NAUTIS 3.9.0

Release Notes

17 July 2023

VSTEP

1. NEW FEATURES

1.1 Base features

- **Change colors of ships:**
    - Ships have a primary and secondary color that can be changed by the instructor, either during a session or when creating a scenario.
    - See the content chapter (chapter 3) for which ships currently support this feature.

- **Automatic lights can be overridden by the instructor.**
- **Networking:** TCP (instead of RakNet). This increases reliability (preventing some out of sync of LCs), at a performance cost.
- **Revamped API.** NAUTIS uses a new iteration of the API based on gRPC.
- **Support for many interactions with and data from NAUTIS:** object transforms, weather, seastate, collisions, currents, exercise control, session control, seabed, geography, date & time, towing lines, sensor blocking, navigation lights and so on. A separate manual is available upon request.

1.2 Other features

- Smoke for the fire object now has a setting to set its visibility distance.
- Added support for GEM TX and standby buttons.
- Added a filter to the property window which shows which elements are bound to external communication.

2. IMPROVEMENTS

2.1 Base improvements
- **Ocean visual improvements**:
    - General revamp of waves, colors, reflections.

- Nightlights in all environments.
    - Improvements to navigation light reflection.

- **Sky visual improvements**:
 - Improved cloud visuals and sky colors.

- Adding routes to the chart no longer prevents interaction with the chart itself; now you can still pan and zoom the chart while placing route nodes.
- Shallow water effects can now be disabled with a checkbox in scenario configuration.
- Draught reading added in echosounders.
- Routes are rendered as a line, but when the path is active or hovered, it is rendered in detail. Nodes with a velocity change are filled and show the new velocity in a tooltip.

2.2   Dynamics improvements

- Added an option to force Hull Voxelization to be symmetric.
- Added an option to force using all submerged voxels to calculate center of buoyancy.
- Corrected calculation option to determine buoyancy based on each individual hull voxel.
- Added an option such that propulsions account for oblique inflow of water.
- Made Transverse Arrest force of propulsions depend on the ship's velocity magnitude.
- Added a utility to automatically generate a baseline configuration of a ship's thrust allocation component.
- Buoyancy solver adjusted such that a ship bounces less on the water after placing it.
- Added an option to calculate the squat effect more accurately.

2.3   Visuals
- Ground snow visual improvements.

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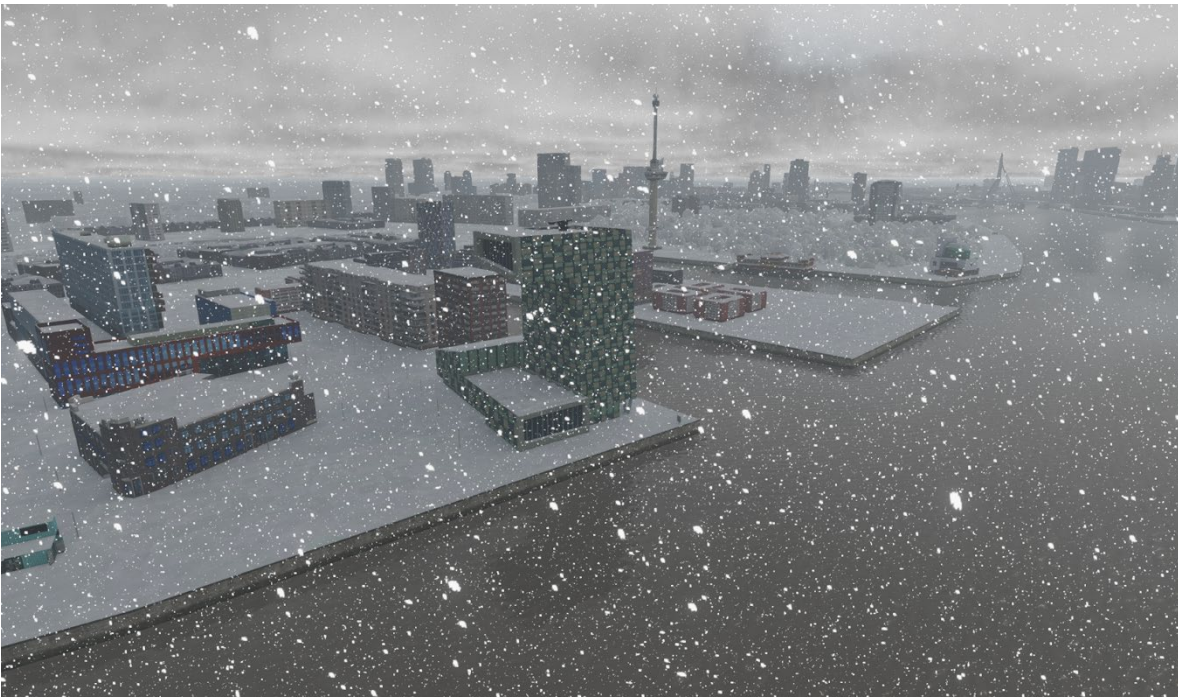
- Searchlight visual improvements: fog & haze blending, visual tweaks.

2.4   Other improvements

- Improved the velocity reset of the Anomaly Detector to bring the vessel to a halt (Object Editor only).
- Dynamics templates will now use marine propellers and add Gearboxes (Object editor only).

- Visualizer more accurately shows the shallow water effects channel (Object editor only).
- Added option to overwrite the navigation marks own culling distances. This will allow the radar instance of NAUTIS to detect navigation marks (like buoys) on a further range.
- EBL VRM tool on the chart no longer supports multiple instances, this prevents crashes and design issues.
- Focus behavior from the overview window, hotkey or top menu is now in sync.
- Smoke particles can no longer change their (collision) properties, this previously resulted in unsupported behavior.
- Binocular zooming is now framerate independent.
- Orbit camera focus point has been changed to be the helmsman position of the ship. The pitch can be locked with a setting. The pitch can also be limited to avoid the camera from being underwater, or a top down view.
- The area object default shape has been adjusted. Also possible to now pick a cylinder and cube shape.
- Rain and thunder sound now linked to ambient sound volume setting.
- The windmeter angle changed from 0 - 360 degrees to -180 to 180 degrees output.
- Draught is now visible in the echosounder.
- Bow particles effect tweaks to prevent flickering effect against the water surface.

3. CONTENT

New content is to be purchased separately by Customer upon request.

3.1 Vessels

- **New vessels**:
    - Boskalis: Queen of the Netherlands.
    - Boskalis: Rockpiper.
    - Coast guard cutter Deania.
    - Bulk carrier Vertex Prince.
    - LNG carrier Vertex Queen.
    - Riga Gulf Tanker (only target vessel for now).

- **Improvements**:
    - **General**
        - Color changing functionality has been added to the following ships: Combistar, Deo Favente and Voerendaal.
        - Added placeable floodlight object. Can be used to add to parts of the environment which should light up when it is dark.
    - **Tripoli**
        - Reverted to using primitives for the collision. Adjusted the shapes to fit in the locks in environments where it should.

- Added a hatches variation.
  - o **Hercules Atlas 4 and 6**
    - Improved accuracy at what distance the lower level of detail version is shown.
  - o **Iolanda**
    - Wheelhouse height was having the wrong value when displayed on panel.
  - o **Libra Voyager**
    - Renamed winches to hoses, increased line length to 1000 m, increased radius to 0.4 m, set material to Hose, enabled collides.
  - o **Sanha FPSO**
    - Sanha FPSO Spingfix (located at the turret). Not enabled by default.
  - o **Brent**
    - Reduced roll angle when turning.
  - o **Venus**
    - Reduced roll angle when turning.
  - o **Voerendaal**
    - Added box for bluesign on the roof.
  - o **Aquila**
    - Changed the doppler log to a dual dopperlog.
  - o **Giessenlanden**
    - Updated the ship icon to match the style of the other ships.
  - o **Aurora Triumph**:
    - Adjusted RPM control curve to take inputs from -100% to +100%.

3.2   Environments

- **Improvements**:
  - o **Antwerp Approach**
    - There was a difference between rotation and position of lock doors of the Terneuzen lock when comparing chart and 3d view, this has been fixed.
  - o **Schwelgern**
    - The a42 bridge near Duisburg did not appear on the radar.
  - o **Rotterdam**
    - Added new landmarks: Cooltower, Zalmhaven toren, Boompjes, Rhijnhaven bridge. Minor building position adjustments near Erasmus bridge.
  - o **Sydney**
    - Several jetties were missing from the environment.
    - Added navigational marks.
    - Updated camera starting location for Sydney.
  - o **Ijmuiden**
    - Fixed lights which were incorrectly turned-on during daylight.
  - o **Fictional port**
    - Removed the current fields on the sea.

4.   BUG FIXES

- **Visuals**:
  - o Propulsion wash visual effect now shows in networked worlds.
  - o Exhaust smoke:

- ▪ Now visible during debriefing.
- ▪ Fixed various culling and 'getting stuck' issues.
    - o Certain decals (tug markings for example) would sometimes disappear, this has been fixed.
    - o Fixed a flickering issue on billboards for AMD videocards.
- **Dynamics**:
    - o Current global fidelity setting for the number of used current layers is now correctly applied.
    - o Engine RPM will now decrease accordingly when the engine is configured to have no gearbox.
    - o Fixed an issue where the engine slow down and shut down failures were not applied in the NFU control mode.
    - o Fixed a crash when an anchor would collide with the environment in certain specific cases.
    - o Bollards apply shape-based mass.
    - o Guarantee valid waterdepth data for bank- and piston- effect on ships with disabled shallow water sampling.
    - o Fixed GearboxOutput Currentgear not updating in TS and IS.
- **Route planners**:
    - o Route followers will now properly show the Propulsion wash effect when they are moving.
    - o Fixed a crash when changing the progressor type of a route follower (for example from acceleration to constant speed).
- **UI**:
    - o Removed show/hide from object overview.
    - o Fixed a crash which could occur when disabling info highlighting objects.
    - o Various UI fixes in dynamics (missing unittypes & translations).
    - o Fixed issue where Magnetic Compass used the wrong sign for magnetic variation.
    - o Radar UI has corrected translations and unittypes.
    - o Fixed a crash when opening properties for a current node on the chartview.
- **Force visualization**:
    - o Force visualizations were smoothed upon spawning and would float into view, this effect has been mitigated.
    - o Force visualization would not be visible when moving from chart view to 3D view.
- **Other**:
    - o Wheelhouse collision shapes are now positioned the same in the editors and in networked worlds.
    - o Fixed various crashes when loading a scenario, when the previous scenario was not finished loading.
    - o The initial bearing on the binocular view could be wrong, this has been fixed.
    - o Fixed an issue where the AIS was being registered with power off.
    - o Fixed a crash when placing the fire object.
    - o Fixed a crash in the instructor station when trying to switch the 3D view to the chart view when a current would exist in the scenario.
    - o Fixed a crash when setting up 'fake trainees' for parallel exercise.
    - o Fixed an issue where there would be a shader compilation error in certain environment, causing artifacts on billboards.
    - o Fixed a crash when on first startup, the scenario folder would not exist yet.
    - o Fixed an issue where the GEM high speed radar would not output any image initially.
    - o Fixed a crash on exit of NAUTIS and in the networking debug window upon closing it.
    - o The DGPS has a non-functional NMEA receiver, this was not explicitly clear.

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5. KNOWN ISSUES

- **Powerlines** do not load on scenarios made in NAUTIS 3.8.0 or earlier.
  - o Work around would be to alter the scenario files:
    - ▪ Open the .scenario file which holds the environment that has power lines configured:
      - ▪ AntwerpenApproach
      - ▪ Boppard
      - ▪ Groningen
      - ▪ Harlingen
      - ▪ IJmuiden
      - ▪ IJzendoornhaaften
      - ▪ Mississippi
      - ▪ Nijmegen
      - ▪ Rotterdam
      - ▪ Schwelgern
      - ▪ Toledo
    - ▪ Find the following text `Scenarios::Header'.
    - ▪ Change the text to include the following:
      - ▪ IMAGE
- **Ship resultant velocity discrepancy between NAUTIS sensor values real-time velocity** (as seen on outside view and ECDIS).
  - o Work around to change the physics FPS on the NAUTIS server to either 30 or 20 FPS. Please contact support if these issues occur.
- **Issues when using the Gizmo to move a vessel on the outside view that was opened as a separate window on the Instructor Station**.
  - o Work around is to wait a bit, the Gizmo will recover at some point.
- **Cameras cannot be visualized twice in the same NAUTIS instance**. For example, the main 3D view and opened 3D view on the Instructor Station cannot both show the bino view.
  - o A window will show indicating that the camera's is already in use.
  - o We are investigating options to allow for showing both cameras.
- **Switching from Day to Night causes a stall of a few seconds.**
  - o Advised is to not make scenarios around the time when the night lights go on and to split day and night training scenarios.
- **Color change only last placed ship.**
  - o Currently there is a bug which prevents colors to be changed for any ship, except the last placed one.