Cockpit-Technologie im A380

SFO A-380 Pascal Wegmann MSc
RNAV – Procedures & Design
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Lufthansa

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Overview

NAVIGATION

- The navigation system can be split into four main groups:
  - Air Data and Inertial Reference System (ADIRS)
  - Radio Navigation
  - Surveillance System (SURV)
  - Airport Navigation / BTV (Brake To Vacate)

ADIRS

- Each **ADIRU** is associated to three air data probes:
  - A Multi Function Probe (MFP), that groups one pitot probe, Total Air Temperature (TAT) and Angle of Attack (AOA) measurements,
  - A Side Slip Angle probe (SSA) and
  - A LH and a RH Integrated Static Probes (ISP).
- Separate static probes and a standby pitot probe supply the emergency navigation system (ISIS). *(see picture 1)* Therefore, the aircraft has four fully segregated sources of air data parameters.

ISIS System

Enables the display of the first item of the SFD menu. The content of the menu includes:
 to adjust and display the two speed bugs,
 to adjust and display the altimeter bug,
 to display or remove the altitude in meters,
 to switch between hPa and In Hg,
 to display aircraft position, heading and track,
 to modify and display a FIX.

Enables the display of the first item of the SFD menu. The content of the menu includes:
to insert a waypoint in the waypoint list,
to insert a FIX at the end of the waypoint list,
to edit and modify a waypoint or a FIX,
 to delete a waypoint or a FIX from the waypoint list.

Picture 1

Raidio Navigation FLS approach

- The Multi Mode Receiver (MMR) system provides GPS position to the ADIRS in order to align the IR part.
 - The IR part uses also the GPS position to compute the GP/IRS position.

FLS approach capability A380

- This new design allows conducting existing non precition approaches (VOR, VOR/DME, NDB, NDB/DME, GPS) in the same manner as Precision Approach (ILS/GLS) with similar display, guidance & warnings.
- This function is autonomous and does not require any additional information from the ground. (see picture 2)

1) Pseudo LOC scale & index
2) Pseudo G/S scale & index
3) Course pointer
4) FLS beam definition
   Anchor Point identification
   Slope
   Distance to RWY threshold
5) Approach capability
6) AP/FD guidance modes

Picture 2

Surveillance System

- The WXR has several modes, that enable the flight crew to analyze the weather along the vertical and horizontal axis:
  - The elevation mode,
  - The tilt mode,
  - The azimuth mode,
  - The gain mode.
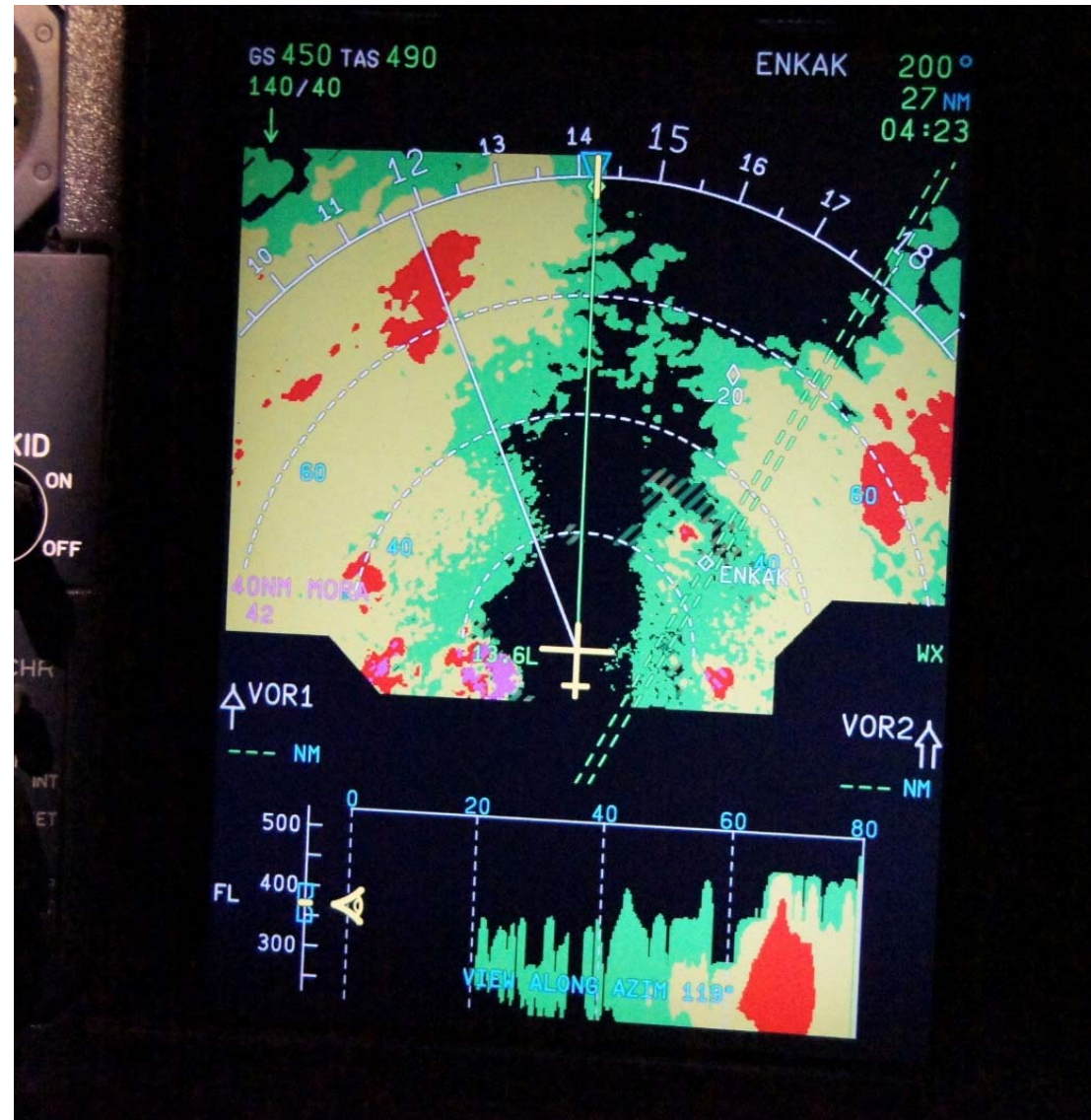
# Airport Navigation / BTV (Brake To Vacate)

The Onboard Airport Navigation System (OANS)
provides the flight crew with an
airport map on its onside ND screen.

The OANS runs on a single computer. It receives
data from:

o FMS (selected runways, origin, alternate and
destination airports and GPS PRIMARY status)

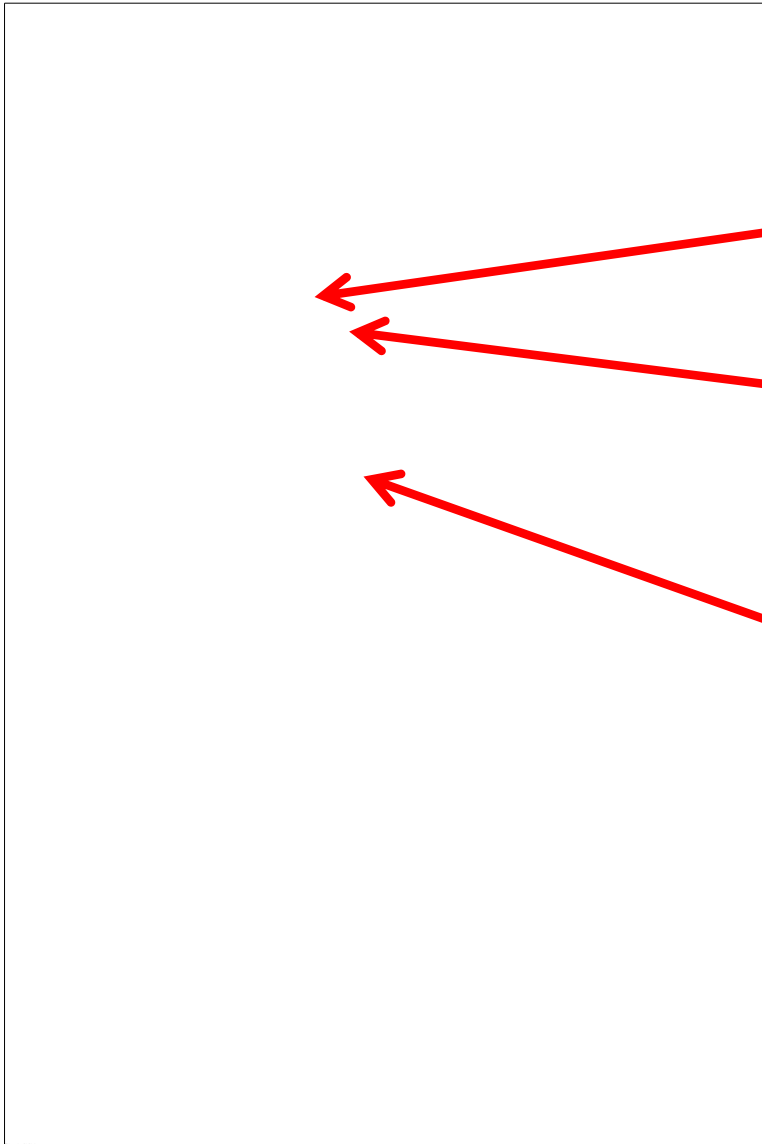• ADIRS (hybridized A/C position after combination
with MMR data)

Flags or crosses can be set according NOTAM information.
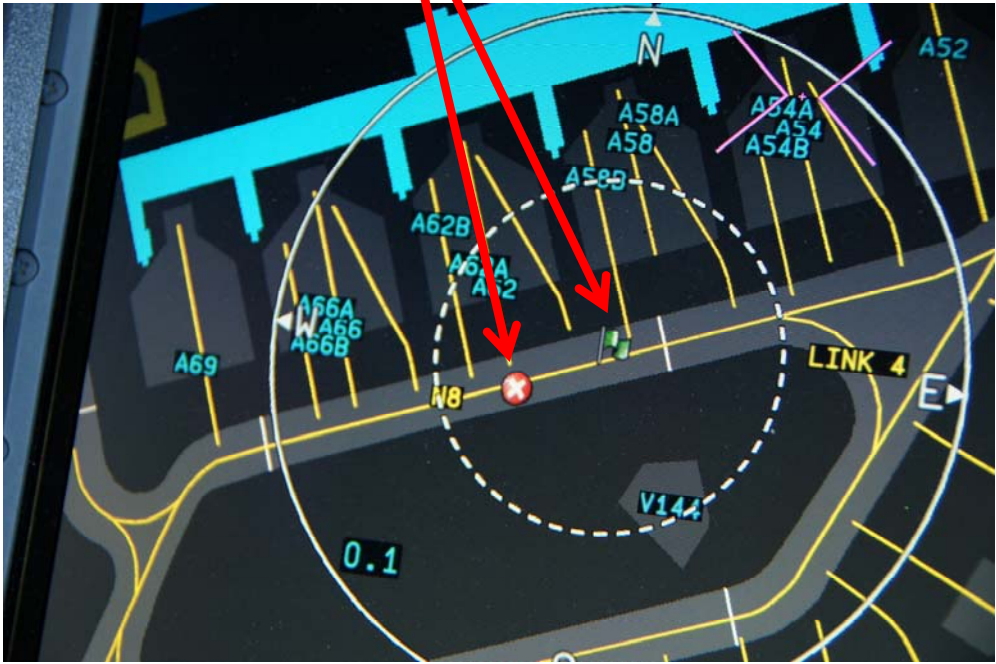
BTV (Brake To Vacate)

The time to cool down the brakes is calculated.

You can see how long the aircraft will be on the runway.

According to the actual weight the system showes the landing distance wet and dry.

Thank you for your attention

Pascal Wegmann MSc
RNAV – Procedures & Design
FRA OZ/G-5
60546 Frankfurt/Main
+49 6122 9339744
pascal.wegmann@dlh.de

A STAR ALLIANCE MEMBER

Lufthansa