



Runway Selection @ Brussels Airport

1 Preferential Runway System



Preferential Runway System

Monday to Friday 6h-23h
Saturday 6h-16h
Sunday 16h-23h



Saturday 16-23h
Sunday 6h-16h



Monday to Friday 23h-6h



FR-SA

SA-SU

SU-MO



Preferential Runway System : best equipped runways

25R
↔ 3638m
↕ 45m

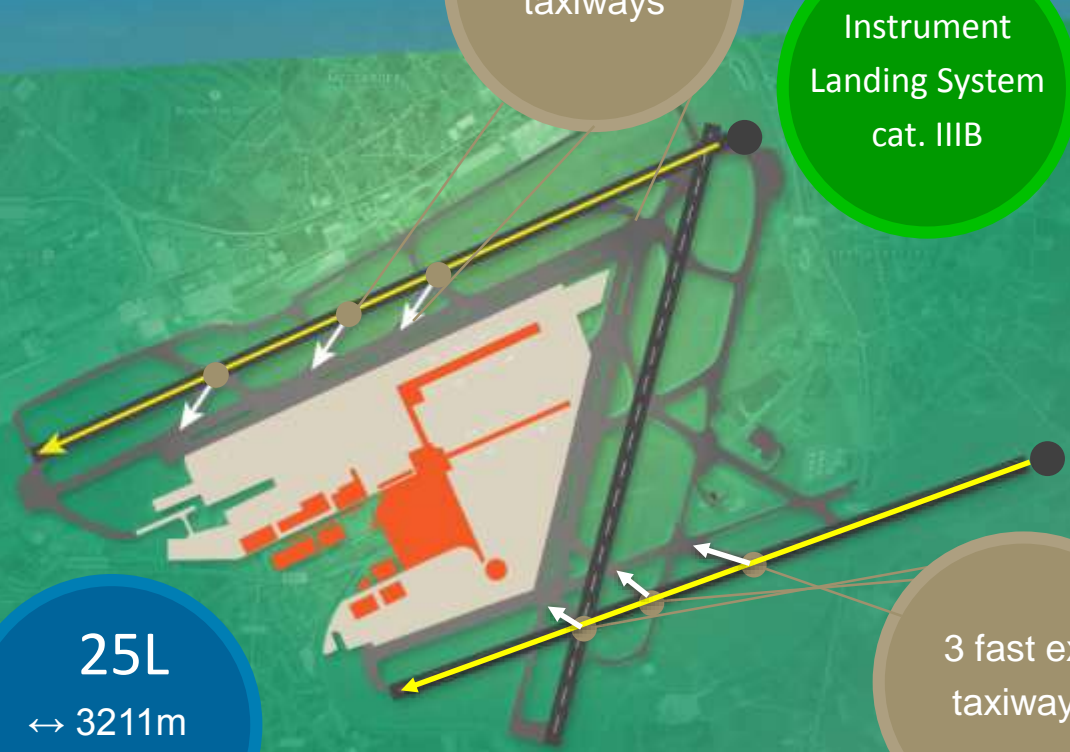
25L
↔ 3211m
↕ 45m

3 fast exit
taxiways

Instrument
Landing System
cat. IIIB

Instrument
Landing System
cat. IIIB

3 fast exit
taxiways



Preferential Runway System : best equipped runways

Instrument
Landing System
cat. I

Absence of fast
exit taxiway

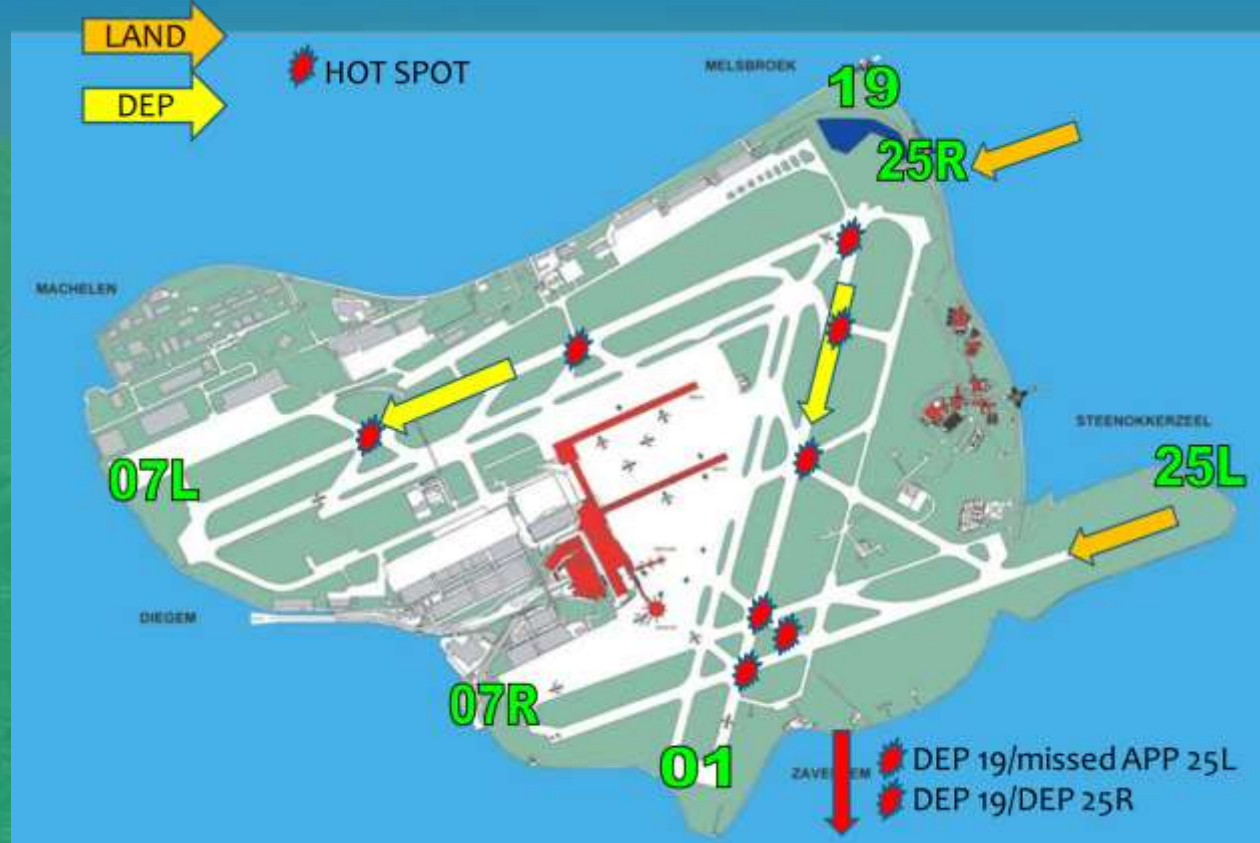


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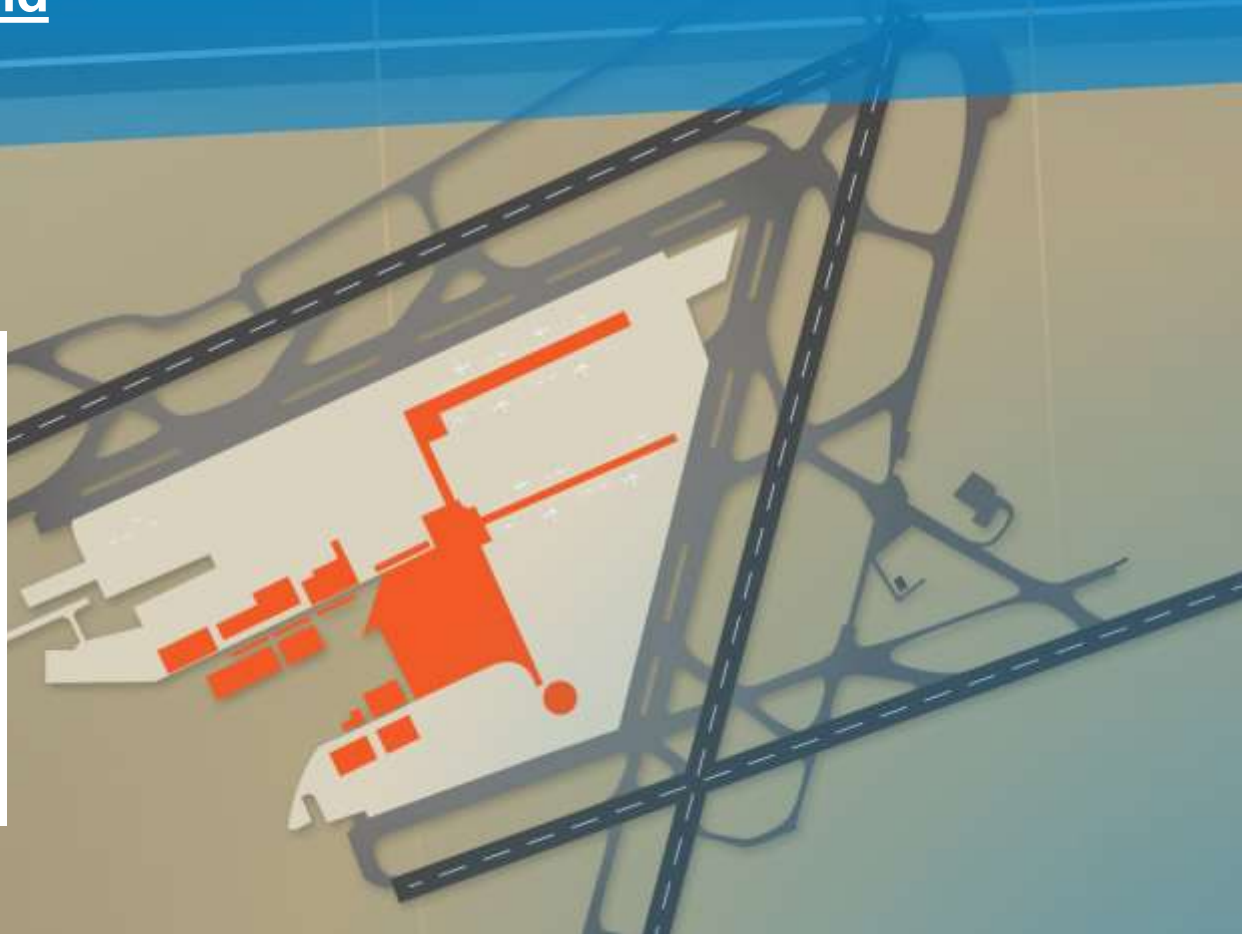
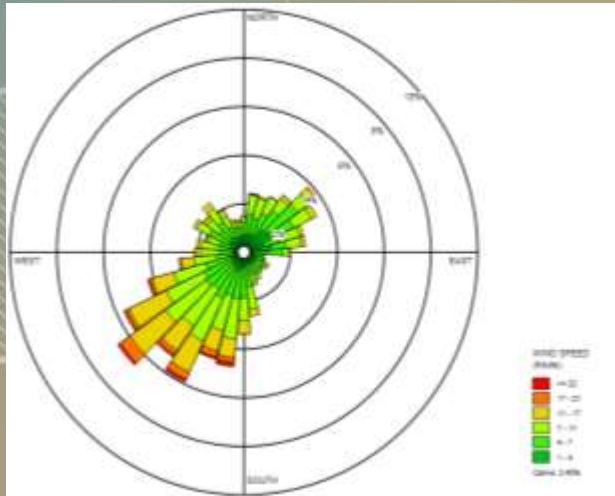
↔ 2987m

↕ 50m

Preferential Runway System : Crossing runway operations



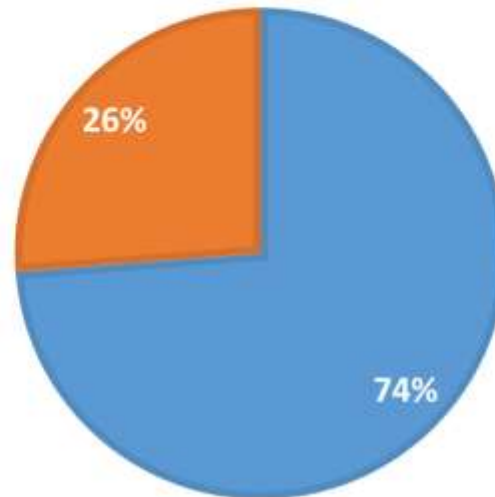
Preferential Runway System : facing the prevailing wind



Preferential Runway System : Use in 2016

2016

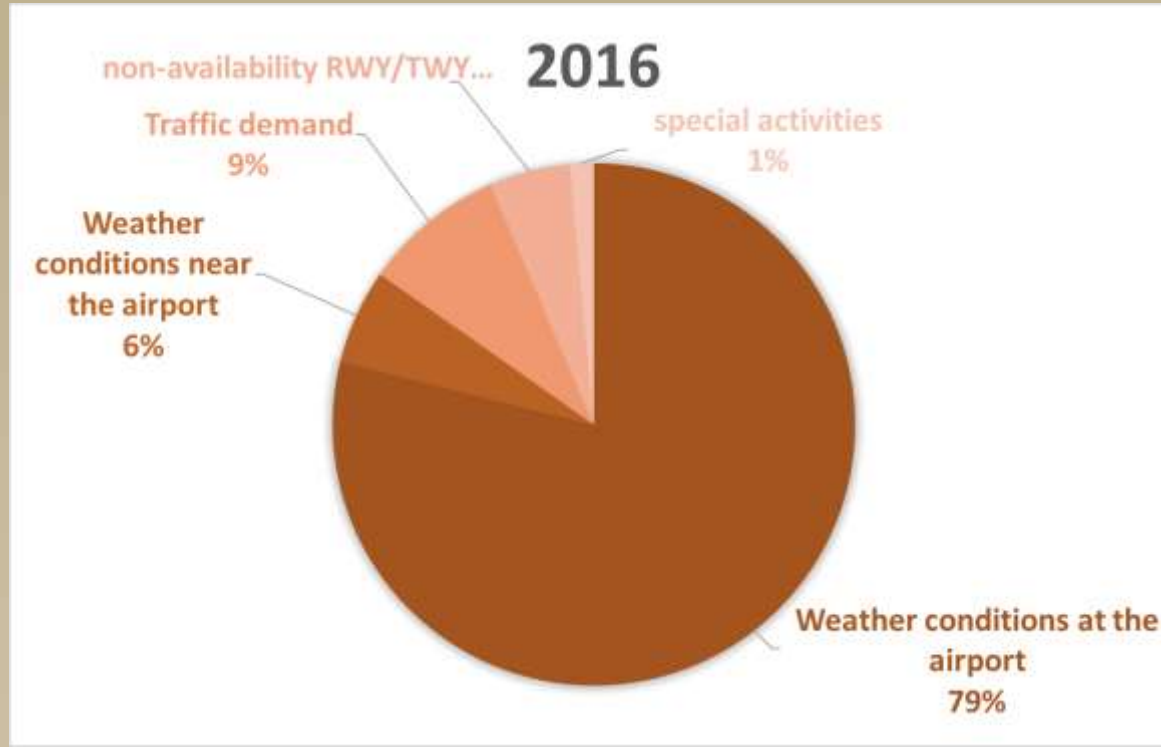
■ % of time PRS ■ % of time alternative Runway use



Alternative Runway System :



Alternative Runway System : Reasons



Alternative Runway System : Limitations

2 fast exit
taxiways

07L

↔ 3638m

↕ 45m

07R

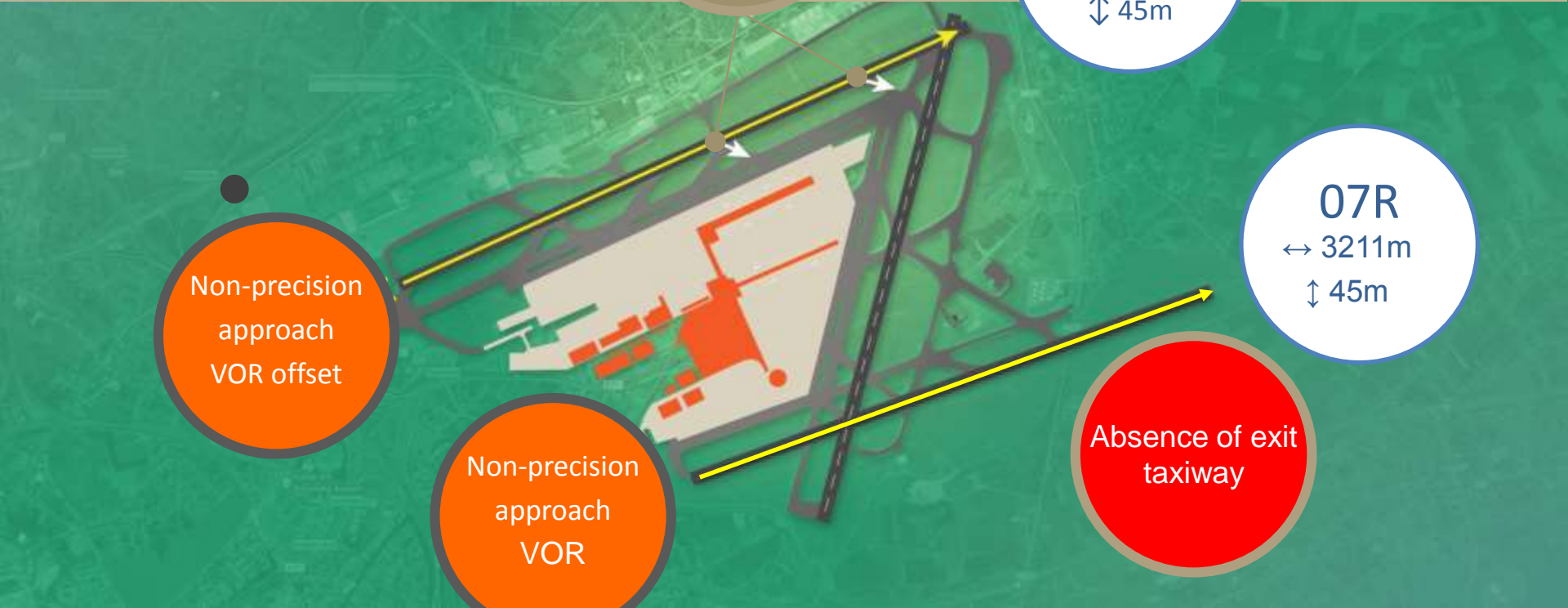
↔ 3211m

↕ 45m

Non-precision
approach
VOR offset

Non-precision
approach
VOR

Absence of exit
taxiway



Alternative Runway System : Limitations

01

↔ 2987m

↓ 50m

2 fast exit
taxiways



ILS cat. I
Guidage
horizontal & vertical

Alternative Runway System : Limitations

- ✈ **Best capacity is parallel operations RWY 25R/25L**
 - Parallel and independent RWY operations
 - ILS cat IIIB on both RWYs

- ✈ **Next best, and used in N/E wind, is RWY 07/01**
 - Reduced capacity due to crossing RWYs
 - 1 landing RWY only
 - ILS cat. I

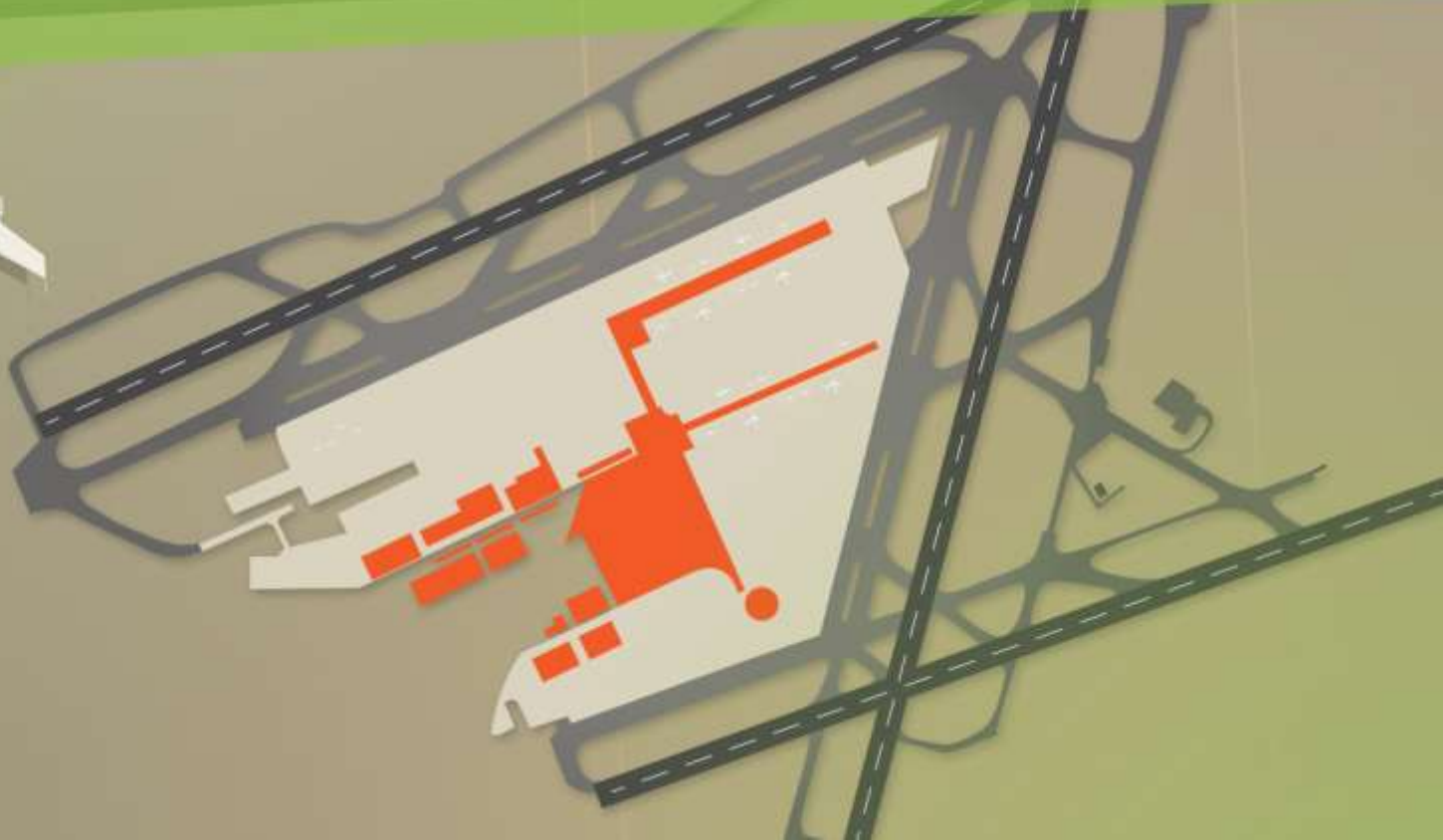
- ✈ **Strong easterly wind, RWY 07L/R**
 - Day: 07R departure and 07L arrival
 - Night: 07L departure and 07R arrival (VOR/DME in RWY axis)
 - > Severe capacity reduction due to exit TWYs

- ✈ **Strong southerly wind, RWY 19 single**
 - ILS cat. I. 1 landing and take-off RWY



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Runway Selection



Runway selection

What is a suitable runway?

✈ **Suitable runway: runway suiting**

Not only:

- PRS and associated wind thresholds

but also :

- meteorological conditions (forecast and actual: vis.,CB's, cloudbase)
- available length and condition of the runway (braking action, contamination, reduced lengths,...)
- approach and landing aids available (ILS, VOR, PAPI's, stopbars,...)
- traffic (demand, complexity, safety, airport constraints (de-icing))

Runway selection

Safety is paramount

✈ **A Tower supervisor shall**

- avoid operations above wind thresholds when another suitable runway configuration is available
- avoid sudden runway changes
- avoid missed approaches

Runway selection

Why do we need to plan and anticipate a runway change?

✈ **Manage complexity in the air :**

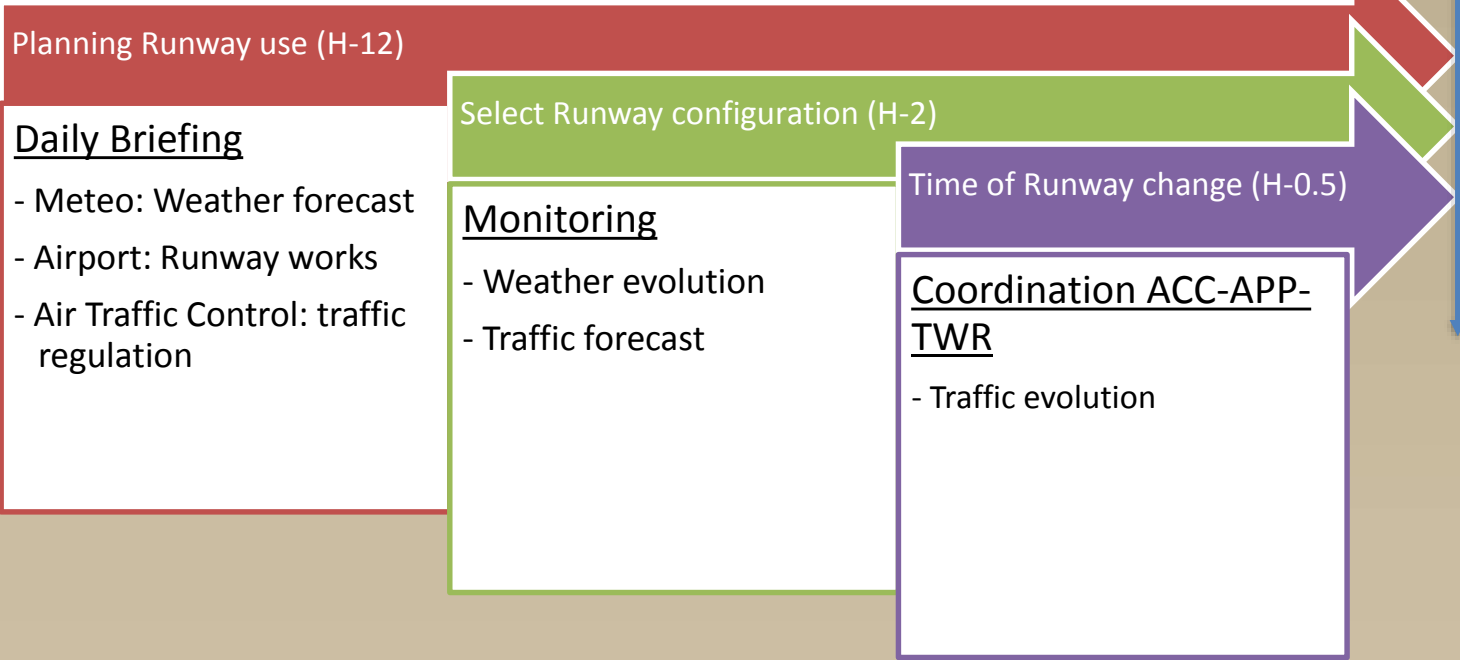
- capacity reduction
 - from 2 independant runways to crossing runways (-30% capacity)
 - Traffic regulation to avoid congestion in the airspace
- New departures and arrival routes
 - Reorientation of air traffic
 - New checks for pilot prior to landing

✈ **Manage complexity on the ground :**

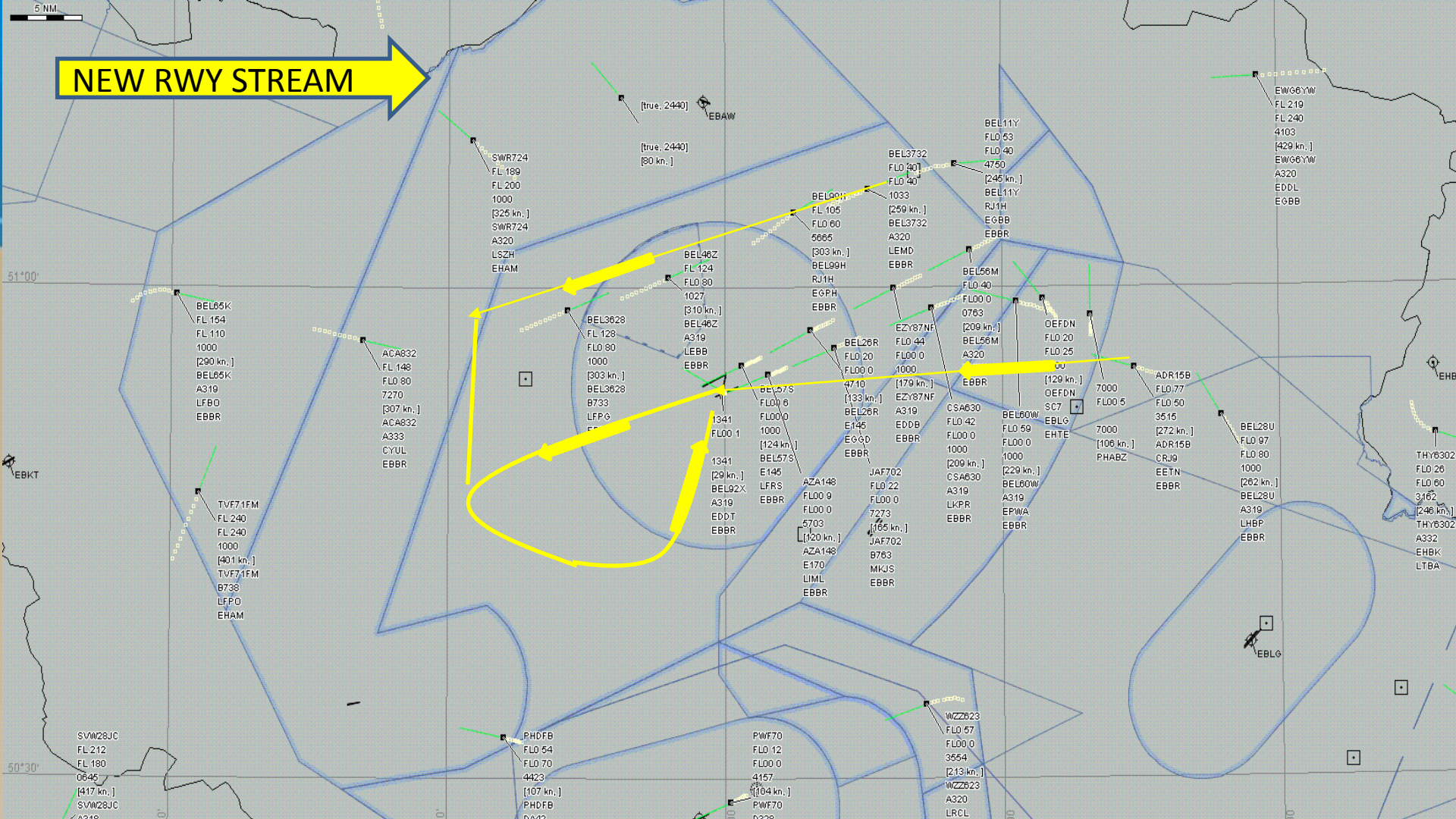
- New departures and arrival route
 - Runway inspection
 - Reorientation of air traffic
 - New checks for pilots prior to take-off

Runway selection

Steps for decision-making



NEW RWY STREAM



Runway selection

Runway change and traffic flows in the air and on the ground



Runway selection

Wind varies in direction and in velocity

