

Tactical Assault Kit for Android (ATAK)

Version 4.1

Change Log

29 July 2020

Table of Contents

1	INTRODUCTION.....	1
1.1	Version Description.....	1
1.2	Added Features	1
1.2.1	<i>Bloodhound Integration with route planners</i>	<i>1</i>
1.2.2	<i>ATAK Shapes with Vehicle Navigation System (VNS) Plug-in</i>	<i>2</i>
1.2.3	<i>Data Packages Now sent via HTTPS.....</i>	<i>3</i>
1.2.4	<i>3D Vehicle Icons.....</i>	<i>4</i>
1.2.5	<i>3D Support for Routes.....</i>	<i>5</i>
1.3	SDK Improvements.....	6
1.4	Plug-ins.....	6
1.4.1	<i>Cloud/FTPS - Delete Option</i>	<i>6</i>
1.4.2	<i>Data Sync - Auto Publish Feature</i>	<i>8</i>
1.4.3	<i>GvLF - Streaming DTED Improvements.....</i>	<i>8</i>
1.4.4	<i>Manifest Maker – User Feedback Improvements.....</i>	<i>10</i>
1.4.5	<i>QM Elevation - Support for Cesium Quantized Mesh Elevation Data.....</i>	<i>14</i>
1.4.6	<i>SSE Tool.....</i>	<i>16</i>
1.4.7	<i>Stack Manager.....</i>	<i>20</i>
1.4.8	<i>ATAK UAS Tool Plug-in</i>	<i>26</i>
1.4.9	<i>Additional Plug-ins and Features.....</i>	<i>27</i>
1.5	List of Available Plug-ins and Applications.....	28
1.6	Additional Changes/Discrepancy Resolution	29

Table of Figures

Figure 1- Bloodhound with Routing Option	1
Figure 2 - Routing Options.....	2
Figure 3 - VNS Calculated Route Display.....	2
Figure 4 Example routes, with an avoidance region.....	3
Figure 5 - Data Package HTTPS Setting	3
Figure 6 - CoT Icon Menu.....	4
Figure 7 - Aircraft Models	4
Figure 8- 3D Model on Map	5
Figure 9 – Route Display in 3D Mode	5
Figure 10 - Route Radial with Ground Clamp Selected.....	6
Figure 11 - Cloud/FTP Initial Screen.....	7
Figure 12 - Delete a Directory	7
Figure 13 - Delete Individual File(s).....	8
Figure 14 – Data Sync Auto Publish	8
Figure 15 - Configure Streaming Server.....	9
Figure 16 - Available DTED Cells.....	9
Figure 17 - Area of Interest Selected.....	10
Figure 18 – Starting a New Plan	10
Figure 19 - Multi Select Option – PLAN.....	11
Figure 20- Multi Select Option - Manifest	11
Figure 21 - Multi Select – PAX	11
Figure 22 - PAX Duty Positions	12
Figure 23 - PAX Team Color	12
Figure 24 - Send Plan Out	13
Figure 25- Sample Manifest Maker CSV format	13
Figure 26 - Layer List.....	14
Figure 27- Add a Layer	14
Figure 28- Define New Layer	15
Figure 29 - Select Download Area.....	15
Figure 30- CoT with QME	16
Figure 31- Send QME Definition	16
Figure 32 - SSE Options	17
Figure 33 - PUC Collection Info.....	17
Figure 34 - PUC Photo	17
Figure 35 - PUC Options	18
Figure 36 - Photo Comparison 1	18
Figure 37 - Photo Comparison 2	19
Figure 38- Facial Recognition Results	19
Figure 39 - All Results	20
Figure 40 - ROZ Manager.....	20
Figure 41 - ROZ Details	21
Figure 42 - Asset with ROZ defined.....	21

Figure 43 - Asset in ROZ.....	22
Figure 44 - Active Video Alias List	22
Figure 45 - Populated Video URL field.....	23
Figure 46 - Video Alias Definition.....	23
Figure 47 - Streaming Video Available	24
Figure 48 - Asset Definition Form with Laser Code.....	24
Figure 49 - Initial Loadout	25
Figure 50 - Updated Munition List Displayed	26
Figure 51 - Drifter Plug-in	28
Figure 52 - Drifter Simulate Time Delay Capability	28
Figure 53 - ATAK with French Translation	29

1 INTRODUCTION

This document represents the changes that have occurred in the Tactical Assault Kit for Android (ATAK) from version 4.0 to 4.1. For information on specific core functionality please refer to the ATAK Software User's Guide or plug-in specific documentation.

1.1 Version Description

ATAK provides tactical maps and situational awareness (SA) on Android mobile devices. ATAK also provides an extensible framework on which user specific tools are built to provide additional functionality. Plug-ins are available based on the needs of the user and are released incrementally with the ATAK baseline. ATAK 4.1 advances SA capabilities by enhancing existing toolsets and introducing new features.

1.2 Added Features

The following subsections provide a brief overview of features that are new or have been enhanced in ATAK 4.1

1.2.1 *Bloodhound Integration with route planners*

ATAK 4.1 now provides the ability to generate an on-road aligned, turn-by-turn Route for a bloodhound track if a plug-in such as the Vehicle Navigation System (VNS) which supplies route planners has been installed. The user defines a bloodhound (see ATAK software user manual) and will now see the routing icon displayed in the bloodhound widget (depicted in Figure 1).



Figure 1- Bloodhound with Routing Option

When the user selects the route icon, the available routing options are presented (Figure 2).

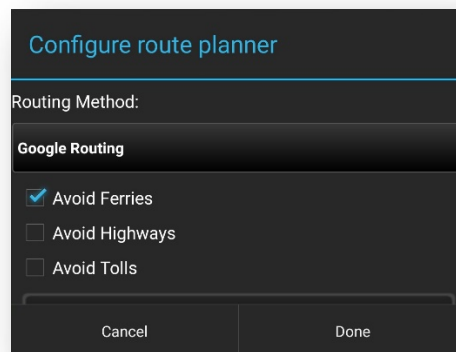


Figure 2 - Routing Options

The route is computed using the specified method/route engine and then displayed on the map (Figure 3). The route will continue to update as the bloodhound and the user marker moves.



Figure 3 - VNS Calculated Route Display

1.2.2 *ATAK Shapes with Vehicle Navigation System (VNS) Plug-in*

In 4.1 ATAK, the VNS offline route planner now features a route around region capability whereby users can predefine an ATAK core region (either circular or polygonal) on the moving map that the user wishes the VNS route solver to route around.

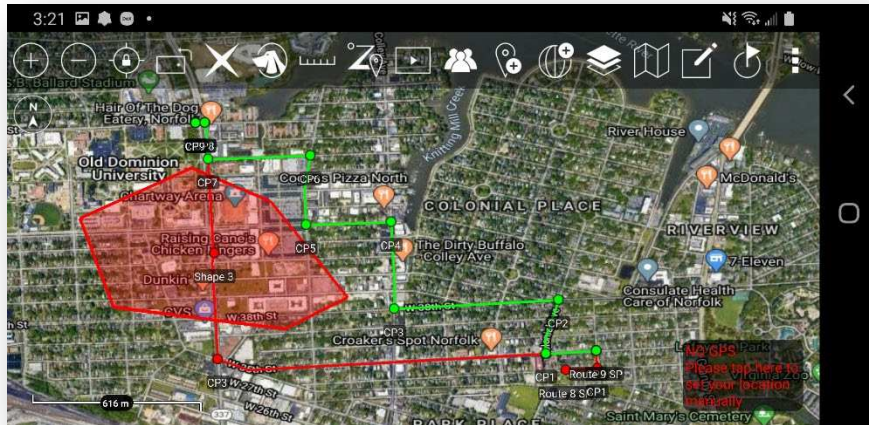


Figure 4 Example routes with an avoidance region.

1.2.3 Data Packages Now sent via HTTPS

ATAK 4.1 now sends Data Packages via HTTPS as the default. When an older client is detected, ATAK automatically defaults back to using HTTP. The default HTTPS port is 8443. The user may specify a different port in the DP preferences screen. See Figure 5.

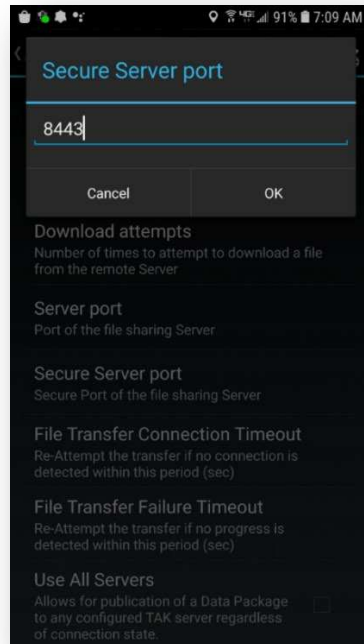


Figure 5 - Data Package HTTPS Setting

1.2.4 3D Vehicle Icons

ATAK 4.1 now provides a set of 3D vehicle icons that may be placed on the map using the Point Dropper tool. The user selects the Vehicle Models option (Figure 6) from the Point Dropper menu. With the addition of new 3D vehicle icons, the user also gets new 2D variants as well.

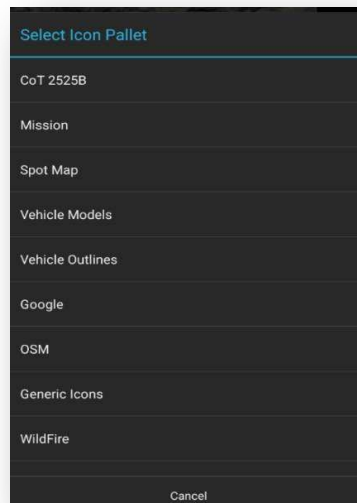


Figure 6 - CoT Icon Menu

The user selects the Vehicle Models option, Models are available in the following categories; Aircraft, Automobiles, Maritime and Other. Figure 7 shows the available Aircraft models.



Figure 7 - Aircraft Models

Figure 8 shows the selected model displayed on the map.



Figure 8- 3D Model on Map

1.2.5 3D Support for Routes

ATAK 4.1 now provides support for display of routes in both 3D mode and traditional clamped to the ground. When 3D mode is enabled, lollipops are displayed connecting the SP/CP/TGT points to the ground. Figure 9 shows a route being displayed with 3D mode active.

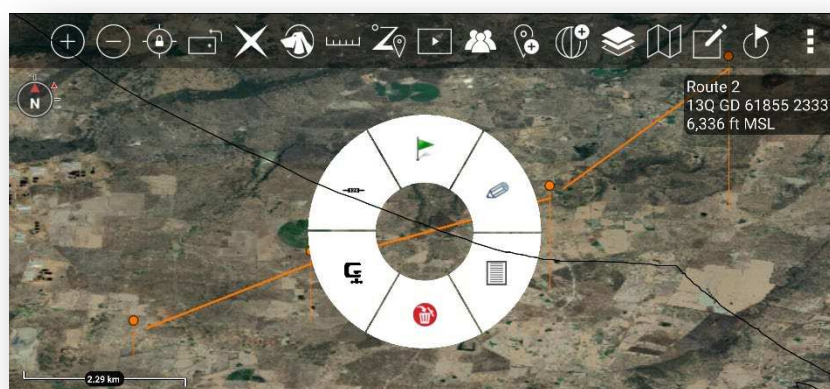


Figure 9 – Route Display in 3D Mode

The user can choose to clamp the route to the ground by selecting the route radial and activating the ground clamp option, as shown in Figure 10.



Figure 10 - Route Radial with Ground Clamp Selected

1.3 SDK Improvements

The SDK received updated documentation, a general ATAK Application Programming Interface (API) cleanup and ongoing code cleanup of Coverity and Fortify identified issues:

- Migrated to Android 29 SDK with a minimum of Android 21.
- Migrated to AndroidX for core and plug-ins.
- Migrated `FeatureDataStoreMapOverlay` from using `FeatureDataStore` to `FeatureDataStore2`. Updated example code to make use of `FeatureDataStore2`.
- Resolved ATAK-12554 allowing minimum/maximum rendering values to be set for features.
- Expose `AltitudeMode` and `Extrude` at the Java side for the `insertFeature`.
- New Dynamic radial menu API.
- Updated Video libraries to address maintenance fixes. Fixes included adding SRT support and fast forwarding a User Datagram Protocol (UDP) stream no longer results in playback at a normal speed to be choppy.
- Added the ability to gather metrics based on the touch location of any of the ATAK activities.

1.4 Plug-ins

1.4.1 *Cloud/FTPS - Delete Option*

ATAK 4.1 extends the existing OwnCloud capability by incorporating support for deleting files and folders from an OwnCloud or FTP/S server.

The user is now presented with a delete option when they launch the Cloud/FTP plug-in as shown in Figure 11.

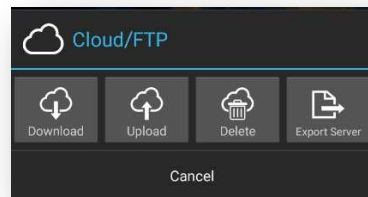


Figure 11 - Cloud/FTP Initial Screen

After selecting the Delete option, the user is connected to the server and the directory is displayed. The user can select an entire directory to be deleted (Figure 12).

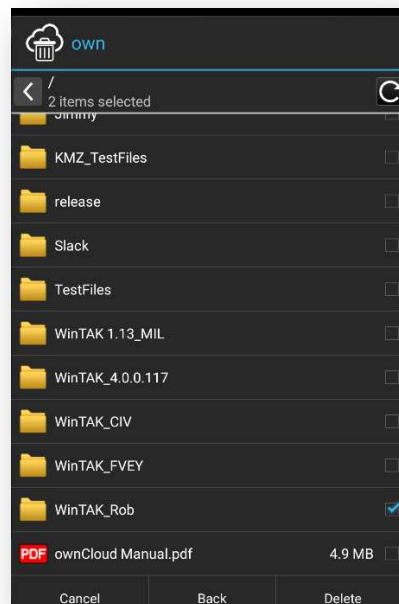


Figure 12 - Delete a Directory

The user can also select individual file(s) from within a directory to be deleted, as shown in Figure 13.

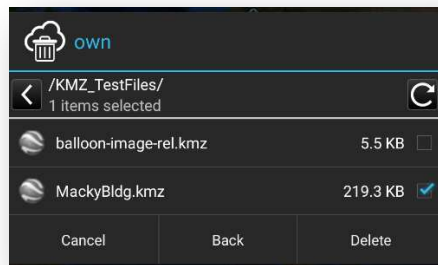


Figure 13 - Delete Individual File(s)

1.4.2 Data Sync - Auto Publish Feature

ATAK 4.1 now provides the user the ability to automatically publish items dropped on the map (CoT markers, Drawing Shapes, etc.), Quick Pics and new Video Aliases to a subscribed feed. The user enables this feature by selecting the Auto Publish checkbox located on the Feed Overview (settings) page. Figure 14 shows the Feed Settings page.

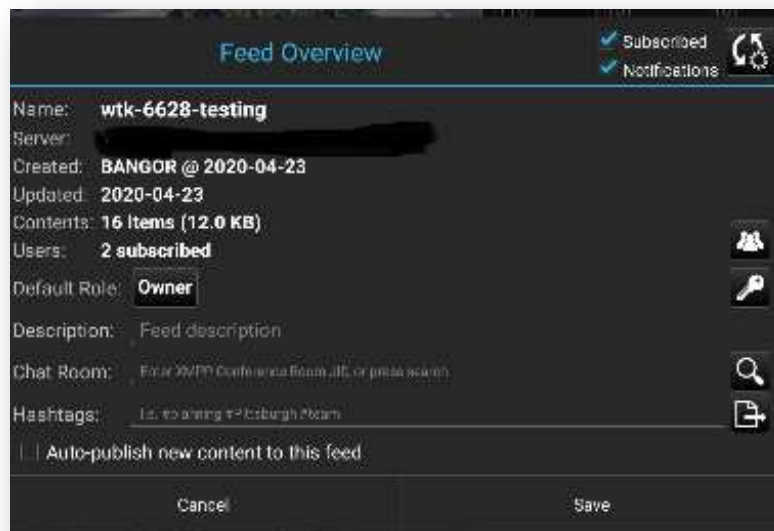


Figure 14 – Data Sync Auto Publish

1.4.3 GvLF - Streaming DTED Improvements

ATAK 4.1 has improved both the User Interface and the performance of the GvLF plug-in used to stream Digital Terrain Elevation Data (DTED) data. The difference between this and quantized mesh data is that the original DTED elevation data is preserved and not approximated.

When the plug-in is first launched, the user configures the server information for the source of the streaming DTED (Figure 15).

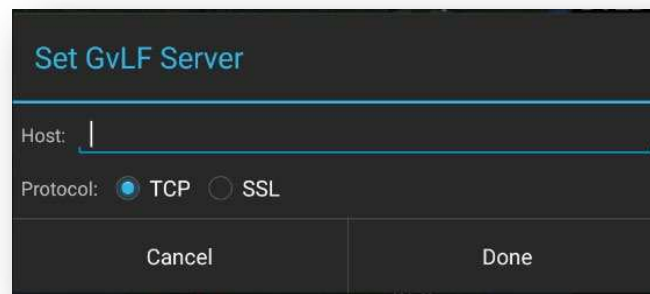


Figure 15 - Configure Streaming Server

Just like with WMS sources, the data starts to download as soon as you enter a region. Additionally, GvLF allows for users to check the coverage provided by a server. From the GvLF screen, the user can click on the check availability button. The map will be updated showing a series of red squares where DTED is available. Inside each cell, the levels of DTED information available for that area will be displayed as shown in Figure 16.



Figure 16 - Available DTED Cells

The user selects their area of interest on the map and download of the DTED data commences (depicted in Figure 17).

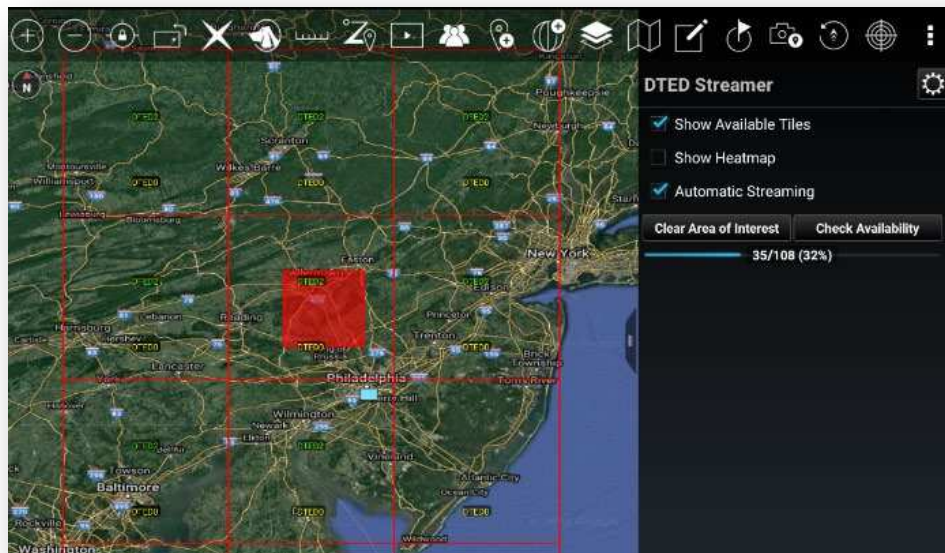


Figure 17 - Area of Interest Selected

While the DTED is being downloaded, the user may continue to interact with the map or other ATAK tools.

1.4.4 *Manifest Maker – User Feedback Improvements*

ATAK 4.0 provided a Beta release of the revised and refactored Departure Airfield Control Officer (DACO) plug-in. With the release of ATAK 4.1 the plug-in has been renamed Manifest Maker.

Manifest Maker workflow has been streamlined in ATAK 4.1. The user is now provided a list of possible sources when choosing the NEW Plan option. With ATAK 4.1 support for storing/retrieving plans from an Owncloud/FTP server has also been integrated. Note: This requires that the Cloud/FTP plug-in is installed and configured (Figure 18).

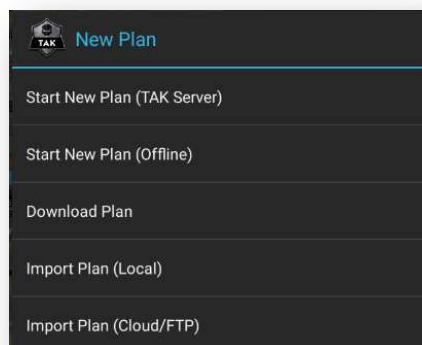


Figure 18 – Starting a New Plan

The basic workflow introduced in 4.0 remains in place. ATAK 4.1 introduces new multi select options and tailored choices based on user feedback.

From the top-level Plans screen the multi-select tool now allows the user to Send a Plan, Copy a Plan, Create a new Version of a Plan, Export the Plan or Delete it as shown in Figure 19.

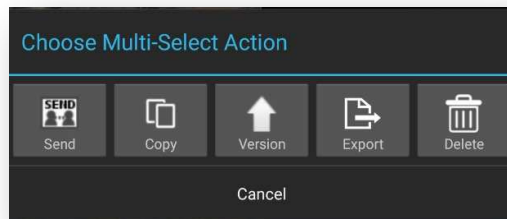


Figure 19 - Multi Select Option – PLAN

If there are multiple manifests associated with the Plan, Multi-Select provides Delete and Copy Options (depicted in Figure 20)

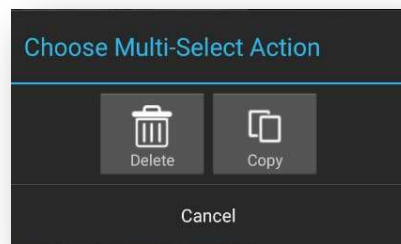


Figure 20- Multi Select Option - Manifest

If there are multiple PAX entries associated with the mission, the multi select options allows the user to delete a PAX, change the weight, assign a duty position, or assign the team color as shown in Figure 21.

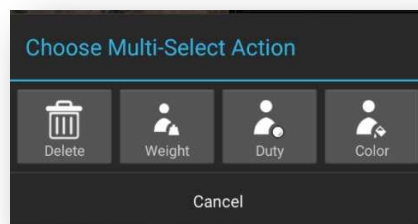


Figure 21 - Multi Select – PAX

If the user selects Duty, the list of available Duty positions is displayed (Figure 22).

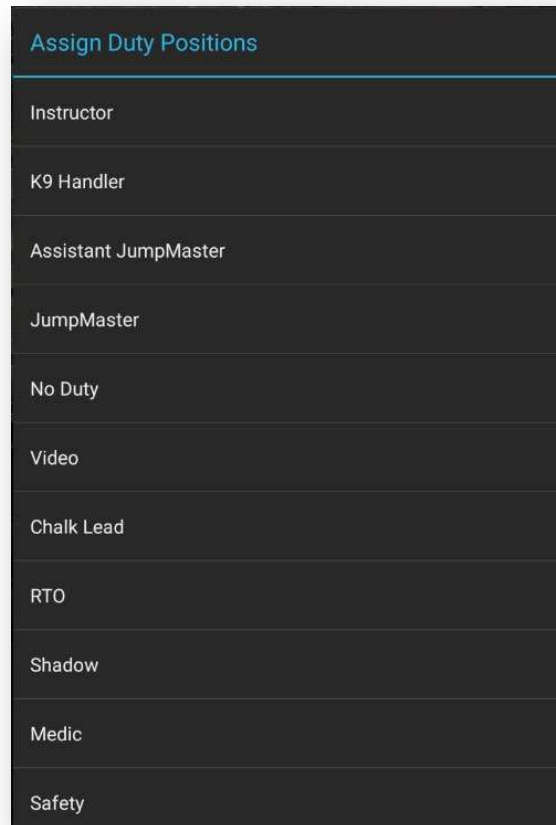


Figure 22 - PAX Duty Positions

If the user selects Color, the list of available team colors is displayed (Figure 23).

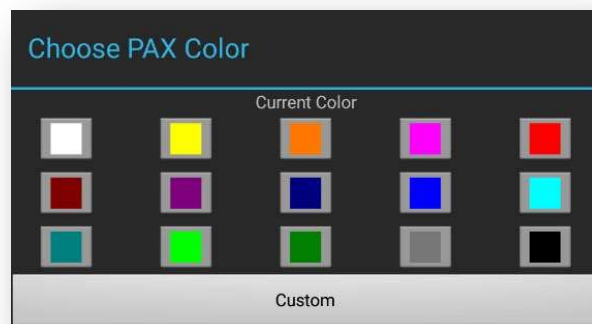


Figure 23 - PAX Team Color

The 'Send Plans' screen features a dark grey header with the 'Send Plans' title in blue. Below the header is a row of four navigation icons on a dark grey background: 'Contact' (three people icon), 'Select Server' (server rack icon with a green circle), 'Data Sync' (circular arrows icon), and 'Cloud/FTP' (cloud icon).

ATAK 4.1 provides better support for importing plans that have been created on the desktop using Excel and then exported to a comma-separated values (CSV) file. The CSV file can be copied to the ATAK device and then imported (Figure X). Note: There are significant formatting instructions for the XLS/CSV file to be imported correctly. Information on the file format is contained in the Manifest Maker Software User Manual.

1	---	PLAN	VERSION---						
2	ALPHA		0.122						
3	---	CALLSIG DUTY	CALLSIGN	WEIGHT	COLOR---				
4		0 K	ANTLER	180	-4276546				
5		1	DENALI	190	-4276546				
6		2	DETAINEE	200	-65536				
7		3	HOSTAGE	190	-65536				
8		4	PRECIOUS	200	-4276546				
9		5 K	TRUNK	165	-4276546				
10									
11	---	MANIFEST---							
12	infil								
13									
14	---	PLATFO TYPE	SUBTYPE	TRACKED V	MAX WEIG	MAX PAX	ADDITIONA	ADDITIONA	STATUS--
15	RZR 1	Automobili	RZR	938	6000	10	1	3	UP
16	---	CALLSIG DUTY	CALLSIGN	WEIGHT---					
17		0	HOSTAGE	190					
18		1 K	ANTLER	180					
19		2 K	TRUNK	165					
20		3	PRECIOUS	200					
21									
22	---	PLATFO TYPE	SUBTYPE	TRACKED V	MAX WEIG	MAX PAX	ADDITIONA	ADDITIONA	STATUS--
23	HMMWV	Automobili	HMMWV	1290	1000	6	2	500	UP
24	---	CALLSIG DUTY	CALLSIGN	WEIGHT---					
25		0	DENALI	190					
26		1	DETAINEE	200					
27									
28	---	MANIFEST---							
29	exfil								

13

1.4.5 QM Elevation - Support for Cesium Quantized Mesh Elevation Data

ATAK 4.1 introduces support for Cesium Quantized Mesh Elevation data via the QM Elevation plug-in. When the user launches QM Elevation, they are presented with a list of installed data sources (Figure 26).

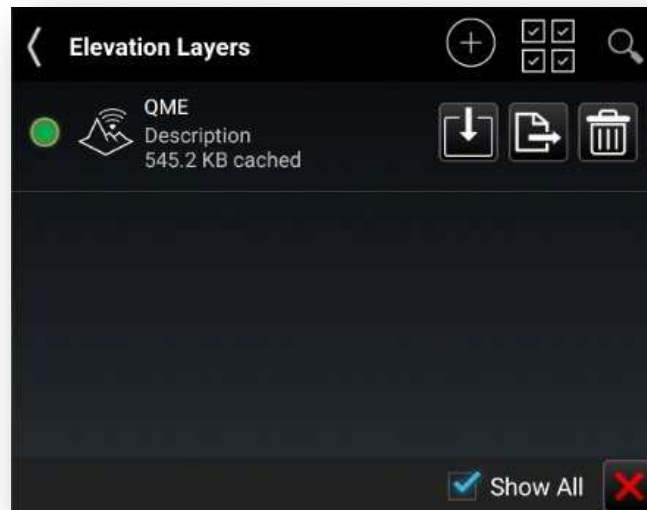


Figure 26 - Layer List

From this screen the user can add another layer, download data from the layers defined, send layer information to other users or delete it.

Add A Layer

Select the “+” icon to open the Add Layer screen (Figure 27).

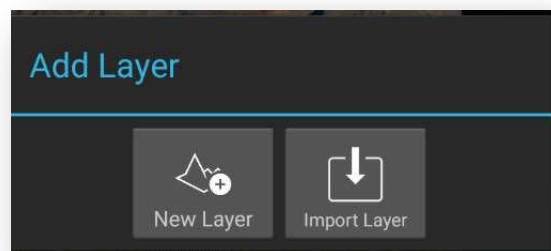


Figure 27- Add a Layer

Select the [New Layer] icon to display the New Layer screen. (Depicted in Figure 28.) The user provides a Name, Description and the URL to the server.

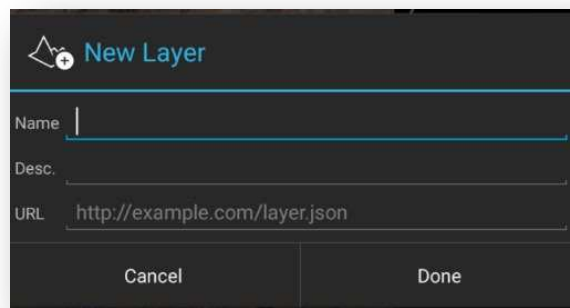


Figure 28- Define New Layer

Once the layer has been defined the user selects the download option and selects the area to be downloaded (shown in Figure 29), then select **[Start]** to begin the download.

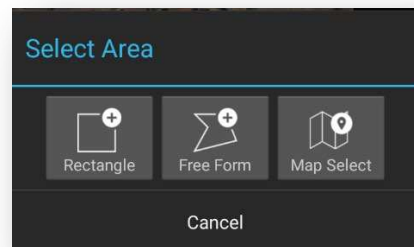


Figure 29 - Select Download Area

Place Map Item

After the elevation data has been downloaded, the user interacts with the Cesium data just as regular DTED. Figure 30 shows an example of a point placed on the map, the Map widget and the item details page showing the elevation of the point. Note that Cesium data is identified as QME on the display.

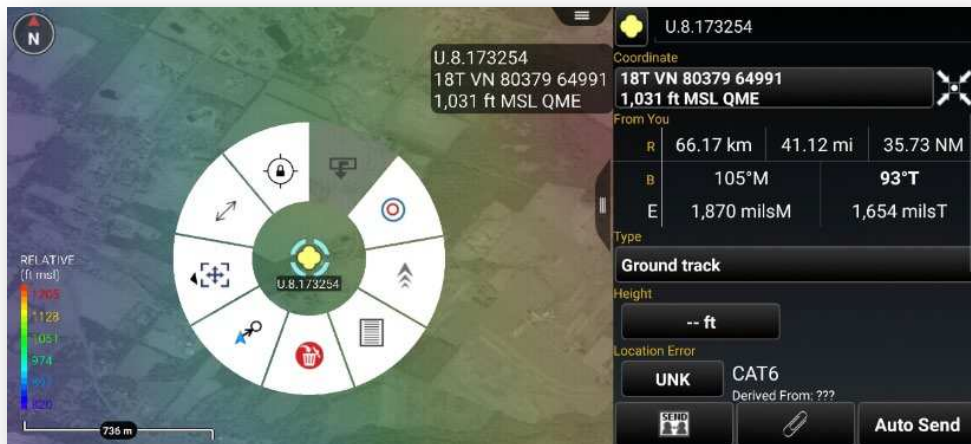


Figure 30- CoT with QME

Share QME Definition

An ATAK user can share the QME information with other users on the network by selecting the SEND option. The user is presented with the standard ATAK send menu as depicted in Figure 31.

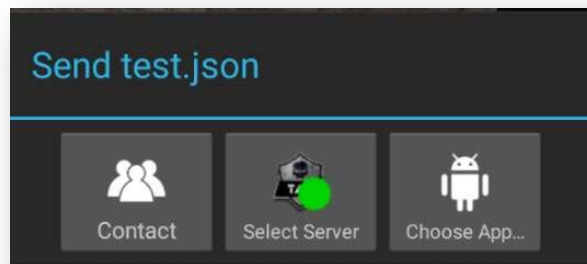


Figure 31- Send QME Definition

The user selects the recipients and sends the JavaScript Object Notation (JSON). The receiving user will see the new layer definition in the list of available layers.

1.4.6 SSE Tool

ATAK 4.1 now provides an interface between the SSE Tool plug-in and a separate, non-TAK related Facial Recognition Software application on the ATAK end-user device (EUD). If the Facial Recognition application is installed and licensed correctly on the EUD, then when the user adds a Person Under Custody (PUC) item within the SSE Tool plug-in, the user is exposed to new interfaces and capabilities. The user takes a facial photo or selects an existing facial photo for the PUC.

The user first selects PUC from the SSE Options (shown in Figure 32).

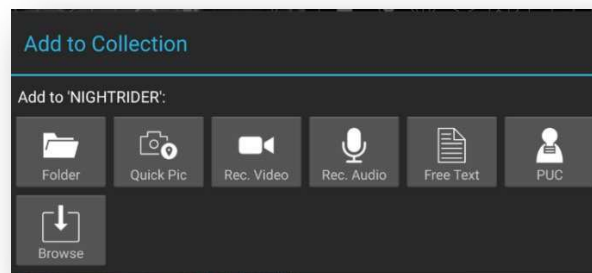


Figure 32 - SSE Options

The user is then prompted to enter data about the PUC Collection (Figure 33).

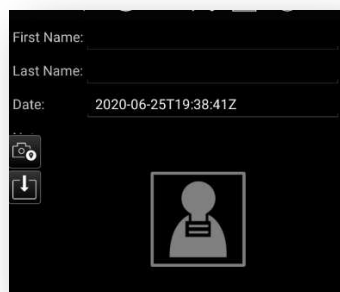


Figure 33 - PUC Collection Info

The user then captures picture(s) of the PUC (Figure 34).

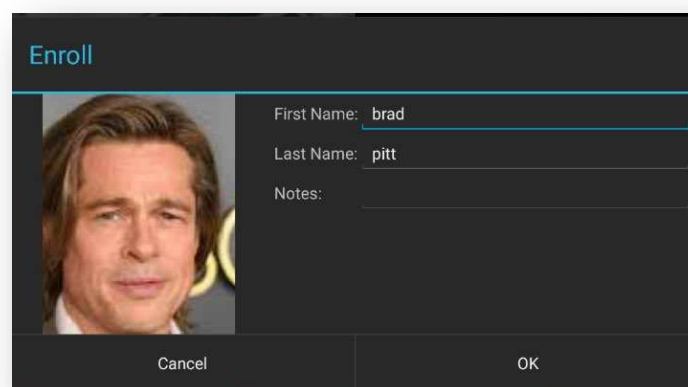


Figure 34 - PUC Photo

After capturing the photo, the user is presented with the PUC options (shown in Figure 35).

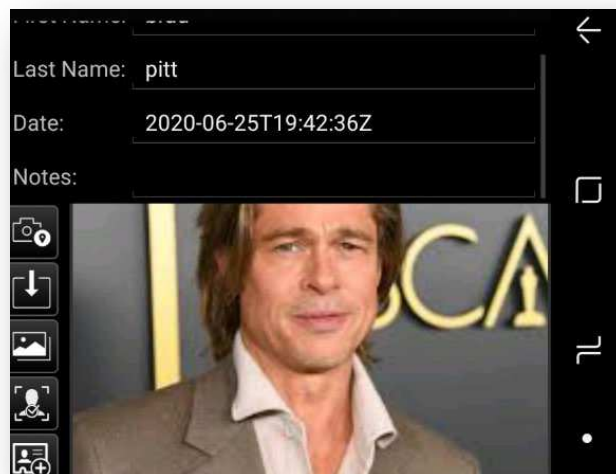


Figure 35 - PUC Options

Selecting the box with the figure outline initiates the Facial Recognition process (Figure 36). The captured photo is compared to the separate Facial Recognition application's galleries/ databases and matching images with a high probability match are displayed (Figure X, Y). The user can also enroll a PUC image back into the gallery/database of the standalone Facial Recognition application using the rolodex icon on the bottom of Figure 35.



Figure 36 - Photo Comparison 1



Figure 37 - Photo Comparison 2

The user chooses which results to add into PUC (Figure 38).

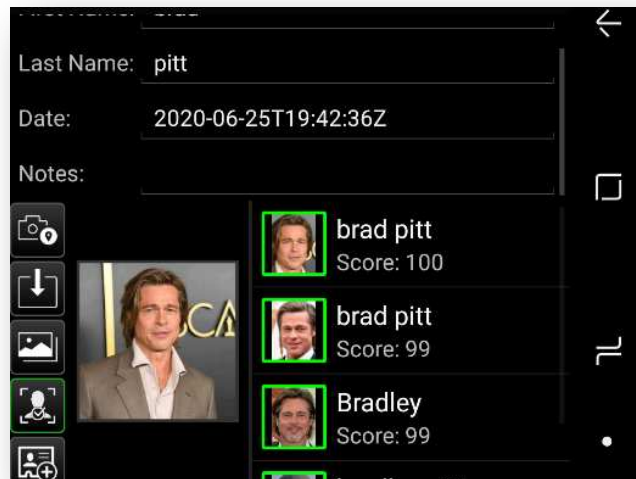


Figure 38- Facial Recognition Results

After results have been accepted, the updated SSE listing is displayed (Figure 39).

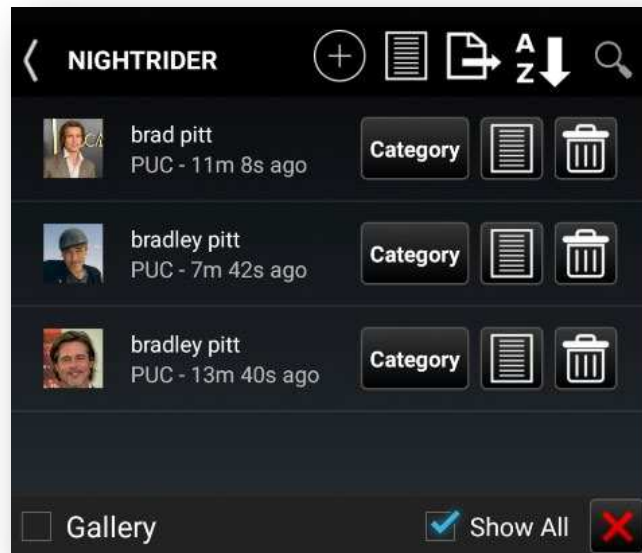


Figure 39 - All Results

1.4.7 Stack Manager

ATAK 4.1 now provides the user the ability to define Restricted Operating Zones (ROZ), improved handling of Video Alias's associated with an Air Asset, allows for the entry of laser code fields, and simplifies the syncing of stored combat load (SCL) munitions with the air asset.

1.4.7.1 ROZ Manager

Stack Manager now provides the user the ability to define a ROZ on the map and then assign aircraft to the ROZ in the asset definition page. The ROZ is created by selecting the ROZ icon, choosing the "+" icon and then placing the center point and radius of the ROZ on the map. The ROZ is then added to the list of available ROZ's (depicted in Figure 40).

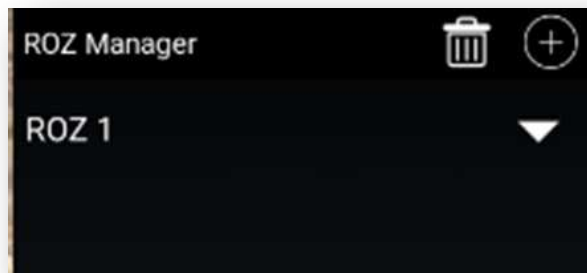


Figure 40 - ROZ Manager

Selecting the ROZ on the map, allows the user to edit the details of the ROZ (shown in Figure 41).

The screenshot shows a mobile application interface for editing ROZ details. The fields are as follows:

Field	Value
Name	ROZ 1
Center Location	11S PA 85250 17838 -- ft MSL
Radius	2.39 km
Area	17.87 km²
Rings	1
Height	-- ft
Show Labels	<input checked="" type="checkbox"/>
Color	Yellow
Line Thickness	Thin
Remarks	

At the bottom, there are three buttons: a small icon, a pencil icon, and a button labeled "Edit".

Figure 41 - ROZ Details

After the ROZ has been defined, the user can include the ROZ on the asset definition screen (depicted in Figure 42).

The screenshot shows a mobile application interface for defining an asset. The fields are as follows:

Field	Value
Callsign	F.2.114552
Block	10 15 100's ft MSL
Location	11S PA 75886 11044
Aircraft	A-10
ROZ	ROZ 1
SCL	Select Loadout
Playtime	hours minutes
End Time	End Time
Rover	Code 1 Code 2
Laser Code	Laser Code
Video URL	None
ABORT	Enter Abort Code

At the bottom, there is a button labeled "Add to Favorites".

Figure 42 - Asset with ROZ defined

As assets are assigned to the ROZ, the label is updated to match the color of the ROZ they are assigned to (Figure 43).



Figure 43 - Asset in ROZ

1.2.2.2 Video Aliases

ATAK 4.1 has simplified the process of associating video feeds with the asset. Selecting the camera icon located next to the Video URL field on the asset form displays a list of current active video alias's (shown in Figure 44)

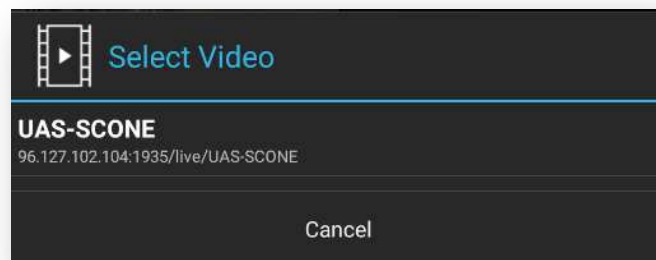


Figure 44 - Active Video Alias List

The user selects the desired alias and the video URL field is populated with the selected alias (Figure 45).

The screenshot shows a configuration window for UAS-SCONE. At the top, there's a 'Callsign' field with 'UAS-SCONE' and a refresh icon. Below it are 'Cancel' and 'Save' buttons. The 'Block' section has 'Lower' and 'Upper' options with a '100's ft MSL' unit. The 'Location' field contains '18T VN 63040 88309' with a map icon and a crosshair. The 'Aircraft' field is labeled 'Enter Aircraft'. The 'ROZ' field is labeled 'Select ROZ' with a trash icon. The 'SCL' field is labeled 'Select Loadout' with a refresh icon. The 'Playtime' section has 'hours' and 'minutes' fields. The 'End Time' section has an 'End Time' field and a 'Calc' button. The 'Rover' section has 'Code 1' and 'Code 2' fields. The 'Laser Code' section has two 'Laser Code' fields. The 'Video URL' field contains 'UAS-SCONE' with a video icon. Below it is an 'ABORT' field labeled 'Enter Abort Code' with a red border. At the bottom is an 'Add to Favorites' button.

Figure 45 - Populated Video URL field

After defining the URL for the marker, the video can be played by selecting the video icon from the markers radial. If the asset is not broadcasting, the icon is grayed out signifying that no video is available.

Selecting the URL field, displays the standard Video Stream definition window (depicted in Figure 46).

The screenshot shows a 'Video Alias Definition' window. The 'Type' field is set to 'rtsp'. There's an 'Ignore Embedded KLV' checkbox. The main address field is '96.127.102.104 : 1935 / live/UAS-SCONE'. The 'Alias Name' field is 'UAS-SCONE'. The 'Network Timeout (sec)' field is '5'. There are two checkboxes: 'Buffering (adds latency)' with a 'Time (sec)' field set to '0', and 'Reliable P2P Connection (consumes more resources)'. At the bottom are 'Cancel' and 'Update' buttons.

Figure 46 - Video Alias Definition

Selecting the asset will show its position on the map. Selecting the radial indicates that the video is available for streaming (the video player icon is active not grayed out) (shown in Figure 47).

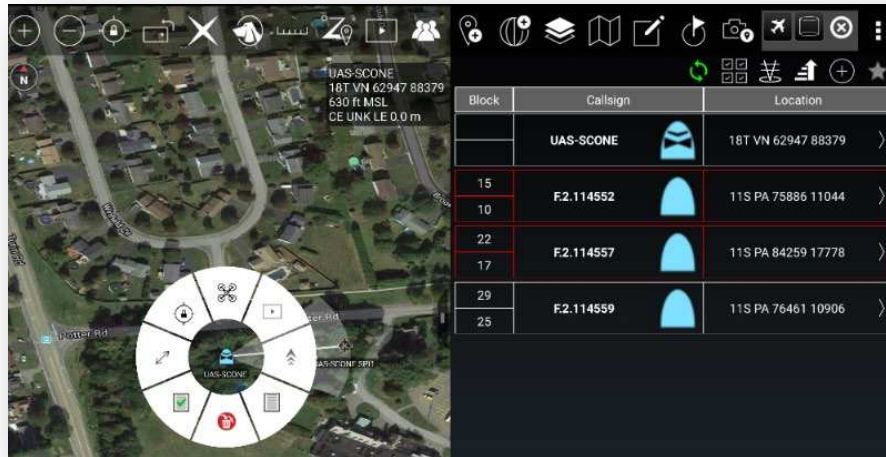


Figure 47 - Streaming Video Available

1.2.2.3 Laser Code Field

ATAK 4.1 has updated the Asset definition form to allow for the entry of a 4-digit Alphanumeric laser code (Figure 48).

The screenshot shows the ATAK Asset Definition Form. The 'Laser Code' field is highlighted with a red border and contains the value '6654'. Other fields include 'Callsign' (F.2.114552), 'Block' (10, 15, 100's ft MSL), 'Location' (11S PA 75886 11044), 'Aircraft' (A-10), 'ROZ' (ROZ 1), 'SCL' (Select Loadout), 'Playtime' (hours, minutes), 'End Time' (End Time, Calc), 'Rover' (Code 1, Code 2), 'Video URL' (None), and 'ABORT' (Enter Abort Code). Buttons for 'Cancel', 'Save', and 'Add to Favorites' are also visible.

Figure 48 - Asset Definition Form with Laser Code

1.2.2.4 Syncing of SCL Munitions

ATAK 4.1 simplifies the task of syncing munitions between the asset definition form and the loadouts form. Typically, the loadouts are defined ahead of time and then added to the air asset (SCL field) when it is created. If the loadout is later updated, the user can now just select the sync icon next to the SCL field and the updated list of munitions is loaded. Figure 49 shows an asset with the initial configured loadout.

The screenshot displays the ATAK 4.1 asset definition form. At the top, the 'Callsign' field is set to 'F.2.114552'. Below it are 'Cancel' and 'Save' buttons. The 'Block' field shows '10' and '15' with a '100's ft MSL' label. The 'Location' field contains '11S PA 75886 11044'. The 'Aircraft' field is set to 'A-10'. The 'ROZ' field is 'ROZ 1'. The 'SCL' field is 'atak12459'. Below these fields is a list of munitions with their respective counts and sync icons:

Munition	Number	Sync Icon
2.75" Flechette (Mk149/255) (range: 1000m)	3	Sync icon (circular arrow)
25.0mm (fighter)	500	Sync icon (circular arrow)
27mm Mauser HE (27mm cannon)	50	Sync icon (circular arrow)

At the bottom, there are 'Playtime' and 'End Time' fields, each with 'hours' and 'minutes' sub-fields, and a 'Calc' button.

Figure 49 - Initial Loadout

The user then removes a munition from the loadout and saves it. From the Asset form the user selects the sync button and the new loadout is displayed, as shown in Figure 50. In the display, a munition (flechette) has been removed.

The screenshot displays the ATAK UAS Tool interface with the following fields and values:

- Callsign: F.2.114552
- Buttons: Cancel, Save
- Block: 10, 15, 100's ft MSL
- Location: 11S PA 75886 11044
- Aircraft: A-10
- ROZ: ROZ 1
- SCL: atak12459
- Munition List:
 - 25.0mm (fighter): Number: 500
 - 27mm Mauser HE (27mm cannon): Number: 50
- Playtime: hours, minutes
- End Time: End Time, Calc
- Rover: Code 1, Code 2
- Laser Code: 6654

Figure 50 - Updated Munition List Displayed

1.4.8 ATAK UAS Tool Plug-in

For a comprehensive list of changes for 4.1 ATAK UAS Tool see the embedded plug-in's change log. For further training on the UAS Tool see takmaps.com and the hosted training videos and the software user manual.

- ATAK UAS Tool plug-in feature updates include:
 - New Quick Flight Mode (Fly with No Controller).
 - Added MAVLink specific settings.
 - Rework UAS status UI.
 - New UAS status summary data list.
 - Added task progress bars.
 - Added height above launch (HAL) as an altitude setting.
 - Added UAS sorting.
 - Added task sorting.
 - Added gimbal azimuth text and line to OSD.
 - Added pref to change OSD background color.

- Added speed, altitude, and ETA labels to routes on map.
- New "Follow Me" functionality.
- Added radial menus to UAS Route points.
- Added DJI settings for choosing the joystick mode.
- Added ability to move active routes.
- Added ability to drag sensor point of interest (SPoI)/move gimbal during route tasks.
- Added ability to Pinch Zoom Observer FMV in UAS Tool Video Player.
- Reworked preferences UI.

1.4.9 *Additional Plug-ins and Features*

1.4.9.1 Jump Master

The following updates were made to Jump Master:

- Added the ability for wind data imports to update the Wind Data table, A/C Options, and Landing Pattern at the same time.
- Added button to the in-jump toolbar to enter full screen mode. Full screen mode has its own buttons that let the user end the jump, change between landscape and portrait, and close full screen mode. Auto-zoom button is hidden during full screen since the map isn't visible.
- Added buttons to change orientation and exit full screen when starting Nav without GPS
- Added an option for the user to display an overlay showing where jumpers will be at the open point.
- Added logic to handle case where an Empty DIP was created.

1.4.9.2 Drifter

ATAK 4.1 saw additional development work performed on the Drifter plug-in. The Drifter plug-in now features a play and pause feature that quickly and easily plays and pauses a marker from “drifting” on the moving map. This allows the user to either individually play/pause specific drifters, to play/pause all drifters globally. To provide a larger utility to mission planning and execution times, the Drifter plug-in now features a capability to have a map marker follow a given route along the moving map at a specified speed. A relative time estimation of completion of the route is given to the user. Again, the play and pause capability can be used in conjunction with a marker even traversing a given route.

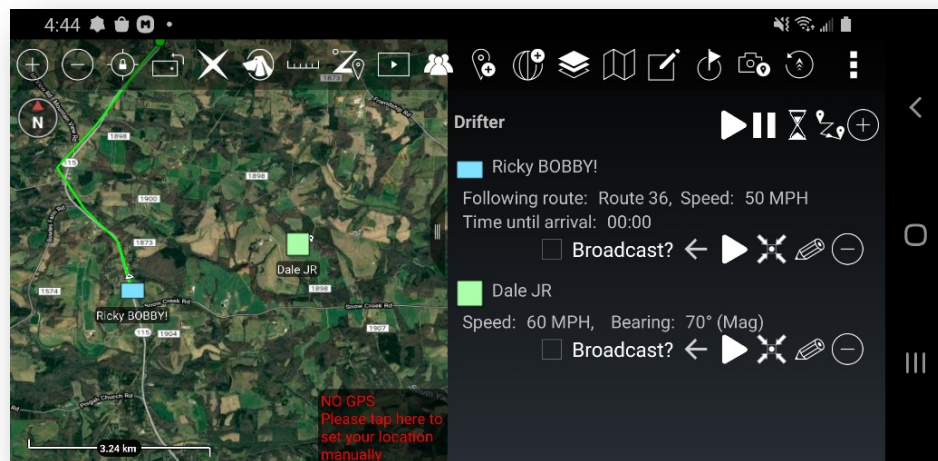


Figure 51 - Drifter Plug-in

The Drifter plug-in additionally now has the capability to simulate moving drifters forward and backwards in time by clicking on the hourglass icon and entering how long the time simulation should be run. This also allows for “backwards” simulations, by specifying a negative time differential, which will move all drifters back to the position that they were a specific amount of time ago.

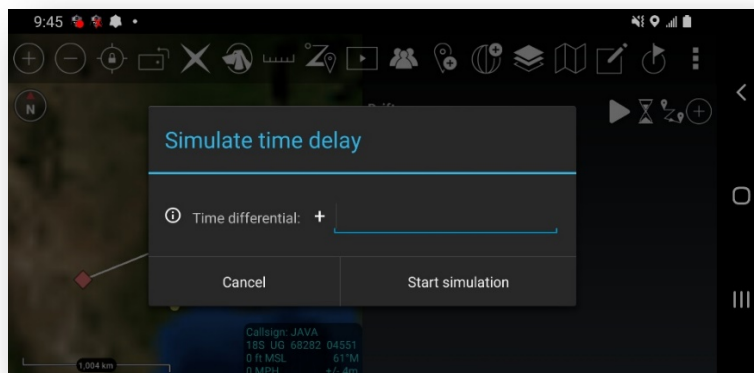


Figure 52 - Drifter Simulate Time Delay Capability

1.5 List of Available Plug-ins and Applications

There is more documentation and information that describes plug-ins available for ATAK on [takmaps.com](https://confluence.takmaps.com/display/TPC/ATAK+Plugins+Master+List) or Confluence

(<https://confluence.takmaps.com/display/TPC/ATAK+Plugins+Master+List>) from the TAK Product Center.

1.6 Additional Changes/Discrepancy Resolution

ATAK 4.1 includes the following additional changes:

- Updated the bundled tools (Serial Monitor/Network Monitor) to make use of newer Android SDK versions.
- Fixed issue where files on an external SD card are not loaded when ATAK is run for the first time.
- Received SPI now can be color coded from the radial menu.
- Various performance improvements.
- Tested and verified working against Android 10.
- Support for SRT video within ATAK
- Support for recording of RTSP streams.
- Updated all bundled applications to be compliant with Android 29.
- Updated allowable units of measure for user created shapes.
- Introduced translation for French speaking users. The French translation is enabled by setting the device's language to French and launching ATAK. Figure 53 shows the ATAK additional tools menu in French.

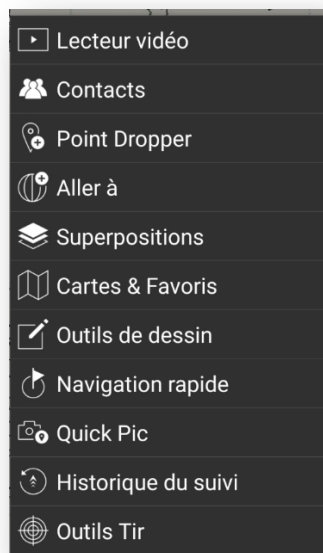


Figure 53 - ATAK with French Translation