versatile test and training tool for navigation and surveillance systems

inVNE

Vessel Traffic Simulator and Sensor Data Generator

inVNE is a VIRTUAL NAVIGATION ENVIRONMENT designed to simulate vessel traffic on inland and coastal waters. The simulator generates real time sensor measurements and communication data based on the programmed traffic scenario, taking into account a wide variety of environmental conditions including rain, wind, water current and tide.

The simulation focuses on closely modeling the dynamics of typical ship movements, on providing the functionality of common nautical equipment (including failure modes), and on reproducing various interactions between ships and shore based surveillance stations.

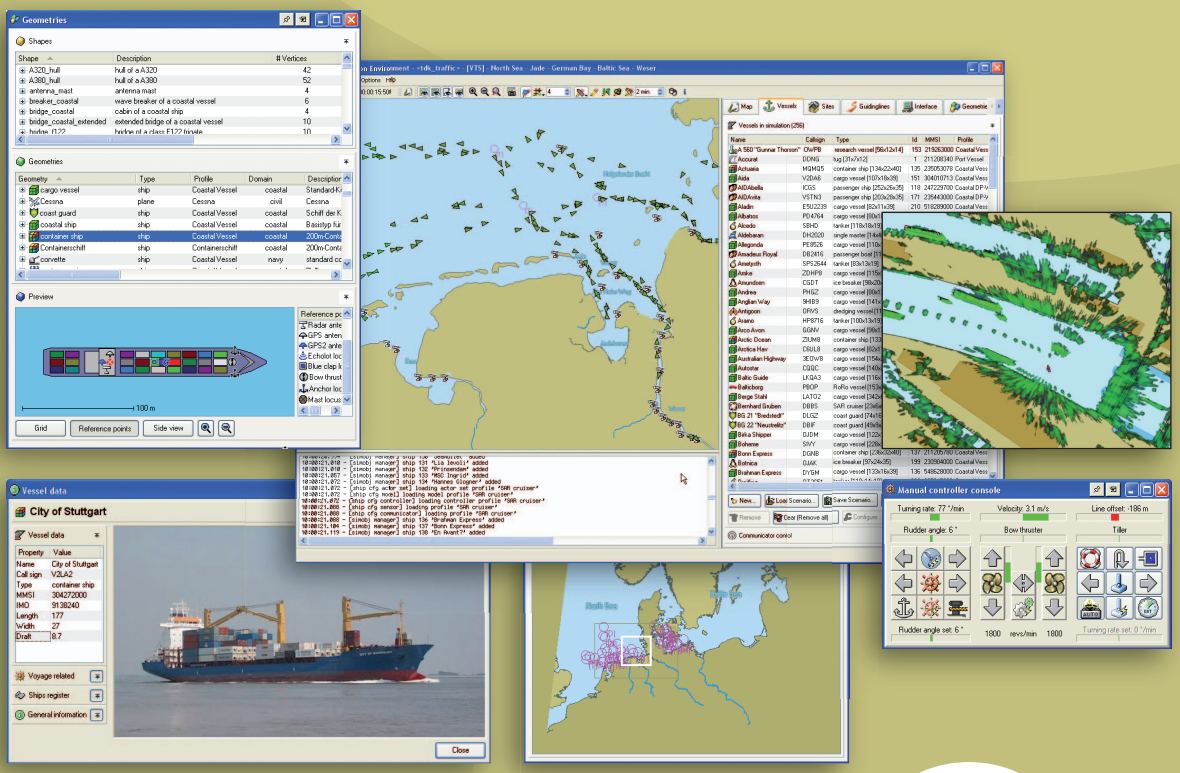
For each ship, the operator can choose from various components and methods to define the movement, the interaction with the environment, the reaction to control signals, and the properties and reliability of equipped sensors and communication devices.

Special emphasis lies on a realistic emulation of navigation sensors – like RADAR (video), tracker, and GPS – as well as communication devices (AIS, SART, ADS-B, Tetra, fog horn, …).

By providing the entire range of sensor signals using standard protocols (ASTERIX, NMEA), the simulator can be fully integrated into existing or planned vessel traffic surveillance systems.

The navigation environment is presented using a modern electronic nautical chart (ENC), visualizing position, movement and status of every traffic element and allowing various forms of interaction.

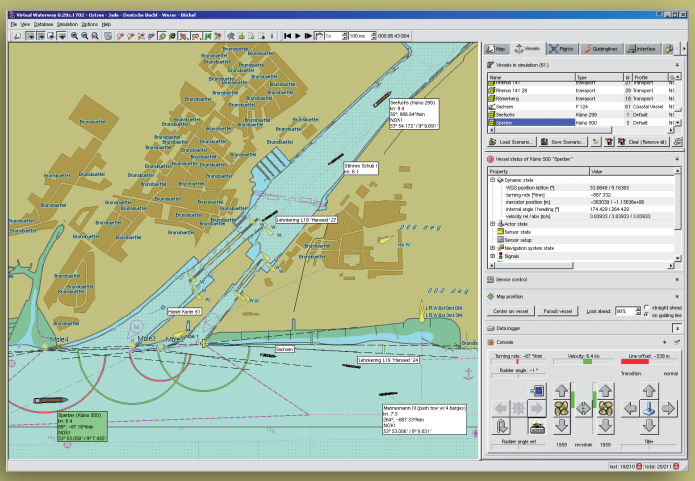
The comprehensive user interface of inVNE allows setting up a large variety of complex and diverse vessel traffic scenarios with arbitrary configurations of the surveillance coverage, while giving the operator complete control over the simulation process.



A product of **innovative navigation**

in SIGHT

Graphical User Interface and Key Features



GUI of inVNE, showing a scene
at the entrance to the Kiel Canal

inVNE feeding two commercial radar
displays with synthetic analog video

Navigational radar training
at a bridge driven by inVNE

Highlights

- *Realistic simulation of marine and air traffic*
- *Up to 1000 vessels calculated simultaneously*
- *Diverse assortment of vessel models, sensor types and surveillance equipment*
- *Generation of highly realistic radar video, ASTERIX, AIS and NMEA output data*
- *Seamless integration of recorded or live data*
- *Perfect environment for up to 5 training bridges connected in-the-loop*
- *Well suited for validation of data processing components used in complex VTS/CSS systems, radar displays and inland navigation systems*
- *Allows integrated training for VTS/CSS operators at their stations*
- *Visualization of navigation environment using ENC*
- *Modern GUI for definition of routes and scenarios*
- *Platform independent (LINUX, Windows™)*

in innovative navigation GmbH

Further information about recent developments of innovative navigation systems can be found on the homepage:
http://www.innovative–navigation.de

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