

Proactive Safety- Looking for things that go right

Christoph Peters, DFS

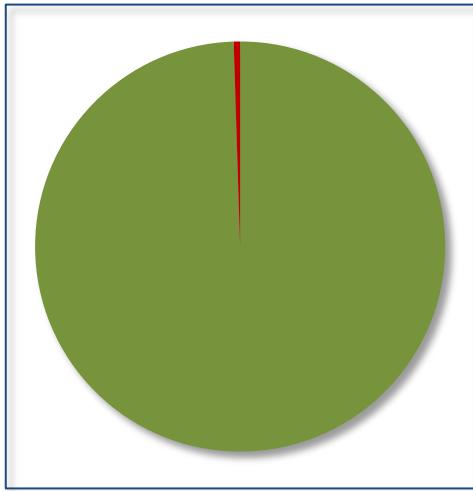
Day 2, 27.09.2013



DFS Deutsche Flugsicherung

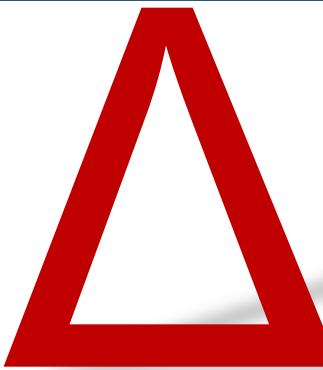
Things go right in many cases...

- Incidents vs. IFR movements in 2012



$$\frac{146}{2993866} = 0,0000488$$

„Work as imagined“

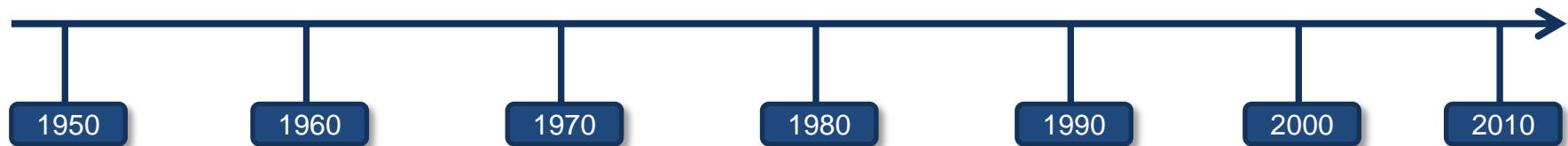


„Work as actually done“

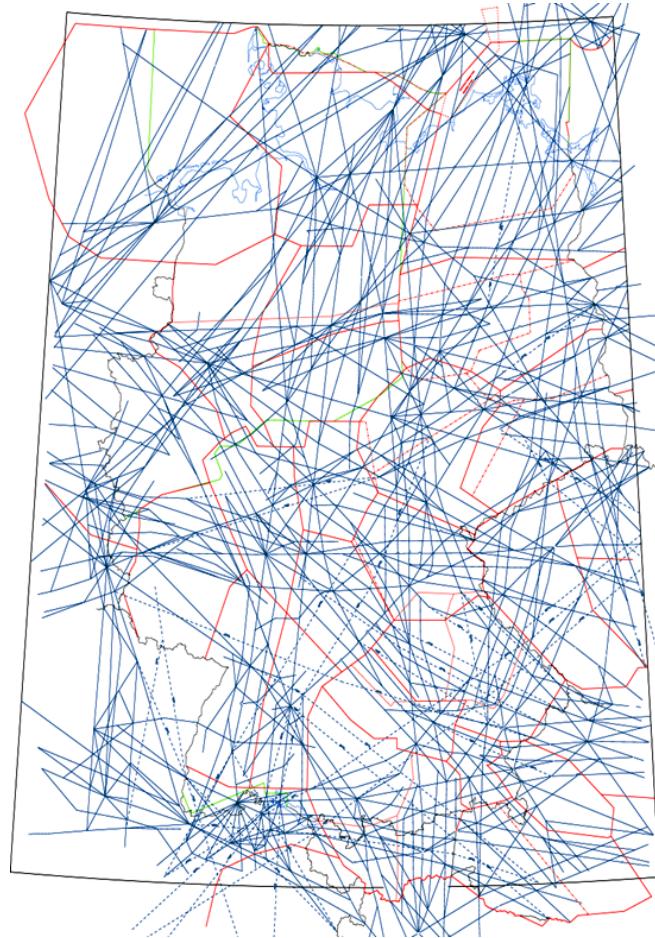
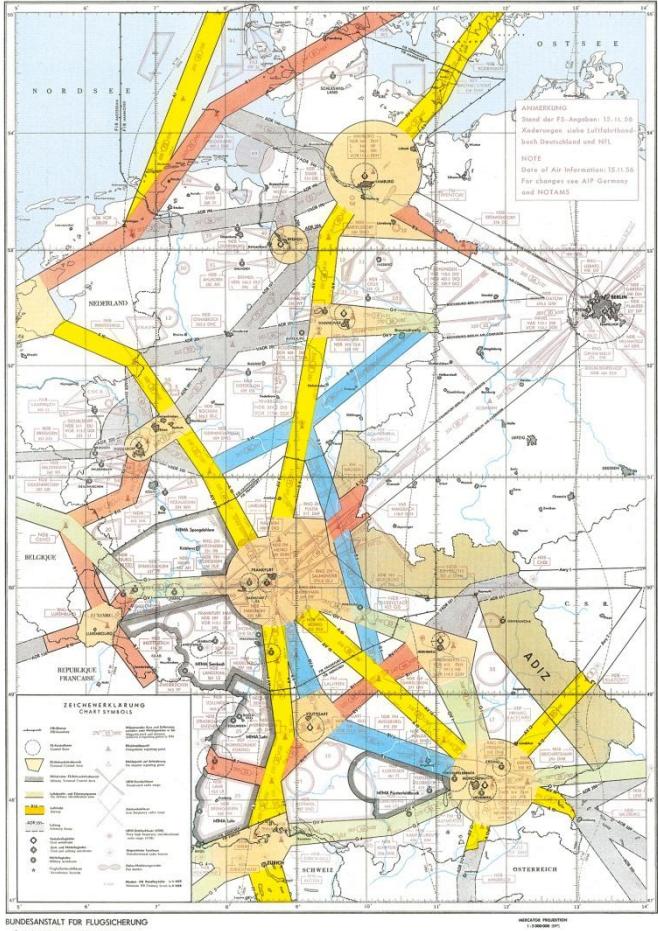
Here is the quick answer: Humans

Humans: “Still vital after all these years of automation”

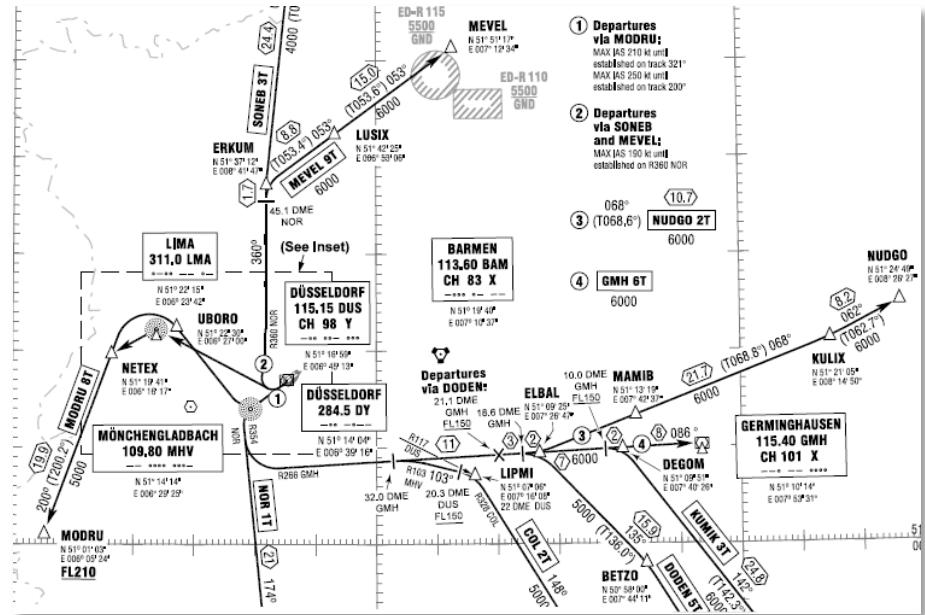
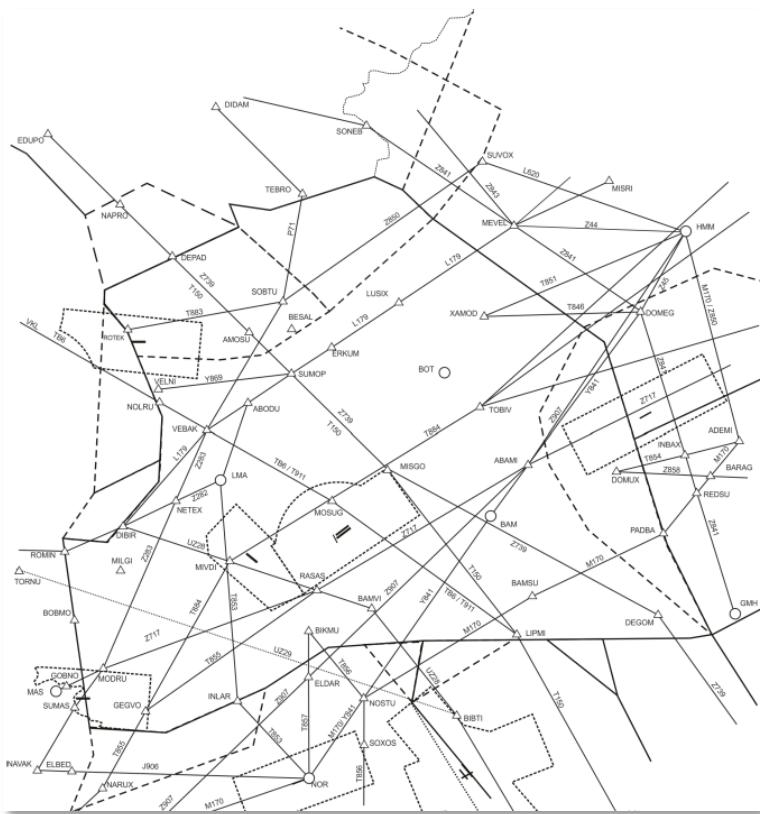
(Parasuraman & Wickens, 2008)



The world is changing...

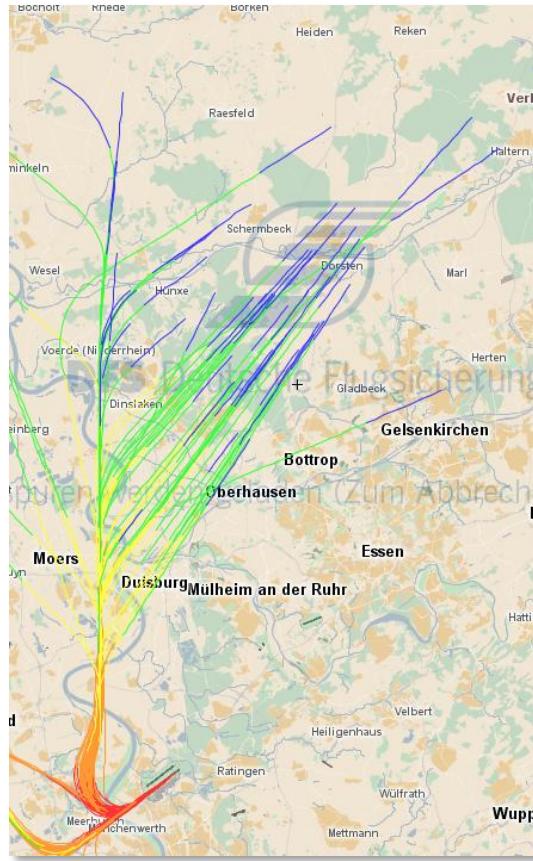
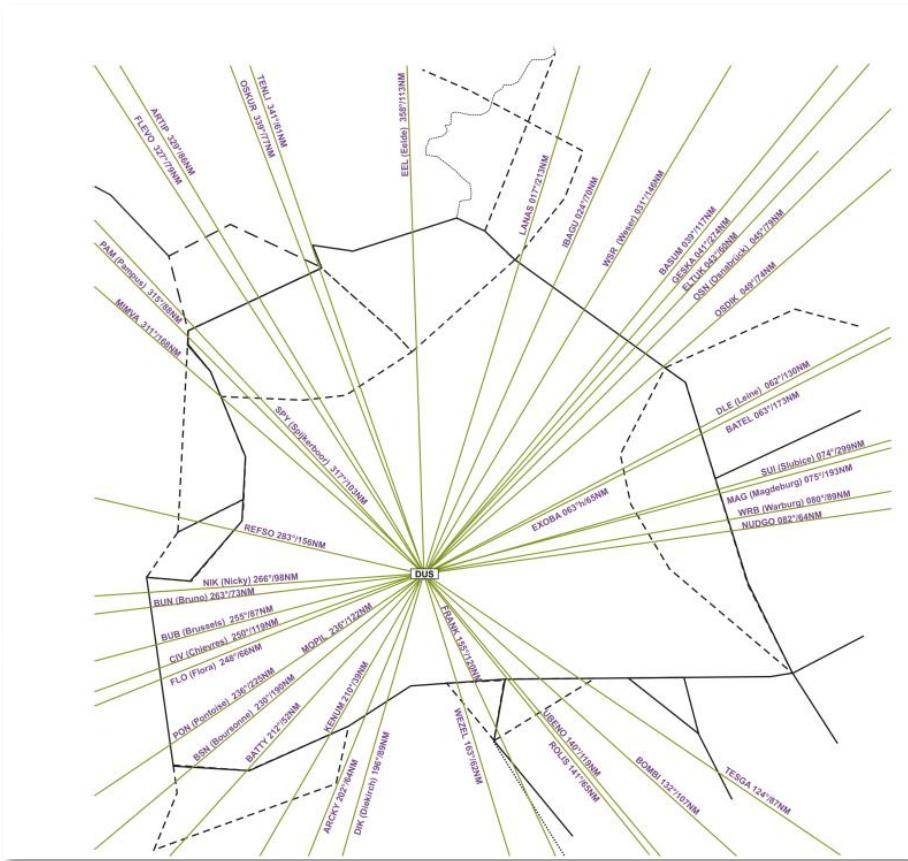


Routes around EDDL



- 22 Departure Routes (RWY 05|23)
- Dozens of intersections, airways, airspace boundaries, etc.

What turned out well?



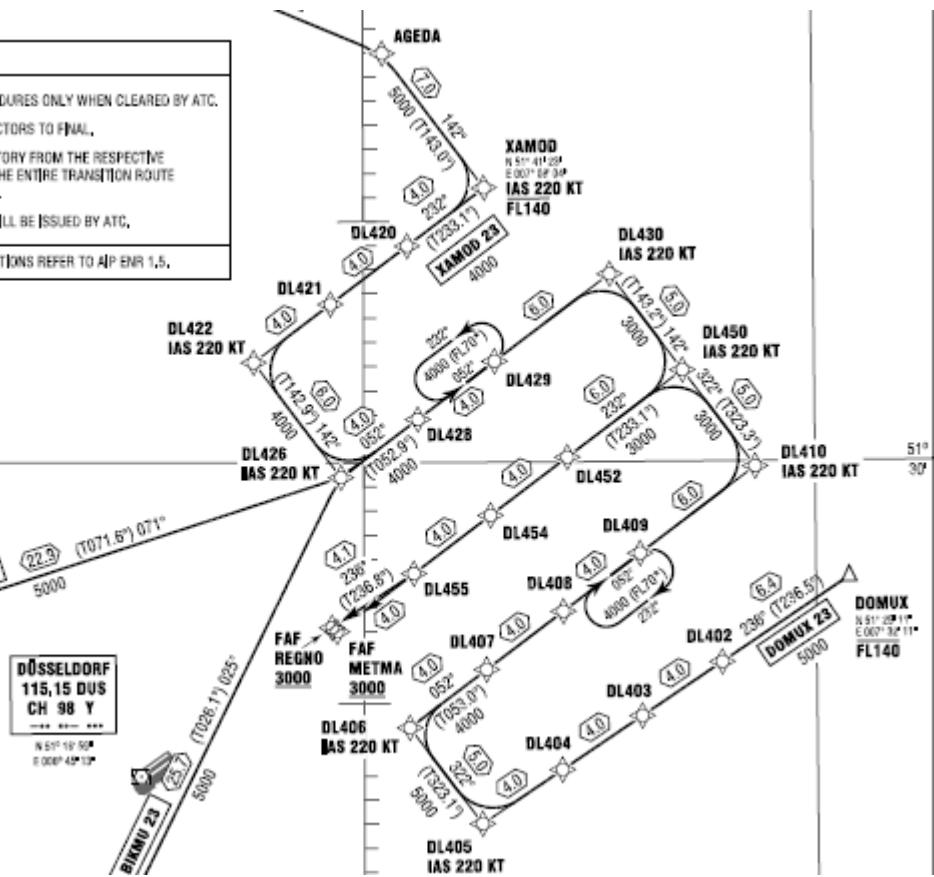
- Passing on of information which proved to be helpful
- Use of the (remaining) degrees of freedom

Approach EDDL (WasI)

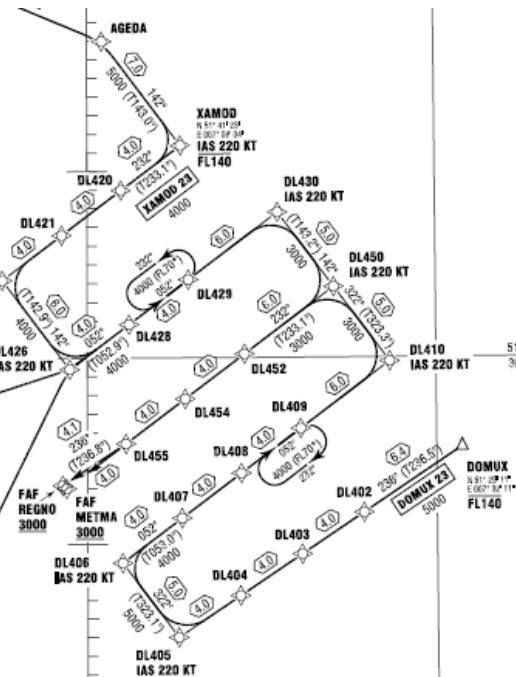
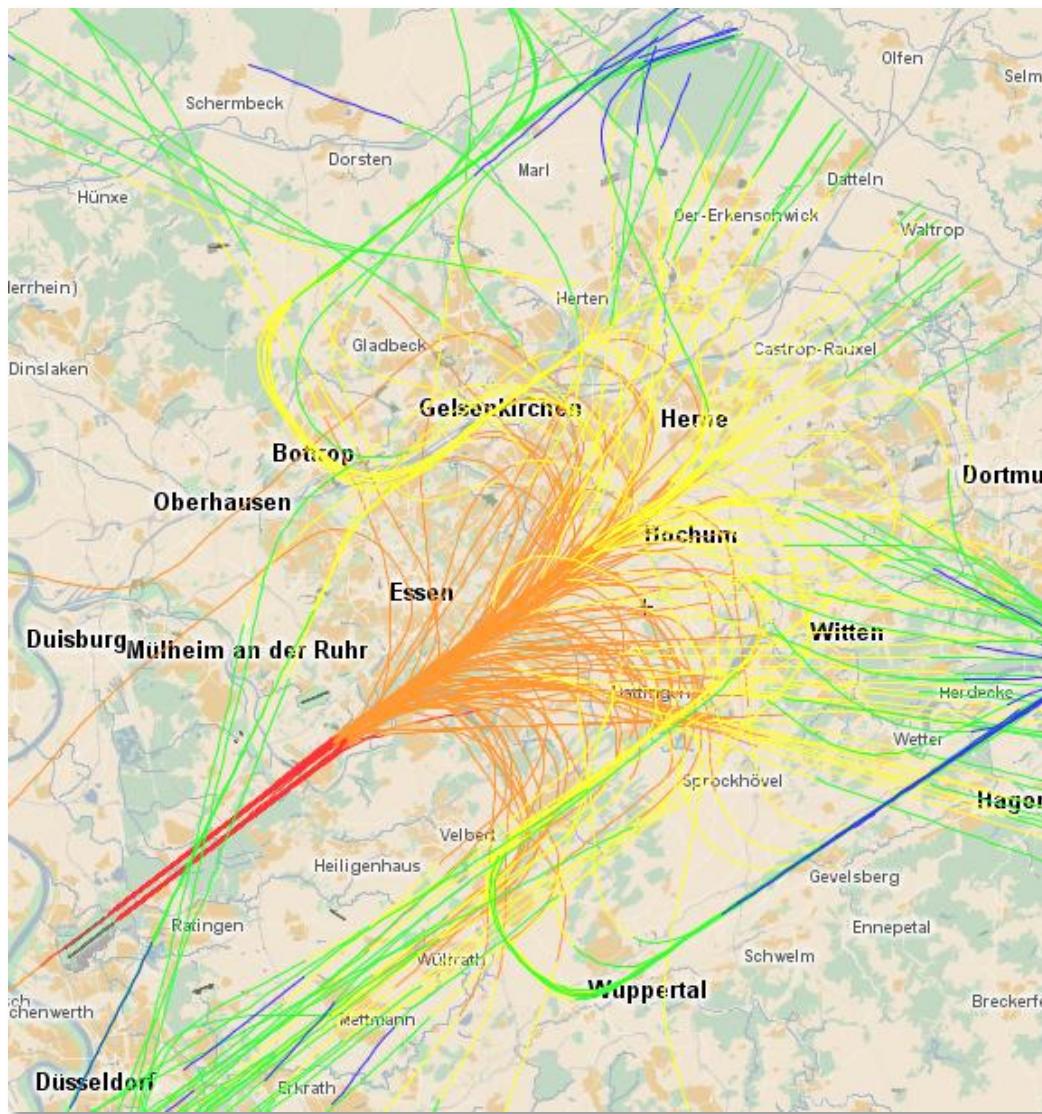
148

ED LIMITS ARE MANDATORY FROM THE RESPECTIVE POINT THROUGHOUT THE ENTIRE TRANSITION ROUTE
ESS CANCELLED BY ATC.

OPERATIONAL REGULATIONS REFER TO API ENR 1.5.



Approach EDDL (WaDo)



Flight progress strips

WasI-principle:

- Every sector will be provided with the relevant data
- A correct number of flight progress strips will be produced for every single flight

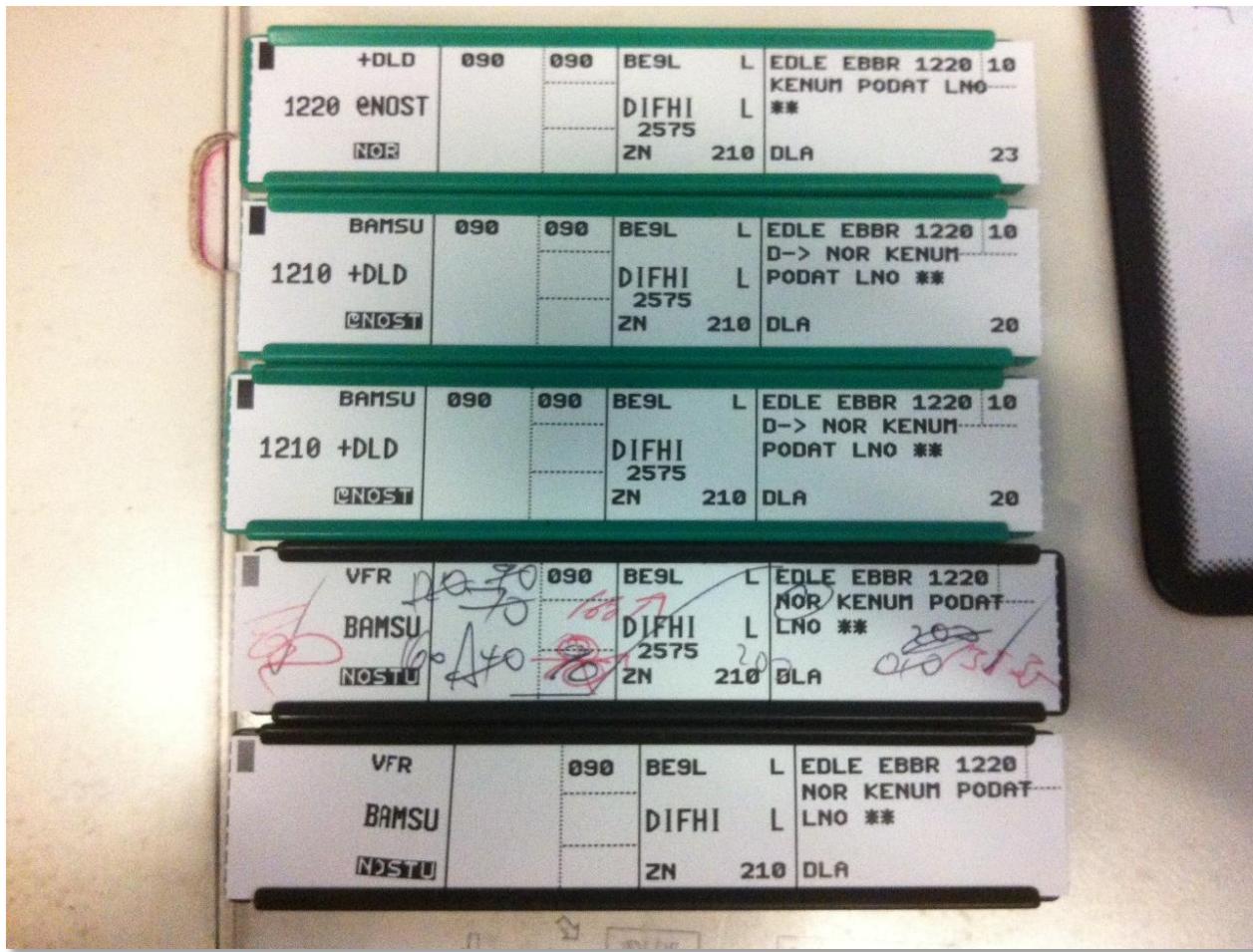
WaDo-principle:

- There is a huge amount of irrelevant data
- Filter out as soon as possible

„Strip graveyard“ #1



„Strip graveyard“ #2



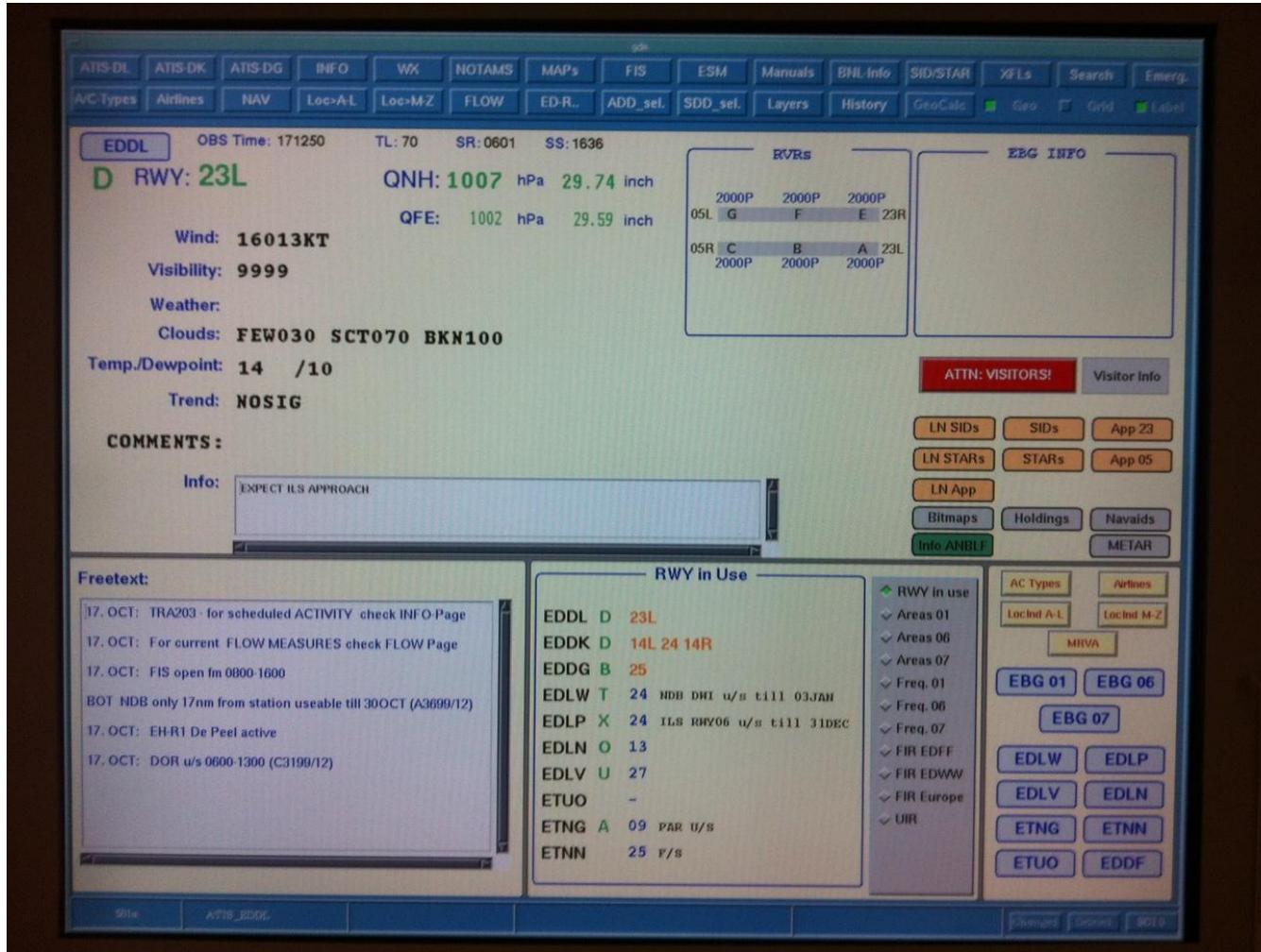
Imagined...



Actually carried out...



Air Traffic Controller „support“ system



Up to date ?

- 111.4 In the event of different interpretations of the German and English versions, the German text shall prevail.
- 111.5 Operational staff shall be familiar with all regulations of the manuals, as far as applicable.
- 111.6 Operational staff are expected to exercise their best judgement if they encounter situations which are not covered by the regulations of the manuals.

Up to date ?

Betriebsanordnungen Center Langen

[ZURÜCK](#) ... [bis 2004](#) ... [2005](#) ... [2006](#) ... [2007](#) ... [2008](#) ... [2009](#) ... [2010](#) ... [2011](#) ...

Jahrgang

2012

- [2012/001 Relief after infringement of separation minima](#)
- [2012/002 Simultaneous Training Sector Family 10](#)
- [2012/003 BAO zum LoA Giebelstadt INFO](#)
- [2012/005 Procedures for Consolidation of Functions in ATC \(SSO\)](#)
- [2012/008 Additional Procedures for Coordination of EDQG Arrivals](#)
- [2012/009 Nutzung des Internetzugangs am DIFI Rechner](#)
- [2012/010 Acrobatics Restrictions RLP](#)
- [2012/015 Handling of Parachute Descents & Aerobatics](#)
- [2012/016 Control and Coordination Procedures SF 01, 06, 07, 21/25 \(un gültig ab 18.10.2012\)](#)
- [2012/016 Control and Coordination Procedures SF 01, 06, 07, 21/25 \(gültig ab 18.10.2012\)](#)
- [2012/017 Operational Procedures PHOENIX](#)
- [2012/018 Operational Procedures P1 DUS and FRA Systems\)](#)
- [2012/019 Glider Operations in TMZ Dortmund](#)
- [2012/020 Zusatzvereinbarung zur Nutzung der ED-R135 Hammelburg](#)
- [2012/021 Glider Operations in Airspace C EDDE](#)
- [2012/022 ATCISS Visitor Button](#)
- [2012/023 BAO zum LoA AOCS Nieuw Milligen ATC](#)
- [2012/024 BAO zum LoA Beek ATC](#)
- [2012/025 TRAMON Service by TACCS for TRA205/302 \(gültig bis 31.12.2012\)](#)
- [2012/031 Allocation of SID SOBRA_L \(EDDF\)](#)
- [2012/032 Glider Operations in TMZ Luxemburg](#)
- [2012/033 Continuous Descent Operations \(CDO\) Trial EDDF](#)
- [2012/034 TRAMON Service by TACCS for TRA203](#)
- [2012/035 DFS STCA Procedures](#)
- [2012/037 Noise Abatement Procedures SFam 01/06/07](#)
- [2012/042 HPA Anflugverfahren EDFE](#)
- [2012/043 BAO zum LoA Egelsbach TWR](#)
- [2012/044 Statistik über Erteilung von Verkehrsinformationen \(gültig bis 30.09.2012\)](#)
- [2012/045 Monitoring of Frequencies \(un gültig ab 18.10.2012\)](#)
- [2012/047 Military exercise CROSS SERVICING EXERCISE \(gültig 16.-26.10.2012\)](#)
- [2012/048 Noise Abatement EDDF - Raise of ILS Glide Path Angle 25R/07L \(gültig ab 18.10.2012\)](#)
- [2012/049 IFR Procedures EDDF APP \(gültig ab 18.10.2012\)](#)
- [2012/051 Monitoring of Frequencies \(gültig ab 18.10.2012\)](#)

Anfahrt

Campus Gastronomie

Monza Park Gastronomie

Fit auf dem Campus

Flughafen-Info

Mitarbeitervertretungen

Niederlassung Mitte

Niederlassungsleitung

Betrieb

Wir über uns

AIP - Luftfahrt handbuch

MIAIP - Militärisches Luftfahrt handbuch

BA-FVD - Betriebsanweisung Flugverkehrsdienste

Anweisungen der Niederlassungsleitung

BAO - Betriebsanordnungen

BAO EDDF APP bis 2004

BAO 1997-2004

BAO 2005

BAO 2006

BAO 2007

BAO 2008

BAO 2009

BAO 2010

BAO 2011

BAO 2012

Sektoren- und Rollenbeschreibungen

LOAs - Letters of Agreement

Betriebsbestimmungen / Mitteilungen

Betriebsinformationen

Electronic Briefing System

ePEP

Ausbildung

PROKOM

CBT PATOS

CISM

Forum der AG EBG 03

Forum der AG EBG 07

Supervisor im Center Langen

Safety

Technik

Qualitätsmanagement

Personalmanagement



“Smart” mechanisms

- Rules of thumb / heuristics
- Locally shared information
- Exchange of planner & executive controller
- Informal / „undocumented“ procedures
- „Heading of the day“

A day in the life of a controller...

On June 20-06-2013 a severe weather situation developed around the airport and the surrounding cities...

EDDK 20**0650**Z VRB02KT 9000 BKN017 22/18 Q1013 TEMPO BKN013

EDDK 20**0720**Z VRB02KT 8000 BKN016 23/18 Q1013 TEMPO BKN013

EDDK 20**0750**Z VRB02KT 8000 BKN016 22/18 Q1014 TEMPO BKN013

EDDK 20**0820**Z VRB01KT 7000 -RA VCTS FEW017CB OVC130 22/19
Q1013 TEMPO TSRA

EDDK 20**0850**Z 36015KT 6000 TSRA FEW015 FEW025CB BKN130 21/19
Q1009 BECMG NSW

EDDK 20**0950**Z 26010KT 3700 -RA VCTS BR FEW015CB BKN150 21/19
Q1012 TEMPO 20020G35KT TSRAGR BKN009 SCT015CB

Weather gets closer to the airport...

EDDL 20**1020**Z 25011KT 4500 –RA BR SCT013 BKN020 22/20

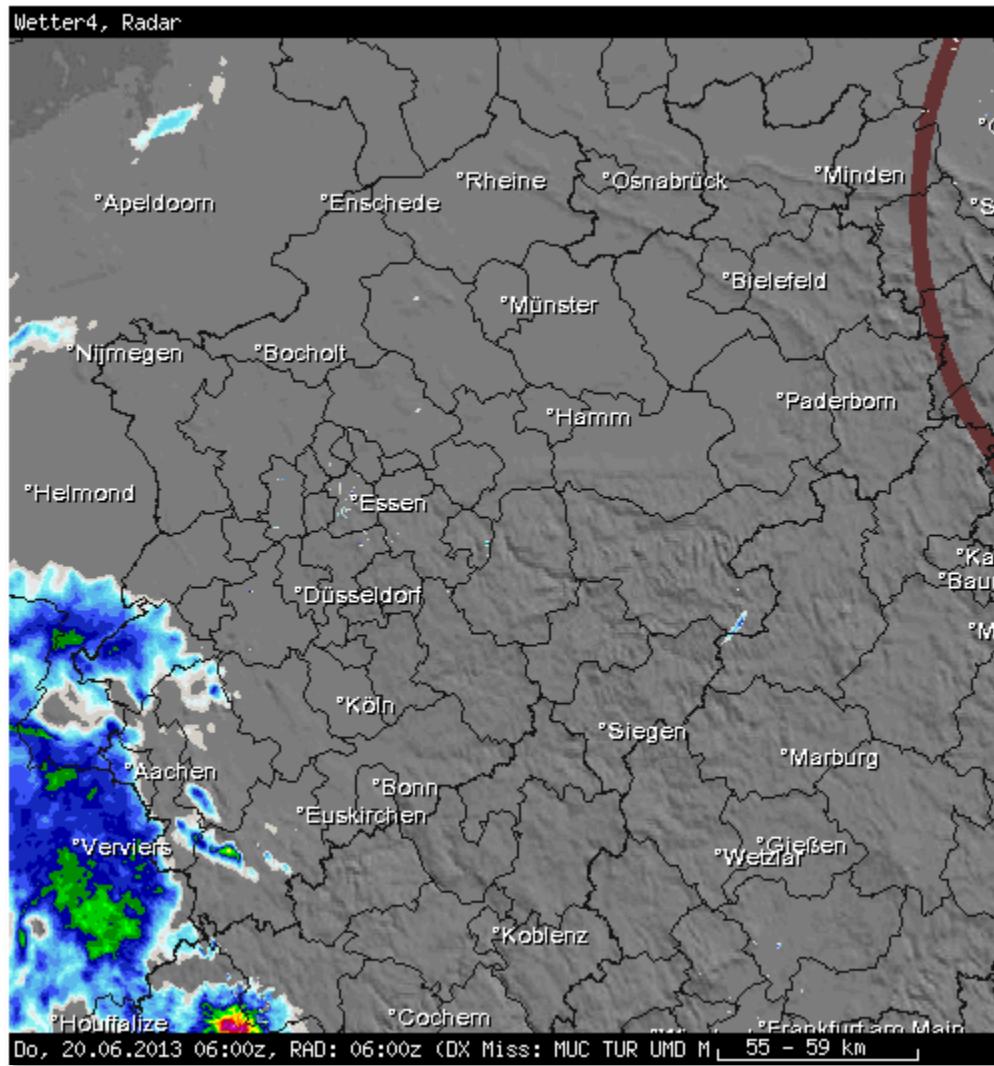
EDDL 20**1120**Z 27012KT 6000 –SHRA VCTS SCT015CB BKN045 21/18

EDDL 20**1150**Z 20012KT 3500 TSRA SCT015CB BKN020 20/18

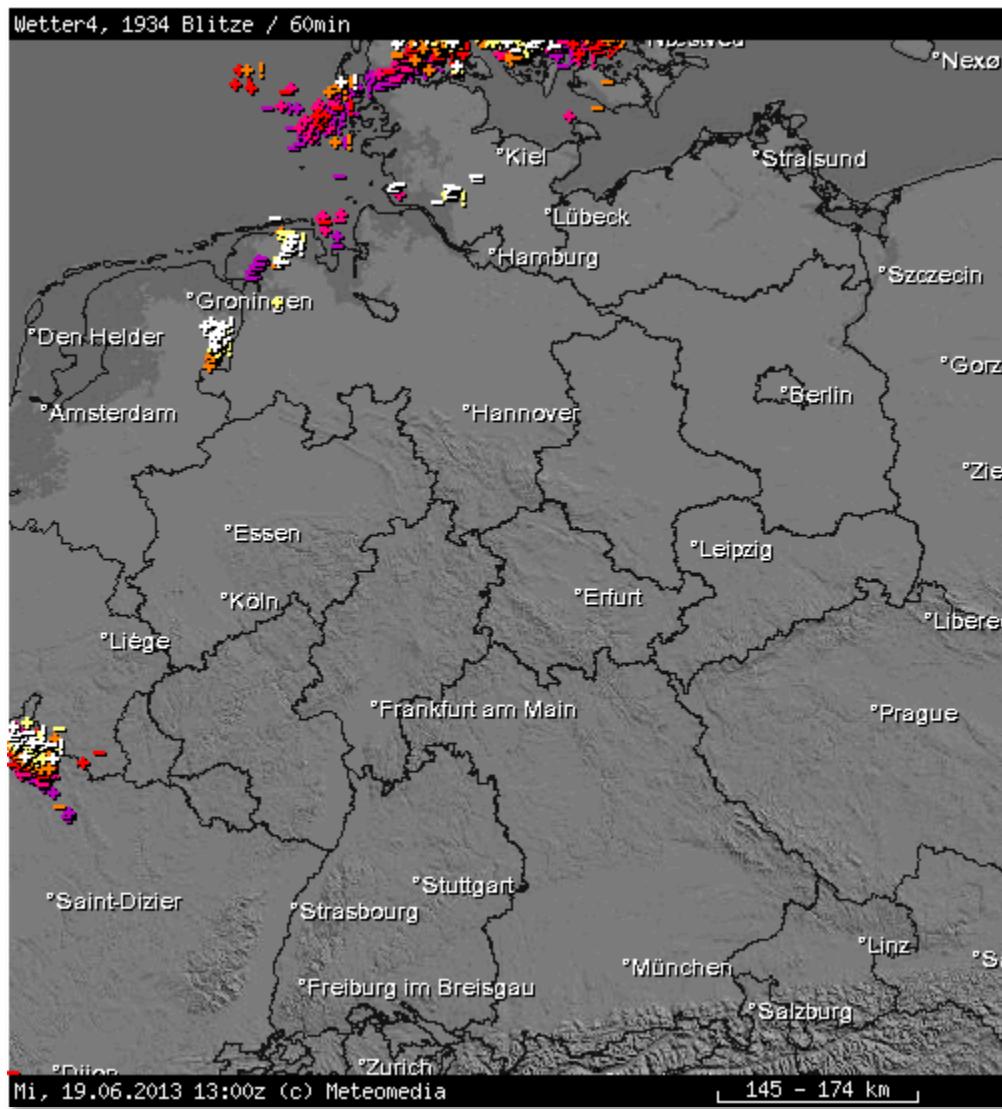
EDDL 20**1220**Z V30006KT 240v320 9999 TSRA FEW008 SCT015CB
BKN050 19/17

EDDL 20**1250**Z 260015KT 9999 VCTS RA FEW008 FEW015CB BKN120
19/17

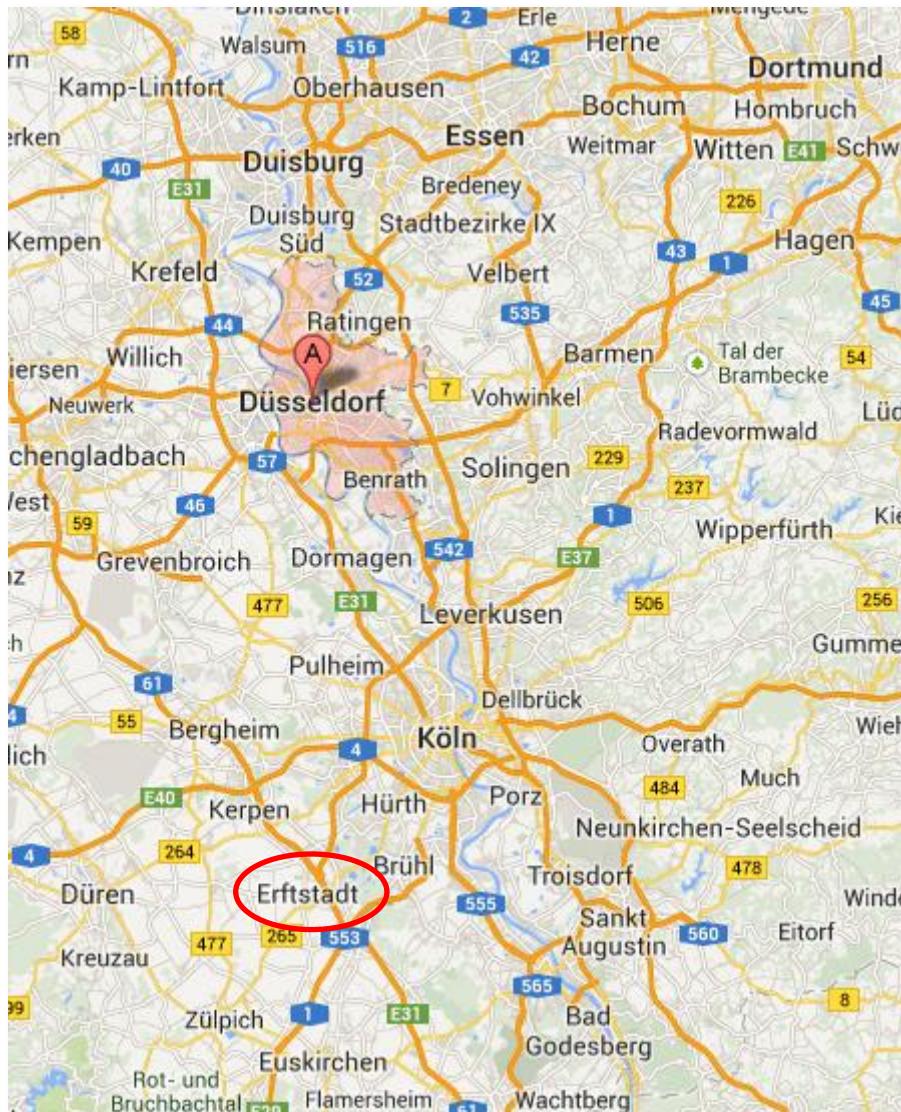
Weather during June 20th 2013



Weather during June 20th 2013



Weather during June 20th 2013



Erfstadt (near Cologne), 10.01 UTC



Wermelskirchen (near Wuppertal), 10.55 UTC



Düsseldorf, 11.45 UTC



Hagen, around 12:00 UTC



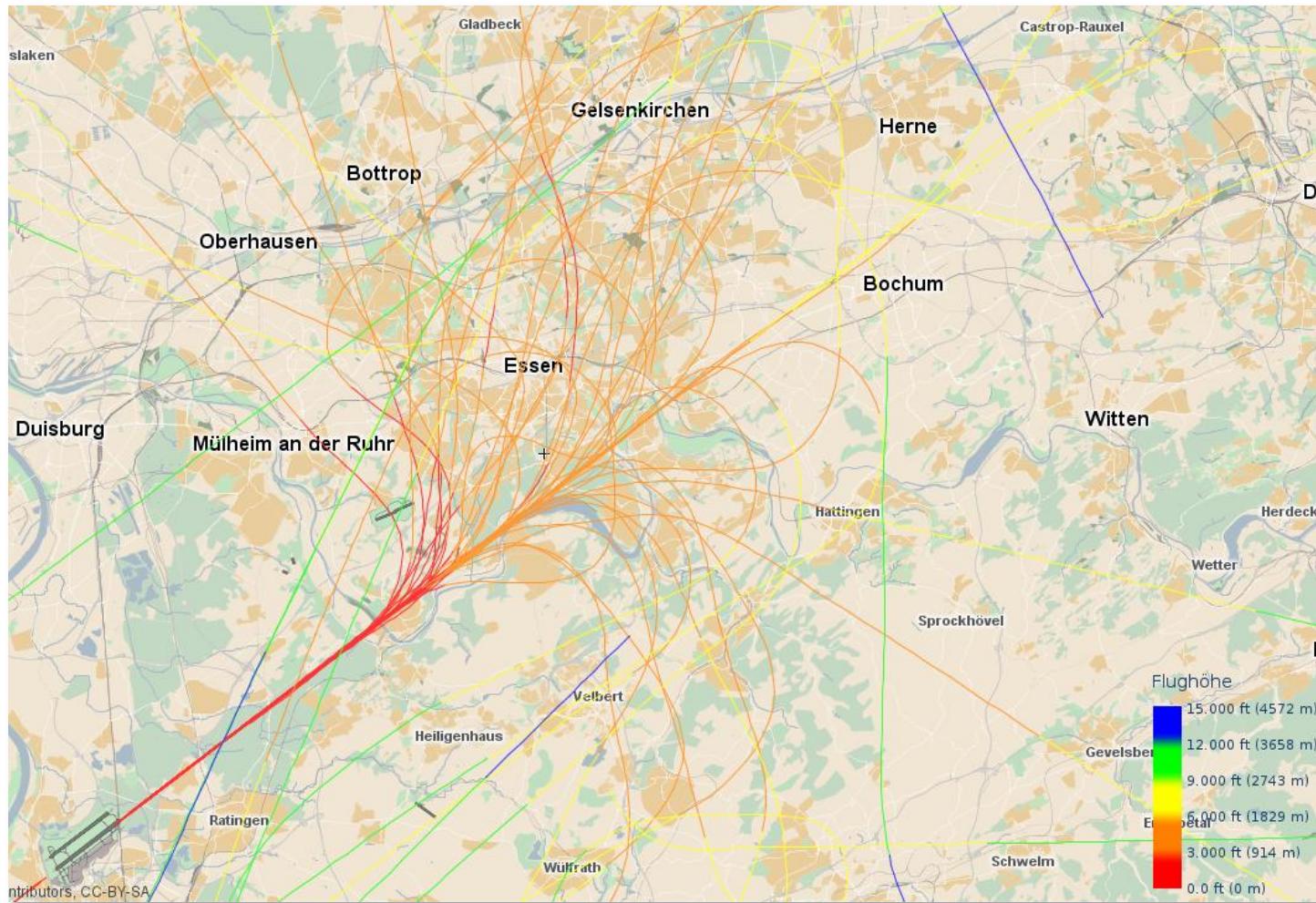
After the weather was gone



After the weather was gone



20.06.2013 Inbounds (1200-1500)



Weather and departures



Why did it go right? #1

„Squawk Box“:



Squawk Box

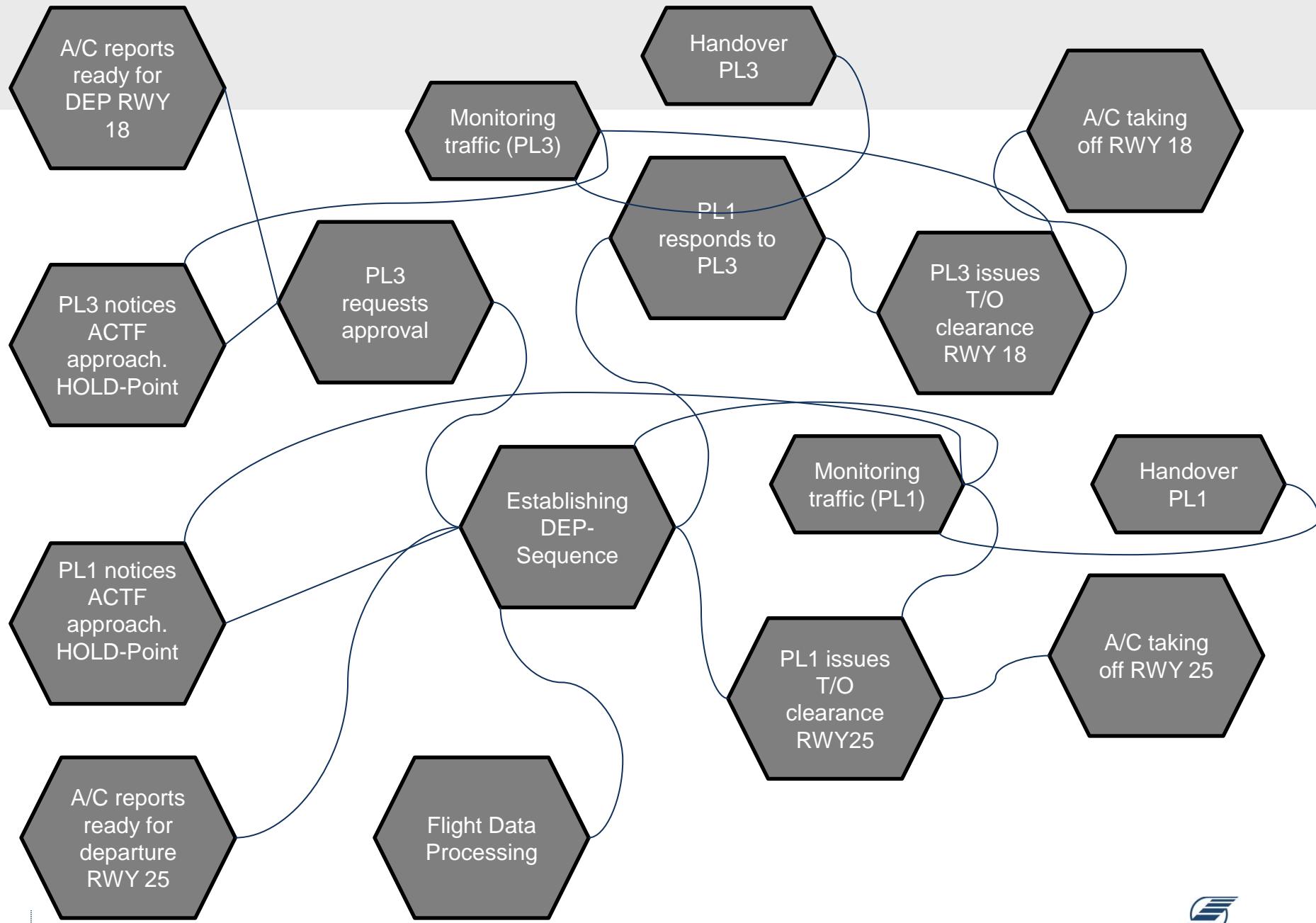


Why did it go right? #2

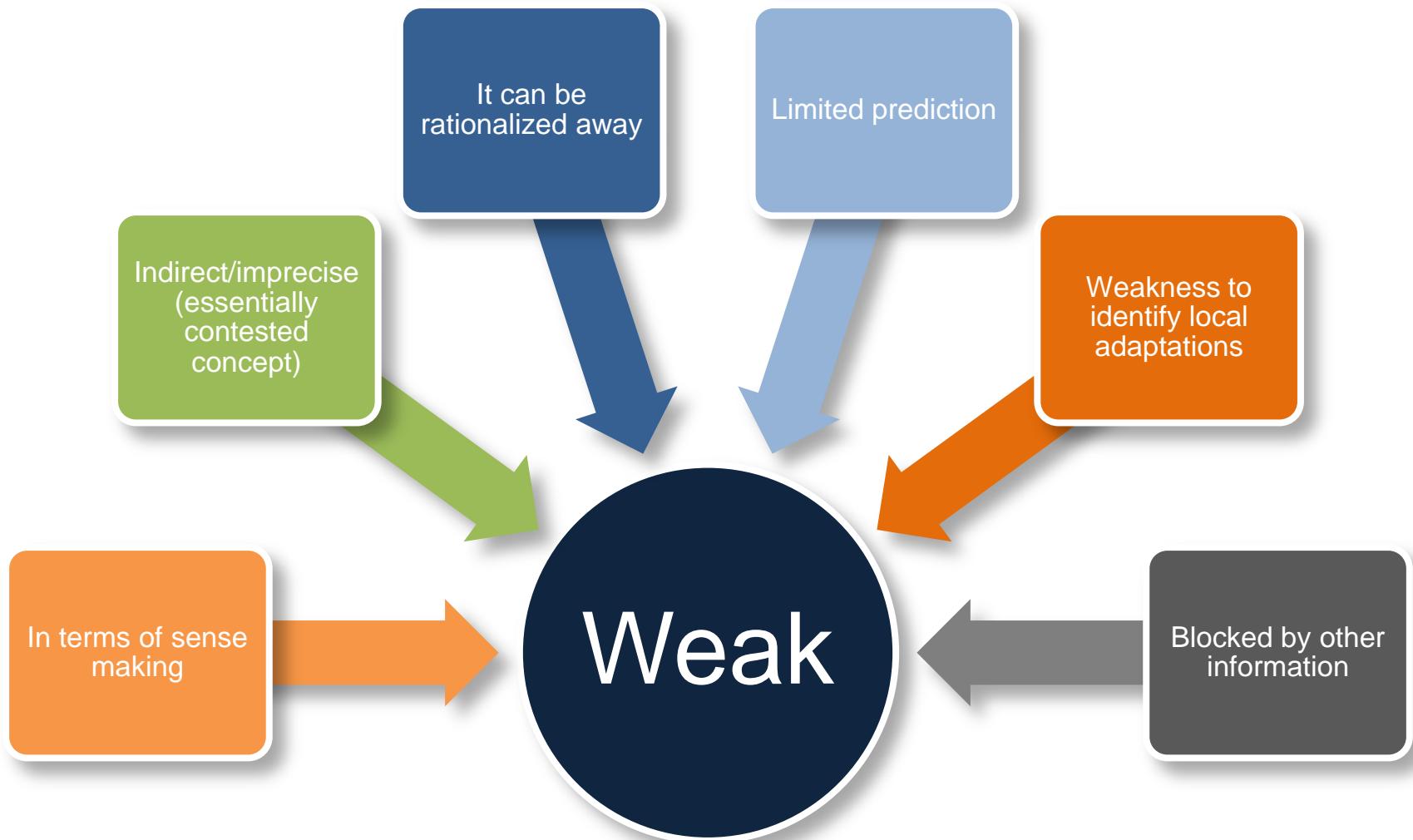
- Operating outside the boundary for a limited time only
- Anticipation of bottlenecks (traffic flow)
- Interaction between operational personal
- Integration of data (weather, traffic flow, etc.)
- Communication between pilots and controllers (non standard RT)
- Coordination between ATC (opening/closing of sectors)

What are we doing as (proactiv) safety management?

- Design Process Guide
- Project „Weak Signals“
- Collaboration on FRAM



What makes a signal „weak“?



Any questions?

„If you hit a wrong note, it's the next note that you play that determines if it is good or bad“

- Miles Davis -

