



## TopSky – ATC

### FDP Overview

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## Overview of TopSky-ATC functions

## Flight Data Processing function

## Flight Plan Management

## Error Prevention

## Questions

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## Surveillance Data Function

- Civil radars: primary + SSR Mode A/C/S
- Other surveillance sources: ADS-B, WAM, ADS/CPDLC

## Flight Data Function – more details in the later slides

## Safety Nets and Monitoring Function

- Radar Alerts (7500, 7600, 7700, Mil, SPI, ACAS Resolution Advisory), STCA, MSAW, AFDA
- MTCD, DAIW/APW, AIW, RAM, CLAM, RVSM monitoring, DUPE, SSR Code miss-match warning, callsign/ACID miss-match warning
- Automatic track to flight plan correlation

## Human Machine Interface Function

- Multiple Air Situation displays with graphical tools
- On-line Map management
- Flight Lists
- Inter-sector transfer support
- Inter-FIR exchange of flight plan support
- Air Traffic Flow Management
- Operational Supervisor Functions

## Monitoring and Control Function

## Recording and Playback Function

- Continuous (24/7) process
- Automatically once daily plus manually if required
- Replay (passive or Interactive)
- Output to video

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# TopSky – ATC Flight Data Processing Function

## Flight Plan Creation

- Messages received via AMHS/AFTN line
- Repetitive flight from RPL database
- Stereo flight plan (routinely used route identified by a coded name e.g. ALPHA2)
- Splitting of an existing flight plan
- Flight data entered manually by the operator (Full or Abbreviated)

## SSR Code Management

- Offline defined groups (domestic, departure, military, other) of SSR codes for automatic allocation

## SID/STAR Management

- Offline defined associated to a specific runway for an airport.
- Automatically allocated and dynamically updated upon change of route or runway.
- Manual allocation possible (operator alerted upon route/runway changes)

## Profile Computation

- From the list of points, profile calculation predicts the flight level and ETO for each point based on CFL/RFL, TAS and aircraft performance.

## Electronic Flight Strips

- Arrival List
- Departure List
- Incoming List
- Sector Inbound List
- Active List,
- Non-Active List
- FIR Inbound List
- FIR Exit List
- Holding List
- Tower Strip Bay Window

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# TopSky – ATC Flight Data Processing Function (cont.)

## Arrival Sequencing

- Flights with assigned arrival runway are sequenced in order of ETA
- Delay added if necessary to achieve required arrival spacing
- Flight promotion

## Paper Flight Strips

- Automatic printing based on off-line defined timer events
- Manual printing is possible (including blank strips)
- Strip formats off-line defined (for departure, arrival, domestic, over flight and template)

## FPL Tracks

- A representation of the position of an aircraft not in surveillance sensor coverage based on information from the associated flight plan

## Online Sectorisation

- Available at the Operational Supervisor position
- Read-only at other positions

## Aeronautical Information

- METAR/SPECI
- Automatic/manual QNH update for up to 16 QNH areas
- NOTAM, BIRDTAM, SNOWTAM, ASHTAM, FCST and meteorological data (TAF, SIGMET)
- GRIB

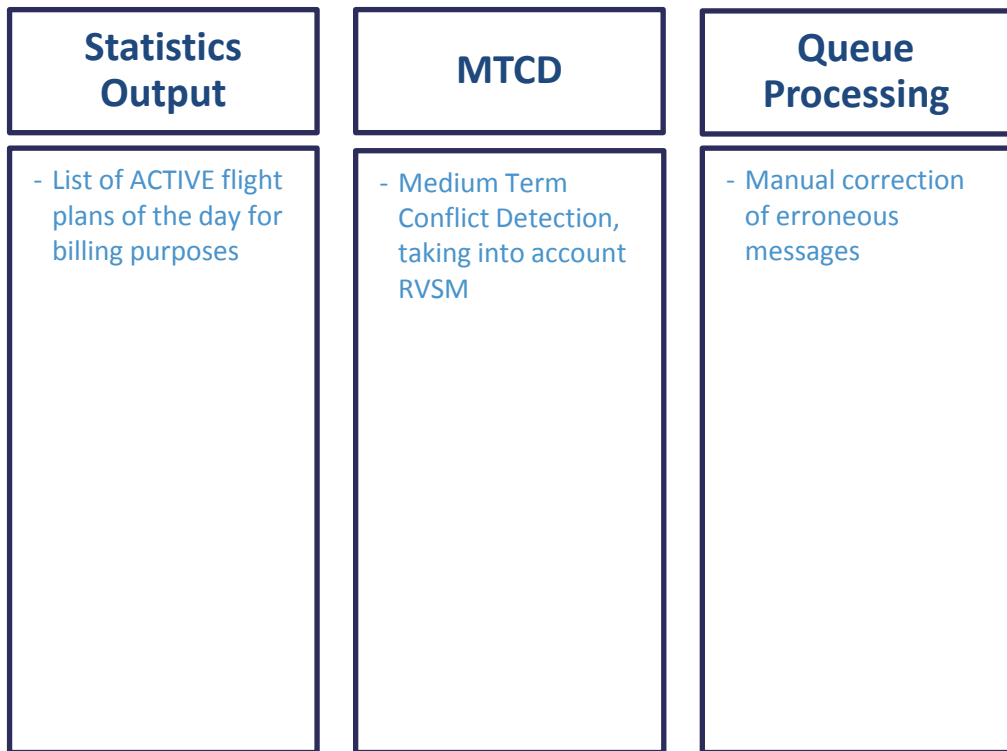
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# TopSky – ATC Flight Data Processing Function (cont.)

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## Upon Flight Plan creation and modification, following actions are performed

- Semantic checks for input data
- Check against the Grounded Registrations list (if configured)
- Syntactic checks of the input data (for received messages only)
  - Syntax conforms to FPL2012 or prior
- Route field validity check
- RNP compatibility check for Route, Equipment and Other Info (PBN item) fields
- Extraction of the route concerned with the FIR/UIR
- Computation of the profile, estimate times, associated route, crossed sectors
- Determining flight plan attributes such as DEP/ARR/overflight/Domestic, Military, SSR code family, IFR/VFR/MIXT, RNP certification status

## If an error is detected, the source information is stored in a message queue for manual processing

## Flight plan fields are modifiable according to flight plan states

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## Flight Data Processing function

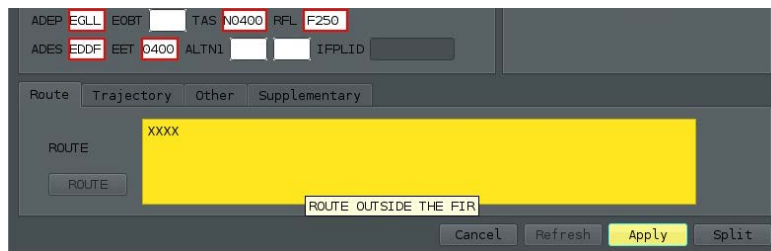
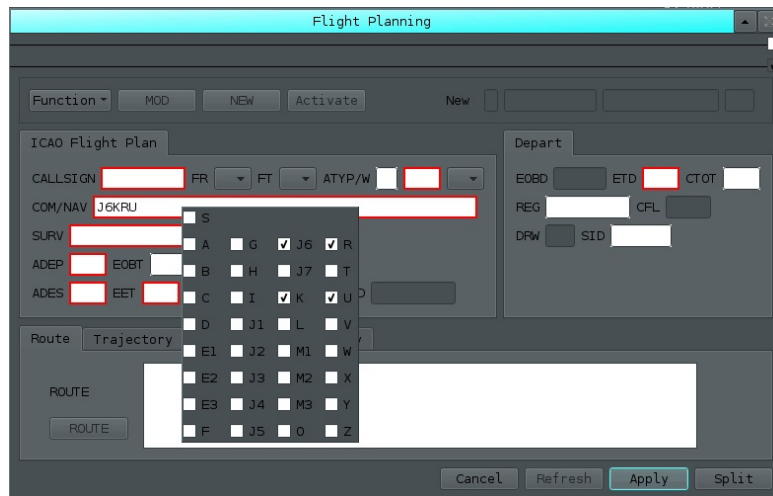
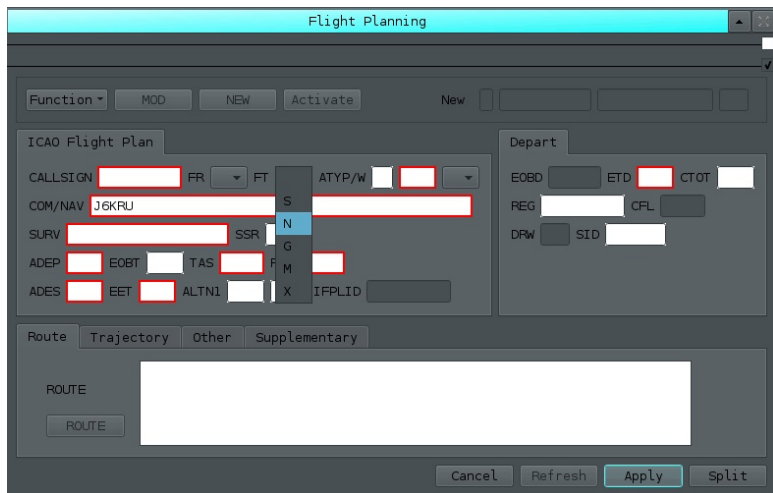
## Flight Plan Management

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## Error prevention methods



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## Any Questions?

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## Thank You !

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