IVAC2 Handbook for EFIN FIR

Contents

Maps

Maps and sectors can be modified by pressing the MAPS button in the top menu. Clicking this button will open the maps menu:

The maps menu contains 28 map groups, all accessible via the black buttons. Each group contains many modifications, which can be toggled on and off by using the gray buttons from the submenu below. The T button right of each gray button is used to toggle text labels on and off for each category.

Be aware that some information may only be visible when zooming in far enough.

There are 1 NM between each marker dot on extended centerlines, for example:
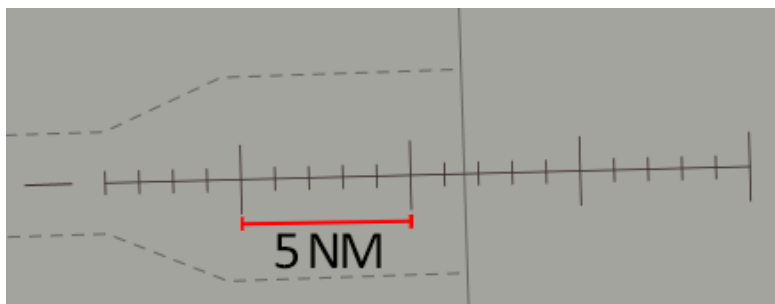
Map groups

The **ACC** group contains modifications for ACC positions, such as Tampere area control.

Sectors	T	CDR1 routes	T	CDR2 routes	T	fir-names	T
tma-names	T	GEO	T	PERM routes	T	Sector B	T
Sector G	T	Sector H	T	Sector J	T	Sector L	T
EFIN VORs	T						

- Sectors – ACC sector borders for Tampere radar
- TMA-names – TMA entry and exit points (T)
- GEO – Geographical guidelines
- Sector B, G, L, H, J – Highlighted area for each ACC sector
- EFIN VORs – VOR stations inside EFIN FIR (T)
- CDR1 routes – Conditional routes used during times published in the AIP
- CDR2 routes – Conditional routes used in accordance with conditions in the CRAM
- PERM routes – Permanent routes in the FIR
- FIR-names – FIR entry and exit points (T)

The groups with an **ICAO** location identifier contains modifications for the corresponding airport. These groups are; EFET, EFHA, EFHK, EFIV, EFJO, EFJY, EFKE, EFKI, EFKK, EFKS, EFKT, EFKU, EFLP, EFMA, EFMI, EFOU, EFPO, EFRO, EFSA, EFSI, EFTP, EFTU, EFUT, EFVA and ENKR.

Each airport has some different modifications. Here is an example of EFHK (Helsinki):

RWY 04L/R	T	RWY 15	T	RWY 22L/R	T	RWY 33	T
GND	T	CTA	T	CTR	T	TMA	T
WPT CTR	T	WPT RNAV	T	WPT TMA	T	RWY	T
SID 04L	T	SID 04R	T	SID 15	T	SID 22L	T
SID 22R	T	SID 33	T	RNAV 04L-1	T	RNAV 04L-2	T
RNAV 04R	T	RNAV 15	T	RNAV 22L	T	RNAV 22R	T
RNAV 33	T	APP EAST	T	APP WEST	T		

- RWY // – Runway extended centerline
- GND – Ground radar
- CTA – Control area borders
- CTR – Controlled traffic region borders
- TMA – Terminal control area borders
- WPT // – Waypoints near the aerodrome (T)
- SID // – Standard instrument departure waypoints (T)

- RWY – Runway centerline
- RNAV // – Standard arrival routes and waypoints (T)
- APP EAST, WEST – Highlighted area for APP positions

The **NAV** group contains modifications for obstacles.

Obstacles	T

- Obstacles – Obstacles inside the FIR (T)

The **SUA** group contains different special airspaces and military zones.

P20	T	P25	T	P30	T	P35	T
P40	T	P45	T	P50	T	P55	T
R10	T	ADIZ (R100)	T	R21	T	R30	T
R35	T	R37	T	R43	T	R45	T
R50	T	R53	T	R54	T		

- P // – Prohibited area
- R // – Restricted area
- D // – Danger area
- ADIZ (R100) – Restricted air defense identification zone

Presets

Presets are used to get quickly from one view to another. You can access the different presets by clicking the PRESETS button in the top menu.
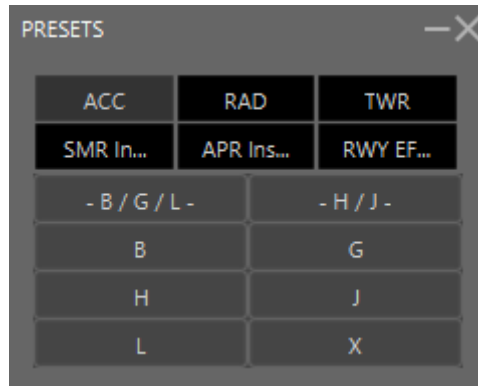
There are 6 different groups, all accessible via the black buttons. The correct preset for the ATC position is automatically loaded when signing in, however you may change it manually in this menu.

- ACC – Opens the correct ACC position and highlights the corresponding sector/-s
- SMR Inset – Opens a ground radar inset
- RAD – Opens the correct radar position with additional information and highlights the corresponding area
- APR Inset – Opens the CTR from the selected airport
- TWR – Opens a tower position with the correct information
- RWY EFHK – Changes the configuration of runway extended centerlines in Helsinki

One of the most commonly used presets are SMR insets. This is an easy way to find traffic at aerodromes, while controlling an ACC position. Example: EFRO

Labels

All Finavia's airports, together with Tampere area control are using a new and unique TopSky air traffic control system.

There are several different types of labels that contains different amount of information:

- Airborne labels
    - Unconcerned
    - Concerned
    - Assumed
    - Released
- Ground labels
    - Arrival
    - Departure
    - Unknown

Each label looks different depending on whether it is selected or unselected. To select a label, hover the mouse cursor over it.

Label fields

The following label fields are used, and will be mentioned on the following pages. Refer to this list when reading the next chapters.

Glossary of abbreviations:

CALLSIGN	Radio callsign
*SI	Current ATC sector (if label is not assumed)
	Next ATC sector (if label is assumed)
TSSR	Transmitted SSR code (squawk code)
*ASSR	Assigned SSR code
ATYP	Aircraft type (always shown to approach/tower units)
WTC	Wake turbulence category (L/M/H/J)
RFL	Requested flight level
*CFL	Cleared flight level
AFL	Actual flight level
*AHDG	Assigned heading or assigned route
*ASP	Assigned speed
*COPN	Entry coordination point – entry point into your sector
*COPX	Exit coordination point – exit point out of your sector
*PEL	Planned entry level – level into your sector
*XFL	Exit flight level – level out of your sector
ADES	Destination aerodrome
*OP_TEXT	Operator text – a text field for remarks (visible on all unconcerned labels if used)
GS	Ground speed
VS	Vertical speed (+26 = climbing 2600 Ft/min)

* = field will be blank if no value is set or the label is unselected

Universal label actions

Each text field in the aircraft label may have a function, depending on the label state and different flight phases. These functions can be accessed by either clicking, double clicking or right clicking a field. The following actions are available on all labels:

Callsign menu – Click the callsign field

Point (show the track to all controllers) – Double click the callsign field

Mark (mark the track) – Right click the callsign field

Show flight plan – Click the destination ICAO field

Show flight plan route – Right click the destination ICAO field

Send a message via text – Open callsign menu and click TEXT or select the label and press F7

Aircraft which are CPDLC only (no voice) will have a box around the callsign:
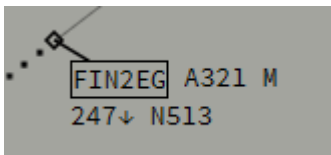
All CPDLC flights will receive automatic DLC messages whenever a cleared level, assigned speed or heading is set or when a frequency transfer is initiated.

Incoming CPDLC messages are visible in the TEXT IN window, which you can open by clicking the TXT IN button in the top menu. You may press the incoming messages once to make them gray. This will remind you which messages are already handled.
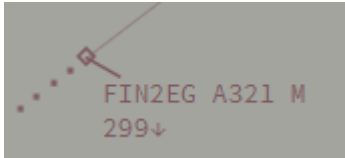
Aircraft squawking standby when airborne are shown as a square:

Unconcerned labels

An unconcerned label is a label that is not interfering your airspace or not yet identified by the system. These labels are light brown in color and they contain a minimal amount of information.

An unselected, unconcerned label consists of:

FIN2EG A321 M
299↓

[CALLSIGN] [SI] [ATYP] [WTC]
[AFL]

A selected, unconcerned label consists of:

FIN2EG SI A321 M 0153
27↓ 350 EFHK
CFL AHDG ASP
OP_TEXT
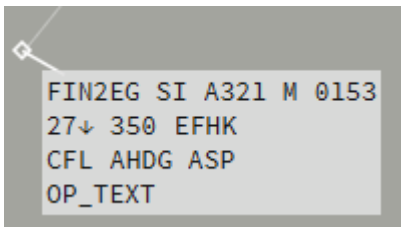
[CALLSIGN] [SI] [ATYP] [WTC] [TSSR]
[AFL] [RFL] [ADES]
[CFL] [AHDG] [ASP]
[OP_TEXT]

If an unconcerned aircraft is about to join your airspace, you must set your position as the next ATC sector. This is done by clicking the SI field and selecting the ATC position. This will make the label concerned.
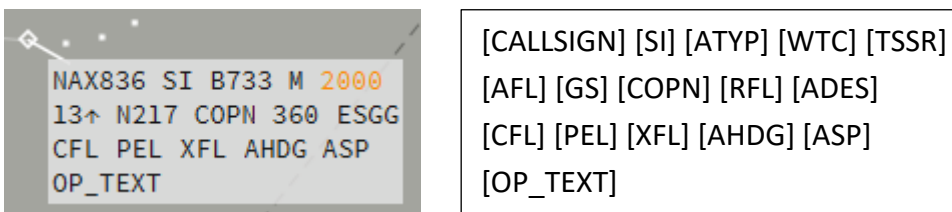
Concerned labels

A concerned label is a label of an aircraft that has been marked to join your sector next. Concerned labels are blue.

An unselected, concerned label consists of:

	[CALLSIGN] [SI] [ATYP] [WTC]	
NAX836 B733 M	[AFL] [GS] [COPN]	NAX836 B733 M
10↑ N215	[PEL] [XFL]	260↑ N428 ADIVO
		280 280

COPN, PEL and XFL are only shown if the values are set.

A selected, concerned label consists of:

	[CALLSIGN] [SI] [ATYP] [WTC] [TSSR]
NAX836 SI B733 M 2000	[AFL] [GS] [COPN] [RFL] [ADES]
13↑ N217 COPN 360 ESGG	[CFL] [PEL] [XFL] [AHDG] [ASP]
CFL PEL XFL AHDG ASP	[OP_TEXT]
OP_TEXT	

The concerned label gives you necessary information regarding the flight in your sector.

The COPN field indicates the planned entry point to your sector. This may be a specific waypoint or a heading. The PEL and XFL fields indicates the planned flight level, at which the flight is entering and leaving your sector. The values of COPN, PEL and XFL are set by clicking the respective fields and selecting the values in the appearing menu.

If an aircraft is approaching your sector from uncontrolled airspace and is not on your frequency, you must send a CPDLC CONTACT message to notify the pilots. To send the message, click the SI field and from the appearing menu click CONTACT > (FREQ) button.
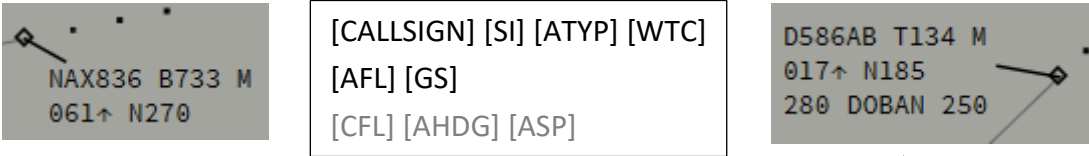
If the aircraft is assumed by another sector, you must wait for the transfer, initiated by the other controller. If the aircraft is close by or inside your airspace, you can make an ROF (request on frequency) by double clicking on the SI field. This notifies the controller to transfer the traffic.

When a transfer has been initiated, the callsign will turn white. You may only accept the transfer when the aircraft is in contact with you on the frequency. Accept the transfer by right clicking the SI field. The label is now assumed.
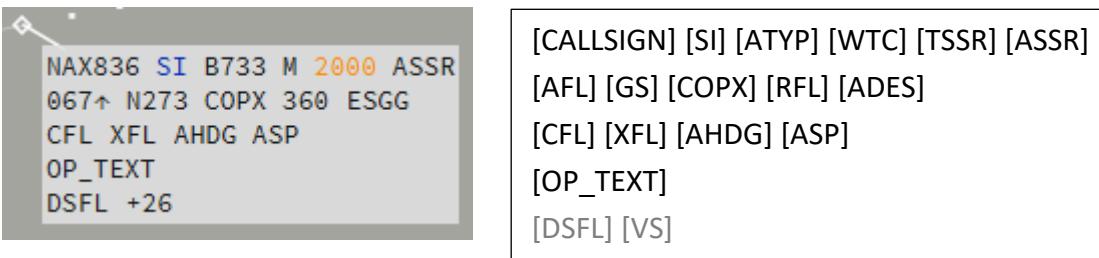
Assumed labels

An assumed label is an aircraft that is under your control and on your frequency. Assumed labels are black and contain a large amount of information.

An unselected, assumed label consists of:

NAX836 B733 M
061↑ N270

[CALLSIGN] [SI] [ATYP] [WTC]
[AFL] [GS]
[CFL] [AHDG] [ASP]

D586AB T134 M
017↑ N185
280 DOBAN 250

CFL, AHDG and ASP are only shown if the values are set.

A selected, assumed label consists of:

NAX836 SI B733 M 2000 ASSR
067↑ N273 COPX 360 ESGG
CFL XFL AHDG ASP
OP_TEXT
DSFL +26

[CALLSIGN] [SI] [ATYP] [WTC] [TSSR] [ASSR]
[AFL] [GS] [COPX] [RFL] [ADES]
[CFL] [XFL] [AHDG] [ASP]
[OP_TEXT]
[DSFL] [VS]

(note: the DSFL is not currently in use)

Assumed label procedures

The first thing you need to do when a label has been assumed is to set the next ATC sector. This is done by clicking the SI field and selecting the next sector from the SI menu.

If an aircraft is going to leave your sector into uncontrolled airspace, the next sector should not be set.

VSG122
NEXT

EFES B
EFES G
EFES H
EFES J
EFES FLOW
EFOU TWR
EFRO RAD
EFRO ARR
EFRO DEL
CONTACT >
118.700
CLEAR
CANCEL
EXECUTE

The cleared level, assigned heading or waypoint and assigned speed can be changed by clicking the respective fields.

Note: in the CFL menu (by clicking CFL): ────────────────────────▶

- CA = Cleared approach
- VA = Cleared visual approach
- LND = Cleared to land
- TGO = Cleared touch and go
- GA = Go around

To assign mode A (squawk) code to a flight, click the ASSR field (the TSSR will be shown in an orange warning color if the flight is transmitting a wrong code, or 2000/7000 etc.). Click assign and a new code will be set.
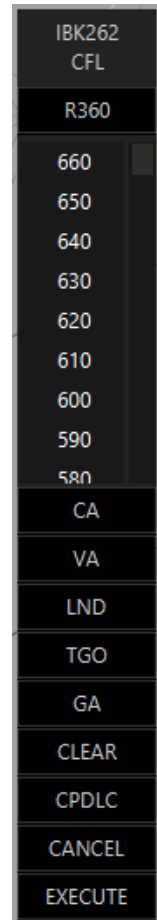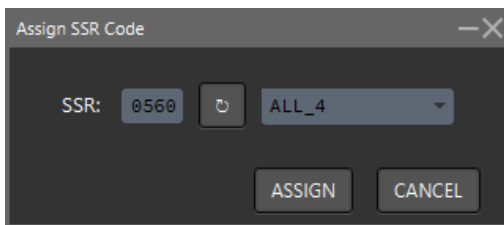
For an arriving flight in your sector, you can select the arrival runway by double clicking the ADES field. To set a STAR (standard arrival route), double click the AHDG field.

You can add a note to the label by clicking the OP_TEXT field. This note is visible to all controllers.

To transfer the label to the next ATC sector, right click the SI field. Once the next sector accepts the transfer, the label will be released. If no ATC sector is available, release the label by opening the callsign menu and clicking RELEASE.
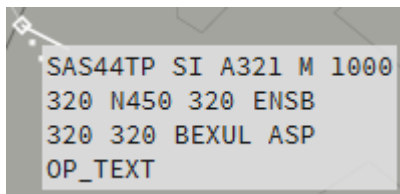
Released labels

A released label is a label of a flight that was previously assumed by you, and has now been transferred to the next sector or released to uncontrolled airspace. Released labels are orange.

An unselected, released label consists of:

FIN2EG A321 M
36↓ N265

[CALLSIGN] [SI] [ATYP] [WTC]
[AFL] [GS]
[CFL] [XFL] [AHDG]

A selected, released label consists of:

SAS44TP SI A321 M 1000
320 N450 320 ENSB
320 320 BEXUL ASP
OP_TEXT

[CALLSIGN] [SI] [ATYP] [WTC] [TSSR]
[AFL] [GS] [RFL] [ADES]
[CFL] [XFL] [AHDG] [ASP]
[OP_TEXT]

A released label contains only the most necessary information that allows you to be aware of the flight. You cannot change any of the values after the label has been released, since it's not inside your airspace and possibly in control of another controller.

Ground labels

There are two general types of ground labels:

- Departure label (blue)
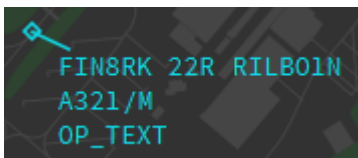- Arrival label (yellow)

For unknown traffic and vehicles, the labels will be white.

An unselected departure label consists of:

  [CALLSIGN] [departure runway]

A selected departure label consists of:

  [CALLSIGN] [departure runway] [SID]
[ATYP/WTC]
[OP_TEXT]

To fill the fields for departure runway and SID, check the next chapter how to issue an IFR clearance. If you need to set a departure runway without issuing an IFR clearance (e.g. VFR traffic), simply click the departure runway field, that is shown as [?] until a departure runway is set.

An unselected arrival label consists of:
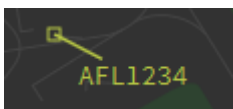
  [CALLSIGN] [arrival gate]

A selected arrival label consists of:
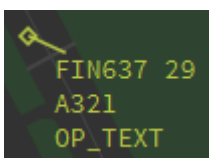
  [CALLSIGN] [arrival gate]
[ATYP]
[OP_TEXT]

To set an arrival gate, click on the question mark, [?] on the label.

By default, all ground labels within the range are shown on all zoom levels. You may turn the ground labels off or on from the top menu by clicking GND, or by right clicking anywhere on the radar screen and selecting GND. The ground labels turned on will help you to find and identify all traffic on the ground. (if you are controlling center or radar positions.)

Note that ground labels may not be assumed, when the aircraft is under your control. This means that other controllers may also modify the labels. This might be helpful when coordinating with multiple ground positions and selecting the arrival gate. However, you must assume the label if you wish to enter notes in the OP_TEXT field.

Special labels

There are also a few other abnormal label types. The following labels are designed to attract attention.

- Emergency – EMERG label:
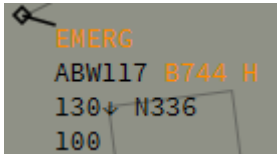
- Radio failure – COMFAIL label:

- Squawk ident:

These labels are shown when squawking 7700 for emergency, 7600 for radio failure, or by initiating a squawk ident.

Datalink Clearance System

To issue an IFR clearance, click the SID field. This will open the DCL (datalink clearance) window:

If the flight plan is filled correctly, all required fields for the clearance will be set automatically.

The DCL window consists of:

- Callsign – aircraft radio callsign
- Cleared to – destination airport
- Runway – departure runway
- SID – standard departure route (to issue another SID, select it from the ALTN SID field)
- Transition – (not in use)
- Squawk – mode A squawk code
- Next Freq – the next frequency (when selected, the SI field will automatically be set)
- Departure – departure airport
- ATIS – your current ATIS information
- ATC RMK – optional remarks to be included in the clearance
- CLD – the complete DCL clearance

Fill in all required fields and click VOICE to transmit the clearance to the aircraft by voice, or SEND DCL to send the clearance via datalink. The datalink will be sent via text.

ATC Information System

The ATC information system is a window containing different, useful information when controlling. It can be accessed by clicking the ATC INFO button in the top menu.
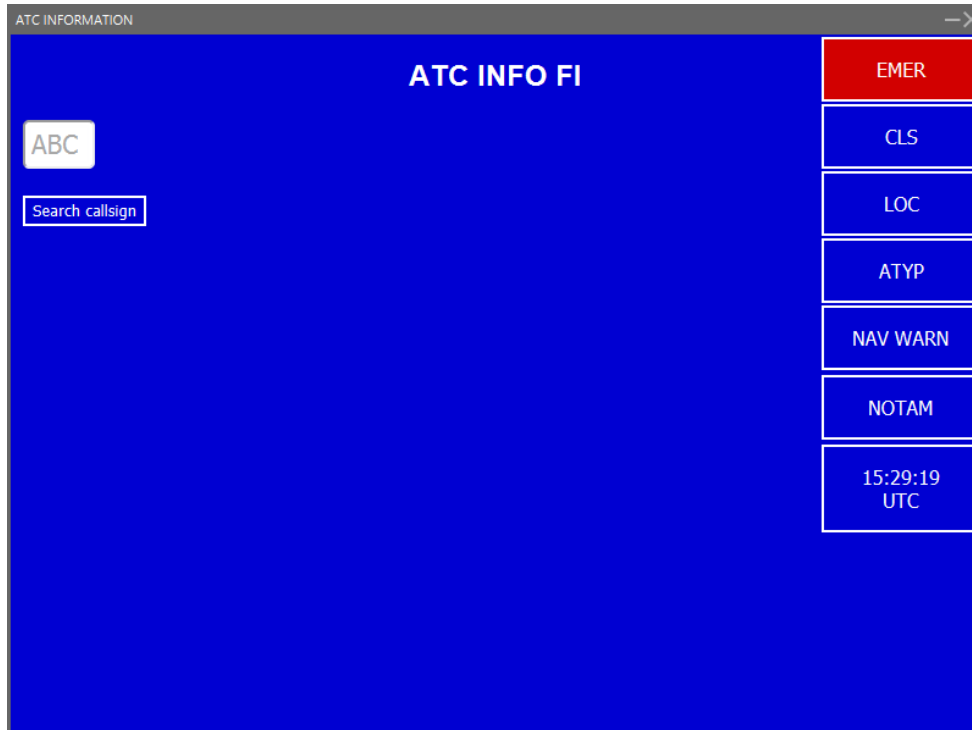
The buttons on the right side will open different information:

EMERG

The EMERG page contains the ASSIST procedure and different checklists to be used in different emergency situations. The checklists can be accessed by pressing the according buttons:

CLS

The CLS page makes it easy to look up different callsigns. The page gives also some information regarding the airline. Search by writing the airline ICAO designator in the field.

LOC

The LOC page contains information regarding the location of any airport. Search by writing the airport ICAO designator in the field.

ATYP

The ATYP page makes it possible to look up performance and supplementary information for different aircraft types. Search by writing the aircraft ICAO designator in the field and click Get Performance Data. If you do not know the ICAO designator of a certain aircraft type, click Search for ICAO Designator to look it up.

NAV WARN

The NAV WARN page contains a list of active military and danger areas in EFIN FIR, published by NOF-Finland. For more information, check the FINLAND Navigation Services AIP from the internet.

NOTAM

The NOTAM page contains NOTAMs of aerodromes, including:
EFET EFHA EFHK EFIV EFJO EFJY EFKE EFKI EFKKEFKS EFKT EFKU EFLP EFMA EFMI EFOU EFPO EFRO EFSA EFSI EFTP EFTU EFUT EFVA, as well as en-route NOTAMs and warnings.

ATC Sectors

Every ATC sector has a unique sector code and a short sector ID. Sectors inside Finland FIR are three letters, except Tampere area control and Helsinki radar positions. The bordering stations, outside Finland FIR has four-letter IDs.

Sector codes and IDs for online positions are visible in the ATC list, which can be opened by clicking the ATC LIST button in the top menu. Example:

SI	Short	Freq	Callsign
EFHK W TWR	HTW	118.850	Helsinki Tower
EFHK GND	HKG	121.800	Helsinki Ground
EFHK DEL	HKD	118.125	Helsinki Ground

The sector ID is shown in the aircraft label SI field when an ATC sector has been set as the next sector. For example, if Rovaniemi radar was set as the next ATC sector for a flight, the SI field in the label would contain the letters ROR. The following sector IDs are used in EFIN FIR:

- Local ACC sectors (Tampere radar) has the sector name as ID. For example:
    - Tampere Radar (sector B) – B
    - Tampere Radar (sector J) – J
    - Tampere Radar (sector H) – H
    - Tampere Radar (sector L) – L
    - Tampere Radar (sector G) – G
- Foreign ACC sectors have four-letter IDs:
    - Petersburg Control – ULLL
    - Murmansk Control - ULMM
    - Sweden Control – ESAA
    - Sweden Control – ESOS
    - Sweden Control – ESMM
    - Norway Control (combined) - ENOR
    - Tallinn Center (combined)- EETT
    - Tallinn Center (sector E) – EETT
    - Tallinn Center (sector W) – EETT
- Regional units (DEL/GND/TWR/APP) are using the following ID types:
    - Helsinki Ground (delivery) - HKD
    - Helsinki Ground - HKG
    - Helsinki Tower (E & W) – HTW
    - Helsinki East Tower – HTE
    - Helsinki Radar (E & W) – RW
    - Helsinki Radar East – RE
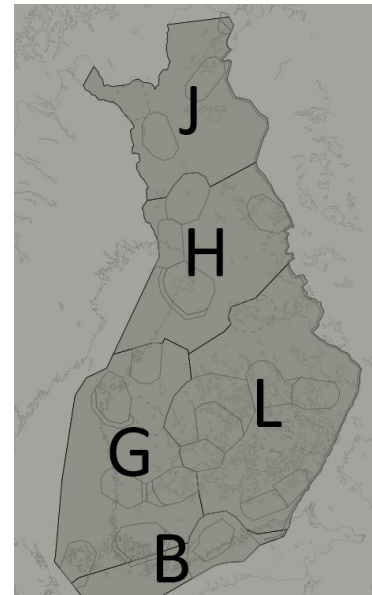
ATIS and voice communications

When signing in with IVAC2, as a minimum you must enable your voice communication to allow pilots to contact you. Do it by by clicking ATIS in the top menu and save the ATIS by clicking SAVE.

To set up an ATIS, fill out the ATIS window and click SAVE. Note that a detailed ATIS is only available for units where an ATIS is available in real life, e.g. only aerodrome and approach units.


The ATIS window contains:

- AIRPORT – select the correct airport ICAO designator from the list
- ATIS – your current ATIS information identification letter
- TYPE – the type of your ATIS (usually ARR/DEP)
- TA – transition altitude (automatic)
- TRL – transition level (automatic)
- APPROACH – expected approach type
- RWY – active runways in use for arrival and departure
- CONDITION – condition of the runway, marked as WET or DAMP (optional)
- RVR – runway visibility range (optional)
- OPS TEXT – additional information by operator
- PREVIEW – final preview of your ATIS

After saving your ATIS, check that your voice is enabled by clicking VOICE in the top menu. The opened window should have a green background (as shown below).
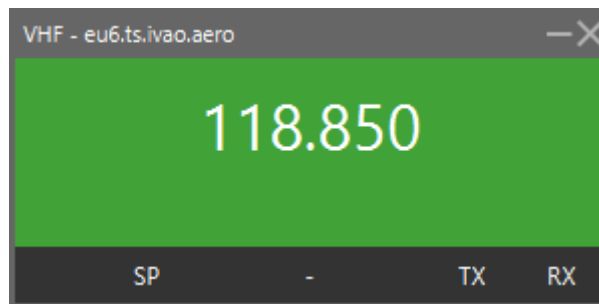
If the VHF is disabled, double click the frequency to retry a connection:
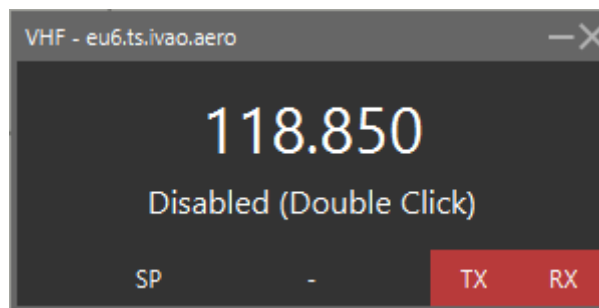
- TX – colored green if transmitting on frequency
- RX – colored green if receiving transmissions on frequency

Double click RX to see who is online and who is transmitting on your frequency.

Flight lists

Flight lists are used to get an overview of flights for planning purposes. All flight lists are accessed by clicking FLTLIST in the top menu. The following lists are available:

Sector list

The sector list shows all traffic currently assumed by you. It is opened by clicking the SL button.

Sector inbound list

The sector inbound list shows all flights that are going to arrive in your sector next, where you are set as the next ATC sector. The list is opened by clicking the SIL button.

Departure list

The departure list shows departing flights from one or several aerodromes, or from a specific runway. By clicking the DEP button, a filter window will open. Type in a departure aerodrome to select which flights should be shown on the list. It is possible to show departures for many aerodromes at once, by typing ''EF'' in the ADEP field. This will show all departures within Finland FIR. (except ENKR)

Arrival list

The arrival list works in the same manner as the departure list, but for arriving traffic. It is opened by clicking the ARR button. Example:

Holding list

The holding list shows all aircraft assigned to airborne holdings. When instructing an aircraft to hold, first set the holding fix as the cleared waypoint in the AHDG field in the label. Then click the callsign of the label and select HOLD. You can now see the aircraft in the holding list. A dropdown menu will appear, containing all the points where aircraft are presently instructed to hold. Select a point and click OK to open the holding list.

When an aircraft is instructed to leave a holding, click the callsign and click XHOLD.