

ZOA CRC Familiarization Guide

Link to Live Version: [CRC Familiarization Guide](#)

What is CRC/vNAS?

CRC is a new virtual ATC client which combines functionality previously seen in vERAM and vSTARS and adds a new “tower cab” mode. vNAS (Virtual NAS) is a “backend” for CRC as well as vStrips and vTDLS. vStrips is a simulation of shared flight strip bay (with existing functionality you’re already familiar with from legacy controller clients and more) and vTDLS is a simulation of the real world TDLS system - this is currently used to send PDCs. You can find more information and documentation for each client on the [vNAS Website](#).

Getting Started

CRC is available to download through the [vNAS Website](#).

Please start by reviewing the [CRC Documentation](#) - it covers all the modes available in the controller client. For your convenience, the below sections of this guide highlight some differences from legacy clients.

Differences/New Features

General

One of the major changes is to the sign-in flow. There is no longer a concept of “priming” on a frequency - rather you first connect to the network on a position, and then “activate” your session. Activating your session largely is the same action as priming previously was. You will not be able to make any modifications to any data before activating your session..

Another new feature is the concept of display tabs. If you’ve used VRC, you may already be familiar with the concept of windows - where each window allows you to set up a different view for your controlling position. In CRC, it is possible to have multiple tabs within each window, to allow for the possibility of having multiple control position types within the same window - which could be useful on smaller screens over creating multiple windows.

You are also able to sign into a secondary position (at or below your current sign in level - if you are signed into NCT, you can add a secondary sign into any other NCT position or any of the cab positions). This does not count as a secondary connection for VATSIM purposes and is only visible to other vNAS users. When you handoff to your own secondary position, the handoff will be automatically accepted. One use case for secondary positions is to create an NCT tab when you are working ZOA, in order to provide top-down services easier. Note that you are not able to select additional frequencies.

Continuing on from additional tabs/windows, the bookmarks system is more flexible in CRC. There is now an ability to set up to 99 bookmarks - the first ten are set in the same way as in vSTARS/vERAM, using Ctrl + Alt + <Number>, recalled using Ctrl + <Number>. Further bookmarks can be set by typing .##. where ## is the bookmark number within any display type. Those bookmarks can be recalled by typing .## - these set/recall commands also work for bookmarks 0-9. You'll notice that there is a "use global bookmarks" setting for each window. This determines whether bookmarks for that window are set/recalled in tandem with any other windows using the "global bookmarks" option.

Bookmarks - Summary	
Command / Key Bind	Description
Ctrl + Alt + <NumPad>	Assigns bookmark to num pad key pressed
Ctrl + <NumPad>	Recalls bookmark assigned to num pad key pressed
.##.	Assigns bookmark to number (e.g. 15) entered
.##	Recalls bookmark using number entered

vNAS also introduces a new era of controlling by synchronizing data not possible with legacy clients. When you sign into the same position as another controller (for STARS, ERAM, ASDE-X, vStrips, vTDLS), a lot of the data you will see is shared between you and any other controllers signed into that same position.

Although there is more change coming with regards to how vNAS processes flight plans, for now one major difference is that there is no longer a distinction between

IFR/VFR flight plans within CRC. You'll also notice that pilot-filed VFR flight plans are not visible within CRC, except for the filed remarks - this mimics the real world. You are able to designate a flight plan as operating under VFR by placing "VFR" or "VFR/<alt>" into the altitude field.

vStrips

vStrips is a web-based application that simulates a shared flight strip bay. One key difference is that strips must be first fetched from the "printer" and don't automatically get added to the bay. Each time there is an amendment to the flight plan, a new strip "prints" and must be added to the bay.

When logging into the website, you'll select a facility you want to view the strips for. If you are working top down, you are able to select "NCT" as a facility, which will print all strips for NCT.

Unlike in VRC, there is no reminder list functionality. Additionally, VFR flight plans are not visible to you in CRC, so it is recommended that you get familiar with utilizing flight strips as a method of keeping track of the state of various aircraft. You are able to add either half strips or print blank strips to keep track of information regarding a VFR aircraft, if you do not add that information to a flight plan. An added benefit is that other controllers within the cab environment are able to see the flight strips you add as well. You can expect more information regarding flight strip usage soon.

vTDLS

vTDLS is a simulation of the real world TDLS system. Currently, the only functionality that is simulated is sending PDCs. CPDLC is not simulated as it is not available by default on VATSIM.

When logging into the website, you'll select a facility you want to view the available flight plans for which you can send a PDC. If you are working top down, you are able to select "NCT" as a facility, which will show all aircraft within NCT.

One benefit of this new system is that you are able to set up PDCs to be sent for pre-filed flight plans (before an aircraft connects to the network) - they will automatically be delivered when the aircraft connects.

The PDC aliases no longer exist in CRC, so vTDLS will have to be used to use that functionality.

Note that once a PDC is sent, or a flight plan is dumped from vTDLS, it is not possible to re-send the PDC.

Tower Cab Mode

Tower Cab mode serves as a way to simulate visual tower operations - as if looking out the tower cab window. At the majority of ZOA's airports this mode should not be used in isolation (as a primary display mode) - as most of our airports have STARS displays in the towers. However, it is still useful as a secondary display type. As a clearance delivery/ground controller you might sign with STARS as your primary display type, but spend most of your time on the tower cab view.

One thing you may immediately notice is that the display adapts to the current weather conditions - visibility and ceilings will be taken into account when depicting the visual picture.

ASDE-X

ADSE-X is now a separate display mode in CRC, whereas previously it was integrated within vSTARS. A lot of new functionality has been introduced to the ASDE-X - refer to the CRC documentation for the full information. Some highlights include:

- Aircraft that are squawking standby will not show up with full data blocks
- Toggling between day/night mode built-in
- Aural and visual safety logic alerts
- Ability to mark closed/restricted areas on the diagram (this data is shared across all users of the ASDE-X)
- Ability to set up "trait areas" which affect how data blocks appear in a certain part of the airport (currently not synced across all users of the ASDE-X, but planned for the future)
- Additional data block functionality, such as displaying a scratchpad (the SFO configuration uses this to display the first fix for departures)

STARS

See this presentation for a walkthrough of the new features:

CRC STARS Familiarization

The STARS mode got a lot of upgrades in CRC over what was available in vSTARS - though there are also some removals for the initial release. As mentioned above, more data sharing is possible within vNAS. For STARS, this means that multiple users signed into the same position will see the same tracks active (the leader line direction, "blue"/"white" statuses are not synced).

Additions:

- F1 key - beaconator - shows beacon code or ADS-B callsign for all tracks
- Unsupported data blocks - data blocks not associated with a flight plan (these were possible in vERAM before, but not shared across different users)
 - The F2 key is the "track respotion" key - it can be used to move a data block from/to a track
- Automated point outs
 - Only available within the same STARS facility (e.g. can do NCT-NCT only)
 - The recipient can acknowledge the point out by clicking on it - on the sender's scope they will see a "PO" indication flashing when this happens
 - The recipient can reject the point out by entering "UN" and slewing on the track - the sender will see "UN" flashing on the track
 - The sender can recall a point out by clicking on the track
- Secondary scratchpads
 - Same command as primary scratchpad, except prepend a + to the scratchpad (e.g. MULTIFUNC, Y, +, LFT, <SLEW> or +LFT, <SLEW> would place LFT as a secondary scratchpad)
- Handoff redirects
 - Enter the target of the redirect and <SLEW> to redirect an incoming handoff
- Convert point out to handoff
 - *, *, <SLEW> converts an incoming point out to an incoming hand off

Changes:

- F2 key is now "track reposition" (RP)
- F6 key is now "flight data" (DA)

- F9 key is now “VFR plan” (VP)
- STARS-to-STARS interfacility handoffs now require the triangle symbol followed by the recipient’s TCP - the triangle symbol can be entered by typing the backtick key (e.g. a handoff from NCT to SUU would be entered as `1 if there is only one SUU sector online)
- STARS-to-ERAM handoffs can be entered using only C (as opposed to something like C42) if there is only one center sector online
- Range/bearing lines can now be drawn from a track to a fix, from a fix to a track, or between two fixes (*T tool)
 - You can now enter fix names instead of having to slew
 - For the start location
 - You can slew on the desired location/track
 - Enter *T and the fix name (no space inbetween) and hit <ENTER>
 - Enter *T, <SPACE> and then the aircraft ID or beacon code and hit <ENTER>
 - For the end location
 - You can slew on the desired location/track
 - Enter a valid fix and hit <ENTER>
 - Enter an aircraft ID or beacon code and hit <ENTER>

Feature from vSTARS not included in initial CRC release:

- MSAW (low altitude alert) processing - not included in initial release
- Automated data block repositioning

ERAM

ERAM is the mode with the most improvements in CRC over vERAM. As with STARS, a lot of data is synced between users signed into the same position. In ERAM mode, the leader line direction/length are synced - making working a D-side position actually feasible. Additionally, speed/heading data is also synced across all ERAM positions (including interfacility).

Additions:

- NEXRAD weather depiction
- Voice communications indicator (VCI)
 - Can be toggled by clicking left of the altitude or typing //<FLID>

- 7110.65 2-17-2.d “ERAM facilities, beginning with initial audio contact with an aircraft, must utilize the voice communication indicator to reflect the current status of voice communications.”
- QU route amendments
 - QU <fix> <FLID> will automatically enter an FRD for the aircraft’s current position and set <fix> as the next waypoint - <fix> must already be in the flight plan for this to work - there is currently no airway/procedure parsing so the route has to be manually amended to distinctly include the <fix> prior to running the QU command
- Automated point outs (see [docs](#) for more thorough explanation)
 - Available interfacility (any other ERAM scope)
 - Sender will see a “P” above the callsign - this will change to a white “A” when the point out is acknowledged
 - Clicking on the “P” will show a menu with all sectors receiving the point out - sectors still pending will be in yellow and those that have acknowledged will be in white
 - Receiver will see a “P” above the callsign
 - Can be accepted by typing QP A <FLID>
 - Clicking on the “P” will show all the sectors initiating the point out in blue - clicking on a sector will acknowledge that point out and change the point out for that sector to white
 - A data block that has previously been pointed out can only be collapsed by typing QP <FLID>

Changes:

- Improved conflict alert processing - it is more predictive
- Improved depiction of handoffs - handoff/acceptance status for subsequent sectors is now visible in the FDB
 - This allows for better usage of automated information transfer procedures

Reporting Issues/Bugs

If you have any questions about CRC and/or vNAS, please first ask in the [#tech-support](#) channel within the ZOA Discord. This will help keep the support burden on the vNAS/CRC developers lower, as ZOA staff can help you do some initial troubleshooting on any issues you might run into.

If you’d like to follow development, you can join the [vNAS Discord](#).