

WinTAK Civilian

Windows Team Awareness Kit (Civilian)
Software User Manual

Version: 4.1

19 August 2020



Contents

Overview	5
Plug-in Manager	6
3D View	7
3D Models.....	7
Placement	8
Self Marker.....	8
Point Dropper	9
Radial Menus.....	10
Range & Bearing	11
Bloodhound Tool.....	11
Bullseye Tool.....	12
R&B Circle Tool.....	12
Dynamic Measure	12
Measure	13
Dead Reckoning	14
Routes.....	15
Routes (Continued).....	16
Navigation	16
CASEVAC.....	17
Maps & Favorites.....	18
Saving a Map Layer.....	18
Overlay Manager	19
Search.....	19
Sort	19

Common Operating Picture (COP) Refresh.....	19
Marker Zoom Level.....	20
Hashtags and Sticky Tags	20
Multi-Select Export & Delete.....	21
Export Files	21
Send Previously Exported Files	21
Delete Overlay Items.....	21
KML Authoring	22
Lasso Tool	24
Data Package Tool.....	25
Contacts.....	26
Encrypted Mesh	27
Video Player.....	28
Adding a Video Stream.....	28
Viewing KLV	29
Live Video Map Display	29
Go To	30
Drawing Tools	31
Create a Shape	31
3D Shapes	33
Geo Fence Tool.....	33
Track History.....	34
New Track.....	34
Track User List	34

Digital Pointer Tool	35
Mark Tool	35
Digital pointer	36
Place Reds	36
Local DP	36
Elevation Tools.....	37
Viewshed	37
Elevation Contour Lines.....	38
DSM Support	38
Import Manager.....	39
WFS (Web Feature Service) Support	40
Multiple Directories.....	40
Cloud/FTP	41
Cloud/FTP (Continued).....	42
Emergency Beacon.....	43
ATAK Manager	44
Toolbar Manager	45
Clear Content.....	46

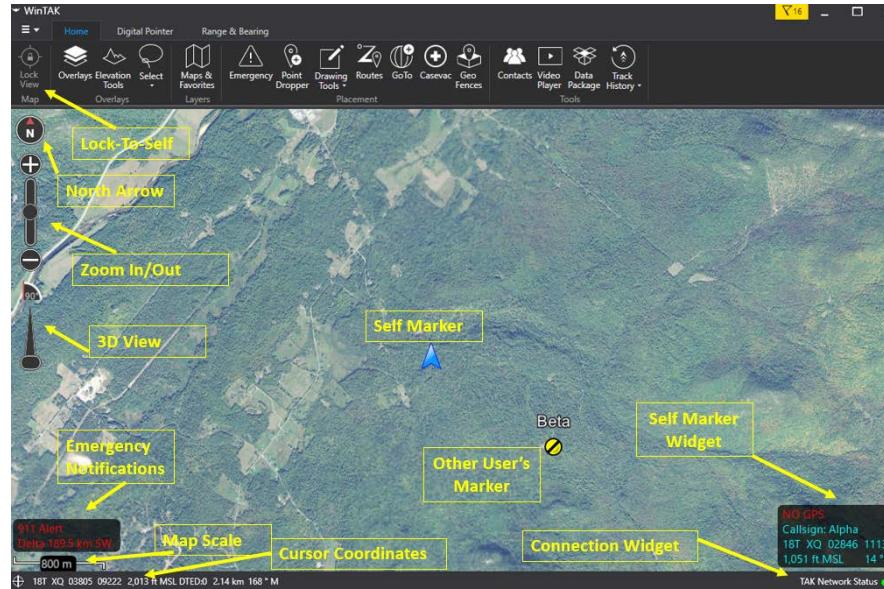
Overview

The Civilian Windows Team Awareness Kit (WinTAK) is a Government-off-the-Shelf (GOTS) software application and mapping framework for Windows devices. WinTAK has been designed and developed to run on the Windows operating system both in a tactical environment and in a Command and Control environment. The software application is an extensible moving map display that integrates imagery, map and overlay information to provide enhanced collaboration and Situational Awareness (SA) over a tactical meshed network. WinTAK promotes information flow and communications from the tactical environment to command enterprise locations.

If GPS is enabled, the **[Lock-To-Self]** feature can be used to lock the view on the user's Self Marker.

Users can rotate the map by long pressing/right clicking and dragging the map. To return the map to north up select the **[Compass]** in the upper left corner of the map.

The **[+]** and **[-]** sliders allow the user to zoom in and out of the map. Select the **[+]** or **[-]** icons to zoom by steps or use the slider for more precise zooming.



 Informational text is provided to assist the user with the application. Drag a window or select on the down arrow to un-dock a window, re-dock the window by dragging it to the center-right edge of the screen. Use the **[Pin]** icon within a drop-down window to hide the display. Select the **[X]** button to close a window.

Emergency Notifications are displayed in the lower left corner of the map interface and can be selected to display in list form.

The toolbar runs across the top of the display. To hide and reveal the Toolbar, click the **[Arrow]** in the upper right corner. Press the F11 key on the keyboard to have WinTAK enter fullscreen mode. The WinTAK title bar and Windows taskbar will both be unavailable while in fullscreen mode. The toolbar will also be minimized but can be displayed by selecting the arrow button in the upper right corner.

The Self Marker Widget displays pertinent information about the Self Marker. This includes callsign, location, elevation (if DTED is installed) and bearing. The display units can be changed in Settings > Display Preferences > Unit Display Format Preferences. The Self Marker Widget can be hidden in Settings > Display Preferences > Show Self Location Widget.

When troubleshooting an issue, a technician may request the user to activate greater debug logging. To do so, select the **[Application Menu]** in the upper left corner and select Support > **[Log Debug Information]** checkbox.

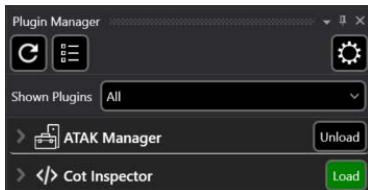
The Map Scale adjusts with the map when zoomed in and out. The geographic coordinates of the user's cursor are displayed below the Map Scale. The coordinate system in use can be changed through the preferences located in Settings > Display Preferences > Unit Display Format Preferences > Coordinate Display. If DTED is installed, elevation information will also be displayed.



Notifications and alerts are indicated by the notification flag at the very top of the screen. Select it to display all notifications in list form.

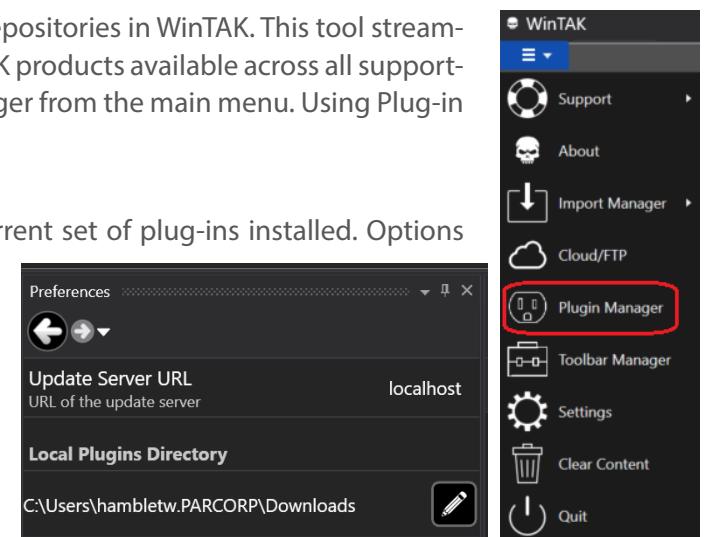
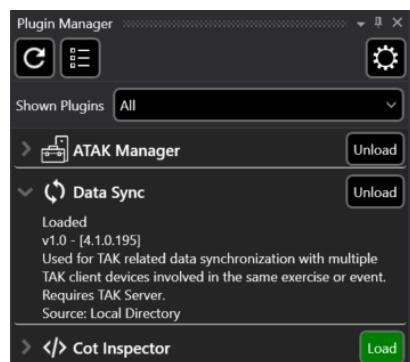
Plug-in Manager

The Plug-in Manager tool allows a user interface for managing online products and product repositories in WinTAK. This tool streamlines the process of obtaining plug-ins and provides a single location for the user to manage TAK products available across all supported TAK product repositories. To install plug-ins and load them, select the WinTAK Plug-in Manager from the main menu. Using Plug-in Manager, the user can load/unload plug-ins from the core WinTAK application.



When Plug-in Manager is launched the display shows the current set of plug-ins installed. Options available are refresh the listing, multi-select and settings.

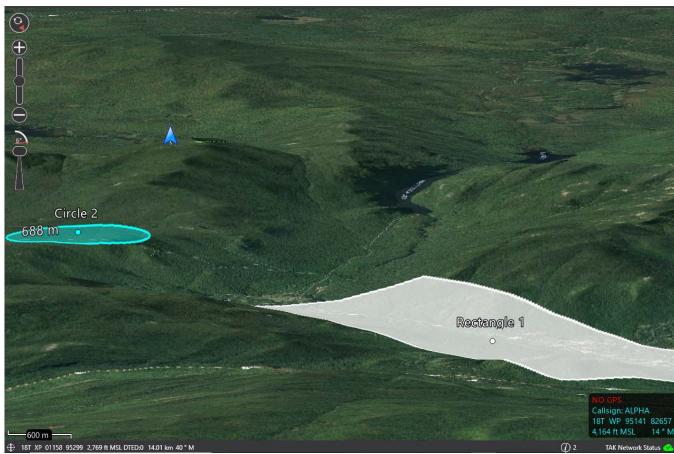
From the settings menu, the user configures where Plug-in Manager searches for available plug-ins. Plug-in Manager provides support for searching both a Web Server (Update Server) or a directory on the local machine.



From the status window, the user can perform the following operations: check the version, description and status of a plug-in; load or unload a single plug-in; or use the multi-select tool and load/unload multiple plug-ins with a single operation.

Note that the load/unload options are enabled after the user has selected a plug-in(s) to work with.

3D View



WinTAK features 3D viewing of terrain and map items (DTED required). To enable 3D view, drag the **[Tilt Slider]** towards the tilt view icon. As the slider moves forward, the view angle changes as indicated by the tilt view icon. Right-click and drag on the map surface to rotate the map view as needed. Left-click on the **[Compass]** icon to return to North Up orientation. Return the **[Tilt Slider]** to the 90 degree position to end 3D View. While viewing the map from an angle, some map items will appear raised above the map surface if they have defined elevations. Drawing tools shapes will contour to the terrain.

3D Models



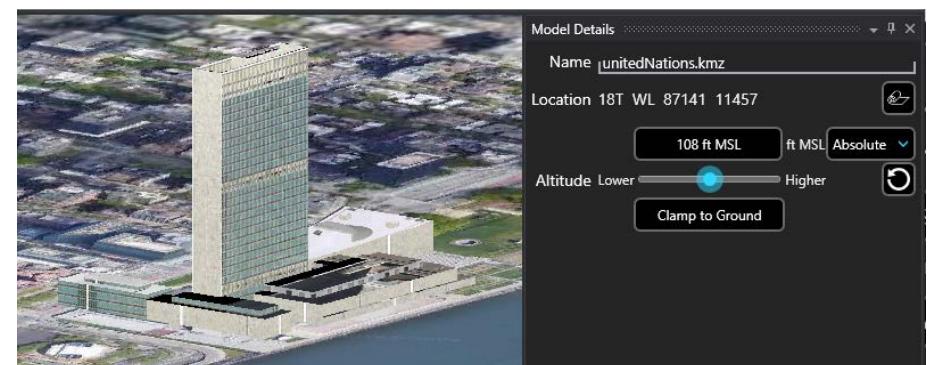
WinTAK supports the use of 3D models. OBJ models and other types from products such as Pix4D can be imported via the Import Manager or can be dragged and dropped onto the WinTAK window to be imported. If using Import Manager browse to the .OBJ file and import only that file, or browse to a .ZIP file that contains the .OBJ file (and others) and import only that file. If the 3D model is dragged and dropped, the user will be asked for an import strategy. Select the 3D Model option.



To resize or rotate the 3D model, select the **[Rubber Sheet Tool]** icon and follow the onscreen instructions. Select the **[Undo]** button to reverse any changes.

The model can be adjusted to be either Absolute or Relative to the ground. The user can also adjust the model using the Altitude slider. Select the **[Clamp to Ground]** button to place the model directly on the map surface.

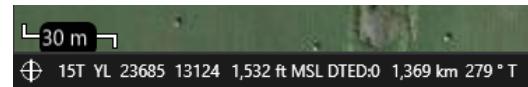
Loaded 3D models will appear as their own category in Overlay Manager and can be toggled on/off or removed from there.



Placement



Users can enter locations of interest using the Point Dropper tool. Select the [Point Dropper] icon to access different types of markers to drop on the map, edit the details and share data/information with other network members. Once any marker is placed, all functions/details can be accessed by selecting the marker to bring up its radial.



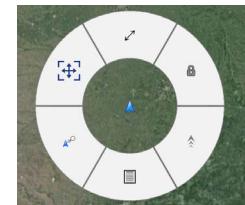
The Coordinate Indicator (located in the lower left corner of the map interface) displays the geographic location and elevation of the mouse pointer. Users can select from a variety of coordinate systems for this display. To set the preference, select Settings > Display > Unit Display Format Preferences > Coordinate Display and choose an option.

Self Marker

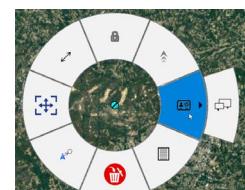


The Self Marker is displayed as a blue arrowhead at the user's current location. The options available on the Self Marker radial are: Polar Coordinate Entry, Fine Adjust, Range & Bearing Line, GPS Lock to Self, Breadcrumbs and Details.

WinTAK supports the following GPS devices, Globalsat USB BU-253S4, Dual Electronics Bluetooth XGPS 160 and the Bad Elf Bluetooth GNSS Surveyor. A Stationary GPS option is also available in Settings > My Preferences > GPS Preferences > GPS Type. This option is useful for operation centers that have machines without built-in GPS capabilities. Users can select the [Stationary Location] button to set their location, the user's Self Marker will be set to that location even after exit and restart. Other options include: Network provided GPS, External GPS, Internal GPS and Off.



Other TAK users appear on the display as a colored circle. The color of the circle represents the user's Team affiliation, with additional lettering inside the circle to identify the role of the user on the team. Team member markers that include a diagonal line indicate that the GPS location is not available. A solid icon indicates that the team member has GPS reception.



Available roles include: Team Member, Team Lead (designated by a TL in the center of the marker), Headquarters (HQ in center), Sniper (S), Medic (+), Forward Observer (FO), RTO (R) or K9 (K9). The options available when the user selects another user's Self Marker are: Delete, Polar Coordinate Entry, Fine Adjust, Range and Bearing Line, GPS Lock on Friendly, Breadcrumbs, Contact Card and Details.

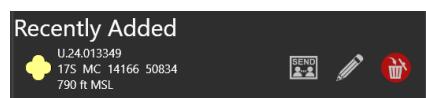
Point Dropper

Select the [Point Dropper] Icon to open the Point Dropper Tool panel. Select from the iconsets and individual markers within that set to add them to the map. Move between iconsets by selecting the left or right arrows next to the set name. Select the down arrow next to an iconset name for a drop-down menu of all available iconsets.

The Marker iconset affiliations are: Unknown, Neutral, Red and Friendly. Select the affiliation then tap a location on the map interface to drop the marker.

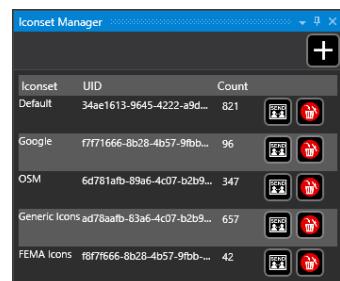
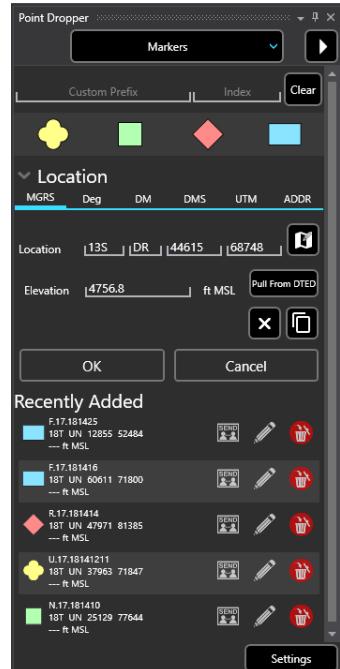
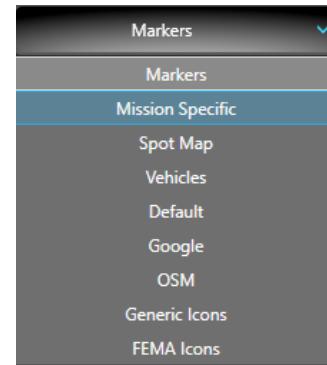
When placing markers, WinTAK will use a default naming convention. To change the standard naming convention of CoT Markers to a custom name, enter text into the Custom Prefix and/or Index fields. Text entered into Custom Prefix will name each marker and the index number will begin with the Index field entry and incrementing each subsequent marker.

Select the [Location] drop-down arrow to manually enter a position for a marker to be placed on the map. WinTAK supports six formats for location entry: MGRS, Degrees, DM, DMS, UTM or Street Address. Select the [Map] icon to fill the fields using the current center of the map display. Elevation information for the marker can be manually entered or can be added by selecting the [Pull from DTED] button (when available). Select [OK] to place the marker.

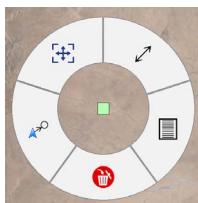
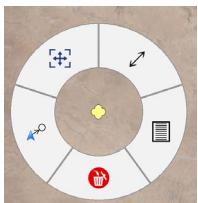


The recently added display lists the latest markers and provides quick access to [Send], [Edit] or [Delete] those markers. Select any marker in the list to pan to it on the map display.

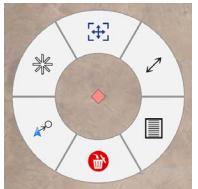
Use the [Settings] button at the bottom-right of the Point Dropper panel to open the Iconset Manager and display a list of installed iconsets to [Send] or [Delete] from the device. Select the [+] icon to select and import a new iconset for use. Valid iconsets become immediately available in the Point Dropper Tool.



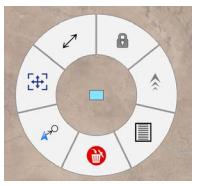
Radial Menus



The options available for Unknown and Neutral Object Markers are: Delete, Polar Coordinate Entry, Fine Adjust, R&B Line and Details.



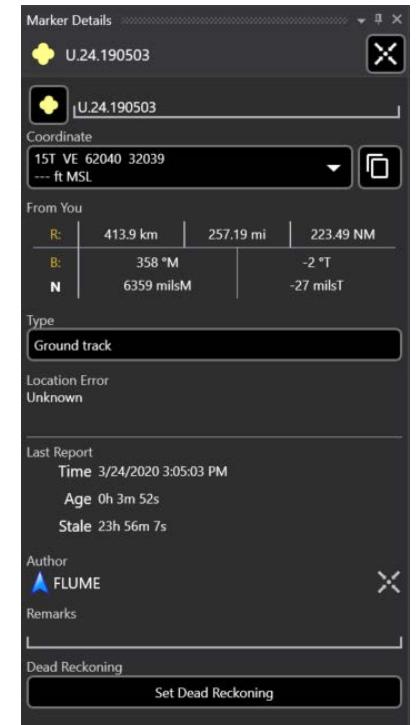
The options available for Red Object Markers are: Delete, Polar Coordinate Entry, Bullseye, Fine Adjust, R&B Line and Details.



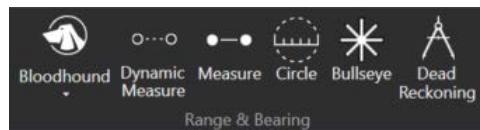
The options available for Friendly Object Markers are: Delete, Polar Coordinate Entry, Fine Adjust, R&B Line, Lock-On Friendly, Bread-crumbs and Details.

Select **[Details]** on the marker radial menu to make modifications that include: Name, Coordinate Location, Elevation, Marker Type and Remarks. Selecting Marker Type opens a dialog box that provides additional categories. Select the **[Paperclip]** icon to attach files, including images, to the marker. Select the **[Send]** icon and choose individual marker recipients or **[Broadcast]** to send to all network members. Select the **[Auto Send]** option to broadcast the marker to other TAK users on the network and the information of the marker will be automatically resent about once every 60 seconds.

Dead Reckoning can be set for the marker from the Details panel. Please see the Range & Bearing section for more information on the Dead Reckoning feature.



Range & Bearing

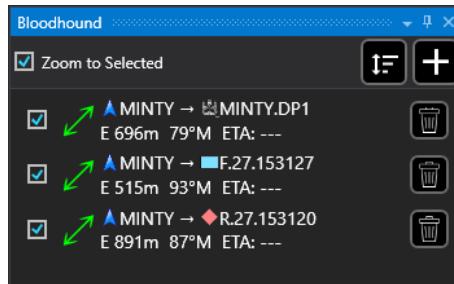


The Range & Bearing (R&B) tool set allows the user to access the Range & Bearing functionality, which provides several measuring tools. Range & Bearing capabilities allow the user to measure distances, monitor Digital Pointers and track objects.

Bloodhound Tool



The Bloodhound Tool provides support for tracking and intercepting multiple map items simultaneously. This tool allows the user to select a pair of map objects and create a Range & Bearing line between them. A text widget in the lower left hand of the map shows Range & Bearing information for the Bloodhound with the soonest ETA. A projected point of intercept will also be visible on the map based on the parameters assigned to each map item using the ETA calculations.

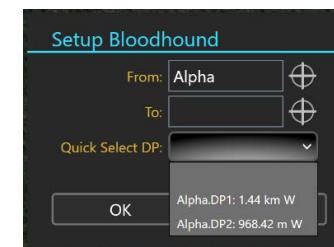


Select the [Bloodhound] icon to open the Bloodhound Tool. A window will open, prompting the user to choose where to start [From:] and where to bloodhound [To:]. Select the first reticle to change the default self marker Callsign to another map item. Select the second reticle to choose a map item to Bloodhound to. Select [OK] and Bloodhound will be activated. While Bloodhound is active, the user will have the opportunity to create additional Bloodhounds from within the Bloodhound panel or delete ones that were previously created. If either point of a Bloodhound moves, the widget will show the updated information. The Bloodhound panel will keep track of any updates and sort the information based on how the user chooses, if multiple Bloodhounds are active simultaneously. By default, Breadcrumbs will also automatically turn on for both the tracker and the target when tracking has been initiated. This can be disabled from within the Bloodhound Preferences at any time. [Zoom to Selected] is also an option available from the Bloodhound panel. [Zoom to Selected] ensures that the Bloodhounds the user wants to observe will always remain in view. This option is enabled at the top of the Bloodhound panel and individually for each Bloodhound by checking their respective boxes.

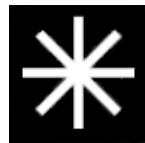
widget will show the updated information. The Bloodhound panel will keep track of any updates and sort the information based on how the user chooses, if multiple Bloodhounds are active simultaneously. By default, Breadcrumbs will also automatically turn on for both the tracker and the target when tracking has been initiated. This can be disabled from within the Bloodhound Preferences at any time. [Zoom to Selected] is also an option available from the Bloodhound panel. [Zoom to Selected] ensures that the Bloodhounds the user wants to observe will always remain in view. This option is enabled at the top of the Bloodhound panel and individually for each Bloodhound by checking their respective boxes.

To initiate navigation to another object from the user's Self-Marker, select the [Compass] icon in the drop-down menu under the [Bloodhound] icon. The user will be prompted to select a map object or a [Quick Select SPI] to navigate to. Select [OK] to confirm the selection. A Range & Bearing line will appear between the Self Marker and the selected map item. Additionally, a navigation panel will open allowing the user to utilize the Navigation Tool.

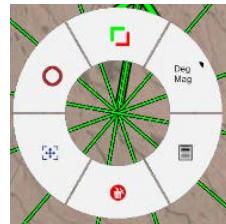
To disable a specific bloodhound, select the [Delete] icon next to the desired bloodhound from the list of current bloodhounds and confirm the deletion.



Bullseye Tool

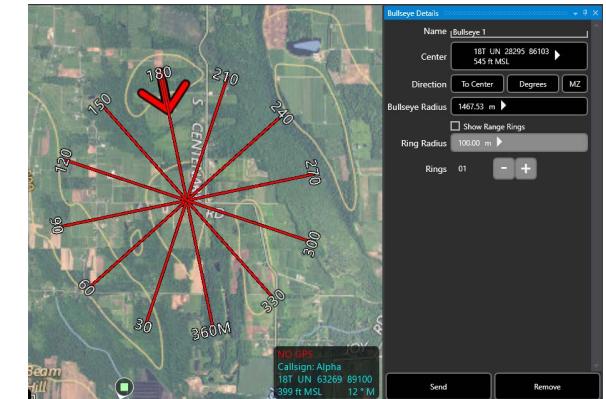


The Bullseye tool is an additional Range and Bearing option that gives more information than the standard R&B Line or R&B circle.



To place a Bullseye, select the [Bullseye] icon, tap on the map to place the Bullseye center, and then again for the outer edge. The Bullseye Details panel allows the user to configure location, direction, units, size, rings and send. The Bullseye points to either Magnetic, Grid or True North and displays additional lines every 30 degrees. The Bullseye is green when the direction is outward (egress), and red when the direction is inward toward the center (ingress).

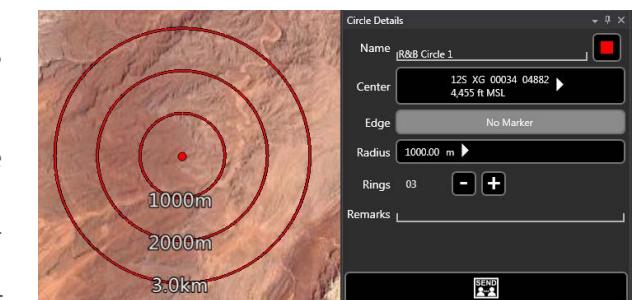
The Bullseye Radial options are: Delete, Fine Adjust, Range Rings, Ingress/Egress, Units and Details.



R&B Circle Tool



The R&B Circle Tool allows drawing concentric circles, at a fixed radius, around a point. Select the [Circle] icon on the toolbar to create the circle. Select the center location on the map and drag outward to the desired radius.



Click anywhere on the circle to open its radial. Options available for the center point are: Delete, Fine Adjust and Details. The circle's rings are not allowed to be fine adjusted. Select the [Details] option on the radial to open the Details panel allowing modifications to the circle name, color, location and radius. Additionally, rings can be added to the circle at the same radius spacing as the original. The option to send the circle is also accessible from within the Details panel. Long press/right click the center of the circle to move it.

Dynamic Measure



The Dynamic Range & Bearing Line allows the user to easily reposition either end while updating its R&B information.

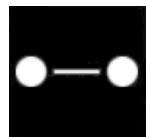


The Dynamic Range & Bearing Line allows the user to easily reposition either end while updating its R&B information. When the desired location is established the user can select the pin icon on the radial menu to place a static [R&B Line] copy of the current Dynamic R&B line onto the map. The pinned R&B Line will show the azimuth, distance and depression or elevation degree between the two points. To reposition an anchor point, click/touch and drag on either end of the bearing line. The line will be moved to the new location with an adjusted distance and azimuth.

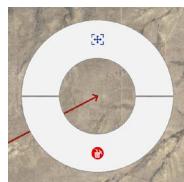


The radial options available for the Dynamic Range & Bearing Line are: Delete, Edit, Depression or Elevation Degree, Change Mils/Degrees, Change Distance Units, Pin, Lock Distance and Details.

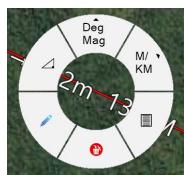
Measure



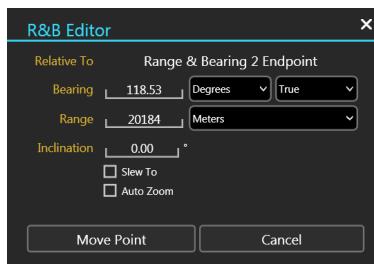
The **[Measure]** icon allows the user to place a static Range & Bearing line on the map. The line can be used to calculate the distance between points, markers or users on a map.



Select either end of the bearing line to display the Measure Radial. The options available are: Fine Adjust and Delete.



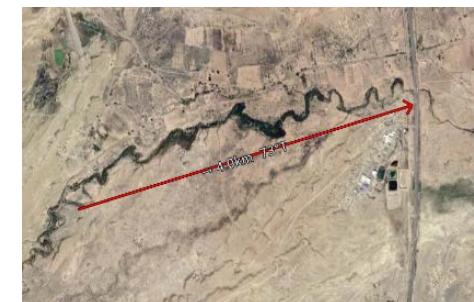
Select any part of the line to bring up the radial which gives additional options: Delete, Edit, Display Depression or Elevation Degree, Change Mils/Degrees, Change Distance Units and Details.



To change settings of the line, tap the **[Details]** icon on the radial. Select the **[Elevation Profile]** button to bring up an elevation profile graph (DTED required). The user may move along the line by sliding the blue tracking circle forward on the elevation profile. A Viewshed may also be displayed by checking the 'Show Viewshed' checkbox.

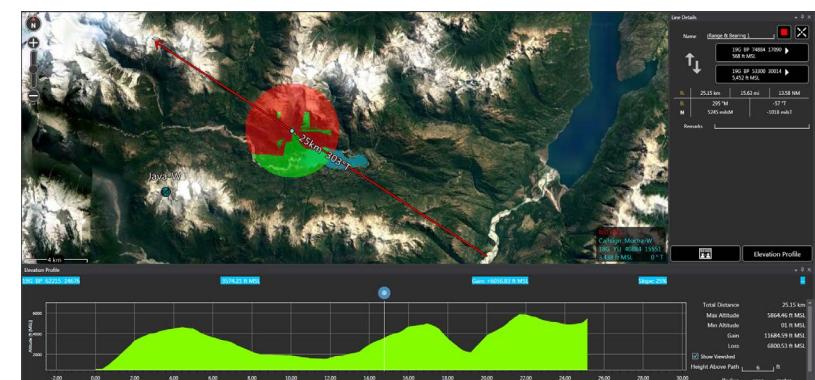
Both Measure and Dynamic Measure tools have an edit option. This opens the R&B Editor tool which allows the user to modify the Range, Bearing and Inclination of the measure line. 'Slew To' and 'Auto Zoom' checkboxes will zoom the map to the new endpoint location, or zoom to include the start point and new endpoint.

Select the **[Measure]** icon to open the tool. Place the first point and drag it to the second point. The Range & Bearing Line will now show the azimuth bearing and distance between the two points. To reposition an anchor point, long press/right click on either end of the bearing line, then click or tap another location. The line will be moved to the new location with an adjusted distance and azimuth bearing.



To make adjustments to either end of the line, select the **[Fine Adjust]** icon on the radial. Crosshairs appear and the area is magnified.

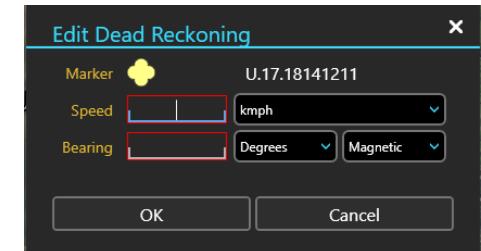
Drag or click and drag inside the magnified area to finely position the end of the bearing line. To delete the bearing line, select **[Delete]**.



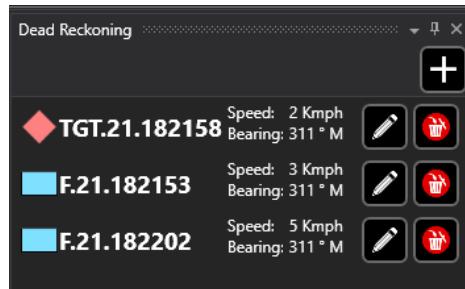
Dead Reckoning



Dead Reckoning provides the user with the ability to assign a speed and bearing value to an otherwise static marker that has been placed. This can be useful to simulate the observed movement of a person or vehicle that the user does not have the capability to track as a DP.



Dead Reckoning can be accessed on the Range & Bearing tab. Selecting the [Dead Reckoning] icon will open a panel containing a list of any markers that currently have a Dead Reckoning speed and bearing assigned to them. The user can edit the speed and direction of these markers, delete existing Dead Reckoning values assigned to markers or assign new Dead Reckoning values to markers. Selecting the [+] will prompt the user to select a marker from the map. Users are restricted to only select markers that they have placed. Once a marker is chosen, an Edit Dead Reckoning window will appear. The user can then assign the appropriate Speed and Bearing values.



Once Dead Reckoning is set on a marker, the marker's location will be updated once every 5 seconds as if it had been moving at the speed and direction set. The marker will display a small arrow that indicates travel direction. If WinTAK is shutdown and then later restarted, the dead reckoning markers will update their positions as if they had continued moving while WinTAK was not running.

Select the [Trash] icon from the Dead Reckoning panel or from within the marker Details to end automatic movement.

Routes

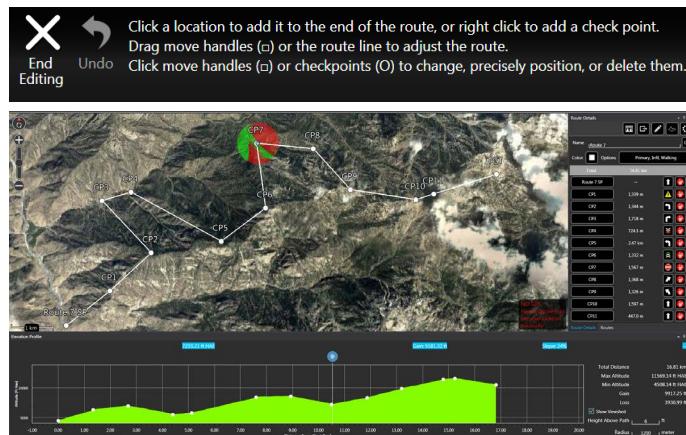


The Routes Tool allows users to create, view or modify existing routes. Select the [Routes] icon to activate the Route tool. Existing routes will be listed with the following options: Details, Navigate, Edit and Delete.



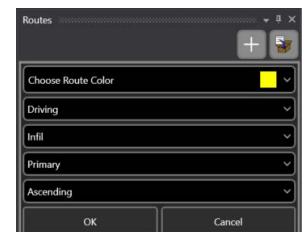
To import a route, select the [Import] icon. Navigate to the location of the saved routes (in KML, KMZ or GPX format) and select the desired route. The route will be imported and displayed on the map.

To create a new route, tap the [+] button. Enter the initial parameters: method of movement (driving, walking, etc.); Infil or Exfil, Primary or Secondary; Ascending or Descending Checkpoints, and Route color. Select [OK] to begin building the route once the parameters are selected. Select a location on the map to begin the route. Long press/Right click to create Checkpoints along the route, left click for vertices. Select [Undo] to reverse any changes. When finished, select [End Editing]. Once the [End Editing] button is selected the route details panel opens. Checkpoints will be listed in a table showing the distances to each Checkpoint. Add route cues to a checkpoint by selecting the button to the left of the [Delete] button for that checkpoint row.



WinTAK supports route exports in KML, KMZ or GPX file formats. Selecting the [Export] button causes the file to export to the "/Documents/WinTAK/Export" folder. Exported routes can be sent to selected recipients on the network or broadcast to all available recipients.

To import a route, select the [Import] icon. Navigate to the location of the saved routes (in KML, KMZ or GPX format) and select the desired route. The route will be imported and displayed on the map.

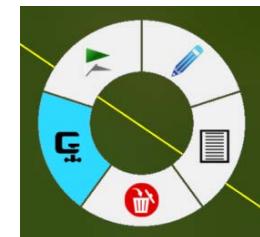


Route Details	
Name:	iRoute 7
Color:	Primary, Infil, Walking
Total:	16.81 km
Route 7 SP	--
CP1	1,339 m
CP2	1,344 m
CP3	1,718 m
CP4	724.3 m
CP5	247 km
CP6	1,332 m
CP7	1,567 m
CP8	1,368 m
CP9	1,326 m
CP10	1,597 m
CP11	447.0 m

Routes (Continued)

Select a route from the map to open a radial menu that offers the option to Delete, Clamp to Ground, Navigate, Edit or view the Details of the route. Select the [Edit] button from the route details panel or the route radial menu to enter editing mode. While in edit mode, select and drag a portion of a route segment to create a new vertex. Tap a checkpoint or vertex to see radial options for those points: Delete, Fine Adjust, Enter Coordinate, Add Checkpoint and Add Cue options are available. A deleted checkpoint will become a vertex. A vertex can be changed into a checkpoint.

Routes can be customized in Settings > Tools Preferences > Route Preferences or by selecting the [Adjust Route Settings] icon at the top of a route details panel.



Navigation

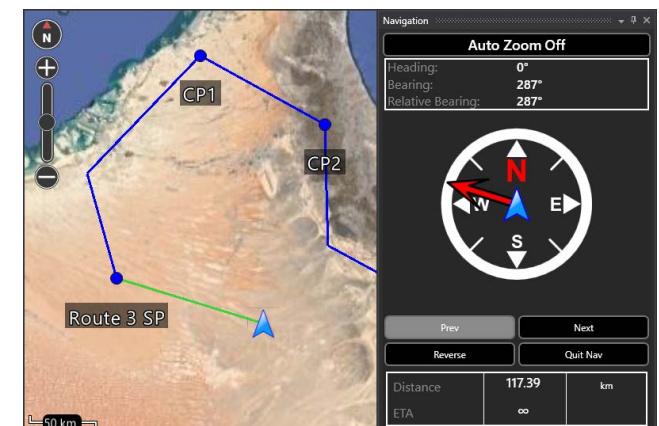


Select the [Route Navigation] from the listing in the Route tool window to open the Navigation window. A range and bearing line is drawn from the Self Marker to the starting point of the route. The information is updated as progress is made toward the specified location on the map.



Select the [Navigation Flag] icon from the route radial menu to start navigation at the beginning of the route or from a checkpoint's radial menu to begin navigation to that checkpoint rather than the beginning of the route.

The Auto Zoom feature within the Navigation panel continually sets the map zoom to keep the Self Marker and Destination Point within view. Select [Auto Zoom] to toggle the feature on or off. While navigating a route use the [Reverse], [Next] and [Prev] buttons to modify the checkpoint currently being navigated to. Select within the [Distance] or [Ground Speed] rows to toggle between kilometers and km/hr; miles and mi/hr; or nautical miles and nm/hr. Select [Quit Nav] to end the navigation function.



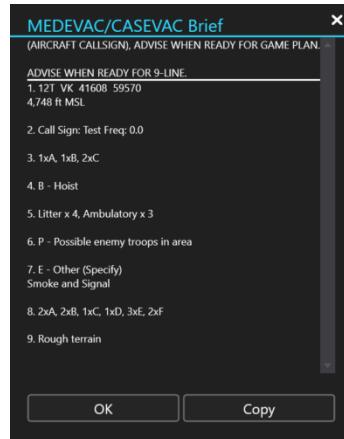
CASEVAC



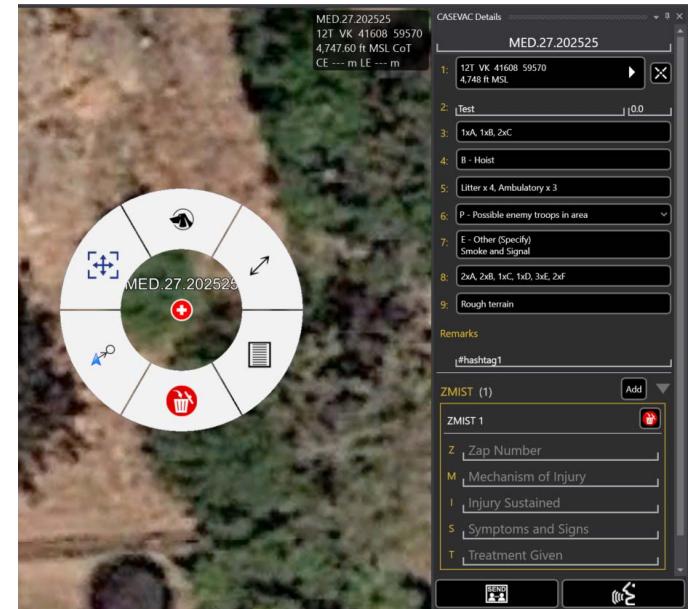
The casualty evacuation, CASEVAC, tool is used to denote any casualties/injuries in the field. The CASEVAC tool follows Appendix G of the JFIRE 2016 publication and can be used for either CASEVAC or the more restrictive MEDEVAC.

The user can place a CASEVAC marker by selecting the [CASEVAC] icon and placing the marker on the map. The available options, located on the CASEVAC radial are: Delete, Polar Coordinate Entry, Fine Adjust, Bloodhound, Range & Bearing Line and Details.

When the CASEVAC window is opened the user is prompted to fill out the nine lines of information, the ZMIST (ZAP number, Mechanism of Injury, Injury Sustained, Symptoms and Signs, Treatment Given) report and the Heli Landing Zone (HLZ). Once the user has entered all the applicable information, the CASEVAC may be sent or broadcast to available users by selecting [Send].

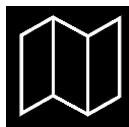


Select the [MEDEVAC/CASEVAC Brief] icon to display the brief which can then be copied and used elsewhere.



Multiple ZMIST reports can be included in one CASEVAC. Select [Add] next to the initial ZMIST heading and section to add a new ZMIST. Select [Delete] at the beginning of an individual ZMIST report to remove it.

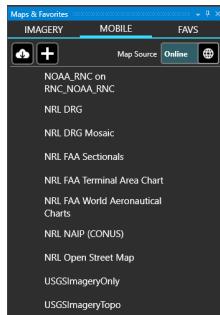
Maps & Favorites



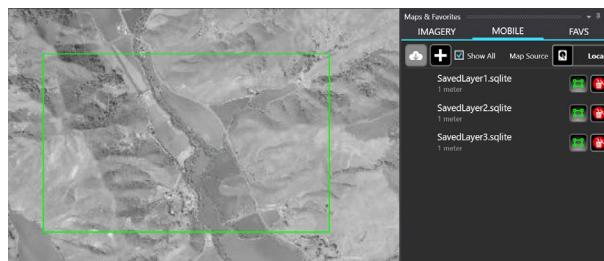
The [Maps & Favorites] icon allows the user to list the maps and imagery that are loaded into the application.

Choose from any of the categories available: IMAGERY, MOBILE and FAVS. Select the [IMAGERY] tab to view added imagery files. The [MOBILE] tab can be used to view or download map layers over a desired area. Frequently used map views can be saved and accessed through the [FAVS] tab.

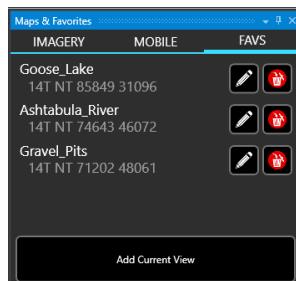
Saving a Map Layer



To save a local copy of a section of an online map, select the [MOBILE] tab and verify that Map Source is toggled to [Online]. Choose the desired map source from the list. Select the [Download] button in the top-left corner and choose the download shape type. A prompt will appear presenting three options for map area selection: Rectangle, Polygon or Existing Shape. The Rectangle option uses the top left and lower right corners to denote the area to be downloaded. The Free Form option allows the user to create a custom area to be downloaded by tapping different points on the map until the shape is complete or the end button is selected. Existing Shape allows the user to choose an already existing shape as the area intended to be downloaded. Drag the map source slider end points to select the resolution for the tileset. The number of tiles to be downloaded will be indicated.

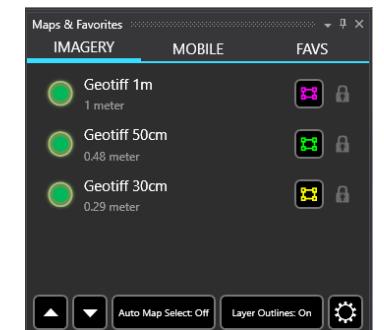
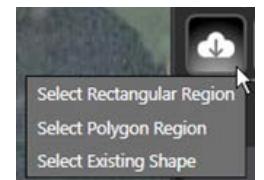


The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the chosen layers and select [OK]. A status indicator will appear to show the download progress. Cancel a download-in-process by clicking the [Download] button a second time or the [Red X] at the bottom right. The user can toggle between Online and Local map layers. When [Local] is selected, a listing of the downloaded imagery layers within the current map interface appears. If the [Show All] box is checked, all downloaded imagery layers will be listed. Select the [Outline] button to toggle the outline layers on or off. When the user selects a layer from the list, map source data corresponding to that downloaded layer will be used as the source for map data.



Specific imagery type files can be added directly into the C:/ProgramData/WinTAK/Imagery folder, imported into WinTAK via the drag and drop or Import Manager methods, or by using the [Manage Imagery] setting icon to add a folder of imagery files. These files will be listed under the [IMAGERY] tab.

If the user wishes to save the current view, select the [FAVS] tab and click [Add Current View]. Enter a name for the view and select [OK]. Select the [Edit] icon (the pencil) to edit a favorite's name and select the [Delete] icon to delete it. A favorite cannot be moved or resized.



Overlay Manager



Overlay Manager sorts map objects, files and overlays into categories and subcategories. Select the **[Overlay Manager]** icon to bring up the list of categories. These include: Teams by color, Alerts, Markers, Data Packages, Image Overlays, Navigation and Shapes, as well as other file types.

The Overlay Manager is shown in a tree view on the left side of the screen.



Selecting a category will open a detailed listing of the items available in that category. The available items within each category are annotated on the menu entry, allowing the user to reference sub-menu content.

When a displayed item in a specific category is selected, the map view will pan to that item and its radial will open.

Users may turn visibility of any category on and off through the circular radio buttons. When the circle appears green, the corresponding layer objects are visible. A hollow circle corresponds to a category, along with its subcategories, as not visible.

If the **[Show All]** checkbox is left unchecked, the Overlay Manager will filter map items listed based on the current map view.

Search



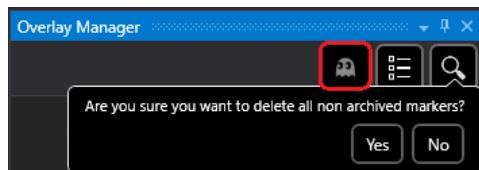
The user may search the available overlays by selecting the **[Search]** icon in the main Overlay menu. Select specific categories of overlays to narrow the search results.

Sort



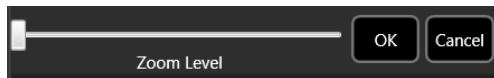
The user may sort selected overlays within a given category either alphabetically or by proximity to the Self Marker.

Common Operating Picture (COP) Refresh



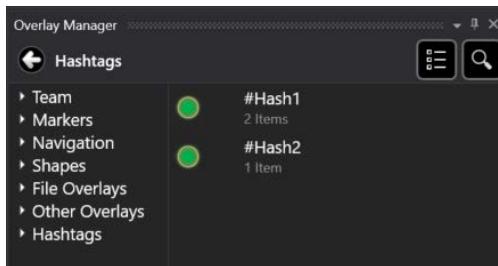
Selecting the **[Common Operating Picture Refresh]** button will remove all temporary items from the map.

Marker Zoom Level

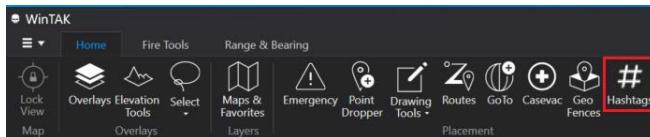


CoT markers can be adjusted so that they are only displayed once the zoom-in threshold has been reached. The default level is to always show at all levels. To access the Zoom slider bar, select the [Settings] (gear icon) on the Overlay Manager toolbar.

Hashtags and Sticky Tags

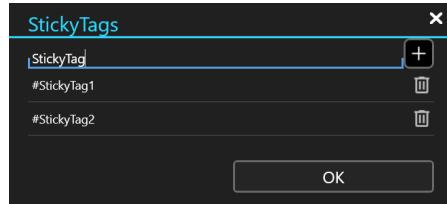


Hashtags and Sticky Tags can be added to map items to aid the user in categorizing and searching items.

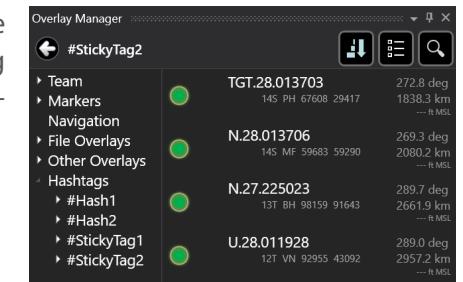
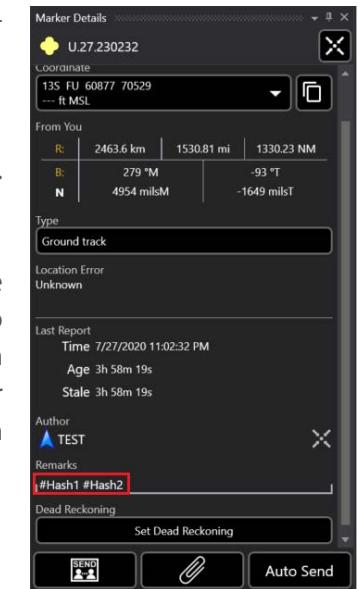


Hashtags can be added to map items in the Remarks field of the Details window.

To add a Sticky Tag, Select the [#] (Hashtag) icon located in the Placement section of the Toolbar. Enter a name and select [+] to add that sticky tag to all subsequently placed map items. More than one sticky tag may be added. To discontinue adding a particular Sticky Tag to subsequent items, select the [#] (Hashtag) icon again and then select the Trashcan associated with the sticky tag.



To view the map items that have hashtags associated with them, select the Hashtag category within the Overlay Manager. Select the desired Hashtag and all of the tagged items will be listed. If one of the tagged items is selected, the map will pan to that item and its radial will display.



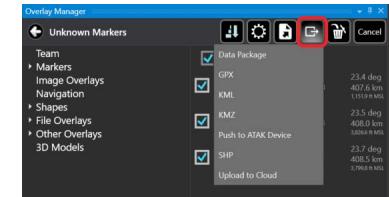
Multi-Select Export & Delete



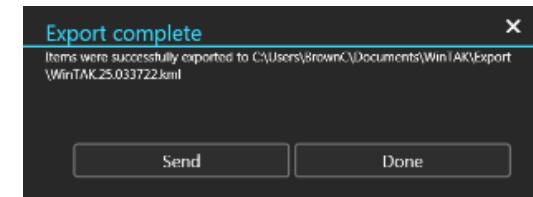
The Multi-Select Tool gives the user ability to export an existing or previous overlays in one of multiple file formats. Following the export, the file may then be sent to one or more TAK users. The Multi-Select Tool is also the primary method to delete objects, attachments and files.

Export Files

Overlay items can be exported in several file formats that will be saved in C:\Users\username\Documents\WinTAK\Export\. This location can be changed by the user. Supported file formats include GPX, KML, KMZ and SHP. Items exported as Data Package will be saved in C:\Users\username\AppData\Roaming\WinTAK\Data Packages\. In addition, items can be exported directly to an ATAK device through ATAK Manager by selecting the [Push to ATAK Device] option. If a Cloud or FTPS Server is configured, items can be uploaded to the server by selecting [Upload to Cloud] option



To export Overlay items, select the [Multi-Select] icon and choose the items to include. After the selections have been made, select [Export] icon. Choose a file format from the drop-down menu. A system navigation window will open asking to enter a file name. Enter a name and select [Export] to create the file. A window will open notifying the user that the file has been exported. Select [Send] to send the file to one or more TAK users, or [Done] to close the window.



Send Previously Exported Files



To send a previously exported file, select the [Export Previous File] icon. Choose the desired file from the list. Select the network recipients in the Contacts window and then select [Send].

Delete Overlay Items

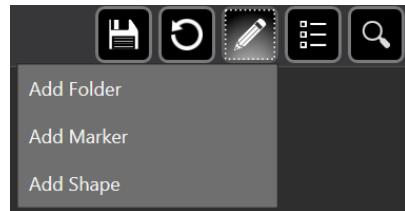


To delete an existing overlay item, select the [Multi-Select] icon. Items may be selected as a category (Markers, Shapes, etc.) or individually. Select the [Delete] icon to remove all items selected.

KML Authoring

The user has the ability to modify KML/KMZ files that have been incorporated into WinTAK and create new KML/KMZ files.

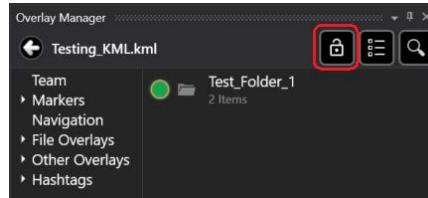
Create KML/KMZ



The user can create a new KML or KMZ file by selecting Overlays > File Overlays > KML. Select the [Edit] (pencil) icon and choose either to create KML or create KMZ. Once the format type has been selected, enter name of the file, select [Save], then select the file name that appears in the list in Overlay Manager and begin editing.

The user can create folder(s) to organize their data or just place a marker/shape on the map. KML Placemarks can be added to new or existing KML/KMZ fil by navigating to the Overlay Manager > File Overlays > KML and selecting an existing KML/KMZ file. An edit button will be available. Selecting it will present a drop-down with options to Add a Folder, Marker or Shape.

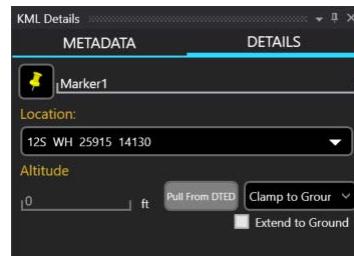
Selecting [**Add Folder**] will prompt the user for the name of the new folder. Adding a Marker will prompt the user to click on the map to create a new marker. Adding a Shape will begin the shape creation process that is similar to the Drawing Tools controls for creating a polyline/polygon. The marker/shape is created with the name "Untitled Placemark" or "Untitled Shape" respectively.



Note: The “**” next to the file name denotes that the user has unsaved changes. The changes can be saved at any time by selecting the [Save] (floppy disk) icon.

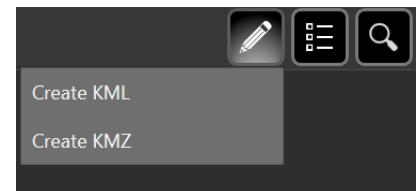
Once the KML has been saved it will be locked against editing. Select the [**Unlock**] button to make more modifications.

Edit KML/KMZ

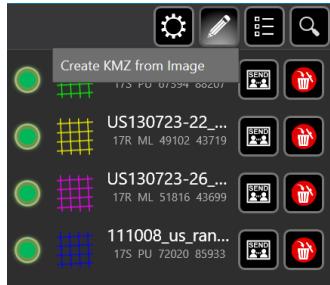


KML Placemarks can be moved or edited. Right click on an existing marker, then click an alternate location on the map to relocate the marker. Fine Adjust movement is also available on the radial menu. To change the styling of a Marker, select the [**Details**] option on the marker's radial. From the DETAILS tab, the Marker's icon and name can be modified. The user can choose to have the marker clamped, relative or absolute to the ground. If relative or absolute is chosen, the user can add an Altitude from DTED (if installed) or entered manually. If the [**Extend to Ground**] checkbox is checked, a line will be added from the marker to the ground. To remove a marker, select the [**Delete**] option on the marker's radial option.

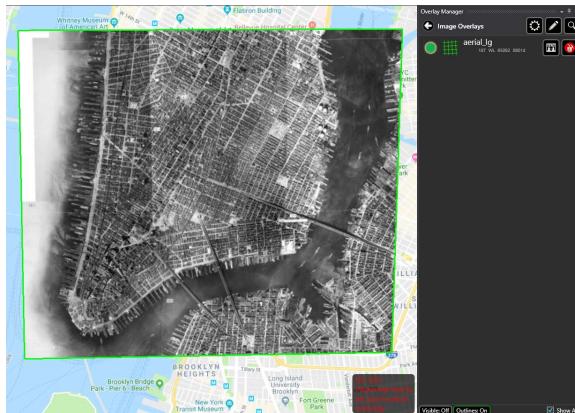
Shapes can also be modified. Select the [**Edit**] option on the shape's radial menu. While in edit mode, dragable movement handles can be used to move a vertex of the shape. Opening the Shape's Details tab will allow the user to modify the Shape's name, color and opacity (for closed polygons). To remove a shape, select the [**Delete**] option on the shape's radial option.



KMZ From Image

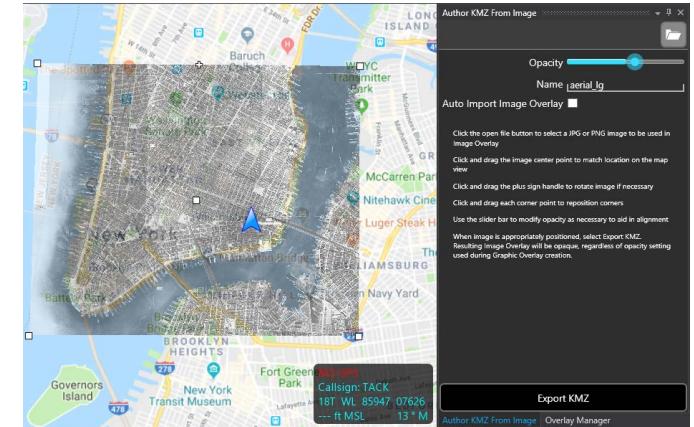


The user can create KMZ from imagery by selecting Overlays > Image Overlays. Select the [Edit] (pencil) icon, select the [Folder] icon in the upper right corner of the **[Author KMZ From Image]** screen, use the file explorer to navigate to an image and then select an image to import (JPEG or PNG formats are supported). The images are placed at the current center position on the map. The user may adjust the image by dragging the corners. The opacity of the image may also be adjusted by using the slider.



When the image is appropriately positioned, select the **[Export KMZ]** button to create the saved KMZ from image file. Regardless of the opacity setting used during the adjustment of the image, the resulting Image Overlay KMZ file will be opaque.

If the **[Auto Import Image Overlay]** checkbox is selected, the KMZ file that was exported will be processed and appear on the map. If KMZ was selected as an import strategy, it will be listed in Overlays > Image Overlays. If Imagery was selected, it is listed in Maps & Favorites > Imagery.

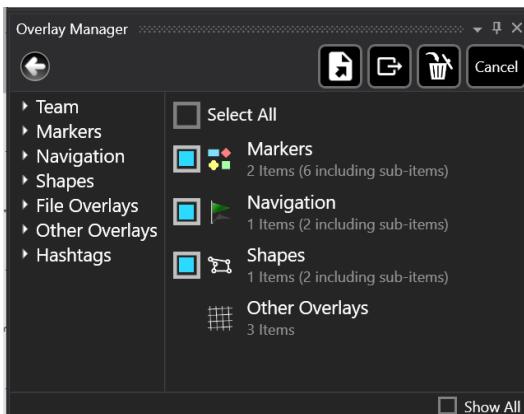
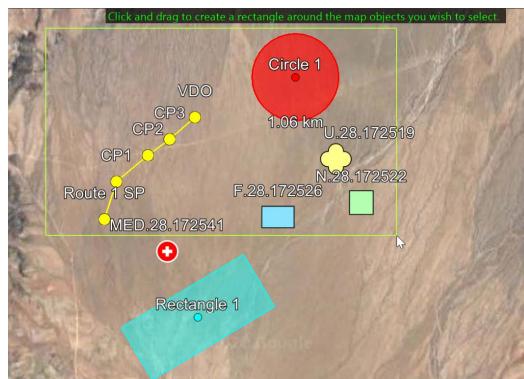


Lasso Tool

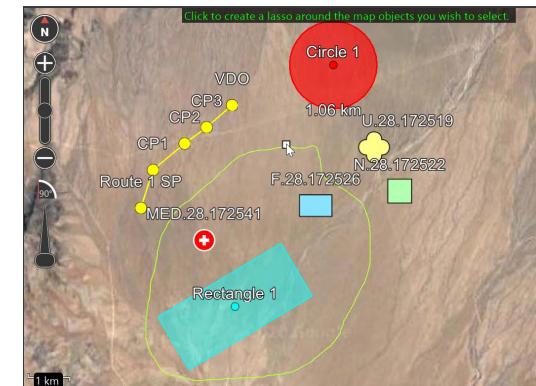


The Lasso Tool allows the user to select several map objects at the same time. Selected items can then be either exported or deleted. The user can choose the type of lasso desired to select the map objects: Lasso (freehand drawing of a line around the objects), Rectangle or Ellipse.

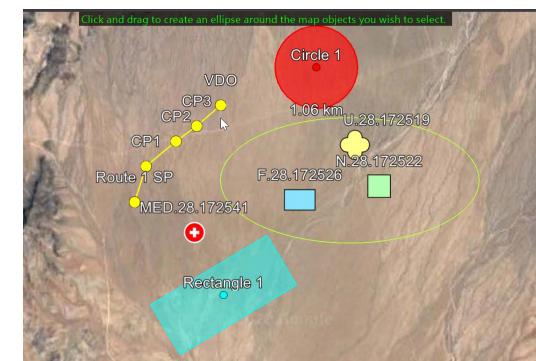
Lasso (Freehand) – Select [Lasso] icon. The user will be prompted to “Click to create a lasso around the map objects you wish to select.” Selecting the drop-down from the Lasso Tool provides access to the Rectangle and Ellipse select options.



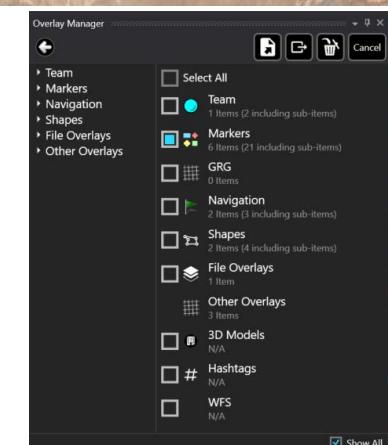
Rectangle – Select [Rectangle Select]. The user will be prompted to “Click and drag to create a rectangle around the map objects you wish to select.”



Ellipse – Select [Ellipse Select]. The user will be prompted to “Click and drag to create an ellipse around the map objects you wish to select.”



Once the lasso has been created, the Overlay Manager appears and the objects selected are indicated in the check boxes. If the [Show All] option is unchecked, only the categories that are included in the lasso will be shown.



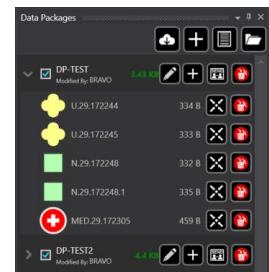
If it is checked, all Overlay Managers categories will be shown. The objects can then either be exported or deleted using the Overlay Manager tool.

Data Package Tool

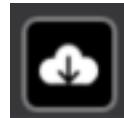
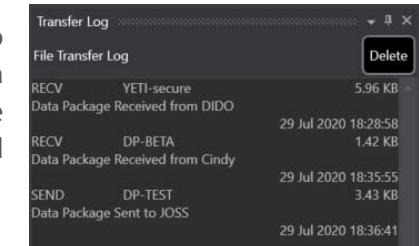


Select the [Data Package Tool] icon to display and build Data packages. The Data Package tool gives the data planner the ability to bundle map items (e.g., routes, placed markers, shapes and imagery) and external files from the device's file system to send to others on the network.

A user may prepare a data package that contains routes, place markers, shapes, files and imagery and send the completed data package to each person on the team. This allows everyone on the team to have the same information. In addition to Map Items (with or without attachments), external files may be included in a package.



To build a new Data Package, select the [+] icon in the Data Package Tool. Enter a name and then select [Build] to create the package. The [QuickSend] button opens a file browser to select a file or one or more files to be sent as a Data Package. Select the [Log] icon to view a history of all Data Packages that have been sent/received. Select the [Folder] icon to see a list of all Data Packages stored on the system. The visibility of the package may be toggled on/off.



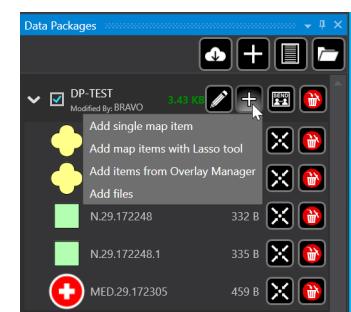
The user can also query a TAK Server and download stored Data packages. Select the [Download] icon to view a list of Data Packages stored on the TAK Server.

To add more content to a Data Package, select the [Edit] icon. The user may add a single map item by selecting it on the map; add items using the Lasso Tool; add items through the Overlay Manager, allowing for multiple selections via checkboxes; or add saved files via the file browser interface.



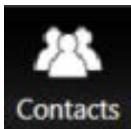
To send a Data Package, select the [Send] icon. The user will be prompted to choose to send the package to network TAK contacts or to the TAK Server. Choosing the [TAK Contacts] option will open a list of all available recipients. If the user chooses to send the package to the [TAK Server], a window will open allowing the user to choose one of multiple TAK servers to which the package should be sent.

Select the [Delete] icon to delete a Data Package.

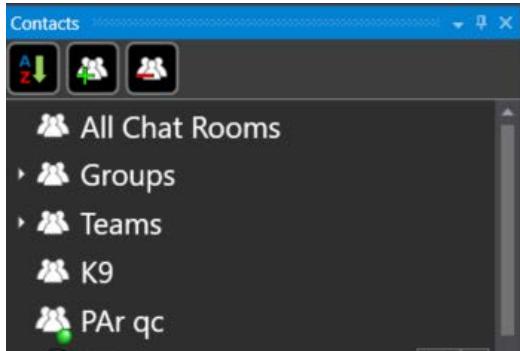


The Data Package Tool can be customized in Settings > Tool Preferences > Data Package Control Preferences.

Contacts



Text-based Geochat and XMPP messages (if the plug-in has been installed and configured) may be sent to active network users by using the Contact function. Select the [Contacts] icon to open the contacts list. With Geochat (the built in messaging tool), the user location is included in every message that is sent.



Select the [Contacts] icon to manage and configure GeoChat. The width of the chat window can also be expanded in order to see both the list of contacts, as well as the chat messages of a selected group or individual. The user can create, edit and delete chat groups, as well as sub-groups. To create a chat group, select the [Add Chat Group] icon. This will open the group configuration screen. Enter the name of the group and select the checkboxes next to the contacts to be added to the group and then select [OK]. If a parent group is being created, no contacts need to be added at this level. To add a nested group, right click the parent group and select [New Group] to create the name of the sub-group and select the [Edit] icon to add contacts. Groups may be managed using the [Edit] option to add / delete contacts within a sub-group or right click on a group or sub-group and select [Delete] to remove the desired group.

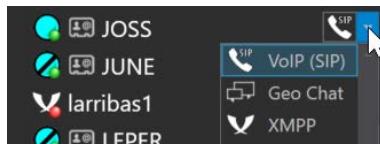


Group and person-to-person messaging is available. To view messages from or send messages to an individual, select the desired contact's [Communication] icon. Selecting the [Pan To] icon, located at the top right of the Callsign in an individual chat, will pan the map interface to that user's location.

Select [All Chat Rooms] to view all messages from or send messages to those present on the network and TAK server. Other groupings available for viewing or sending messages are: Groups and Teams. If a GeoChat message is sent from the top level of Teams, it will be sent to all contacts, similar to All Chat Rooms. When the [Team] category is selected, messages can only be sent to the user's Team.

When a parent group is chosen, messages are sent to all members of the parent group, as well as all of the sub-groups. When a sub-group is chosen, messages are sent only to members of the sub-group.

Pre-defined messages are located at the bottom of the chat area. These pre-defined messages can be used to quickly create a message to send. Select [Mode] to scroll through the six different menus of messages, including: Default (DFLT), Assault (ASLT), Reconnaissance (Recon), Low Visibility (Low Vis), Jump Master (JM) and User messages. These messages present an easy way to transmit a brief message to other network members concerning position or message understanding. To change the text of any of the pre-defined messages, long press/right click on the button and modify the button label and corresponding button text.



The Contact window provides a pull-down indicating the options available for sending a message to the user. Supported options are VoIP (SIP), GeoCHAT, XMPP (TAK Chat) messaging or e-mail.



The Contact icon will display a number when a message has been received. Select the [Chat Message] icon to open the window with the chat dialog. Chats can also be accessed by selecting the [flag] located near the upper right corner of WinTAK.

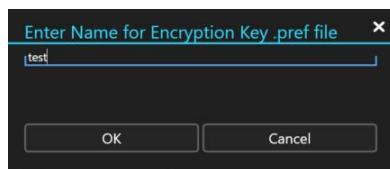


Encrypted Mesh

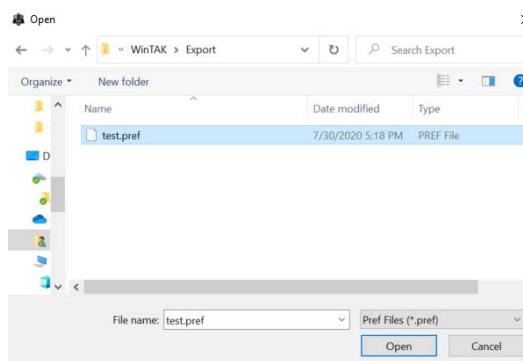
A user can configure enhanced security for all communications on a mesh network. An AES-256 encryption key is generated on one device and is then shared with the other devices that require encrypted communications. Once enabled, encrypted devices can securely communicate with one another and exchange SA, Chat, Data Packages, etc. Encrypted devices cannot communicate on the mesh network with non-encrypted devices and vice versa. This feature provides an additional level of security for advanced users.



To configure encryption, navigate to Settings > Network Preferences > Configure AES-256 Mesh Encryption.



Select the **[Generate Key]** button to create an encryption key, then enter the desired file name. The encryption key is saved in the C:\Users\username\Documents\WinTAK\Export folder and can be added to a Data Package to be shared with other users (prior to enabling encryption on the device) or can be preloaded onto the devices. At the time the key is generated, the user has the option to load the key immediately.



To load an encryption key, select the **[Load Key]** button and navigate to the location of the key file, then select **[Open]**. Select the **[Forget Key]** button to the key and revert to unencrypted traffic.

Video Player



The Video Player supports playing a variety of video streams. The menu allows the user to add, edit, play, download from a TAK Server or send videos to other network users. Select the [Video Player] icon to open the Video Player.



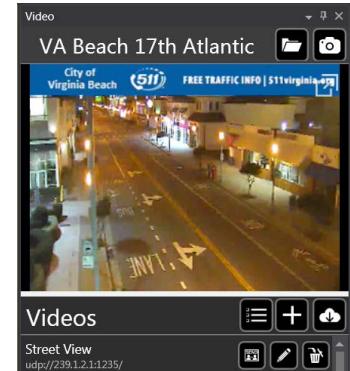
To play a stored video file, select the [Open Video File] icon, use the file explorer to locate the video and then select it to begin playing the video. The user can also manually place video files in C:\Users\username\Videos\WinTAK to have them automatically show up in the list of available videos.



Pause and play control icons appear on the running video screen when the user hovers the mouse over it. To save a screenshot of the current video, select the [Screenshot] (camera) icon. The image will be saved in C:\Users\username\Pictures\WinTAK\Video Screenshots\ folder.

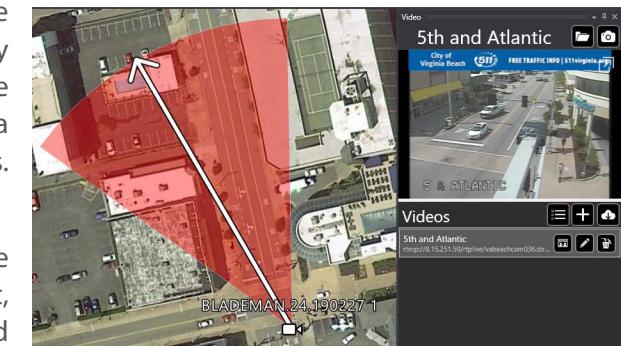


The video display window can be undocked by dragging and dropping it away from the map window. Multiple video files can be played by selecting the [Open video in new window] icon which is located in the upper right corner of the currently playing video.



Adding a Video Stream

To add a video alias, select the [+] button and enter a new video alias manually. Enter the Alias Name and select the Protocol (UDP, RTSP, RTMP, RTMPS, TCP, RTP, HTTP, HTTPS, RAW) along with the necessary streaming information including, IP address (leave IP blank to listen on your own IP), Port Number, file name (if appropriate), Network Timeout, Buffering and Buffer Time. Selecting buffering along with a buffer time will provide a small amount of buffering of input video flow to help smooth video streams. Adding buffering will increase latency. When done, select [Save].



A video alias can also be added to a [Sensor Point] from the [Mission Specific] icon pallet within the Point Dropper Tool. After the user adds the URL and FOV to the details window of the Sensor Point, the video can be viewed. This Sensor Point can be sent to other users when provided with the URL and FOV.



Select the [Add Video From Server] icon to download an alias from the TAK Server.



Video aliases may be sent to other network members by selecting the [Send] button on the desired video listing or multiple video aliases can be sent by selecting the [Select Multiple Videos] icon, checking all videos to be sent and then selecting the [Send] icon. One or more members may be selected. Tap the [Send] button to send to the intended recipients.

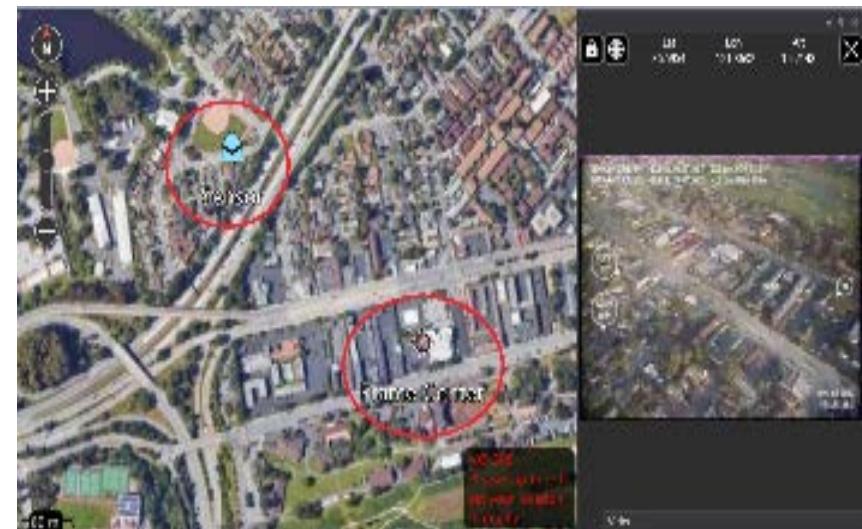
To edit an existing Video Alias, select the [Edit] icon to the right of the video alias to access the same options as shown for the [Add Video Alias] option. During editing, the video alias can be renamed or redirected to a new address and port combination.

To delete an existing video, select the [Delete] icon to the right of the desired video alias and confirm deletion.

Viewing KLV

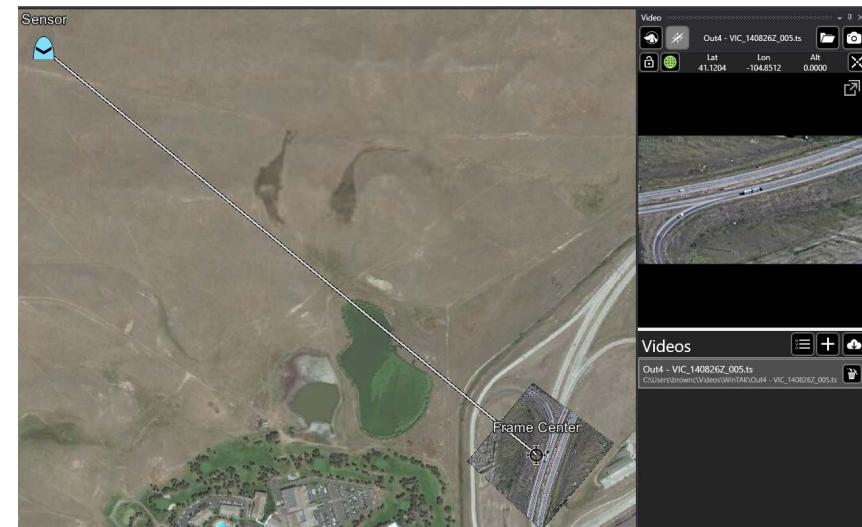
If a video includes KLV location data, an option will be available to view a representative DP or CoT Marker. These markers indicate the map location of the sensor at the corresponding time viewed within the video player.

The DP marker will indicate the center of view corresponding to that sensor as the video plays. The user may zoom to the DP or CoT Marker by selecting the [Zoom To] icon on the video controls or may lock to the sensor by selecting the [Lock] icon.



Live Video Map Display

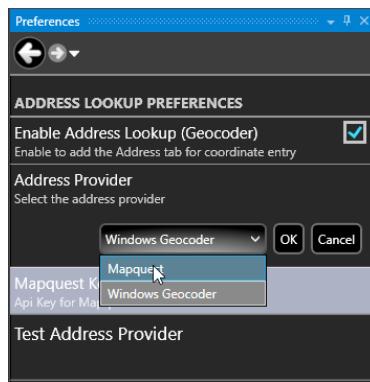
When the user connects to a video file or video stream that contains metadata for the four corners of the video, the user can project that video onto the map. Connect the video alias or open the video file, then select the [Globe] icon in the upper left corner of the video window, turning the globe green. Then select the [Lock] icon to pan to the video projected onto the map. The video will overlay upon any current imagery displayed.



Go To



Select the [Go To] icon to enter details and navigate to a specific location in the WinTAK application.



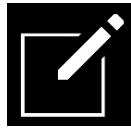
Select from the [**MGRS**] (Military Grid Reference System), [**Deg**] (decimal degrees), [**DM**] (degrees-minutes), [**DMS**] (degrees-minutes-seconds), [**UTM**] (Universal Transverse Mercator) or [**ADDR**] tabs on the Go-to interface and enter the location data. The user has the choice to pan to the map location by selecting [**No Point**] or placing a CoT marker at the entered location.

With MGRS and UTM, the user has the option to Autofill from the center of the map by selecting the [**Autofill**] icon at the right of the location line. If DTED is installed, the elevation value can be automatically populated by selecting the [**Pull From DTED**] button. The user can select a desired marker type (point, unknown, neutral, hostile, or friendly) to be placed at the entered coordinates. If [**No Point**] is selected, the map will pan to the location but will not add a point.

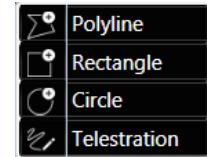


The [ADDR] tab displays the name of the location database below the address entry field. This database can be configured in Settings > Tool Preferences > Address Lookup Preferences. WinTAK users must enter a key provided by Mapquest in order to use the Mapquest Lookup Database. Once the key has been entered, the user can select the [**Test Address Provider**] to ensure that the connection is successful. Windows 10 is also able to use the Windows Geocoder as the default Lookup Database. This database does not require a key.

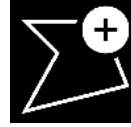
Drawing Tools



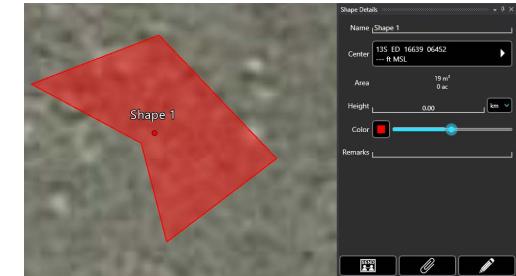
The Drawing Tools allow the user to create different shapes on the map. Select the [Drawing Tools] icon to open the tools. The user may choose to create a polyline, rectangle, circle or telestration. Closed shapes also have the option of adding a Geo Fenced area that allows the user to receive alerts that are configured within the Geo Fence Tool.



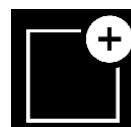
Create a Shape



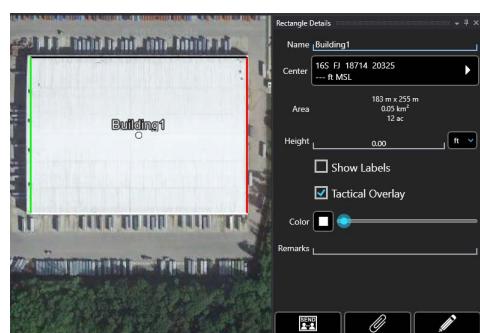
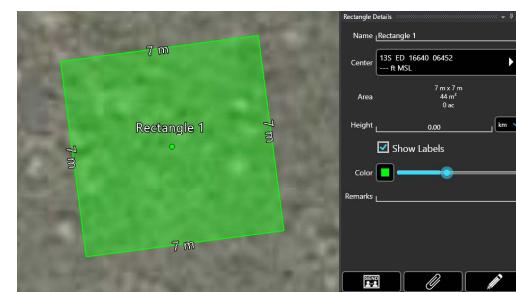
To create a polyline/polyshape, select the [Polyline] icon and then a location on the map to place the first vertex for the shape. Continue to place vertices by selecting different map locations. Select the [Undo] button to remove the last action in sequence. Close the shape by selecting the initial vertex or select [End Shape] to end with an open shape. Once the shape has been created, the Shape Details menu appears. Details that can be changed include: Name, Center Point Location, Elevation, Height, Color, Opacity and Remarks. After a shape has been created, the user can send the shape to others using [Send], attach files using [Attachments] (paperclip) or open the shape for editing using the [Edit] (pencil) icon.



Select the shape on the map to open the shape's radial menu. Options available include: Delete, Fine Adjust, Range and Bearing (R&B) Line, Geo Fence, Edit and Details. Geo Fencing is addressed in the next section. Selecting the [Edit] icon on the radial menu launches edit mode and makes the vertices selectable. Move a vertex to a new location by selecting, holding and dragging. Long press/right click on a line to add a vertex, which can then be moved to a new location. Selecting [Undo] will reverse changes in sequence. Select [End Editing] to save all changes and end edit mode. The entire shape can be moved by long pressing/right clicking on the shape center point and selecting a new location.



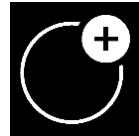
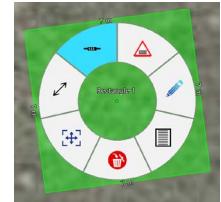
To create a rectangle, select the [Rectangle] icon. Select the location of the first corner on the map and then drag to the opposite corner. Once the rectangle has been created, the Rectangle Details menu appears. Details that can be changed include: Name, Center Point Location, Elevation, Height, Show Labels, Tactical Overlay, Color, Opacity and Remarks. After a rectangle has been created, the user can send the rectangle to others using [Send], attach files using [Attachments] (paperclip) or open the rectangle for editing using the [Edit] (pencil) icon.



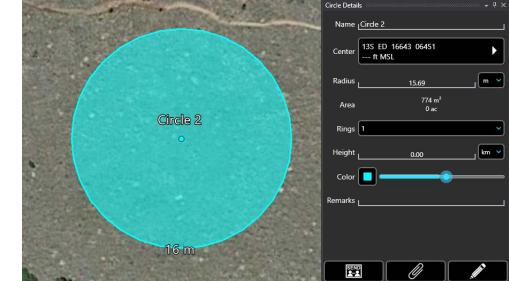
Selecting the Tactical Overlay option will allow the user to add tactical color coding to a structure being outlined, establishing a common set of terms for operational coordination. The white side of the rectangle represents the front, while black represents the back of a structure. The green side of the structure appears clock-wise from the front (white), while the red appears counter-clockwise. Create the rectangle and when the details menu is displayed, select the [Tactical Overlay] checkbox to have the color coding turned on. If the color coding is not correct, resize and rotate the rectangle to have the colors fall appropriately on the structure.

Unclassified

Select the rectangle on the map to open the rectangle's radial menu. Options available include: Delete, Fine Adjust, R&B Line, Labels, Geo Fence, Edit and Details. Selecting the [Edit] icon on the radial menu launches edit mode, makes corners selectable and places "+" markers on each side. Move a corner to a new location by selecting, holding and dragging. Select, hold and drag the [+] on a side to rotate the rectangle. Select [Undo] to reverse changes in sequence. Select [End Editing] to save all changes and end edit mode. The entire rectangle can be moved by long pressing/right clicking on the rectangle center point and selecting a new location.



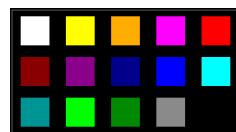
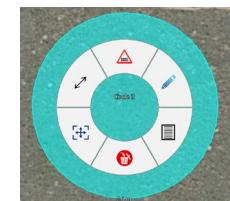
To create a circle, select the [Circle] icon. Select a location on the map for the circle center and a second location for the radius. Once the circle has been created, the Circle Details menu appears. Details that can be changed include: Name, Center Location, Elevation, Radius, Number of Rings, Height, Color, Opacity and Remarks. After the circle has been created, the user can send the circle to others using [Send], attach files using [Attachments] (paperclip) or open the circle for editing using the [Edit] (pencil) icon.



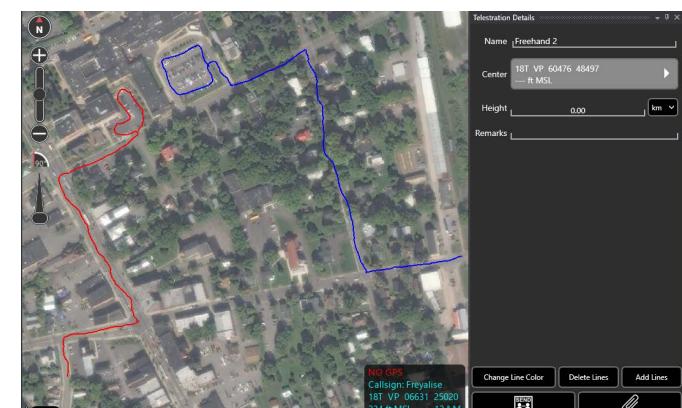
Select the circle on the map to open the circle's radial menu. Options available include: Delete, Fine Adjust, R&B Line, Geo Fence, Edit and Details. Selecting the [Edit] icon on the radial menu launches edit mode. Move the circle center by selecting it and then a new location on the map for the circle to be placed. Change the circle radius by selecting the circle edge and then a new location on the map for the radius. Select [Undo] to reverse changes in sequence. Select [End Editing] to save all changes and end edit mode. The entire circle can be moved by long pressing/right clicking on the circle center point and selecting a new location.



To create a telestration, select the [Telestrate] icon. While the Telestration Tool is active map scrolling is disabled, allowing the user to free form draw with a mouse or stylus on the map.

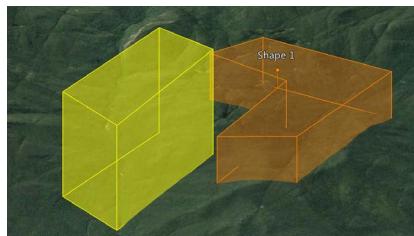


Select the [Color Palette] icon to open a drop-down palette of colors from which to choose. Once a color is selected, draw upon the map with the left mouse button or stylus. Several lines of various colors can be part of a single telestration. Select [Undo] to remove the most recent activity. Select [End] to end the current telestration session and save all activity as a multi-polyline shape. The entire telestration can be moved by long pressing/right clicking near the center of the telestration and selecting a new location.



Selecting a telestration will open the Radial Menu. Options available include: Delete and Details. Select [Details] to change the Name or Height of the telestration, enter Remarks, Change Line Color, Delete Lines or Add Lines. After the telestration has been created, the user can send the telestration to others using [Send] or attach files using the [Attachments] (paperclip) icon.

3D Shapes



Closed polylines and rectangles with heights are rendered as solid 3-dimensional objects when the map is in 3D View.

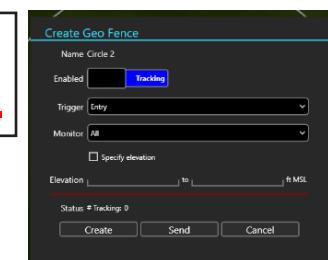
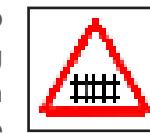
Geo Fence Tool



The Geo Fence tool allows users to create a virtual fence that triggers entry/exit notifications if map items of interest cross the virtual boundary lines. A Geo Fence can be added to any closed Drawing Tool shape (circle, rectangle, closed polygon). To create a Geo Fence, select the [Geo Fence] icon on the shape's radial menu. The Create Geo Fence window will open allowing the user to configure the new Geo Fence.



The Enabled Field slider will move to Tracking by default when a new Geo Fence window is created. Toggle the slider between Tracking and Off to enable/disable the Geo Fence. Use the Trigger field to define which types of Geo Fence breach to monitor. Choose between Entry, Exit or Both. Use the Monitor field to define which entities the Geo Fence will track. Choose between TAK Users, Friendly, Reds, Custom or All. Check the [Specify Elevation] box to enable the Elevation field, where elevation boundaries for the entities being tracked can be defined. Select the [Create] button to finish creating the fence. Select the [Send] button to send the Geo Fence along with the shape to another user. Select [Cancel] to close the Create Geo Fence window and discard changes.



The default radius for monitoring users (filtered within the "Monitor" field) outside the Geo Fence is set at 75 km. This means the total area monitored begins at the farthest point from the center of the shape plus 75 km.

When a Geo Fence breach has been detected, an alert widget will appear in the lower left of the map display and a notification will be listed in the WinTAK notification list. Access this list by selecting the [Notifications Flag] in the upper right corner of the window or selecting the [Geo Fences] icon in the Toolbar. Geo Fence alerts may be deleted from either location.

Track History



When GPS is available, WinTAK tracks user movements, creating track paths. These track paths can be viewed on the display, exported to a file, or uploaded to a server. A GPS position must be established before tracking can begin. Track History can be configured in Settings > Tools Preferences > Track History Preferences.

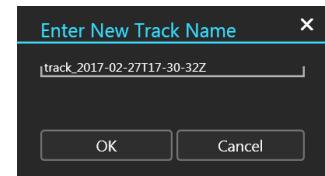


The Track History Tool controls the storage and display of track paths. Select the [Track History] icon from the Toolbar to open it. The options include [New Track], [Track User List], and [Clear Tracks].

New Track

Select [New Track] to create a new track. Accept the default track name or enter a custom name, then select [OK] to begin the new track. GPS location data will be recorded as breadcrumbs in the track database.

Select the [Clear Tracks] option to remove any tracks from the map.

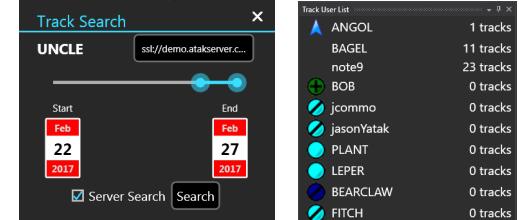
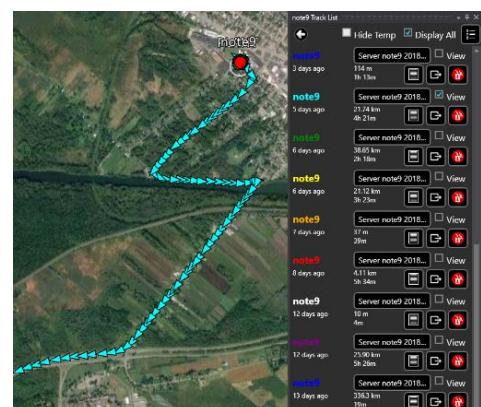


Track User List

Select [Track User List] to view track information that has been previously saved locally or on a TAK Server. The Track User List displays information about tracks stored on the local device. Select the user of interest, even if no local tracks are available. Selecting them makes server search available. Any local tracks that are available will appear.

Select any track to display it and pan the map to its location. Multiple tracks can be visible on the map at the same time, and visibility can be toggled on and off by checking/unchecking the [View] box. Select [Details]

to modify the name, color or style of a selected track and view additional information. Access the Elevation Profile Tool from the Details menu by selecting on the [Elevation] icon in the upper right. Remove tracks from the list and map by clicking the [Delete] icon present in the Track List. Export tracks to a KML, KMZ or CSV file, or to TAK Server by selecting the [Export] icon found in the Track List or within the Track Details. Tracks are exported to the C:\Users\username\Documents\WinTAK\Export\ folder. Select [Done] to dismiss the Export feature or [Send] the track to another TAK user.



To retrieve track information from a TAK Server, ensure a TAK Server connection is available, select a desired user from the list, then select [Continue Search on Server]. Select the desired TAK Server from the drop-down list, use the slider to specify the desired time range, then select [Search]. The tool searches the track database for matches against the specified time range and user callsign. The matching tracks are displayed as a list and are navigated the same as the local tracks. Tracks pulled from TAK Server are identified as such in the track name.

Digital Pointer Tool



The Digital Pointer Tool capability allows the user to utilize several tools: Mark Tool, Digital Pointers (DP), Place Reds and Local DP.

Mark Tool



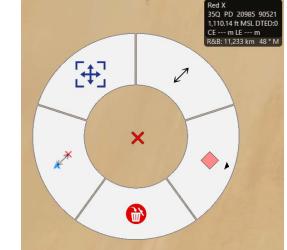
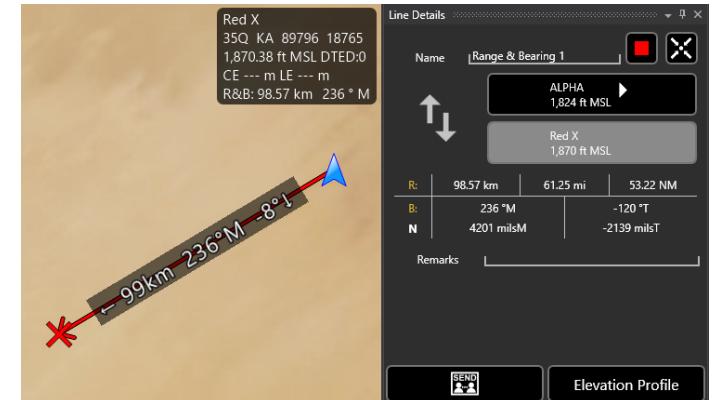
The Mark Tool provides a quick way for discerning the coordinates and elevation of a location on the map. Select the [Mark X] icon on the toolbar to open the Red X Tool. The icon turns red with a red dot to indicate that it is in the movable state.

Each time the map is clicked the Red X will move to that location. The Red X position, elevation (if DTED is installed) and Range & Bearing information is displayed in the widget at the upper right of the display. Select the [Mark X] icon again to pin the Red X to its current location. The pinned state is indicated by the removal of the red dot from the icon. The icon remains red to indicate that the tool is active.



Selecting the [Red X] will open its radial. The options available are: Delete, R&B Line to Self, Fine Adjust, R&B Line and Place a Marker. Long press/right click the [Red X] icon on the toolbar to disable and remove the X.

Note: The Red X is not persistent. When WinTAK is closed and then reopened, the X will no longer be present.



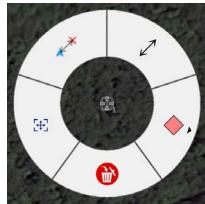
Digital pointer



Select one of the three [DP] icons on the toolbar to toggle the tool into a movable state. Select the desired location on the map and a DP indicator will appear in that location.



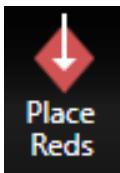
Select another location to move the indicator. Tap the [DP] icon on the toolbar again to pin the DP and right click or long press to disable the DP. If other team members are on the same network, the DP markers will automatically be sent to them as notification messages.



The options available from the DP Marker radials are: Delete, Fine Adjust, Pair to Self Marker, R&B Line and Place Marker.

The options available from other users' DP Marker radials are: Lock View, Pair to Self Marker, R&B Line, Bloodhound and Place Marker.

Place Reds



The [Place Reds] button can be used to quickly place multiple red markers. When toggled on, any click on the map will create a new red marker at the selected location.

Local DP



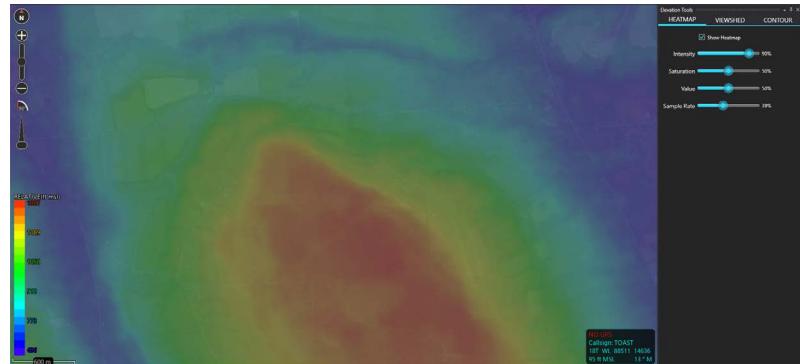
Selecting the [Local DP] button allows the user to place a local DP marker at the specified coordinates.

Elevation Tools



Select the [Elevation Tools] icon to open the Heatmap, Viewshed and Contour Lines functionality. The Heatmap shows the user elevation data on a color scale with lower elevations represented by blue and higher elevations in red.

The Transparency, Saturation, Value and Sample Rate of Resolution can be modified to user preference. DTED is needed for this tool to work properly.



Viewshed

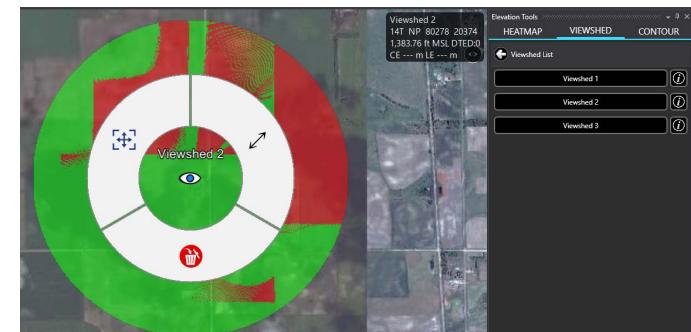
The Viewshed Tool allows the user to choose a position on the map interface and determine visibility from that location based on the surrounding elevation data. Select the [Eye View] icon and then select a location on the map or a map marker. An Eye marker will appear on the map interface.

Note: If zoomed out too far, the user will only see the Eye View icon and will need to zoom in further to see the viewshed.

A circle will display with green representing areas visible to the viewer and red representing areas that are obstructed from view. The user can modify the viewshed radius. The Height Above Marker can be altered to reflect how far above ground level the viewshed should calculate.

Intensity can be increased or decreased using the slide bar. Select [Remove Viewshed] to delete the viewshed from the map. Choose [Select Viewshed] to show a list of all created viewsheds. Select an individual viewshed name to pan to it on the map. Select the details icon [i] to view or modify the current viewshed parameters.

The viewshed radial will open by selecting the [Eye View] icon from the map. Available options are Delete, Fine Adjust and R&B Line.

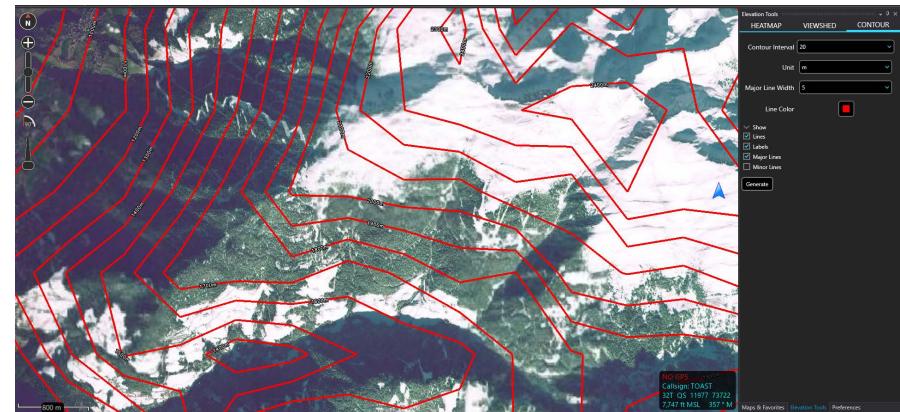


Settings for Elevation Tools can be changed by going to Settings > Tool Preferences > Elevation Overlays Preferences.

Elevation Contour Lines

The Contour Lines Tool allows the user to generate contour lines on the map in the area within the current window.

Select the [Contour] tab within the Elevation Tools screen. The [Generate] button becomes active when the map is zoomed to the correct scale (Scale varies based on screen resolution). Modify any of the fields desired and then select the [Generate] button. A progress bar and the percentage complete will appear to give feedback on the contour line generation. Major Lines, Minor Lines and Labels can be toggled on or off without having to regenerate the contour lines. Line color and Major Line Width can be changed after the lines have been generated. If the Interval or units (meters or feet) are modified, select the [Generate] button to regenerated the contour lines with the new values.



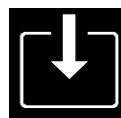
DSM Support

DSM (Digital Surface Modeling) imagery is supported in combination with the elevation heat map and the Mark tool. The Imagery files with DSM data can be manually placed in the C:\ProgramData\WinTAK\DSM folder for ingestion. When ingested, no actual imagery will be shown on the map, but it will provide height data for buildings and trees.

The user can pan to the location of the imagery file, turn on the heat map and place a Red X in the highlighted area. The Red X will show additional information including: Terrain Elevation and Surface Elevation. If DTED data is installed, Estimated Height will also be shown.

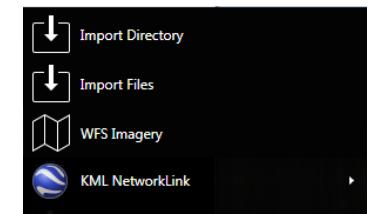


Import Manager

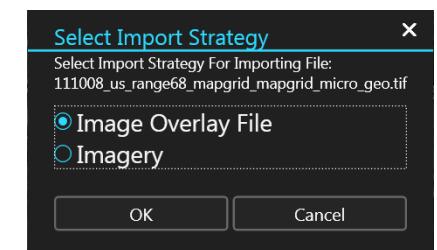


Use the Import Manager to import supported files into WinTAK. Examples of file types that are supported include: XML, 3D Models, SQLite, MrSid, NITF, GRG, PFPS/RPF, GEOTIFF, PFI, KML, KMZ, LPT, DRW, GPX and SHP. Files can be imported either by dragging and dropping a file or by selecting the drop-down in the upper left corner and choosing the [Import Manager] Icon. Select an import strategy for the file, if necessary.

The Import Manager window will appear. When the import is complete, "All files and folders successfully imported" will display on the screen. Imported DTED files will be placed into C:\ProgramData\WinTAK\DTED. Dependent on file type, most imported files will be accessible via Maps and Favorites, Overlays or Data Package.



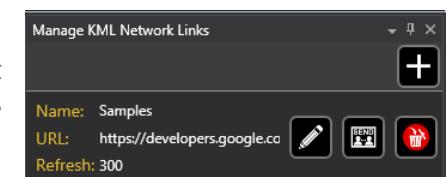
Imported XML and SQLite files are found under the Maps & Favorites [**ONLINE**] tab. Native type files such as MrSid, NTF, PFPS, GeoTiffs, CIB and CADRG are found in the Maps & Favorites [**IMAGERY**] tab. Only the files that are currently on the mapview appear in [**IMAGERY**] tab. Panning the view will change the listing to correspond with the view. Files imported using the Image Overlay File import strategy appear under Overlay Manager > Image Overlays.



Imported overlay files including KML, KMZ, LPT, DRW, GPX and Shapefile will be accessible via Overlays > File Overlays. Data Package files that are imported will be available in the Data Package tool. Imported KML geometry supports altitude and KML specified altitude modes (clamp-to-ground, absolute and relative-to-ground).

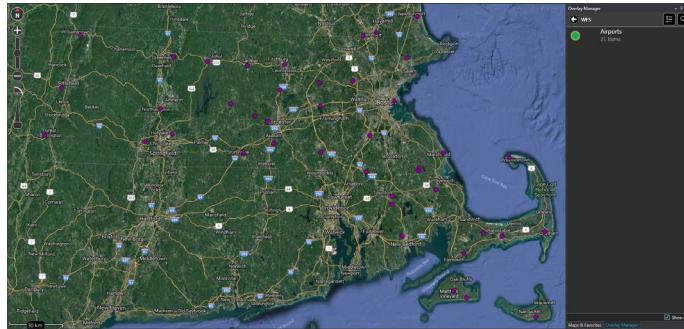
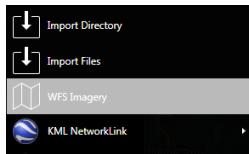
Select the drop-down (in the upper left corner), select the [Import Manager] tool, and choose to import a directory, files, or to add a KML network link. Navigate through a Windows File Directory, select the files and choose [OK] or [Open] to process the selected files. Choose an import strategy if prompted.

To setup a KML Network link, select the drop-down in the upper left corner and navigate to Import Manager > KML Network Link > Manage Network Links to set up the import of a KML file via the network using HTTP. Select [+] and then enter a name for the link, a valid HTTP URL and a refresh interval. Select [Add] to save the link. The links will be downloaded and added to the map and Overlay Manager upon exit and restart of the application.



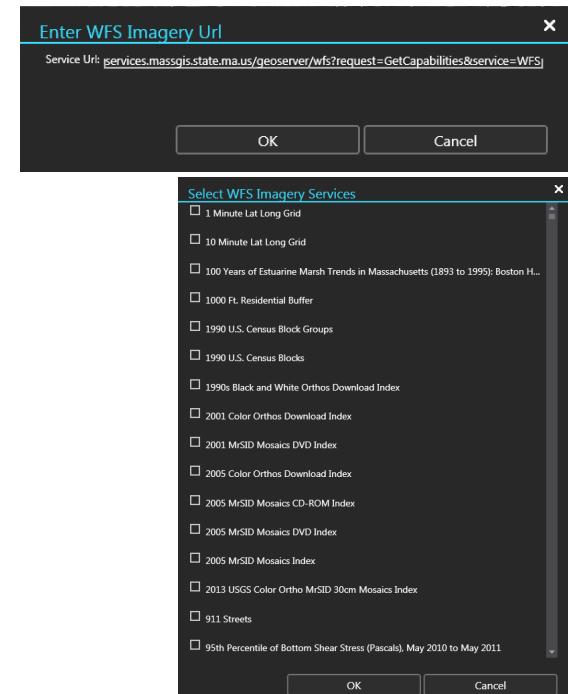
To add more links or remove existing KML Network links, return to [**Manage Network Links**]. Use the [+] to add more links or select [**Delete**] to remove an existing link.

WFS (Web Feature Service) Support

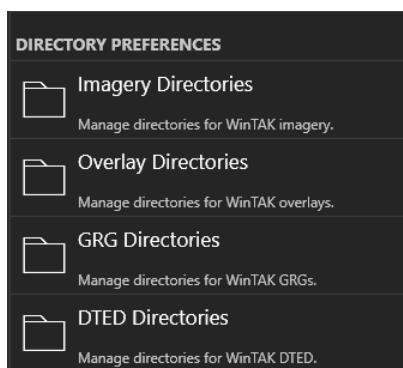


WFS imagery is supported and can be ingested in several different ways. If the user has an existing WFS xml config file, it can be dragged and dropped onto the map. The file can also be manually placed into the C:\ProgramData\WinTAK\WFS folder for ingestion.

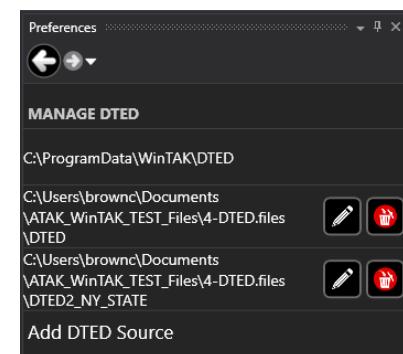
WFS Imagery can also be added by selecting the drop-down (in the upper left corner), selecting the [Import Manager] > [WFS Imagery] and then entering a WFS Imagery Service URL. After querying the service, the user will then be presented with a list of available Imagery sets. The user can select which services to Import and then select [OK].



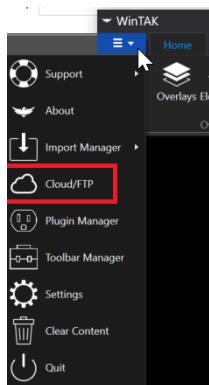
Multiple Directories



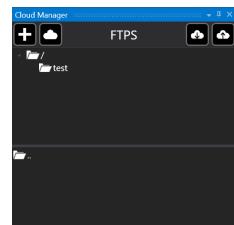
The user can set up multiple directories to be processed when WinTAK is started. These directories include Imagery, Overlays, Image Overlays and DTED. Select Settings > My Preferences and scroll down to the Directory Preferences section. Choose the desired directory then select, for example, [Add DTED Source] to manage which DTED folders will be processed. Select the [Folder] icon, navigate to the location of the DTED folder and then select [OK] twice. WinTAK will now read from that folder for DTED information. Additional folders can be added and WinTAK will read from all folders that are added.



Cloud/FTP

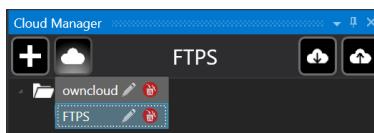
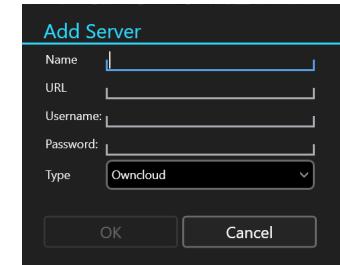


The Cloud/FTP feature allows users to upload/download files from external server. The types of servers supported are OWN CLOUD, FTP and FTPS.

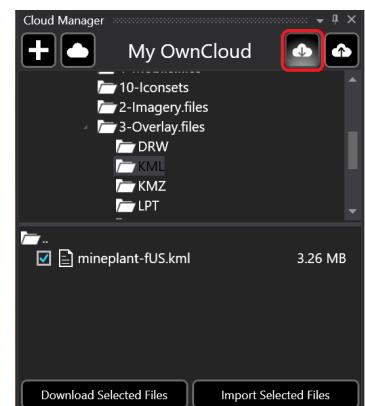


Select the Cloud/FTP feature by selecting the drop-down in the upper left corner and choosing the [Cloud/FTP] option. From the initial screen the user can ADD a server, select which server to use and download or upload a file.

Select the [+] icon to launch the Add Server dialog. Enter the fields for the server to be added and specify the type of server to be defined. When all the fields are completed, select [OK] and the connection to the server becomes active.



Select the [Cloud] icon, to display the Select Server options. If multiple servers are defined, the user can choose the desired server to use for the current operation. The server settings can also be edited, or the server definition can be deleted.

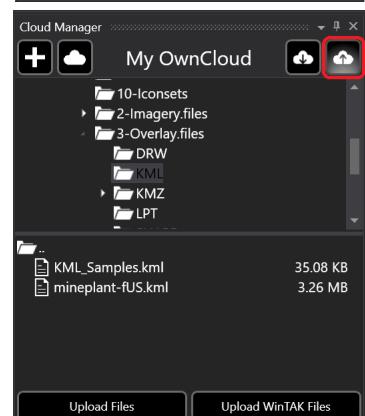


Downloading Files

After choosing the desired server, select the [Download Cloud] icon to select files to download from that server. Left click on the folder name in the upper area and the files available in that folder will be presented in the lower area. If the folder contains additional folders, those will be listed beneath the parent folder in the upper area. Check all the files in the lower area that should be downloaded. Then select whether the selected files should only be downloaded or should be Imported into WinTAK.

If the user chooses the [Download Selected Files] button, a Windows file explorer window is opened, and the user selects where to save the file.

If the user chooses the [Import Selected Files] button, the file is downloaded and imported into WinTAK. The user can then open Overlay Manager and navigate to the item.

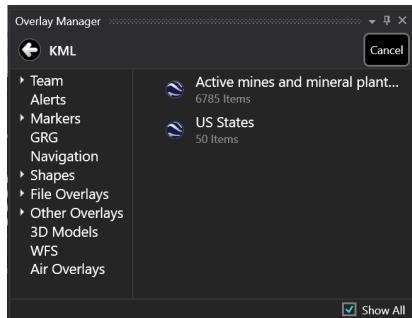


Uploading Files

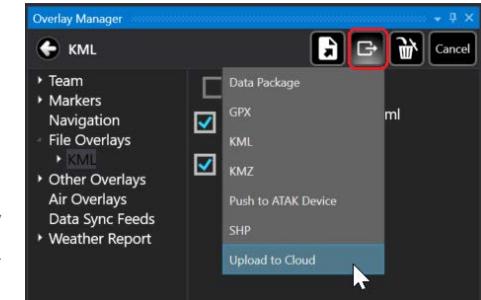
After choosing the desired server, select the [Upload Cloud] icon, to either browse the file system and upload selected files or select WinTAK files using the Overlay Manager to upload selected files.

To select files with a Windows file explorer window, select the [Upload Files] button. Navigate to the desired folder and select the file(s) for upload then select [OK]. The files are then uploaded to the directory that was selected on the server.

Cloud/FTP (Continued)



To select files with Overlay Manager, select the [**Upload WinTAK Files**] button. The Overlay Manager is opened to the File Overlays category. Drill down into Overlay Manager to display the files, select a file and then it will be uploaded to the server.



Uploading from Overlay Manager

Cloud/FTP support is also integrated into the Overlay Manager workflow. To initiate an upload from the Overlay Manager, select the Overlay Manager, select the [**Export**] icon, then choose the category and the files to be uploaded. From the drop-down, select the [**Upload to Cloud**] option.



Once the Cloud Manager window is opened, select the server/directory for the upload and then select the [**Upload Selected Files**] button and the selected files are uploaded to the directory that is selected on the server.

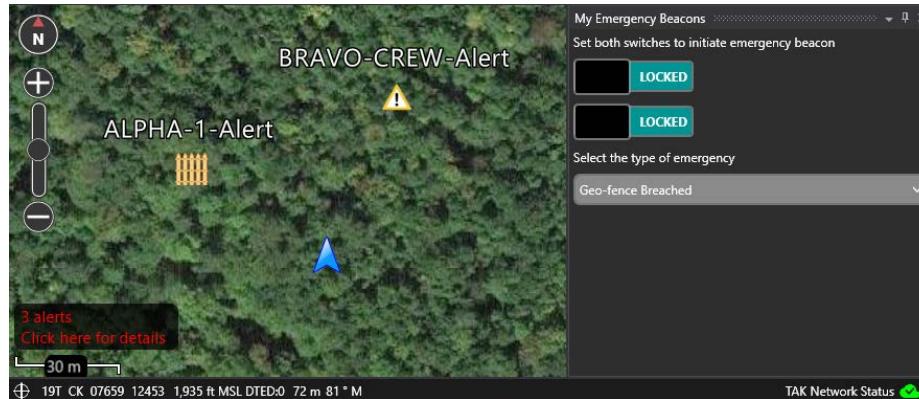
Emergency Beacon



Select the [Emergency Beacon] icon to open the Emergency Beacon Tool.

The Emergency Alert (beacon) allows the user to indicate their location and need for assistance by selecting one of the following: Alert, Ring The Bell, Geo-Fence Breached and In Contact.

Alert
Ring The Bell
Geo-fence Breached
In Contact

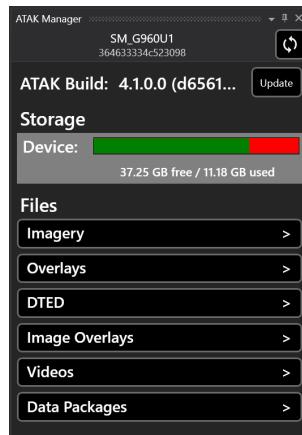


Once the Emergency type has been selected and both switches have been enabled, the TAK Server broadcasts the announcements to all network contacts. Even if the user's device is turned off, the beacon will continue. Only when the user returns to the Emergency Beacon tool and turns off the switches will the beacon be canceled and removed.

ATAK Manager



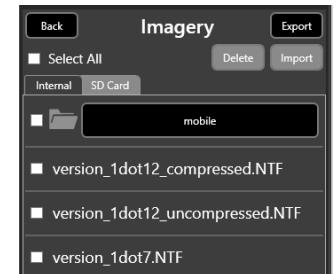
ATAK Manager is launched by selecting the [ATAK Manager] icon from the menu bar.



The Device Details screen displays which version of ATAK is installed, the amount of space available on internal storage and external storage (if present) and displays a list of file types that can be imported/exported between ATAK and WinTAK. Select [**Install**] or [**Update**] next to the ATAK version number to launch a Windows File Explorer window. From this window, select the ATAK .apk file to be installed on the ATAK device. Selecting the APK will push the file to the device and then install it.

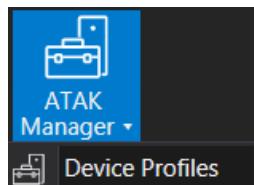
The Storage portion of the screen displays amount of free/used space available on the internal and external (if present) SD cards. The Files section allows the user to transfer Imagery, Overlays, DTED, Image Overlays, Videos or Data Packages between ATAK and WinTAK devices.

Select the type of data to be transferred and whether to [**Export**] data from WinTAK to ATAK or [**Import**] data from ATAK into WinTAK. Files can also be imported from an ATAK devices's external SD Card.

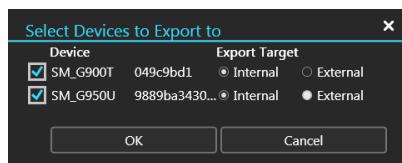


If the user chooses the [**Export**] option, a Windows file explorer window will open to the default WinTAK directory for that data type. The user selects the file(s) to export and ATAK Manager will copy the files to the correct location in the ATAK directory structure.

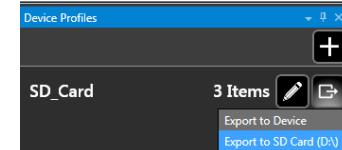
If the user chooses the [**Import**] option, a list of files on the ATAK device matching the selection will be displayed. The user selects the file(s) and clicks on the [**Import**] button. The files are copied to the default WinTAK directory for that data type.



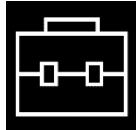
The user can create a device profile to quickly load an ATAK device with preset data. Under the ATAK Manager Icon the user may select Device Profiles and then the [+] button to create a new profile. This will bring up the Create Device Profile window. The user can select the plus buttons to add APKs, Mission Packages, Imagery, Overlays, DTED, Image Overlays and Videos.



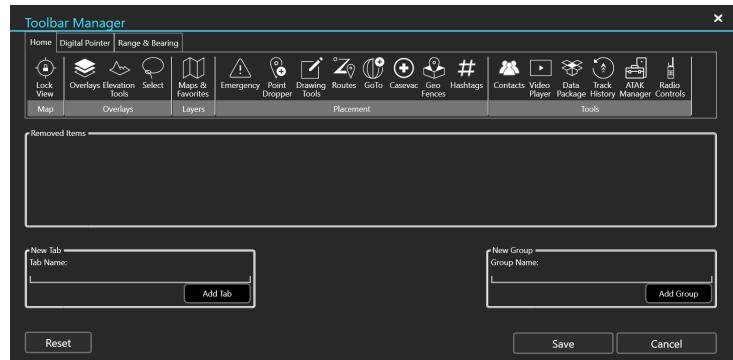
This profile can be exported to a single device or to multiple devices at once. The Device Profile can also be exported to an SD Card.



Toolbar Manager



Select **[Toolbar Manager]** from the additional tools menu in the upper left corner to customize the Toolbar. The user can rearrange buttons, groups and tabs. Icons can also be hidden from the Toolbar.

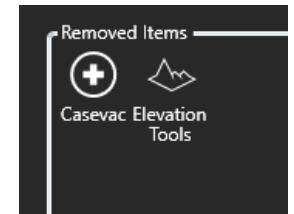


Within the Toolbar Manager, drag and drop individual icons to rearrange them. Groups can also be dragged to different areas of the toolbar, as can groups within Tabs. To create a new Tab, select the **[New Tab]** window, fill in a tab name and click **[Add Tab]**. A group may be dragged and dropped into the tab. Once a group has been added to the tab, individual icons can then be dragged in. Create a new group through the **[New Group]** box.



To rename a tab or a group, right click on the current tab name or group name, enter a new name and select **[Enter]**.

To hide icons, drag them to the **[Removed Items]** box. Select **[Save]** when finished and the Toolbar will reflect the changes. **[Reset]** will return the Toolbar to its default configuration.



Clear Content



Clear Content allows the user to remove all user-added content from the Windows Machine. Note that this action will permanently erase all WinTAK content. Select [Clear Content] from the additional tools menu in the upper left corner drop down

[Clear maps & imagery] checkbox clears all map and imagery data that has been imported in the Maps & Favorites Tool.

Lock both switches by clicking on them and then selecting [Clear Now] to remove all content. WinTAK will then close. Select specific items to delete by tapping [Select Items]. This will navigate to the Overlay Manager multi-select tool.

