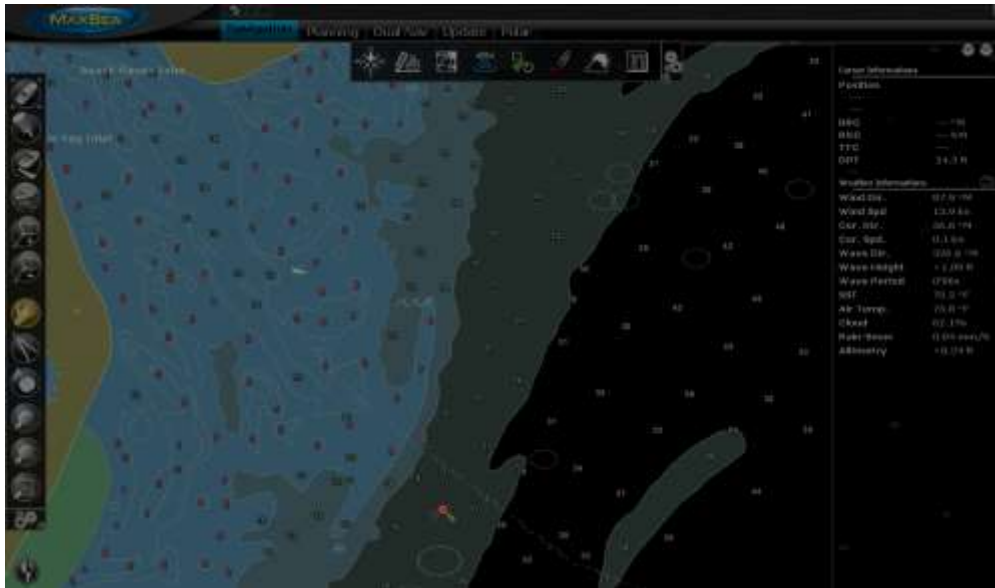
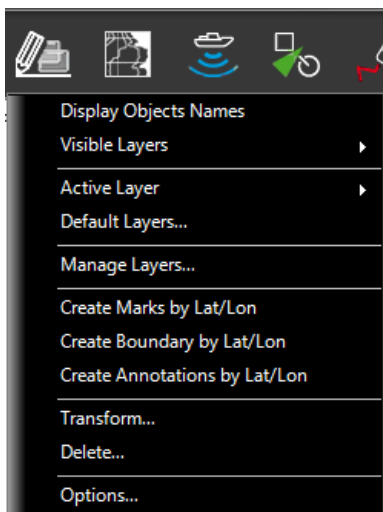


- Optimized for low light condition (dusk and night):



- “Menu” style ribbon offers more functions and scalability:



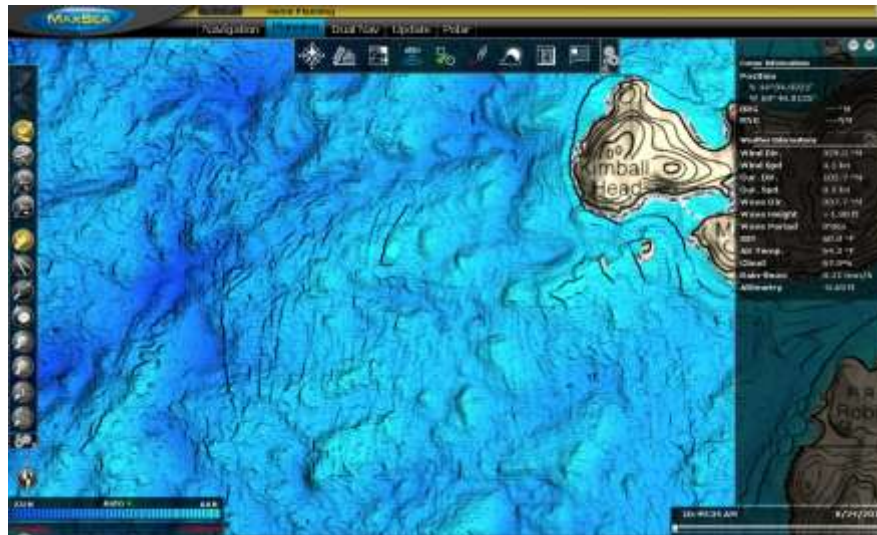
- The “Workspace” proven concept allows to display various customized “views” of the software:
 - The “Monitoring” Workspace is mainly used while underway and gives access to navigation tools (track, PBG, Marks) and radar functions. In this workspace, the Chart Date and Time (used for the tides icon, weather,...) is always real time and cannot be changed.
 - The “Planning” Workspace is mainly used for weather analysis, trip planning and marks management. In this Workspace, you can change the Date and Time (“Virtual Time”) in order to animate Tides, Currents and Weather.
 - The “2D/3D” Workspace is used to work in a traditional 2D/3D Split Screen.

- The “Update” Workspace is used to update the Weather

Note: Each workspace can be customized to only display the tools and buttons you want. It is recommended to keep the “Monitoring” Workspace as simple as possible and perform the advanced tasks in the “Planning” Workspace.

Depth Shading & Contour Lines

The depth shading and the contour lines are used to work on depth data (3D database) in a traditional 2D view or can be used to enhance the 3D presentation (to enhance the relief).

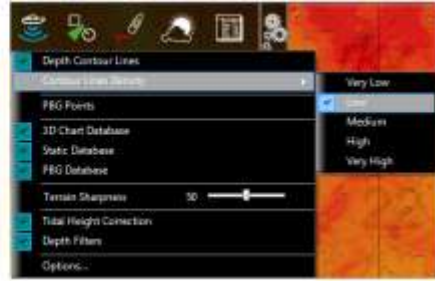


Advanced Depth Shading and Contour Lines settings are available:

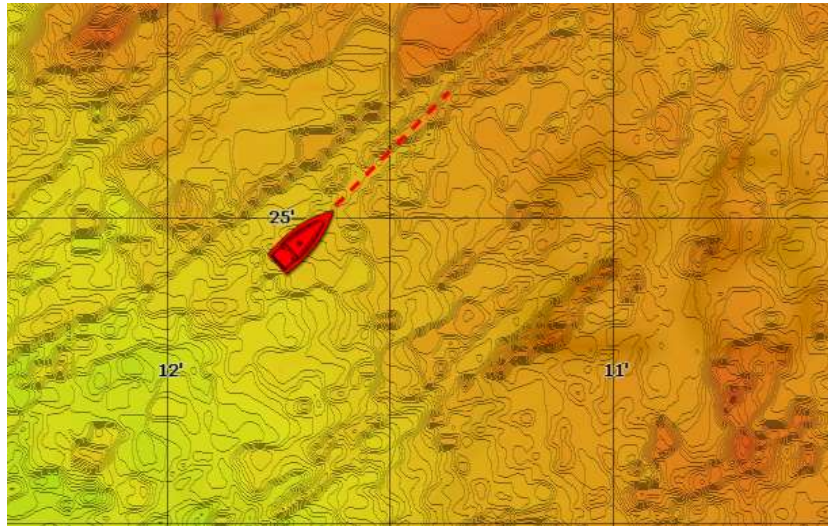
- Adjustable Depth Shading transparency and color shade (available in MaxSea TZ ECS and Plot):



- Adjustable contour lines (only in MaxSea TZ Plot):
The density of the contour lines can be adjusted from the “Scale” (click on the plus or minus to increase or decrease the density), or from the Ribbons:



An innovative GPU algorithm allows to draw on the screen a large number of contour line while keeping the “Time Zero” performance (fast chart redraw in 2D or 3D):



- MaxSea Time Zero introduces a powerful “real-time” auto configuration mode. MaxSea will automatically adjust the color scale and the density of the isolines according to the area and zoom level. Need to click the “Auto-Config” and “Apply” button each time the chart is zoomed or panned like in previous versions of MaxSea.

Click on this area to enable/disable the automatic color scale adjustment

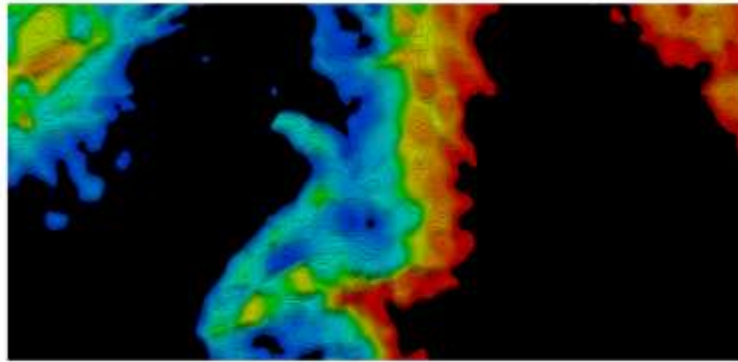


In manual mode, the min/max can be adjusted with the mouse wheel directly on the scale:

Rollover the cursor on the min/max value (when the Auto mode is disabled) and use the mouse wheel to change the value in "real time"



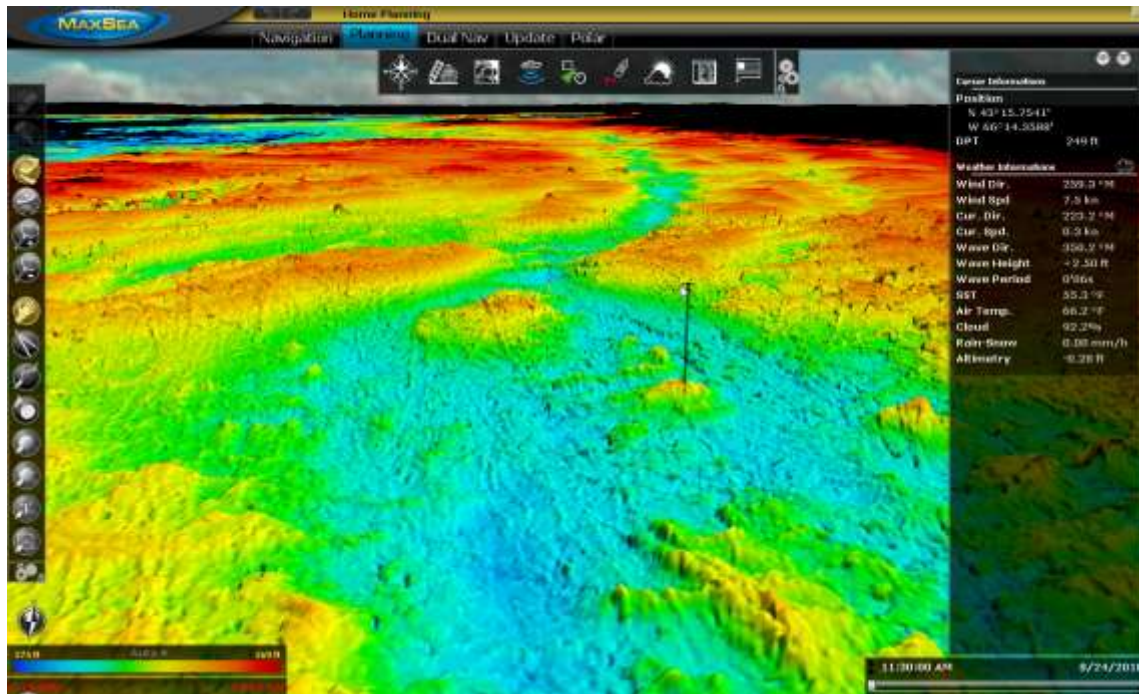
Rollover on the color scale itself and use the mouse wheel to span the min/max at the same time



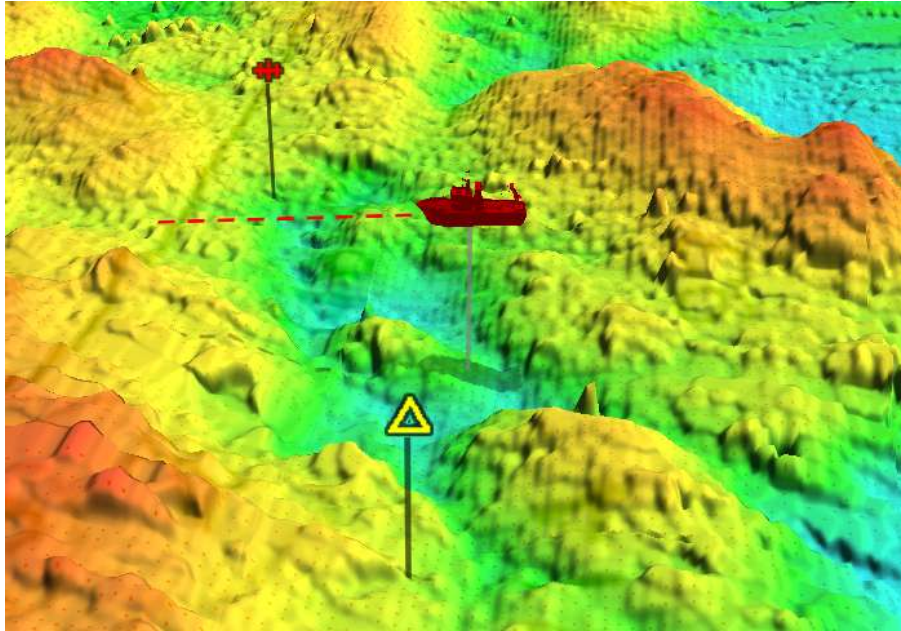
... or manually (using a keyboard) by double clicking on either the min or max value.

3D Chart engine

The Time Zero chart engine uses a native 3D environment. Anything that can be done in the traditional 2D view can also be done in 3D (creating marks, routes, panning and zooming ...).

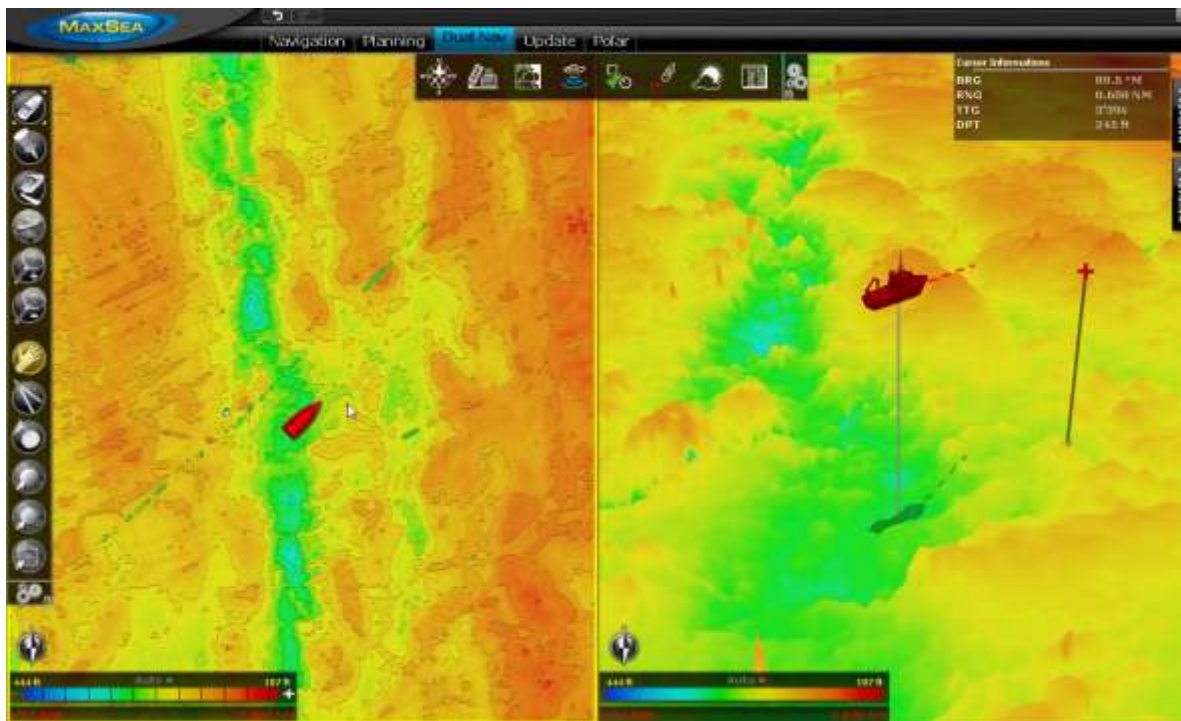


When the chart is displayed in 3D, every object (marks, areas, boat icon, cursor...) remain on the surface but display a shadow on the bottom:



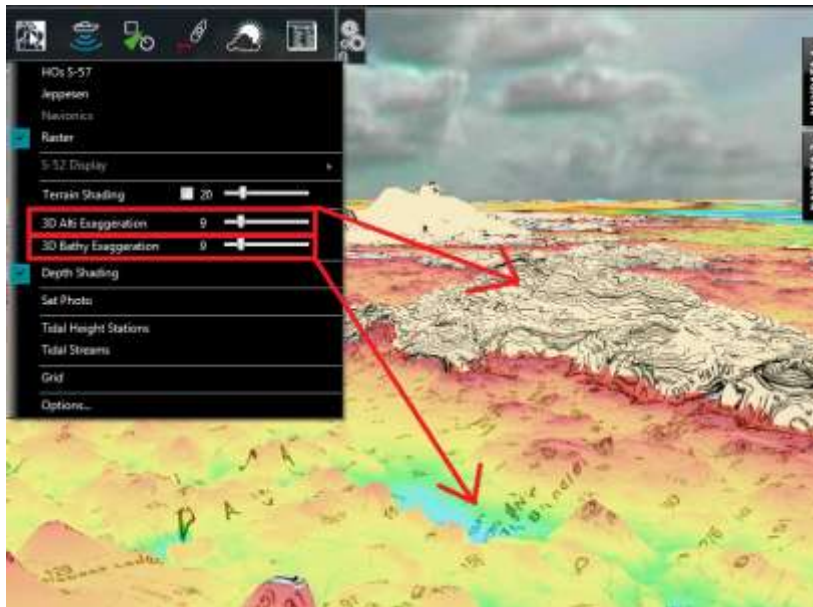
This allows placing marks (or the cursor) with accuracy over pinnacle or any topology that appears in 3D. It also gives a better reference in the 3D view.

For customers that want to see the 3D view while working on a traditional 2D window, you can use the split screen “2D/3D” Workspace:



In split screen, a ghost cursor will appear on the 3D windows marking the corresponding location of the cursor on the 2D window.

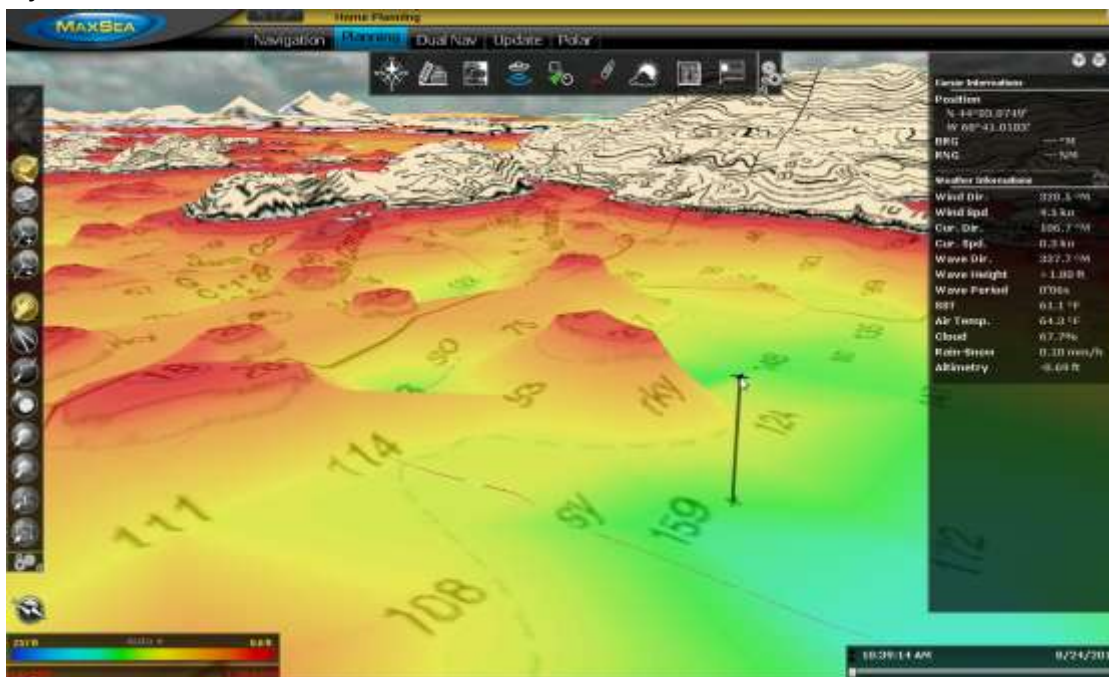
The independent 3D exaggeration allows to set the vertical exaggeration on land and below water using independent values:



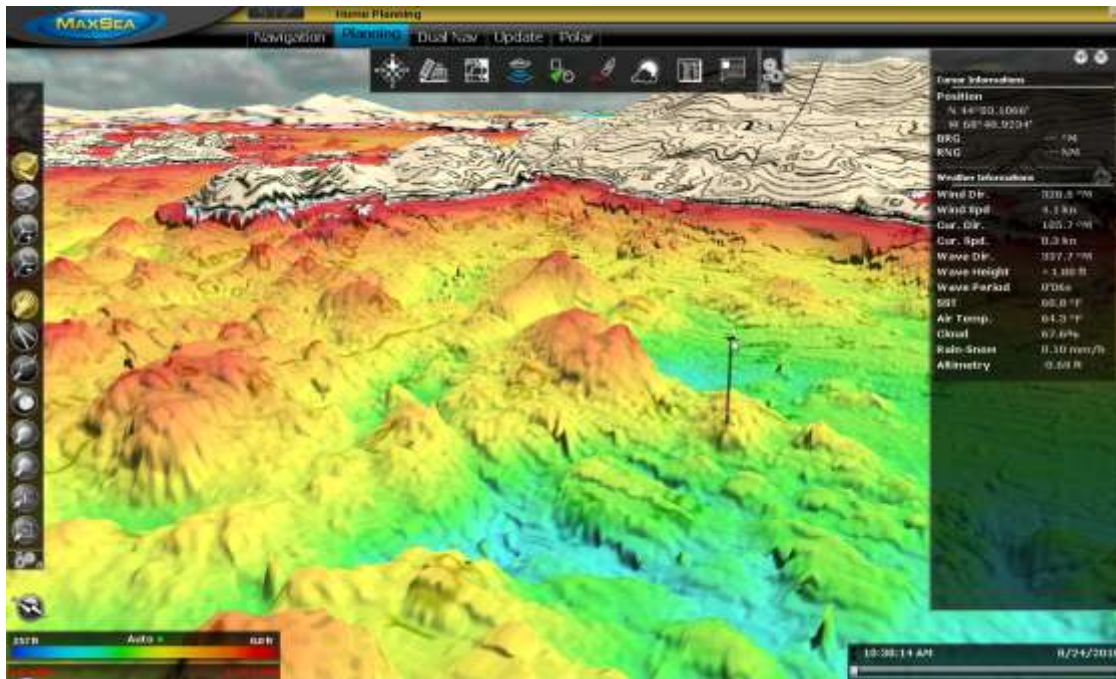
PBG

PBG has always been one of the “core” functions of MaxSea. Lots of resources have been focused on improving furthermore the PBG function in MaxSea Time Zero. The 3D database updates are available in real time in the Time Zero environment: no need to wait or to refresh the screen. The accuracy has also been improved (the depth points are no longer recorded in a grid but at their real location!)

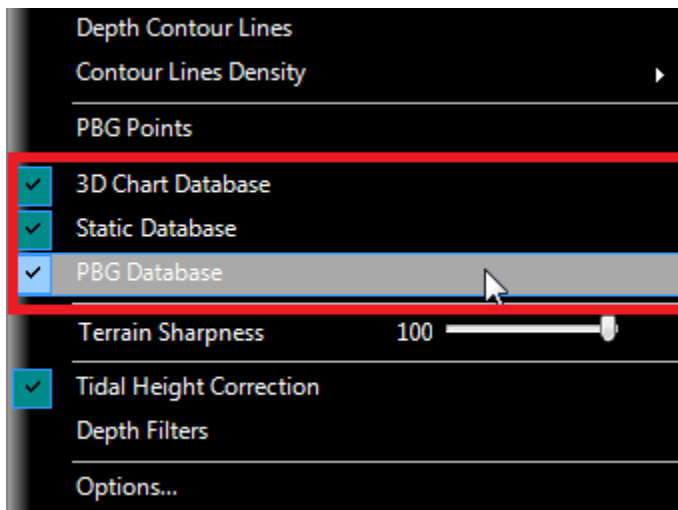
Before PBG:



After PBG:



The new innovative 3D databases management supports large quantity of data.



- The “**3D Chart Database**” uses the “.dbt” files from the MM3D charts (stored in: *C:\ProgramData\MaxSea Int\DATA\Terrain*)
- The “**Static Database**” stores the depth information that has been imported (either from a “PTZ” or “XYZ” file). In most cases, this database will hold the PBG data that was created using a previous version of MaxSea. Note that when you import 3D data in the static database, MaxSea creates individual files (ending with “.ptz2”) for each import. This allows (advanced users) to “remove” an import. Simply remove the corresponding file from *C:\ProgramData\MaxSea Int\DATA\PTZ2*.
Note: The import functions support large files! 2GB files can be imported without trouble.

- The “**PBG database**” is the current or active database that stores the depth recorded in MaxSea Time Zero. This database is “more powerful” because it will allow advanced edition/transformation of the data in the future (for example “erase all the PBG recorded in between two dates”). The active PBG data is stored in the same file as the tracks:

C:\ProgramData\MaxSea Int\DATA\Tracks2.mdf

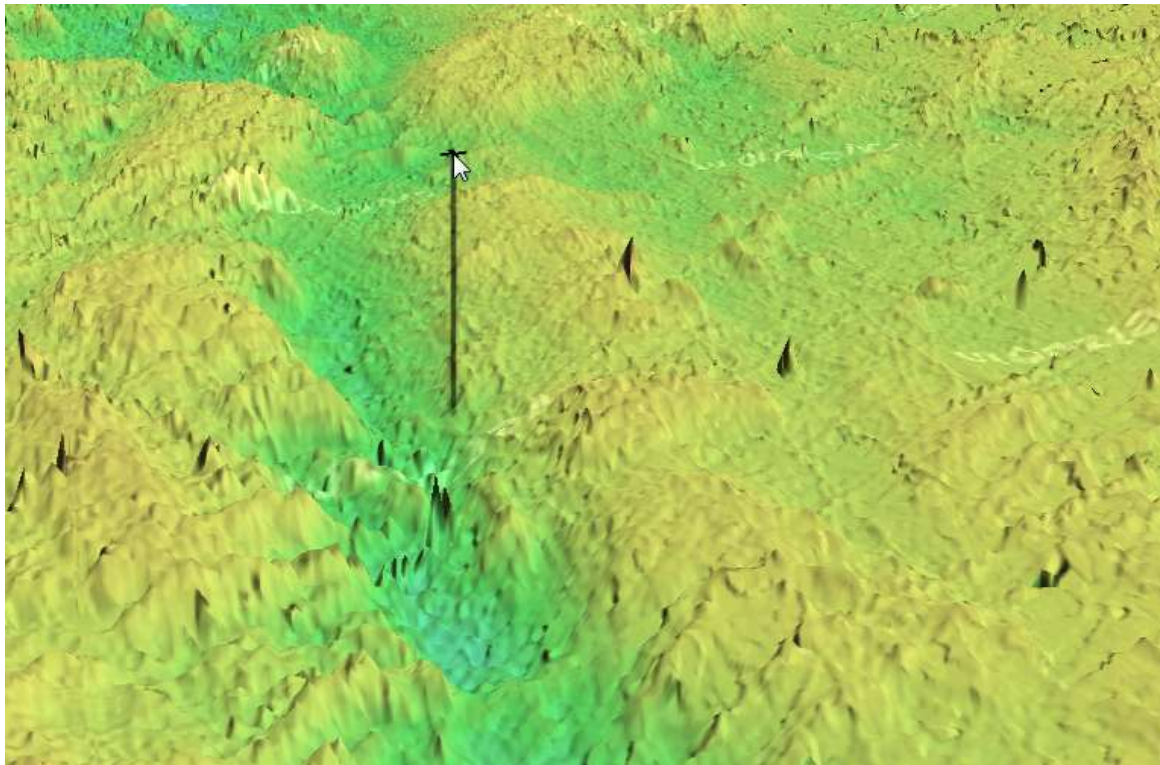
Note: In the future, a function will be developed to transfer the active PBG data in the static database (transform it into a “.ptz2” file).

Each of these 3D databases can be activated or disabled independently. Unlike other software, you don’t merge the information coming from your sounder and other sources. When all the 3 databases are selected, MaxSea merges them in real time on your screen (but stores them independently in the background).

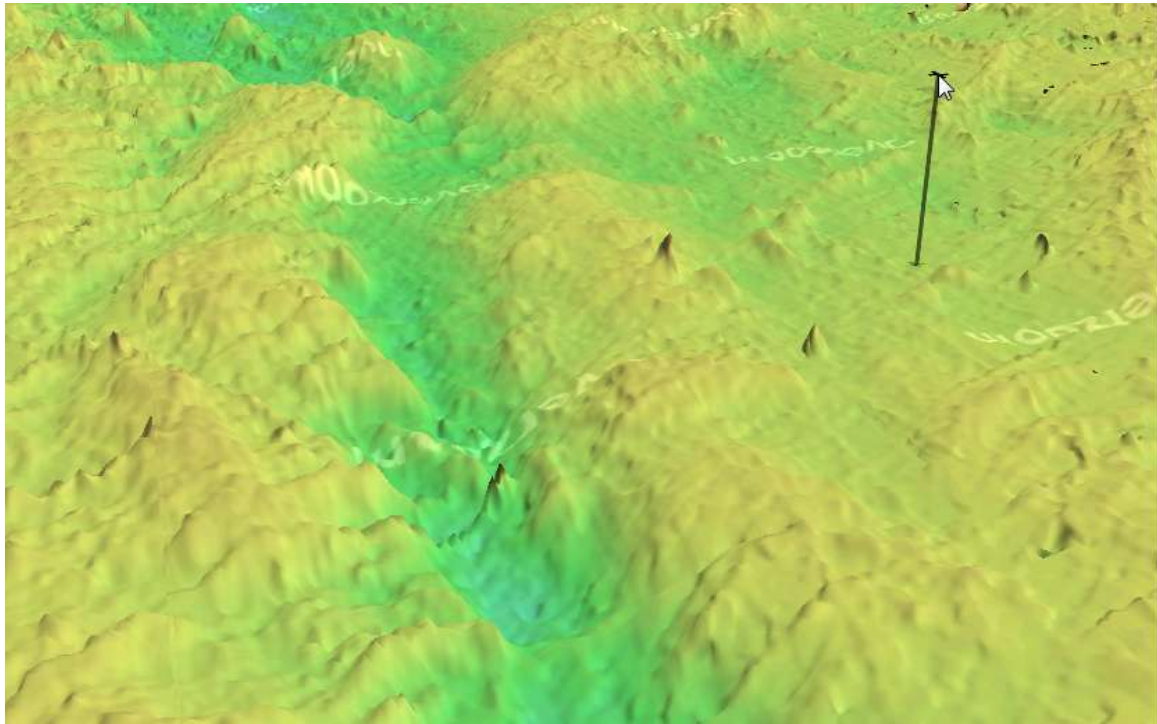
Additional settings allow you to refine the 3D data presentation on the screen (these settings don’t change how the data is recorded and thus can be adjusted in real time):

- Terrain Sharpness: This parameter (available under the “PBG” ribbon) allows to “smooth” or “sharpen” the data.

High Sharpness Value:

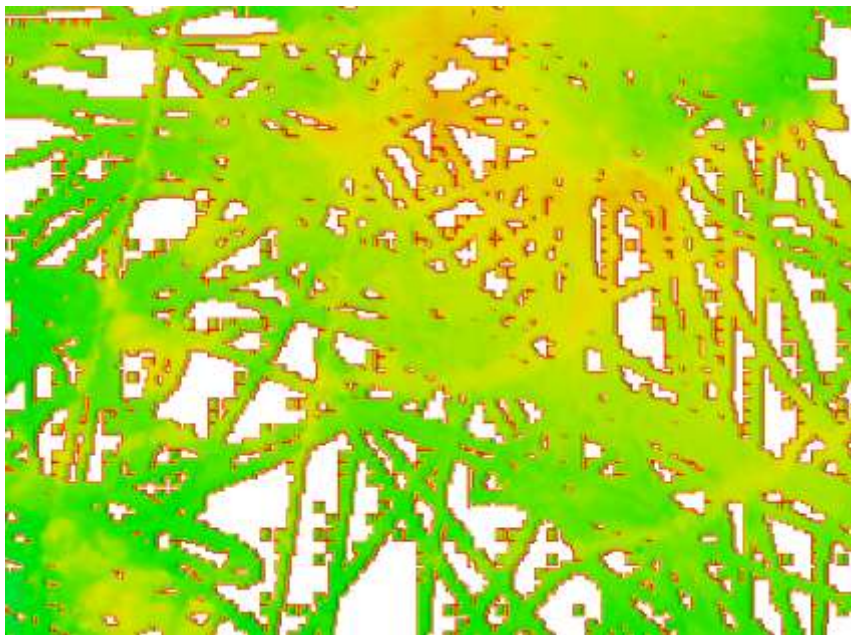


Low Sharpness Value:

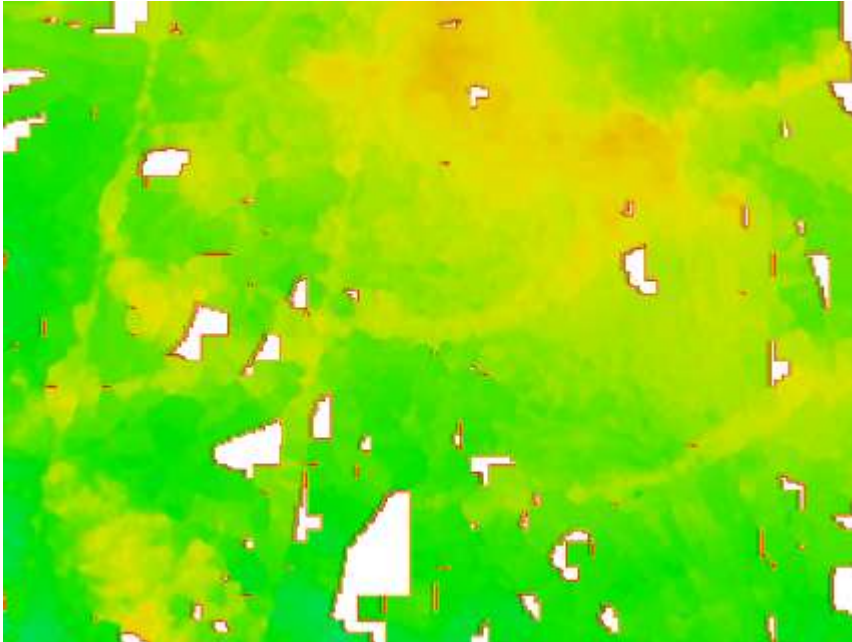


- PBG Brush Width: This parameter (found in the PBG menu) allow to change the “size” (or width”) of a PBG track. Increasing this value widen the interpolation in between the various “pass” (or tracks).

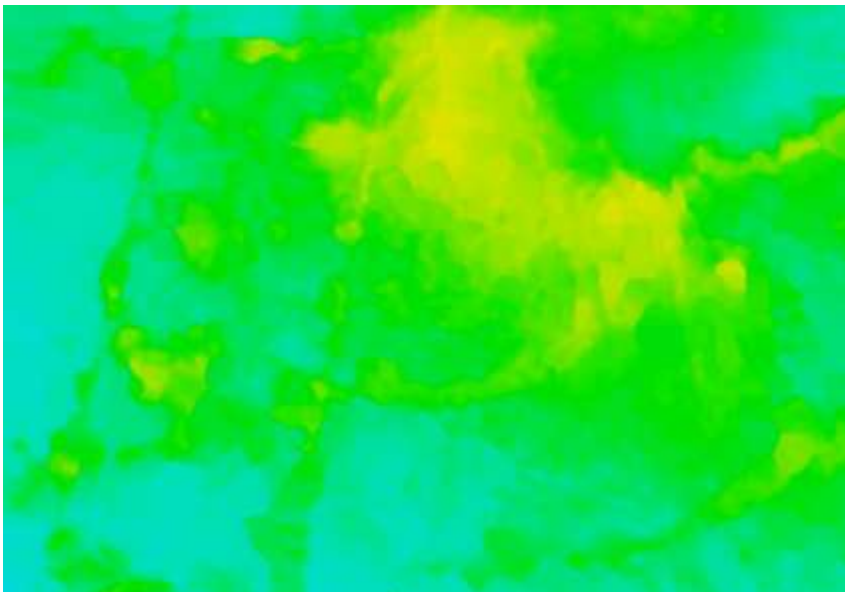
Small Size (each individual pass can be seen):



Medium Size (the “holes” are being filled):



Large Size (the entire screen is interpolated):

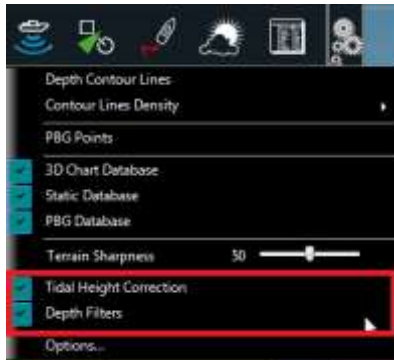


Note: even with a very large brush size, the details are not disappearing. MaxSea Time Zero uses a very advanced interpolation process that keeps a good detail where the data has been recorded while filling the “holes”.

A recommended brush size is in between 100 to 300m. Feel free to experiment as this parameter is dynamic (so you can change it in real time) and is applied to both the PBG and Static database.

Note: If the user is just starting to record new 3D data, a large brush size is usually recommended.

PBG Filters



MaxSea Time Zero offers advanced Tides correction and Depth Filters that can be turned ON/OFF from the PBG Ribbon. The configuration of these filters is performed from the Options menu.

- Tides Height Correction: In automatic mode the nearest tide station (from own ship position) will be used. In manual mode, you choose the Tide Station you want (choose the reference tide station)

Note: You can set the reference station directly from the chart by right clicking on a tide station icon and select "use as reference station".

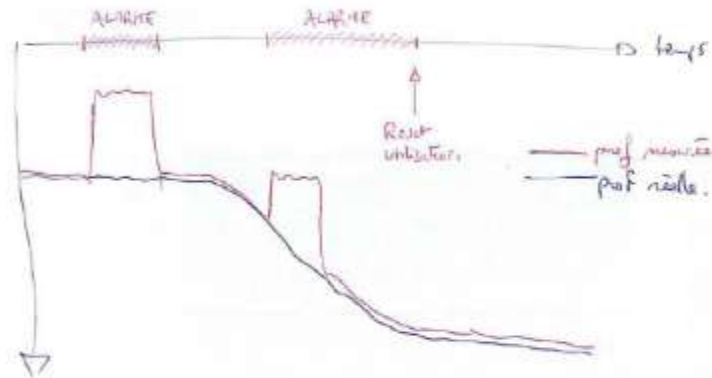
- Depth Filters:

Minimum Depth Filter	16.4 ft
Maximum Depth Filter	3,281 ft
Consistency with Previous Recorded Data	75.0 %
Consistency with 3D Database	75.0 %
<input type="checkbox"/> Merging 3D Chart Database	
Fixed Data Rejection	Off

- Minimum/Maximum Depth Filters: you can define a minimum and maximum value. When the depth sent by the sounder fall out of this range, the depth value is not recorded
- Consistency with previous data: This filter makes a comparison between the current depth value returned by the sounder and the last know good depth value (which was recorded). For example, if this filter is set to 80% and if the last depth recorded was 100m, the next depth value needs to be in between 20m (100-80) and 180m (100+80) in order to be recorded. When recorded, this value becomes the reference for the next depth value.

Note: In some case, this filter can be "stuck" and needs to be rested by the user (in order to force MaxSea to accept the current depth as a new reference)

- if the real depth changes a lot in a specific area (in this case try to increase the filter value)
- if the sounder returned a false depth (which is rejected) then re-acquire a good bottom after a while which falls out of the last known good depth range. On the first example of the graph below (left), MaxSea reject the value (alarm) then accept it again once the sounder return a good data (after passing the fish school). On the second example, the depth change dramatically during the alarm and MaxSea cannot recover.

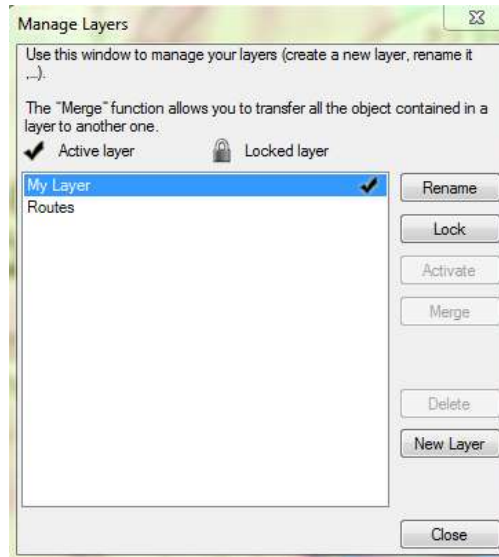


- o Consistency with 3D Database: This filter uses the same algorithm as above but compares the depth value sent by the sounder against the depth recorded in the 3D database (for the same location). When “Merging 3D Chart Database” is checked in the PBG menu, the 3D Data from the chart (.dbt files), the 3D data from the static database and the 3D data from the PBG database are used all together. If the option is unchecked, only the 3D data from the static and PBG database is used.
- o Fixed Data rejection: Sometimes, when the sounder is out of range, it outputs a fix depth value. This filter will minimize fixed data being recorded in the PBG database.

Mark, Tracks and Layers management

MaxSea Time Zero uses an innovative and powerful database management to handle the marks, tracks and layers. The user does not have to manually handle files anymore (known as the “ptf” files in previous version of MaxSea). Basic objects manipulations (on marks, tracks, areas...) are much easier to perform in MaxSea TZ. For example, transferring objects from one layer to another is very easily done (think about all the duplicated objects filling the PTF files when users were using copy and paste!). To perform this action in MaxSea TZ, just right click on a mark (or a multi-selection) and choose “Assign Layer”. This new management also brings new advanced features such as undo/redo, the “transform” and “delete” window or the list for Marks, Tracks and objects that can be filtered.

- **Layer Management:**



The “Manage Layers” window allows creating, renaming, locking or merging layers.

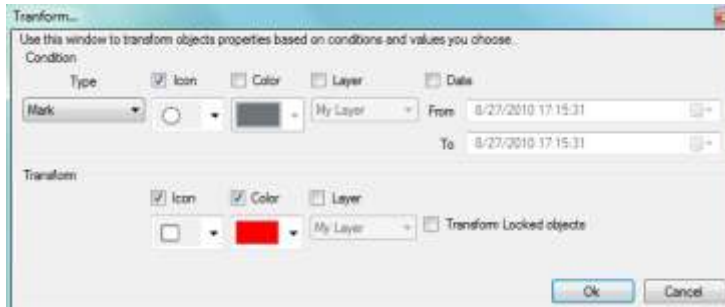
Note: You cannot Delete or Merge the active layer.

When you want to merge two layers (transfer all the objects from a “source” layer to another “target” layer), first select the source layer then click on merge, then choose the target layer. At the end of the process, the source layer is deleted and all the objects are transferred.

- **Default Layer:** By default, all marks (points, areas, circles, annotations) and tracks are being stored on the “Active Layer” (same behavior as the previous version of MaxSea). The new “Default Layer” window of MaxSea TZ allows you to bypass this rule. For example, you could want to have all your tracks (or the AIS/ARPA tracks) recorded in the same specific layer all the time. The “default Layer” function allows you to do just that.



- **Transform and Delete Windows:** The transform and delete windows take advantage of the powerful database management. The transform window allows you to select objects (based on specific conditions) and transform their properties. The below example will select the Marks (points) that have a circle icon of any color belonging to any layer that have been created at any date and will transform them in red with a square icon.



Here are some examples of how the Transform window can be used:

- Select all the Red Tracks and transfer them on a specific layer
- Select all the objects that have been created at a specific date and transfer them onto another layer
- Change the color of all the tracks that are stored on a specific layer

The “Delete” window use the same concept to select the objects as the “transform” window. Instead of transforming the properties of the objects, the “Delete” window will erase them.

Note: If objects (or a layer) that you want to transform are locked, make sure to check “Transform Locked Objects”.

Note: You can “Undo” after transforming or deleting object. Just be aware that this can take a long time (5-15 seconds) if lots of objects were transformed.

- **Multi-selection:** Use the “Select” tool to select multiple objects. This is very useful when you want to transfer multiples marks to another layer: simply select them and right click on them.



Note: If you right click on the tool itself, you can select the “Lasso” mode that allows to “draw” a free selection.

- **Lists:** Lists views are now available for Marks, Tracks, Boundaries and Annotation. You can sort (by double clicking on the column title) and display your marks in an “Excel like” view. This is very useful to center on a specific object: simply click on the first column (or double click) to center on the corresponding object.

	Layer	Time	Length	#Points	Starting Time	Ending Time
▶	Tracks	0'12s	33 yd	9	3:02:53 PM 9/1/2010	3:03:06 PM 9/1/2010
	Tracks	0'22s	52 yd	15	3:03:27 PM 9/1/2010	3:03:49 PM 9/1/2010

The “Filter” button allows displaying specific objects in the list using customized conditions:

