



**DFS** Deutsche Flugsicherung

# BUNDESREPUBLIK DEUTSCHLAND FEDERAL REPUBLIC OF GERMANY

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## AIC IFR

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### **Continuous Descent Operations (CDO) Aeronautical information for arrivals to**

**Hamburg Airport (EDDH)  
Braunschweig-Wolfsburg Airport (EDVE)  
Frankfurt Main Airport (EDDF)  
Nürnberg Airport (EDDN)**

#### **Continuous Descent Operations (CDO) in general**

##### **1. Introduction**

Continuous Descent Operations (CDO) should lead to greater noise abatement and fuel saving. DFS Deutsche Flugsicherung GmbH, the responsible air navigation service provider for operations at airports, creates the required procedures. For the legal background of this procedure, please refer to the German AIP and ICAO Doc 9931 (CDO Manual). In addition:

- Pilots are requested to report the ATIS received when contacting the arrival sector in order to reduce frequency congestion.
- Higher rate or amount of distance-to-go information transmitted by the air traffic controller will be applied.
- Higher rate or number of clearances for Continuous Descent Operations will be applied.

##### **2. Explanation**

Continuous Descent Operations (CDO) is an aircraft operating technique aided by appropriate airspace and procedure design and appropriate ATC clearances enabling the execution of a flight profile optimised to the operating capability of the aircraft, with low engine thrust settings and, where possible, a low drag configuration, thereby reducing fuel burn and emissions during descent. The optimum vertical profile takes the form of a continuously descending path, with a minimum of level flight segments only as needed to decelerate and configure the aircraft or to establish on a landing guidance system (e.g. ILS).

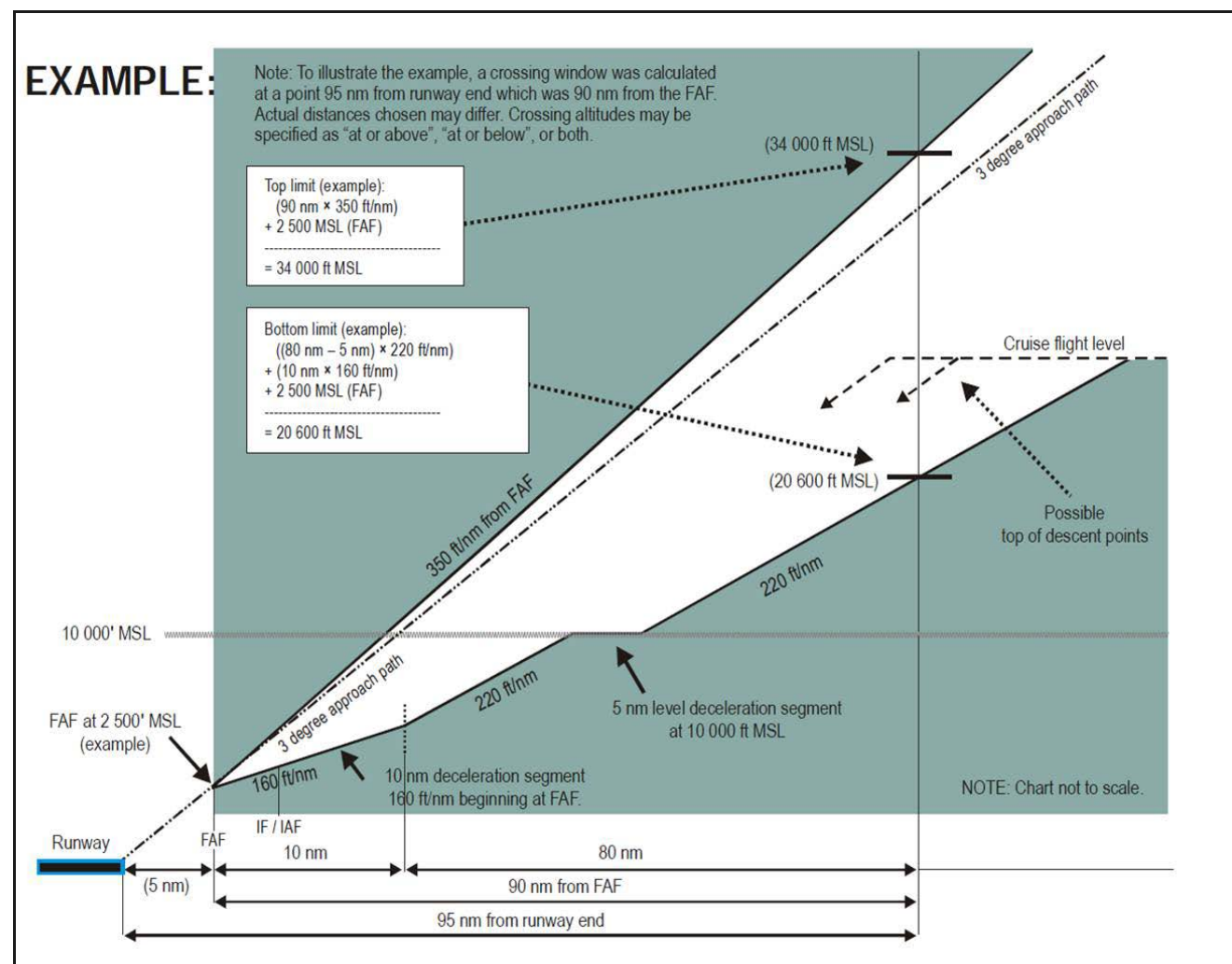
The optimum vertical path angle will vary depending on the type of aircraft, its actual weight, the wind, air temperature, atmospheric pressure, icing conditions and other dynamic considerations. A CDO can be flown with or without the support of a computer-generated vertical flight path (i.e. the vertical navigation (VNAV) function of the flight management system (FMS)) and with or without a fixed lateral path. However, the maximum benefit for an individual flight is achieved by keeping the aircraft as high as possible until it reaches the optimum descent point. This is most readily determined by the onboard FMS.

##### **3. Procedures**

Aircraft will be radar-vectorised by approach control and cleared for a continuous descent to the intermediate approach level in such a way that after reaching this intermediate approach level on the localiser course, about one NM will be left for intercepting the glide path in level flight. The purpose of this intermediate approach segment is to reduce speed. It is assumed that the continuous descent will be performed at a rate of 300 ft/NM (descent angle approx. 3°) down to the cleared level.

If, for certain reasons (such as separation, airspace structure, obstacles), it is necessary to initially assign levels above the intermediate approach level, these restrictions shall, as far as possible, be cancelled early enough to avoid an interruption of the continuous descent at a rate of 300 ft/NM.

In the case of significant changes to the planned distance to touchdown as well as noticeable discrepancies of flight level and remaining flight time, details about the distance to touchdown will be transmitted to the pilot together with the clearance for descent. This should enable the pilot to correct the rate of descent as required.



#### 4. Phraseology

The following phraseology will be used in radiotelephony:

- **DESCEND TO REACH (level) AT (significant point) AT PILOT'S DISCRETION**
- **WHEN READY DESCEND TO REACH (level) AT (significant point)**
- **WHEN READY DESCEND TO REACH (level) AT (significant point) COMMENCE CDO**
- **WHEN READY DESCEND (level) TRACK MILES (NM from touchdown) COMMENCE CDO**
- **DESCEND AT PILOT'S DISCRETION**
- (distance) **MILES TO FLY.**

#### 5. Review/evaluation

Regular feedback on CDO performance to all involved operational stakeholders is essential for the successful implementation and application of CDO.

Stakeholders are invited to send any feedback via e-mail to DFS Deutsche Flugsicherung GmbH ([cdo-feedback@dfs.de](mailto:cdo-feedback@dfs.de)).

**Continuous Descent Operations (CDO) on a tactical basis, aeronautical information for arrivals to Hamburg Airport (EDDH), Braunschweig-Wolfsburg (EDVE), Frankfurt Main (EDDF), Nürnberg (EDDN)**

### 1. Hamburg Airport (EDDH)

The introduction of CDO procedures at Hamburg Airport takes place on 12 December 2013.

Until 30 April 2014, the implementation is expected to be carried out on a tactical basis and known waypoints of STARs or transitions will be used.

Starting from the waypoints

- GIKOG
- EKERN
- MIC
- RAMAR
- BUMIL
- DIRBO
- AGATI

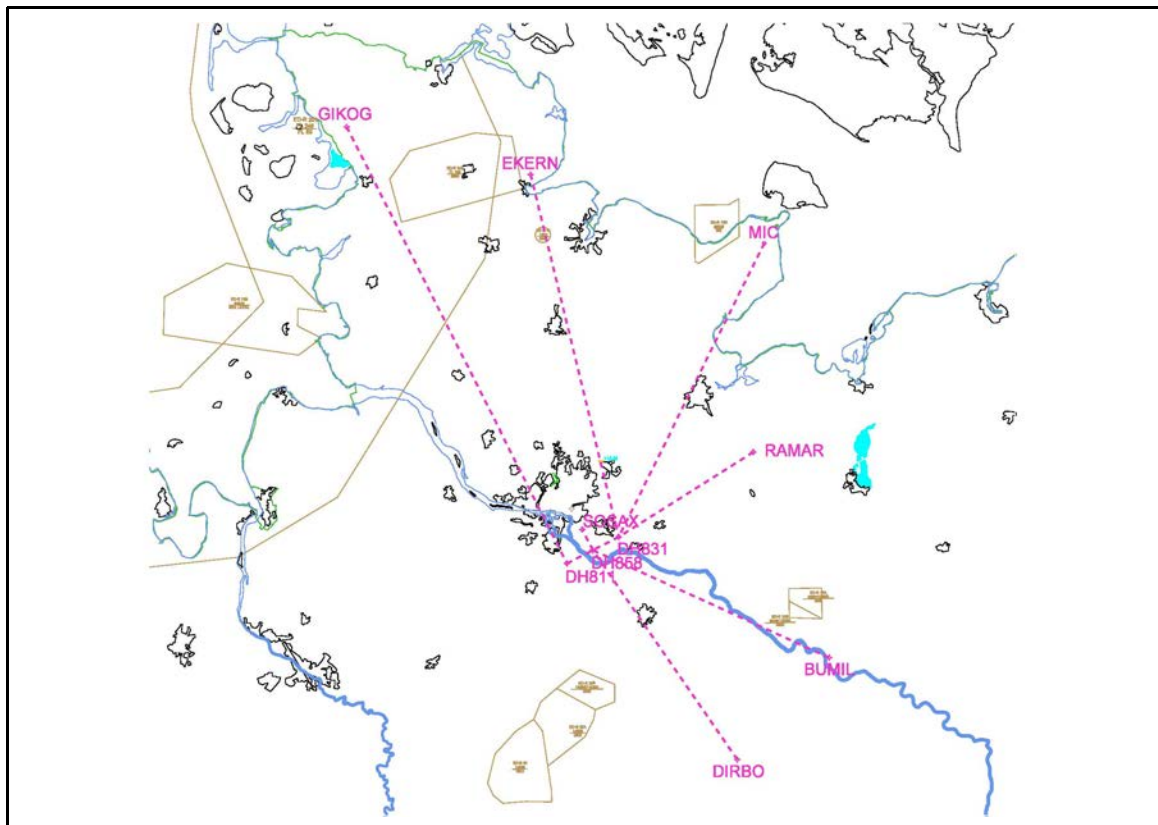
tactical clearances with CDO profiles to the appropriate points

- RWY 33: DH811, DH858, DH831
- RWY 05: DH213, DH257, DH233
- RWY 23: DH632, DH658, DH612
- RWY 15: DH432, DH458, DH412

may be expected.

It is planned to support the tactical CDO-procedures starting at 1 MAY 2014 by means of published CDO-Procedures (Transition and Profile).

### RWY 33:

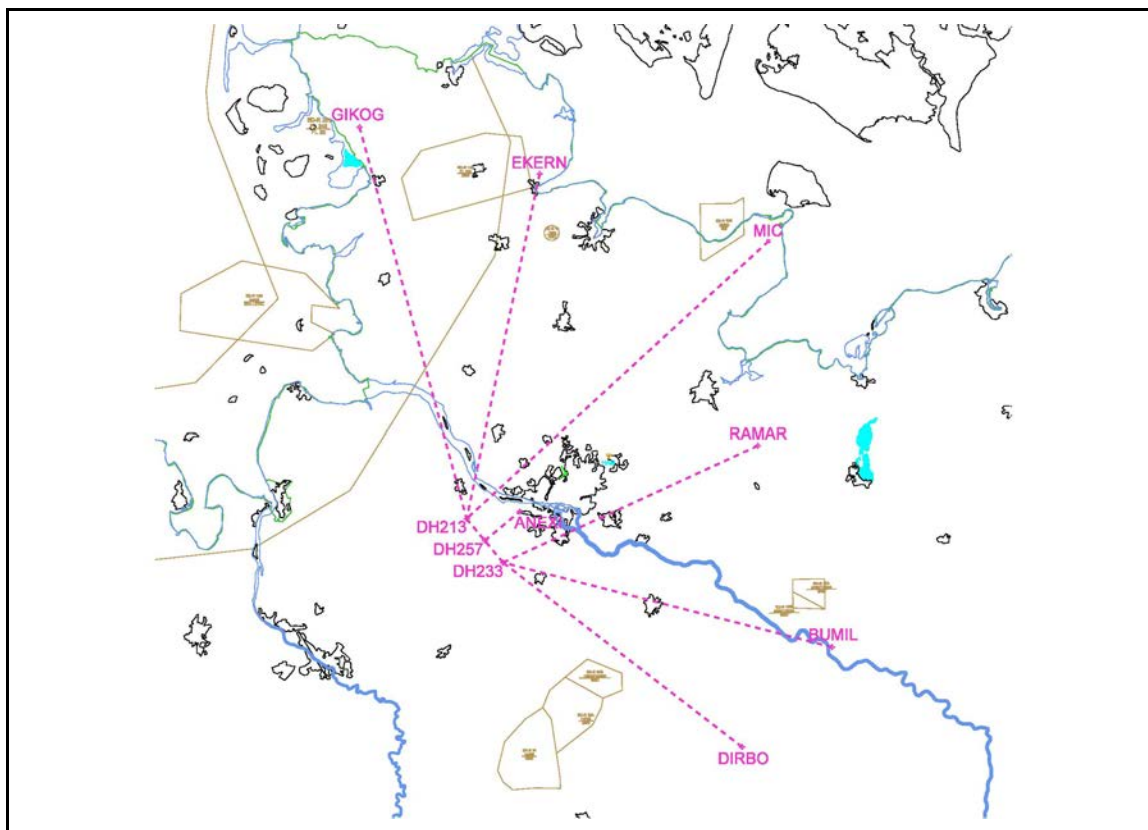


Legend: - - - - CDO profiles

Frequencies for ATIS report:

- 134.250 MHz
- 136.075 MHz

# RWY 05:

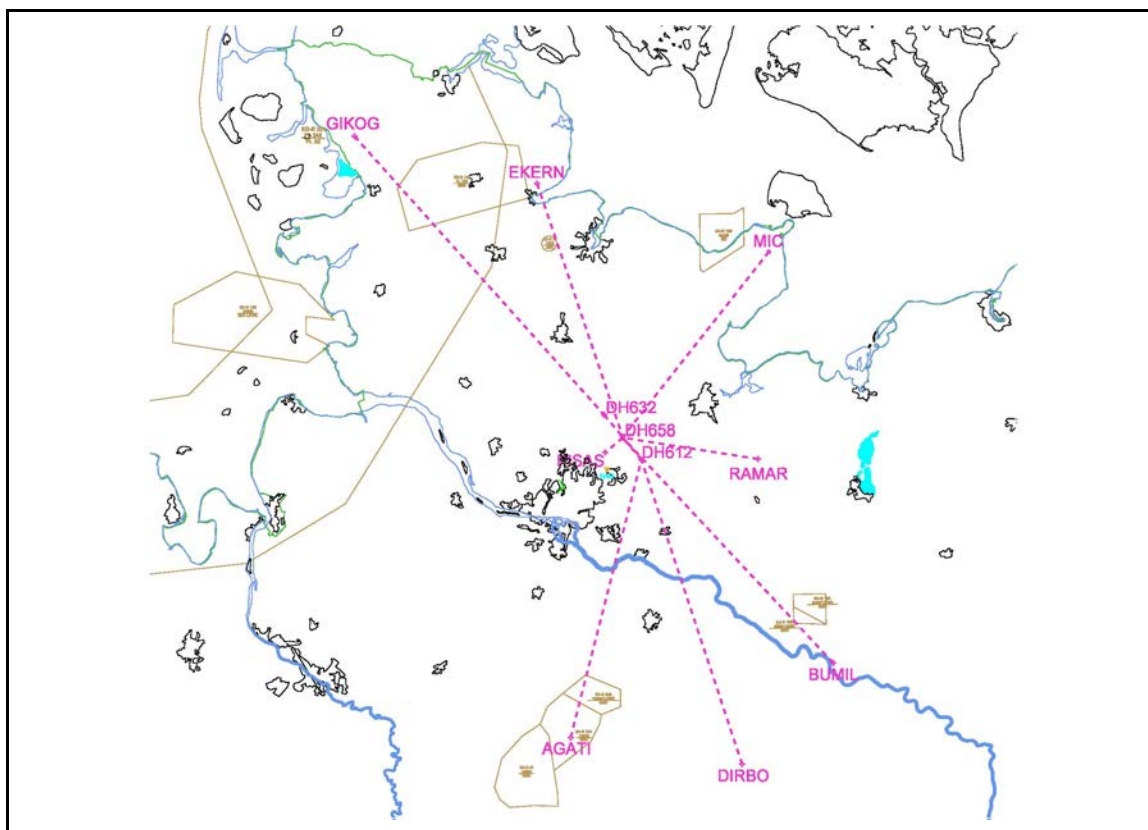


Legend: - - - CDO profiles

Frequencies for ATIS report:

- 134.250 MHz  
- 136.075 MHz

# RWY 23:

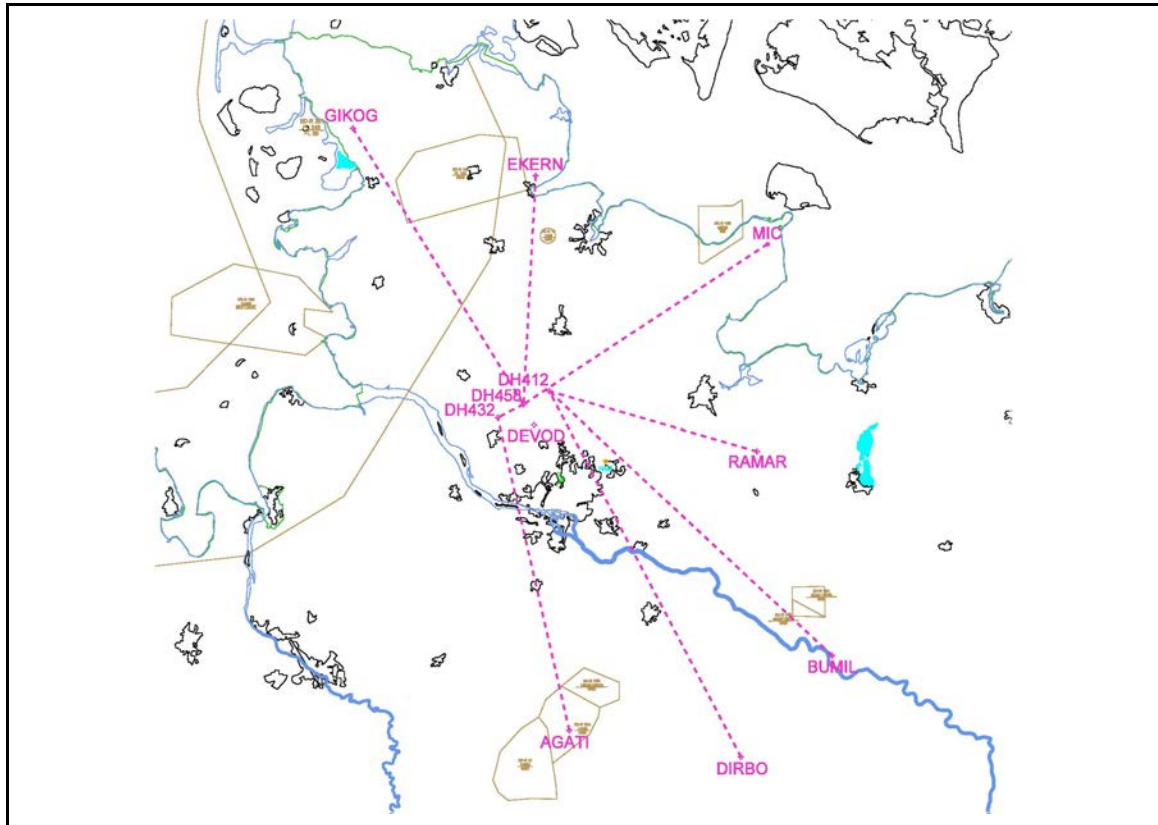


Legend: - - - CDO profiles

Frequencies for ATIS report:

- 134.250 MHz  
- 136.075 MHz

## RWY 15:



Legend: - - - - CDO profiles

Frequencies for ATIS report: - 134.250 MHz  
- 136.075 MHz

## 2. Braunschweig-Wolfsburg Airport (EDVE)

The introduction of CDO procedures at Braunschweig-Wolfsburg Airport takes place on 12 December 2013.

Until 30 April 2014, the implementation is expected to be carried out on a tactical basis and known waypoints of STARs or transitions will be used.

Starting from the waypoints

- WERRA
- PIROT
- ROBEG
- NIE
- BIBNU
- ABMAL
- BKD
- MAG
- LARET

tactical clearances with CDO profiles to the appropriate points

- RWY 08: BADIV, TIDMI, VE013
- RWY 26: KONUG, VELEB, RUMEM, VE028

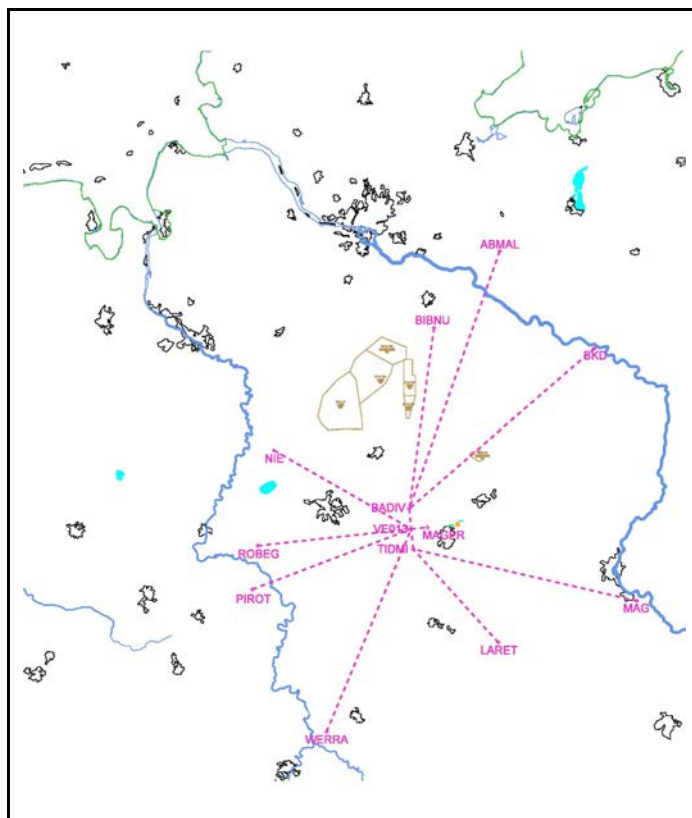
may be expected.

The waypoints BADIV, TIDMI, KONUG, VELEB and RUMEM are published in German AIP in ENR 4.4 on 12 DEC 2013.

It is planned to support the tactical CDO-procedures starting at 1 MAY 2014 by means of published CDO-Procedures (Transition and Profile).



**RWY 08:**

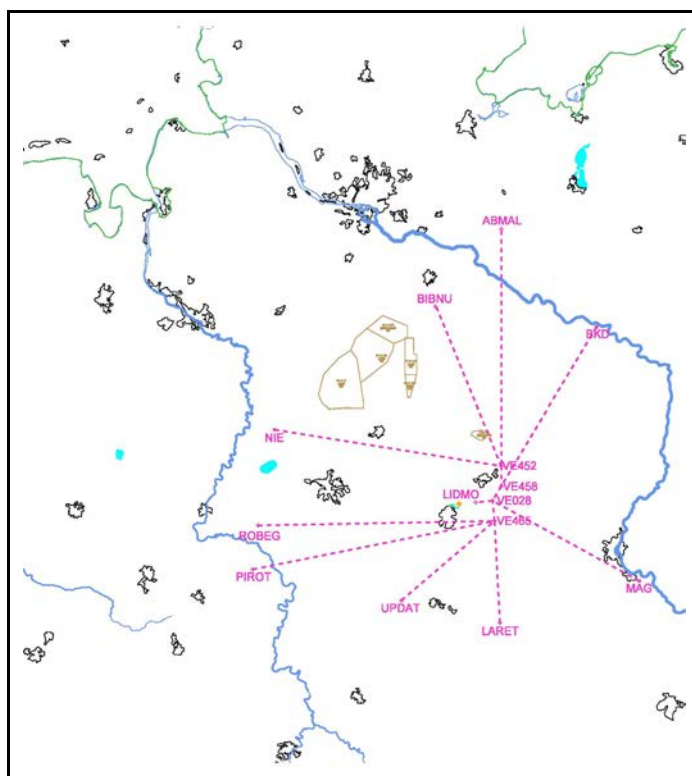


Legend: - - - - CDO profiles

Frequency for ATIS report:

131.325 MHz

**RWY 26:**



Legend: - - - - CDO profiles

Frequency for ATIS report:

131.325 MHz

### 3. Frankfurt Main Airport (EDDF)

The CDO trial at Frankfurt Main Airport started on 31 May 2012 and was successfully completed.

CDO will be assigned on a regular basis as of 17 October 2013 for arrivals to EDDF on the flight segment between passing the clearance limit

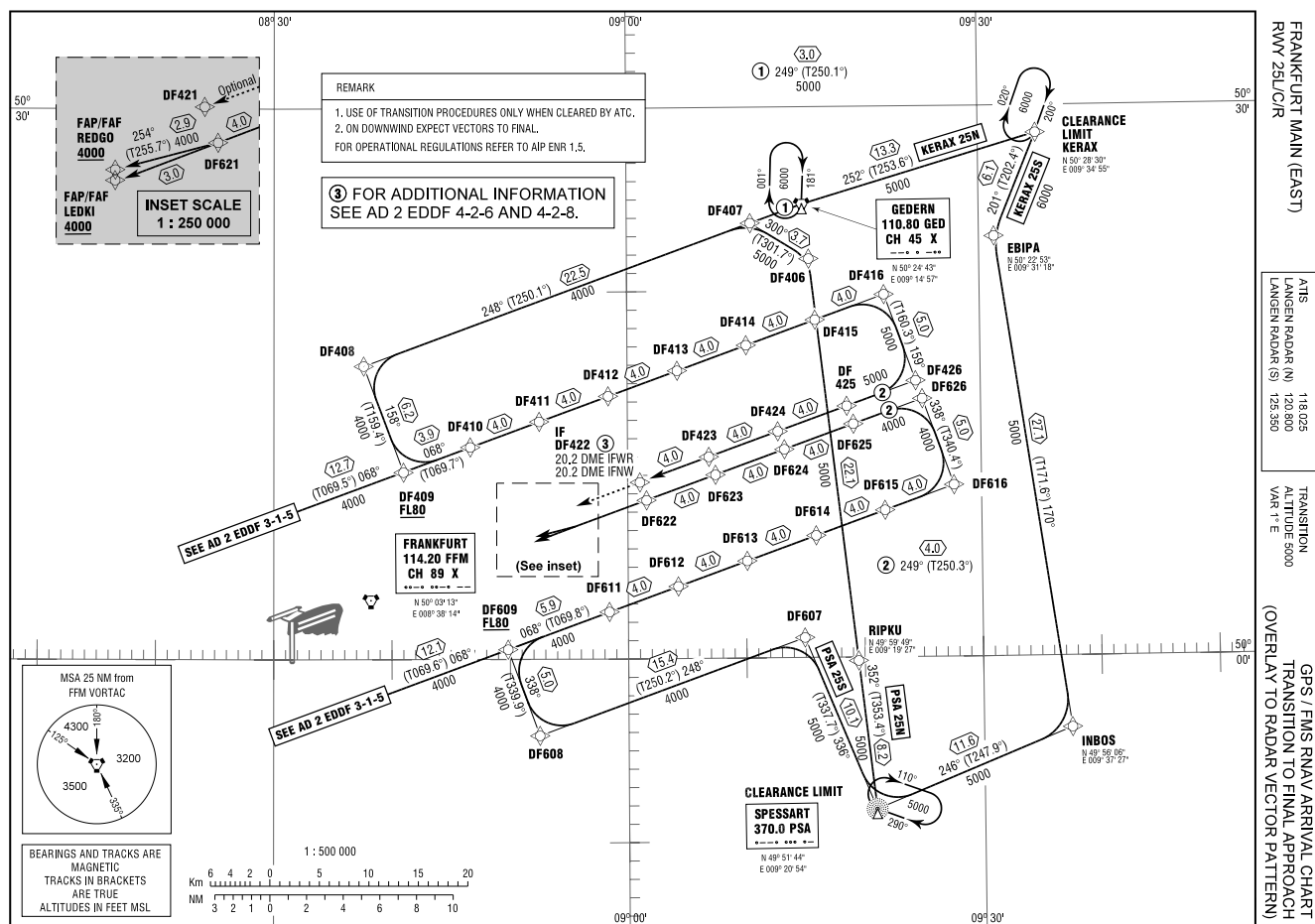
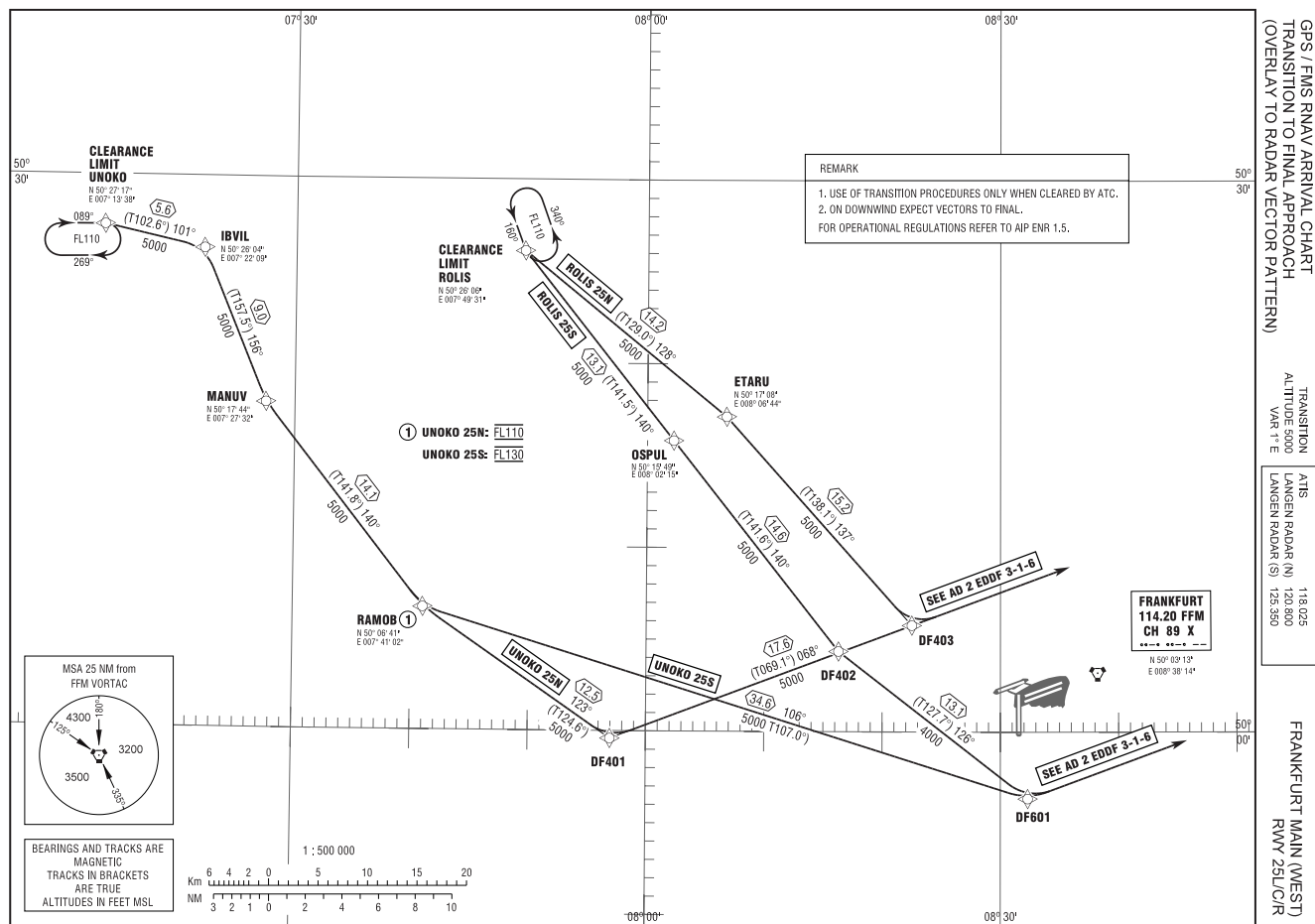
- UNOKO
- ROLIS
- KERAX
- PSA

and reaching the final approach altitude (4000 ft MSL or 5000 ft MSL) at the latest. It will be cleared only if the traffic situation permits.

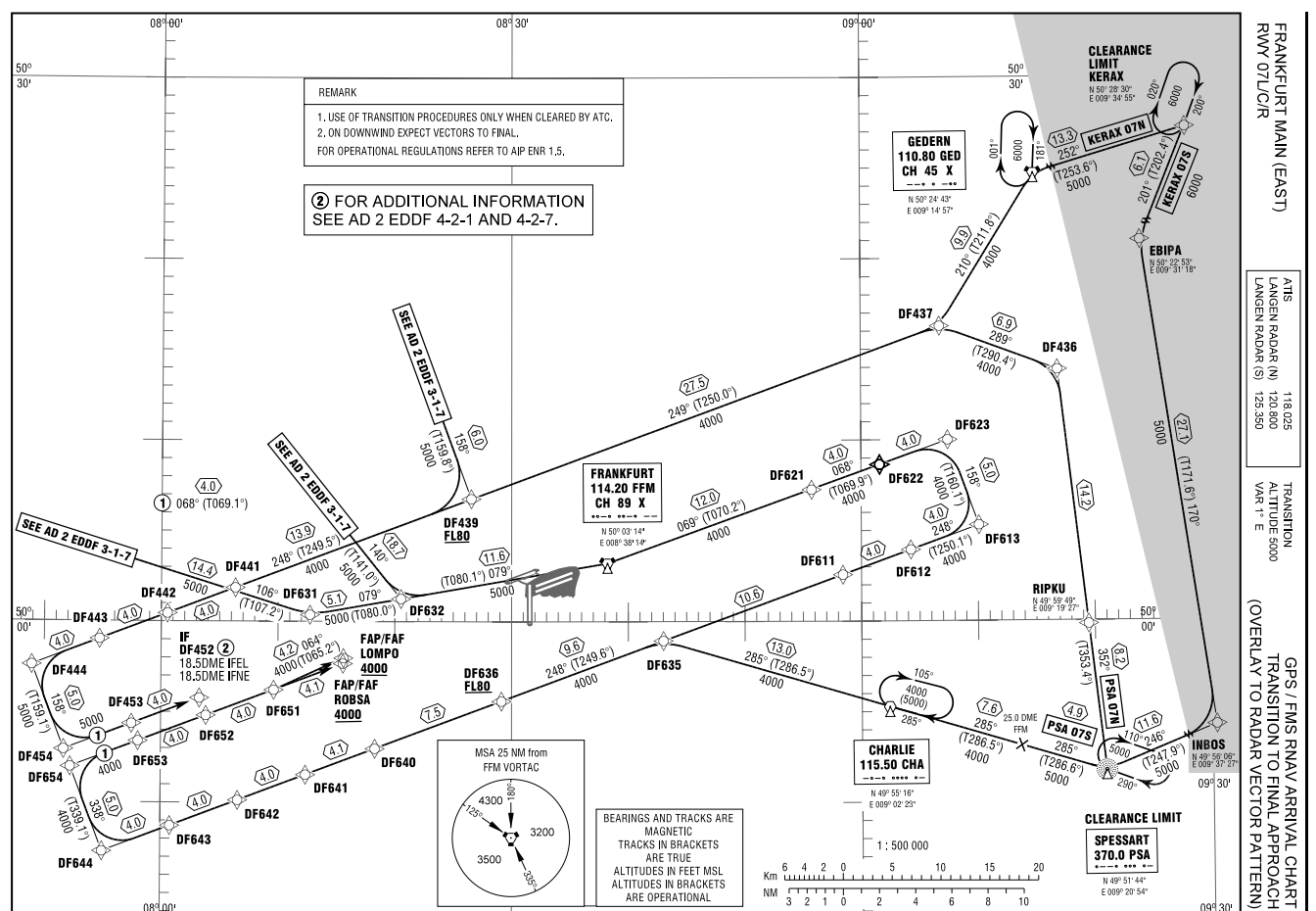
Frequencies for ATIS report:

- 120.800 MHz (N)
- 125.350 MHz (S)

**RWY 25:**







#### 4. Nürnberg Airport (EDDN)

The introduction of CDO procedures at Nürnberg Airport takes place on 12 December 2013.

Until 30 April 2014, the implementation is expected to be carried out on a tactical basis and known waypoints of STARs or transitions will be used.

Starting from the waypoints

- ERL
- NEPEG
- UNKUL
- SUBAG

tactical clearances with CDO profiles to the appropriate points

- RWY 28: DN427, DN434, DN457

may be expected.

Starting from the waypoints

- BISBU
- SUBAG

tactical clearances with CDO profiles to the appropriate points

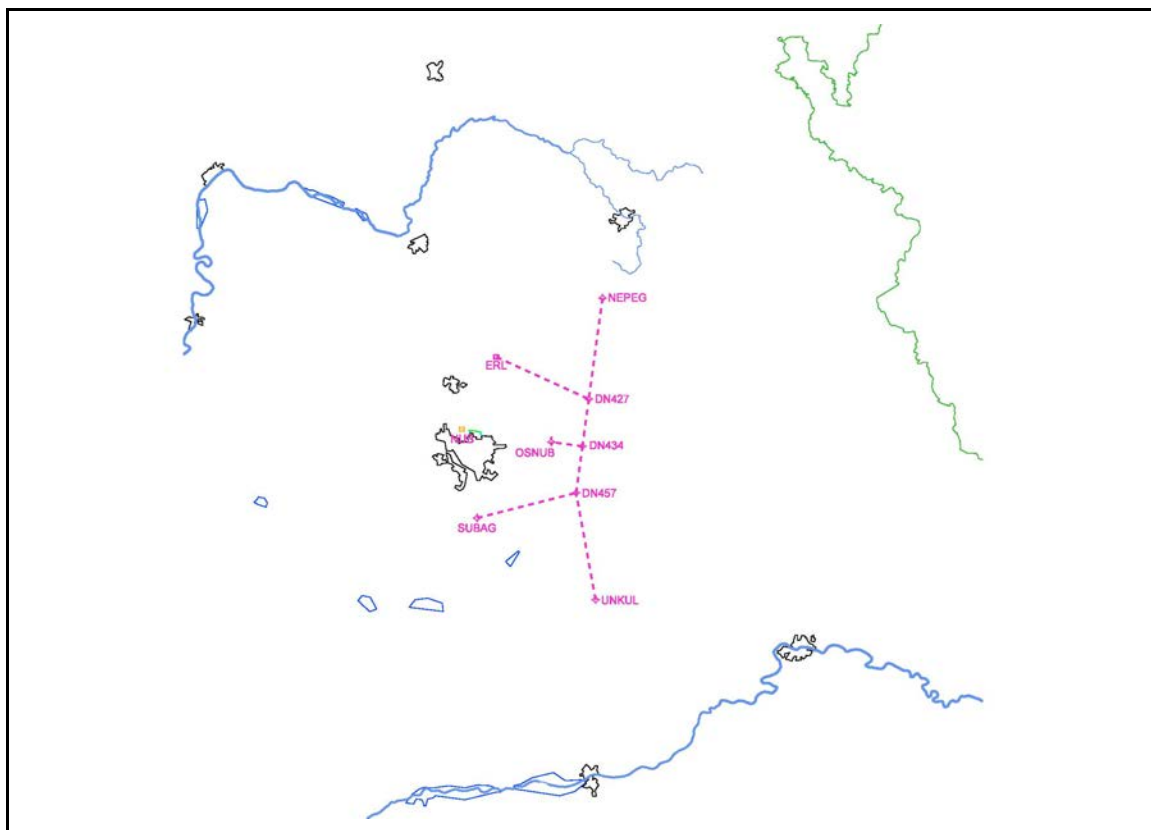
- RWY 10: DN452, DN432, DN422

may be expected.

The waypoints SUBAG, NEPEG and BISBU are published in sections ENR 3.3 and ENR 4.4 of the German AIP on 12 December 2013.

It is planned to support the tactical CDO procedures as of 1 May 2014 by means of published CDO procedures (Transition and Profile).

**RWY 28:**

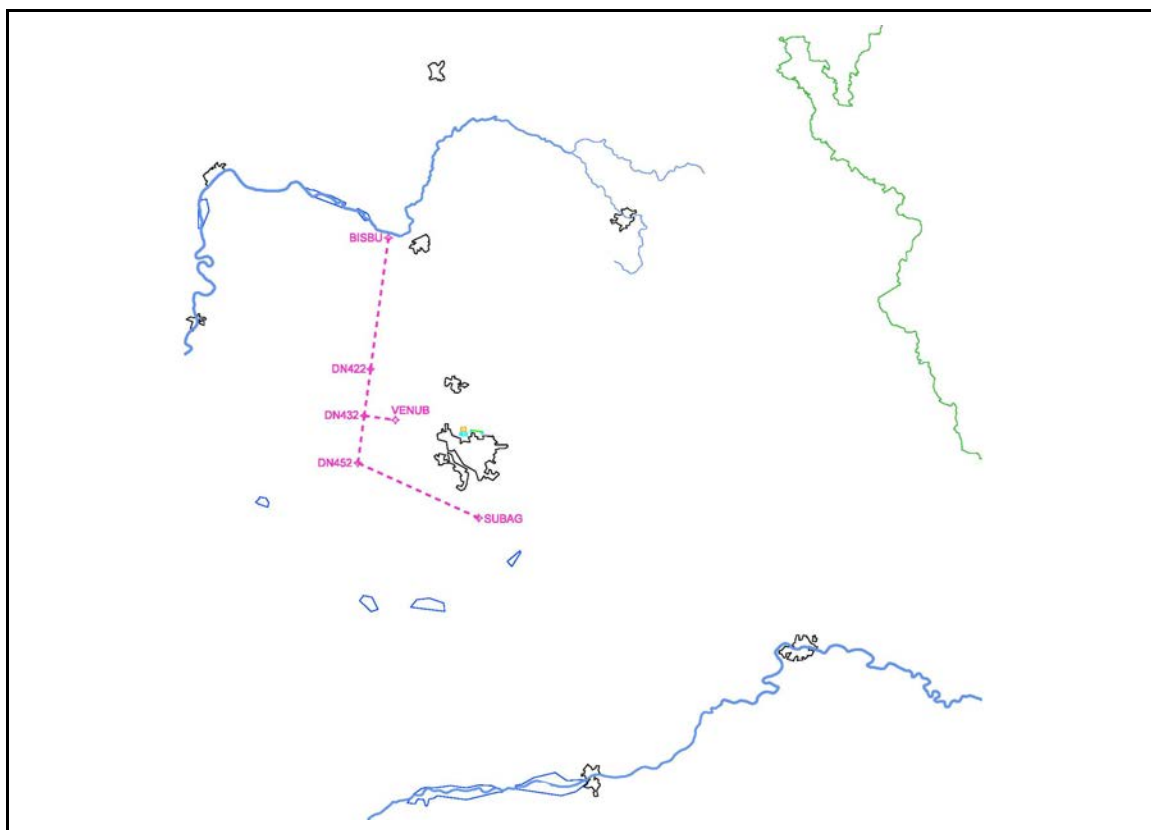


Legend: - - - CDO profiles

Frequency for ATIS report:

129.525 MHz

**RWY 10:**



Legend: - - - CDO profiles

Frequency for ATIS report:

129.525 MHz

**Continuous Descent Operations (CDO) on the basis of Instrument Flight Procedure Design (Transition and Profile) for arrivals to Köln/Bonn (EDDK), München (EDDM), Leipzig/Halle (EDDP), Hannover (EDDV)**

On the basis of the published transition and profile procedures a clearance for CDO may be expected.

This AIC supersedes AIC 7/12.