Point Merge in Germany

Point Merge Conference, Oslo, March 3rd/4th, 2015

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Agenda

- History of Point Merge in Germany

- Point Merge Hanover

- Point Merge Leipzig/Halle

- Way forward

History

Two approaches towards Point Merge within DFS:

- German/EU research project „iPort" 2012: FTS and RTS for Munich (MUC) and Leipzig (LEJ) airports

  Motivation: Capacity, reduction of ATCO workload
  Planning of 3rd RWY at MUC
  Cargo Hub of DHL, high traffic peaks btwn. 22-02h loc

- In Parallel:
  Opertional staff at Frankfurt (FRA) developed several PM Systems
  Motivation: Capacity (4th RWY, capacity goal 126 movements/h) as well as noise reduction due to CDO
  Goal: Implementation of PMS as of 2016

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History

Summary FRA:

- Development of several, sometimes „interesting" solutions for the integration of the PM Systems in the complex airspace structure around FRA

- RTS 2013

- Problems due to high complexity at FRA independant parallel operations, crossing DEP RWY, a/c usage restrictions at northern RWY, TRA, nearby airports like EDFH, EDDK, EDDN, EDDS…, noise abatement

- Very difficult to establish PMS

- Management decision in 2013: Implementation of PMS as German „use case" at an 2 RWY-airport with less complex environment
-> Project start PMS EDDV in August 2013, internally as „trial" procedures

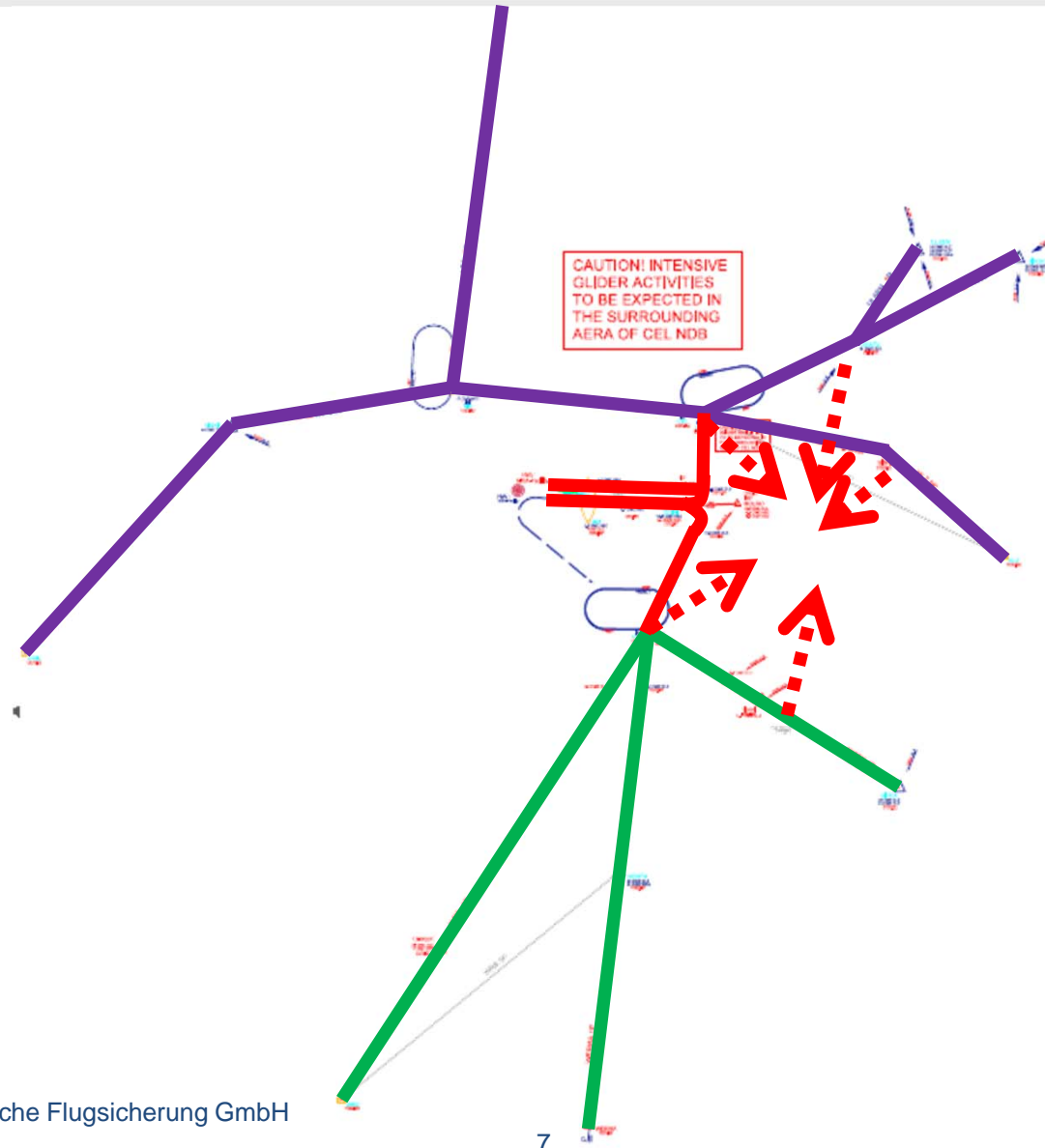**DFS** Deutsche Flugsicherung

PMS at Hannover EDDV

EDDV environment:

- 2 RWYs

- Traffic 76,000 movements/year

- Airbase ~ 10NM west of EDDV THR RWY 27, Training base for military transport aircraft -> APP has to has to ensure 12NM seperation to EDDV Arrivals -> Usage of PMS expected

- Implemented 11DEC14 (1st procedure with the requirement of RNAV-1 in Germany)

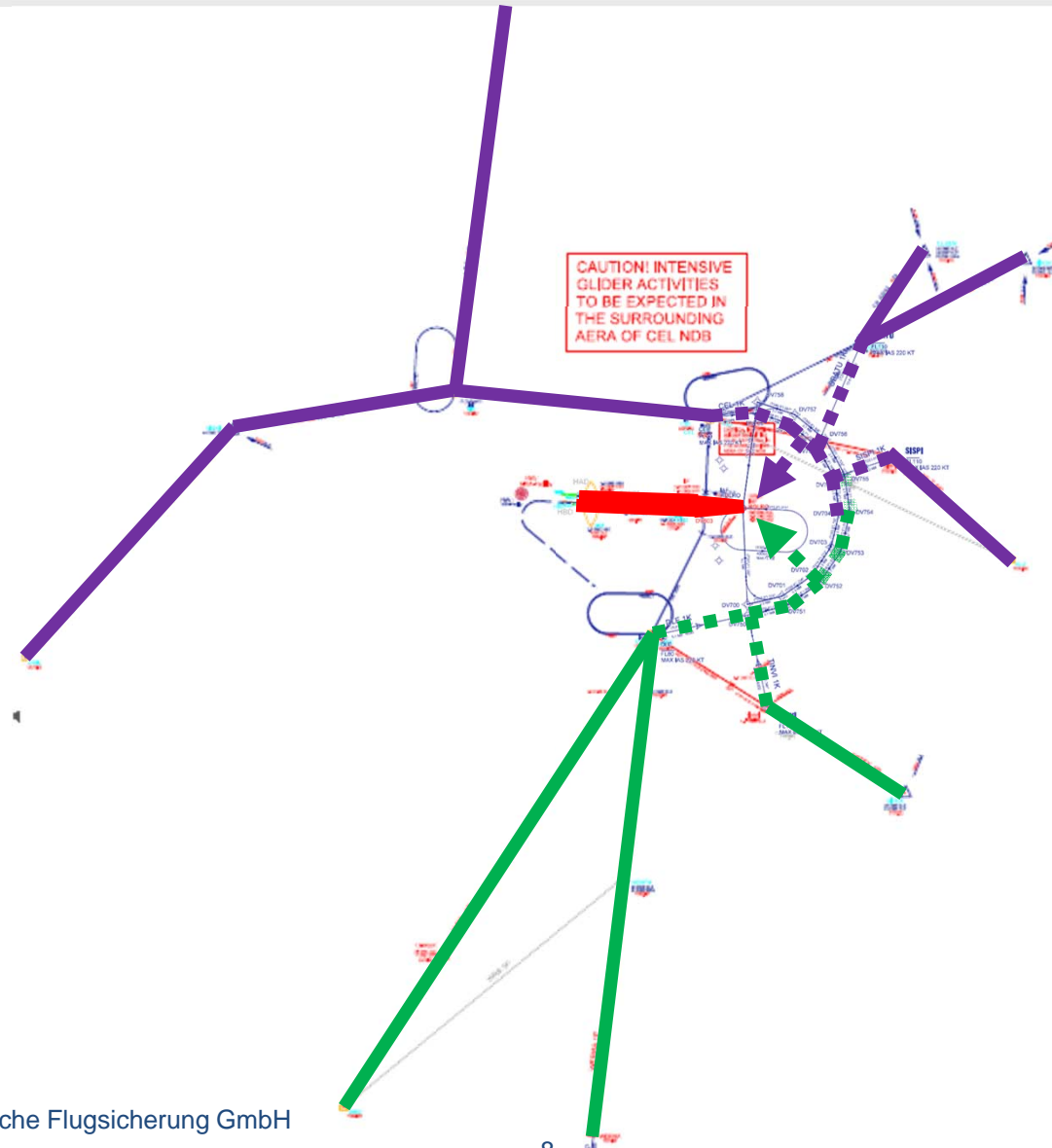- As expected: barely used, more usage expected in summer 2015
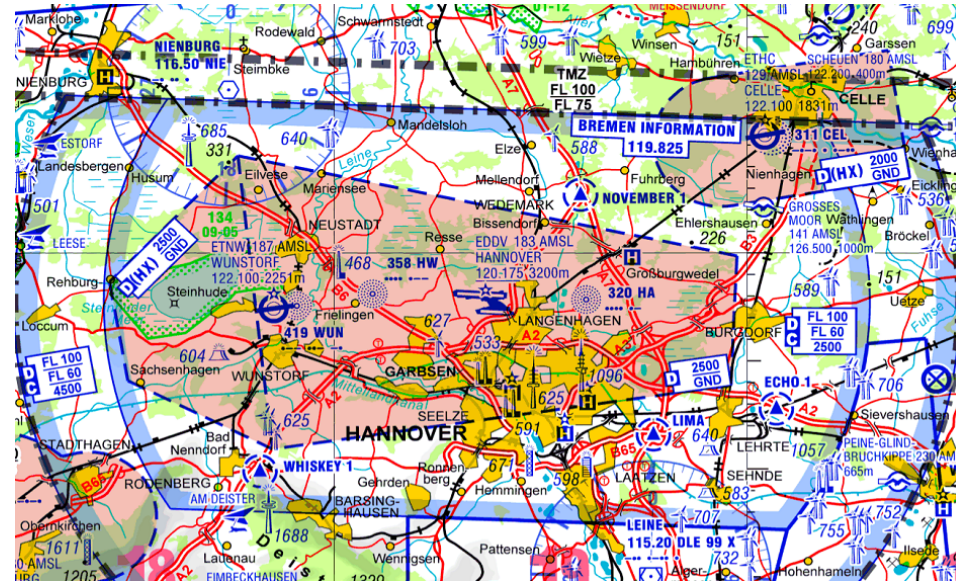
PMS at Hannover EDDV - Concept

- Current concept includes conventional STAR and RNAV overlay transitions (downwind-concept)

- When using published Arrival procedures (transitions) difficult to establish 12 NM separation gap for Wunstorf military traffic

- Rare usage of Transitions, usually vectoring to final approach

- RTS: very easy to establish 12 NM seperation using PMS

- PMS published „By ATC only" due to expected rare usage

- In principal: Start of PMS STAR is IAF of existing conventional STAR/IAP

- APP Unit decides to use PMS -> clearance at least 2 minutes before arriving IAF (FMS programming)

- PMS STAR not filable, no customer concerns regarding trip fuel planning

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PMS at Hannover EDDV - Concept

CAUTION! INTENSIVE
GLIDER ACTIVITIES
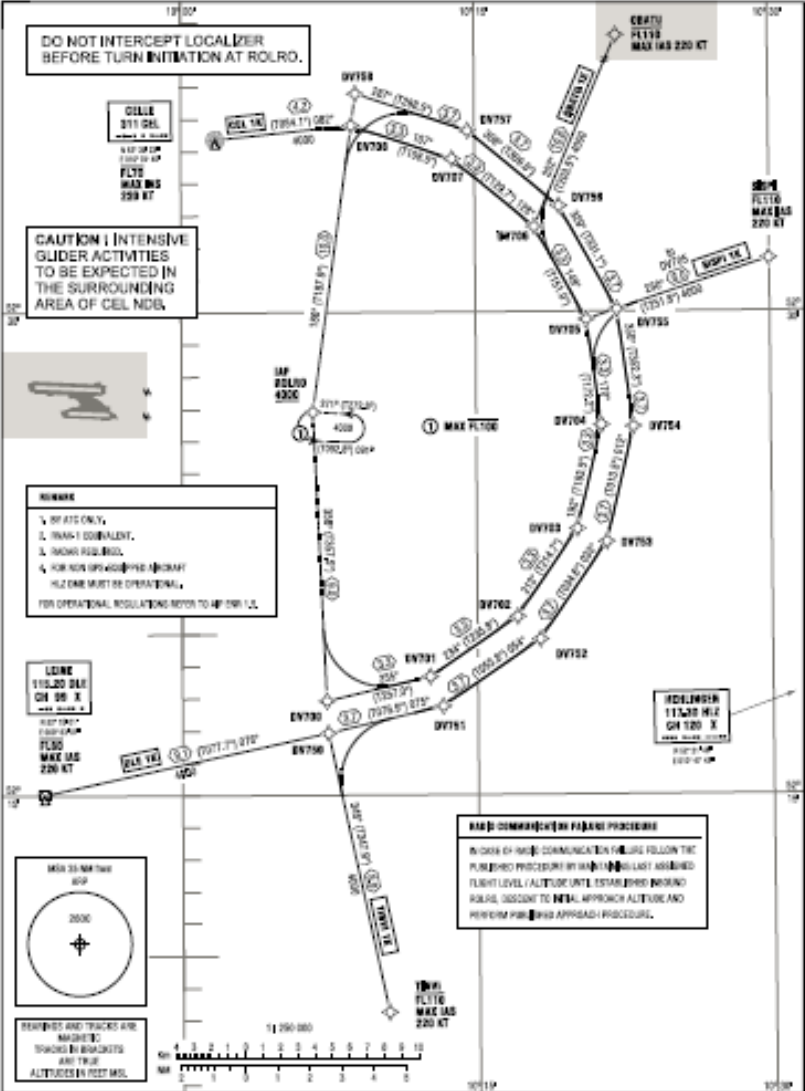TO BE EXPECTED IN
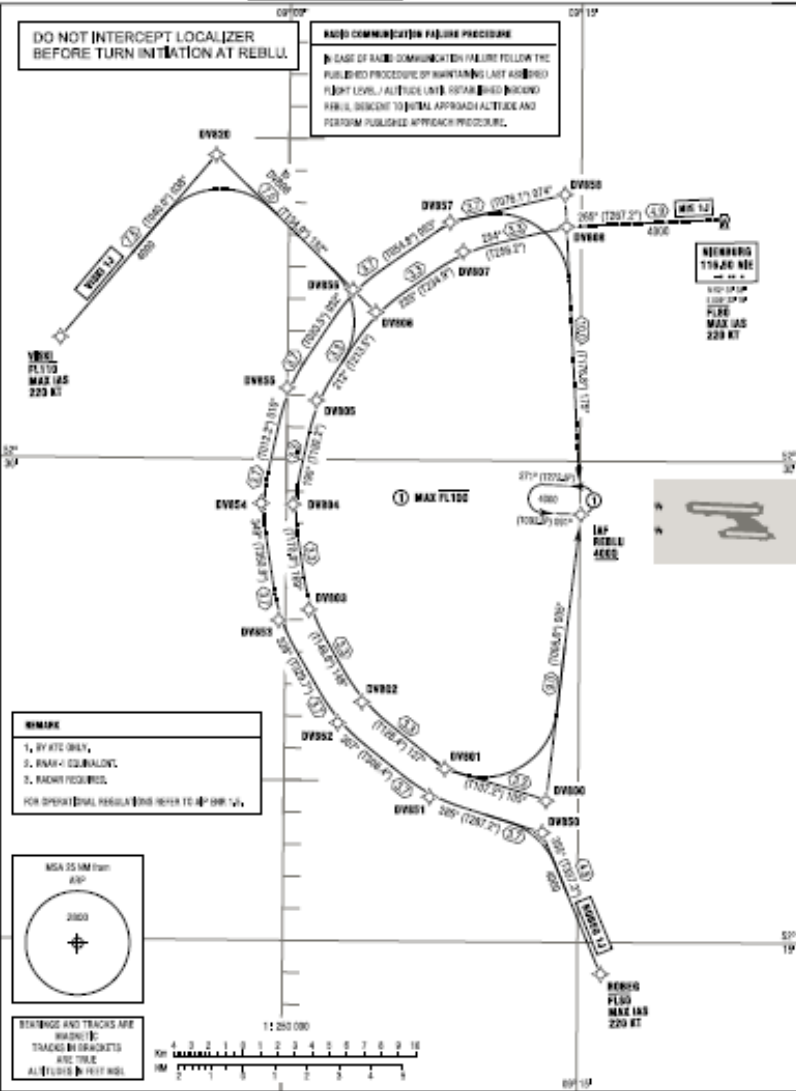THE SURROUNDING
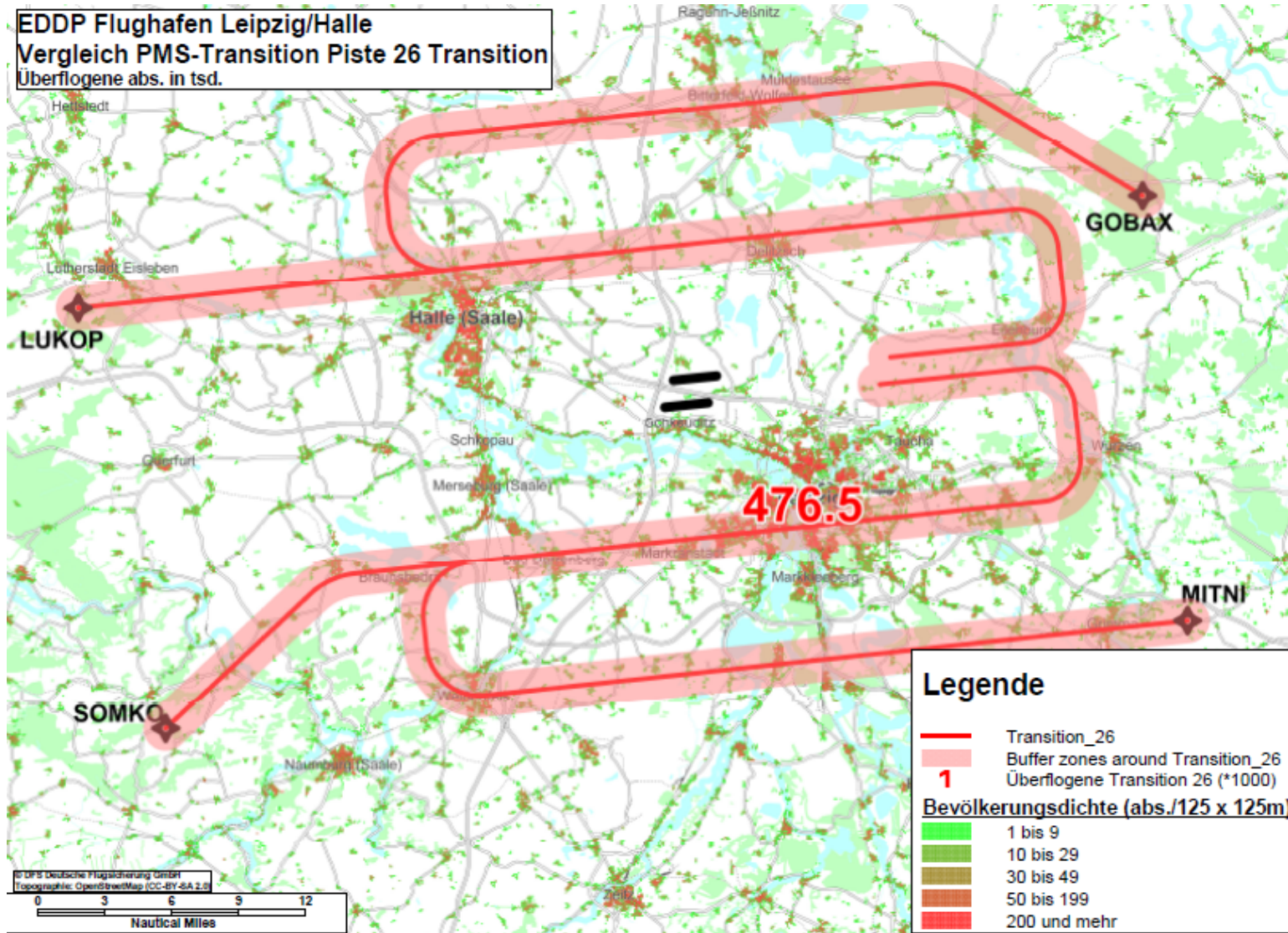AERA OF CEL NDB

PMS at Hannover EDDV - Concept

PMS at Hannover EDDV
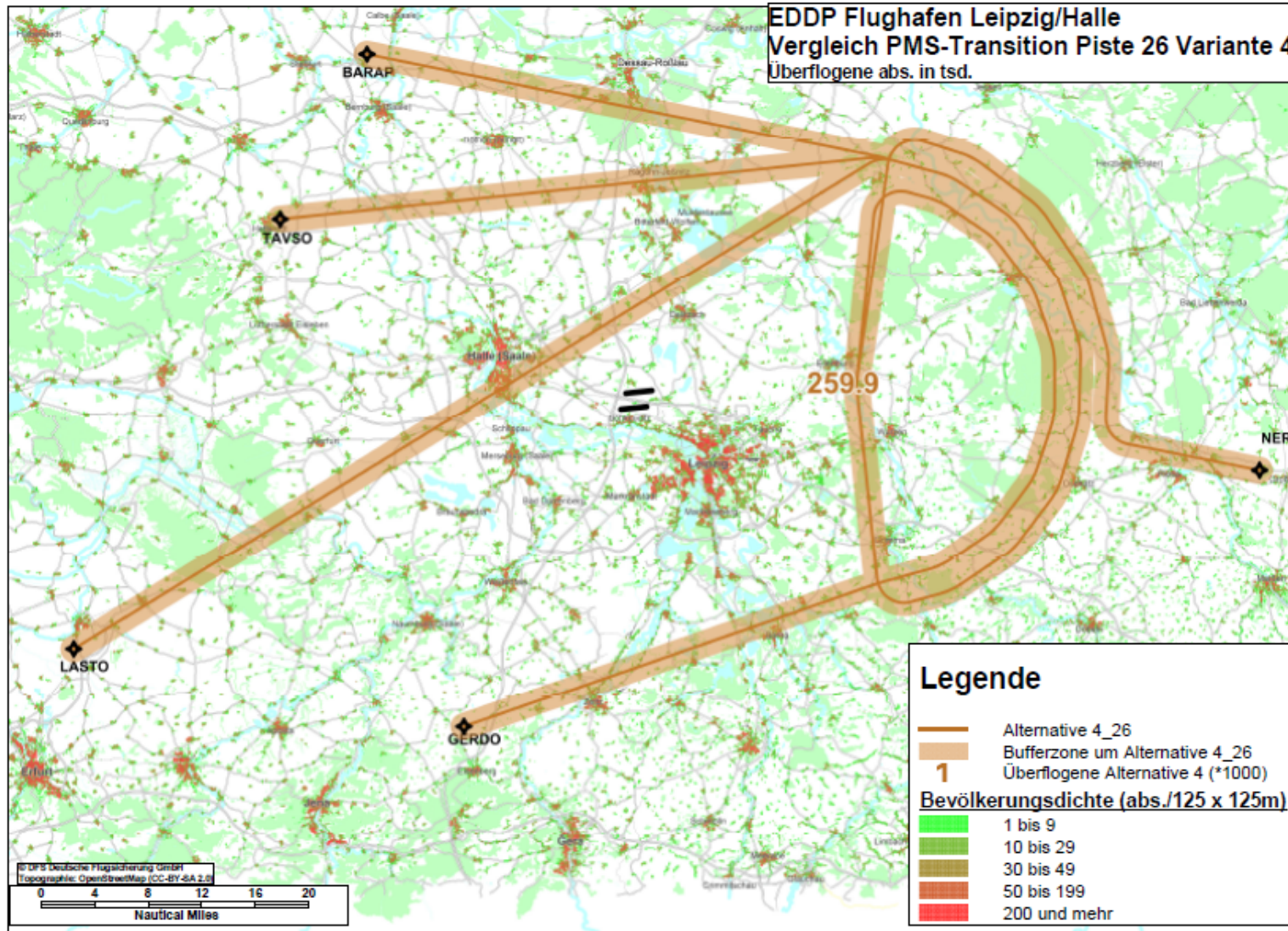
PMS Leipzig EDDP

- Approx. 63,500 movements/year

- Hub for Express Cargo Airline

- 60+ inbounds per night, most within two inbound rushes

- No dedicated approach control unit

- Project start April 14

- Implementation planned DEC15

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PMS Leipzig EDDP – Status-quo: Transitions to final approach

EDDP Flughafen Leipzig/Halle
Vergleich PMS-Transition Piste 26 Transition
Überflogene abs. in tsd.

476.5

Legende

— Transition_26
▬ Buffer zones around Transition_26
1 Überflogene Transition 26 (*1000)

Bevölkerungsdichte (abs./125 x 125m)
- 1 bis 9
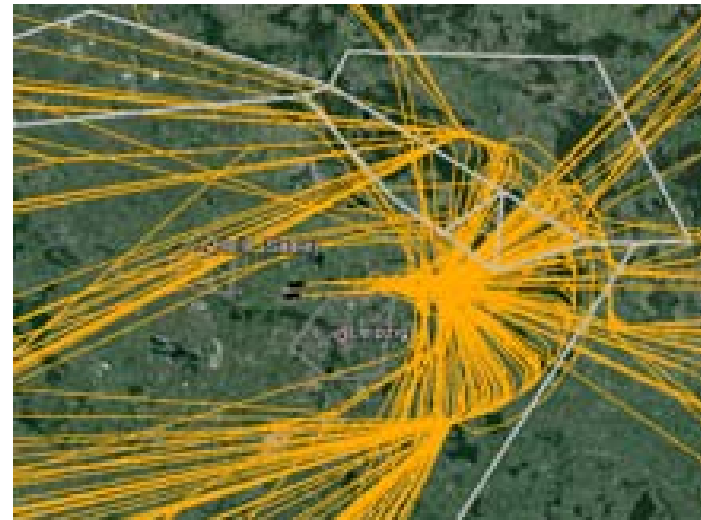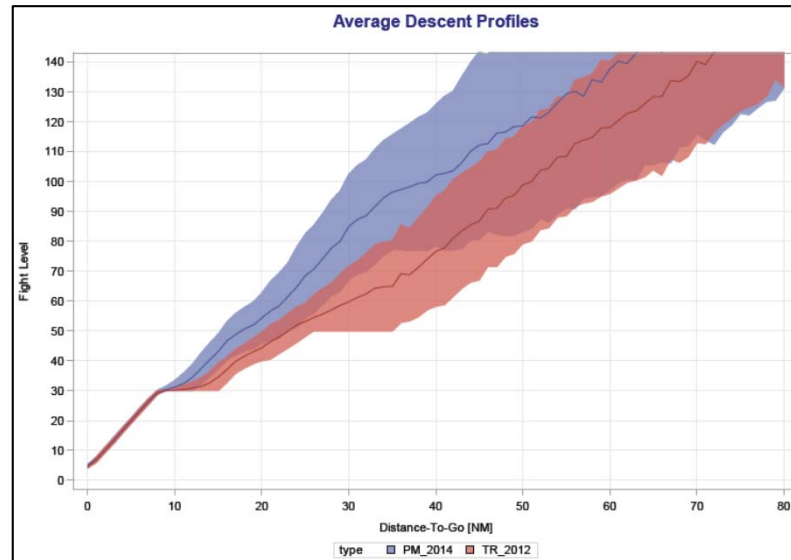- 10 bis 29
- 30 bis 49
- 50 bis 199
- 200 und mehr

PMS Leipzig EDDP

PMS Leipzig EDDP – Results of Simulation

- Reduction in Workload

- Slightly reduced Flight Time

- Higher vertical profile

- Nearly no overflights of Leipzig

PMS Leipzig EDDP - Issues

- From a noise perspective very good results expected, but:

- Significant concerns by main customer regarding fuel planning:

- ➢ Fear that sequencing legs influence the trip fuel amount, for long range flights up to 3 tons more fuel required ➔ reduction in pay-load

- Other general issues:

    - RNAV-1 requirement ->NAV DB capacity (Procedures/APT)

    - Radio communication failure procedures (➔ no level change on sequencing leg)

    - Safety assessment (➔ vertical instead of lateral separation)

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Way forward

- PMS Hanover trial to be evaluated by end of 2015

- PMS Leipzig will be introduced as trial first.

- Solution for fuel planning issues needs to be found

- Results will be used to decide about possible introduction at other German airports

  - Munich – parallel independant runways, 380.000 movements/year

  - Berlin – parallel independant runways, 250.000+ movements expected

  - Hamburg – Crossing runway system, 155.000 movements/year

- Decision by end of 2015

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Thank you for your attention

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