



DFS Deutsche Flugsicherung

CPDLC and VDL2 in Germany

Status and Planning

September 2005



Objectives

Airport Datalink

En-route Datalink

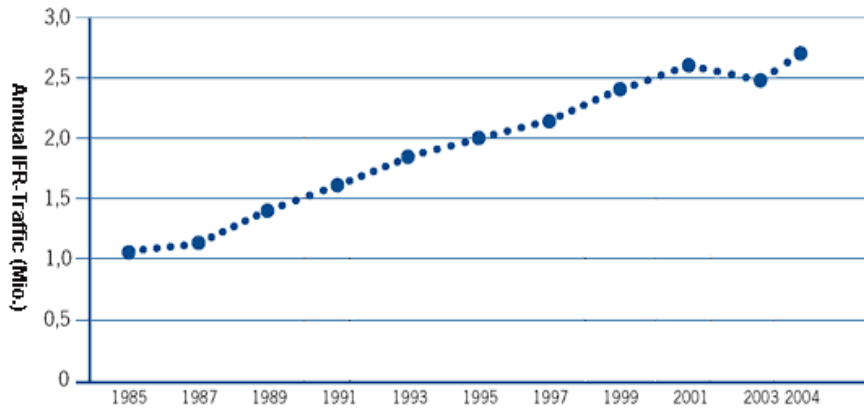
Datalink Communications Infrastructure

Conclusion

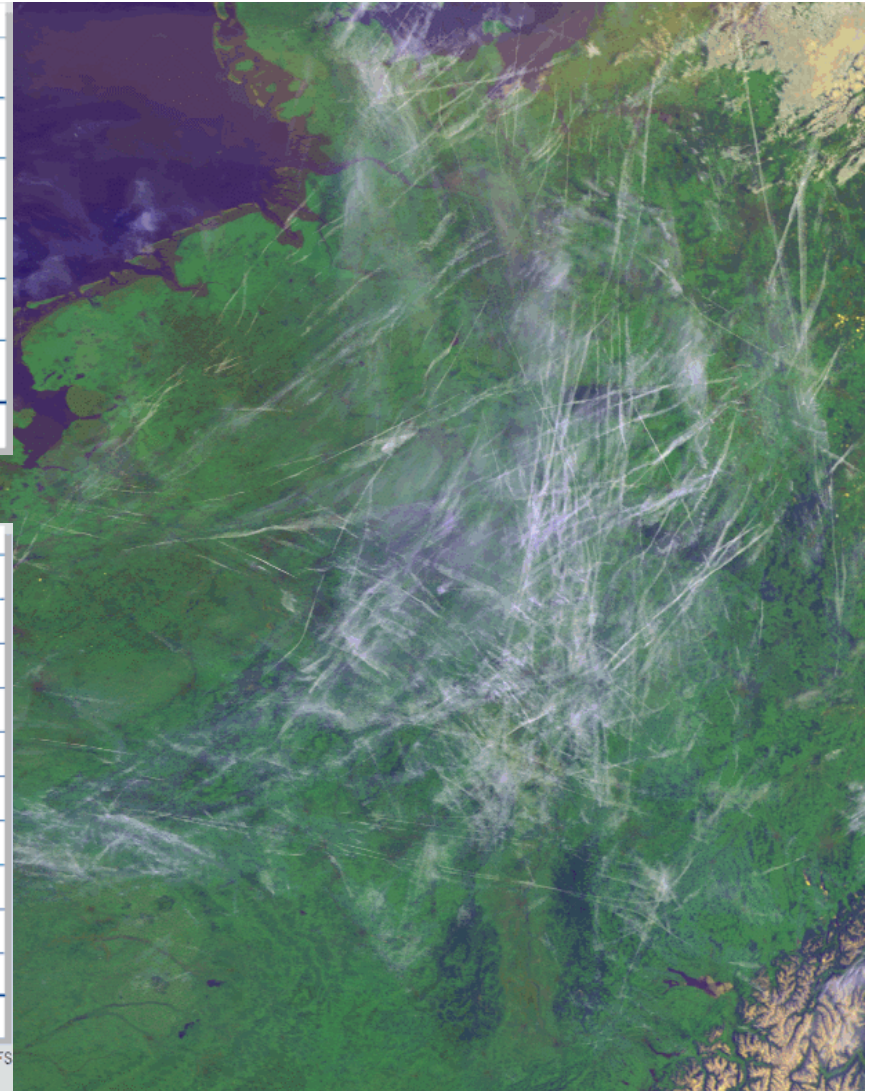
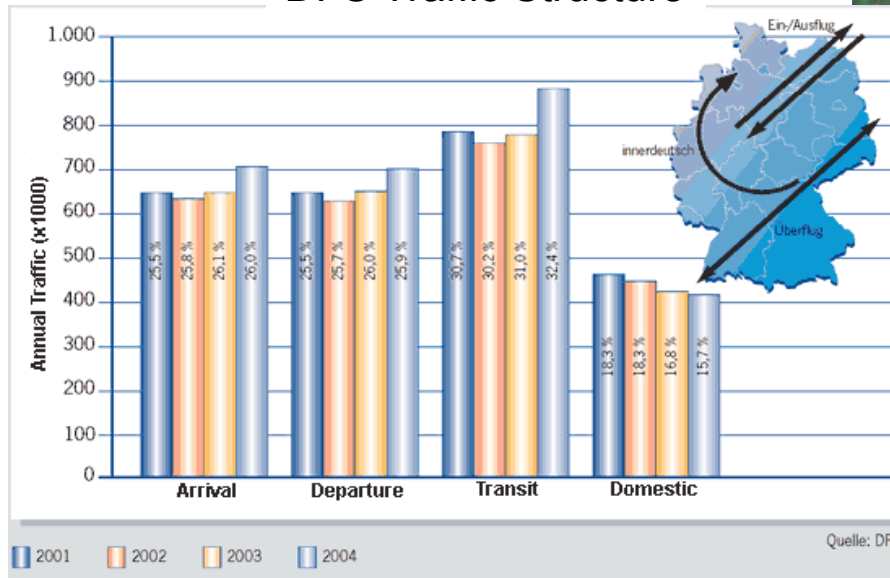
Objectives



DFS annual IFR-Traffic



DFS Traffic Structure





Strategic Goal:

**Increase capacity
and improve
productivity and efficiency.**

- **Share Information among all Stakeholders (CDM)**
- **Make Aircraft information available to Ground Systems**
- **Make Ground information available to Aircraft Systems**
- **Utilize Satellite Navigation Cost Savings**
- **Improve Flight-Planning from Pre-Flight to Realtime (4D-Trajectories)**



European Convergence and Implementation Plan (ECIP)

- ATC06 Implement ATC air-ground data link services (Phase 1) by End of 2007

European Commission Mandate on a SES Implementing Rule on Data Link Services

- ICAO Annex 10-Volume III-Chapter 6,
Doc 9705-AN956 (ATN), Doc 9776-AN970 (VDL)
- EUROCAE ED110A, ED111, ED120
- AEEC 631-3
- JAA NPA 20-11

CPDLC Airport Applications



D-ATIS

available at all DFS operated Airports

D-DCL

operational:

Munich, Hamburg, Stuttgart, Bremen,
Hannover, Saarbrücken

2006: Frankfurt, Leipzig,
Erfurt, Dresden

2007: Berlin (SFX, TXL, THF*),
Düsseldorf, Cologne

2008: Nurnberg, Münster

ACARS, VDL/ATN*



CPDLC En-route Applications



DLIC (Data Link Initiation Capability)

Exchange of address information („ATN-Port“), supported applications (type and version)

ACM (ATC Communication Management)

Data Link supported automated hand-off

ACL (ATC Clearances)

Clearances like „Heading Change, Climb/Descend to FLxxx“

AMC (ATC Microphone Check)

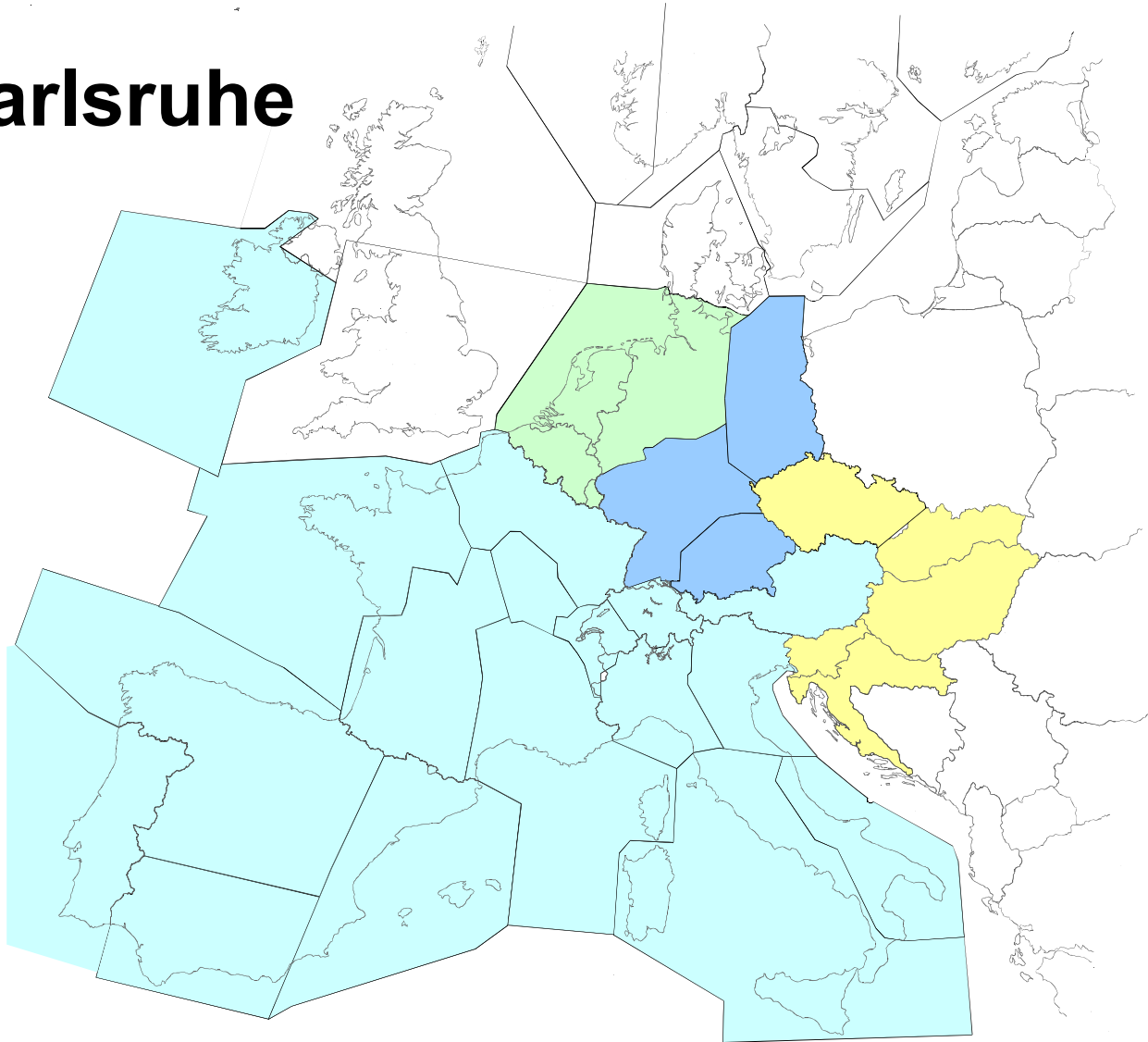
Info to all A/C within sector to check for „Stuck Microphone“





UAC Karlsruhe

2008





- **Datalink will be integrated in the next generation ATM-System – VAFORIT at UAC Karlsruhe**
System enhancement is under contract
- **Joint Project agreed for the Datalink Frontend Processor between UAC Maastricht / DFS**
Supplier selection is in progress
- **VDL Mode 2 infrastructure procured from SITA**
10 VDL M2 Stations (VGS) operational in Germany
10 additional VDL M2 Stations will be deployed starting 2007
- **ATN infrastructure is contracted**
ATN Router will be deployed End of 2006

**DFS - CPDLC ground infrastructure is
ready for operation in 2007**



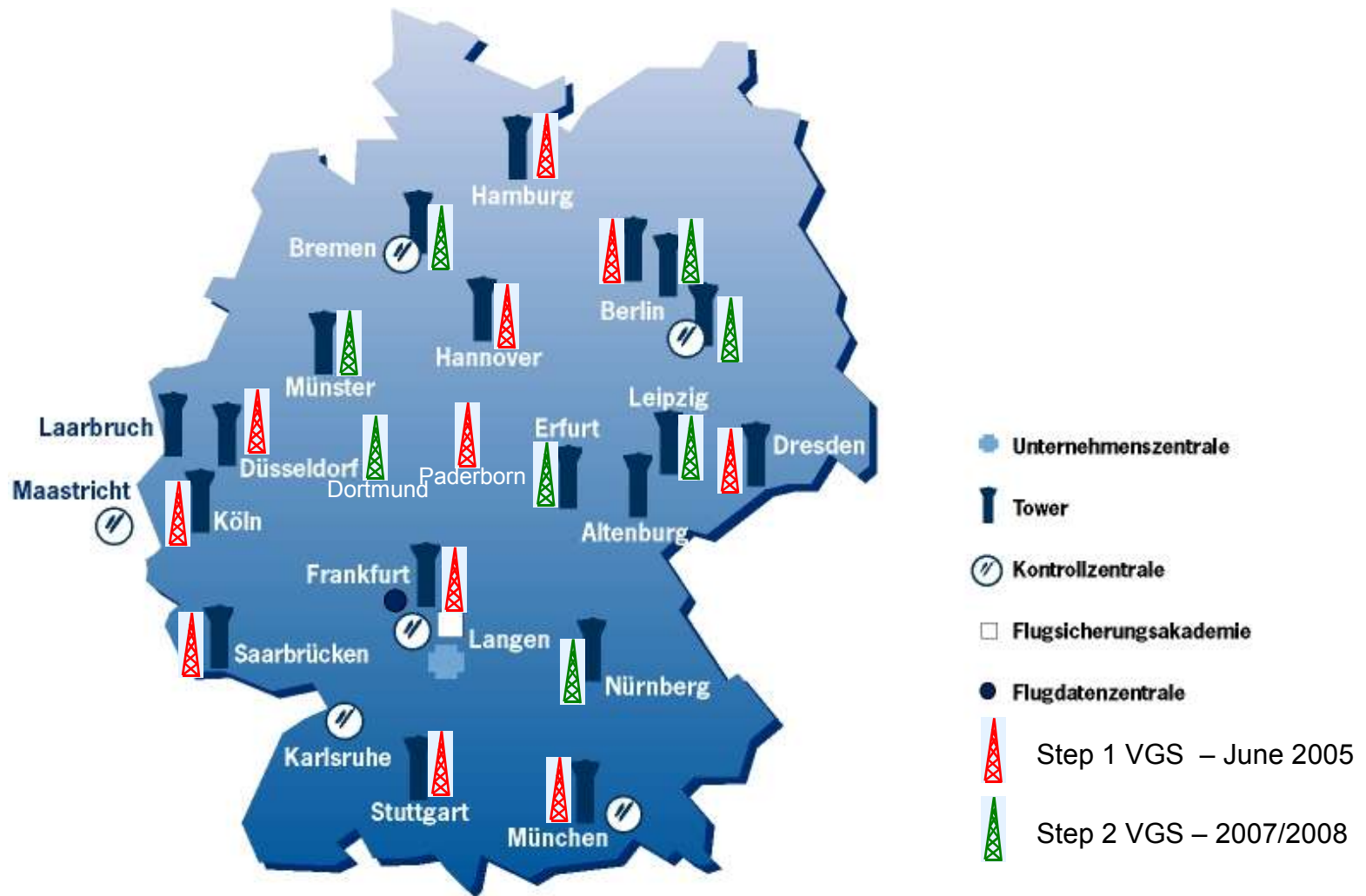
DFS procure the SITA-VGS network in Germany

- 19 stations at 11 Airports already installed (Step 1)
8 additional stations will replace “old” RGS’s starting in 2007 (Step 2)
- latest Generation - digital radios, “ready” for VDL M2
- Stations will be connected to DFS network
- DFS will use the stations for ATC purposes

SITA will use the DFS-VGS for AOC purposes

- SITA will install a Gateway between the AOC/ATC networks
- The DFS-VGS will behave as a “Sub-network” of the global SITA Aircom system.
- Change of ownership will not affect avionics

DFS / SITA VGS-Locations



Conclusion



- **Datalink is essential to improve ATC-capacity**
- **European Regulatory Framework (SES, ECIP) push CPDLC implementation**
- **D-ATIS is implemented at DFS- Airports**
- **D-DCL deployment is in progress**
- **VDL M2/ATN ground infrastructure will be ready by the End of 2006**
- **CPDLC en-route ATM-Infrastructure will be available and Controllers will be trained in 2007**

**CPDLC will be operational in
DFS upper airspace by 2007**



Thank you