 | Custom Zone trailer_9 | Polygon | Yes | Yes | Yes | -- | 44.40866 / 8.88770 |
| ○ | trailer12 | Custom Zone trailer12 | Polygon | Yes | Yes | Yes | -- | 44.40901 / 8.88730 |
| ○ | trailer13 | Custom Zone trailer13 | Polygon | Yes | Yes | Yes | -- | 44.40889 / 8.88785 |
| ○ | trailer14 | Custom Zone trailer14 | Polygon | Yes | Yes | Yes | -- | 44.40845 / 8.88898 |
| ○ | trailer15 | Custom Zone trailer15 | Polygon | Yes | Yes | Yes | -- | 44.40710 / 8.88898 |
| ○ | trailer16 | Custom Zone trailer16 | Polygon | Yes | Yes | Yes | -- | 44.40711 / 8.88936 |
| ○ | trailer17 | Custom Zone trailer17 | Polygon | Yes | Yes | Yes | -- | 44.40698 / 8.88958 |

# THANK YOU

Competence center START 4.0

Veronica Asta

OPTIMeasy, Founder

veronica.asta@optimeasyway.com

December 16th, 2021