

Using ASRC and VRC in ZDC

ASRC and VRC are the controller clients used on the VATSIM network. This article will show you how to use ASRC and VRC in ZDC.

Documentation

Here are links to the documentation for each Radar Client:

[Advanced Simulation Radar Client \(ASRC\)](#)

[Virtual Radar Client \(VRC\)](#)

Radar Clients and Radar Modes

Controllers may use whichever radar client and radar mode they choose. Training will be provided on both clients at all positions.

ZDC suggests that...

- 1) Radar Client
 - a) Clearance Delivery, Ground, and Tower use VRC
 - b) TRACON and Center use ASRC

- 2) Radar Mode
 - a) Clearance Delivery Controllers use **Tower** mode
 - b) Ground Controllers use **Ground** mode
 - c) Tower Controllers use **Tower** mode
 - d) TRACON Controllers use **ARTS** or **STARS** mode
 - e) Center Controllers use **DSR** mode

Visibility Settings

Use the General Settings window (found in Settings → General) then the Airspace Tab to adjust the Target Visibility Range. These are the maximum visibility settings allowed for each position type:

- | | |
|-----------------------|---------------------------------|
| 1) Observers | 300nm |
| 2) Clearance Delivery | 20nm |
| 3) Ground | 20nm |
| 4) Tower | 50nm |
| 5) Approach/Departure | 150nm |
| 6) Center | As needed (Approx. 320 for ZDC) |

Visibility Center

You can set your visibility center at a specific point (Airport, VOR, NDB, FIX) or else every time you double click the mouse your visibility will be set to the point. Both controller clients allow you to center your visibility on up to four (4) points. The benefit of doing this, instead of increasing your visibility range, is to reduce bandwidth use.

To center your visibility, type `.vis [POINT] <enter>`. Example: `.vis ORF <enter>`. To set the individual points use `.vis1[POINT] <enter>`, then `.vis2 [POINT] <enter>`, etc. You cannot link these commands together. VRC has an option to set the visibility to multiple points at once, the command is `.vis [POINT 1] [POINT 2] [POINT 3] [POINT 4] <enter>`. To reset your visibility, in ASRC type `.vis <enter>` and in VRC type `.novis <enter>`.

Controllers shall use the following guidelines for setting their visibility:

- | | |
|-----------------------|---|
| 1) Observers | N/A |
| 2) Clearance Delivery | Set visibility to the airport you are controlling |
| 3) Ground | Set visibility to the airport you are controlling |
| 4) Tower | Set visibility to the airport you are controlling |
| 5) Approach/Departure | Set visibility to the primary airport in the TRACON (or Area) |
| 6) Center | Set visibility to ORF VOR.*** |

***Center may use a 175nm visibility range and set 4 visibility points: ENO, ORF, LYH, EWN.

ATIS and Controller Information

Refer to the [ATIS Training Article](#) for a guide on setting up the ATIS and Controller Information.

Tracking Aircraft

For the most part, only radar controllers (DEP, APP, and CTR) will track aircraft. Only radar certified towers may track VFR aircraft operating within the Class B or Class C airspace so that other controllers know the aircraft is in communication with ATC. In ZDC, these are the towers at KIAD, KDCA, KADW and KBWI.

To track an aircraft, press F3 then click on the aircraft or press F3 and the aircraft select key (if aircraft is selected) to track an aircraft

To drop-track of an aircraft, press F4 then click on the aircraft or press F3 and the aircraft select key (if aircraft is selected) to track an aircraft

If the Position File (.POF) is properly loaded, each TRACON position has an ARTS Tag associated with it so all TRACON controllers know who is tracking the aircraft. In most cases, the Controller ID (ID) on the Controller List (CL) is a combination of a number and a letter and the letter in the ID corresponds to the ARTS Tag. The radar client must be in ARTS mode for the primary targets to display the letters. Example, the DCAFR arrival sector's ID is 4J and ARTS Tag is "J". When this position is tracking an aircraft, the primary target becomes a "J". If this airplane is handed off to the BWIFN (ARTS Tag is "Q"), once the receiving controller accepts the radar handoff, the primary target will turn into a "Q".

All center controller sectors have "C" for the ARTS Tag. All tower controller's have "T" for the ARTS Tag. "C" and "T" ARTS Tags are not used within TRACONS.

DO NOT...

... Track ANY aircraft at the Clearance Delivery (DEL) and Ground (GND) positions.

... Track IFR aircraft at the tower position.

... Track any aircraft that are on the ground.

ONLY track airborne aircraft that have been "radar identified" **and** are communicating with ATC on a frequency.

The initial departure controller should only track aircraft after that have checked in on the proper departure frequency and have been properly radar identified. By tracking the aircraft, other controllers know that the aircraft is in contact with ATC and which sector.

Only track VFR aircraft that have been assigned a beacon code, are not in the traffic pattern, request/need flight following and must be on a frequency. Use the radar handoff for VFR aircraft to another controller only if they must be in contact with ATC.

Drop track of all VFR aircraft upon termination of radar services.

When aircraft leave your airspace and there is no controller to handoff to, drop track of the aircraft as soon as the aircraft is advised that radar services have been terminated.

Radar Handoffs

Place radar handoffs far enough in advance of the aircraft leaving your sector. The goal is to have the aircraft talking to the next controller PRIOR to the aircraft entering the next controller's airspace. A good rule of thumb is for TRACON controllers to place handoff requests 15-20 miles or 5,000ft from the end of the sector and Center controllers to place handoff requests 50 miles or 10,000ft from the end of the sector.

To place a handoff, press F4 then enter the 2 digit ID of the position you want to handoff to then click on the aircraft or press the aircraft select key (if the aircraft is already selected). You will see the 2 digit of the ID flash in the sequence on the data block.

To receive a handoff, press F3 then click on the aircraft or press F3 and the aircraft select key (if aircraft is selected).

To refuse a handoff, press F4 then click on the aircraft or press F4 and the aircraft select key (if the aircraft is already selected).

Once a radar handoff has been accepted, you do not need to immediately transfer communications to the next controller. Wait until the aircraft is within 15nm of your airspace boundary, 2,000 ft within the ceiling/floor of your airspace, or at which time when you no longer need to communicate with the aircraft and you can be sure there will be no conflicts while the aircraft is still in your airspace. Again, the goal is to have the aircraft talking to the next controller PRIOR to the aircraft entering the next controller's airspace.

ZDC has a pre-made alias file that will look for the next position's "radio name" and frequency if you enter the appropriate ID along with the alias. Use the ".hand" alias (or equivalent) for ALL text aircraft. All text handoffs must include the provided radio names and the frequency that are in the ZDC Position File, NOT the actual text callsign of the position. You can utilize the alias by selecting the aircraft and typing ".hand 24." This will output "contact Washington Center on 123.85." If you add ".gd" it will add "good day" to the message. ".hand 24.gd" will output "contact Washington Center on 123.85, good day." If you are using voice, there is no need to send the handoff information via text.

DO NOT use the radar handoff request feature to request handoffs to or from the tower, ground, or clearance delivery positions. These positions are not radar certified and therefore should not be tracking aircraft. Coordinate these types if handoffs via Chatbox.

Be sure to complete all flight plan and radar data tag updates prior to placing the radar handoff request because you cannot change this information once the handoff has been accepted. Only the controller tracking the aircraft can edit or amend the flight strip, change a temporary or hard altitude, or edit the scratchpad, be sure to do this PRIOR to requesting a radar handoff.

If the next controller is out of your visibility range, coordinate the handoff via the chat box and drop track once you instruct the aircraft to contact the next controller.

Flight Plans

ASRC and VRC allow you to change the information in a flight plan. You can edit the route, remarks, cruise altitude, airports, and aircraft type.

Some things to remember when amending routes...

...Be sure the pilot can fly the new route before amending the flight plan.

...If you give the pilot direct to a fix, delete all parts of that route prior to the fix they are going direct to so that other controllers know what the aircraft is doing.
...When assigning a new cruise altitude, don't forget to change the flight plan.

[Click here](#) to view Brian Hoyle's explanation on how to amend routes in ASRC.

In VRC, bring up the flight plan (F6 then click) and you can edit the entire field in the box.

To change the cruise, or "hard", altitude, press F5 [new altitude in thousands] and then click on the aircraft or use the aircraft select key to enter the new altitude.

Beacon Codes

Each ARTCC on VATSIM is assigned sets of beacon codes for IFR and VFR aircraft. These codes are displayed on the website. ASRC and VRC will assign beacon codes to aircraft based on the information in the POF. In order for this to work, your frequency must correspond to your text callsign or else you will receive a beacon code error.

You can assign beacon codes to aircraft by pressing F9 then click on the aircraft or press F9 and the aircraft select key (if the aircraft is already selected). In VRC you can also use F6 to display the flight plan and click the ASSIGN SQUAWK button.

You can manually assign beacon codes by pressing F9 [BEACON CODE] then click on the aircraft or press F9 [BEACON CODE] and the aircraft select key (if the aircraft is already selected).

Note: In VRC there is an option in the General Settings to assign beacon codes at random from your allotment of codes.

Remember, all aircraft that have CODE flashing in their data blocks must be assigned a new beacon code as soon as possible. Also, aircraft that come from an uncontrolled sector should be assigned a new beacon code and properly radar identified. You do not need to assign a new beacon code if the aircraft has been handed off to you unless CODE is flashing.

Assigning Altitudes: Cruise and Temporary

ASRC and VRC allow controllers to assign Cruise, or "hard", altitudes and Temporary, or "soft", altitudes. Hard altitudes should be set when an aircraft gets their initial IFR clearance and only need to change while enroute when the pilot requests a different altitude. Do not enter the initial altitude as a Temporary altitude. Hard altitudes should be changed when issuing a descent into the terminal area. Temporary altitudes may be used when climbing aircraft in a TRACON and should be cleared prior to handing off to the center controller or a neighboring TRACON. Don't clear the temporary altitude when handing off to another sector within your TRACON. The temporary altitudes do not replace coordinating via the chatbox.

To change the "hard" altitude, press F5 [new altitude in 100's of feet] then click on the aircraft or press F5 [new altitude in 100's of feet] and the aircraft select key (if the aircraft is already selected). Example: "F5 310" will change the hard altitude to FL310.

To change temporary altitudes, press F8 [new altitude in 100's of feet] then click on the aircraft or press F8 [new altitude in 100's of feet] and the aircraft select key (if the aircraft is already selected). Example: "F8 070" will change the temporary altitude to 7,000.

To clear a temporary altitude, press F8 then click on the aircraft or press F8 and the aircraft select key (if the aircraft is already selected).

The Scratchpad

The scratchpad is used to enter 3 characters of information into the data block. It is recommended that you use the scratchpad when assigning headings to aircraft in your airspace. ZDC uses this information to note a heading or an approach type and runway request. Be sure to clear the scratchpad once the aircraft has been cleared on their filed route or prior to placing a handoff request. You may leave the approach type information in the scratchpad when handing off to tower. If the approach type being used is the one the tower is advertising in the ATIS, no scratchpad information is needed. Some TRACONS and Approach Controls have additional information that should be entered into the scratchpad; this information is found in the specific SOP for the facility.

Use lowercase letters in the scratchpad so the information stands out. Capital letters can be confused with airports in the data block.

To edit the scratchpad information, press INSERT [enter 3 characters of information] then click on the aircraft or press INSERT [enter 3 characters of information] and the aircraft select key (if the aircraft is already selected).

Here are some applications of the scratchpad:

Headings

If aircraft are not direct to a fix, you can use the scratchpad to enter the heading an aircraft is on. Use "hXX" where XX is the first two digits of the heading. Example: "h05" is heading 050. "h31" is heading 310. Use a lowercase "h" so that it stands out in the data block. Clear the scratchpad once the aircraft is cleared to a fix in the flight plan.

Runways and Approaches

You can assign an approach type to the primary runway by using...

- a) "vis" for visual approaches
- b) "ils" for ILS approaches
- c) "vor" for VOR or VOR/DME approaches
- d) "gps" for GPS approaches
- e) "nav" for RNAV approaches
- f) "lda" for LDA or LDA/DME approaches
- g) "loc" for LOC or LOC/DME approaches

You can assign an approach type to a specific runway by using...

- a) "vXX" for visual approaches
- b) "iXX" for ILS approaches

XX is the runway number. If the runway is Left, Right, or Center, omit the first number of the runway and include the "L", "R" or "C". Example: "v19" is a visual approach to runway 19. "i3R" is an ILS approach to runway 33R. Some facilities have their own codes for entering approach and runway information into the scratchpad; this will be included in the specific facility SOP.

Departure Gates

In the Potomac TRACON (PCT), the controller giving the clearance shall enter a code for the departure gate in the scratchpad. The departure controller shall clear the scratchpad once the aircraft has been given direct to their departure fix. If you are unable to clear the aircraft to their departure fix as per the SOP, leave the departure gate in the scratchpad and coordinate the heading via chat box.

If your SOP says you are supposed to clear an aircraft to a departure fix but are unable to give direct to the fix prior to handing off, put the aircraft on a heading directly towards the fix, enter the heading as "hXX" in the scratchpad so the next controller knows they need to get the aircraft direct to the departure fix. If you must put the aircraft on another heading that is not directly

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toward the departure fix, coordinate this in advance with the next controller. If the pilot is unable to find the departure fix and needs to be vectored all the way to it, this must be coordinated via the chat box.