

ATAK



Software User Manual

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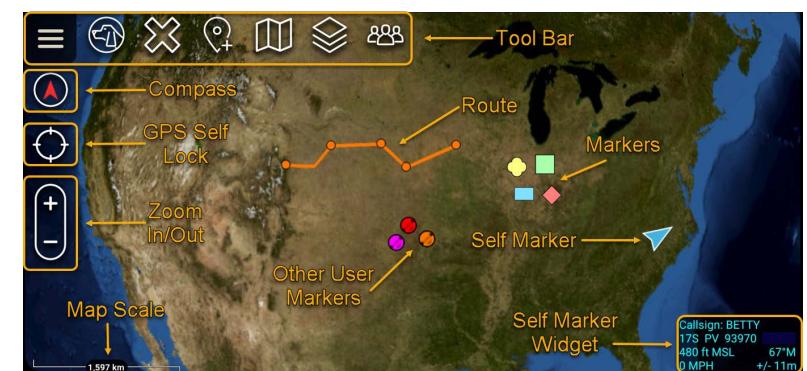
ATAK Overview

The Team Awareness Kit for Android (ATAK) is a Government-off-the-Shelf (GOTS) software application and mapping framework for mobile devices. ATAK has been designed and developed to run on Android smart devices used in a tactical environment. The ATAK 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. ATAK promotes information flow and communications from the tactical environment to command enterprise locations.

The first time ATAK is opened, or after a Clear Content, a passphrase is auto generated to activate data encryption. The user can supply their own passphrase by using Settings > Callsign and Device Preferences > Encryption Password > Change Encryption Passphrase. Following this step, the End User License Agreement (EULA) must be accepted. Next, a prompt will appear to allow ATAK to have access to several areas of the device such as its location, pictures, videos, SMS, etc. A prompt will appear with a TAK Device Setup screen to allow further configuration of ATAK. Changes and imports made here can always be updated later. Finally, the Self-Marker can be placed manually on the map if GPS location is not enabled. Do this by following the instructions located in the Self-Marker widget in the lower right corner of the map.

The toolbar sits at the top of the map display. The features whose icons reside on the toolbar are discussed in the individual sections of this guide. The three bars to the left of the toolbar (or to the right when using the legacy toolbar option) provide access to all ATAK tools and plug-ins. Long pressing the three bars hides the toolbar.

The North Arrow appears in the upper left and is used to control map orientation. It has two primary modes: North Up/Track Up (default) and Manual Map Rotation/Lock. While in North Up/Track Up Mode, single press on the **[North Arrow]** icon to cycle between the North Up and Track Up map orientation. Long press the **[North Arrow]** to call out the additional controls menu where the Manual Rotation/Lock and 3D features are available.



Select the **[Rotation]** icon to enter Manual Map Rotation/Lock Mode. When in Manual Map Rotation/Lock Mode, rotate the map orientation by pressing on the map with two fingers and pivoting them in the desired direction. Single press on the **[North Arrow]** to lock the screen orientation, signified by the appearance of the lock icon, and again to unlock the orientation for further adjustment. 3D controls are discussed in a separate section.

Select the **[Magnifier]** icons to zoom in or out on the map. The map can also be zoomed by using two fingers on the screen to pinch and spread the map. Select the Android back button to center the screen on the Self-Marker. Selecting the **[Crosshair]** icon will pan to the Self-Marker and lock the center of the screen to the Self-Marker's position.

Alerts and notifications are displayed in the lower left of the map interface.

The Map Scale displays a 1 inch to X mi/km reference on the map. The scale adjusts with the map when zoomed in and out. Hint windows are available to alert users to changes or make suggestions about the use of tools the first time they are opened.

Compass Interactions



There are several options for interacting with the [North Arrow] compass icon. Tapping on the compass icon cycles between North Up and Track Up for map viewing. Selecting North Up keeps the map locked with North always being at the top of the screen.

Track Up allows the map to rotate based on the bearing of the device itself, keeping the Self-Marker facing north. Long Pressing the compass opens additional control menus for Manual Orientation and 3D Modes.

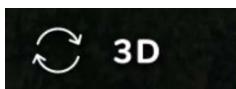


Manual Orientation

To place the map into manual orientation, long press on the compass and select the Manual Orientation control option. Once in the manual orientation mode, touch the screen with two fingers and simultaneously rotate both fingers and the map will rotate accordingly.

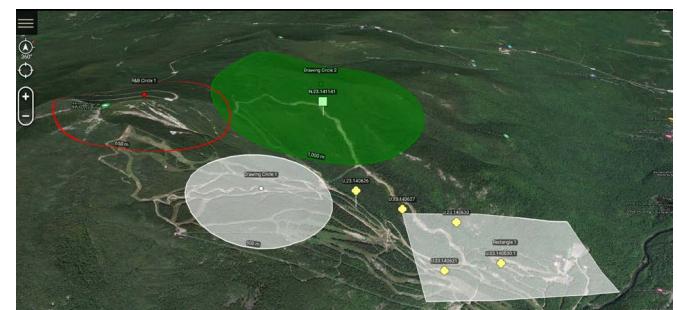


To lock the map in its current rotation, tap on the compass again and the icon will indicate that the map is locked.



3D View

ATAK features 3D viewing of terrain and map items (Elevation Data such as DTED, Shuttle Radar Topography Mission (SRTM), or Quantized Mesh are required to be installed). To enable 3D view, long press on the [North Arrow] to call out the additional controls menu and select [3D].



A tilt angle indicator will appear around the edge of the [North Arrow] when 3D view is active. Touch the screen with two fingers and simultaneously swipe up or down on the screen to tilt the view angle. Once the appropriate viewing angle is set, select the [3D Lock] icon to retain this view while panning the map. While viewing the map from an angle, some map items will appear raised above the map surface if they have defined elevations.



ATAK also allows the view to tilt to a 90-degree angle to look at a marker/image from a straight on perspective.

Compass Interactions (Continued)

3D Models

ATAK 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 manually placed in the atak/overlays folder prior to startup. 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 using manual placement to the atak/overlays folder, place a .ZIP file containing the .OBJ file (and others) into the directory and they will be imported on startup.



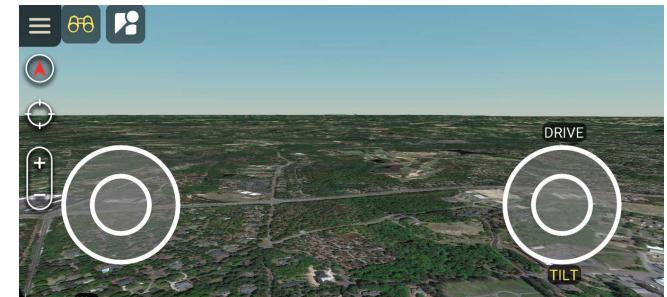
Once imported, a 3D Model icon will appear on the map. Zoom into the area of the icon until a loading ring appears. After the loading process has finished, the 3D model will be projected onto the map. Enable the map 3D View and tilt the view angle to see the 3D modeling. Loaded 3D models will appear as their own category in Overlay Manager and can be toggled on/off or removed from there.

First Person View



ATAK provides the ability to view the map from a First Person perspective. First Person simulates the view of a user looking straight ahead towards the horizon rather than from the default overhead map view perspective. The First Person tool can be activated from the Additional Tools and Settings menu.

When selected, the First Person Tool places buttons at the top of the map and two soft joysticks on the right and left of the map.



To enable the First Person View perspective, select the **[First Person View]** button and then tap the desired location on the map.



Compass Interactions (Continued)

Once the map is in First Person mode, the soft joysticks can be used to control the camera. The right joystick toggles between driving and tilting the camera view. The left joystick adjusts the elevation of the First Person view. Elevation can be adjusted both above ground level and below ground level for a subterranean view.

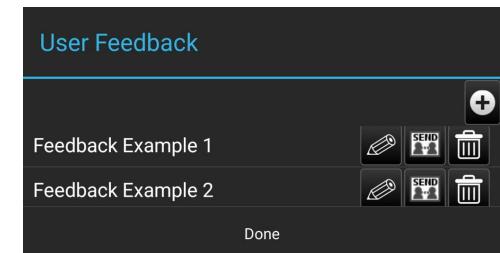


Select the [First Person] icon to disable First Person mode and return to the default map view.



User Feedback

ATAK users can initiate feedback and issue reporting. To access the User Feedback Tool, navigate to Additional Tools and Settings > Settings > Support > User Feedback. From the User Feedback dialog, select [+] and complete the text fields using text entry or the Android speech to text feature accessed by selecting the [Microphone] on the top row of the QWERTY keyboard. Associated files, like log files and screenshots, can be added by selecting [Attachment] > [Edit] > and [+] to navigate within the Android internal file structure system to the desired file(s). When the form is completed with the required information, select [Send] and the bug report will automatically be uploaded to a repository when a connection is available.



Placement



Locations of interest can be entered using the Point Dropper tool. Select the [Point Dropper] icon to place internationally standardized markers and other icons on the map, edit the data and share the markers with other network members.

Self-Marker



By default, the Self-Marker is displayed as a blue arrowhead with a white outline at the user's current location. The radial options available when for the Self-Marker are (clockwise from bottom): User Details, Compass Overlay, Polar Coordinate Entry, Fine Adjust, GPS Error Overlay, R&B Line, Custom Threat Rings, Lock to Self, Tracking Breadcrumbs, and Place a Marker at the user's current location.



The appearance of the Self-Marker can be customized by navigating to Additional Tool and Plugins > Settings > Display Preferences > My Location Color/Size. Custom options for the Self-Marker include marker size, main color and outline color. To apply custom colors, select the [Custom] option and use the sliders under Change/Create icon Main Custom Color and Change/Create Icon Outline Custom Color to create the desired color.



Long-press [Fine Adjust] to open the sub-radial and enter Coordinate or MGRS Location.



Long-press [Place Marker] to open the sub-radial to place a CoT marker.

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 marker indicates that the user 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: (clockwise from bottom) Delete, Polar Coordinate Entry, Fine Adjust, R&B Line, GPS Lock on Friendly Marker, Contact User (Communication options), MSD, Show Tracking Breadcrumbs and User Details.



Long-press or tap [Communications] to open the Communications sub-radial.

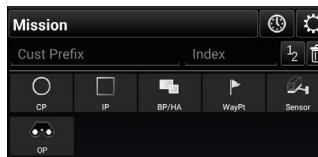
Chat and Send Data Package are always available to communicate with the user. If configured in Settings; Email, SMS Messaging, TAK Chat (XMPP), VOIP and Cell Phone communication options will also appear on the sub-radial

Point Dropper

Select the [Point Dropper] icon to open the Point Dropper menu, which contains several iconsets, recently added points and Iconset Manager.

The basic Markers symbology affiliations are: Unknown, Neutral, Red and Friendly. Select a marker from the pallet, then tap a location on the map to drop the marker.

To add a marker by manually entering coordinates, choose the marker and long-press a location on the map. A window will open allowing the user to enter the desired coordinates (MGRS, Lat./Long, etc.). Change the standard naming convention by entering values into the custom prefix and index fields or leave blank to use the defaults. If values are entered, the next marker will be dropped with the prefix name and starting number(s) or letter(s) and every subsequent marker will be assigned the next consecutive number(s) or letter(s).

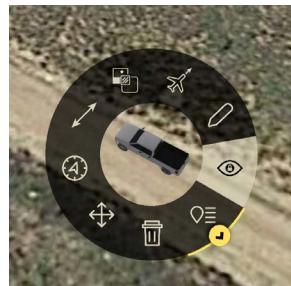


Select the mission specific iconset to open marker options including Contact Point (CP), Initial Point (IP), BP/HA, Waypoint, Sensor or Observation Point (OP).

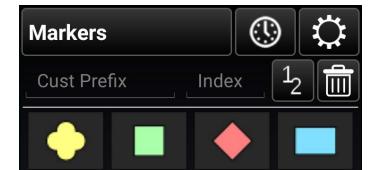


The Mission iconset allows the user to place mission-specific markers. For instance, the Sensor marker can be placed with a visible Field of View (FOV) direction and length. The FOV can be adjusted from the Sensor radial. The radial options are (clockwise from bottom): Delete, R&B Line, Adjust FOV Angle Width, Adjust Direction and Length, Play Video (if configured in Details), FOV Color, FOV Visibility and Sensor Details with sub-radial Send.

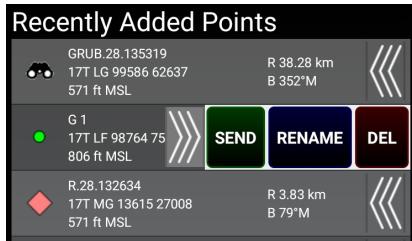
Swipe in the iconset area or select the [Iconset Name] field, bringing up the iconset drop-down, to move between iconset pallets.



The Vehicle Models iconset places to-scale 3D models of the selected icon. The available radial options are: Delete, Fine Adjust, Polar Coordinate Entry, R&B Line, Opacity, Change Heading, Edit, Free Rotate / 3D View, and Details with sub-radial Send. If the Edit option is selected, modifications to the model can be made in the same manner as the Rubber Sheet feature. See the Rubber Sheet section for more details. The Free Rotate / 3D View allows the user to quickly access the map rotation and 3D view of the Vehicle Model or other objects on the map.



Point Dropper (Continued)



The last point placed is shown at the bottom of the Point Dropper window. The information for all recently placed points can be accessed by selecting the [Clock] icon. This displays the marker icon, name, coordinates, elevation, and range & bearing information. The user can send, rename or remove any recently added markers by selecting the [Arrows] next to the marker to reveal [SEND], [RENAME] or [DEL] buttons.

Select the [Iconset Manager] (gear) button to add or delete iconsets or to set the default CoT Mapping.

Iconset Manager		
Add Iconset	Default Mapping	
Iconset	UID	Count
Default	34ae1613-	821
FEMA Icons	f8f7f666-	42
Generic Icons	ad78aafb-	657
GeoOps	83198b4872a	68
Google	f7f71666-	96
OSM	6d781afb-	347

Select Default CoT Mapping
<input checked="" type="checkbox"/> Force all icons to this icon set
Markers (*Selected)
Spot Map
'Google' icon set
'OSM' icon set
'Generic Icons' icon set
'FEMA Icons' icon set
'Default' icon set
'GeoOps' icon set
Cancel

Radial Menus



The options available for Unknown Object Markers are: Delete, Polar Coordinate Entry, Fine Adjust, R&B Line, Lock On, Tasking, MSD, Tracking Breadcrumbs and Details with sub-radial Send.

Long-press [Fine Adjust] to open the sub-radial which allows the ability to enter coordinates or MGRS location.



The options available for Neutral Object Markers are: Delete, Polar Coordinate Entry, Fine Adjust/Enter Coordinate/MGRS Location, R&B Line, Lock On, MSD, Tracking Breadcrumbs and Details/Send. Long-press [Fine Adjust] to open the sub-radial which allows the ability to enter coordinates or MGRS location.



The options available for Red Object Markers are: Delete, Polar Coordinate Entry, Compass Overlay/Bullseye, Fine Adjust/Enter Coordinate/MGRS Location, R&B Line, Custom Threat Rings, Tracking Breadcrumbs and Details with sub-radial Send. Long-press the [Compass] to open the sub-radial that allows the user to add a compass to the marker, anchored a bullseye to the marker or draw a range and bearing between the marker and the Self-Marker.



Long-press [Fine Adjust] to open the sub-radial which allows the ability to enter coordinates or MGRS location.



The options available for Friendly Object Markers are: Delete, Polar Coordinate Entry, Fine Adjust/Enter Coordinate/MGRS Location, R&B Line, Lock On, Play Video (if configured), Contact Card (if configured), Custom Threat Rings, Tracking Breadcrumbs and Details with sub-radial Send.



The options available for Spot Markers are: Delete, Fine Adjust/Enter Coordinate/MGRS Location, Polar Coordinate Entry, R&B Line, Nav-To, Custom Threat Rings, Show Label and Details with sub-radial Send.

The options for User Defined Icons are: Delete, Polar Coordinate Entry, Fine Adjust/Enter Coordinate/MGRS Location, R&B Line, Lock On, MSD, Tracking Breadcrumbs and Details with sub-radial Send.

Select [Details] on a marker radial to make desired modifications including: Coordinate, Elevation, Name, Type and Remarks. Selecting Marker Type opens a dialog box with extra categories. File attachments including images, can be associated with the object by selecting the [Attachments] (paperclip) icon. Once all the desired modifications have been made, the Marker can be sent to other network members using [Send]. The information can be broadcast to all members or sent to specific recipients. Select the [Auto Send] option to broadcast the marker to other TAK users on the network, with updates automatically sent about once every 60 seconds.

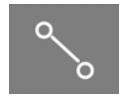
Range Tools



Range Tools provides several types of measuring tools for measuring direction and distance. Select the [Range Tools] icon from the Additional Tools & Plugins window to open the Range Tools toolbar. The toolbar includes a R&B circle, dynamic measure line, static measure line and a bullseye.



Range & Bearing Line

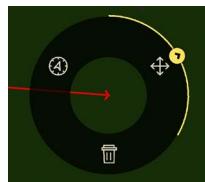


The R&B Line tool calculates the distance between two locations on a map, the distance between an object on the map and another point on the map, or the distance between a point on the map and the Self-Marker. Select the [R&B Line] icon on the toolbar to toggle on (yellow) and off (white). When yellow, tap a point to measure from or long press to measure from the Self-Marker to that point. Once the first point or object is selected, tap another point or object from which to measure. Once endpoints are set, the line is stationary.



Select the [Dynamic R&B Line] icon to begin creating a line that can be moved and repositioned by the user. Tap once to place an endpoint, then again for the second endpoint. This R&B Line remains unlocked. Touch and drag an endpoint to move it. When the desired location is established, select the center of the line and use the [Pin] button on the radial menu to pin the position of the bearing line. This pinned R&B Line will remain after the Dynamic R&B Line is toggled off.

The pinned R&B Line will show the azimuth, distance and depression or elevation degree between the two points. To reposition an anchor point, long press on either end of the bearing line, then tap another location. The line will be moved to the new location with an adjusted distance and azimuth.



Select either end of the R&B Line to display the R&B Line end point radial.

The options available are: Delete, Fine Adjust/Enter Coordinate/MGRS Location, and Polar Coordinate Entry.



To make fine adjustments to either end of the line, tap the [Fine Adjust] icon on the radial. Cross-hairs appear and the area is magnified. Drag finger inside the magnified area to finely position the end of the bearing line, then select [Confirm] to accept the new position or [Cancel] to discard it. To delete the bearing line, select the [Delete] icon on the radial and the line will be deleted.

To make fine adjustments to either end of the line, tap the [Fine Adjust] icon on the radial. Cross-hairs appear and the



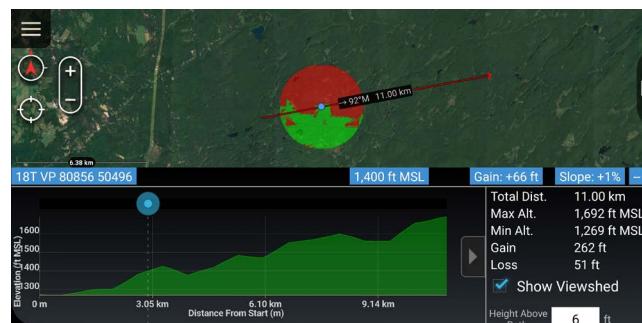
To obtain even further options for the bearing line, tap along the line and the R&B Line radial will display. Options available are: Delete, Clamp to Ground, Edit, Bloodhound (enabled if the R&B Line is created between 2 markers), Depression or Elevation Degree, Angle Bearing Units, Distance Units, Minimum Safe Distance (MSD) and Details. See Bloodhound (Multiple Bloodhounds) section for more details about the Bloodhound radial option.



Range & Bearing Line Continued

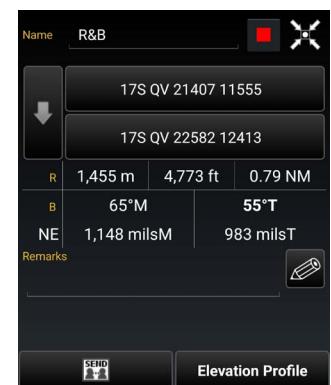
Select the Angle Bearing Units radial to display additional bearing unit options, including Degrees Grid (measured in relation to the fixed grid lines of the map projection), Mils Grid, Degrees Magnetic, Mils Magnetic, Degrees True or Mils True.

Select the Distance Units radial to display additional distance unit options, including Nautical Miles, Meters/Kilometers or Feet/Miles. If the length of the R&B line is longer than approximately 30km, the line will then follow the contour of the ground versus being a straight line from one endpoint to the other. To make changes to the parameters of the line, select the [Details] icon on the radial.

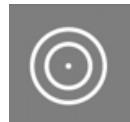


The Elevation Profile option at the bottom of the Details page displays the elevation profile for the selected R&B Line at the bottom of the map when selected. The Elevation Profile provides information on Max Altitude, Min Altitude, Gain and Loss. By checking the [Show Viewshed] checkbox, a viewshed will be shown along the line. Slide the blue dot left or right to advance the viewshed along the line. The R&B Line can be sent or broadcast to other users from the Details menu.

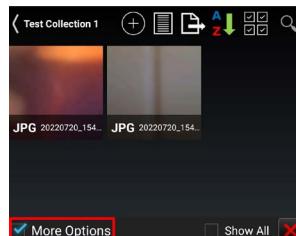
Range & Bearing Tool settings can be customized in Settings > Show All Preferences > Display Preferences > Basic Display Settings > Unit Display Format Preferences.



Range & Bearing Circle Tool

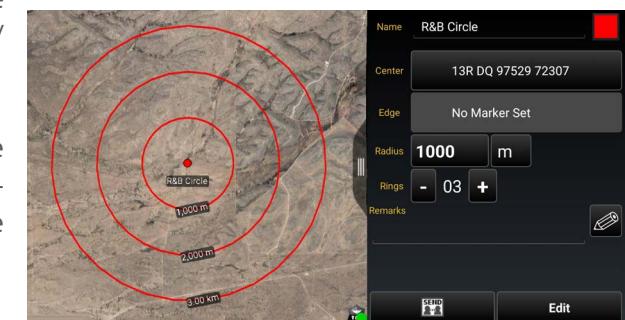


The R&B Circle Tool uses one or more range rings to mark a point on the map. Select the [Circle] icon on the toolbar to toggle the Circle Tool on (yellow) and off (white). When yellow, select the desired location on the map for the center of the circle. If the Self-Marker or a marker is selected for either the center or the radius of the circle, the circle's center or radius will change when the markers are repositioned.



To make further adjustments to circle parameters, tap the center of the circle to display the Circle radial menu. Options available are: Delete, Fine Adjust/Enter Coordinate/MGRS Location, Label On/Off, R&B Line, Edit and Details.

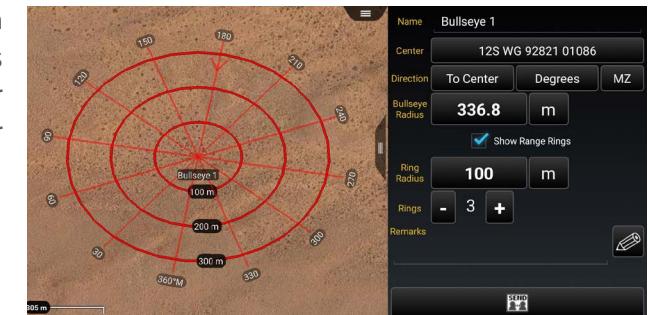
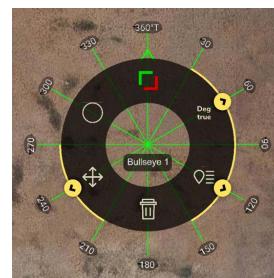
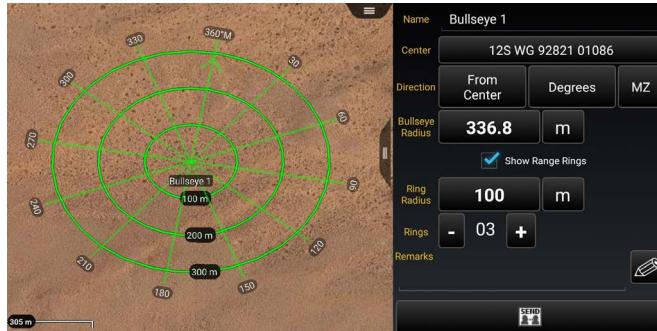
Select the [Details] icon on the radial to modify the circle center location, the radius, the unit of measurement, the number of rings and remarks. After making adjustments, the circle will be redrawn as specified. The R&B Circle can be sent or broadcast to other users.



Bullseye Tool



The Bullseye Tool is an additional Range & Bearing option that gives more information than the standard R&B Line or R&B Circle. The Bullseye provides a circular grid with lines every 30 degrees. The angles can be changed to be either toward the center point or away from the center point. Range Rings can also be added. The Bullseye can be sent or broadcast to other users by selecting [Send] from the Details window.

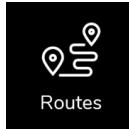


The Bullseye radial options are: Delete, Fine Adjust/Enter Coordinate/MGRS Location, Range Rings On/Off, Ingress/Egress, Units and Details.

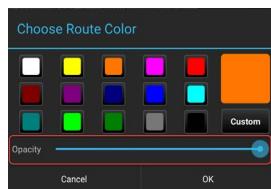
Route Planning and Navigation

Route planning and navigation capabilities allow the user to create or modify routes and set navigation objectives.

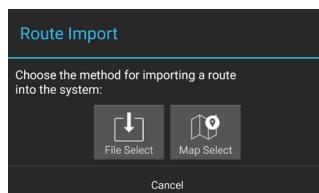
Routes



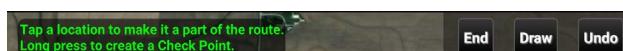
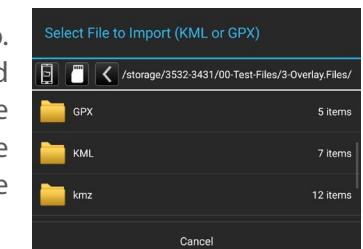
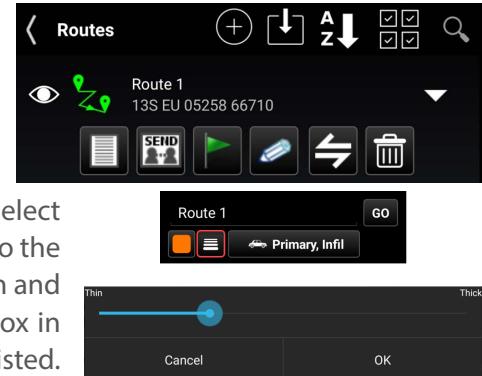
The Routes Tool allows users to quickly create, view and modify routes. Select the [Routes] icon from the Additional Tools and Plug-ins window to see a list of existing routes, create new routes, import routes, sort, export, delete routes and search for routes. For an individual route, the user can view the details, send, navigate to, edit, reverse or delete the selected route.



Route line thickness and opacity can be changed as well. To change route line thickness, select the [Line Thickness] button to the right of the [Color] button and use the slider to adjust to the desired line thickness. Route color opacity can be adjusted by selecting the [Color] button and then adjusting the opacity slider in the Choose Route Color window. If the [Show All] box in the lower right is unchecked, only routes that are visible in the current map screen will be listed.



Select the [Import] icon to import a route in one of two ways: from a file or from a line on the map. Choose [File Select] to navigate to the location of the saved routes (in KML or GPX format) and select the desired route. The saved route will be imported and displayed on the map and will be listed in the Overlay Manager under the Navigation category. Tap [Map Select] to choose a line present on the map and have it converted into a route. Examples of lines that can be used include a drawing tool polyline, a drawing tool telestration line or a line within a KML overlay.

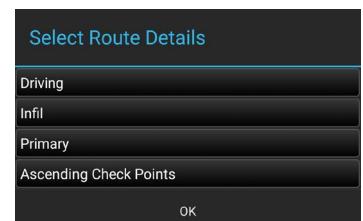


To create a new route, tap [+], select the route type, and follow the onscreen instructions. Select a location on the map to make it part of the route or long press to create check points along the route. Select [Draw] to manually create a route segment by using a finger drag motion on the map. Once the [End] button is selected, the route details window opens.



Within the Details window, choose to navigate to the route by selecting the [GO] button, change the color and opacity of the route, change the line width of the route, change the route details and modify the check points. Select [Undo] to undo any modifications to the check points.

The Route Details may be changed by selecting the field next to the [Color] button. Change the method of movement (driving, walking, etc.); Infil or Exfil; Primary or Secondary, and Ascending or Descending check points.



Routes (continued)

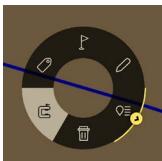


Check points can be modified as follows: Rename, Add Cues, Align (only available when using a route alignment plug-in) or Delete. To rename the check point, select the current check point and a Rename window will appear. After changing the name, select [Done]. To add a cue to a check point, select the box to the right of the distance column. The Cues window will appear and a preset cue may be selected or a custom cue may be entered. When the desired cue is added, select [OK].



The bottom of the route details screen provides the option to Send, Export, Edit, view the Elevation Profile and view/modify Route Preferences. When the send option is selected, the route may be sent to selected recipients on the network or broadcast to all available recipients. The route can be exported to a file in KML or GPX format and can be found in the "/atak/export" folder.

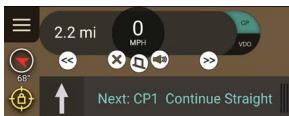
The Elevation Profile icon allows the ability to view the elevation profile for that route. The Elevation Profile provides information on Total Distance, Maximum Altitude, Minimum Altitude, Gain and Loss. If the [Show Viewshed] checkbox is checked, a viewshed will appear on the route and trace the route as the Elevation Profile blue dot is moved along the graph.



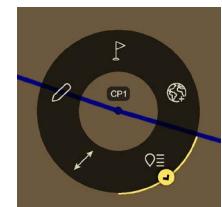
The Route Tool offers two different sets of radial options depending on which portion of the route has been selected. If a line segment is selected, the radial options include: Clamp to Ground, Labels On/Off, Navigation, Edit, Details with sub-radial Send and Delete.



If a point is selected, the radial options include: R&B Line, Edit, Navigation, Enter Coordinate and Details with sub-radial Send. Enter Coordinate allows users to quickly alter the position and elevation of check points, within a route, without having to enable editing mode first.



Route navigation can be initiated by selecting the route's navigation radial option or by selecting the route's [Navigation] icon in the Routes listing. Navigation information will appear in the top left corner.



If a cue has been established, when the user gets close to a check point, the cue for that check point will be displayed; if the volume is turned up, the cue will be audible. Voice Cues can be turned off by selecting the [Mute] icon. Speed units can be changed during navigation by tapping the top row of the navigation display to cycle between MPH, KMH, KN, and mps. The displayed cue can be collapsed to provide more screen space.



The arrow buttons on either side of the navigation information allows the user to move forward to the next check point or move back to the previous check point. Selecting the [x] will end navigation. Tapping on the distance or speed displayed will toggle the units between miles + mph, km + kmph, nm + kt, and km + mps.

Routes (continued)

When navigating a route while titled in 3D mode, a 3D billboard feature can be enabled to pop up an image associated with a marker. As the user approaches a marker with an attached image, the image associated with that marker will pop up, once the user is within the defined billboard render distance. The image remains displayed until the user has travelled past the marker.

The default distance for images to appear during navigation can be changed in Settings > Tool Preferences > Specific Tool Preferences > Route Preferences > Billboard Render Distance. The billboard feature can also be turned off by toggling the Settings > Tool Preferences > Specific Tool Preferences > Route Preferences > Show Attachment Billboards.



Selecting the **[Quick Nav]** icon will begin navigation (a bloodhound) to any point, object or route on the map. A pairing line is drawn and navigation information is displayed in the lower left portion of the screen. Estimated time to the next check point, speed and distance to the next check point are updated as the user moves. See the Bloodhound section in this document for more information.

Red X Tool



The Red X Tool provides a quick way for discerning coordinate and elevation information for a point on the map. Select the **[White X]** on the toolbar to toggle the Red X tool into a movable state.



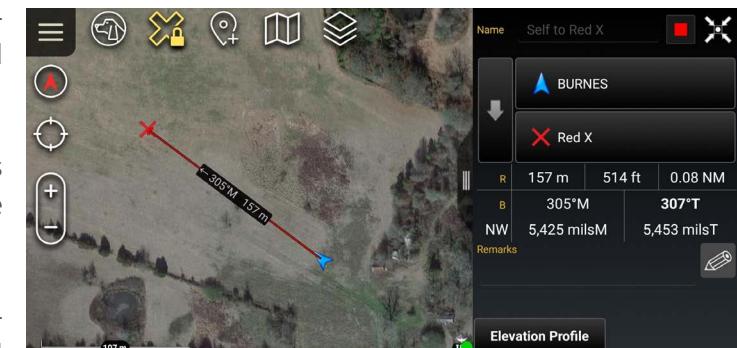
When first selected, the icon will turn yellow denoting that each time the map is tapped, the Red X will move to that location. The widget in the upper right of the screen will show pertinent location information for the location of the Red X.



When the icon on the toolbar is tapped again, the Red X will lock to its current location, the icon will remain yellow and a lock icon will appear. Long press the **[Red X]** icon on the toolbar to disable the tool.



Selecting the **[Red X]** on the map will open its radial menu. Radial options include: Delete, Polar Coordinate Entry, R&B Line-to-self with a sub-radial menu (that includes a compass and bullseye), Compass, Fine Adjust/Enter Coordinate/MGRS Location, R&B Line and Place a Marker.

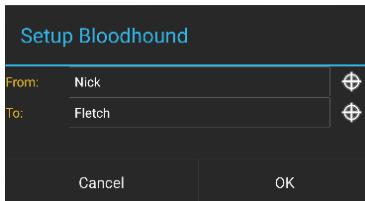


Note: Red X is not persistent. When ATAK is closed and then reopened, the Red X will no longer be present.

Bloodhound



The Bloodhound Tool provides support for tracking and intercepting a map item. It allows for the selection of two points on the map and/or map objects and displays Range & Bearing information between the chosen tracker and the target. Select the [Bloodhound] icon to open the Bloodhound Tool. A prompt will appear to choose where to start by tapping the [**From Reticle**] (default = user's Self-Marker) and where to bloodhound (track) to by tapping the [**To Reticle**].



Targets include map objects like other user's Self-Markers, SPIs, CoT Markers, Shape center points, Range & Bearing end-points and any other map objects. If a map location is selected instead of an object as the target, Bloodhound will place a waypoint marker there. The Self-Marker will then track towards the waypoint. Select [**OK**] and Bloodhound will be activated.

If either point moves, the green widget in the lower left will show the updated information. As the tracking object begins to navigate toward the target, the Estimated Time of Arrival (ETA) will update accordingly.

The green line showing the direct path from the tracker to the target will flash when a user-defined ETA outer threshold is reached (default = 6 minutes from target). The line will flash as the tracker continues toward the target until the next ETA threshold is reached (default = 3 minutes). The line will turn a flashing yellow until the final ETA threshold (default = 1 minute) is reached. The line then flashes red until the target is reached.

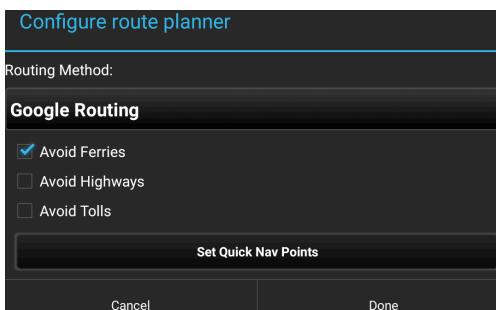
Colors and thresholds can be modified in Settings > Tool Preferences > Specific Tool Preferences > Bloodhound Preferences.



Route Mode



Select the [**Route Mode**] icon in the bottom left corner of the screen when the Bloodhound Tool is active to activate Route Mode.



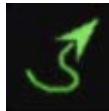
The [**Route Mode**] feature requires that a route planner (e.g., the planner that is bundled with the VNS Plug-in) has been installed and configured.

Route Mode (Continued)

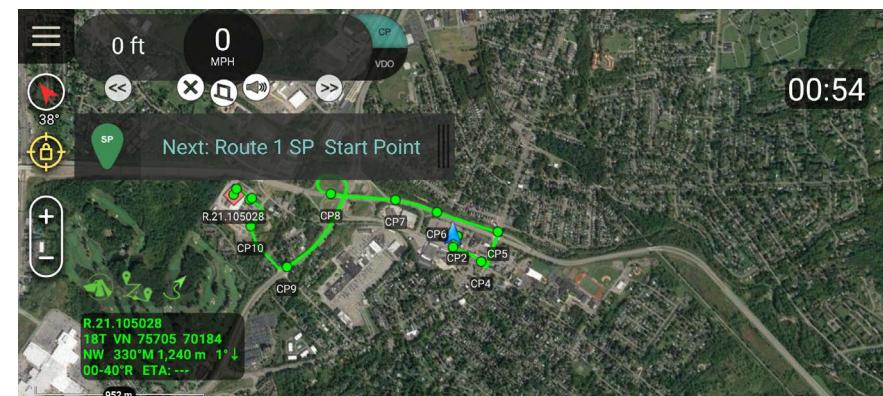
Once the route planner has been configured, the Bloodhound's Range & Bearing line will become a route. This will update periodically (the default is 1 second) to determine if the route from the start map item to the end map item needs to be calculated. This occurs when either the start or the end map item is a pre-configured distance away from the calculated route (the default is 150 meters). This setting can be changed in the Bloodhound preferences.



Navigation Mode with Route Mode



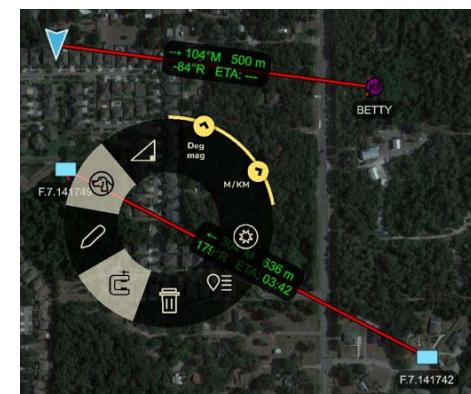
When Route Mode is active, the Navigation Interface can be activated by selecting the [Open Navigation Interface] icon. The navigation interface provides voice and visual cues like those that are used when navigating traditional routes.



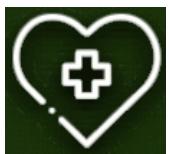
Multiple Bloodhounds

To create multiple bloodhounds, open Range Tools, select the [R&B Line] icon, then select any two markers on the map. Once the R&B line is created between the two map items, select the line to open the radial, then select the [Bloodhound] icon from the radial. The bloodhound information will be displayed on the R&B Line.

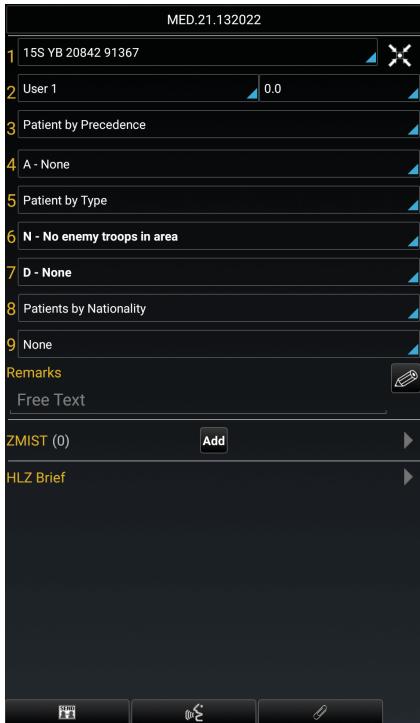
If either point moves, the Bloodhound information shown on the R&B Line will be updated. As the tracking object begins to navigate toward the target, the Estimated Time of Arrival (ETA) will update accordingly.



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.



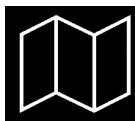
To drop a CASEVAC marker, select the [CASEVAC] icon in the additional tools menu and select the desired location on the map. CASEVAC radial options include: Delete, Bloodhound, Fine Adjust, (long press Fine Adjust for blow out menu: Enter Coordinate/MGRS Location), R&B Line and Details (long press Details for the sub-radial Send menu to quickly send the marker).



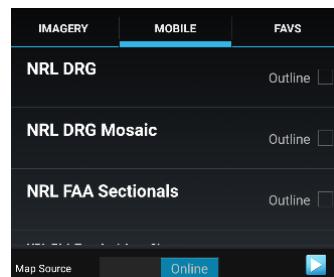
The nine lines of information can be complete in the CASEVAC details window which is opened by selecting the [Details] icon from the CASEVAC radial. The ZMIST (ZAP number, Mechanism of Injury, Injury Sustained, Symptoms and Signs, Treatment Given) report and/or a Heli Landing Zone (HLZ) brief can also be accessed in the Details. Select the [MEDEVAC/CASEVAC Brief] icon to display the brief which can then be copied and used elsewhere. Select the [Attachment] (paperclip) icon to attach files, including images to the marker. Once all applicable information has been added, the CASEVAC may be sent to available contacts by selecting [Send].

Multiple ZMIST reports can be associated with one CASEVAC by selecting [ADD] next to the initial ZMIST heading and section. A ZMIST report can also be deleted by selecting the [Delete] icon. ZMIST submenus contain hotkeys for common entries and allows for text entries for nonstandard conditions.

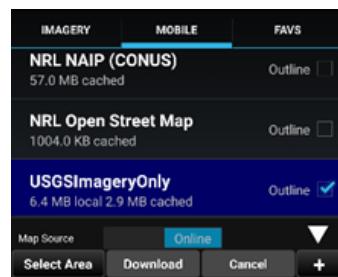
Maps & Favorites



Select the [Maps & Favorites] icon to list the imagery loaded in the application.



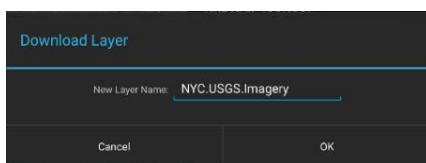
The following categories are shown: Imagery/Maps, Mobile and Favorites (FAVS). Select [Online/Local] on the Mobile tab to toggle between using an online map source or locally stored map layers over a desired area. Select the [FAVS] tab to review a previously saved view or to add the current view.



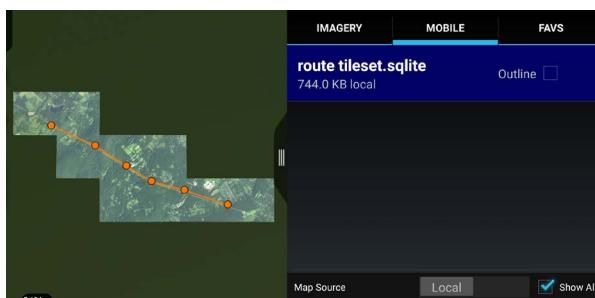
Saving a Map Layer



To save a local copy of a map layer, choose the MOBILE tab and toggle to [Online]. Select the right arrow to expand the Map Source option, then tap [Select Area] to define a region of interest. A prompt will appear presenting four options for map area selection: Rectangle, Free Form, Lasso or Map Select. The Rectangle option uses the top left and lower right corners to denote the area to be downloaded. The Free Form option provides the ability 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. Lasso provides the ability to draw a lasso around a specific area on the map to be downloaded.



Map Select allows for an already existing shape or route to be selected as the area intended for download. If a route is chosen, a prompt will be provided to enter a Route Download Range. This is the distance from the route that will be downloaded. Drag the map source slider end points to select the resolution for the tile-set being downloaded. The number of tiles to be downloaded will be indicated. Select the [Download] button to begin the download process.

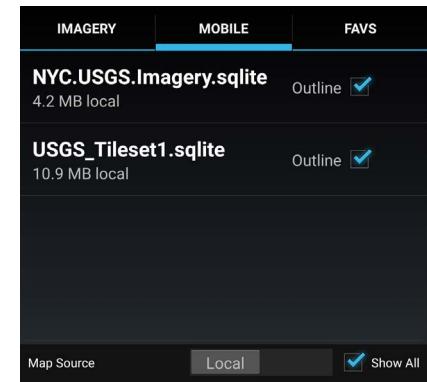


A new tileset can be created or the tiles being downloaded can be added to an existing one. Enter the name to be applied to the selected layers and select [OK]. A status indicator will appear to show the download progress. A download-in-process can be canceled by selecting the [Cancel] button. Online and Local map layers can be toggled as needed. When [Local] is selected, a listing of the downloaded imagery layers in the current map interface appears. The local layers are listed in order beginning with the area closest to the map center. Select the [Outline] checkbox 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.

Saving a Map Layer (continued)

Imagery can be imported via the Import Manager tool or placed directly into the atak folder structure for use by the application. For instructions on which subfolder a specific file type should be placed, refer to the information found in Settings > Support > ATAK Documents > ATAK Dataset Instructions. All imported imagery will be listed under the IMAGERY tab and function the same as the MOBILE tab.

If [Show All] is checked, all available layers are listed. Otherwise, only layers that are visible in the current map view will be listed. Imagery based map products (e.g., MrSID, GeoTIFF, NITF) that are placed in the atak/imagery folder will appear under the IMAGERY tab when ATAK is restarted. To view the list of supported products, select Settings > Support > ATAK Documents > ATAK Dataset Instructions.



Bookmarking a Location

To save the current view and displayed imagery, select the FAVS tab and tap [Add Current View]. A prompt will appear to name the view, which will be saved along with its coordinates and the map source being used. Selecting a view in the FAVS listing will pan the map to that location and transition to the map source used in the saved view. Saved Favorite views can be sent to other TAK users by selecting the [Send] option.



WFS Support (Web Feature Service)

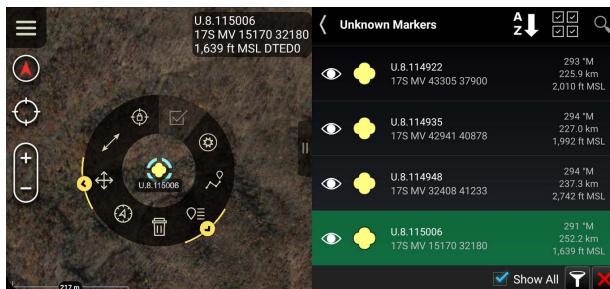
WFS imagery is supported and can be ingested in several different ways. Existing WFS XML configuration files can be imported through the Import Manager. The files can also be placed into the atak/WFS directory manually.

Additionally, WFS Imagery can be added by selecting the right arrow at the bottom of the Maps & Favorites Mobile tab to expand the Map Source option, selecting [+] and then entering a WFS Imagery Service URL. After querying the service, a list of available imagery sets will be presented. Select the required services for import and then select [OK].

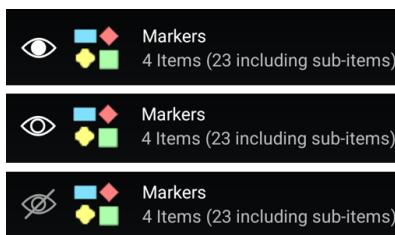
Overlay Manager



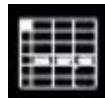
Overlay Manager sorts map objects, files and overlays into categories and subcategories. Select the [Overlay Manager] icon to bring up the list of categories. These include: Teams by color, Alerts, Markers, Data Packages, Navigation, Shapes, Hashtags, Elevation Data, Map Controls, as well as other file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

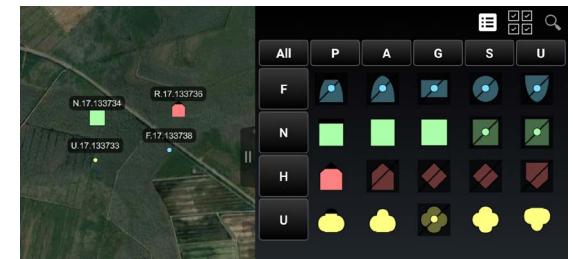


Visibility of any category can be toggled on and off using the [Eye] radio buttons. When the eyeball icon appears white, the corresponding layer objects are visible. An outlined eyeball indicates that the subcategory has some, but not all, objects visible. An eyeball with a line through it corresponds to a layer that is not visible.



The Markers category offers additional visibility controls for CoT markers allowing for groups of them to be toggled between various display states. After selecting the Markers category, select [Slicer], which appears beside the [Multi-Select] button at the top of the window.

CoT markers should now be displayed in a grid format. Tapping the [All] button will toggle all CoT markers on the map between the three visibility states; visible, points, and hidden.



Tapping any letters at the top of the grid will toggle the visibility states of CoT markers that match that track regardless of their affiliation. A specific marker group from a specific affiliation and track can also be toggled by selecting the marker icon at the intersection of the two attributes.

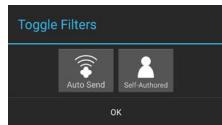


To return to the Overlay Manager marker sub-categories, select the [List] icon.

Overlay Manager (Continued)

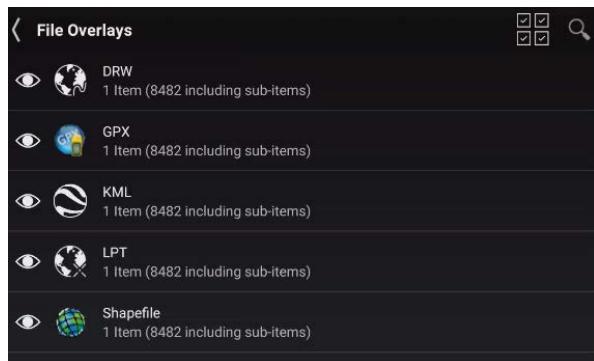
The objects in a category listing can be sorted alphabetically or by proximity to the Self-Marker.

If the [**Show All**] checkbox is checked, all map items in Overlay Manager are listed. If the [**Show All**] checkbox is unchecked, Overlay Manager filters map items based on the current map view.

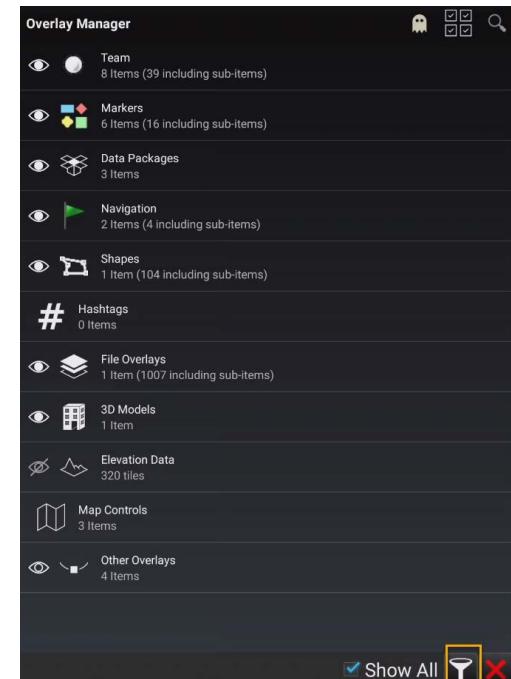


Additional filters can be applied to the Markers category. Available filters include Auto Send and Self Authored. The Auto Send filter will only show markers that have the Auto Send feature enabled.

The Self-Authored filter will show only markers created on the local device and exclude all markers received from other TAK contacts. To apply, select [**Filters**] to open the filter dialog, select a filter to activate it, then [**OK**]. To deactivate a filter, select it a second time.



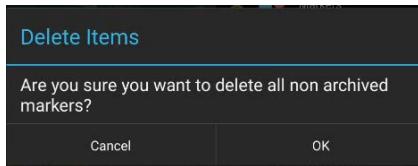
Available overlays can be searched for by selecting the [**Search**] icon in the main Overlay Manager toolbar. Select specific categories of overlays to narrow the search results.



Common Operating Picture (COP) Refresh

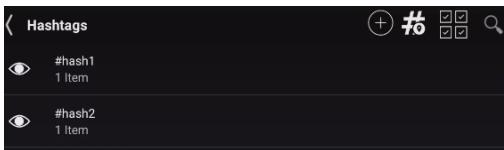


The COP Refresh removes any temporary map items from the map. These include Self-Markers from other users, SPI's from other users and ADSB Aircraft Tracks.



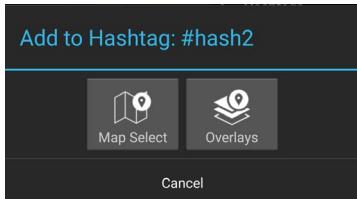
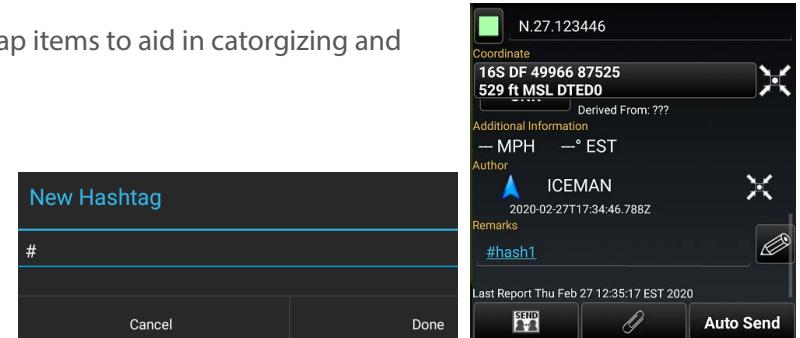
Selecting COP Refresh will display a window to confirm the deleted items.

Hashtags and Sticky Tags

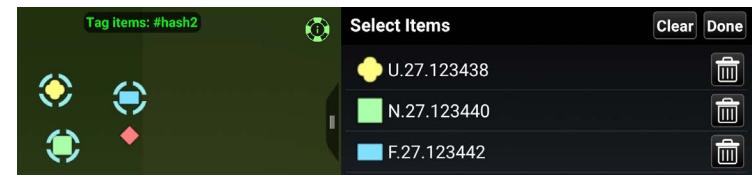


Hashtags and Sticky Tags can be added to map items to aid in categorizing and searching for items.

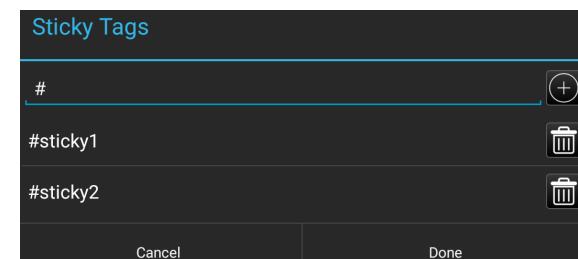
Hashtags can be added to map items in the Remarks field of the Details window or by selecting the [#Hashtags] icon in Overlay Manager. Select [+] to open the New Hashtag dialog. Enter a Hashtag and select [Done].



After the new Hashtag has been created, the [Add to Hashtag] dialog box appears, and the hashtag can be added to items via Map Select or through Overlays. Multiple items may be selected. Once all desired items have been chosen, select [Done]. The Overlay Manager will list all created hashtags along with the tagged items. If one of the tagged items is selected, the map will pan to that item and its radial will display.



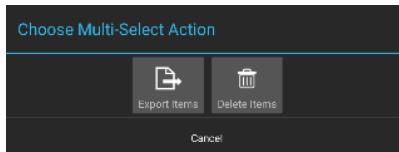
Select [#] to open the Sticky Tags dialog. Enter a name and select [+] to add that sticky tag to all subsequently placed map items. More than one sticky tag may be added. To discontinue adding a particular Sticky Tag to subsequent items, select [Delete] (the trashcan icon) associated with the sticky tag, then select [Done].



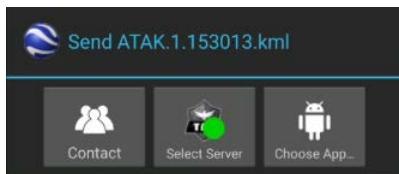
Multi-Select Export & Delete



Existing overlays can be exported to a file or directly to other users for use in other applications. To export, select the [Multi-Select Action] icon, select [Export], choose a file format, then select each category of overlays that should be included in the export file. Select [Previous Exports] to send to other users.

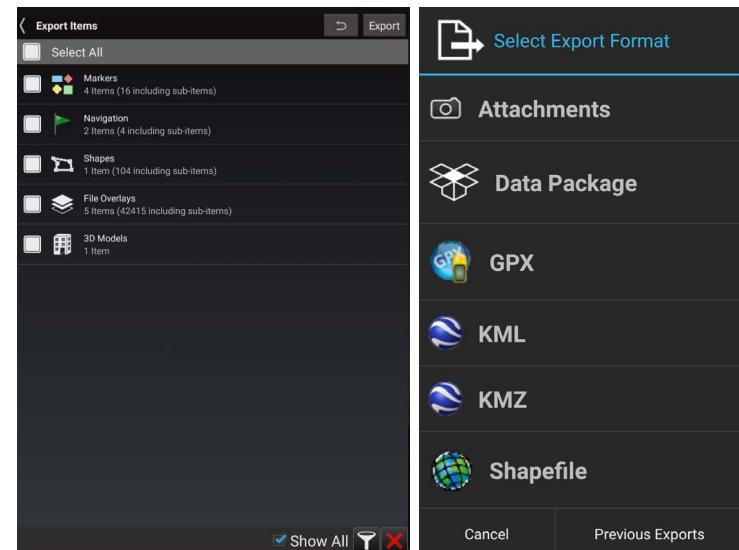


After the selections have been made, tap [Export], enter the desired file name and select [Export] to create the file.



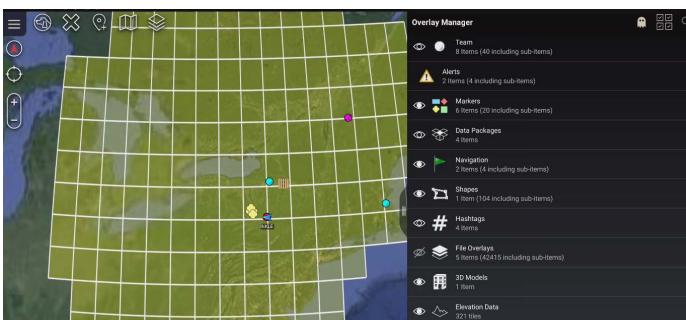
A notification will appear when the file has been exported. Select [Done] to save the file or [Send] to send to a TAK Contact, TAK Server or an application.

To delete existing overlay items, tap the [Multi-Select Action] icon, then the [Delete] icon. Items may be selected as a category (Markers, Shapes, File Overlays, etc.) or individually (specific neutral marker, for instance). When all selections have been made, select the [Delete] button to remove the specified items and confirm deletion.



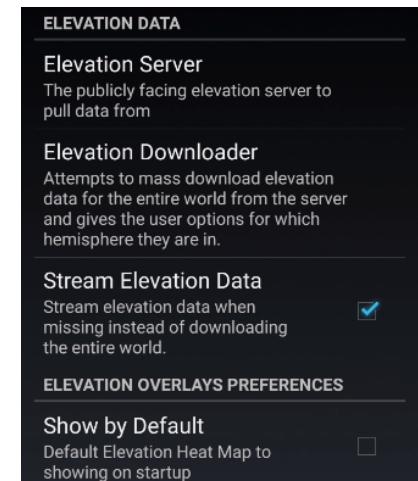
Elevation Data

By default, ATAK will stream DTED0 elevation data if the device was not provisioned with elevation data. To disable the default preference, navigate to Settings > Tool Preferences > Specific Tool Preferences > Elevation Overlays Preferences and uncheck [Stream Elevation Data].



To view the area of coverage, select [Overlay Manager], then toggle the Elevation Data radio button. The yellow grids indicate where the DTED0 data has been downloaded.

Note: If the user has multiple streaming sources of elevation data configured (i.e., DTED0 and Quantized Mesh), DTED0 takes precedence when querying elevation data.



File Editing

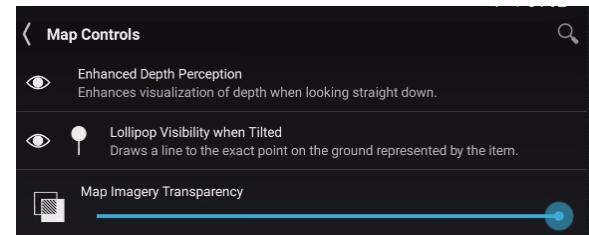


The color and thickness of file overlays (Shapefiles, KMZ, DRW, etc.) can be edited by selecting [Edit] (pencil icon) from the listing.



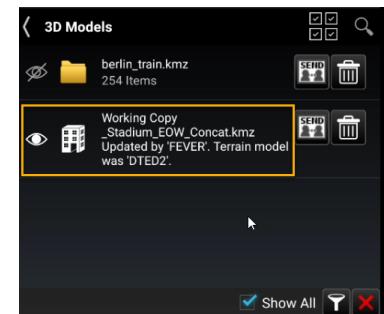
Map Controls

Different aspects of the map can be controlled by using Map Controls in the Overlay Manager. Options include the ability to enhance visualization of depth when looking straight down in 2D mode with the Enhanced Depth Perception option, the ability to enable or disable Lollipop Visibility when Tilted in 3D mode and the ability to use a slider to change the Map Imagery Transparency.



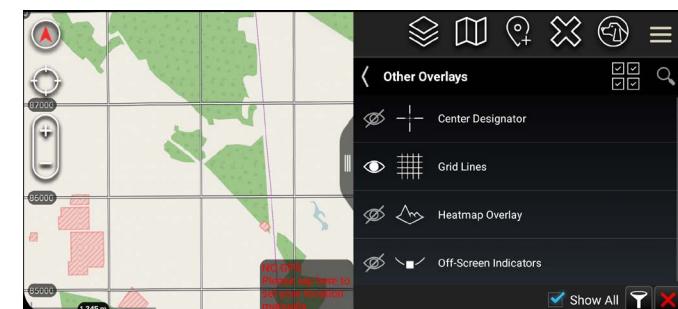
3D Models - Metadata

When ATAK receives a 3D model that has been edited by WinTAK, Overlay Manager displays the metadata associated with the model. Metadata includes information such as the Callsign of the user who performed the editing, terrain model employed, etc.



Overlay Grid Lines

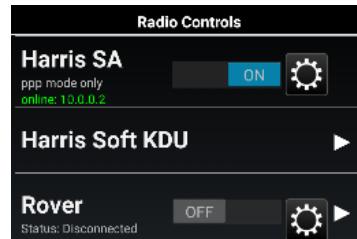
Overlay Grid Lines can be added to the map within Overlay Manager. Select [**Overlay Manager**], then [**Other Overlays**] to access the menu. Toggle the Eye icon to Enable/Disable Grid Lines. Enabled Grid Lines scale based on map zoom level.



Radio Controls



Select the [Radio] icon to access controls for the currently supported ATAK radios.



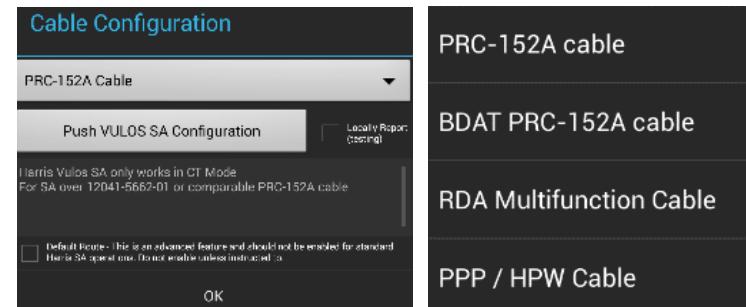
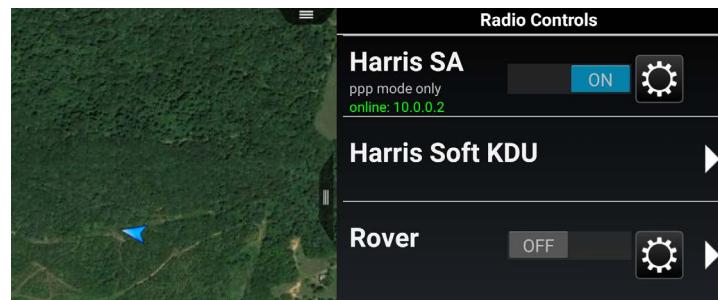
PRC-152-A is a Harris voice and data radio, this enables point-to-point and displays the coordinates of the 152-A SA Radio. Note the text will state whether the device is supported. Harris Soft KDU is a keypad display unit to access the Harris radio controls.

ISRV (Rover) is capable of video downlink from aircraft to ground through a TacRover and TacRover-E.

PRC-152 Connection

Connect to a PRC-152 Harris Radio and select the configure icon on the Radio Controls menu. The Cable Configuration window will display to choose the appropriate cable configuration.

A description of each cable and the radio's hardware interface is provided. Select [OK] to exit the cable configuration selection menu.

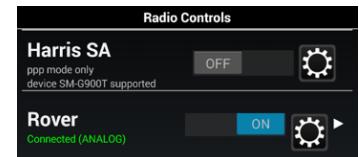


Slide the [OFF] button to [ON] in the PRC-152 section to begin connecting.

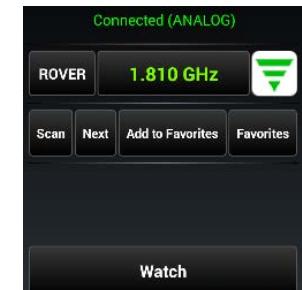
Once a connection is established, point-to-point protocol communication is available and is indicated on the Radio Controls menu. Other radios on the same network will appear on the map once squelched.

Rover Controls

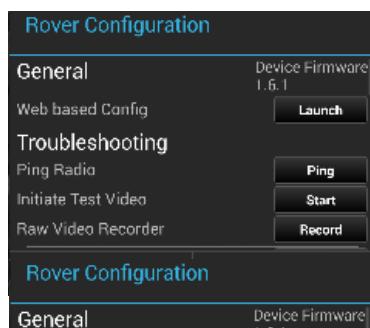
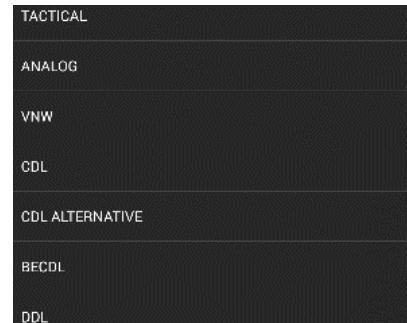
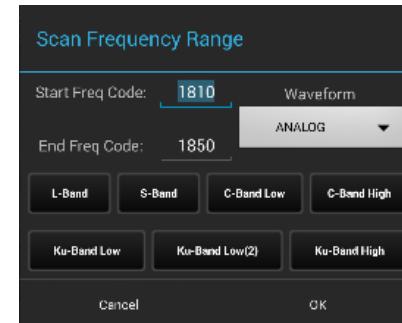
Slide the [OFF] button to [ON] in the ISRV (Rover) section to begin connecting through an Ethernet connection. ATAK scans through frequencies to establish an active feed. When the connection is established, the antenna icon will turn from gray to green and will indicate that it is connected.



Select the [Rover] menu item to open the Rover Controls menu. The Status field will indicate the device connection status and the current waveform. The waveform can be changed by accessing the Frequency Scan menu. The Frequency or Module/Channel (DDL) can be changed from the Rover Controls menu, as well as entering the Settings menu, launching the web configuration page for the Rover device, and watch the video. The preset can be added through this interface as well. Setting the Module and Channel will automatically change the waveform to DDL. The [Recently Used] and [+] buttons have been added to save hand jammed frequencies and DDL, for quicker viewing capability. Tap [+] to add a channel to the recently used list. Video frequencies and DDL information will not automatically be added to the list.



The frequency can be manually changed by tapping the current frequency entry or by opening the Scan Frequency Range Menu by selecting the [Scan] button. Change the frequency by entering a [Start Freq Code] and [End Freq Code] and selecting [OK]. ATAK will scan all available frequencies within the established range. Select [Next] on the Rover Controls menu to advance to the next available stream in the range. Tap the [Waveform] drop-down to open the menu of available waveforms and select the desired waveform from the list. Additionally, the user may choose between L-Band, S-Band, C-Band Low and C-Band high, Ku-Band Low, Ku-Band Low (2) and Ku-Band High.



Select the [Settings] icon to access the Rover Configuration settings. Options are available to initiate the Web-based Configuration for the Rover device in a web browser, Ping Radio, Initiate Test Video, engage the Raw Video Recorder and Advanced Options.

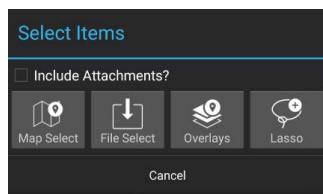


Select the [Watch] icon to view a video stream.



Data Package Tool

Select the [Data Package Tool] icon to open the data package tool. When opened, the tool will display any data packages that have been stored, as well as provide options for building new packages, downloading them from a server, deleting and exporting them. When preparing for an operation, a team leader may prepare a route, place markers, shapes and imagery on that map that pertain to operation objectives. Any or all of these items can be included into a data package and sent 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 (from the SD card) may be included in a package. The visibility of the package or its elements may be toggled on or off.

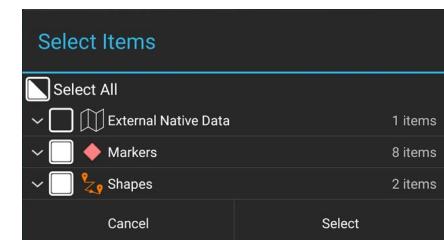


Select the [+] icon in the Data Package Tool to create a new data package. Choose the selection method; Map Select, File Select, Overlays or Lasso to add items to the Data Package. The Map Select option allows for one or more items to be selected from the map and included in the Data Package. The File Select option displays the file browser which can be navigated to the desired files to be included in the data package.

The Overlays option displays the Overlay Manager tool where select categories or individual items from the Overlay Manager can be included in the data package.



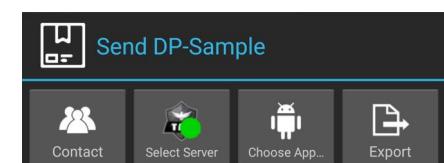
The Lasso option allows the user to draw a lasso around the items on the map to be included in the data package. External Native Data items (such as the map source) are also included when using Lasso. The user can modify the items that have been selected with the Lasso and remove any unnecessary items. Choose [Done] or [Select] with Lasso when finished, then choose to either create a new data package or add the items to an existing Data Package.



When items are added to a data package, a red asterisk will appear on the data package name to indicate it needs to be saved. Select the [Save] icon to save the changes.

The information under the package name includes the callsign of the user who created the data package and number of items in the data package. Select the name of the data package to view the included items. Toggle the visibility radio button to control data package content visibility on the map interface.

When done with modifications, select the [Send] icon to open a list of options for sending the data package including TAK Contact, TAK Server or another application. If the package size is larger than the value set in Preferences, the size shown in the package list will display red and the user will have an option to override the limit when they send. The threshold size may be changed in Settings > Tool Preferences > Specific Tool Preferences > Data Package Control Preferences.



Data Package Tool (continued)

When sending a data package to a TAK contact, either Select All, Show All or toggle recipients by selecting or de-selecting their corresponding checkboxes.

When the [Delete] icon is selected, a prompt will appear to remove or leave the contents of the data package on the map interface.

Select the [Download] icon to access an existing data package from a TAK Server.

Available Packages		
	A z 	16.8 MB
00-Everything.test	IONIC	2021-03-02T14:55:59.384Z
20211119_115523_t.jpg	ANDROID-6e70daa1ff5cd06e	37.7 KB 2021-11-19T11:55:41.309Z
20211122_103346.jpg	Latte-A	921.2 KB 2021-11-22T10:34:46.515Z
20220323_213920.jpg	LARMA	191.0 KB 2022-03-23T21:40:17.404Z
AAAAAA.zip	LEMAY	5.6 KB 2022-05-11T13:12:24.338Z



Select the [Transfer Log] icon on the Data Package Tool menu to view the file transfer log of imported and exported data packages. The Data Package Tool can be customized in Settings > Tool Preferences > Specific Tool Preferences > Data Package Control Preferences.

Select the [Multi-Select Action] icon to export or delete multiple data packages via the Overlay Manager.

Select the [Search] icon to locate a desired data package in the listing.

An existing data package can be modified by selecting the [+] icon and following the same steps as above.

Name: DP-Sample

Remarks: Enter description and #hashtags here

(1 Map Items, 0 Files)

Cancel Done

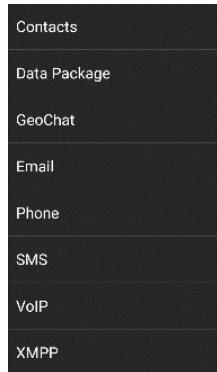
Select the data package listing name, then select the [Edit] icon to change the name or add remarks or hashtags.

DP-Test 1		
	Drawing Circle 1 17S QV 01443 59948	
	G 1 17S QV 00385 59821	
	gas_stations 1 17S QV 00566 59334	
	Hazard Tree 1 17S QV 00831 60126	
	heliport 1 17S QV 00943 59578	
<input checked="" type="checkbox"/> Show All		

Contacts



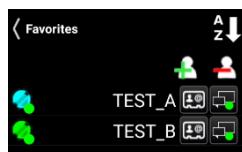
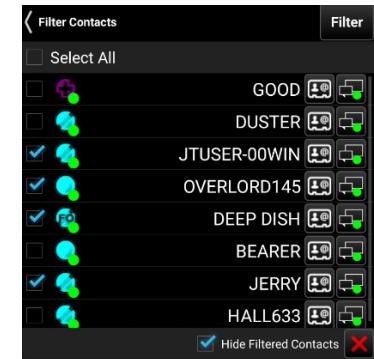
The Contacts list includes a variety of ways in which a user may communicate with other users on the local network or TAK Server. A default communication type (shown in the last column) may be selected and used until another type of communication is selected.



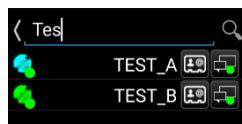
There are several ways within the Contact Tool to filter the contact list. To only see contacts that use a specific communication type, select the arrow next to the word "Contacts" at the top of the list window. A window will open showing all the types of communication, such as Data Packages, GeoChat (built-in chat capability), Email, Phone, SMS, VoIP and XMPP. Choose one of these to ensure all contacts without that type available are filtered out of the contacts list.

Note: If the type chosen is not the default for a user, the type can be accessed through their radial.

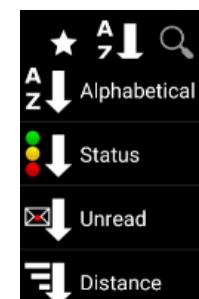
Options located at the top right of the contact's window, available for all communication types, include Multi-Select, Favorites, Sorting and Searching. The multi-select option provides the ability to filter out contacts. Any number of contacts can be filtered. Filtered contacts will be removed from the map and can be removed from the Contact's window, if **[Hide Filtered Contacts]** is enabled.



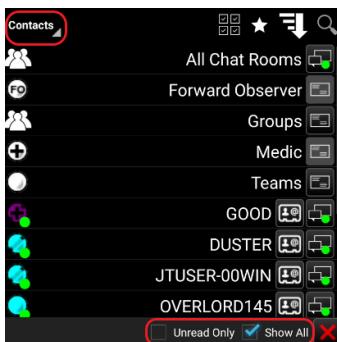
To add a contact to Favorites, select the **[Star]** icon, select the **[+]** icon, choose the contact(s) and then select **[Add]**.



Select the **[Sort]** icon to sort contacts alphabetically, by connection status, by unread messages or by distance from the Self-Marker. The sort type will change with each tap of the icon.



Select the **[Search]** icon to search for a specific contact. As the search criteria is entered, any contacts that meet the criteria will begin to appear.



The contacts list also has two filters available at the bottom of the screen. The **[Unread Only]** box, when checked, will display only contacts with whom there are unread message waiting. When unchecked (default), all available contacts are displayed. The **[Show All]** box, when checked (default), will display all contacts regardless of their location. When unchecked, only contacts that are visible within the current map view will be displayed.

If a contact is no longer online, it will be indicated by changing the contact listing to a yellow color and the marker changes to gray both in the list and on the map.



Contacts (Continued)

Profile cards (accessed by selecting the second to last column) are available for each contact containing additional information about that contact including:

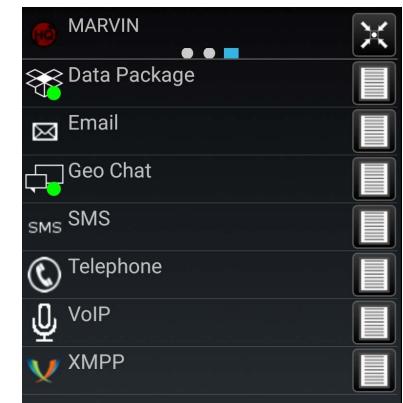
1) Role, software type and version installed, node type, default connector, last reported time, battery life



2) Location information



3) Available types of communication.



GeoChat Group Management

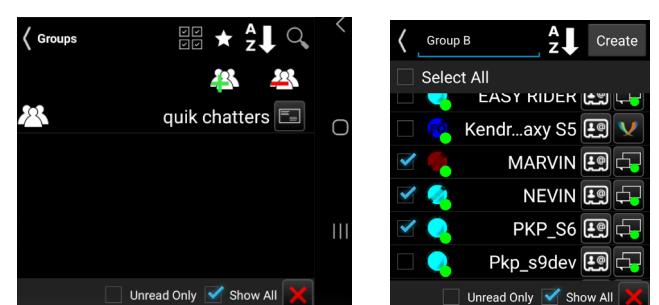


GeoChat Group Management is initiated through Contacts. Select the [**Contacts**] icon, then select the [**Groups**] line (not the communications button). The local device can create, edit and delete chat groups, as well as sub-groups. To create a chat group, select the [**Add Group**] icon, enter a group name, select the contacts to add to the group and select [**Create**].



If a parent group is being created, no contacts need to be added at this level. To add a nested group, select the parent group, select the [**Add Group**] icon, enter a group name for the sub-group, choose the contacts that will be in the group, and select [**Create**]. Groups may be managed using the add/delete contacts or add/delete Geo-Chat groups options.

To add users to an existing group, select the [**Groups**] line (not the communications button), then select the name of the group to add users. Select the [**Add Users**] icon. A window will open allowing the group creator to add users to the selected group. Select the [**Add**] button when all the users to be added are checked.



GeoChat Messaging

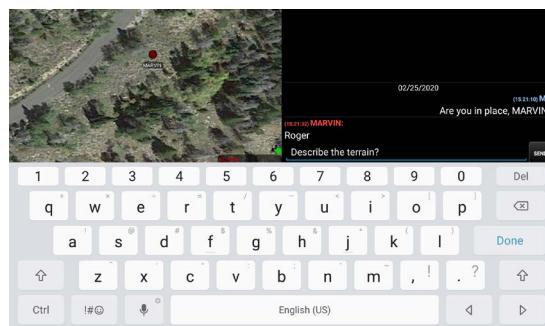
If the user specifies the GeoChat (built-in Chat capability) communication from the drop-down at the upper left, group and person-to-person messaging is filtered. In addition to the toolbar options that are available with other communication types: Favorites, Sorting and Searching, the GeoChat communication type also has a History option ([Clock] icon). If the History option is selected, chat history with the selected contact is displayed.

To view messages from or send messages to an individual, select the desired contact's [Communication] icon.

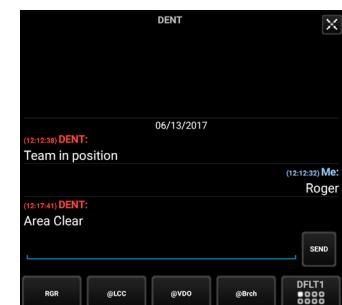


Select [**All Chat Rooms**] to view all messages from or send messages to all present on the network and TAK Server. Other groups available for viewing or sending messages are: Forward Observer, Groups (user made), HQ, K9, Medic, RTO, Sniper, Team Lead and Teams. If the user's current role is Forward Observer, HQ, K9, Medic, RTO, Sniper or Team Lead, that user can view or send messages to all other contacts with the same role. If a GeoChat message is sent from the top level of Teams, it will be sent to all contacts, similar to All Chat Rooms.

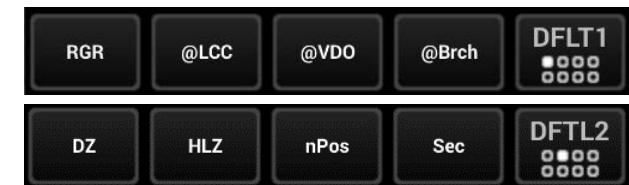
When a sub-team is chosen, messages can only be sent to the user's active (my team) team color. When a parent group is chosen, messages are sent to all members of the parent group, as well as all of the sub-groups. When a sub-group is chosen, messages are sent only to members of the sub-group. Individuals or groups listed within GeoChat may be removed from the contacts menu by toggling off their visibility in Overlay Manager.



Selecting in the [**Free Text Entry**] area will bring up an onscreen keyboard. At the bottom of the chat area are pre-defined messages that may be used to quickly create a message to send. Select the current menu button to scroll through the eight different menus of pre-defined messages, including: DFLT1, DFLT2, ASLT1, ASLT2, JM1, JM2, RECON1 and RECON2.



These pre-defined messages present an easy way to transmit a brief message to other network members concerning position or other important communication. The messages may be changed by long pressing on the button and changing its label and corresponding text.



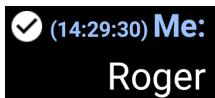
GeoChat Messaging (Continued)



Selecting the [Pan To] icon, located at the top right of the call sign in an individual chat, will pan the map interface to that user's location.



A numbered red dot will appear on the [Contacts] icon when a message has been received successfully. The number denotes the number of unread messages that have been received. Select this icon to view the contact list. The username who sent the message will appear with a numbered red dot next to their name. Alternatively, the text of the message can be read by dragging down from the top to open the Android notifications drawer. This notification will only stay available for a short time.



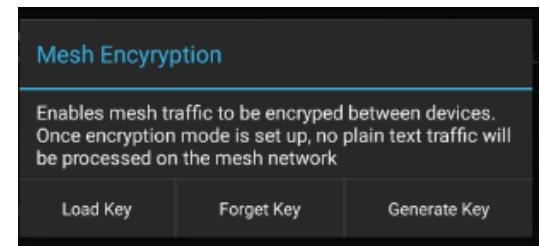
When sending a chat message to a user, a “read” indicator will appear next to the sent message. When the indicator is filled (white background, dark checkmark), it indicates the recipient has read the message. When the indicator is an unfilled (dark background, white checkmark), it indicates the message has been delivered but the recipient has not opened their chat window to view it.



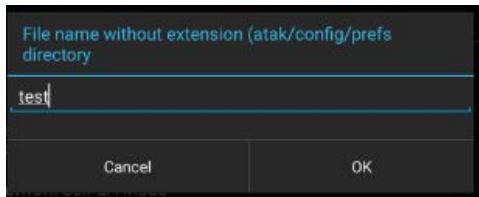
Newer TAK Servers can hold messages sent to disconnected users and deliver the messages the next time the offline user reconnects to the server.

Encrypted Mesh Communications

Enhanced security for all communications can be configured on a mesh network in ATAK. 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.

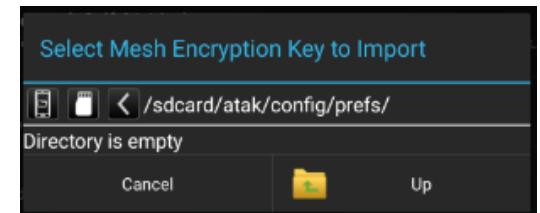


To configure encryption, navigate to Settings > Network Preferences > Network Connection Preferences > Configure AES-256 Mesh Encryption.



Select the **[Generate Key]** button to create an encryption key, then enter the desired file name and select **[OK]**. The encryption key is saved in the atak/config/prefs 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.

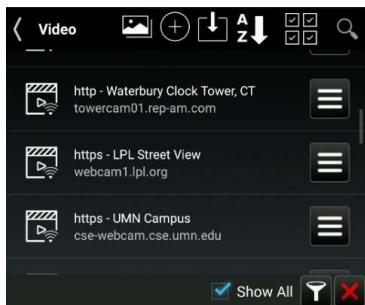
To load an encryption key, select the **[Load Key]** button and navigate to the location of the key file. Select the **[Forget Key]** button and revert to unencrypted traffic.



Video Player



Select the [Video Player] icon to open the Video player. The Video Player supports playing video streams from IP cameras, Rover5 and H.264 encoders. The menu allows the user to add, edit, delete, play or send videos to other network members.



Options for the video player include view video snapshots, add new video alias, download an alias from the TAK Server, multi-select option to either export or delete aliases or search for a specific alias.

Select the desired listed video alias or file name to begin playing the stored or streaming video. The video will display half the width of the screen.

To view a video at full screen, slide the pull bar. To return to half screen, press the device's [Back] button. Select the [Back] button to return to the list of available videos.



To add a stored video file, select the [Import Manager] icon, select [Local SD], and navigate to the video file and select [OK] to add the video to the list of available videos. The user can also manually place video files in `\atak\tools\videos\` to be listed after ATAK is restarted. When a video is playing at half width, slide the pull bar to the right to hide the video but maintain the connection. Slide the pull bar to the left to unhide the video. The status of the video player is reflected in the main Android toolbar located at the top of the screen.

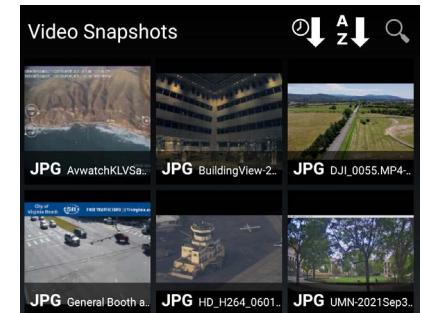


Select the [Snapshot] icon to save the current frame of the video as a JPEG image file, the icon will flash green to indicate that the snapshot has occurred. The file will be saved in `\atak\tools\videosnaps`.



Saved snap shots can be viewed by selecting the [Video Snapshots] icon. Images can be sorted by time taken or by the name of the snapshot and searched for by their name. By selecting an image, the image will be displayed within the window.

The user will have the options of cycling though the images, [Send] to a TAK user, or edit in [Image Markup]. (Image Markup must be installed.)



If a live UDP or appropriately formatted RTSP stream is being viewed, it can be recorded by selecting the [Record] icon. The icon will change to a green square while recording. Select the [Green Square] to end the recording. The recordings are saved in `\atak\tools\videos\`.



Note: This is only available for UDP streams.



To close the video player, select the [X] located at the bottom right corner of the video player or select the [Back] button.

Adding a Video Stream



To add a video alias, select [+] at the top of the Video Player screen.

Enter the necessary information for the selected stream type: Stream Type (UDP, RTSP, RTMP, RTMPS, TCP, RTP, HTTP, HTTPS, RAW, SRT) along with the necessary streaming information including, IP address (leave IP address blank to listen on the local IP), Port Number, Alias Name, 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 the necessary information is entered, select [Add].

Type	udp	<input type="checkbox"/> Ignore Embedded KLV
Preferred Network	default	
<hr/>		
Alias Name		
Network Timeout (sec)	12	
<input type="checkbox"/> Buffering (adds latency)	Time (sec)	0
<hr/>		
<input type="button" value="Cancel"/>		<input type="button" value="Add"/>



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.

Downloading a Video Stream



To download a video alias from a TAK Server, select the **[Download]** icon at the top of the Video Player screen, then select the TAK Server. A list of available Video aliases will be presented. Select the desired video alias then select **[OK]**. The selected video will then be added to the list of videos.

Search for Video

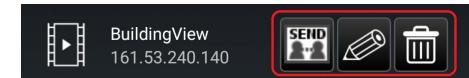


To find a particular video alias from the list of available videos, select the **[Search]** icon at the top of the Video Player screen, then enter the name of the desired video.

Individual Video Options



To view additional options for individual videos, select the [Additional Options] icon. The options include: sending the video alias to other contacts, editing the alias or deleting the alias.



The [**Send**] button will prompt the user to choose to send to Contacts or a TAK Server. If Contacts is selected, choose one or more contacts, then tap [**Send**]. Selecting [**Broadcast**] will send to all contacts.

To edit an existing Video Alias, select the [**Edit**] icon 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, then confirm the deletion.

Viewing KLV

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

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

Note: This functionality is only available for live streams in UDP format if the KLV data is available as well.



Live Video Map Display



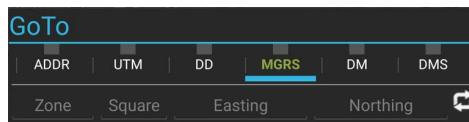
A video (video stream) with metadata for the four corners of the video can be viewed in the map interface. To start, by open the video and select the [**Globe**] icon in the upper right-hand corner of the video window, turning the globe green. When the window is minimized, the video can be viewed on the map interface. The video will overlay upon any current imagery displayed.



Go To



Select the [Go To] icon to enter coordinates and navigate to a specific location on the map.



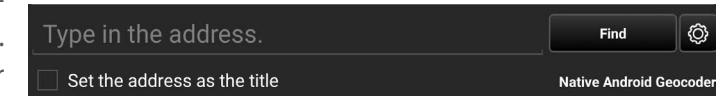
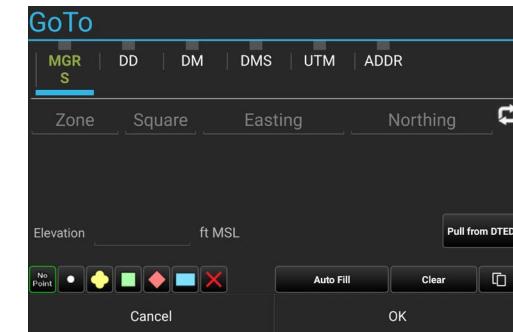
Select from the [**MGRS**] (military grid reference system), [**DD**] (decimal degrees), [**DM**] (degrees - minutes), [**DMS**] (degrees-minutes-seconds), [**UTM**] (Universal Transverse Mercator) or [**ADDR**] (address) tabs on the Go To interface and enter the location data of interest.

The coordinate entry tabs can be reordered by long pressing and dragging the coordinate entry tab to the new desired location in GoTo.

Enter the Latitude, Longitude and Elevation in the space provided for MGRS, DD, DM or DMS searches. If DTED is installed, the elevation value can be automatically populated by tapping the [**Pull From DTED**] button. Select a desired marker type (spot, unknown, neutral, red, or friendly) to be placed at the location of the entered coordinates. If [**No Point**] is selected, the map will pan to the location but will not add a point.

An address can be entered to drop a marker or pan the map to the desired location. After entering an address, select [**Find**]. This will populate the [**Add Address**] box in the Go To window. Check the Set the Address as the Title box to place the address on the map as a label. If a marker is selected, the address will be the marker's label. If no marker is selected, the address will be placed alone on the map as a label.

The address lookup provider used for the ADDR tab can be configured in the Settings > Tool Preferences > Specific Tool Preferences > Address Lookup Preferences. The chosen address provider will be displayed in the Go To window on the [**ADDR**] tab.



Drawing Tools



Drawing Tools provides the ability to create different shapes and/or telestrate on the map.



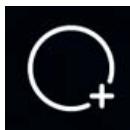
The Radial menu options available on enclosed shapes are: Delete, Fine-Adjust, Labels, R&B Line, Free Rotate / 3D View, Geo Fence, MSD, Edit and Details (long press the Details option to access the sub-radial menu to quickly send the shape). The Delete, Fine Adjust, R&B Line and Details radial options behave in the same manner as other map objects.



The Labels option toggles on/off a label associated with the shape displaying the shape's dimensions or name. The Free Rotate / 3D View (eye icon) radial option allows map rotation and to view in 3D mode. A yellow eye will appear in the upper left corner and as the map is rotated, the degrees of rotation are displayed and updated. Tapping the yellow eye again will turn the feature off.

The Geo Fence Tool creates a virtual fence that triggers entry/exit notifications based on its assigned parameters. The Edit option can be used to re-adjust and make additional changes to the shape, as needed. In addition to the standard configuration options that are present in the Details window, the area of the shape is calculated and displayed here as well.

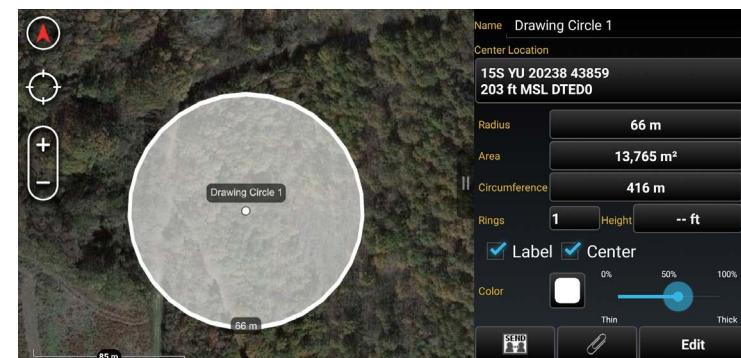
Create a Shape



To add a Circle, select the [Circle] icon, select a location to place the center point and tap another location for the radius. Select the circle and select [Details] on the radial menu to change the name, radius, number of rings, color, opacity, line thickness, line style add a remark, add an attachment or to send/broadcast the circle information to others.

All dimensions (radius, area, circumference and height) can be manually adjusted in the Details allowing for precise shape placement on the map. Label visibility and Center point visibility can also be controlled from the Details. Selecting any point of the circle on the map, will open the circle radial menu.

To edit the circle, select [Edit] from the Details window. Long press the center point to move the circle or long press the edge to resize. Select [Undo] to reverse changes or select [End Editing] to save the changes.



Create a Shape (continued)



To add an Ellipse, select the [Ellipse] icon, select a location to place the first corner, select another location for the second corner which sets the edge, and finally select a third location to establish depth. Select the ellipse and select [Details] on the radial menu to change the name, color, opacity, line thickness, line style, add a remark, add an attachment or to send/broadcast the circle information to others.

All dimensions (width, length, heading, area, circumference and height) can be manually adjusted in Details, allowing for precise shape placement on the map. Label visibility and Center point visibility can also be controlled from the Details. To edit the ellipse, select [Edit] from the Details window. Drag or long press the markers to edit the ellipse on the map. Select [Undo] to reverse changes or select [End Editing] to save the changes.

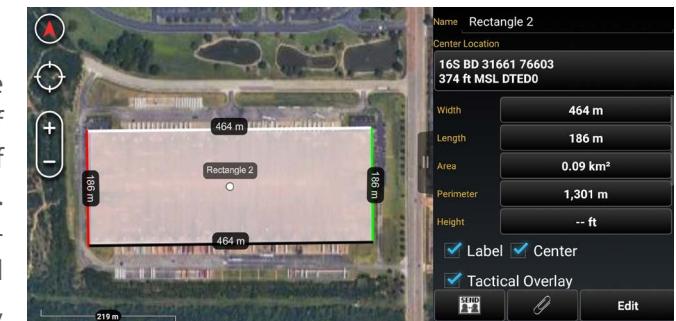
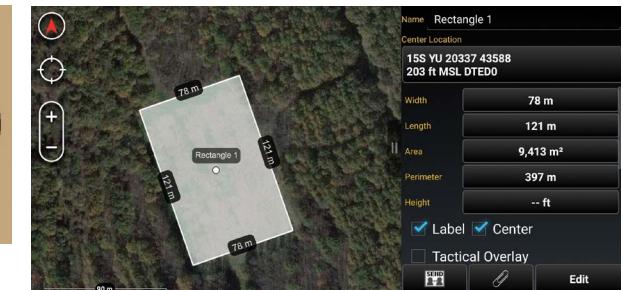
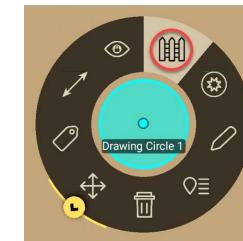
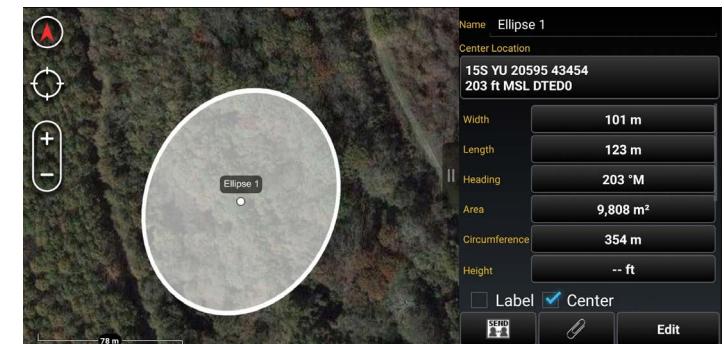


To add a Rectangle, select the [Rectangle] icon, select a location to place the first corner, select another location to add a parallel corner and then select a third location to indicate the desired depth of the rectangle.

Select the rectangle on the map and select [Details] on the radial menu to change the name, color, opacity, line thickness, line style, show labels, show tactical overlays, add a remark or send/broadcast the rectangle information to others. All dimensions (width, length, area, perimeter and height) can be manually adjusted in the Details allowing for precise shape placement on the map. Label visibility and Center point visibility can also be controlled from the Details.

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 clockwise from the front (white), while the red side appears counterclockwise. The first point during placement should be the left front corner of the structure (white/green corner), while the second point should be the right front corner of the structure (white/red corner) and the third point should be the back. Create the rectangle and when the details menu is displayed, select the [Tactical Overlay] checkbox to turn on the color coding.

Selecting any point of the rectangle on the map will open the rectangle radial. Note that Fine Adjust is not active for this shape. To edit the rectangle, select the [Edit] icon. Drag a corner or side of the rectangle, or long press a mid-point or vertex, to move the selected side. The rectangle can be rotated if one of the four mid-points is held and dragged. Select [Undo] to reverse changes or select [End Editing] to save the changes.

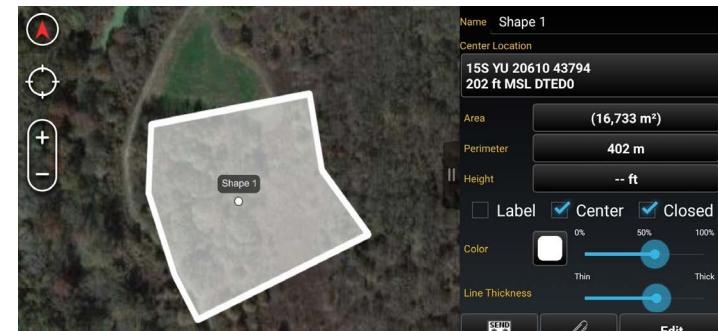


Create a Shape (continued)



To add a Free Form shape, select the [Free Form] icon and then select a location to place the first vertex for the shape; continue to tap to add vertices. Select the initial vertex to close the shape or select [End Shape] to form an open shape. Select the [Undo] button to remove the links in sequence.

Select the free form on the map and select [Details] on the radial menu to change the name of the shape, coordinate center point, coordinate units, color, opacity, line thickness, line style, add height, add a remark or send/broadcast the shape information to others.



Checking the [Show Labels] box will display the name of the shape on the perimeter. Checking the [Center] box will unhide/hide the center point and center point label. Checking the [Closed] box will display a closed shape versus an open shape on the map. An open shape's center point cannot be changed.

Selecting the shape on the map will open the free form radial. Note that Fine Adjust is not active for this shape. To edit the shape, select the [Edit] icon on the radial. Drag a vertex of the shape or long press a line to add a vertex. Select [Undo] to reverse changes or select [End Editing] to save the changes.

Telestrate



Select the [Telestrate] icon to access the Telestrate toolbar. Selecting the [Telestrate] icon enables and disables map scrolling by turning telestration on or off. When Telestrate is toggled on, the user is able to free form draw manually or with a stylus.

Select [Undo] to remove the most recent activity. Selecting [End], ends the current telestration session saving all activity as a single Multi-Polyline and returns the user to the main Drawing Tools menu. Selecting a telestration on the map will open the radial menu. Radial options include Delete, Labels, Free Rotate/3D, Clamp to Ground and Details. Select [Details] on the radial menu to change the name, add a height, change line colors, delete lines or add lines, adjust line thickness or send/broadcast to others.

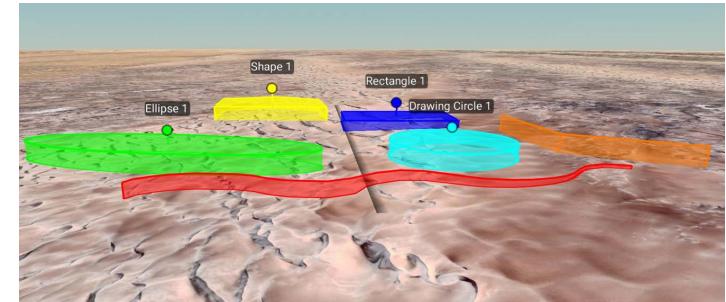


Selecting the [Color Selection] icon will open the Choose Telestration Color menu. Choose a provided color or select [Custom] to customize a color.



3D Shapes

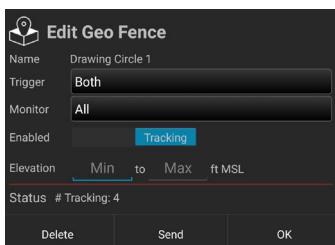
All shape types with height can be rendered as 3-dimensional objects when the map is in 3D Mode.



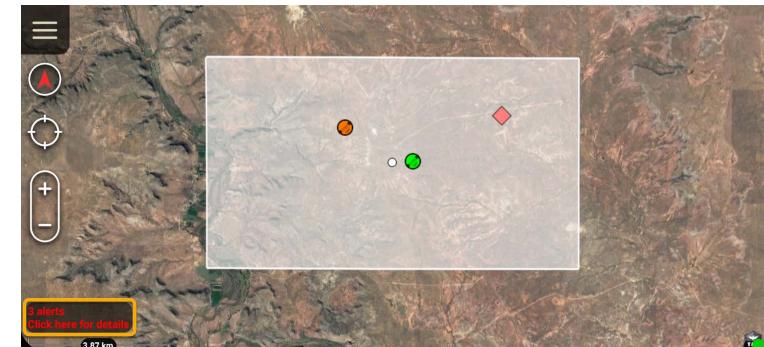
Geofencing



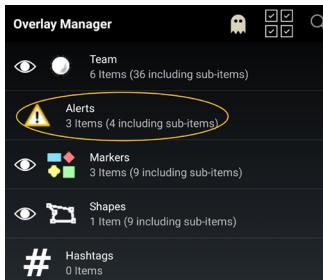
The Geo Fence Tool allows users to create a virtual fence that triggers entry/exit notifications if map items of interest cross the virtual boundary lines. Geo Fence options are added to the existing drawing tools. After a Geo Fence has been added to a shape, it can be accessed by selecting the [Geo Fence] icon from the additional tools menu or by selecting it from the shape's radial. The Geo Fence radial option will be highlighted when a Geo Fence has been added to a shape.



The Enabled field slider will move to Tracking by default when a new Geo Fence 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, Hostile, Custom or All. Elevation boundaries for the entities being tracked can be defined by setting Min and Max elevation values. Select the [OK] button to finish creating the Geo Fence. Select the [Send] button to create the fence and send it to another user. Select [Delete] to close the Create Geo Fence window and discard changes.

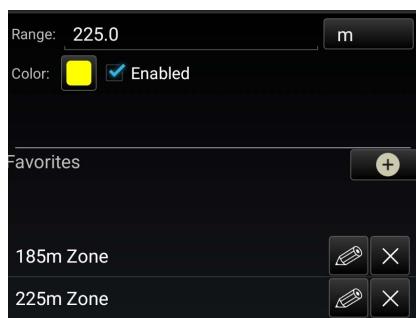


Geo Fence breaches will trigger an alert in the lower left corner of the map and will also be listed in the Overlay Manager.

Minimum Safe Distance (MSD)



Select the [Minimum Safe Distance] (MSD) radial option to create a zone around a shape that has been previously placed on the map.



Use the Range field to specify the distance from the shape's border that the zone will be created from. MSD color can be adjusted by selecting the color swatch and the visibility for the zone can be enabled by checking the [Enabled] checkbox.



MSDs can also be created and saved to the Favorites section by selecting [+]. These favorites are shared between all shape types that support this feature. Select an MSD from the Favorites section to quickly enable it.

Lasso Tool

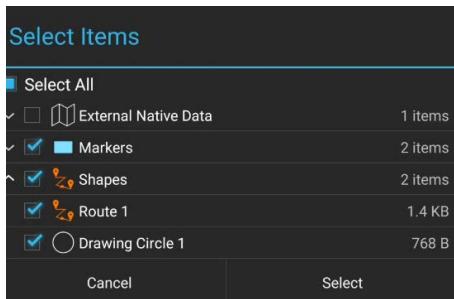


The Lasso Tool allows users to quickly select items from the map to be exported and shared with other users, or to be deleted from their system. The Lasso Tool is located in the additional tools window.

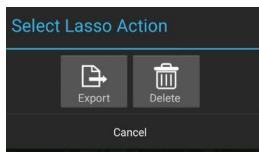
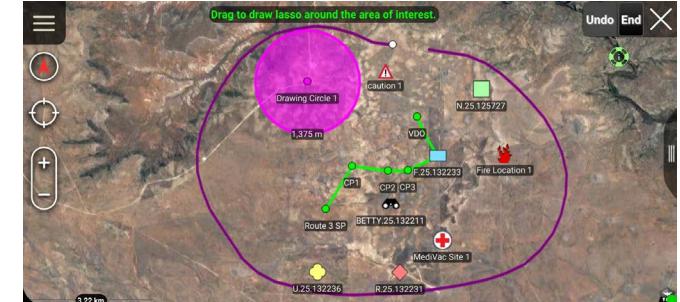
Drag to draw lasso around the area of interest.

When the tool is launched, onscreen directions are displayed in green, providing instructions how to use the tool.

Draw a circle around the area of interest to display a list of all the map items in the area. The user may deselect items if needed.

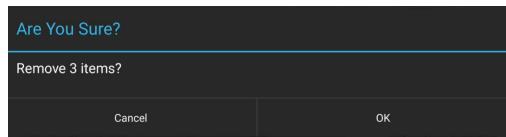


Select the **[External Native Data]** box to include the underlying map data in the export. Tap **[Select]** when all individual items have been chosen.



The Select Lasso Action interface provides the option to either **[Export]** the items or **[Delete]** these items.

Selecting **[Export]** displays the Select Export Format screen. The available formats are Attachments, Data Package, GPX, KML, KMZ or Shapefile. The format is selected based on the data included.



Select **[Delete]** and verify by selecting **[OK]** on the confirmation screen. This will remove the selected items from the map.

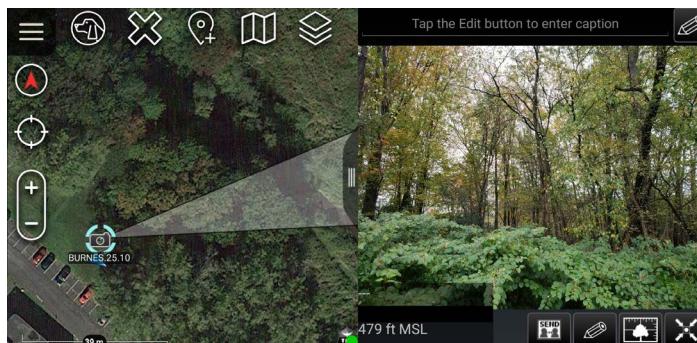


Quick Pic



Select the [Quick Pic] icon to access the Android device's camera or another camera application.

After taking a picture, it can be discarded by selecting [Retry] or saved by selecting [OK] or [Done]. Saving the picture returns to the map view and places a camera marker at the Self-Marker's location. The image taken is attached to the marker. The image can be sent to other TAK users on the same server, marked-up (if the Image Markup application has been installed and loaded), have overlay metadata added to the image (if the TAK GeoCam application is installed and loaded) or panned-to the Quick Pic marker on the map.



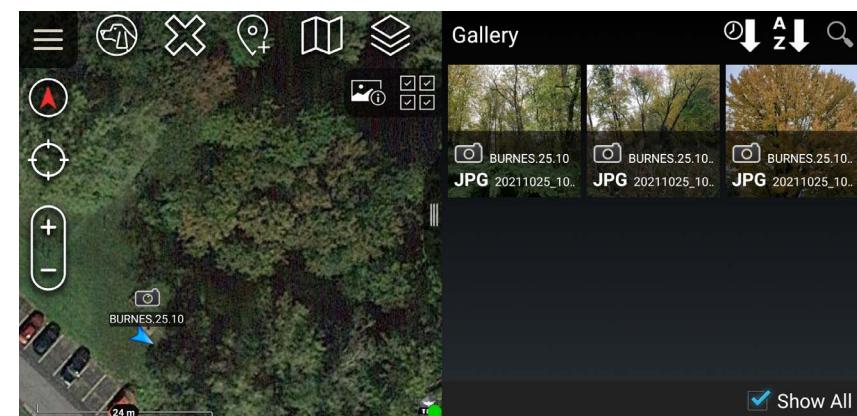
Select the Quick Pic marker to activate its radial. Options include Delete, Polar Coordinate Entry, R&B line, Image View and Details (long press to access the sub-radial menu to quickly send the marker). Select [Image View] to view the image along with the marker and the approximate field of view of the still image. The image can also be accessed by selecting [Details], the [Attachment] (paperclip) icon and then selecting the image thumbnail.



Gallery



The integrated Gallery Tool can be used to view media attachments. The marker attachments are on the right side of the screen. Captions can be added to the image file by opening the specific image in the gallery and tapping the line at the top of the image.

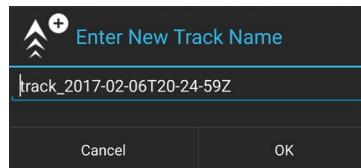


Track History

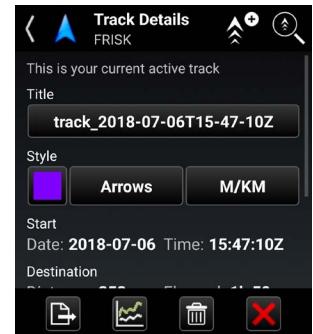
The device's GPS can be used to track movements with the Track History tool. These tracked paths can be exported to a TAK server, to a route or to a KML, KMZ, GPX or CSV file. A GPS position must be established before tracking can begin.



Selecting the **[Track History]** icon will open Track Details for the current active track. The track title, color and style can be modified.



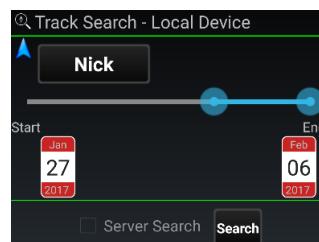
Initiate a new track by selecting the **[Add Track]** icon. Accept or edit the default track name and select the **[OK]** button to begin the new track. User location data is recorded as breadcrumbs in a new track file.



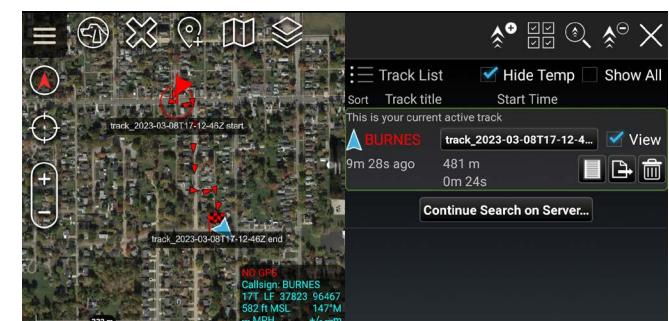
Track Search



Use the Track Search function to view track information that has been previously saved locally or on a TAK Server. The tool searches the track database for matches against the specified time range and by user callsign. Matching tracks are displayed as a list, and can be selected to view on the map interface.



Select the **[Track Search]** icon to access the function. Specify callsign and time frame, check the box for Server Search (if desired), then select **[Search]**. The track list will appear. The query results can be sorted by Track Name or Start Time. Select any of the query results to move to that track. Once selected, the name, color and style of a selected track can be modified or the track can be cleared. Convert a track to a TAK route, published to a server or export it as a KML, KMZ, GPX or CSV file by selecting the desired track and then **[Export]**. Enter a file name then select **[Next]** and choose the export format. Select **[Done]** or **[Send]** when the export completes.



When viewing the track list, the Track History Toolbar will appear at the top of the Track history pane. The options include **[Add a Track]**, **[Multi-select]**, **[Track Search]** and **[Clear Tracks]**. The Track History List allows the user to select tracks of other users that have been saved on their device. The Track Search – Local Device allows the ability to perform a tailored search for tracks meeting specific criteria. Use the searching option to retrieve all the tracks on the device. The Track History Breadcrumb and Settings can be configured in the Settings > Tools Preferences > Specific Tool Preferences > Track History Preferences.

Digital Pointer Tools



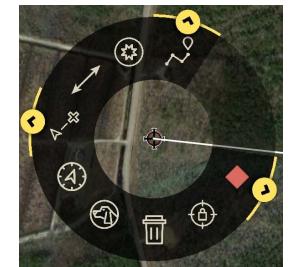
Select the **[Digital Pointer]** icon to begin using the Digital Pointer Tools feature. When the icon is selected, the available tools appear in the toolbar. The Digital Pointer Tools capability primarily allows the user to share pointers with team members. Additionally, GoTo MGRS is available for use.



The Pointer button allows the user to place an indicator on the map. If other team members are on the same network, the pointer icon will automatically be sent to them as a notification message. The pointer icon auto sends to all other users' maps with a line to the user's marker that set the pointer.



Selecting the user's own pointer opens a radial menu, allowing to Delete, Fine Adjust, Polar Coordinate Entry, R&B Line to Self-Marker (long press for Bullseye and Compass options), R&B Line, Custom Threat Rings and Place a Marker.



Selecting another user's pointer opens a radial menu with more options including Delete, Bloodhound, Polar Coordinate Entry, R&B Line to Self-Marker (long press for Bullseye and Compass options), R&B Line, Custom Threat Rings, Breadcrumbs and a sub-radial Color option for the Breadcrumbs, Place a Marker and Lock-On.



Select the **[GoTo MGRS]** icon from the Digital Pointer toolbar to manually enter desired MGRS coordinates to place a local Pointer. This allows for fast entry of the 10-digit Easting and Northing and includes the corresponding grid zone for that map view.

Digital Pointer Tools settings can be customized in Settings > Specific Tool Preferences > Digital Pointer Toolbar Preferences.

The legacy toolbar mode can be enabled in preferences. Legacy mode will add the Dynamic R&B Line option and provide the option to configure between 1-3 DPs on the Digital Pointer toolbar.

Elevation Tools



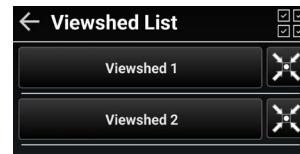
Select the **[Elevation Tools]** icon to open the Elevation Tools which includes Heatmap, Viewshed and Contour Lines functionality.

The Heatmap Tool displays elevation data on a color scale with lower elevations represented by blue and higher elevations by red. The Intensity, Saturation, Value and Sample Rate of Resolution can be modified for user preference. Elevation Data (such as DTED, SRTM, Quantized Mesh or other forms) is needed for this tool to work properly.



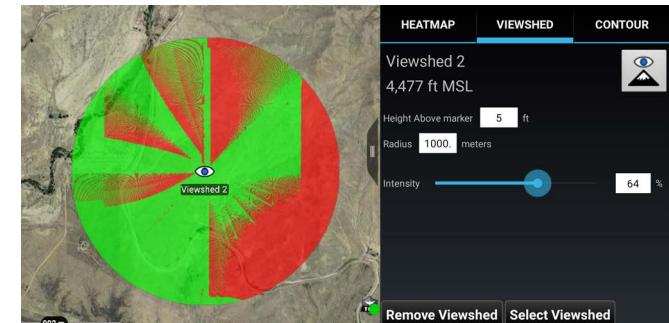
Viewshed

The Viewshed tool determines the visibility from a selected map location. From the Viewshed tab, select the **[Eye View]** icon and then tap a location on the map or select a map marker. An Eye marker will appear on the map interface.



Note: If zoomed out too far, only the Eye View icon will be visible. Zoom in to see the viewshed.

Note: Viewsheds and Contour lines do not persist upon ATAK quit/restart.



A circle with the specified radius will display with the viewshed marker as the center. Green parts of the circle represent areas visible from that location and red parts represent areas that are obstructed from view. The Height Above Marker can be altered to reflect how far above ground level the viewshed should calculate. The radius of the viewshed can also be modified.

Intensity can be increased or decreased by using the slide bar or entering a numeric value.

Select **[Remove Viewshed]** to delete the viewshed from the map.

Tap **[Select Viewshed]** to show a list of all created viewsheds. Select an individual viewshed name to pan to it on the map. Select the **[i]** icon (Details) to view or modify the current viewshed parameters. Viewsheds can also be removed through the multi-select tool.

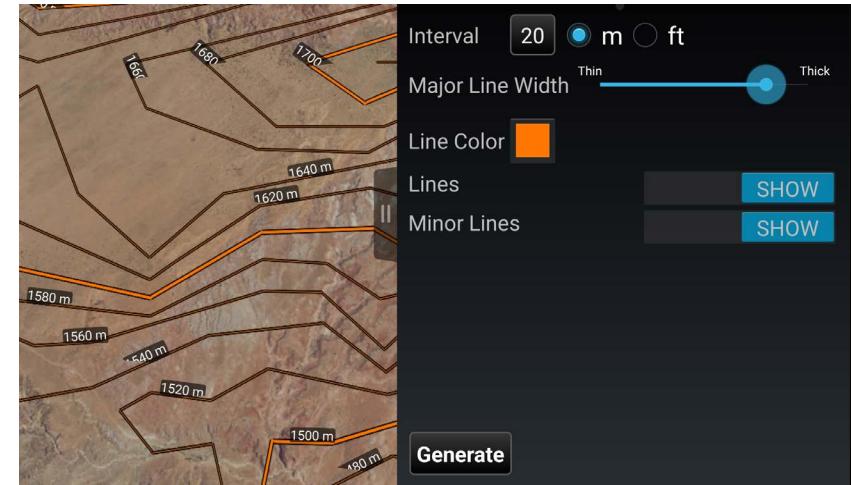
The viewshed radial will open by selecting the **[Eye View]** icon. Available options are Delete, Fine Adjust/Enter Coordinate /MGRS Location and R&B Line. Settings for Elevation Tools can be changed by navigating to Settings > Tool Preferences > Specific Tool Preferences > Elevation Overlay Preferences.

Contour Lines

The Contour Lines Tool generates contour lines on the map in the area within the current window.

To generate contour lines, 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 fields as desired and then select the [Generate] button. A progress bar and the percentage complete will appear to give feedback on the contour line generation.

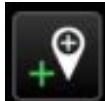
Major Lines and Minor Lines can be toggled on or off without having to regenerate the contour lines. Line color, Units (meters or feet) and Major Line Width can be changed without regenerating the contour lines. If the Interval is modified, select the [Generate] button to regenerate the contour lines with the new value.



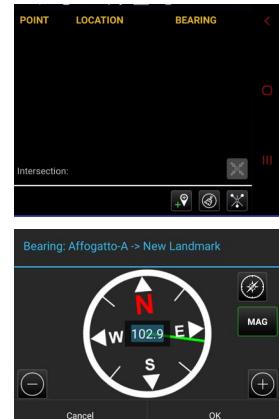
Resection Tool



The Resection Tool provides a capability for users without a GPS signal to estimate their location from known points/landmarks on the map. Two or more reference points on the map are needed to provide a more accurate estimate of the user's location.



From their position, the user identifies and places a series of landmark points on the map. As each landmark point is placed via the point dropper icon, a compass is displayed allowing the user to adjust the bearing from their position to the landmark.



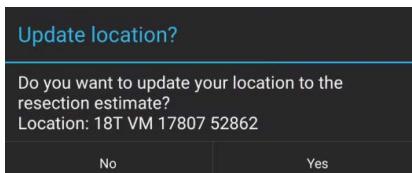
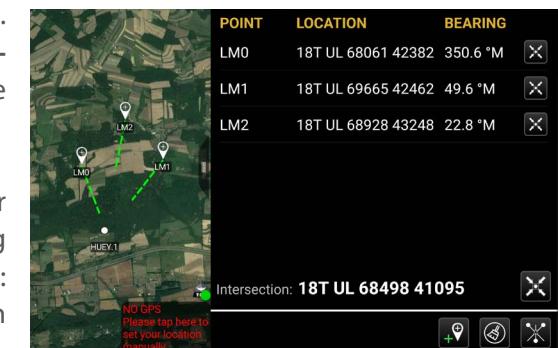
After a landmark point has been placed, the location and bearing can be modified by tapping the corresponding field for that landmark entry on the Resection panel. When two or more landmark points have been placed, an intersection point is computed and displayed in the intersection field.



Select the [Plot Intersection] icon to place a marker on the map at the current intersection point. If additional landmark points are added, the intersection field will be updated and the [Plot Intersection] icon can be selected again to place a more up to date intersection point marker on the map. The marker will be labeled with the callsign of the device.



To move a landmark point, long press the point on the map and then select another location for the point. To remove an individual landmark point, select the landmark point on the map to bring up the radial and select the [Delete] radial option. Other landmark point radial options include: Bearing, Fine Adjust, R&B Line and Details. To delete all landmark points that have been placed on the map, select the [Clear Landmarks] icon and confirm the deletion of all landmark points.



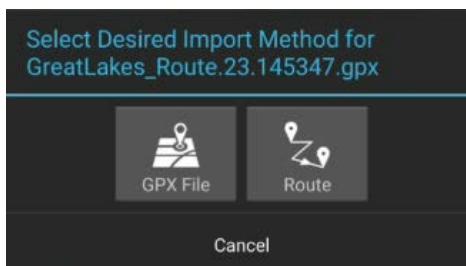
When finished estimating a new location, select the back button to exit the tool. A dialog will appear with the option to update the Self-Marker location. Select [Yes] to update the Self-Marker to the new resection estimate and have that location broadcast in the SA message to other users on the network. Select [No] to not update the Self-Marker location.

Import Tool

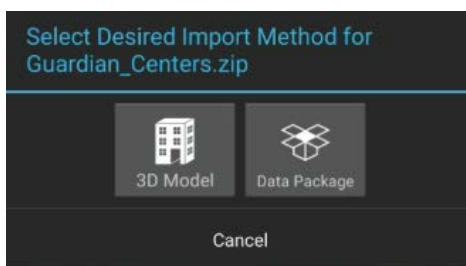


Select the **[Import]** icon to import supported files into the TAK application from an SD card or via the network.

From the Select Import Type interface window the following can be selected: **[Local SD]**, **[Gallery]**, **[KML Link]**, **[HTTP URL]** or choose a different application.



Select **[LOCAL SD]** to import from a folder residing on the internal or external SD card. Navigate to the folder from where files are to be imported. Various types of files can be imported via Import Manager including: ATAK configuration, ATAK Data package zip files, Elevation Data (such as DTED, SRTM, Quantized Mesh or other forms), imagery and overlay files.



Imagery file types that are supported include XML, SQLite, GeoPackage with imagery, CADRG, CIB, ECRG, GeoTiff, JPG2000, KMZ with imagery, MrSid, NTIF and PFPS. Overlay file types that are supported include DRW, GPX, KML, KMZ, LPT and Shape. Dependent on file type, most imported files will be accessible via Maps and Favorites, Overlays or Data Package.

Some file extensions, like ZIP or GPX files for example, may result in a prompt for the user to select which import method to use.

Select **[KML Link]** to import a KML file via the network using HTTP or tap **[HTTP URL]** to import other file types via the network using HTTP. Enter a name for the link, a valid HTTP URL and a refresh interval (KML link only). Finally, indicate whether the local content should be removed when ATAK is shut down. Select **[Add]** to save the link.

Add KML Network Link Resource	
Name	<input type="text"/>
URL	<input type="text"/>
<input type="checkbox"/> Auto Refresh Interval: <input type="text" value="300"/> seconds	
<input type="checkbox"/> Remove Local Content Upon Shutdown	
<input type="button" value="Cancel"/>	<input type="button" value="Add"/>



Once the KML Link or Remote File Resource has been added, it will be listed in the Remote Resources category in Overlay Manager. The red status indicator appears next to files that are available for download but have yet to be added. Selecting the **[Download]** icon initiates the download process after the user verifies the activity. The green status indicator lists files that have been successfully downloaded.

Rubber Sheet



The Rubber Sheet Tool allows the ability to add georeferencing to a 2D image or a non-rectified 3D model, as well as edit a 2D image overlay or 3D model that is already georeferenced. Select the [Rubber Sheet] icon to open the toolbar.



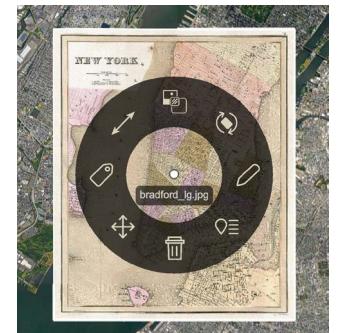
Options available on the toolbar are: Import, Sort, Export and Search. Imported Rubber Sheets can be sorted in either alphabetical order or by distance from the Self-Marker.

Working with 2D Imagery

To import a 2D image, pan and zoom the map to the desired location for the imagery. Select the [+] icon, select the desired image file to import, then select [OK]. The image will be displayed on the current map view and listed in the Rubber Sheets section of Overlay Manager.

After the image has been imported, selecting it will open a radial menu with the following options: Delete, Fine Adjust, Labels, Range & Bearing Line, Opacity, Rotate, Edit, and Details.

Imported Rubber Sheets can be sorted in either alphabetical order or by distance from the Self-Marker.



Select [Edit] to adjust the size, rotation, and location of the imagery. The controls are the same as for editing Drawing Tools rectangles. Drag a corner to change the rectangle size, drag the midpoint of an edge to change size and rotation, and drag the center to move the entire rectangle. Select [Rotate] to use two fingers to rotate the rectangle without changing its size. When the image has been adjusted to the desired position on the map, select [End Editing].

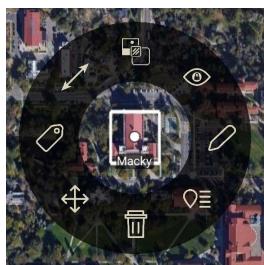


Select [Export] from the Rubber Sheets Overlay Manager list to export the rubber sheet image as a KMZ file. The exported result is placed in the atak/tools/rubbersheet folder. For convenience, the user is prompted whether to import the exported result as an image overlay.

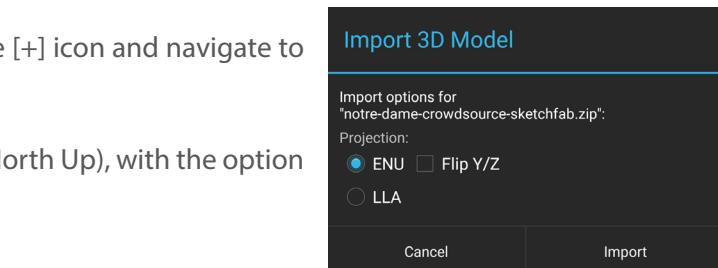
Working with 3D Imagery

To import a 3D model, pan and zoom the map to the desired location for the model. Select the [+] icon and navigate to the file location of the desired 3D model then select [OK].

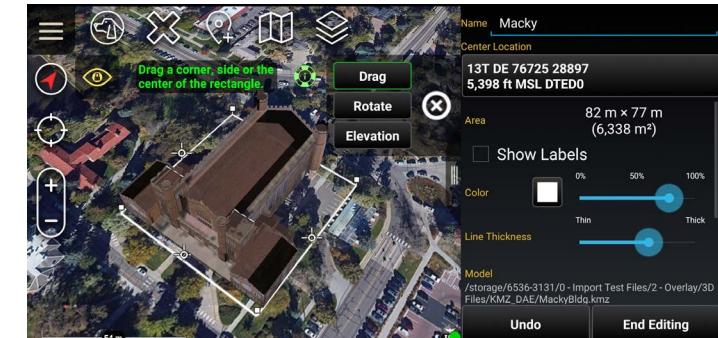
If the model is not geo-rectified, projection options are presented. Choose between ENU (East North Up), with the option to Flip Y/Z, or LLA (Lat, Lon, Alt), then select [Import].



Once the model has been imported and placed on the map, the user can select the model to open a radial with the following options: Fine Adjust, Labels, R&B Line, Opacity, Free Rotate / 3D View, Edit, Details and Delete. To edit the model, select the [Edit] icon from the radial.

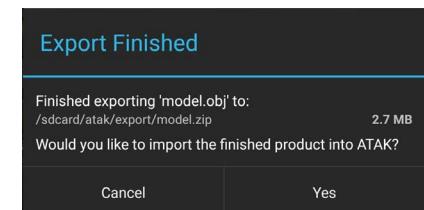


Once in edit mode, the model can be dragged on the map, rotated and/or raised or lowered.



After the model has been positioned as desired, select [End Editing]. To export it to a georeferenced OBJ 3D model, select Overlay Manager > Rubber Sheets, then select the [Export] icon. The file is placed in the /atak/export folder.

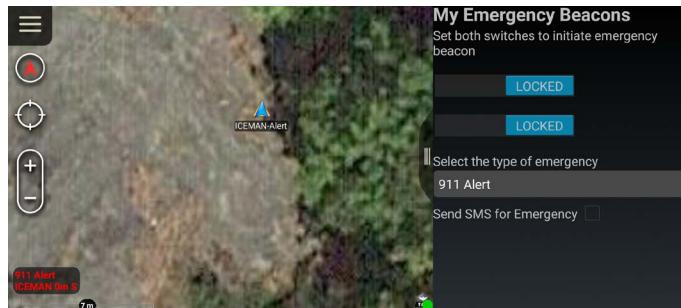
When the export has finished, select whether to import the finished product into ATAK. If the model is imported, it will be placed on the map and will be listed in the Overlay Manager under 3D Models.



Alert



Select the [Alert] icon to open the Alert Tool in ATAK. The Alert Tool allows the user to indicate the need for assistance, the type of emergency and location on the map. The type of emergency can be selected from the drop-down menu, before activation, and includes options for a 911 Alert, Ring the Bell, Geo Fence Breached or In Contact.



911 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 announcement to all network contacts. Even if the user's device is turned off, the beacon will continue. The beacon will be canceled and removed when the user returns to the Alert tool and toggles the switches off. If the SMS for Emergency option has been configured, the alert will be sent via text message to the configured numbers.

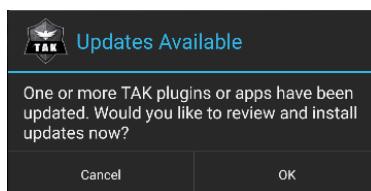
TAK Package Management



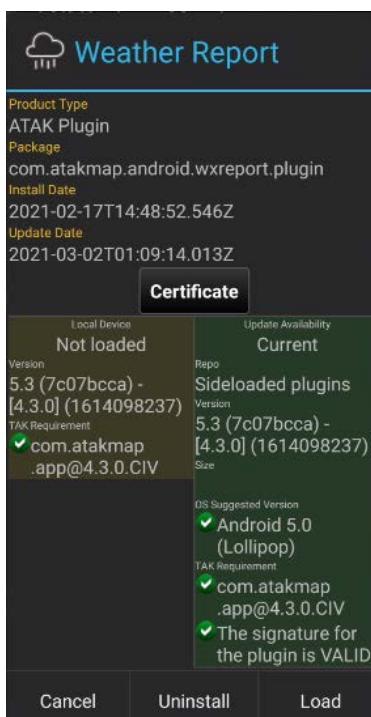
The primary user interface for managing products and product repositories in ATAK is the TAK Package Management Tool. This tool streamlines the process of obtaining plug-ins and provides a single location to manage TAK products available across all supported TAK product repositories. To install tools or plug-ins into Android OS and load them, select the [Plugins] icon from the additional tools and plug-ins menu. Actions available from here include viewing the status, availability, and details of all available products. Products can also be installed, updated or uninstalled from this menu.



Select [Search] (magnifying glass) to enable a text search field that can also filter by status and origin.



Upon opening ATAK or after a product repository sync is completed, if any current products have available updates (e.g., a new version of an application or plug-in), a prompt will appear to open the TAK Package Management view for updates. Note that compatible products may still function when not up to date; however, incompatible products will not be loaded until they are updated.



The lists of plug-ins will have a red or green shield associated with it. A green shield signifies an officially signed plug-in or application. A red shield signifies that the plug-in or application is not officially signed.

TAK Apps & Plugins			
All	Sideloaded plugins	Enter search terms	X
App/Plugin	Status	Availability	
Cloud/FTP	<input checked="" type="checkbox"/> Loaded	Current	
Data Sync	<input type="checkbox"/> Not Loaded	Current	
SIP	<input type="checkbox"/> Not Loaded	Current	
TAK Ge...Plugin	Incompatible	Incompatible	

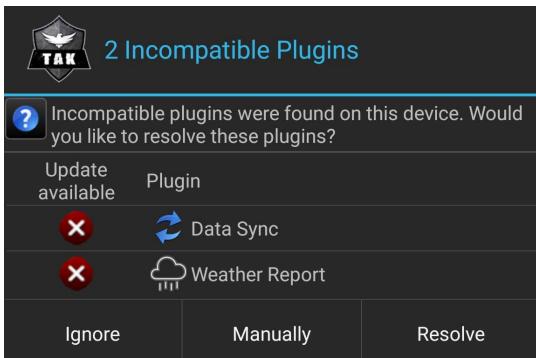
To enable or disable auto synchronization of the device with all configured product repositories, select the [Menu] icon (three vertical dots) from the TAK Package Management screen then select [Edit] and check the [Auto Sync] box.

Note: The three vertical dots and edit are replaced with a [Settings] (gear) icon on a tablet device.

If Auto Sync is enabled, the sync occurs each time ATAK is started. If a newly installed plug-in is not on the list, select the [Sync] icon to update the local list.

Note: The status of installed but inactive plug-ins will appear as STATUS: Not Loaded.

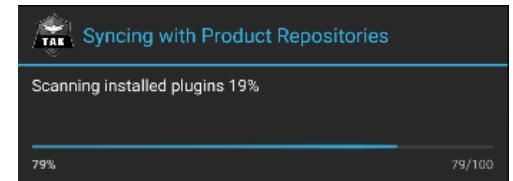
TAK Package Management (Continued)



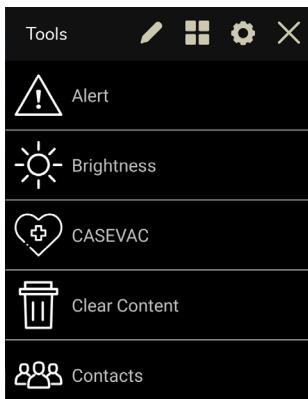
Over the Air Update Server product repository is disabled by default but may be enabled to (1) view status of remote repository (status of last sync attempt), (2) view time of last successful sync with the remote repository and/or (3) switch to a custom or private remote repository (change the URL).

To enable Over the Air Server product repository, open TAK Package Management > select the vertical dots > select [Edit], then check the box for [Update Server]. [Update Server URL] becomes available (empty by default). Select to enter the URL for the desired repository server and select [OK]. Return to the TAK Package Management screen and press [Sync] to populate server and local plug-ins. The server status information will appear near the top of the screen.

ATAK automatically syncs with the configured product repositories the first time it runs after being upgraded to a new version. This allows ATAK to check for available updates and incompatible plug-ins. If a repository sync is manually initiated by the user, a sync operation will display a progress dialog. Auto sync operations which occur during startup do not display a progress dialog, minimizing interference of the user working in other tools.



Toolbar Manager



The ATAK toolbar is customizable allowing for multiple layouts to be available to quickly switch to or edit. The default toolbar contains five tools, a sixth tool can be added on a smartphone device with up to ten tools supported on a tablet device.



Select the **[Additional Tools]** button, beside the toolbar, to access the other available tools which are displayed in a grid format by default.



To change the tools layout to list format, select the **[List View]** button.



Selecting **[Grid View]** will return the layout to the grid format.

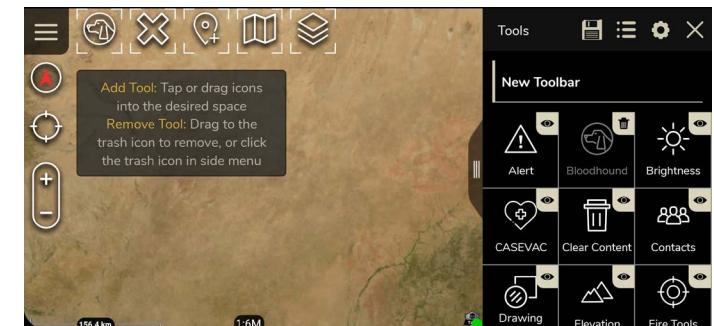


Modifying a Toolbar



Select **[Edit Toolbar]** to launch the toolbar Edit Mode. Any user-created toolbar may be modified by selecting **[Edit Toolbar]** at any time.

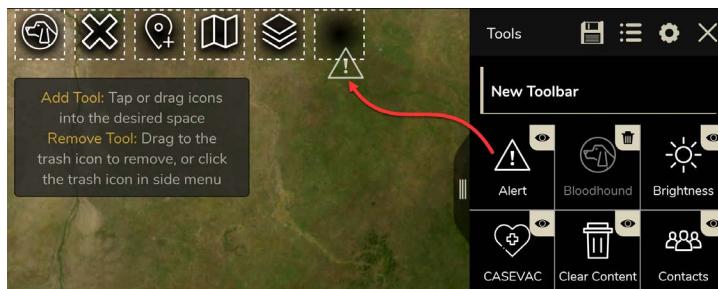
Note: When entering Edit Mode through the icon on the toolbar, the current toolbar will be presented to modify. If this is the default toolbar, a copy of it will be used as the starting point for the new toolbar since the default toolbar cannot be modified. To start with a “clean” toolbar, go to the toolbars list and choose to **[Add Toolbar]** instead.



The following actions can be done when in Create/Edit Mode:

- Name/rename the toolbar
- Add and/or remove a tool on the toolbar
- Change the visibility of a tool in the listing

Modifying a Toolbar (Continued)



To add a tool to the toolbar, long-press and drag the icon into the position desired.

If an icon is already in the space, dragging the new tool into the space will replace it. Long-press and drag a tool from the toolbar to the delete area on the map to delete it from the toolbar and return it to the main tool list.



There are several icons that appear on the tools when in Edit Mode that provide the ability to manage the tool icons both within the tool list and on the main toolbar.



The visibility icon indicates that a tool is displayed in the main toolbar list after the editing panel is closed. Select this icon to remove it from the tool list. It may be made visible again when in Edit Mode.



The visibility icon with a slash through it indicates that the tool will not be visible at all after closing Edit Mode. Select it to return the tool icon to the tool list.



The Delete icon gives the user another way to remove a tool from the main toolbar. Select it and the tool will be removed from the toolbar and moved back to the tool list. An icon with the trashcan also indicates that the tool will be visible on the toolbar but not visible in the list when Edit Mode is closed.



After completing all desired modifications to the toolbar, select [Save]. The toolbar will appear in ATAK's available list of toolbars.

Export Custom Toolbar



To save a toolbar outside of ATAK, select [Export Toolbar]. The exported file will be saved to /sdcard/atak/export/. After exporting, the toolbar can be sent to another TAK user. The toolbar will also be saved to the toolbar list.

Note: A toolbar can also be imported using ATAK Import Manager or selecting the [Import Toolbar] button in the Toolbar Manager panel.

Toolbar Management



Select the **[Toolbar Manager]** button to see a list of all the currently available toolbars.

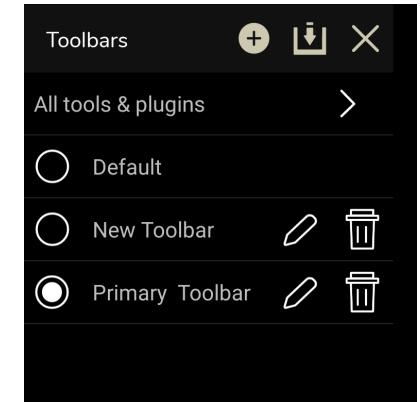


Select **[Import Toolbar]** to import a previously saved toolbar from the Android file system.

Note: Another TAK user can also send a toolbar in a Data Package that will be auto-imported into the receiver's toolbar list.

Toolbar selection is also done in the Toolbar Manager. Select the radio toggle button to choose which toolbar to use. Toolbars may be edited by selecting **[Edit]** on the line with its name. Remove a toolbar by selecting **[Delete]**.

A legacy toolbar option is available as well. The legacy tool bar can be selected during TAK device setup by selecting **[ActionBar Experience]** and then the **[Right Side (Legacy)]** option. The option to switch to the legacy toolbar can be accessed after device setup by navigating to Additional Tools and Plugins > Settings > Support > TAK Initial Device Configurations.

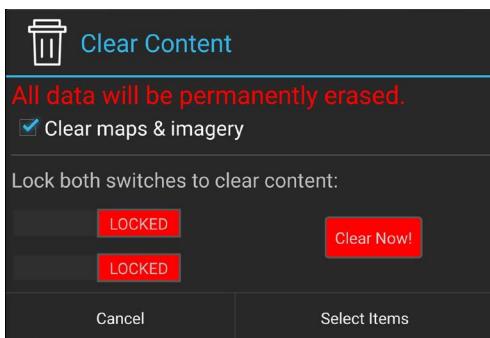


Clear Content



Select the [Clear Content] icon to remove all ATAK content from the Android device. Note that this action will permanently erase all content.

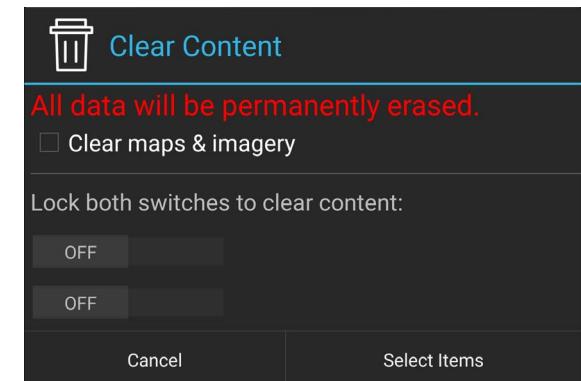
Select the [Clear maps & imagery] checkbox to clear map and imagery data as well.



Lock both switches by swiping them to the right to activate the [Clear Now] button then tap [Clear Now]. ATAK will exit after this action has been completed.

Select specific items to delete by tapping the [Select Items] button. This will navigate to the Overlay Manager multi-select tool to choose specific items to delete. Select [Cancel] to return to the main interface.

During the deletion process the file data is corrupted, making file recovery nearly impossible.



Installing a Plug-in

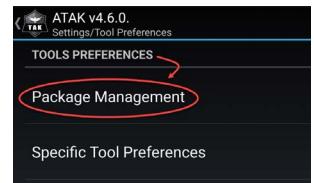
Plug-ins must be installed and then loaded to function in ATAK.

Manual Install

If an update server is not available, a manual install can be done. Acquire the plug-in .apk file, place it on the local device, browse to it, then select the apk to launch it. Android will prompt for permission to install. Allow the installation to run until notified that it is complete.



Launch ATAK and open the TAK Package Management screen by selecting [**Plugins**] from the Additional Tools menu or by navigating to Settings > Tool Preferences > Package Management.



A list of currently installed plug-ins will be displayed. Also included in the list are available stand-alone applications.



If the newly installed plug-in is not on the list, select the [**Sync**] icon to update the local list.

TAK Apps & Plugins		
App/Plugin	Status	Availability
Cloud/FTP	<input checked="" type="checkbox"/> Loaded	Current
Data Sync	<input type="checkbox"/> Not Loaded	Current
SIP	<input type="checkbox"/> Not Loaded	Current
TAK Ge...Plugin	Incompatible	Incompatible

The status of installed but inactive plug-ins will appear with a status of Not Loaded. Select the checkbox , then [**Load**] for the new plug-in to be loaded. The plug-in can be unloaded by unchecking the box. When the plug-in has a status of Loaded, it is ready for use. The status of an installed plug-in that is no longer compatible with ATAK will appear with a status of Incompatible.

The lists of plug-ins and applications will also have a red or green shield associated with it. A green shield signifies an officially signed plug-in or application. A red shield signifies that the plug-in or application is not officially signed. If an updated plug-in is not available, the plug-in should be uninstalled. To uninstall the plug-in, select the [**Trashcan**] icon.

The [**Information**] icon provides additional information about the plug-in.

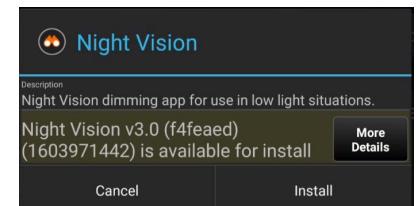
Weather Report	
Description	Provides weather overlays (requires Internet)
Product Type	ATAK Plugin
Package	com.atakmap.android.wxreport.plugin
Install Date	2021-10-25T20:52:50.386Z
Update Date	2021-10-25T20:52:50.386Z
<div style="display: flex; justify-content: space-between;"> Certificate Update Availability </div>	
Local Device	Loaded
Version	6.0 (c1e526b7) - [4.5.0] (1633454704)
TAK Requirement	<input checked="" type="checkbox"/> com.atakmap.app@4.5.0.CIV
<div style="display: flex; justify-content: space-between;"> Repo Current </div>	
Sideloading plugins	
Version	6.0 (c1e526b7) - [4.5.0] (1633454704)
Size	
OS Suggested Version	<input checked="" type="checkbox"/> Android 10
TAK Requirement	<input checked="" type="checkbox"/> com.atakmap.app@4.5.0.CIV
The signature for the plugin is VALID	<input checked="" type="checkbox"/>
<div style="display: flex; justify-content: space-between;"> Cancel Uninstall </div>	

Manual Install (Continued)

App/Plugin	Status	Availability	
 Image Markup	Installed	Update available	
 Network Monitor	Not installed	Available	
 Night Vision	Not installed	Available	
 Serial Monitor	Not installed	Available	
 TAK GeoCam	Installed	Update available	

To install a stand-alone application that has a status of Not Installed, select the application entry from the list. Once the selected application dialog appears, select the [Install] option. Once installed, the application is loaded.

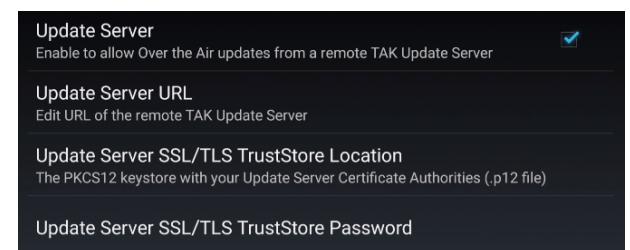
The application can also be upgraded to a newer existing version if the status is Update Available. Select the application entry in the list and once the application dialog appears, select the [Update] option. The application can also be uninstalled from this dialog by selecting the [Uninstall] option.



Update Server Install

Plugins can also be installed via an Update Server. The Update Server can be configured by selecting Settings > Tool Preferences > Package Management > select the Additional Options drop-down > Edit. Check the box for [Update Server] and configure the three subsequent fields.

Launch ATAK and go to the TAK Package Management screen by navigating to Settings > Tool Preferences > Package Management. A list of currently installed applications and plug-ins will be displayed.



Select the [Sync] icon to update the list from the server.

The plug-ins and applications listed can be installed, loaded, upgraded and uninstalled in the same manner that was described in the previous section.

Automatic Provisioning (Link EUD)

Using the Link EUD option when ATAK is initially configured, links the user device to an organization's server. The list of available plug-ins will be updated in TAK Package Management, based on the user's role in the organization. To manually refresh the list, select the [Sync] icon.

