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The current deficiencies

EASA Workshop: Weather information provided to pilots

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ECA, 10 / 2015

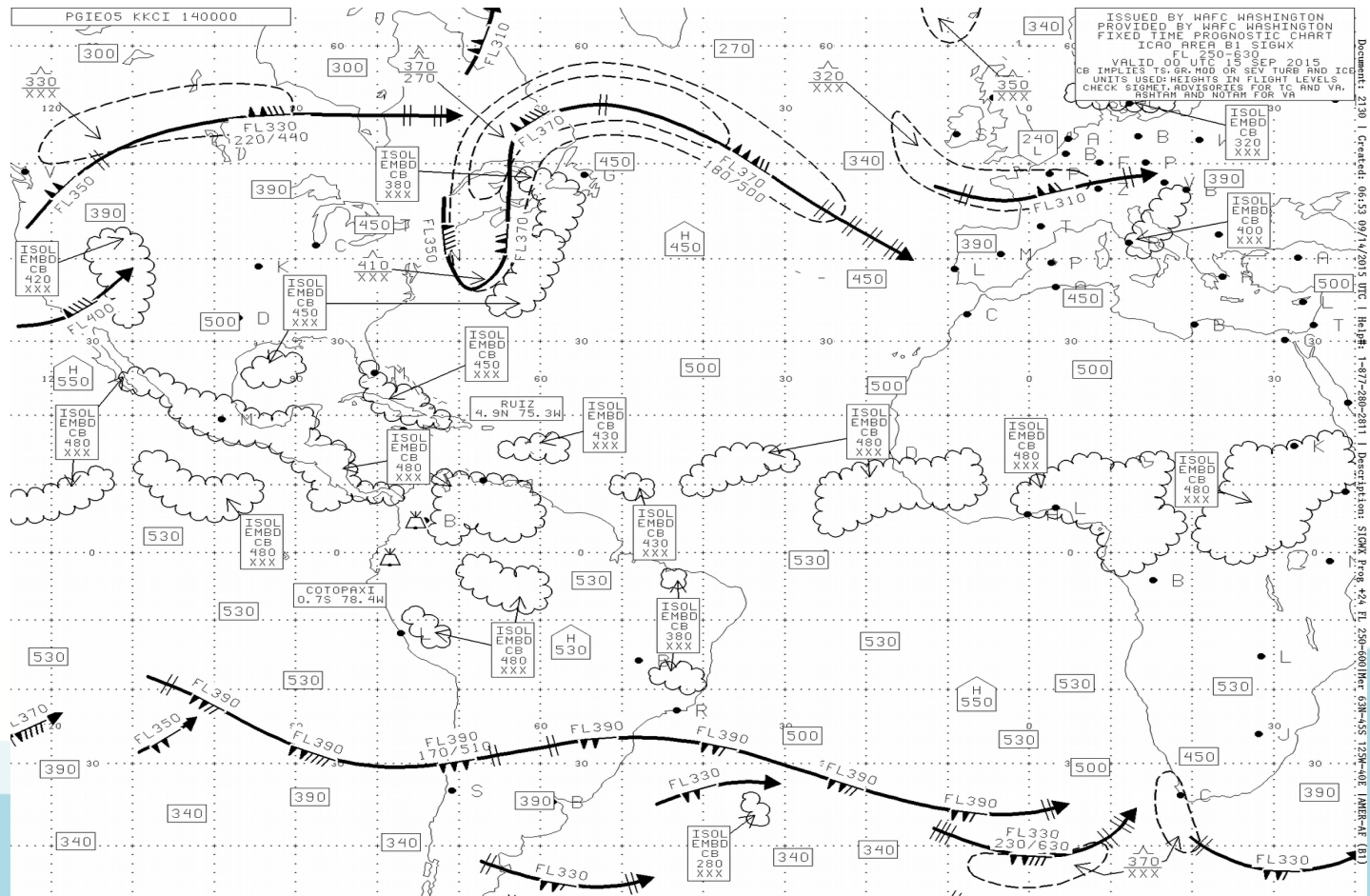


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What are the deficiencies?
→ What are the most important ones?

Flight-Planning is a black – on grey world





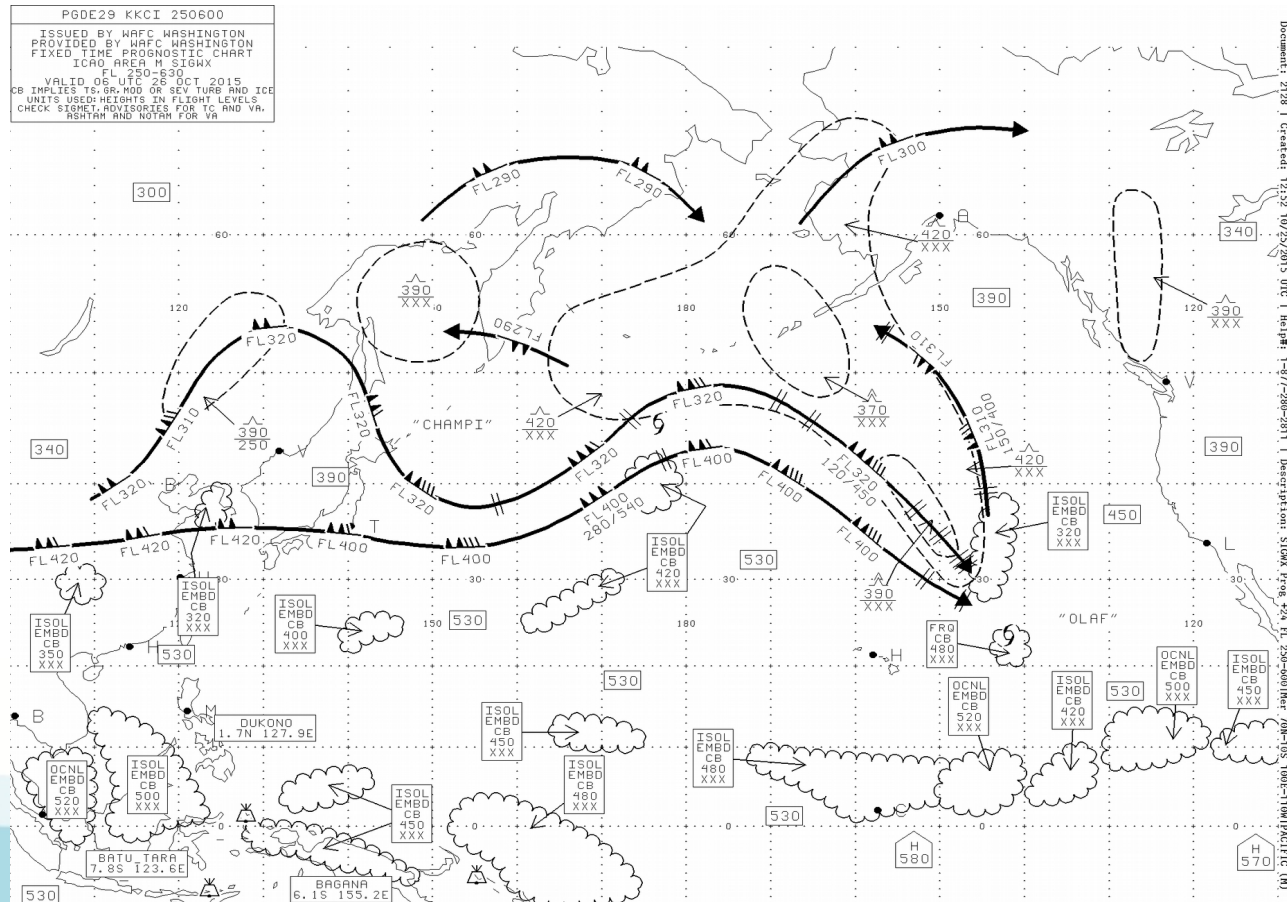
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Flight-Planning is a black – on grey world





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What are the deficiencies?

→ What are the most important ones?

Inflight- updates ? Only via ACARS...

```
SIGMET REPORT
CZWG WINNIPEG FIR
WS SIGMET G5 VALID 232310/240310
CWEG- CZWG WINNIPEG FIR FRQ TS OBS WTN
20 NM OF LINE N5837 W09602 - N5701
W09452 TOP FL360 MOV NE 10KT NC
WS SIGMET L7 VALID 232300/240300
CWEG- CZWG WINNIPEG FIR FRQ TSGR OBS
WTN 20 NM OF LINE N5047 W09637 - N4930
W09834 - N4941 W09942 - N4900 W10036
TOP FL450 MOV E 10KT INTSFYG
WS SIGMET M2 VALID 232230/240010
CWUL- CZWG WINNIPEG FIR CNCL SIGMET M1
232010/240010
WS SIGMET L6 VALID 232155/240155
CWEG- CZWG WINNIPEG FIR FRQ TS OBS WTN
30 NM OF LINE N5046 W09650 - N4927
W09856 TOP FL440 MOV E 10KT INTSFYG
WS SIGMET G3 VALID 232040/240040
CWEG- CZWG WINNIPEG FIR FRQ TS OBS WTN
25 NM OF LINE N5920 W09815 - N5704
W09625 TOP FL380 MOV NE 10KT NC
WS SIGMET G2 VALID 231930/232330
CWEG- CZWG WINNIPEG FIR FRQ TS OBS WTN
15 NM OF LINE N5902 W09856 - N5717
W09811 TOP FL360 MOV NE 20KT NC
UC SIGC MKCC WST 232155 CONVECTIVE
SIGMET 73C VALID UNTIL 2355Z ND FROM
70NE ISN-60NE MOT-30WNW BIS-40SSE
ISN-70NE ISN DVLPG AREA TS MOV FROM
20020KT TOPS ABV FL450.
```



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The Terminal Weather Information for Pilots System (TWIP)

Radar info via ACARS
directly to pilots.

...not in Europe

```
MCO 1810
TERMINAL WEATHER
*MODERATE PRECIP
  BEGAN 1805
-STORM(S)
  ARPT ALQDS MOD PRECIP
  1NM N-E HVY PRECIP
  MOVG W AT 15KT
.EXPECTED HVY PRECIP
  BEGIN 1815
```

```
MCO 1820
TERMINAL WEATHER
*MICROBURST ALERT
  30KT LOSS
  BEGAN 1815
-STORM(S)
  ARPT ALQDS HVY PRECIP
  ARPT ALQDS MOD PRECIP
  MOVG W AT 15KT
```

```
MCO 1830
TERMINAL WEATHER
*HEAVY PRECIP
  BEGAN 1825
-STORM(S)
  ARPT ALQDS MOD PRECIP
  1NM W-NW HVY PRECIP
  MOVG W AT 15KT
.PREVIOUS MICROBURST
```



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What are the deficiencies?
→ What are the most important ones?

Inflight- updates ?

24 JUL 2015: ACARS SYS FAIL

- 7 hrs+
- whole system
(multiple airlines...)



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What are the deficiencies?
→ What are the most important ones?

Inflight- updates ? Via voice broadcast...

EUROCONTROL guidance notes for pilots

9. Getting Aeronautical and Meteorological Information in Flight



VHF WEATHER BROADCASTS (VOLMET)

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Throughout Europe, certain stations transmit airfield weather information for major airfields continuously on a VHF frequency (VOLMET). The AIP and commercial flight guides list the stations which do this, their frequencies, and the airfields included. Such information is made available by the meteorological service providers, too.

ATIS BROADCASTS

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is up

EME
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But: VHF frequencies: under threat.



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What are the deficiencies?

→ What are the most important ones?

Not all aircraft
have ACARS,
and
sometimes,
only voice-info
is available.

BIRD SIGMET 08 VALID 141200/141300 BIRK-
BIRD REYKJAVIK CTA VA ERUPTION MT EYJAFJALLAJOKULL LOC N6337 W01937
VA CLD FCST BLW FL200 N65 W025 - N6430 W016 - N66 W018 - N67 W025 -
N68 W022 - N68 W016 - N64 W007 - N61 W007 - N61 W025 - N62 W027 -
N64 W027- N65 W025

sigmets of the day

BIRD SIGMET 09 VALID 141215/141300 BIRK-
BIRD REYKJAVIK CTA VA ERUPTION MT EYJAFJALLAJOKULL LOC N6337 W01937
VA CLD FCST FL200/FL350 N65 W027 - N66 W025 - N66 W023 - N61 W010
-N61 W015 - N62 W027 - N65 W027 CNL SIGMET 07 141200/141300



Icelandic Met
Office



avoid !





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What are the deficiencies?

→ What are the most important ones?

Research
and development
programs in
Europe hardly
consider pilots'
information needs
for safe and
efficient flight.

SESAR: Project 11.02.01 promotes current and future MET capabilities such as probability forecasting, convection forecasting and real-time weather monitoring, with the aim of gathering robust and detailed user requirements for MET information and services. Project 11.02.02 will then design and demonstrate foundational capability improvements to MET infrastructure that will support the requirements, as well as design and build MET prototypes that will integrate with, and support developments being undertaken in other SESAR operational WPs. These prototype MET services will access requests from, and deliver their data to, the 4DWxCube and SWIM network. The value of these new prototypes will be evaluated through SESAR validation exercises, fully supported by the WP11.2 team.

- >> verification papers lack words like 'Pilot' , 'Crew' or 'aircraft' as user of met-information; aircraft are only a source of information
- >> do not verify that the met-info reaches the user, i.e. pilot
- >> do not contain items like satellite- or lidar (windshear) information



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- Can a priority list be established?
- Has this already been assessed?
- Are there consensual conclusions?

Deficiencies:

- Met documentation black+white
- low connectivity of cockpit, in flight and on ground
- WX-radar and satellite information not available for briefings and enroute
- ACARS not mandatory
- some advanced ACARS-services not available in Europe (TWIP)
- frequencies for voice volmet threatened.



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Is there a need to further work on this subject to reach a common view?

How can the Agency help?

Priorities could be discussed,
the item-list expanded
more deficiencies identified.

Can ECA help ?

Yes, we can.