

# Bulletin - TIMEZERO V5.4

Update 11/03/2026

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## Rain Radar & Lightning – Major Upgrade

Rain Radar has been part of TIMEZERO for several versions, providing near real-time precipitation directly on the chart.

With this release, Rain Radar evolves through a new data provider and the integration of Lightning display. Together, these changes extend offshore visibility and enhance storm monitoring, especially during live use and replay.

Rain Radar & Lightning are part of the **Premium Weather (PW)** subscription. This upgrade is also implemented in **TZ iBoat** (and planned for future updates where applicable).

### Rain Radar – New Data Provider (Meteomatics)

TIMEZERO now uses **Meteomatics** instead of RainViewer as the data provider for Rain Radar.

The Rain Radar layer now combines two complementary sources:

- **Ground Radar**, providing high-resolution precipitation data near coastal areas
- **EUMETSAT satellite precipitation (MSPE H60B)**, extending visibility offshore beyond terrestrial radar range

Compared to the previous provider, coverage is now different. The key improvement is the addition of satellite precipitation offshore, extending visibility beyond coastal radar range. Ground radar availability may vary depending on the region.

To keep interpretation clear, the display distinguishes three coverage levels: ground radar coverage (no mask), satellite-only coverage (light mask), and areas with no available data (dark mask). Rendering differences compared to previous versions reflect the characteristics of the new datasets.



Rain Radar coverage (Meteomatics): light areas show ground radar coverage. The central light-gray zone (Atlantic, Mediterranean, W Indian Ocean) shows EUMETSAT rain detection coverage.

**Coverage note**

Lightning availability follows Rain Radar coverage (ground radar near the coast + satellite precipitation offshore), except in **Australia**, where lightning is not currently available.

**Meteomatics Data Specifications (Reference)**

Ground Radar provides ~1 km resolution with a 10-minute update cycle.

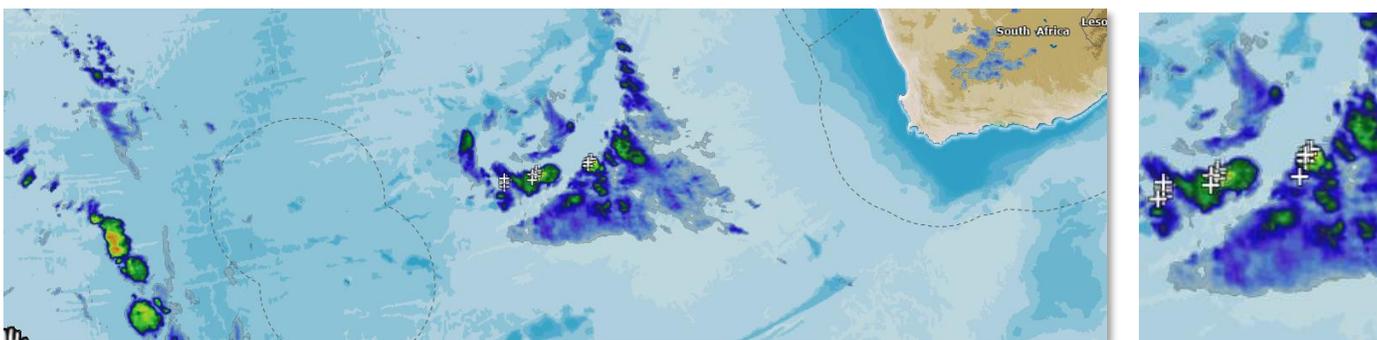
EUMETSAT MSPE provides ~5 km resolution at the equator (up to ~8 km at high latitudes), with a 15-minute update cycle.

**New: Lightning Display**

Lightning impacts are now integrated directly into the Rain Radar layer, so precipitation and electrical activity are interpreted within the same view.

When Rain Radar is enabled, lightning strikes appear automatically. New impacts are briefly highlighted, while older impacts fade progressively instead of disappearing abruptly. The lightning time window is user configurable (10 to 60 minutes, default 30 minutes. Setting location: Weather>Display>Time Window in Weather settings).

Lightning coverage matches Rain Radar coverage.



*Heavy rainfalls and thunderstorms off cape town, South Africa*

To keep things as easy as possible, we have grouped rain radar display and Lightning display in the same “Rain Radar” Layer.

## Rain Radar & Lightning in TIMEZERO (How It Works)

Rain Radar is enabled as a chart overlay layer. Once activated, the weather time bar switches to **Recent mode**, allowing replay of the last minutes and visual tracking of system evolution.

Precipitation intensity is displayed using the standard TIMEZERO rain palette. Lightning impacts are displayed as cross symbols. The most recent strikes are visually emphasized, and newly appearing impacts trigger a short flash effect. As time progresses, impacts fade progressively, maintaining readability and avoiding visual clutter.

## Rain Radar & Lightning in Replay

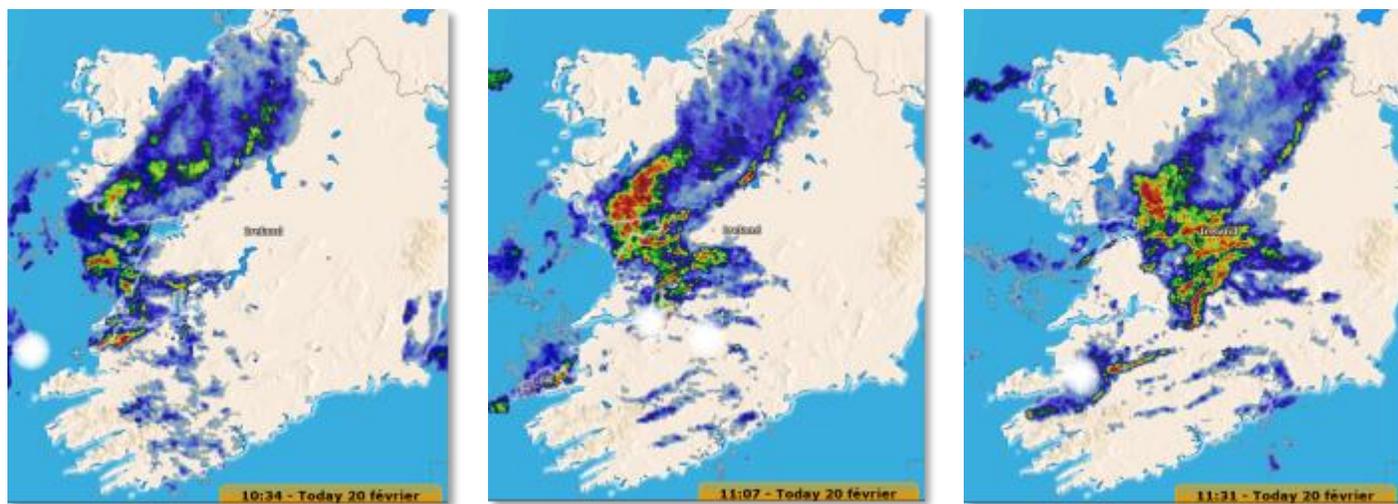
The combined display becomes particularly effective during replay.

As precipitation frames update sequentially, lightning strikes appear inside convective cells as they develop and fade out as they age. This makes storm evolution significantly easier to interpret than static radar snapshots.

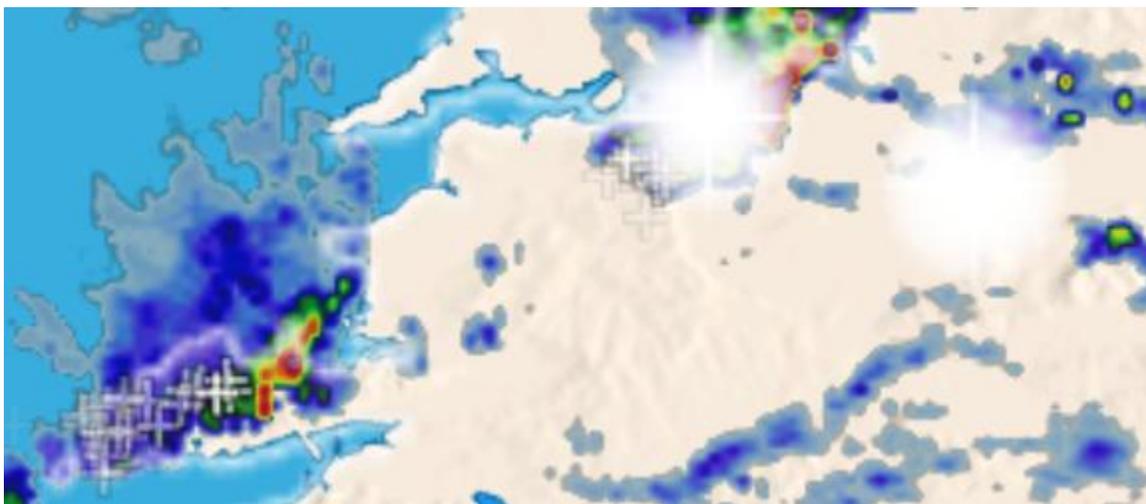
Users can clearly observe:

- Storm structure,
- Lightning concentration within active cells,
- Movement direction over time.

This dynamic perception improves understanding of convective development and supports better operational decisions.



A winter cold front moving across Ireland, with associated thunderstorm activity.

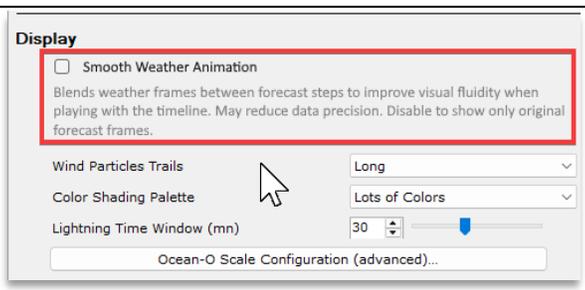


When playing the timeline, lightning strikes visibly track the rain in the animation. This clearly illustrates convective structure, helps users understand the evolving situation, and makes a strong visual asset for sales demos.

### Precision vs Smooth Weather Animation

The “Smooth Weather Animation” option, located in Weather Settings page, is set to OFF by default.

When enabled, temporal interpolation creates a visually smoother transition between frames. When disabled, updates are more discrete but reflect the raw data more precisely. The default setting prioritizes data fidelity over visual smoothing.



### Rain Radar + Lightning: Key Benefits

Rain Radar provides precipitation structure and intensity. Lightning highlights convective activity within that structure.

Combined, they allow users to:

- Identify active storm cores faster,
- Detect intensifying cells,
- Anticipate storm movement offshore or near the coast,
- And improve route and safety decisions.

This transforms Rain Radar into a more operational storm monitoring feature for offshore navigation and professional use.

### Full Compatibility with Furuno DFF1-UHD+

TZ Professional and TZ Navigator are now fully compatible with the new **Furuno DFF1-UHD+ Fish Finder**.

The DFF1-UHD+ is Furuno’s next-generation ultra-high-definition black box fish finder, designed to deliver exceptional target separation and seabed detail.

The DFF1-UHD+ shares the same fish finder platform as the one integrated in the TZT XL series.



### **Black Box TruEcho CHIRP with Side Scan**

**Display Size** Black Box

**Display Type** Black Box

**Frequency** CW 50-200 kHz and CHIRP 40-225 kHz and CHIRP Side-Scan 230 or 455 kHz

**Power Usage** 12-24 VDC

**Power Output** 150 W or 300 W or 600 W or 1 kW

**Range** 4000 ft

When a DFF1-UHD+ is detected on the network, it can be selected directly from the Sounder settings, and all standard fish finder features are supported.

### **Supported Displays & Features**

The DFF1-UHD+ is supported in:

- **Fish Finder view**
- **Side Scan view**

All standard sonar functionalities remain available, including:

- Echogram display
- A-Scope
- Historical scroll
- Gain and signal processing controls
- Etc...

Note: The DFF1-UHD+ requires the Sounder module to be enabled.

### **Additional Sounder Controls**

Support for DFF1-UHD+ includes extended FishFinder processing options available in Furuno systems, such as:

- Color Range Expansion
- Echo Stretch
- Clutter controls (including LF/HF where applicable)

These settings allow finer echo tuning and improved seabed and target visualization.

## Bottom Classification (Important Compatibility Note)

The Fish Finder screen supports **Bottom Classification**.

However:

- Bottom Classification currently works only when a **CW-capable transducer** is used (pure CW or mixed CW/CHIRP transducer).
- It does **not** work with **CHIRP-only transducers**.

This limitation comes from the current DFF1-UHD+ firmware implementation. It already exists in TZTXL MFDs

Furuno (FEC) is planning a future firmware update to enable Bottom Classification with CHIRP-only transducers. Once available, this support will be integrated into TIMEZERO.

⇒ If Bottom Classification is required, ensure that the installation includes a CW-capable transducer.

## Summary

With V5.4, TZ Professional and TZ Navigator extend full operational support to DFF1-UHD+, including:

- Fish Finder and Side Scan compatibility
- Advanced echo processing controls
- Bottom Classification support (CW transducers)

This strengthens TIMEZERO's integration with Furuno FishFinder systems and expands high-end fish finder compatibility.

Note: If you have both a DFF-3D and a DFF1-UHD+ with SideScan configured, the side-scan from the DFF1-UHD+ will be displayed.

## ECS-USA Compliance (TZ Professional)

TZ Professional supports the requirements of the **ECS-USA (Electronic Chart System – United States)** regulatory framework.

With the appropriate configuration, TZ Professional conforms to **RTCM Standard 10900.8 (Class B ECS)** and can be deployed as an Electronic Chart System in accordance with U.S. regulations.

### Requirements & Configuration

To operate in ECS-USA compliant mode, TZ Professional v5.4 must be installed and configured according to the requirements described in the user guide, including:

- Use of official NOAA S57/S63 charts (requires the optional S57/S63 module)
- Proper system configuration and chart update management
- Approved hardware environment (marine-certified display systems where required)
- Integration with compliant position sources

When correctly configured, TZ Professional supports ECS operational requirements under U.S. regulations.

ECS compliance depends on both software configuration and hardware environment. Refer to the TZ Professional User Guide – ECS-USA chapter for full deployment requirements.

## Dead Reckoning – Strengthened Backup Navigation (TZ Professional)

In today’s navigation environment, GNSS reliability cannot always be guaranteed. Signal shadowing, temporary loss of reception, equipment failure, or abnormal GPS behavior can all affect the accuracy of a vessel’s displayed position. Over the past year, the Dead Reckoning (DR) feature has been progressively enhanced through several minor releases. TZ Professional v5.4 now completes these improvements with the integration of transversal water speed when available. Below is a summary of the Dead Reckoning feature in TZ Professional v5.4.

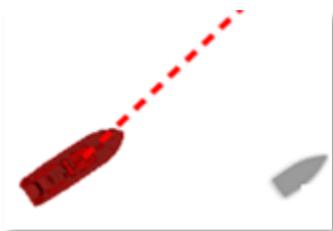
When GNSS position data is lost, TIMEZERO automatically calculates an estimated position based on:

- The last known position
- Heading
- Speed Through Water (longitudinal and transversal)

If heading and/or Speed Through Water data are unavailable, the operator can manually enter these values using the Dead Reckoning NavData.

A major advancement in dead reckoning is the integration with the Furuno DRS radar. When connected and operating in Dead Reckoning mode, the operator can manually adjust the vessel’s position using the radar overlay to align with known references such as coastlines or buoys. Once the DR position has been manually corrected and validated, this updated position is used as the new reference for subsequent dead reckoning calculations.

Even when GNSS appears to be functioning correctly, TZ Professional allows activation of a Dead Reckoning Ghost Ship. This ghost position does not rely directly on GPS data; instead, it uses heading and Speed Through Water, running in parallel with the GNSS position. This enables continuous cross-verification of the GPS data:



*Ownship and its ghost ship*

An alarm can be configured to trigger if a deviation is detected between the GNSS position and the Ghost Ship. This warning prompts the operator to verify the GPS position, for example using the radar overlay or by creating a manual Line of Position (LOP) with the Divider.

The Dead Reckoning Ghost Ship feature provides operators with additional confidence in GPS integrity, particularly in areas where spoofing or GNSS anomalies may be a concern.

These tools ensure continuity of navigation and allow users to detect discrepancies between estimated motion and GNSS data.

These following paragraphs describe what was improved in v5.4

## 1) More Accurate DR with Transverse Water Speed

Dead Reckoning can now incorporate **Transverse Water Speed**, when available, in addition to longitudinal Speed Through Water. By accounting for sideways motion (leeway), the DR computation becomes more realistic in conditions involving wind or lateral drift. A new sensor value is introduced:

- **STW(tr) – Transverse Water Speed**

This allows verification that transverse speed data is correctly received. Negative values indicate port direction.

### Technical Note

Transverse Water Speed is decoded from:

- NMEA0183 VBW (field 2)
  - NMEA2000 PGN 130578
- No new connection category is required; the existing STW category is reused.

## 2) Expanded Dead Reckoning Fallback Logic

While automatic DR already existed, the fallback logic is now more flexible:

- Automatic Mode when heading and speed are available
- Partial Manual Modes when either heading or speed is missing
- Full Manual Mode when no position, heading, or speed is available

The **Dead Reckoning NavData panel** now supports these expanded scenarios, allowing course and/or speed to be adjusted manually when required.

## 3) Reorganized Dead Reckoning Options Section

Dead Reckoning settings, located in Initial Setup setting page, have been reorganized into a dedicated “Dead Reckoning” section in the Options page.

**Dead Reckoning**

**Enable Dead Reckoning**

When Dead Reckoning mode is enabled, TimeZero will automatically activate Dead Reckoning when position data is lost. If you suspect inaccurate position data (even if it's still available) you can right-click on the own ship icon to manually force Dead Reckoning.

**Display Dead Reckoning Ghost Ship**

When enabled, a secondary own ship icon will appear on the chart, calculated based on Heading and Speed Through Water.

**Monitor for GPS Deviation**

Deviation Threshold

When enabled, an alarm will trigger if there is a significant deviation between the received GPS position and the position calculated based on Heading and Speed Through Water.

The following controls remain available (*now centralized*):

- Enable Dead Reckoning
- Display Ghost Ship
- Monitor for GPS Deviation + threshold

## Summary

Dead Reckoning remains a critical continuity feature in TIMEZERO. With V5.4, it becomes:

- **More accurate**, thanks to transverse water speed integration (*new*)
- **More flexible**, with expanded fallback and manual modes (*enhanced*)
- **More organized**, with centralized configuration (*restructured*)

These improvements reinforce TIMEZERO's resilience in degraded GNSS scenarios while maintaining full operator control.

## Compatibility with TZtouchE

TIMEZERO Professional and Navigator are now compatible with Furuno's new **TZtouchE** multi-function display.

This new model expands the TZ ecosystem at a lower price point with built-in fish finder capabilities.

### Products Overview (Reminder)



#### TZtouchE (9" / 13")

A streamlined NavNet TZtouch series MFD designed for modern cruising and fishing boats.

It features:

- TZ MAPS Cartography
- Built-in single-channel TruEcho CHIRP™ or CW Fish Finder
- Built-in CHIRP Side-Scan (230 kHz / 455 kHz)
- Compatibility with Furuno radar and sonar options

## Network Compatibility with TIMEZERO

TZ Professional and TZ Navigator can operate on the **same Ethernet network** as TZtouchE units, similarly to other NavNet systems.

This enables:

- Detection of the MFD on the network
- Display of the **integrated Fish Finder echoes** within TIMEZERO
- Sharing of **User Objects** (Marks, Routes, Waypoints) between devices

This ensures seamless integration within mixed Furuno installations, allowing TIMEZERO to operate alongside TZMAP or TZtouchE displays in a unified navigation environment.

#### **Important note regarding the new TZMAP MFD from Furuno:**

The TZ MAP MFD units are not designed to be networked with other devices (with the exception of a DRS Radar). Therefore, TZ Navigator and TZ Professional must not be connected to the LAN port of any TZ MAP MFD.

## Fleet Tracking – Enhanced Control & Integration

Fleet Tracking allows vessels connected to My TIMEZERO to share position and operational data within defined fleets. It is widely used for professional fleet coordination (fishing and commercial operations) as well as corporate supervision scenarios. This release brings major improvements to Fleet Tracking, focusing on:

- **Fleet-level permission control** with the new *Emit Only* mode,
- **Hybrid fleets** through the new *AIS Member* type (MMSI-based targets),
- Clearer visibility of fleet membership and permissions in the Fleet Info report,

### New: “Emit Only” Permission (Fleet-Level Control)

A new **Emit Only** permission can now be configured per user and per fleet from the Extranet.

When enabled for a fleet, the vessel continues to transmit its position (including Depth and Wind if selected), but it no longer sees other members of that fleet and cannot send messages, routes or user objects to the fleet or to individual members. However, it can still receive messages and user objects from the fleet.

Permissions are handled independently per fleet, enabling hierarchical structures and passive tracking scenarios (supervisor visibility without reciprocal visibility). If a user belongs to multiple fleets, visibility rules apply per fleet; full visibility granted in another fleet prevails.

### New: AIS Member

Fleet Tracking now supports a new AIS Member type. Instead of requiring TZ Professional (or compatible Furuno MFD) to run on a computer with an Internet connection, a vessel can now be added to a fleet simply by entering its MMSI. The vessel’s position is retrieved directly from the TZ Cloud AIS database, enabling fleet configurations that include AIS-only targets.

Adding an AIS Member to a fleet provides several advantages compared to relying solely on TZ Cloud AIS:

- Target Trail is available
- Targets are updated near real time when new data is received by the server (rather than relying on polling)
- Target Track can be enabled
- The target appears in the Fleet List for easy access and centering
- The target is updated even when not displayed on screen (unlike TZ Cloud AIS targets, which update only when visible on screen)
- Up to 7 days of position history can be retrieved, even if TIMEZERO has been turned off (server-side store-and-forward)

AIS Members are displayed with a dedicated icon and classified as “TZ Cloud AIS” from the Tooltip and Fleet target list. They are non-interactive targets, meaning it is not possible to send them messages, routes, or user objects.



*A specific icon, on the right, is used to display AIS member target*

## Updated Fleet Info & Permissions Visibility

The Fleet Info section (Position Report log) has been updated for better troubleshooting.

It now displays all fleets the user belongs to, along with the permission status for each fleet (“Emit Only” or “Emitter & Receiver”). When full permissions apply, all fleet members are listed, and AIS Members are displayed separately.

For each vessel, the date of the last reported position is shown. To reduce clutter, inactive members (no position uploaded for 7 days) are grouped under a separate section.

## Notes (Fixes & Reliability)

- **Acknowledgments:** Message and user object acknowledgments are now displayed only on the TIMEZERO instance that originally sent the corresponding MessageID (fix for multi-PC setups using the same account).
- **Boat ID / MMSI:** Boat ID handling has been improved for fresh installations and MMSI updates, ensuring consistent vessel identity synchronization with the server.

## Summary

These improvements make Fleet Tracking more suitable for professional and supervisory deployments by enabling controlled fleet visibility, supporting AIS-only integration, improving fleet membership transparency, and strengthening reliability.

## Tides & Tidal Currents – Major Data Improvement (NOAA Areas)

Over the past years, we have received recurring customer reports about tides not working correctly in specific locations. These issues were typically localized and tied to station data inconsistencies.

With V5.4, TIMEZERO introduces a major improvement of tides and tidal currents for **NOAA-covered areas**, including:

- USA
- Puerto Rico
- Bahamas
- NOAA Pacific Islands

This update is based on both a database refactor and algorithm improvements validated against official NOAA references.

## Updated Tide Database (DBS 16 v5.4)

A new tides database (**DBS 16 v5.4**) is delivered with TZ Professional / Navigator V5.4.

It remains compatible with previous versions. For NOAA-covered areas, it includes significant station corrections and updated harmonic content.

Some of these new harmonics are only fully exploited when used with the latest TIMEZERO software.

## Improved Tide Accuracy vs NOAA

A dedicated validation effort has been conducted to compare TIMEZERO tide results against official **NOAA tide predictions**.

As a result, tide stations and predictions are now aligned with NOAA reference data across the NOAA-covered regions listed above.

## Tidal Currents Improvements

Tidal currents are often derived from tide stations located nearby.

By improving tide station accuracy and reference consistency, tidal currents also benefit from increased reliability in NOAA-covered areas.

## Ocean-O Auto Filter

Ocean-O Auto Filter is a new feature designed to quickly identify areas with similar oceanographic conditions.

From a selected point on the chart, it automatically adjusts the Min/Max scale of all visible Ocean-O layers, making comparable zones stand out immediately.

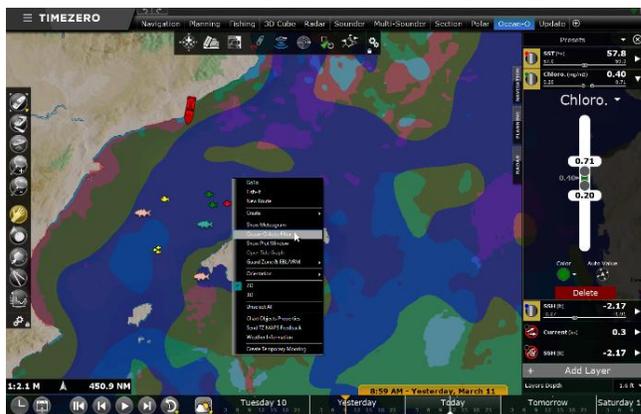
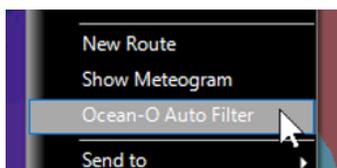
### Key Point: Always Use the Catch Date

Oceanographic parameters (sea surface temperature, chlorophyll, altimetry, etc.) evolve over time. For Auto Filter to be meaningful, it is essential to set the calendar to the catch date (and ideally the time) before running the feature.

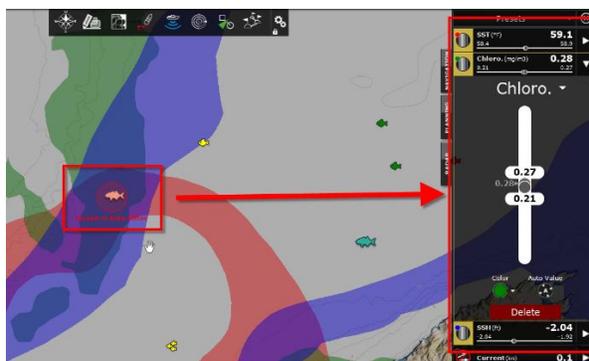
For example, if a fishing trip was successful in a specific area, you can use the catch location at that exact date as a reference to highlight other zones showing similar conditions (same SST, same altimetry, same chlorophyll concentration, etc.).

## How to Run Ocean-O Auto Filter

- Set the calendar to the catch date (mandatory).
- Right-click on the corresponding location:
  - on the chart
  - on a mark
  - or on a catch
- Select **Ocean-O Auto Filter**.



**Result:** All visible Ocean-O layers displayed in **Color Palette** or **Footprint** mode are then automatically adjusted (Min/Max scale) to highlight areas matching the same criteria.



## Refining your result

During the calculation, the area used to determine Min/Max is displayed as a red circle.



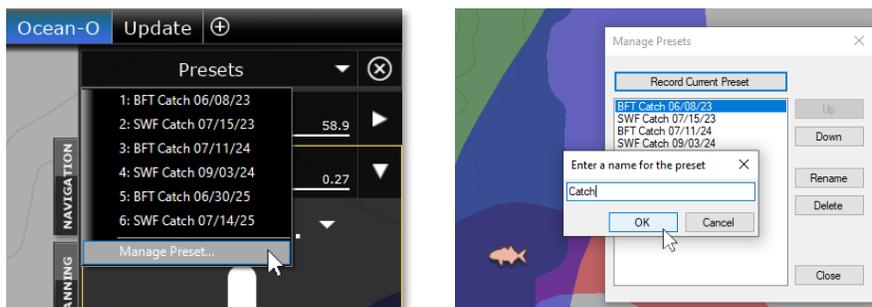
To refine the filtering, zoom in on a more targeted area and run Ocean-O Auto Filter again.



Note: you can also manually fine-tune the result using the MIN/MAX sliders in the side panel (mouse wheel) to adjust the range.

## Saving and Comparing

Once satisfied, you can save the result as a preset. This makes it easy to compare multiple presets later and identify recurring patterns and correlations.



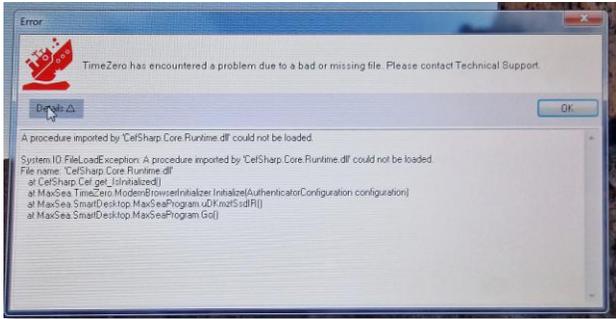
## Summary

With Ocean-O Auto Filter, you can quickly lock in the Ocean-O signature of a productive day. Save it, then reuse it ahead of your next run to pinpoint when those conditions are likely to rebuild.

## Windows 7 No Longer Compatible

Officially, TIMEZERO ended support for Windows 7 some time ago, shortly after Microsoft discontinued its own support for this operating system. However, until the current release, TIMEZERO products remained unofficially compatible with Windows 7, as we did not intentionally remove support from our software.

That said, TIMEZERO relies on several third-party components (including SQLite, .NET, and CefSharp). When these external components stop supporting Windows 7, TIMEZERO may also become incompatible. In the current version, the incompatibility is related to **CefSharp**, which is used for the embedded browser in multiple areas of the software. As a result, the latest versions of TIMEZERO can no longer run on Windows 7 systems and will crash at startup mentioning that the component CefSharp cannot be loaded:



For customers who must continue using Windows 7, we recommend installing the following archived versions, which remain unofficially compatible:

- **TIMEZERO Professional:**  
[https://download.myTIMEZERO.com/TZProfessional/V5/InstallProfessional\\_5.3.0.37.exe](https://download.myTIMEZERO.com/TZProfessional/V5/InstallProfessional_5.3.0.37.exe)
- **TIMEZERO Navigator:**  
[https://download.myTIMEZERO.com/TZNavigator/V5/InstallNavigator\\_5.3.0.25.exe](https://download.myTIMEZERO.com/TZNavigator/V5/InstallNavigator_5.3.0.25.exe)

Please note that these archived versions should be considered a temporary solution. We strongly encourage upgrading to a supported Windows operating system to ensure long-term stability, security, and access to future TZ software updates.

## Improved World Chart Labels.

We have updated the world chart data by adding a large number of place names, both at sea and on land. Many users reported that it could be difficult to orient themselves offshore or in inland waterways due to the lack of labels, as the world chart was previously only lightly annotated.

This improvement is based purely on data enrichment (additional chart labels), with no graphical changes.

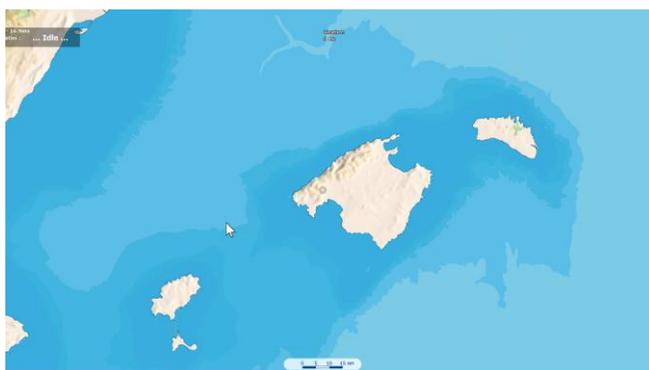
Approach charts have also been updated to include missing island names. For example, some Mediterranean islands previously had no labels (such as the Balearic Islands or Malta), as well as smaller islands along the Atlantic coast (Ré, Oléron), and islands in the Bahamas (Bimini, etc.).

Additional offshore place names, such as canyons and other geographic areas, have also been added.

This improvement applies to **TZ Professional, TZ Navigator, and TZ iBoat.**

Before

After



Availability

- TZ Professional / TZ Navigator: the updated chart data is included in the new full v5.4 installer.
- TZ iBoat: chart data updates automatically (Internet connection required). Simply navigating to the relevant area will trigger the update.

We expect this update to help users orient themselves much faster, whether navigating offshore, coastal waters, inland waterways, or discovering new areas.

Enjoy TIMEZERO v5.4!