

## RNAV STAR:s at Umeå

### GENERAL

Pilots are requested to plan their descent to perform a continuous descent approach (CDA) from at least FL100. Specified minimum level at waypoints must be adhered to unless specifically cancelled by ATC.

When descending on initial approach, noise reductions should be achieved using Low Power, Low Drag operating procedures (LP/LD) by maintaining a "clean" aircraft configuration until the final stage of the approach, provided this is consistent with safe operation of the aircraft.

### APPROVED USERS, EQUIPMENT AND OPERATIONS

Operators are required to have a P-RNAV Approval by their authority.

Operators receiving clearance via RNAV STAR and are unable flying P-RNAV, shall inform ATC by using phraseology "UNABLE RNAV STAR". ATC will then provide vectors or issue clearance to a navigation aid in Umeå TMA.

### POSITION UPDATE

P-RNAV STAR are based on GNSS for position update. Note that DME/DME back-up is not available in this area.

### RNAV EQUIPMENT FAILURE

If the airborne RNAV equipment fails or if the GNSS position update is malfunctioning, ATC shall be informed as soon as practicable. ATC will then provide vectors or issue clearance to a navigation aid in Umeå TMA.

### RNAV STAR DESCRIPTION

For each RNAV STAR, there is a description as a list of waypoints in sequence. If there is a speed limit and/or altitude restriction, this will be notified on chart and in the RNAV STAR description.

There is also a description of the database coding to be used by navdatabase suppliers only. The coding is according to ARINC 424 standard.

Note: In order to adapt RNAV STAR coding to certain FMS equipment, a minimum altitude restriction is added at some waypoints where speed restriction is prescribed. These altitudes are marked with an asterisk (\*).

### RNAV STAR CHART

Each RNAV STAR includes information about distance to threshold "DTG XX NM" (DTG = Distance To Go) at certain waypoints in order to facilitate a continuous descent approach (CDA).

If there is an altitude restriction, this is depicted in the chart as follows:

FL100 = At or above FL100

5000 = At or above 5000 ft

### WAYPOINT LIST

A separate list of co-ordinates in WGS-84 for all waypoints used at Umeå is provided.