

S2 Training Program

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Finland

Introduction

This is a modification of the official VATSIM Scandinavia training program for students training for the TWR (S2) Rating for use in Finland (EFIN FIR). Each mentor is expected to take his student through these sessions to make sure all students have been through the same core content in their training. The training is now based on multiple simulator sessions before starting to control online. The program will have a steady increase of traffic and difficulty. This will make it easier for the student to monitor the progress of the student as it is not based on how many pilots are showing up online for the training. The training will be conducted in Finnish unless the student is not fluent in the language.

The Tower controller

A tower controller has responsibility for aircraft at an airport, in the airspace directly above and in the close vicinity of the airport. At large airports, the tower function could be split into several tower positions, which can be one for arrival and one for departure, as well as ground and delivery. Initial S2 training in Finland is performed at a regional airport. As a tower controller you issue IFR clearances, keep the aircraft separated while taxiing on taxiways and clear aircraft for takeoff and landing on the active runway. You are also responsible for the traffic in the control zone including traffic circuits. The tower works in close collaboration with the approach or enroute controller, whoever is responsible for the airspace above. In Finnish regional aerodromes, the tower controller also handles the approach control function. On VATSIM, an additional endorsement is required for S2 controllers willing to simulate radar towers.

Session training program

Each session will consist of a theoretical part, then a practical part covering the contents of the theory. The first sessions will be in a simulator called Sweatbox. The simulator will offer the student a steady increase of traffic level, to allow a steady learning curve. All exercises have overlying/adjacent sectors online and take place on a single runway airport. Sessions may or may not be followed in this exact order by your mentor, and sessions may be repeated if it is considered necessary.

The first sessions are in single runway airports, such as EFTP, EFTU or EFOU. The transition to EFHK will be done after this, consisting of 2 or more sessions in Sweatbox, with additional online training. The CPT will be undergone in EFHK.

Session 1: Intro session

A theoretical session covering the following:

- Basic organizational awareness
 - VATSIM: VATEUR, VATEUD and VATSCA
 - Code of Conduct
 - Being helpful and respectful towards pilots
 - Radar range settings
 - Remain at position when logged on as active controller
 - The role of supervisors and when should they be called
- Supporting programs
 - ATC booking via Vroute or CC
 - Audio for VATSIM, VATSpy and Vroute
- Emergencies
 - Handling emergencies
 - Stand of the VATSIM CoC towards emergencies

Controller radar client software (EUS)

- Configuration files for country and airport
- Configuration to view radar screen appropriately
 - Control zone
 - Runway and extended center lines
 - Taxiways
 - Aprons and parking stands
- Interpret aircraft labels:
 - Squawk: code, standby and mode C
 - Altitude: present (maintaining, climbing, descending)
 - Cleared flight level
 - Scratchpad
 - Additional information depending on local setup
- Basic functions
 - Zoom and pan the radar display
 - Assign squawk code
 - View aircraft flight plan
 - Set cleared flight level (temporary altitude)

- Keep departure lists updated (ground status, issued clearance etc.)
- Enter info into scratchpad
- Enter controller information (text ATIS)
- Set up voice ATIS
- Use controller list to be aware of other controllers online
- Acquire METAR for own airport
- Communication:
 - Private chat with controllers and pilots
 - Transmit to text pilots on the frequency channel (aliases)
 - Request pilot on the frequency (contactme)
 - Transmit voice on the frequency
 - Monitor another controller's frequency
 - Transmit text to general ATC channel
 - Check for online SUPs and call a SUP
- If there is time and/or need, a short introduction to EUS can be done by having one aircraft on a traffic circuit, for example.

Session 2: Basic controlling and VFR traffic

It is recommended to start with the Finnish language phraseology, if able.

- Introduction to airspace structure
 - CTR limits, airspace classification and how to separate aircraft
- Separation
 - Separate aircraft on ground
 - Separate aircraft departing from same runway
 - Separate arriving and departing aircraft
 - Conditional clearances
 - Separate aircraft in the control zone according to airspace classification D
- General ATC procedures for Tower position
 - Spell out the phonetic alphabet (Alpha, Bravo, etc.)
 - Meteorological knowledge:
 - Active runway
 - Wind
 - RVR (if applicable)
 - Temperature (for turbine engine aircraft)
 - QNH
 - Runway conditions (if applicable)
 - Intended approach procedure
 - MET report
- VFR departure leaving the Control Zone
 - VFR clearance using control zone VFR exit points
 - Taxi to holding point before active rwy
- VFR arrival
 - Clear into the circuit
 - Landing time and taxi to general aviation area
- VFR traffic circuit.
 - Clearance for traffic circuit
 - Touch and go, stop and go, low approach, go around
- For piston engines:
 - Taxi to run-up area
 - Rare on VATSIM, but in real life most small AC will want some minutes for engine runup, and some may want to simulate this on VATSIM as well
 - Some airports have their own run-up areas while other use a holding point where the aircraft is not in the way for other departures.
- Helicopter traffic

Session 3: IFR departures

- Standard IFR departure
 - Review flight plan (even/odd FL, routing) and assign SID
 - Spell out aircraft callsigns and destination ICAO codes.
 - Assign squawk code and set cleared flight level (temporary altitude)
 - Deliver departure clearance to pilot (SID and squawk code)
 - Approve startup and pushback.
 - Taxi clearance to active runway for departure.
 - Lineup if aircraft needs to hold due other departing traffic or just landed traffic.
 - Takeoff clearance (including wind information if different from previously transmitted wind information)
 - Transfer to controller above or UNICOM
- Non-Standard IFR departure
 - Coordinate non-standard departure with controller above
 - Coordinated heading and initial altitude for further radar vectoring during departure
 - Direct to first waypoint in the flight plan
- Coordination
 - Effective coordination with other controllers when required
 - E.g., direct routing into other controllers' sectors

Session 4: IFR departures and arrivals

- Standard IFR arrival
 - Continue approach (if landing clearance cannot be given due to traffic)
 - Landing clearance and wind information
 - Taxi clearance to appropriate stand via taxiways
 - Go around, (ATC or pilot initiated), coordinate with controller above.
- Both inbound and outbound IFR
- Multiple aircraft on final (Continue approach, number two...)
- Separate aircraft taxiing in from aircraft taxiing out

Session 5: Combining IFR and VFR

- Combining all traffic
- Separation techniques and traffic information in class D airspace

Session 6: EFHK procedures

The student may continue with Sweatbox training in Helsinki (EFHK). After online training, when the student is confident enough to start training on their own and the mentor considers the student ready, the CPT date can be agreed upon. Now, the student may begin with the solo endorsement on **EFHK_E_TWR**.

Optional: Radar tower endorsement

In Finland, all regional tower positions are also responsible for the surrounding TMA - airspace ("tutkatorni"). The most realistic way to simulate this would be only letting S3 controllers control in regional positions, but, instead, S2 controllers are allowed to control here with an additional, optional, radar tower endorsement.

It is recommended to undergo this endorsement after all other mandatory sessions have been completed.

Online preparations

Before going online, the mentor will guide through the following:

1. Preparations before logging in as an active controller
 - a. Login as observer and coordinate with adjacent controllers, if necessary
 - b. Acquire current METAR for airport
 - c. Choose active runway
 - d. Enter controller and airport ATIS
2. Log in as active controller
 - a. Valid position callsign
 - b. Appropriate facility
 - c. Rating
 - d. Set appropriate radar range corresponding to position
 - e. Log in with VATSIM ID, password and name
 - f. Configure AFV
 - g. Make adjacent controllers aware of position activity and operationality by transmitting on ATC channel or Discord
3. Log out as an active controller
 - a. Coordinate closing with adjacent controllers
 - b. Indicate position is about to close
 - c. Use the .break command
 - d. Transfer pilots on frequency to another controller or UNICOM
 - e. Log out of VATSIM

Examination

Tower Controller (S2) checkout:

Time frame: 60 to 90 minutes

Supporting ATC: on approach or area/enroute sector above, no ground

Required performance to pass:

- Log on as active Tower Controller
- Communicate with pilots and controllers online
- Respond to pilot calls and coordination requests from adjacent controllers
- Function as a Tower controller at a regional airport during normal traffic conditions
- Handle at least one IFR departure and one IFR arrival satisfactory
- Handle at least one VFR departure and one VFR arrival satisfactory
- Control at least 2 aircraft on the frequency simultaneously
- In total, handle 8 movements during the examination.
- Coordinate runway in use and nonstandard departure with approach or area/enroute controller above
- Keep aircraft separated on taxiways and runway
- Separate aircraft taking off from and landing on the same runway
- Separate aircraft in the control zone
- Use correct English phraseology and phraseology in local language if applicable