VATSIM
香港 HK

Hong Kong Controller Plugin

AutoTrac III
Tag Usage Guide

Background

In 2016, the Civil Aviation Department of Hong Kong introduced a new air traffic management system (ATMS) – AutoTrac III, made by Raytheon. This ATMS brought with it several unique features, including the provision of 3-letter route abbreviations, the use of plane-shaped radar targets and the ability to quickly reference the assigned approach of each aircraft.

For over 8 years, these features were not replicated in our sector files, as no readily available solution matched our needs.

With the introduction of HKCP AutoTrac III tags, created in-house by members of the Hong Kong vACC, controllers can now enjoy updated, realistic and accessible tags, with plenty of new features designed to improve immersion for both controllers and pilots.

As a general disclaimer, Hong Kong vACC is in no way related to Raytheon or the Civil Aviation Department, and the plugin should not be used for real-world aviation-related purposes. Functionality of the plugin does not exactly mirror what is present in the real system.

Features

As previously mentioned, the real-world AutoTrac III (AT3) system has many quirks and features. Here is a list of features that the plugin provides in addition to basic EuroScope/TopSky functionality.

- Realistic formatting of aircraft type, (assigned) altitude, (assigned) heading, (assigned) speed tag display
- Realistic radar target symbols and Controller Jurisdiction Symbol (CJS) indicator
- Approach type selection dialogue and tag display
- Route selection dialogue and tag display
- Approach gate (ABBEY/BETTY/CANTO) ETA tag display, and integration with the MAESTRO plugin for AMAN delays

Contents

Setup

The plugin comes pre-installed and set up in the Hong Kong Sector Package, available via the Hong Kong Sector Installer, or on GitHub.

Tag items and functions provided by the plugin are prefixed with "HKCP/AT3" in EuroScope.

The MAESTRO plugin by Juha Holopainen must be installed for the plugin to be loaded. The TopSky plugin by Juha Holopainen must be installed for the plugin to have full functionality.

If the plugin is loaded properly, all Mode-C and Mode-S targets should have an aircraft icon.

Performance

The plugin performs a small amount of calculations every time a target or its tag is refreshed. Together with demanding plugins, e.g. TopSky and MAESTRO, there may be a small, but noticeable, decrease in performance during busy events. In this case, it may help to:

- Decrease the number of "tagged" aircraft (double click empty spaces in the tag to toggle the minimised "untagged" state)
- Reduce the visibility range of your VATSIM connection

Refer to the TopSky General Informational manual for more techniques.

Tag Types

The Hong Kong Sector File is configured with 3 AT3 tag families.

AT3 (APP) is designed to be used by Approach/Departure controllers (excluding terminal) on Hong Kong TMA.asr

AT3 (TR) is designed to be used by Terminal and Area controllers on Hong Kong ACC.asr

AT3 (AMC) is designed to be used by Aerodrome and Zone controllers on Hong Kong Zone.asr
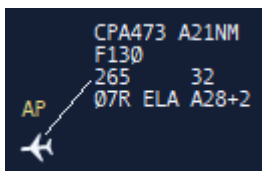
The *Tag item displays* section of this guide describes the differences in between each tag in further detail.
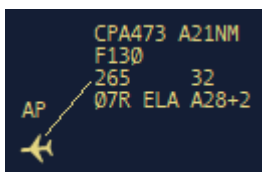
Flight plan states

The colour(s) of each AT3 target and tag represents the flight plan state (assumed, not assumed, handoffs) of its radar target.
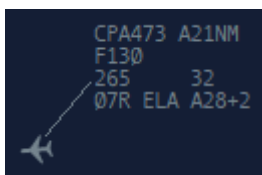
Assumed by another sector

Outgoing handoff in progress

Incoming handoff in progress/Redundant
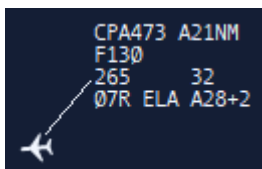
Assumed

Radar Target displays

The AT3 Radar Target has two components: the Radar Target Symbol, and the Controller Jurisdiction Symbol (CJS) above it.

Radar Target Symbol

The Radar Target Symbol indicates the last received position of the radar track. SSR target symbols are rotated so that the nose of the aircraft symbol matches the calculated track of the radar target.

PSR, not assumed

SSR, not assumed

SSR, assumed

SSR, airspace infringement warning in progress (AIW)

Controller Jurisdiction Symbol

The Controller Jurisdiction Symbol (CJS) works in a similar way to the TopSky Sector Indicator. By default, it appears only on radar targets assumed by other controllers and/or have an incoming/outgoing handoff. This behaviour is customisable in the [replace].

Assumed by another sector

Outgoing handoff in progress

Incoming handoff in progress/Redundant

Assumed (default)

Assumed (alternate) [replace]

Left click the CJS to toggle the frequency of the sector

Incoming handoff in progress/Redundant with frequency

Tag item displays

Line 1: Callsign and Aircraft Type + Wake Turbulence Category

Line 1 is identical across all 3 tag families.

Right click the callsign to access the TopSky callsign menu.
Left click the callsign to access the EuroScope flight plan setting dialog.

Aircraft connected to CPDLC via TopSky will have square brackets surrounding its callsign (e.g. [CPA473]).

CPA473   Callsign (CPA473) for the radar target's correlated flight plan

A21NM   Aircraft type (A21N) and its associated ICAO Wake Turbulence Category (M) for the radar target's correlated flight plan

Line 2: Altitude, Vertical Speed Indicator and Assigned Altitude

Line 2 is identical across all 3 tag families.

The assigned altitude is displayed only if it is not identical to the actual altitude.

Right click any element to access the TopSky altitude assignment menu.
Left click any element to toggle TopSky route draw.

F130   Actual altitude only (FL130)

F130 F110   Actual altitude (FL130) and assigned altitude (FL110)

F130 A090   Actual altitude (FL130) and assigned altitude (9000 ft)

F127↓A090   Actual altitude (FL127), vertical speed indicator (descending), and assigned altitude (9000 ft)

Line 3: Track and Assigned Heading

Line 3 is identical across all 3 tag families.

The assigned heading is displayed only if it has been assigned.

Right click any element to access the TopSky heading assignment menu.

265   Calculated track (265°)

265H230   Calculated track (265°) and assigned heading (230°)

Line 3: Ground Speed and Assigned Speed

Line 3 is identical across all 3 tag families.

The assigned speed or Mach number is displayed only if it has been assigned.

Right click any element to access the TopSky speed assignment menu.
Left click any element to clear the assigned speed value.

`32`   Calculated ground speed (320 knots)

`32S28`   Calculated ground speed (320 knots) and assigned speed (280 knots)

`32S28+`   Calculated ground speed (320 knots) and assigned speed (280 knots or greater)

`32M76+`   Calculated ground speed (320 knots) and assigned Mach number (.76 or greater)

Line 4: Approach/Departure (Arrival Runway and Approach or SID)

Line 4 is unique to each tag family.

For Approach/Departure tags, it displays the arrival runway, if it has been set; the approach type, if it has been set or generated; and the SID, if it has been assigned.

Right click the approach type to access the TopSky waypoint menu.
Left click the approach type to access the Approach Selection Menu.

Left or right click the runway to access the EuroScope runway assignment menu.

`07L ILS`   Arrival runway (07L) and approach type (ILS)

`34 ILSZ`   Arrival runway (34) and approach type (ILS Z)

`07L RNP`   Arrival runway (07L) and approach type (RNP)

`25R RNPY`   Arrival runway (25R) and approach type (RNP Y)

`APP RTE >`   There is not enough data for HKCP to assign an approach

`OCEAN3A`   SID (OCEAN3A)

Line 4: Aerodrome (Arrival Runway and Approach)

Line 4 is unique to each tag family.

For Aerodrome and Zone tags, it displays the arrival runway, if it has been set; the approach type, if it has been set or generated. It does not display the SID.

Right click the approach type to access the TopSky waypoint menu.
Left click the approach type to access the Approach Selection Menu.

Left or right click the runway to access the EuroScope runway assignment menu.

`07L ILS`	Arrival runway (07L) and approach type (ILS)
`34 ILSZ`	Arrival runway (34) and approach type (ILS Z)
`07L RNP`	Arrival runway (07L) and approach type (RNP)
`25R RNPY`	Arrival runway (25R) and approach type (RNP Y)
`APP RTE >`	There is not enough data for HKCP to assign an approach

> **Note**
>
> HKCP determines which approaches are available by comparing the arrival airport and runway with data inside HKCPApproaches.json.
>
> If HKCP is unable to assign an approach, it will first attempt to list the approaches of an arrival runway at the airport. If it is unable to do so, the Approach Selection Menu displays "BAD DATA".

Line 4: Terminal/Area (Arrival Runway, Route Abbreviation, Gate ETA and AMAN delay)

Line 4 is unique to each tag family.

For Terminal and Area tags, it displays the arrival runway, if it has been set; the route abbreviation, if it has been set or generated; the ETA at the specified route's APP gate and the required delay as specified by the MAESTRO AMAN. It does not display the SID.

The route abbreviation consists of the first letter of the APP gate (e.g. "A" for "ABBEY") or "R" if the aircraft has passed the APP gate, and the time at which the aircraft is expected to arrive at the gate or the destination airport (e.g. "28" for 28 minutes past the hour).

The AMAN delay consists of the length of delay the AMAN system has computed for the aircraft to arrive at the APP gate in the required sequence (e.g. "+2" for two minutes needed).

Right click the route abbreviation to access the TopSky waypoint menu.
Left click the route abbreviation to access the Route Selection Menu.

Left or right click the runway to access the EuroScope runway assignment menu.

`07L ELA A28+2` Arrival runway (07L), Route abbreviation (ELATO V522), Gate ETA (ABBEY at time 28) and AMAN delay (2 minutes)

`07R IDO C43` Arrival runway (07R), Route abbreviation (IDOSI V561), Gate ETA (CANTO at time 43)

`07L ELA R35` Arrival runway (07L), Route abbreviation (ELATO V522), Gate ETA (VHHH at time 35)

▬▬▬▬▬ Departures

> **Note**
>
> HKCP matches only the exact route when assigning a route abbreviation automatically. Manually assign the route abbreviation using the Route Selection Menu if it is incorrect.
>
> If the Gate ETA does not appear, re-assign the route abbreviation using the Route Selection Menu

Line 5: Scratchpad

Line 5 is identical across all 3 tag families.

Right click the scratchpad to modify its value.
Left click the scratchpad to modify its value.

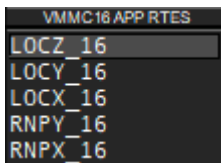The standard EuroScope scratchpad can be edited on the detailed (hover-over) tag.

Line 6: Compound Warning

Line 6 is identical across all 3 tag families

The TopSky Compound Warning displays warnings related to the radar target, e.g. CLAM.

Tag function menus

Approach Selection Menu

The Approach Selection Menu provides the ability to select an approach type for a radar target, which is then shown on Approach/Departure and Aerodrome tags. This reduces the amount of coordination required between sectors for non-standard approaches.
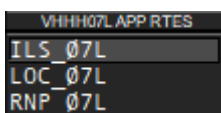
The menu does not modify the correlated flight plan, so any runway or STAR assignments must be made manually.

After a runway change or diversion, the previously selected approach is retained. Controllers should select a new approach using the menu.

The Approach Selection Menu is accessed by left-clicking on the Approach tag element in line 4.

> **Note**
>
> HKCP determines which approaches are available by comparing the arrival airport and runway with data inside HKCPApproaches.json.
>
> If HKCP is unable to assign an approach, it will first attempt to list the approaches of an arrival runway at the airport. If it is unable to do so, the Approach Selection Menu displays "BAD DATA".

Route Selection Menu

The Route Selection Menu provides the ability to select a route abbreviation for a radar target, which is then shown on Terminal and Area tags. This provides a clear image of traffic for pre-planning and sequencing.

The menu modifies the correlated flight plan to assign the corresponding STAR. It does not modify other parts of the route.

After a runway change or diversion, the previously selected route is retained. Controllers should select a new route using the menu.

Controllers are reminded that the route abbreviation should not be used to indicate direct routings. For example, an aircraft entering VHHK via ELATO for VHHH should be allocated ELA at all times provided it is routing via V522, regardless of whether it was given a direct to ABBEY/LIMES; whereas an aircraft routing from VMMC to VHHH via radar vectors may be given LIM, with LIMES being the first selectable waypoint in their flight plan.

The Route Selection Menu is accessed by left-clicking on the Route tag element in line 4.

Note

HKCP determines which approaches are available by comparing the arrival airport, route and runway with data inside HKCPRoutes.json.

If HKCP is unable to determine which approaches are available, the Route Selection Menu displays 'BAD DATA".

HKCP matches only the exact route when assigning a route abbreviation. Manually assign the route abbreviation using the Route Selection Menu if it is incorrect.

Enjoy :)