ARTAK
Augmented Reality Tactical Assault Kit
Samsung mobile

User Manual
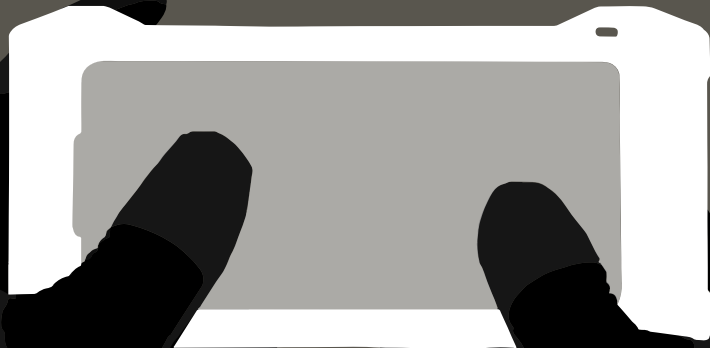
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ARTAK

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Basic Controls

(i) The Samsung phone uses touch interactions, which means you interact with the device using your fingers

Selecting Objects and Icons

Tap on or tap and hold objects and icons with your finger to interact with them

⚠ Home Menu must be closed to interact with map movement

Maps

Move
Live Map - tap and hold on the white pill on side of the map and move to desired location in virtual space

Tap and hold on map surface to move the location of the map

Static Map - Click/grab anywhere on the map with one hand and move to desired location

Rotate
Press/grab/click objects and icons to interact with them

Scale (Zoom In/Out)
Click/Grab with both hands and move hands apart from or towards each other

Menus

Open/Close Menus

Use the > button in the bottom left hand corner to open the Home Menu
Use < to close the Home Menu

Use back arrow to return to previous menu or "x" to close out

Move Menus

Scroll a Menu
Press/grab/click objects and icons to interact with them

Open/Close Menus

Click the > button in the bottom left hand corner to open the Home Menu

Click < to close the Home Menu

Click back arrow to return to previous menu or "x" to close out

Scroll a Menu

Click the scroll bar and move up/down or side-to-side

Start Up

Ensure that status symbols in the top right corner are green

Icon	ToolTip/Function
	Internet Green - Successfully Connected to Internet Red - Could Not Connect to the Internet
	Multi-User Green - Multi-User Active and Connected Yellow - Single-User Mode Active Red - Multi-User Not Connected

Icon	ToolTip/Function
	Network Green - Device Connected to a Network Red - Device Not Connected to a Network
	Server Green - Successfully Connected to Server Red - Could Not Connect to Server

Login Screen
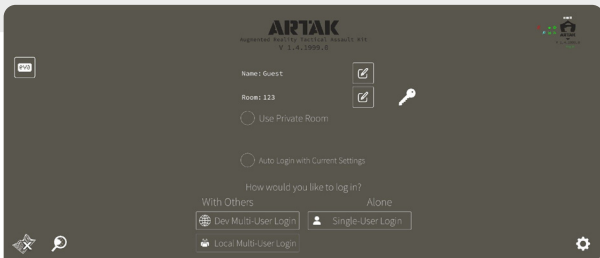
Icon	ToolTip/Function
Eolian Virtual Assistant (EVA) Click on the icon in the Login Screen to toggle EVA on/off. EVA will walk you through syncing an anchor, becoming main presenter, opening a map, and spawning nodes
Edit username This is the name that will appear in the room **Edit room name** Allow others to join using the same room name

Login Screen

Icon	ToolTip/Function
eya	**Eolian Virtual Assistant (EVA)** Click on the icon in the Login Screen to toggle EVA on/off EVA will walk you through syncing an anchor, becoming main presenter, opening a map, and spawning nodes
(edit icon)	**Edit username** This is the name that will appear in the room **Edit room name** Allow others to join using the same room name

Icon	ToolTip/Function
	Open partition key panel Setting partition keys will lock all data created in a room using keys behind those keys.
	Clear Spatial Mesh Clears spatial mesh data
	Open Debug Panel Shows a log of warnings, errors, stack trace, and full debugging Shows Photon Stats
	Network Settings Panel Click to open network settings panel

Network Setting Panel

Offline Mode
Operate the application independent of all networking

By toggling on you will no longer have Internet options

Allow Internet
Will allow the app to connect to the Internet

Server Connection Type

Cloud - Connects to Eolian's cloud sever. (Requires Internet)
CANN - Connects to a CANN on this device's LAN
Custom - Connects to the specified IP Address

Single-User Mode

App will operate normally but with no Multi-User Functionality

Multi-User Connection Type

Cloud - Connects to Internet Multi-User service running on a Cloud
CANN - Connects to the Multi-User service running on a CANN
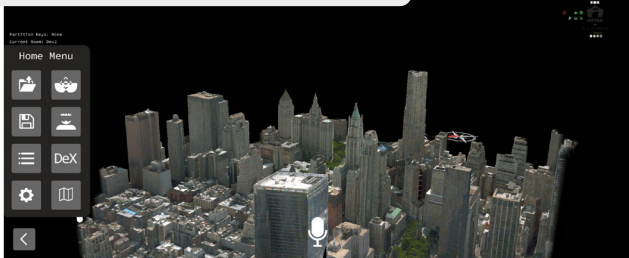Custom - Connects to the specified IP Address

Refresh
Force Application to recheck current network settings

Home Menu

Icon	ToolTip/Function
	Map Selection Choose from a selection of maps Online Local Server Upload
	Mission Plans Menu for creating, loading, and deleting mission plans

Icon	ToolTip/Function
	Save a Mission Plan Plan a mission, then press create to get to save panel Enter a save name, then save to cloud or save to local file **Load a Mission Plan** Choose from saved mission plans, then press load
	Control Panel Menu for enabling and disabling other users controls Ability to take control over the room so other users aren't able to manipulate anything.

Home Menu

| Icon	ToolTip/Function
	HMD Syncer Menu for syncing this devices virtual content to the real world location Choose between spatial anchors or image tacking
	User List List of all users in the multi-user session as well as control over various user settings Toggle mute users/mute all Toggle disable all controls
	App Settings Menu containing basic map settings

Icon	ToolTip/Function
	Map Menu Menu containing settings and controls for the current map
DeX	**DeX Mode** Allow your smartphone or tablet into a desktop computer by connecting your phone to a monitor

DeX Mode
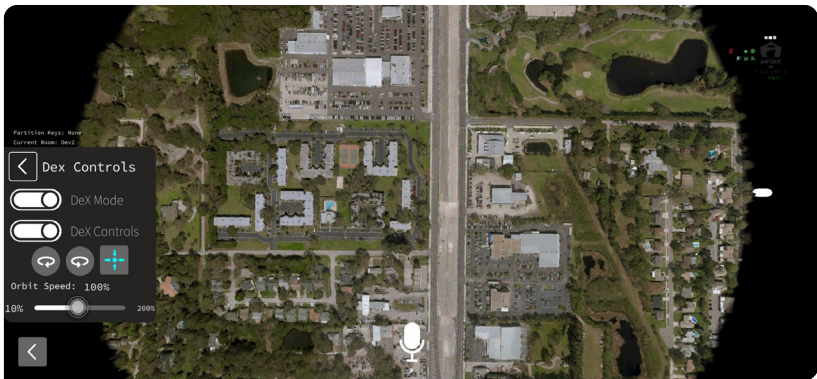
Samsung DeX Setup for Screen Sharing

Follow these steps to display ARTAK onto another screen. For more detailed Samsung DeX information, go to: XXXX

Connect your Samsung device to an external monitor VIA USB-C to HDMI cable. (Adapters can also but used). Samsung's DeX mode should automatically start.

Connect any peripherals (Mouse, Keyboard, etc.)

Start ARTAK while in Samsung's DeX Mode.

ⓘ   To just share the devices screen without DeX mode, drag down from the top of the screen and tap the "Using Samsung DeX" option to switch to screen share mode.

ARTAK DeX Mode

Follow these steps to activate ARTAK's DeX Mode. Note: the device does not itself need to be in DeX mode to utilize ARTAK's 2D features.

After login, navigate to the DeX Controls menu in the Home Menu.

Tap Toggle DeX Mode. This will toggle on and off ARTAK's DeX support.

Mouse Controls

Left Click

Drone Scan: Moves the scan around in

3D space.
Live Map: Moves the surface of the map around.

Right Click

Rotates your view around the world center.

Scroll Wheel

Drone Scan: Moves your view closer to and further from the map.
Live Map: Zooms the map surface in and out.

Right click + Scroll Wheel (Live Map Only)
Moves your view closer to and further from the map.

Touch Controls

Single-Tap and Drag:

Drone Scan: Moves the scan around in 3D space.

Live Map: Moves the surface of the map around.

Double-Tap and Drag:

Rotates your view around the world center.

Pinch Zoom:

Drone Scan: Moves your view closer to and further from the map.

Live Map: Zooms the map surface in and out.

Double-Tap and Pinch Zoom (Live Map Only):

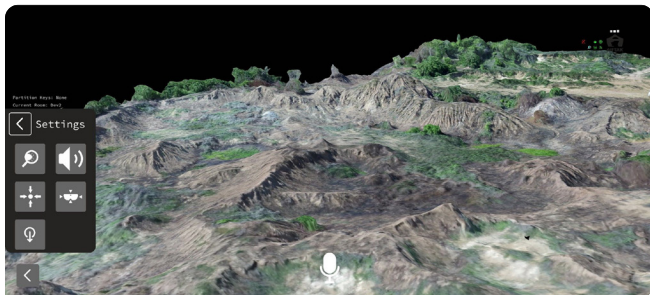Moves your view closer to and further from the map.

Known Issues

**Right Click +
 Scroll Wheel**
Currently does not work when the device is plugged into a monitor.

Settings

Icon	ToolTip/Function
	Open debug panel
	Clear spatial mesh

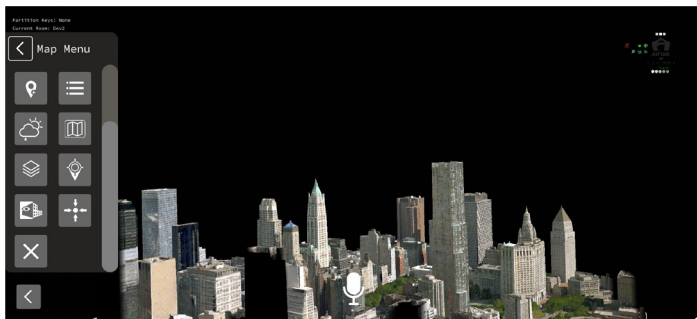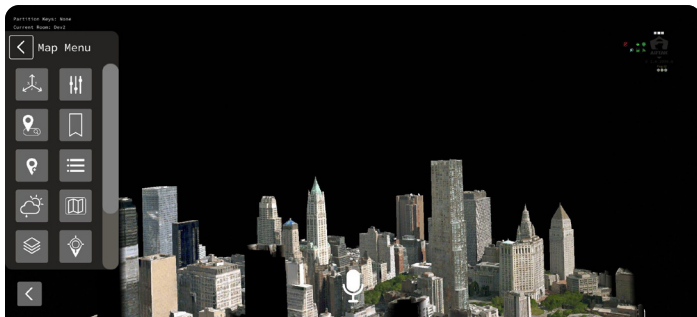| Icon	ToolTip/Function
	Open audio settings panel Mute Self Master Volume SFX Volume AI Voice Volume VOIP Volume
	Recenter visual data to the virtual world center
	Recenter the visual data in front of you
	Exit the room and return to the login screen

Map Menu

Location Search and Bookmark icons will only appear in live maps

Icon	ToolTip/Function
	Map Manipulator **Manipulate map via UI controls**
	Location Search Enter a location to center the map over Use Lat/Lon, MGRS, or type a location to search for a location
	Bookmark Load and create location bookmarks
	Node History Choose a historical time window to view live data

Icon	ToolTip/Function
	Map Settings Gives you the right Lat/Lon or MGRS Toggle contour lines, node labels, map labels, node directional Able to lock/unlock the map Able to lock/unlock all (nodes, routes, map) Toggle map shape from circular to square Adjust zoom level and map radius (shrink or enlarge map) Able to change the Node Height Node Stem Transparency Toggle map shape (i.e. circle, or square)
	Point Select Add nodes into the node queue Top row shows everything you can ingest (ASSETS, VEHICLES, POINTS, TASKS) Second row shows (UNKNOWN, FRIENDLY, NEUTRAL, HOSTILE) To spawn the node in the node queue press the plus button next to current selection.

Icon	ToolTip/Function
	Point List
	Enter a location to center the map over
	Use Lat/Lon, MGRS, or type a location to search for a location
	Layer Selection
	Live Nodes
	Can see breadcrumbs (blue lines that show historical records of positioning)
	Analytic
	ex/ NYC Subway Lines
	Overlay
	ex/ population density
	Current Weather
	View weather information of the current map location for a location

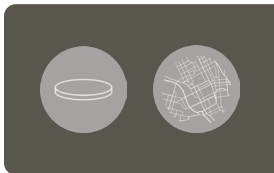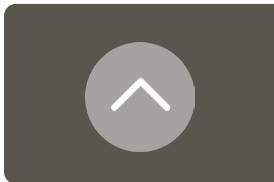| Icon	ToolTip/Function
	Minimap Shows the area that was scanned from a 2D image Zoom in and out with the pill bar on the bottom after it is opened.
	Show Lat/Lon See the location with latitude and longitude the whole entire time on your laser pointer
	Recenter visual data Click to recenter the current visual data to the virtual world center for a location
	X-Ray Open a window to clip away parts of the map. Best used for viewing interior scans for a location
	Close Map Click to entirely close out a map including any nodes/routes for a location

Map Manipulator

Icon	ToolTip/Function
	Mode Switch between manipulating the placement of the map in the virtual space and manipulating the location and scale of the actual map.
	Nudge Directional nudge

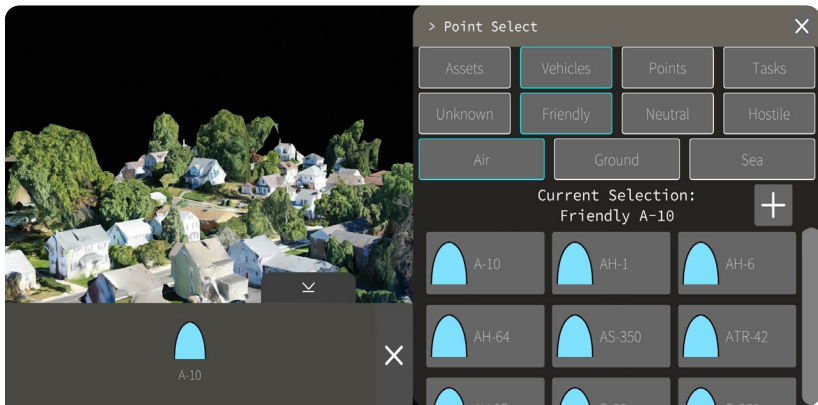| Icon	ToolTip/Function
	Zoom In / Zoom Out
	Rotate Rotate map to the left or right
	Map Boundary Axis Selection **X -** Adjusts the horizontal placement of the map in the virtual space **Y -** Adjusts the vertical placement of the map in the virtual space **Z -** Adjusts the depth of the map in the virtual space
	Increment Adjust map values between increments of 1x, 2x, or 5x

Point Select

Click desired node (Assets, Vehicles, Points or Tasks) and then tap the plus button to add to node queue

Click asset in the queue and then place to desired location on map

Point Select Settings

ⓘ Tap any node and a pop up circle will appear with options

Icon	ToolTip/Function
	Target Lock Focus and follow as if live A green ring will appear around the node
	(Line of Site) LOS Actions Choose between 360, 270, 180, 90, 60 FOV (Field of View) A shaded region will appear representing what the node can see

Icon	ToolTip/Function
	View Inventory Add guns, bombs, radios to the vehicle Shows firing range, blast radius, and service range of inventory
	Manipulate Altitude and Course Grab the green arrow to change node to desired altitude Grab the red circle to rotate the node to desired degree Click the blue arrow to snap node back to ground Click red "x" to exit
	Change Node Status Fully Capable (green bar) Damaged (yellow bar) Destroyed (red bar) Full to Capacity (blue bar)

Icon	ToolTip/Function
	Lock Node
	Shows the area that was scanned but from a 2D image
	Zoom in and out with the pill bar on the bottom after it is opened.
	Route Options
	Unlink route points from this node
	Delete routes from this node
	Create a route from this node
	More Information
	Location, Course, Personal offset, Type, COT_Type, UID, Name, Status, Node Type
	Destroy Node
	Clear node
	Clear routes connecting to the node

Route Options

ⓘ Click any route node and a pop up circle will appear with options
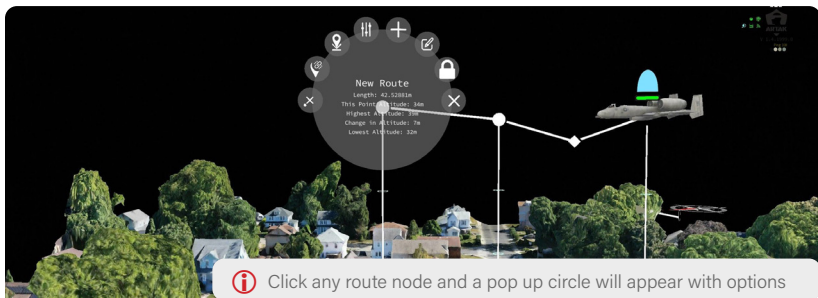
Icon	ToolTip/Function
	Destroy Point Removes point from the route
	Detach Link Points Choose between 360, 270, 180, 90, 60 FOV (Field of View) A shaded region will appear representing what the node can see
	Snap point to ground Node is pinned to the map, and cannot be moved

Icon	ToolTip/Function
	Change color Change the color of the route by using sliders
	Extend Route Add another point to the route
	Edit Route Label route Basic Route - white Infill Route - light blue Dismount Route - blue
	Lock this route Lock/unlock a route into place
	Destroy this route Clear route from map

Node History

Live Data Sources

Target Date:

January ▼   1 ▼   2023 ▼
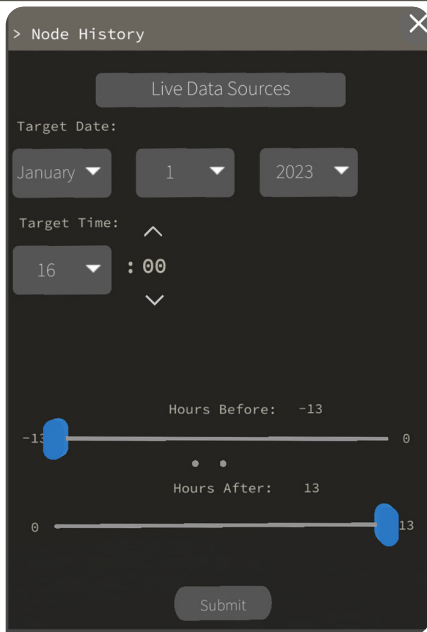
Target Time: ∧

16 ▼ : 00

∨

Hours Before: -13
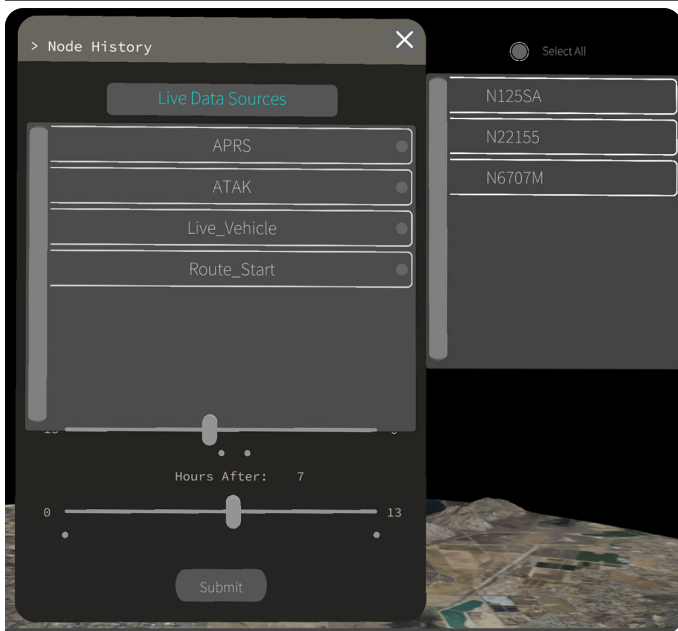
-13 ———————————— 0

● ●

Hours After: 13

0 ———————————— 13

Submit

Live Data Source

Choose from APRS, ATAK, Live_Vehicle, and Route_Start
Then choose a specific call sign

Target Date/Time

Choose a specific date of the node desired
Enter a target time - then use sliders to up to -13 hours before target time or +13 after target time

How to Add Drone Scans for ARTAK to Import

Below will outline the steps for adding a drone scan 3D model into ARTAK.

⚠️ You can attempt to Import a model of any size you like, however, files over 100mb will cause exponentially longer load times. ARTAK's HoloLens version cannot load scans over 100mb in size (attempting to do so will crash the app). Please be aware of this limitation when generating your scans to import.

If haven't done so already, boot up ARTAK and when prompted, give ARTAK access to the device's files.
This will then create a new folder in the device's file system called ARTAK.

When a new scan is ready to be exported, first create a new folder in ARTAK/scans named after the scan.
For Example: ARTAK/scans/TestScan_01

Export your drone scan from your preferred application or copy the files into the folder you just created.

Note: Some applications will allow you to create the folder during the export process. All exported files should now be in ARTAK/scans/Your Scan Name. The minimum required files are:

.obj (3D model)
.prj (Location projection data)
.xyz (Map coordinates - Used with projection to get the map's location)

Other files typically are:
.mtl (Material - Maps textures to model)
.jpg (Texture - gives the map its color)

Note: Material and Texture files are note required but are highly recommended. Without them the map will appear completely gray. There can also be more than one of either of these files.

Boot up or return to the ARTAK app. Go to the Map Select panel and toggle on the Upload option. (If already open and toggled on; refresh the list by toggling Upload off and back on again.) If everything is correct, your new scan will appear in the list!

Click on the file in the list and ARTAK will import the scan into the app, upload to the CANN for multiuser use, and create an easy-to-load cache of the model for future uses! Note: Cached scans will appear when the Local option is toggled on. These can be deleted by hitting the Clear Cache button visible when the Local option is active.

Note: Scans currently on the CANN will be visible when the Server option is toggled on.

Final Note: The app will automatically determine the best option when loading a scan regardless of what options in the UI are toggled on.
For Example: TestScan_01 is a file that is located on the server and in ARTAK's local cache. If you have the Server option toggled on and select TestScan_01, the app will still load the scan from the cache and won't download it from the server.

Updating & Opening ARTAK

1. Download the ARTAK_VX.X.0.0.apk file from your desired source onto the android device.
2. Tap on the apk file once it has downloaded. It will prompt an install.
3. Wait for installation
4. Open the ARTAK app on your Android device and it will launch on the newly installed version
5. Allow all permissions for ARTAK on device, i.e. camera, microphone, etc.

ⓘ For further information please visit

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