



CDM@DSNA

SEMINAR
AND OPERATIONAL
WORKSHOPS

Outline a CDM for
regional airports

Workshop

SHARE VIEWS,
GET RESULTS



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Direction générale de l'Aviation civile

Ministère la Transition écologique et solidaire



Airport view



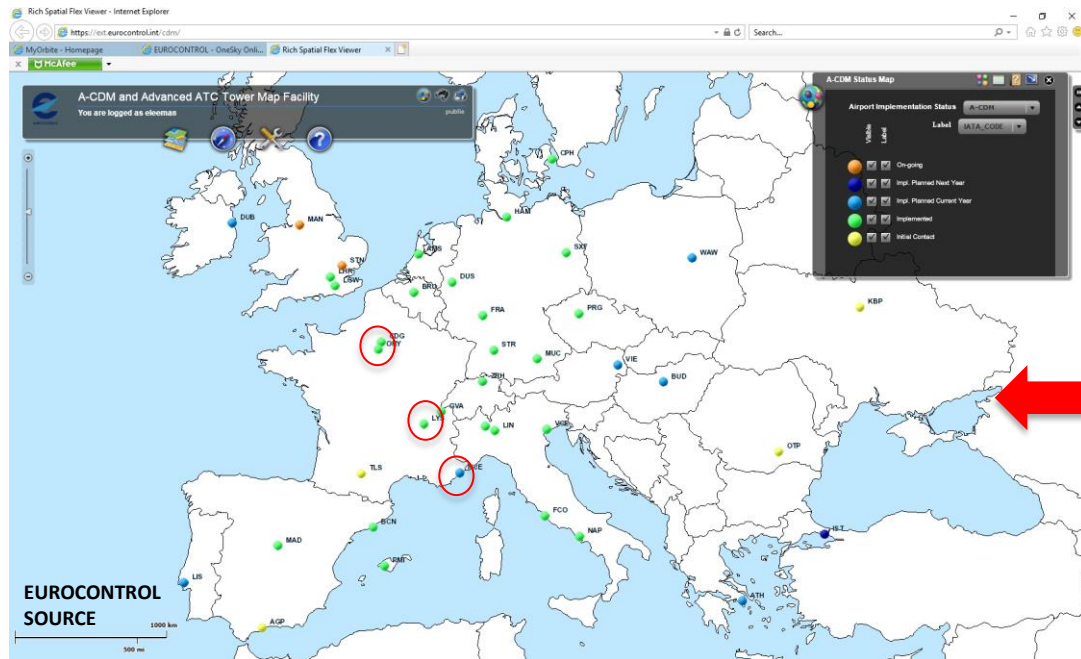
CDM for Regional Airports

Expectations ...

Olivier SCIARA
Safety, ATM and Technical Manager

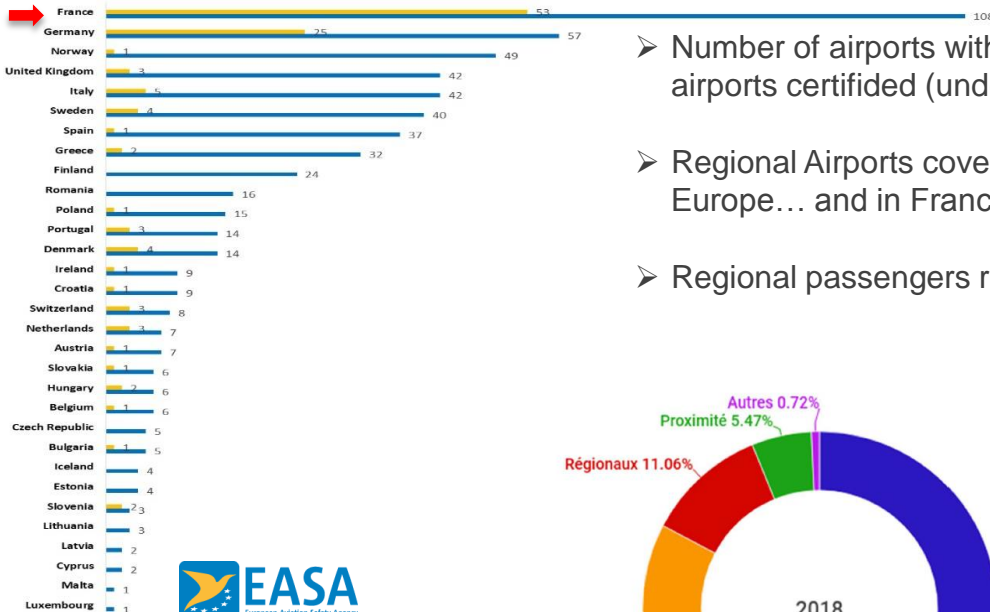
UAF
& FA UNION
DES AÉROPORTS
FRANÇAIS
& FRANCOPHONES
ASSOCIÉS

→ ATM Network situation in France



Regulation (EU) 2014/716 “Pilot Common Project”
Regulation 2019/123 “ATM Network Functions”

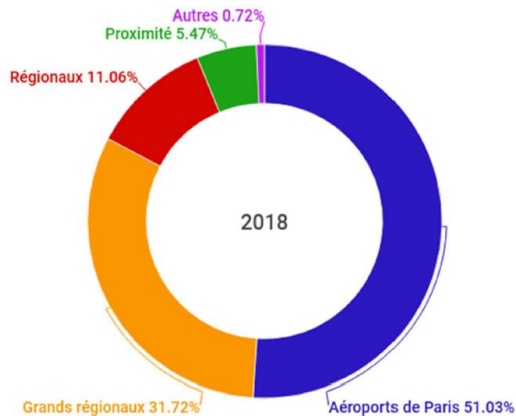
➔ Why we need to be better connected



- Number of airports with regular, commercial traffic and connections are (55 airports certified (under EASA Rules)
- Regional Airports cover around 50% of commercial air traffic movements in Europe... and in France
- Regional passengers represent 49% of traffic passengers (51% for Paris AD)



AESA SOURCE



UAF SOURCE

Aérodromes Ranking above 1M/pax 2018

Aéroports	Pax	%2018/2017
1 Paris-Charles de Gaulle	72 229 723	4.0%
2 Paris - Orly	33 120 685	3.4%
3 Nice Côte d'Azur	13 850 561	4.1%
4 Lyon-Saint Exupéry	11 037 413	7.4%
5 Toulouse - Blagnac	9 630 308	3.9%
6 Marseille Provence	9 390 371	4.3%
7 Bâle - Mulhouse	8 573 646	8.7%
8 Bordeaux	6 799 572	9.3%
9 Nantes Atlantique	6 199 181	12.9%
10 Paris - Beauvais	3 787 086	3.8%
11 Lille - Lesquin	2 078 549	9.1%
12 Montpellier Méditerranée	1 879 963	1.6%
13 Ajaccio -Napoléon Bonaparte	1 673 308	6.6%
14 Bastia - Poretta	1 525 159	8.9%
15 Strasbourg	1 297 177	7.4%
16 Biarritz-Pays Basque	1 183 635	-0.6%
17 Brest - Bretagne	1 104 699	5.6%

>>> 17
aéroports dans
ce classement

UAF
SOURCE

>>> Rappel :

- Grands aéroports régionaux : >5M pax
- Aéroports régionaux : 1M<5M
- Aéroports de proximité : 100 000 < 1M pax

→ Facts from French Regional Airports (RA)

- French Airports are relevant to join the ATM Network, but A-CDM may create more burden for Regional Airports than benefits.
- The ATM Network is also relevant for us, because airlines visit our airports, and most important for us and our passengers
- We expect a better allocation of the resources (improvement of the turn around, GH resources, parking stand allocation, ..)
- We need to improve time after push back and engine start acceptance (fuel save)
- We need to have a better reaction after perturbation and operation start again
- So we need a light solution, simple and an easy process to manage Strategic (=1 week before), Pre Tactical (=1 day before operation) and Tactical (= day of operation) data



➔ Were are we now

- All airports in France could contribute to ATM Network, and some airports are under investigation for a light system other than A-CDM (ie Advance ATC Tower solution) because RA don't need to exchange all DPI¹ messages.
- We start to work with ACI on this topic, and Engène Leeman (ACI-EUROPE liaison Officer in Eurocontrol NM) help us to go forward (information have been made during UAF internal congress last May)

- Regarding passenger Traffic and the benefit for the NM (Network Management) a first list of aerodromes for whom it could brings benefits

- LFBO Toulouse
- LFML Marseille
- LFSB Bale-Mulhouse
- LFBG Bordeaux
- LFRS Nantes
- LFPB Le Bourget



- We need to go further with DSN, and we now need feedback experience to use the right tool (cost investment vs benefit)

The target is not only to implement a technical solution, but is to put in place a win to win solution for both (ATM NM and Regional Airport) in order to exchange relevant data to improve operations

(1) Departure Planning Messages



Thanks for your attention

Questions ?

**UAF
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DSNA view





ATC operational issues Bordeaux Mérignac airport

CDM@DSNA seminar, November 25th 2019

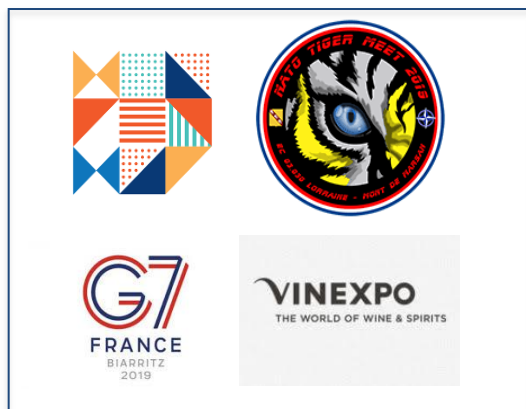
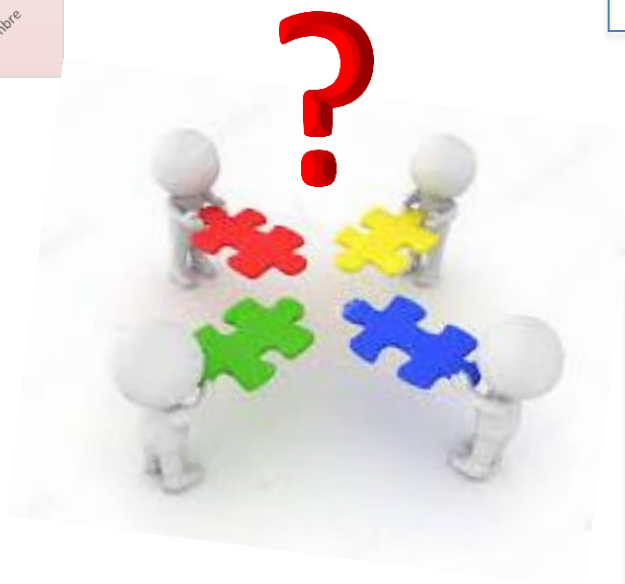
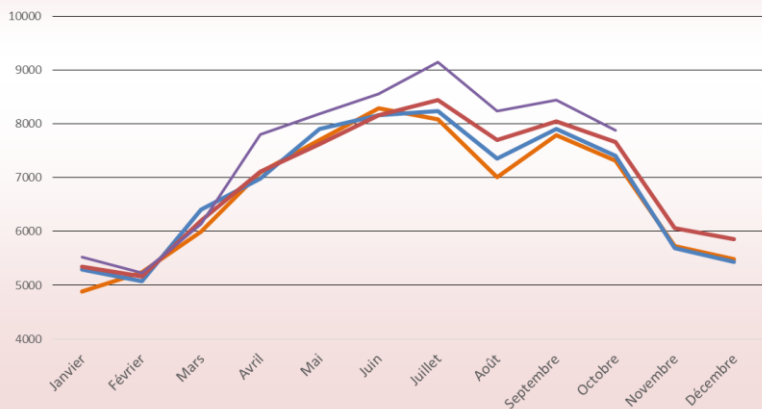


Elements of context



IFR Aquitaine

— 2016 — 2017 — 2018 — 2019



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Capacity vs infrastructure



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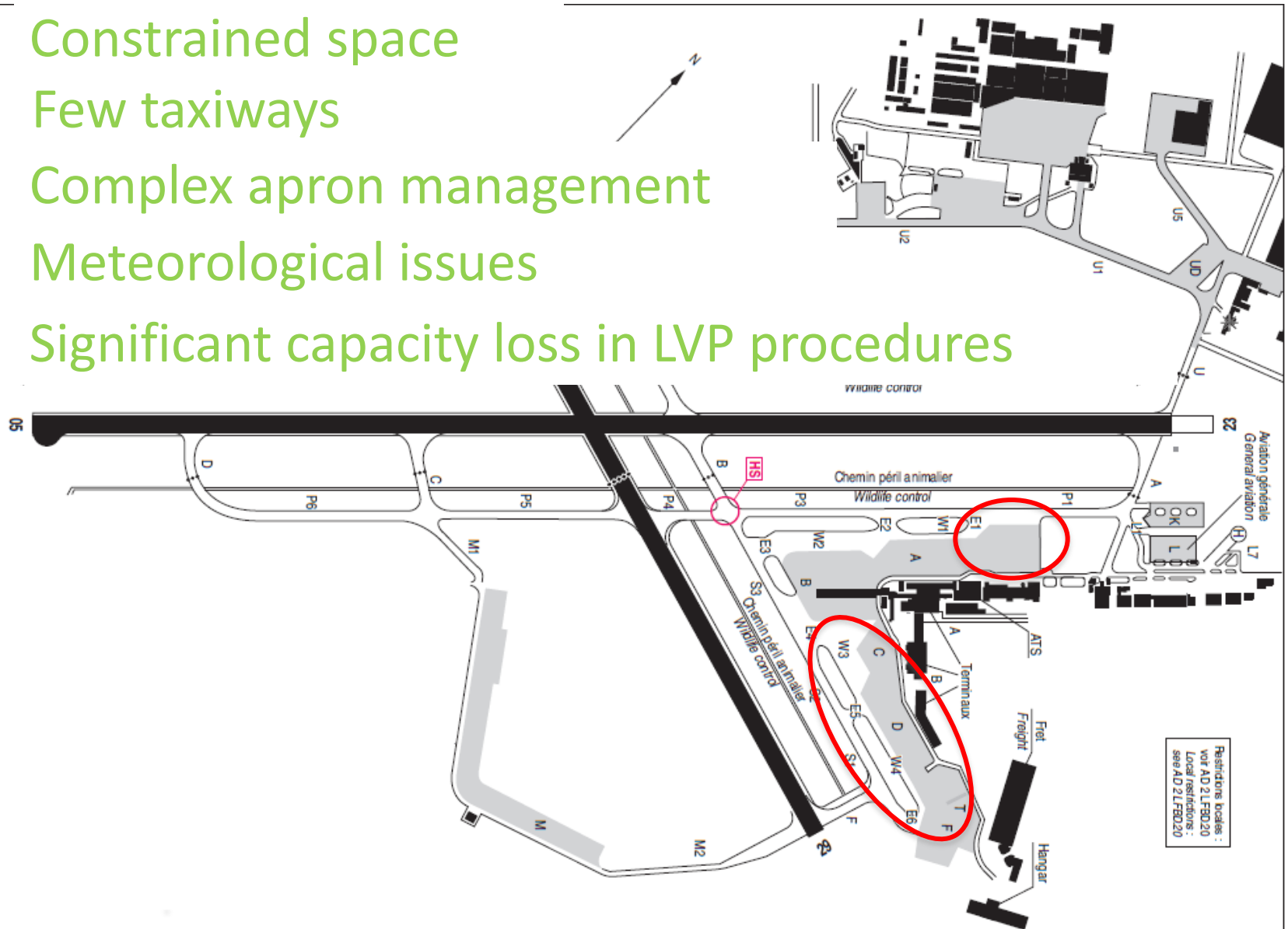
Constrained space

Few taxiways

Complex apron management

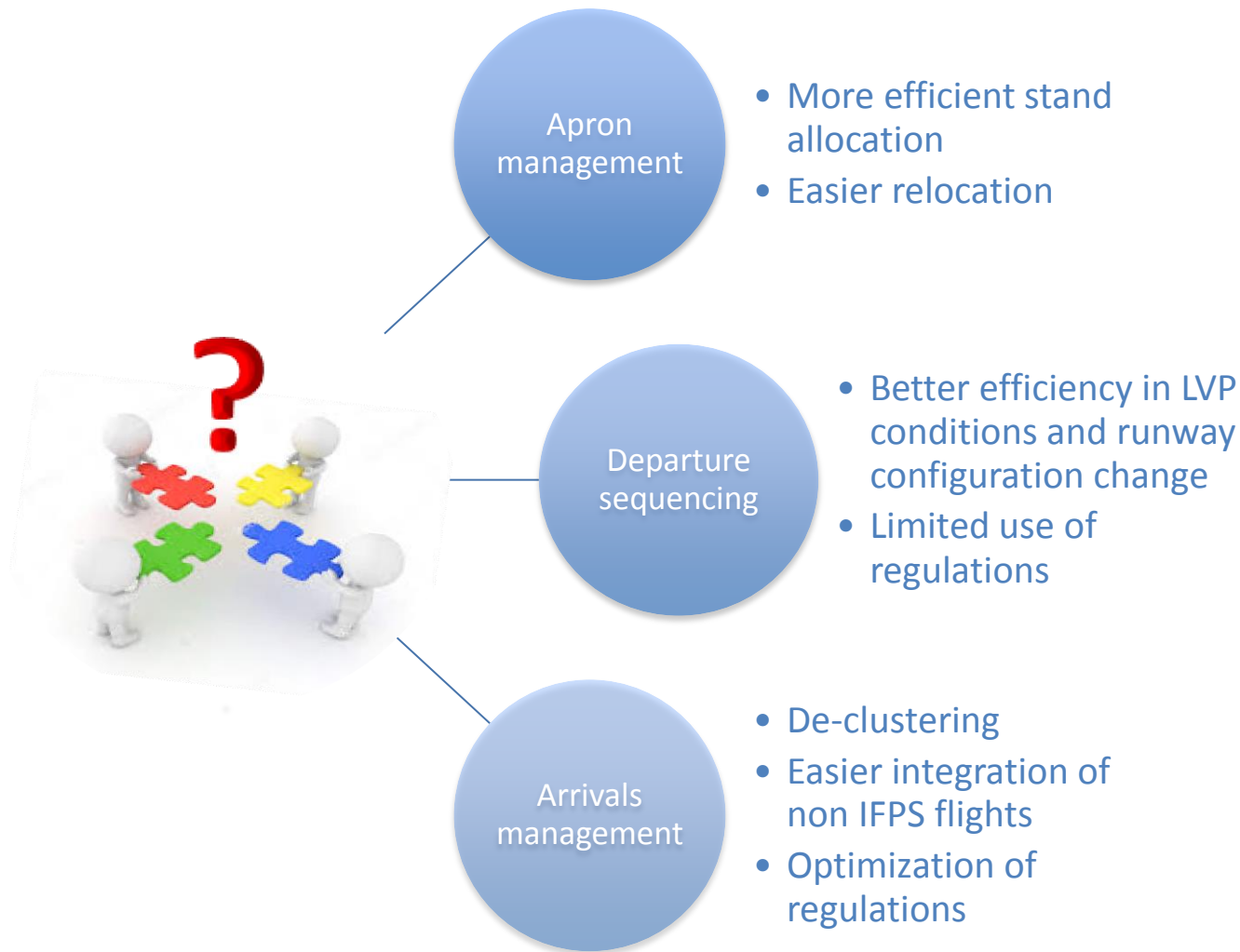
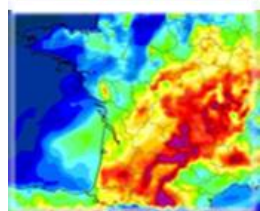
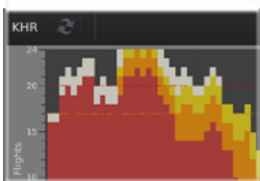
Meteorological issues

Significant capacity loss in LVP procedures



Expected benefits of CDM





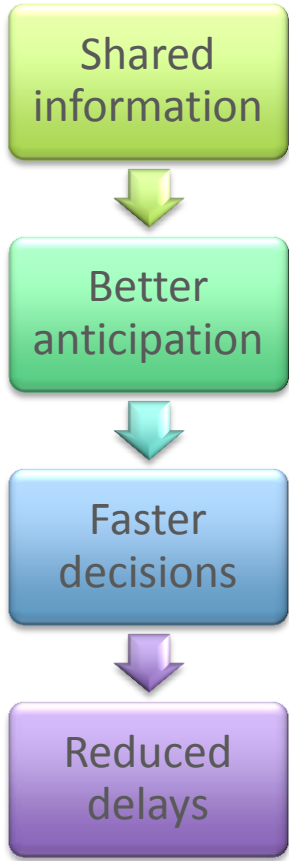
G7 summit : a CDM experience



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NM view



Supporting
European
Aviation



Towards low-cost regional airport CDM & Network Integration

Alan Marsden - EUROCONTROL

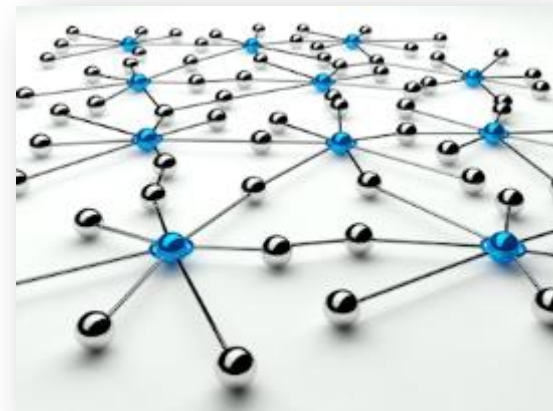


NETWORK
MANAGER



Why share information between airports and the network ?

- ATFCM efficiency is limited by the lack of accurate information about the flight in the period before its departure.
- Airports, AOs, handlers,... efficiency is limited by the lack of information on the incoming flight.
- Flight Update Message (FUM) and Departure Planning Information (DPI) Messages in order to provide accurate estimates of arrival and Take Off Times.



More accurate arrival times
Improved network
efficiency

Levels of integration

- Currently there are 3 levels of integration of airports with the ATM Network :

Category	Characteristic	Network Impact
Full A-CDM	Full set of DPI Messages	28 airports covering 34% departures in NM area
Advanced Tower	ATC-DPI on leaving block	23 airports covering 7% departures
Standard airports	No DPI transmission	

Problem statement

“Can we create an additional category where the full set of DPI messages is transmitted, meeting NM accuracy criteria, but done in a quasi-automated manner” ?

Reduced milestones

M1 : ATC Flight Plan Activation : EOBT – 3hrs
M2 : EOBT – 2hrs
M3 : Take-Off from outstation
M4 : FIR entry
M5 : Final Approach
M6 : Landing (ALDT)
M7 : In-block (AIBT)
M8 : Ground Handling starts (ACGT)
M9 : TOBT update before TSAT
M10 : TSAT issued
M11 : Boarding starts
M12 : Aircraft Ready (ARDT)
M13 : Start-Up Request (ASRT)
M14 : Start-Up Approved (ASAT)
M15 : Off-Block (AOBT)
M16 : Take-Off (ATOT)



M1 : ATC Flight Plan Activation : EOBT – 3hrs
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Trial Location - Alicante

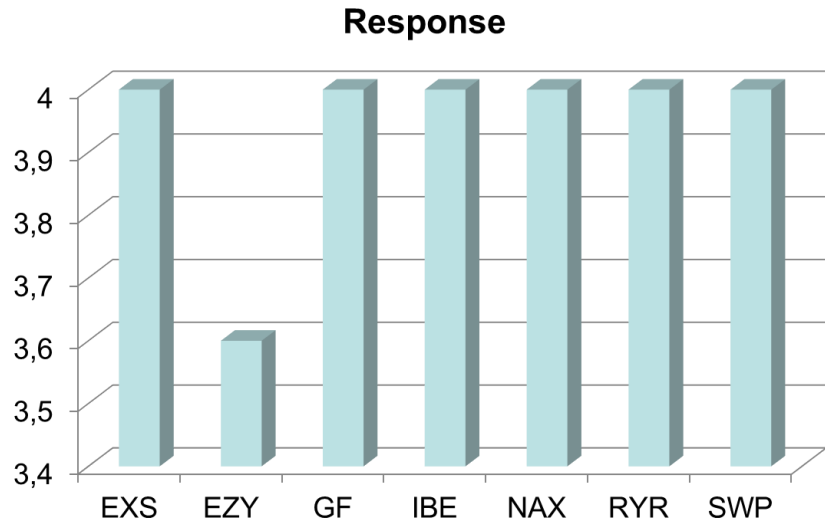
- ☞ Main carriers are low cost airlines:
 - ☞ Ryanair, Easyjet, Vueling, Norwegian, Air Europa, Air Nostrum, Flybe, etc.
- ☞ Traffic is point to point (no hub operations)
- ☞ A320 and B737 families are 75% of the traffic.
- ☞ Short Turn-around: 35' typical Scheduled turn-round time

Alicante airport describe themselves as



... a formula1 pit-stop airport

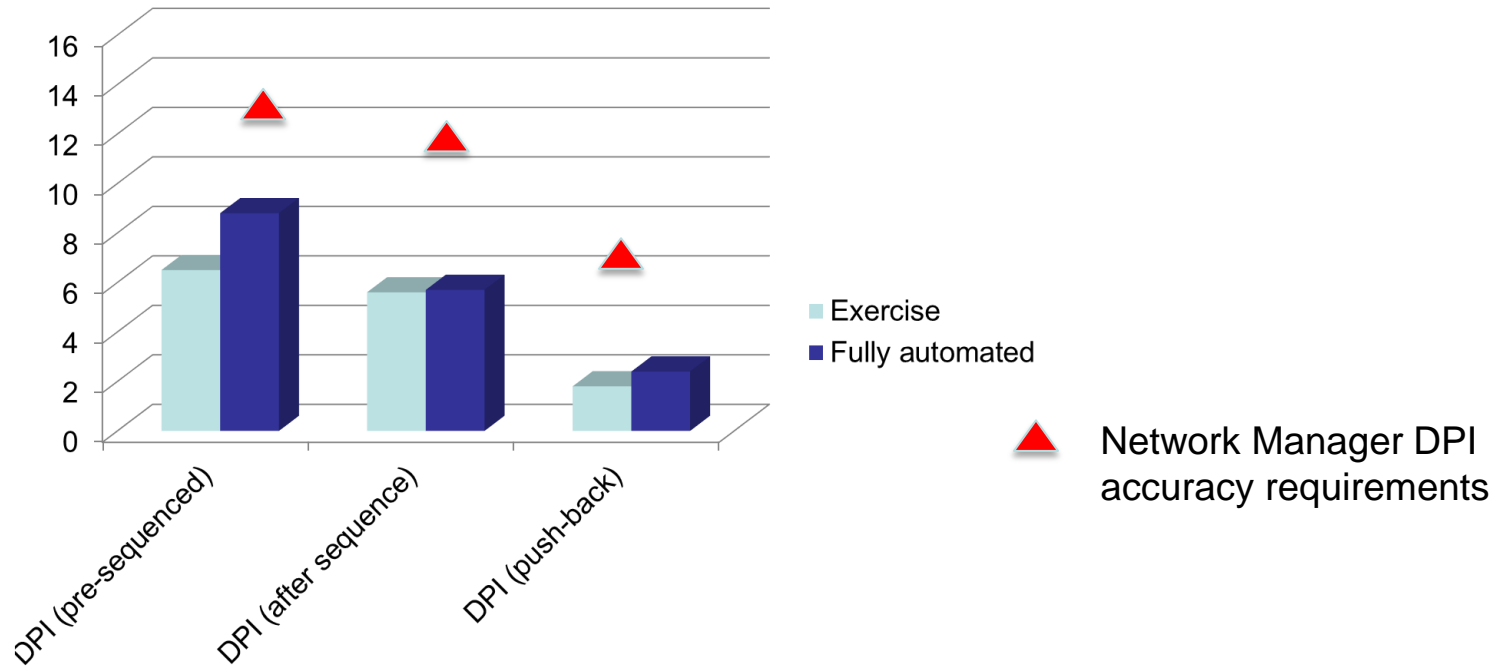
Q15 : “I would support the deployment of this concept at Alicante airport “.



- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Agree
- 4 = Strongly Agree

Objective Results

Average difference between TTOT in DPI message and ATOT



Integration of Regional Airports through A-CDM

Integration of regional airports ensuring perspective of NM, airport and pilot is the same as standard A-CDM

TOBT generation (could be automatic with manual intervention if necessary)

TSAT derived from pre-departure sequence or default (CTOT – EXOT or TOBT)

AOBT event

Variable Taxi Times (VTT)

Departure Planning Information (DPI) provision and meeting quality requirements

Start-up procedures linked to TOBT / TSAT

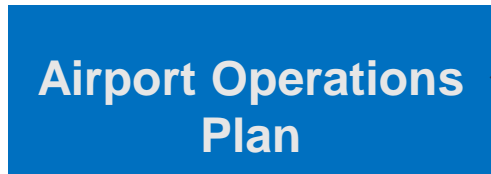
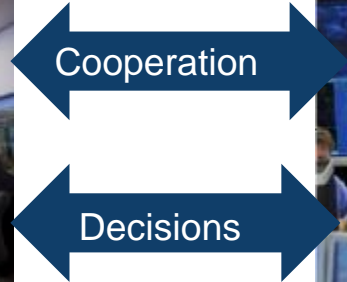
Future Evolutions



Airport Operations Centre



Network Manager Operations Centre



- Flow Management considering airport constraints & airline priorities
- Consolidation of network and airport constraints into single plan
- Disruption and Resilience – APOC/NMOC
- Target Time Concept
- Total Airport Management
- SWIM/B2B Web Services

Testing in a French regional airport ?

- EUROCONTROL could support the further development of the CDM Lite concept in a French regional airport through :
 - Provision of information sharing platform allowing stakeholders to visualise milestones and determine TOBT (automatic or manual) for generation of DPI messages
 - Reception of DPI messages at NM and assessment of accuracy
- Benefit for SESAR program – transition from R&D to deployment and leading to standards definition
- Airport becomes fully A-CDM accredited.





Meteo France view





**METEO
FRANCE**

Airport Met Websites

**CDM@DSNA Seminar
November 2019**



Met Websites Deployment


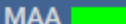
Met websites already deployed :

- Full websites : Roissy, Orly, Lyon St Exupéry, Nice, Bâle Mulhouse
- Met websites : Marseille, Toulouse, Bordeaux, Montpellier, Beauvais, Strasbourg, Caen, Rennes, Deauville, Dinard

Further deployments :

- All other airports in the metropolitan area with forecasts (TAFs) : 50 additional airports over the next 3 years
- Addition of information on 4 sensitive airports, according to the specific needs of these airports (Marseille, Toulouse, Bordeaux, Nantes)

Marseille Met Website : addition of winds forecasts

PREVI  MAA 

10:30Z ...Z../..


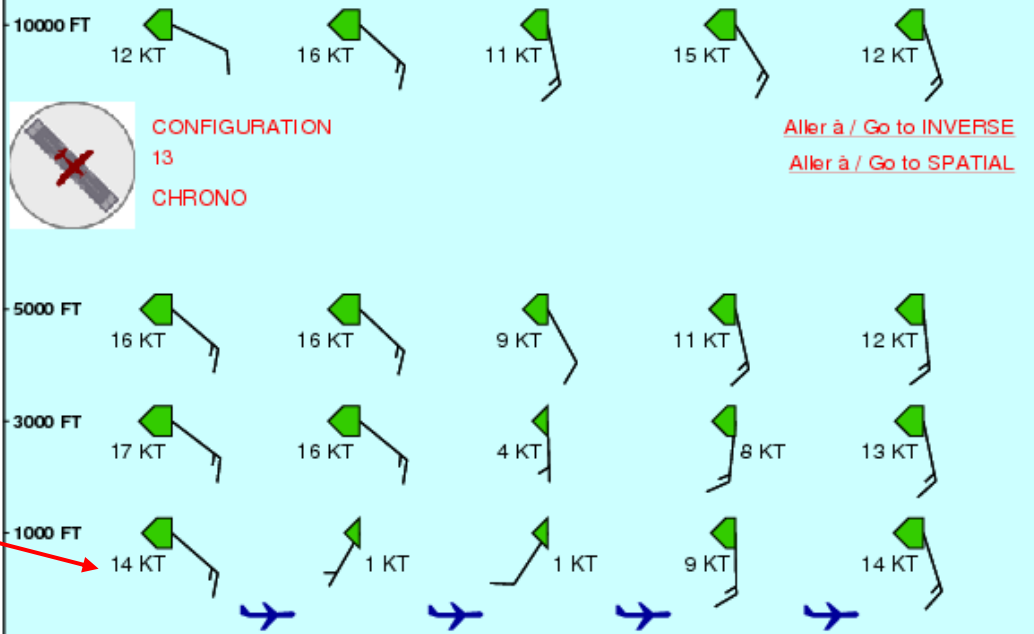
 AEROGamme METAR & TAFs AIDE DECISION ▾ APPROCHE ▾ IMAGERIE ▾ PASSE ▾ Contact

Image Mise à jour : 20/11/2019 à 10h32

Vents à la verticale de LFML pour les heures à venir / Winds upright of LFML for next hours
Prévisions modèles / Model forecasts 20/11/2019 à 00 UTC

09 UTC 12 UTC 15 UTC 18 UTC 21 UTC

12 hr forecast



helps to
determine the
QFU in service

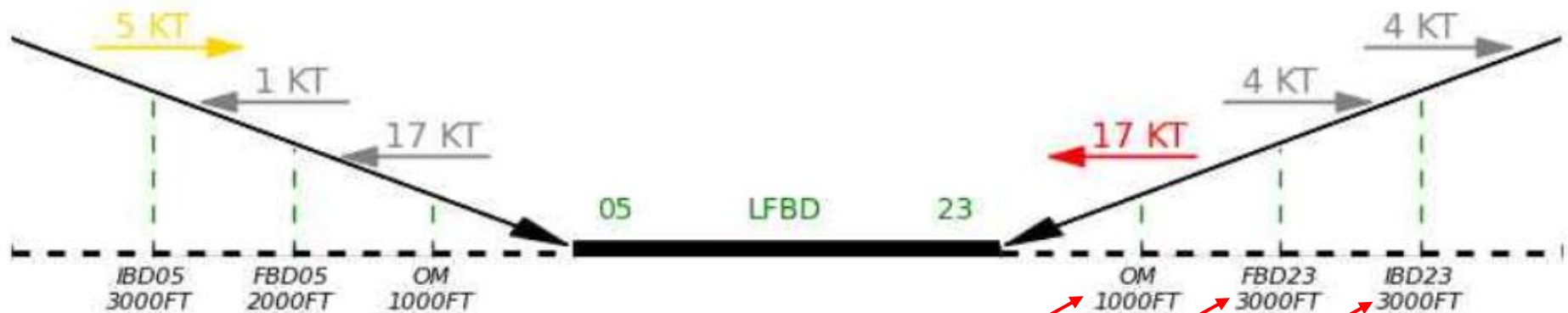
Coming soon: tailwind in the final

Modele du :03/06/2019 06:00 UTC
PREVISION VENT du : 03/06 de 23:30 UTC - 00:30 UTC

PREVISION VENT INTERCEPTION
PISTE :05
IBD05 (3000 FT) : 170 deg/11 KT

PREVISION VENT INTERCEPTION
PISTE :23
IBD23 (3000 FT) : 160 deg/13 KT

PREVISIONS VENT ARRIERE EN FINALE



Reference points chosen according to approach procedures



Lessons learnt from experience (best practices from CDG)



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CDM@CDG

25 novembre 2019
IBIS hotel



Direction générale de l'Aviation civile
Direction des services de la Navigation aérienne



DSNA



Ressources, territoires, habitats et logement
Energies et climat Développement durable
Prévention des risques Infrastructures, transports et mer

Présent
pour
l'avenir

Meetings

Decision tools

Optimization

Common datas

Departures management

Crisis management

Human experience

Taking into account respective constraints

Sharing information

Cooperation

Trust

Willing



Ministère de l'Écologie, du Développement durable, des Transports et du Logement

Roots of CDM are not :
Tools and Process

OTHERWISE



Any questions ?

