Atlas user guide

This document provides an overview of Atlas, detailing how you can interact with and make the most of its features.

WARA PUBLIC SAFETY

Contents

Account and login

Use the URL atlas.waraps.org to go to the Atlas website.

Sign in

When you go to Atlas, you will have to sign in to access the tool. This is done by clicking on the *sign in* button.

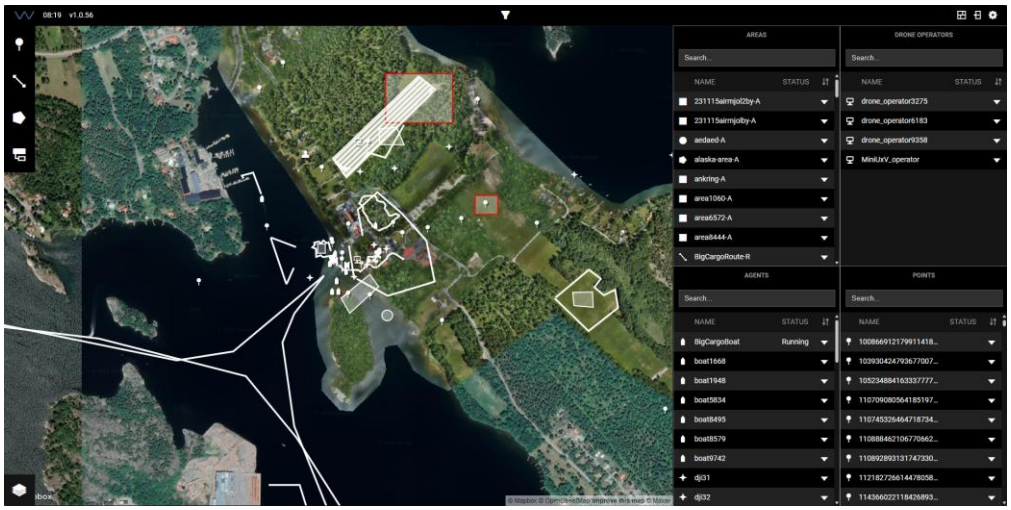
Request an account

If you do not have an account, you must first request one to access Atlas. This is done by clicking on the *request account* button. This will open an email in which you can specify your request for an account to Atlas.

Interact with Atlas

Default configuration

When you sign in to Atlas for the for the first time you will see the default configuration of the tool. The default configuration consists of a mapbox 2D map displaying all agents and map objects that are visible on the global instance of Atlas. You will also see a toolbar on the left side of the map. This toolbar allows you to create map objects (paths, points and areas) and send tasks to agents. Furthermore, there are three map layers available in Atlas 2D map. Users can toggle between these using the map layer options at the bottom left of the map. The default configuration displays four lists, displayed to the right. You can change and create a personalized configuration (see Configuration).

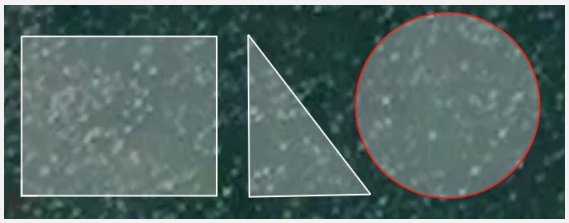


2D map

The default 2D map shown in Atlas is a mapbox satellite image which contains all the agents, both simulated and real, as well as map objects that are connected to the global instance of MQTT. For more information about this, please see the API-specification. The map objects visible in Atlas are points, areas and paths.

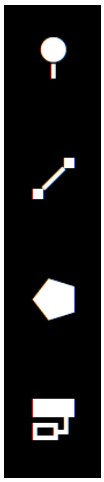
Agents	
Drone	
Boat	
Human agent	
Unmanned Ground Vehicle (UGV)	
Unmanned Underwater Vehicle (UUV)	
Drone Operator	

Map Objects

Areas (circle is no go-zone)	
Points	
Paths	

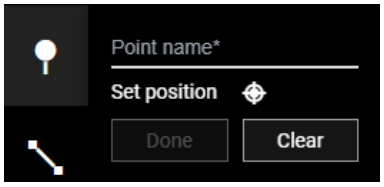
Use the toolbar

To interact with the agents and map objects, you can use the toolbar which is located on the left side of the map. The toolbar presents four options, *Point*, *Path*, *Area* and *Task*.

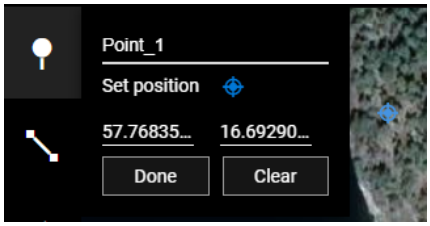


Point

By clicking on *Point* you can create and place a new point in the map. To do so you must fill out a *point name*. The name cannot contain blank space or be the same as a previously existing point name. If any of these are detected, a red text will appear to indicate this.

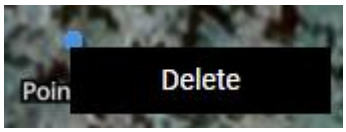


You will then need to select a position on the map where the point is to be positioned. This is done by clicking on the *crosshair*, you then click on the position in the map where you want to place the point, and the crosshair will appear in the map to mark the selected position. Longitude and latitude for the selected position will appear in the toolbar menu.



To confirm, click on *Done*. If you want to change the position, click on the *crosshair* in the toolbar menu again and you can reposition the marker. The point will then appear on the map and in the Points list. By clicking on *Clear*, all information is cleared.

To change position after you have selected *Done*, you must delete the point from the map and create a new one. Delete a point by right clicking on the point in the map. The point will turn blue to indicate that it has been selected, and a *delete*-option will appear. By clicking on delete, the point will be removed from the map, as well as in the points list.



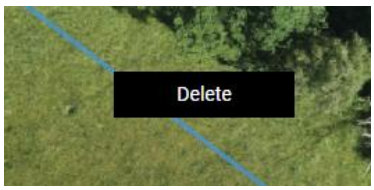
Path

The second option in the toolbar is *Path*. To create a path, you must first fill out a *path name*. The name cannot contain blank spaces or be the same as a preexisting path. If you select such a name, a red text will appear to indicate this.

Click on the *crosshair* to draw the path by positioning waypoints in the map. This is done using the pointer. When you are done with your path, you must double-click final waypoint. This will lock in your selected path. If you want to change your path, click on the *crosshair* again, and you will be able to redo your path.

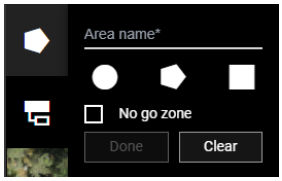
By clicking on *Clear*, you will remove all information from the path menu. When you are done, click on *Done* and your path will appear as a white line on the map. It will also appear in the list showing areas.

If you want to delete a path, right click on the path in the map. A *Delete* option will appear beside the path. Click on *Delete* to delete the path from the map and the areas list.

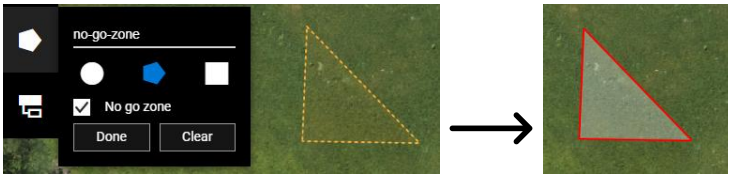


Areas

To create an area, you must first fill out an *area name*. The name cannot contain blank spaces or be the same as a preexisting area. If you select such a name, a red text will appear to indicate this. You can then select the shape of the area you want to create. When you have chosen the shape, you set the size and position by clicking on the map. For the rectangle and circle the shape is predefined, however for the polygon, the shape is determined based on where you position the corners.



Furthermore, areas can be made into no go zones. No go zones are used to mark areas where nothing should enter. They can for example be used in scenarios where certain area should be protected or is unsafe to enter. To create a no go zones, select the *no go zone* option in the toolbar menu when you are creating your area. No-go zones are shown as areas with a red border on the map.



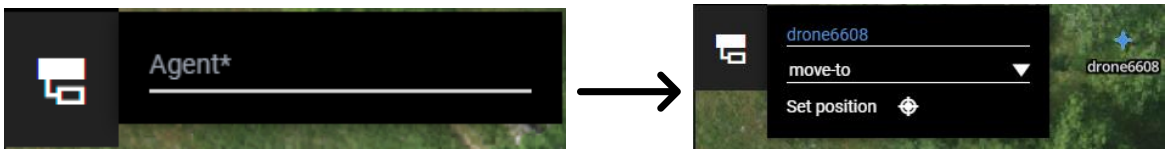
When you are done with your area, you must double-click on the final waypoint. This will lock in your selected area. If you want to change your area, click on one of the *shapes* in the toolbar menu one time to remove the existing area, then select a new shape to draw a new area. By clicking on *Clear*, you will remove all information from the area menu. When you are done with

the area, click on *Done* and your area will appear on the map. It will also appear in the list showing areas.

If you want to delete an area, right click on the area in the map. A *Delete* option will appear beside the area. Click on *Delete* to delete the area from the map and the area list.

Task

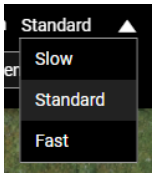
When you have opened the task menu, you must select an agent (that should receive the task). This is done by clicking on an agent in either the map or in the agent list. The name of the selected agent will appear in the input field and a dropdown menu will appear underneath it. The dropdown contains all the tasks that the agent can perform. Based on the task that has been selected the required information in the menu will change. All information must be filled out for the task to be sent.



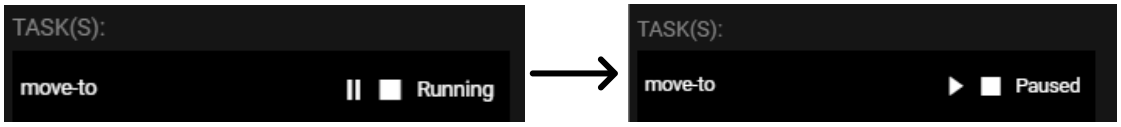
For certain tasks – *Move To* for example – a position must be selected. Select the position by clicking on the *crosshair* and use the pointer to mark a position in the map. The longitude and latitude for the marked position will appear in the task menu and more information fields for altitude and speed will appear.

A point in the map can also be used for this task, in that case the name of the point will be shown instead of the longitude and latitude. For other tasks such as S*earch Area* or M*ove Path*, an area or a path must be selected. This is done by clicking on the area or path either in the map or in the area list. The name of the area or path will then appear in the task menu to indicate that it has been selected.

Due to the requirements of the API-specification, an altitude must be filled out regardless of the agent type. You can also set the speed for an agent for a task. The speed is selected through a dropdown menu. As for the altitude, this might not be relevant for all agents (human agent for example), however it is still required.



When all information is filled out the task can be sent to the agent by clicking on *send task*. A task can be paused or aborted by clicking on *stop* or *pause* in the *agent list*. By clicking on *play*, the task is continued.



Drone operators

Drone operators will delegate tasks that they are given to the agents that are assigned to them. Just like agents and map objects, they are visible on the map, and you can send them tasks in the same way as agents. Operators can receive multiple tasks after each other, and delegate them to multiple agents. The agents to which the tasks are delegated can perform the tasks simultaneously.

Interactions through the 2D map

As a user you can also interact with agents and map objects directly through the 2D map in Atlas.

By *clicking on an agent* and then *right clicking* on the map you can send tasks directly to the agent. When you right click on a position in the map the possible tasks for the marked agent will appear on the map. If you right click on a position in the map that is not an area, path or point you can do a *move to* to that specific position for example. However, if you click right click on an area a path or a point, the options for that agent relating to those map objects will appear.

When a task has been selected, the task menu will open to allow you to fill out the additional information that is needed.

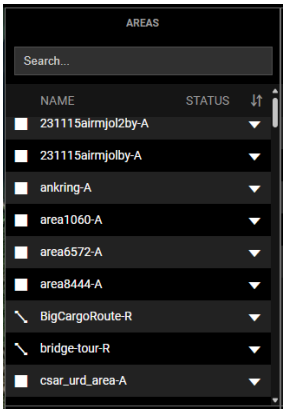

drone6608
search-area
Search_area-A
Altitude
m
Standard
Send
drone6608

Lists

The list component is part of the default configuration in Atlas. They provide an overview of the all the areas, paths, points, agents and operators that are available in Atlas. There are four separate list-components, Areas list, Agents list, Operators list, and the Points list.

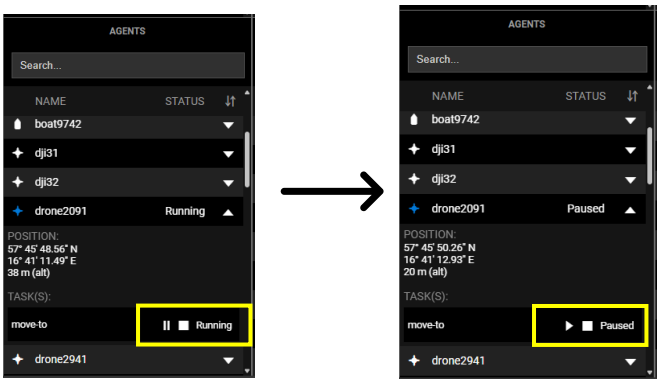
Areas list

The areas list includes all areas and paths in Atlas. The list displays the name and shape of the area, as well as the status and position of the area. If the area is a no go zone, this is shown under status. The position of an area or path is visible if you open the area information by clicking on the *arrow* that is on the right side of the list element.



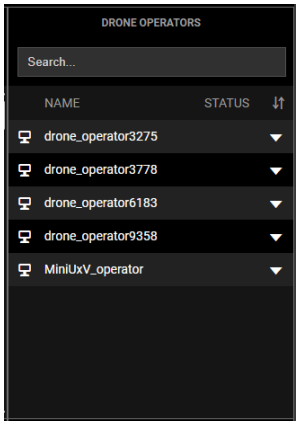
Agents list

The agents list shows all agents in Atlas. It displays agent name, status, position and the status of tasks. The position and tasks is shown by clicking on the *arrow* on the right end of the list element. Tasks can be aborted, paused or resumed through the list. This is done by clicking on *stop*, *pause* or *play* next to the agent status.



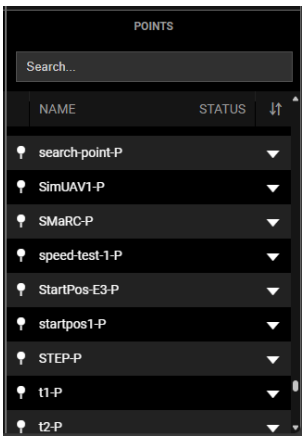
Operators list

The operator list shows all operators in Atlas. It displays operator name, status, and position of the operator. The position is shown by clicking on the *arrow* on the right end of the list element.



Points list

The point list displays all points in Atlas. It displays point name, status, and position of the point. The position is shown by clicking on the *arrow* on the right end of the list element.



Finding agents, operators and map objects using lists

Map objects, operators and agents can be located on the map by clicking on an agent, operator or map object in a list. This will change the viewport in the map so that you see the selected map object, operator or agent in the map. The lists can be sorted in alphabetical order by clicking on the *arrows* at the top right corner of the list

In all lists there is a search function; by typing the name of the agent, point, path, area or drone operator it will appear in the list.

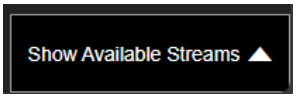
Change list layout

You can change the configuration of the list layout by clicking on the grid icon at the top left corner in Atlas (see Configuration).

Video component

The video component is a video dashboard, displaying video streams from agents with said functionality in Atlas.

To view a video stream, click on *Show all streams*. All available streams will then be displayed as buttons at the bottom of the component. Click on a stream to open it. You can close the menu displaying all streams by clicking on the *arrow* on the right side of the menu.



If you want to close a stream, click on the *X* at the top right corner of the video stream.

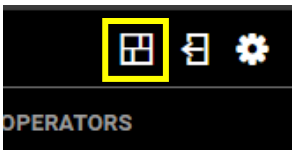
3D-map

The 3D map is made in Cesium tiles and displays a 3D model of Gränsö. Areas, points, paths, operators and agents are displayed as 3D models in the 3D map.

Configuration - Create custom screen layouts in Atlas

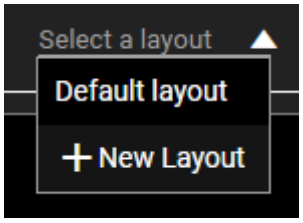
Access the layout configuration

Atlas offers users the possibility to create custom configurations of screen layouts which allows for better user experience as well as flexibility when using Atlas. In order to configurate your layout you must be logged in. Then go to configuration by clicking on the grid icon at the top right corner of the screen.

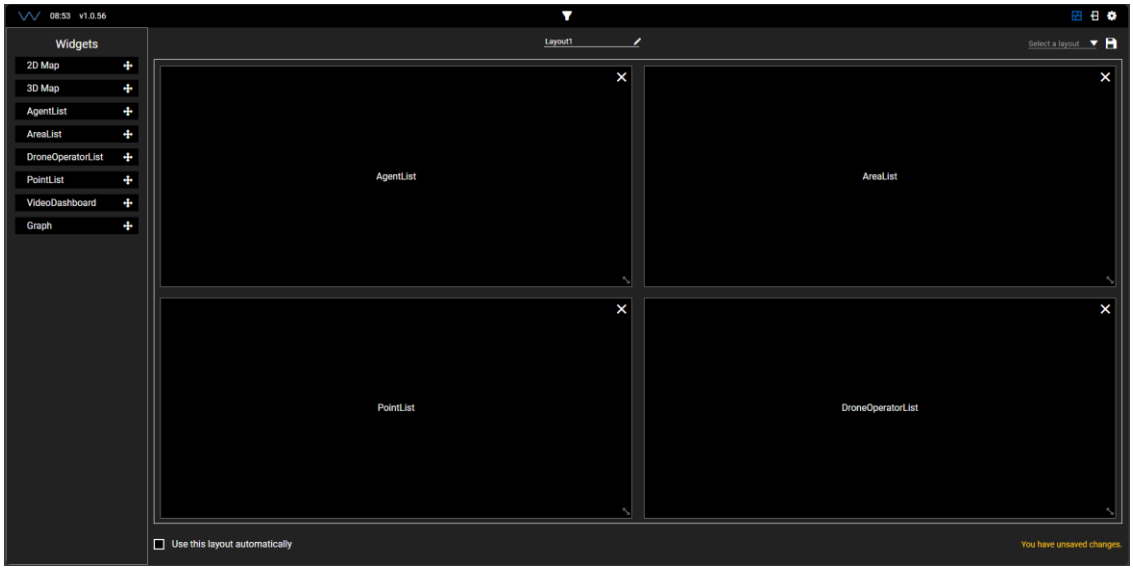


Creating a layout

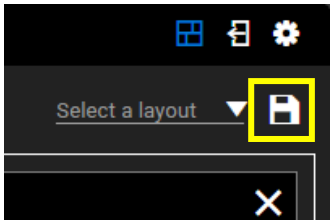
When you click on *configuration*, you will see the default configuration. By klicking on the drop down to the right, a new layout can be created. This is done by clicking on the *new layout* option in the drop down.



When a new layout has been created an empty area will appear and a list of widgets is visible to the left. The widgets can be placed in the empty area by dragging and placing them. When a widget has been placed in the area, the widget can be resized. Do this by dragging the bottom right corner of the widget place in the area. You can add multiple widgets in the area to customize your layouts. Any empty space in area will also be empty in the layout.



The layout is saved by clicking on the save icon on the top right corner. If you exit the configuration mode without saving, your layout will not be saved. Layouts names can be edited by renaming them at the top centre of the page.

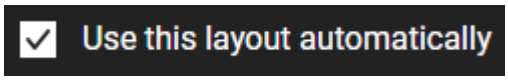


In order to launch a configuration, go back to the main page while having the layout open in the configuration page.

Creating layouts for multiple screens

If you want to create configurations for multiple screens, create a layout for each screen and save them. Open the first layout by having it open in the configuration page, then open a new window in your browser and go to Atlas and open the next configuration in that window. This allows users to choose the number of screens that you want to use.

You can choose which layout you want as your start page in Atlas by checking the box named *Use this layout automatically* at the bottom of the configuration page.



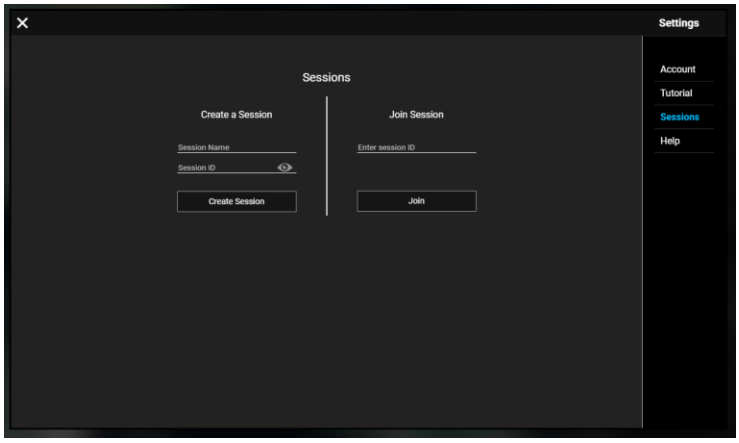
Using sessions in Atlas

What are sessions

To accommodate the execution of scenarios and testing, Atlas has functionality to support sessions. Sessions allow users to create scenarios that can only be accessed by users that are given the session ID. In addition to limiting access to scenarios, users can access the scenario as different roles. Agents and map objects in the scenario are assigned to roles, thus making it possible for different users with different roles in a scenario to view and control different agents/map objects.

Create sessions in Atlas

To create a session in Atlas first click on the *gear* at the top right corner of the screen then click on sessions in the menu to the right. Two options will appear on the page, one for creating a session, and one of joining a session.

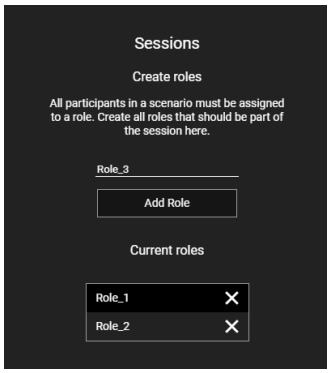


In order to create a session, fill out the information required. This includes a session name and a password. You create your own session name and password, if the selected name is already taken a new session with the same name can not be created.

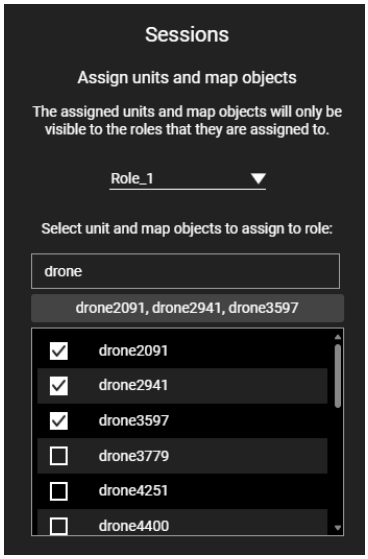
When the information is filled out, click the *create session* button.

Create roles

After creating a scenario, you must define at least one role. To do this, enter a role name and click *add role*. The new role will appear in a list of existing roles below the button. If needed, roles can be removed by clicking the *X* next to the role name.



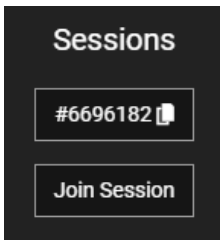
In the next step, you can assign agents, points, paths, areas, and drone operators to specific roles. To do this, select a role from the dropdown menu, then click on the input field to display a list of available agents and map objects. You can assign them to the selected role by selecting them from the list. A search function is also available to quickly locate specific agents or map objects.



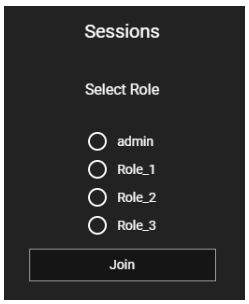
Once assigned, the agents and map objects linked to a role will be displayed below the input field.

Generate and join session

When you have created roles and assigned agents and map objects, click on *create session*. This will generate a session ID that is needed to join the session. The ID can be copied by clicking on the ID. Then click on join session to enter.



When joining a session you must select the role you want to join as. You can either join as one of the roles that have been created, or as admin. The admin role can see all agents and map objects that are included in the scenario, not just the ones assigned to a specific role. Click on join to enter the session. You can join a session either when creating a session or through the sessions start page.



Leave a session

If you want to leave a session, simply press the leave button.