DAY ONE – CDM@DSNA SEMINAR

The CDM@DSNA seminar is the annual event where DSNA gathers in a collaborative spirit its customers and stakeholders (about 100 pers.). The topics debated are purposely operational oriented, the time scale is the year ending and the year to come. Animation aims to be opened by using panels, workshops and Q/A session.
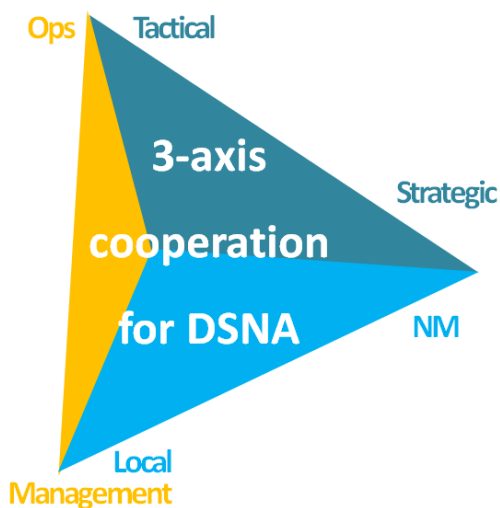

See list of Participants here.

OPENING ADDRESS : *"An event for and by its participants"*

Maurice Georges – Directeur des Services de la Navigation Aérienne

Maurice Georges welcomes all participants who have done us the honour of joining us at this 5th CDM@DSNA seminar.

He notes with great pleasure that more than the half of the attendees are representatives from airlines, airport operators, network managers, military authorities and many others external stakeholders. DSNA managers from headquarters as well as the operational teams are expecting a real exchange with our partners rather than a theoretical exercise. Maurice Georges stresses also the importance of taking into account all those not in this room as well: the operational staff. **All this people are needed for getting a complete cooperation in a three-dimensional approach**:

- from the local to the network perspective
- from tactical to strategy
- and from ops to management and vice versa.

Maurice Georges notes that aviation is now facing a new challenge namely that its social acceptability is no more taken for granted. For more than 100 years, aviation was connected to positive values from innovation to development, freedom and travel. Now for the first time, some citizen appear reluctant to fly, even asserting that flying is not a mode of travel for the future. **The positive values of Aviation include: Safety, Quality of service and Environment.** It is important to demonstrate that these three values are not in opposition and moreover needed to be interwoven together more than ever.

Capacity will be discussed at this CDM day. **Capacity is not an objective but an enabler.** It is an obvious enabler of safety and more efficient and environmental trajectories. It is also an enabler of cost-efficiency because it implies the existence of a well-functioning system. The safe and sustainable systems the industry needs will come about if the topic of airspace capacity is addressed properly. The industry must demonstrate that it has a – positive – future, and that it continues to innovate in best practices and environmental procedures.

This environmentally-friendly aviation is possible with a full cooperation between airlines, air traffic control and airports. Large-scale projects are underway: for instance in Roissy-CDG, there is commitment at the Ministerial level to achieve a system by 2023 under which 100% of the arrival procedures would be continuous descent, day and night. This will entail implementing new PBN procedures. The project is one of global scale and will need to be achieved jointly. If the industry can do so, it will demonstrate that it is focused on the very core of today's needs.

Maurice Georges wishes participants a beneficial and fruitful seminar.

NM PERFORMANCE VIEW

Iacopo Prissinotti - *Eurocontrol, Network Manager Director-*

This presentation is set on an analysis of operations over the summer 2019. **DSNA's situation is good overall.**

- European growth amounts to just over 1% lower than expected but reflecting the right trend. Meanwhile, **DSNA's growth is above average in both Marseille and Brest ACC**.

- While European en-route delays have decreased by 3,2% versus the previous year, **a one-third reduction was achieved in Marseille ACC, helped by the lower number of industrial actions and better weather**. Beside, thanks to the efforts of all the stakeholders and DSNA itself, **the delays in Reims and Brest have been reduced by over half.**

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- Measures have been effective and a better predictability has also been implemented in the network, though **the situation remains far from the 2017 values, and in a crisis situation overall**. The Summer Coordination Cell was initiated, convening every Monday to report to all operational stakeholders over the previous week. This resulted in a common situational awareness of the problems and situation over the period elapsed, but also decision of common actions to be maintained during those weeks. Considering the whole network activities (FUA, FABEC Airspace Re-configuration Project, eNM19…), Iacopo Prissinotti notes the very strong proactive spirit thanks to DSNA's participation.
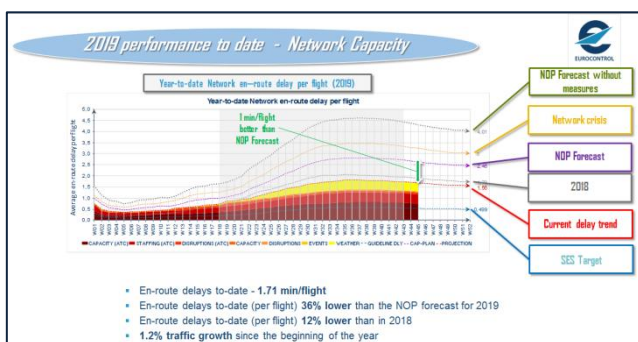
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At the end of 2018, the aggregation of all network delays reported by the ANSPs to the NM amounted to 4 minutes on average. Above 3 minutes, the crisis-high level is reached.

The measures made it possible to develop a new forecast, which then scaled the delays back to 2.46. As of today, that number has dropped to 1.56. According to European regulations, delays should not amount to more than 0.5 minute; we are thus still very far.

By implementing the measures, delays will fall below the three-minute mark, at least for the coming year and following summer. However, the more traffic evolves, the more the tactical actions will need to be met with structural activities. Otherwise, the benefits will be lost and delays will rise again.

A strategy has been defined to review the delay figures, with a view to scaling them back to one minute. To reach that figure from the current three-minute level, tactical actions alone will not be sufficiant. There must be a more structured approach: the steps needed in the next five years have been identified in the SPS European Airspace Architecture Transition Plan. A workshop was held in October and followed by a meeting, at which the initial action plan was confirmed. Another two-day workshop is planned in late-January, for which all the operational stakeholders are expected, to provide information in a very purpose-specific manner. Industry champions will be defined to lead these activities; final approval will be sought at Industry Management Board's meeting in March-April. Overall, a very robust plan for implementing the fundamental actions will be needed for the next five years, with a structured approach and improved performance.

Some hotspots actions are already identified and in progress such as:
- Cross-border free-route for all Europe.
- A complete air-ground and ground-ground connectivity (with full-IP on the ground)
- Enhanced FUA
- Weather condition management
- Better pre-tactical phase for summer 2020
- Connected Airport programme Indeed, NM was dedicated primarily to the airspace domain. There were many requests for a more end-to-end solution, with strong participation from the airports side. Work will be conducted to carry out more AOP and NOP.

The lessons learned from 2019 emphasises the importance of gradual and flexible implementation with adjustments made as necessary to air space users' needs. **There is no local problem longer anymore.** As the infrastructures are saturated, any impediment in a given area has a domino effect over the network. **An enhanced network decision-making process is needed**: not only the culture but also the processes must be addressed.

Iacopo Prissinotti continues his efforts with others to boost the CDM system from inside, on Eurocontrol and the network manager in particular. NM systmes and operations will be modernozed sa as to better support tactical ATFCM. Stakeholders can look forward to much more efficient agenda management, both top-down and bottom-up, based also on the very valuable work having been carried out to date.

DSNA 2019 OPERATIONAL ACHIEVEMENTS AND PERSPECTIVES FOR 2020

Geoffroy Ville - *DSNA, Deputy Director of operations*

The percentage of on-time flights amounted to 91% in 2019, and 94.4% in 2017, while the peak day of 2017 ranks 18th now.

The situation in Europe has improved in 2019 compared to 2018, and the traffic increased by more than 2.26%. Marseille ACC experienced a larger increase (3.56%) and ranked second int the European top20 delay locations behind Karlsruhe. The second French ACC in the list is Reims at the 14th place. Thus far, DSNA is showing an average of 2.28 minutes delay per flight, and **21% of total delays**.
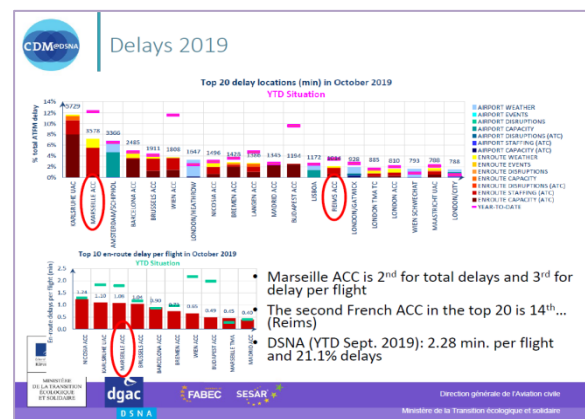
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The good collaboration with NM for S19 can be noted, for instance with the pre-tactical regulations adopted to address weather, as opposed to last-minute strong regulation. All the measures taken have now restored stability and trust into the system. Indeed, with **the "file as you fly" campaign planned flight levels are more respected and traffic counts are more representative** of the actual situation. France also enjoyed the full benefit of the technical deployments carried out in 2018 and 2019. The full datalink exchange has been rolled out in Brest and Bordeaux, alongside enhanced monitoring and surveillance EHS, and larger radar screens.
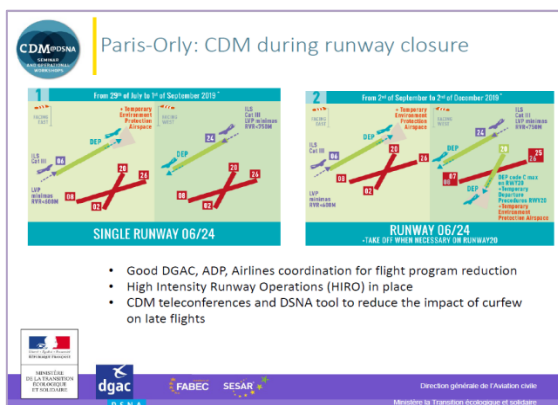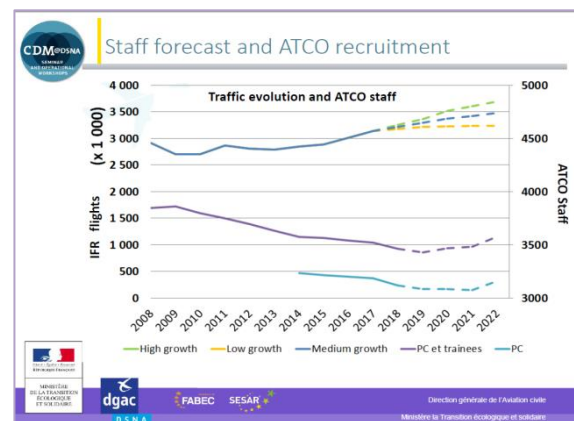

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Furthermore, the runway closure at Paris-Orly initiated in the summer is now coming to an end with a real collaborative work between the DGAC, ADP and all the airlines to reduce the impact of the programme. The high-intensity runway operation was in place with the controllers, supplemented by teleconferences, and the development of tool for daytime late flight detection. A more precise feedback will be done at the Operational Working Session, tomorrow.

2019 also established the 1st of September 2019 as the highest delay ever in the European network for a day without major industrial action. The French communications centre had gone down, due to an incorrectly-formatted message that blocked the system. The system is of widespread use around the world. An inquiry was able to be launched and work initiated with Eurocontrol and Skyguide. Geoffroy Ville was able to make a quick presentation at the last NDOP to share all the lessons learned about the system and the patches required. The report will be widely transmitted.

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Regarding social context, if it has been good till now, discussions related to a major reform of pension begins and will likely to entail massive strikes on December. In addition to this, **French civil aviation have begun discussions with all unions in preparation for the five-year social agreement** (aligning with the PR3 period), with efforts to negotiate all the flexibility and performance measures foreseeable for the network.

Training is a particularly sensitive topic in the negotiation of the upcoming social agreement and in daily work to reduce the training time at all the centres. **The lowest point in controller staff will be reached in 2020, and return to more satisfactory levels in 2021.** After 2021, the training for 4-FLIGHT will resume in Reims and Marseille ACC. It is for this reason that measures are being sought for 2020 to alleviate the load on these two centres. Improvements are still being sought for adjusting rostering, in particular for the late hours, when delays increased dramatically. In 2019, priority continued to be placed on staffing en-route centres, as opposed to approaches. From 2020 on, new trainees will be sent to approaches, as more controllers will be available, having completed their three-year training at the centres.

Outlook from 2020 is featured:
- ATFCM national cell
- fewer controller triggering less opened sectors despite flexibility
- Training for all instructors, and controllers for 4-FLIGHT in Reims and Marseille ACC
- Active participation in all NM action plan measures, to reach the global optimum.
- Transfer of lower sectors from Brest ACC to prepare FRA expected for 2021.
- Active participation in Airspace design and Coordination Group (ADCG) providing an implementation roadmap for next spring 2020.

AIRLINES FEEDBACK

Robert Anton – *facilitator and FABEC Program Director for DSNA*

Maurice Georges – CEO of DSNA, Iacopo Prissinotti – Director of NM,
Robert Anton - FABEC Program Director for DSNA, Geoffroy Ville – Deputy Director of Operations

Robert Anton thanks the speakers for their very precise look back at 2019 and the outlook for the future. He invites the audience to voice questions, comments, feedback, and expectations of airlines, airports, etc. He specifies that this seminar is part of a customer relations process at DSNA, and that all contributions will be kept on record carefully.

Lufthansa	Mr Gerd Mattes asks about FRA. The implementation seems already a solid procedure and would like to hear more about any new procedures about the cross-border points as mentioned in the last presentation.

Geoffroy Ville explains that the coding will not change, due to the continuing application of the FRA cell rules. It is the limits of the cells that may be redefined. Besides, under the standard FRA cell procedure, distinctions are made between entry points, exit points cnd intermediate points. In order to implement the FRA in the French, Swiss and German airspace, some issues have already been identified and will be discussed with the FABEC team to ensure that the planned changes will be acceptable to each of the systems. It is in this sense that the FABEC workshops planned in late-January or early-February will be a good opportunity to review the planning and tests to be run beforehand.

Thomson Airways	Mr Björn Tiffert wonders about Marseille's airspace and developments for the coming years. In his understanding, there is still no solid agreement in place regarding rostering.

Geoffroy Ville indicates that no experiments were held on rostering but major changes have been made in 2019 compared to 2018. Marseille reinforced several periods of time during the year, including weekends and in the summer. Entering now the discussions on the social agreement, DSNA is quite ambitious in its demands; any means for improving the rostering and minimise the impact of training in 4-FLIGHT will most definitely be adopted.

Maurice Georges adds that the social negotiations in France take place at both the national and local levels: the general framework is set nationally, followed by more detailed terms in accordance with specific local contexts. As to staffing profile, significant investments have been made to increase staff in Marseille, with more than 30 new air traffic controllers, in 2018, 2019 and 2020. The situation could also become critical in Reims and Paris in the coming years.

Maurice Georges understands the need to give stakeholders more visibility about the issues at stake at the two relevant levels, national or local. For the time being, the efforts made in Marseille to increase headcount are expected to ease the situation in the near future. The main efforts now are focused at Reims and Paris ACC, both of which are very sensitive in the coming years.

Question from registration online	At the time of registration for the event, Robert Anton specifies that some participants asked about the situation in Marseille ACC in particular: challenges, difficulties, analysis and timeframe for addressing these. He invites Pierre Outrey, Head of Marseille ACC, to make comments on Marseille's ACC

Pierre Outrey confirms that the groundwork has been laid for the situation to improve from 2019 on. Work has been carried out in particular on the rostering system; Efforts are being aimed at evening and night, as the mid-season is quite difficult in Marseille. However, the flexible rostering system was not approved at the local level. The lowest point in HR will be hit in early 2020. Thanks to the national strategic decision, a major improvement is to be expected after 2020.

Regarding summer 2019, a significant amount of work was carried out on ATFM and ASM solutions, first at the network level with NM, followed by the national level and ACCs. It is hoped that this solution will be rolled out in 2020. The weather situation was also addressed, with a view toward improvements through the FABEC solution, network NM solution, and the military AMC. Though the situation is still quite poor, improvements are on the way.

For next summer, the dialogue will resume with the "local customers" and airports, to improve the situation. As was done the previous quarter, situational updates will be made every week to improve the tactical approach throughout 2020.

Maurice Georges also explains that controllers in Brest, Bordeaux, Reims and Roissy are currently better-paid than those in Marseille. If local agreement is not found, not only the desired benefits are not delivered in their entirety, but the extra funds for controllers are not available either. It should be emphasised that the negotiation process is hard-nosed; no one comes meekly to the table.

AIRFRANCE	Mr Raphael Eyrolle of Air France OCC and Chairman of the Eurocontrol Airlines Operations Group describes Summer 2019 as better than Summer 2018, thanks to the tremendous amount of work carried out. He expresses his disappointment at the failure to reflect the full breadth of the airlines' work in the presentations. The French resolutions produced for Orly, for instance, were not solely the work of the ADP and DGAC – they were the work of the airlines, in a collaborative process.

AIRFRANCE	Mr Raphael Eyrolle wants also to bring the attention of DSNA that Air France's medium-haul flights alone generated 18 000 tonnes more CO_2 this summer than in summer 2017, describing this as a crisis situation. Looking ahead to Summer 2020, he would find it most helpful if the DSNA could put together a weekly updating and response mechanism for the airlines, so problems (i.e. staffing problems) can be announced and anticipated.

AIRFRANCE	Mr Raphael Eyrolle is interested in seeing action with the NMs to adapt the measures to achieve the scalability to which Mr Iacopo Prissinotti referred in his presentation.

Maurice Georges responds regarding the 2019 results that no progress can be made without action at both the national and network levels. As regards weekly performance monitoring, each week, a specific forecast was already carried out for the following week. Nonetheless, the minimum capacity available is that which was declared. He does not recall a week with lower capacity. He adds that DSNA is very keen on making flight optimisation, even flight-by-flight, where possible. It also has to adapt with the network manager procedures. It thus became necessary to strike the proper balance between full flexibility and stability across the network. The airline paid penalties this summer due to capacity restrictions in Europe, not only at DSNA. Feedback was also received from some participants' organisations, from the network manager and from the ops room, that stability in network operation this year was clearly better than the previous one. This is clearly a situation on which it is important to capitalise.

Iacopo Prissinotti wishes first to clarify the visuals chosen for his presentation. He had first projected the traffic growth, with the expectations for the next five years. Today, there are 16 000 KT of CO_2 emissions

on a virtual trajectory, which would not have occurred with the growth this year. Without the measures, it was estimated that an additional 6 million KT would have resulted, especially given the crisis situation and nervousness.

Turning to the question from Raphael Eyrolle, he feels that DSNA should support the creation of the much more effective decision-making process between operational players. He describes the said process as the only way to achieve success, as it forms the basis of the overall discussion. Over the summer, thanks to common awareness, the right steps were able to be enacted. A better decision-making process is in preparation at NM level; the proposals are being drafted for the Board meeting to be held the following week.

AIRFRANCE	Mr Laurent Renou thanks the speakers for their presentations and all those responsible for the measures carried out over the summer with the NM. Even if the reduction delay has been fostered by less industrial action and better weather, the coordination was truly helpful. However, this progress came also at the expense of fuel consumption. As Maurice stated in his introduction, it is important to be very careful with the environmental issue.
	Echoing Iacopo about the principle of free-route, he explains that the current implementation in fact increases complexity for the airlines, and does not bring much value. A truly cross-border version of free-route is thus needed, in the coming years, and definitely by 2024. He asks whether the implementation of free-route will meet this requirement.

AIRFRANCE	Mr Laurent Renou also asks whether DSNA is still as confident as they were at the 2018 event, in asserting that DSNA would be able to increase capacity by 50% by 2025, thanks to Datalink, 4-FLIGHT, free-route and dynamic airspace configuration.

Maurice Georges confirms that he is confident in this goal. This objective will be reached, not only thanks to the systems mentioned, but also thanks to the recruitment and the training planned of controllers. He describes this as a key point of strategic importance to effectively demonstrate that capacity is an enabler for safety and the environment.

He also wishes to mention the developments carried out with Spain, interfacing with DSNA from three ACCs: Marseille, Bordeaux and Brest. Two years ago, some strong capacity constraints emerged between Barcelona and Bordeaux. Efforts have been underway to change the cross-border transfer, not by moving the border on the map, but through a renewed cross-border transfer. The aim now is to improve the interface between Spain and Marseille. The connection is very sensitive, and furthermore involves a very large military zone. In fact, the Mediterranean area is not the ideal free-flight place some may imagine it to be.

Thirdly, as regards the interface between Spain and Brest, DSNA engaged its colleagues from Spain last year about the continuing issues in balancing flows between Spain and Marseille, identifying the development of free-route space in Brest as a key contributor to solving the problem.

Iacopo Prissinotti confirms that the effect of free-route on a larger scale, as a means of improving cross-border implementation, is one of the fundamental keys to performance across the network, as well as a stimulant for the right level of technological integration.

Attainment of the 50% target relies on a number of factors, including: the full air-ground integration datalink, needed within the next two-three years; a highly-functioning IP network; improvements on the CNS part; improvements on the airspace part, including the more terminal area. In parallel, better management of the human resources is also needed (through rostering, sector capacity, etc.) and must come through more network-wide efforts.

Question from registration online	On behalf inputs given from the airlines present through the registration form, Robert Anton calls upon Geoffroy Ville to speak about the actual volatility statistics, following the seminars about air traffic volatility held over the previous year.

Geoffroy Ville reminds the efforts in 2018 to produce an indicator for some sectors in France in which 40 to 60% of the volatility was found (intruders, extruders, late/early of more than 20 minutes). The airlines sent messages to the pilots. DNM launched an entire campaign, with videos, as did FABEC. Thus, volatility has significantly improved. The situation was described as much better than the previous year. This progress is owed also to the reduced number of regulations put in the system compared to last year. The airlines may have experienced the situation differently.

Iacopo Prissinotti emphasises, on this topic, the importance of providing for stability by sticking to the flight plan, but also creating more and better procedures. The more predictable the framework and the better planned the operations – up to 24 hours in advance, the more closely the airlines will be able to plan, thus avoiding the costs of larger turnaround and eventually the number of grounded aircraft.

Question from registration online	Robert Anton raises another question received by one of the participants: *"Many projects are managed within DGAC, Eurocontrol and operators (airports and airlines) to improve the ATC capacity. However, the timescale between authority and operators seems a bit different. Is there a way (and a need) to manage the projects start-up model, and is the DGAC confident in its ability to respond to traffic needs in the coming years?"* He sums up the question as addressing the pace at which the projects are handled.

Maurice Georges sees two questions. First of all, how results can be achieved more quickly? As quick as the DSNA would like to see the process move, some administrative issues remain, in particular the negotiations with the unions to speed up training times in order to deliver the benefits. Thus clearly, accelerating is an issue. As regards system development and implementation, accelerating delivery is also a challenge. Some particularly large-scale programmes, such as 4-FLIGHT, take (perhaps too much) time. There are also plans to develop fast technical solutions that will be able to provide capacity more quickly. The SALTO project at ATFM is also based on fast delivery of technical solutions. The DSNA thus does want to move as quickly and as comprehensively as possible.

The second question pertained to a better cooperation with the airlines and stakeholders. The IATA-DSNA (French ATM Strategy) is a response by ensuring comprehensive structures and strategic developments and developing key projects in a more cooperative manner. Indeed, for some projects still in progress, there is room to implement joint programme organisation in which the airline are committed, reviewing not only the objectives and results, but also the development and management of the programmes themselves.

Question from registration online	Robert Anton quotes the questions directly linked to a topic discussed during the 2-day seminar (coordination civil/military, ACDM, 4-FLIGHT). They will have answers in the appropriate panels, workshops or working session of the event.

Maurice Georges thanks all participants for this exchange.

CIVIL/MILITARY COORDINATION

Colonel Christophe Hindermann - DSAé/DIRCAM,
Head of Airspace Division in Military Air Traffic Management Directorate

Highlights of the presentation

First of all, **France is distinctive within the European landscape, when it comes to the military:**

- It is the only country in Europe able to maintain expeditionary forces.
- It is engaged in war in Africa, through Operation Barkhane; it is also very involved in the Middle East (Syria, Libya).
- It runs multiple training missions.
- France is a nuclear power. It must train in this field through operations at specific points throughout the year and can thus not exchange and share all its planning.

A new military requirements entitled "New Weapons Training Area", or ZENA (Zone d'Exercice pour Nouvel Armement) came about to accommodate:

- the new-generation aircraft, such as Rafale in France and Air35 in other countries in Europe
- the new missiles, including Meteor, which arrived in Summer 2019 with range two to three times greater than its predecessors.
- the new weapons systems, which also work with tactical datalinks.

The method chosen with DSNA consists of clustering existing areas to reduce their impact on civilian traffic. After nine months of hard work with the civilian authorities, the decision has been made to have **one ZENA useable daily, in each quarter of France: the first this year, and up to 2022 for the last.**

A first ZENA will be available for a four-month trial period from the beginning of December. A focus is done on a cross-border ZENA developed with the German Airforce, but also DSNA and DFS. Discussions are planned in Berlin on this topic by mid-January, the issue being both political and operational.
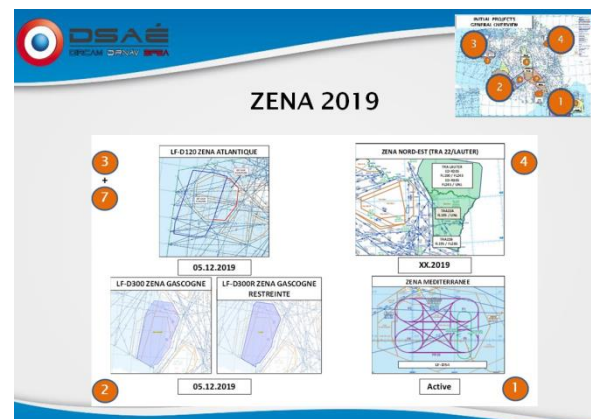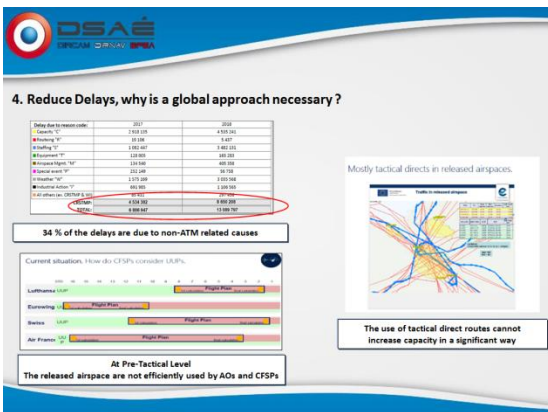

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According Regulation 2150, on the common rules for flexible use of airspace, the airspace is not civil or military; it is a continuum and is allocated according to user requirements. Flexible use of airspace has been created to mitigate impacts, specifically through airspace allocation based solely on needs. Thanks to its strong strategic civil and military airspace core management from national to local level, contrary to some countries in Europe, France books only at what it needs and releases the booked airspace, taking care to do so early enough so that it can be used by others. **France posts approximately 200 UUPs per**

year, demonstrating that its airspace use plan is strong enough. France is also unique in its use of TLS: Traffic Light Scheme. Modalities are defined according to the trigger threshold concept. When the said threshold is reached, specific priorities are automatically applied, giving priority to civilian flows. In certain cases, military activity can be stopped to give way to the civilian flows.

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The delays due to the military account for 3-4% of the whole. In France, however, this figure amounts to less than 1%, **To reduce delays, a major action can be done at the pre-tactical level, within 12-15 hours, where the released airspace is not efficiently used by the air operations CFSP, notwithstanding the efforts made in summer 2019.**To improved predictability, the military is ready to enable more efficient flow and flight sharing for civil stakeholders, This will be possible in the future with new tools and better exchange through projects for the Single European Sky (i.e SWIM). In the meantime, efforts remain possible, especially collective.

Debate panel

Panel member: **Colonel Hindermann - DSAé/DIRCAM,**
Head of Airspace Division in Military Air Traffic Management Directorate
Razvan Bucuroiu - EUROCONTROL - Head of Network Strategy and Development,
Gerd Mattes - Lufthansa - Senior Manager Dispatch,
René Feillet - DSNA – Head of Airspace Department
Facilitator: **Robert Anton - DSNA - Program Director FABEC**

Gerd Mattes - Lufthansa - Senior Manager Dispatch, Razvan Bucuroiu - EUROCONTROL - Head of Network Strategy and Development, Robert Anton - DSNA - Program Director FABEC, René Feillet - DSNA – Head of Airspace Department, Colonel Hindermann - DSAé/DIRCAM

To open this session and before inviting the floor to contribute, Robert Anton addresses a number of questions to the panel.

First of all, Robert Anton asks to Mr Razvan Bucuroiu who represents the NM in this panel what NM can do to improve FUA efficiency.

	Mr Razvan Bucuroiu looks forward to applying, if so permitted, in structuring Eurocontrol's military excellence project, and illustrating best practices in cooperation between military and civil partners with some examples from the interesting success story written over the last 20 years by civil-military cooperation in France : - The Zena zones, for instance, became shared with the wider European community over one year ago. They could now be taken into consideration and included in airspace design required in the FABEC area, at the European

network level. Not only were these zones provided, they were put forward as 4D descriptions, consisting of 3D depiction plus the intended utilisation (e.g., "at least one area per day", "for X number of hours", "with X degree of modularity"), along with some options. Such cooperation is not so frequent with military partners from other States.

- Another excellent practice from the French landscape is good pre-notification of exercises by the military. These practices have always been very good from the beginning.

- The effective utilisation of the tools in core airspace management in the context of the FUA, like the good utilisation of AUPs and UUPs, as well as the daily negotiation that takes place on the military areas in France.

As to flight planning, it is true that further improvements could be made, primarily in the way in which the CFSPs are handling the information. The latter is made available by B2B, for use by the CFSP. The issue is not only procedural, but also systemic. There probably exist more procedures than necessary; system support needs to emerge much more prominently.

Robert Anton asks to Mr René Feillet who represents DSNA in this panel to discuss the pathways for improvement toward flexible use of airspace and global efficiency.

According to René Feillet, the key lies in communication: To illustrate, he refers to the yearly meeting at which Defence shows DSNA all the military exercises planned for the following annual period.

As to TLS, which gives priority to civilians when the impacted flow exceeds the defined target, new terms will be defined in certain areas in order to improve the system. This is work-in-progress.

René Feillet calls attention to the lesson to be learned in this regard: whenever a new request comes, whether from one side or the other, reaching an agreement will require trust. Until that trust is built, questions will always linger as to whether the need is real, whether the other party is asking for too much, whether the planned scheme will actually work, etc. The best response is thus to begin with trials: testing the ideas on the ground for four or six months, until such time as doubts have been quieted.

Bringing up the collaboration with Germany in the north-east, he states that the only way to prevent massive impact on civilian traffic is through success in this collaboration. Any other new weapons training area in this very location would have a considerable impact. DSNA thus intends to fully plays its part in the negotiation process.

Robert Anton seeks Gerd Mattes' opinion on the FUA processes, avenues for improvement, operating modes and progress achieved.

Lufthansa	Mr Gerd Mattes describes the progress as truly visible, as well as measurable. The airlines rely heavily on CFSPs, which are achieving good progress in incorporating flexible use of airspace wherever possible.
	They look forward to making improvements to send out updated flight plans, even on short notice, depending on feasibility within the network manager's overall process.
	He looks forward to the cooperation between the French and German military. In past experience, the booking times for military airspaces have differed between the French and German sides: Germany would open when France would close, or vice versa. The alignment and harmonisation of booking times, in the tight European Central environment is key
	As to the new areas to come, including Zena, he also looks forward to the introduction of free-route airspace. While the CFSPs play a key role, the airlines – as customers of flight planning service providers – need to ensure the most efficient use possible. Airline must also cautious on how these process will be not only developed, but also connected with many other components, including the airlines' internal tools, including fly-backs, etc.

Robert Anton asks Mr Razvan Bucuroiu for his opinion on compatibility between the advanced flexible use of airspace and free-route.

EUROCONTROL	Mr Razvan Bucuroiu urges colleagues, both military and civil, to carefully read the ASM Handbook. Notably, it clearly defines how AUPs need to be issued, the syntax to be used, etc. Otherwise, AUPs could not be processed and passed on to the airspace users.
	A number of airspace structures have also been included, to support ASM and free-route airspace. The flight planning buffer zones are one example. FABEC and France in particular proved extremely helpful in FBZ. It gives a clear plan for flight planners to plan and circumnavigate an area. All the tools are available for the publication of points around the area, as mentioned by Gerd.
	Returning to another very important remark from Gerd, he points that there exist some frustration on the military side, when a specific military airspace is not used. However, given the absence of synchronisation of the military areas in Europe can lead to underuse airspace by airlines in spite of their willingness. That synchronisation at the network level remains a much-discussed topic.

Robert turns the question of synchronisation to Colonel Christophe Hinderman

DSAé DIRCAM BIRNAV BFEA	Colonel Christophe Hindermann states that, unfortunately, synchronisation between multiple countries remains impossible for the time being. The tools and processes are still lacking. While they may exist for large-scale exercises, they remain difficult to implement as regards daily training. For the moment, all the issues in the airspace are directed to the network manager, when it would be much more efficient to share and synchronise. Furthermore, work is continuing on the design, to ensure that the slots are placed at the best point, when the civil needs are at their lowest. As to the issue mentioned by Maurice Georges, work does remain with regard to the maritime areas, particular on the Mediterranean Sea and the Adriatic Sea. The area will not be fully-manageable, the Navy having its own needs, especially where vessels and submarine are concerned. Discussion will need to continue on this topic.

Robert Anton seeks René Feuillet's response to the landscape described.

dgac DSNA	René Feillet maintains that the best path toward improvement is through trials and collaborative decision-making whenever possible. The coordination of military activities in different countries is indeed a tricky point, as it is a matter of sovereignty. That being as it may, information-sharing and coordination do not threaten sovereignty as such, and are indeed the only way to improve. DSNA is on the verge of signing a common roadmap on the future of the AMC. Also, as discussed in 2018, as ASM and ATFCM are so closely connected, the functions of the French AMC have been extended to include the latter's functions, in order to improve coordination, collaboration and collaborative decision-making. The FMPs in the AMCs will remain the same.

Robert Anton is pleased to confirm that in CDM process, no stakeholder delegates any part of its authority; information is shared, made the focus of open discussion, and ultimately contributes to greater efficiency. Thus, no stakeholder "gives up" any part of its authority.

Robert Anton asks Mr Gerd Mattes for any feedback about the Tiger Meet exercise involving NATO.

Lufthansa	Mr Gerd Mattes responds that such an exercise plays out as just another restriction in the airspace. Tiger Meet or any one-off event in a given country must be digested by the standard processes. The work has been carried out in close conjunction with the CFSP. Lufthansa's utilisation of this airspace has been quite good. It has also adjusted its processes to incorporate 8 hours' lead time. In this context, Tiger Meet is the publication of flexible use of airspace. There are no manual processes for adjusting specific flight plans for specific

	areas, trajectories, etc. Nonetheless, the pilots expect releases of airspace, knowing that the more direct the route, the better their CO2 performance and efficiency.

Robert Anton invites questions from the audience.

UNITED	Mr Mark Hurston asks about the information when an airspace is no longer required by the military. Working with NATS over the North Sea, the AUPs and UUPs are not recognised or read by the CFSP, whether Sabre or Lido. He asks how Mr Gerd Mattes receives the released airspace information, within the automated system, if not by AUP-UUPs.
Lufthansa	Gerd Mattes explains that incorporation into IT is the key. A brief handback within 3-4 hours for a long-haul flight plan, including the North Sea, according to the North Atlantic track, can be digested by the processes. Gerd Mattes explains that the process is based on the dispatcher and the level of automation.

UNITED	Mr Mark Hurston indicates that NATS produces some report on the flexible and functional use of airspace, including levels of use, indicators on speed, etc. He would greatly appreciate it if DSNA could produce the same type of reporting.
EUROCONTROL	Mr Razvan Bucuroiu thanks him wholeheartedly for this suggestion, and indicates that NATS requested NM support in this type of reporting. There would be no obstacles whatsoever to producing the same data for France. Some information channels have been set up for this purpose. On some occasions and in response to some events, such information was provided already.

Robert Anton, commenting on the complexity of the many threads that need to align, thanks the panellists for their participation.

"4-FLIGHT DEPLOYMENT" WORKSHOP

Yannick Meston, Program Director 4-FLIGHT

"4-FLIGHT deployment" presentation

4-FLIGHT is a big step for DSNA in order to
- **reduce environmental impact**
                    -10 % CO2 emissions,
- **reduce costs of ATM   -50%**
- **increase capacity   x3**
- **increase safety   x10**

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One of the most significant benefits of the 4-FLIGHT programme is the implementation of Coflight data processing. This is a new flight data processing system, with several advanced functions forming the backbone of the system. However, 4-FLIGHT will also entail all the supplies and constructions in the control room needed to run the system; consequently, it is not only a software programme, but **indeed a transformation programme** as well for DSNA.

The operational environment deployment in 3 phases: Commissioning for the Reims and Marseille ACCs is planned for late-2021/early-2022. The Paris ACC will be equipped with the same system one year later, and be extended to the Brest and Bordeaux ACCs, which already benefit from an enhanced system introducing their legacy systems, called ERATO.

Regarding training for Reims and Marseille, Approximately 2 years will be needed with live trials handling live traffic with 4-FLIGHT system. The impact, time frame will be described during the workshop.

"4-FLIGHT deployment" workshop

Panel member: **Razvan Bucuroiu - EUROCONTROL - Head of Network Strategy and Development,**
Geoffrey Kingston - EasyJet - Flight planning Manager,
Raphaël Eyrolles - Air France - ATC Manager - CCO and AOG chair,
Vital Bride – DSNA - ATS Manager for Reims ACC,
Benoît Mathieu – DSNA - ATS Manager for Marseille ACC,
Sarah de Mazancourt – DSNA - Deputy Head of Airspace Department

Facilitators: *Yannick Meston – DSNA - Program Director 4-FLIGHT*
Vincent Bobin – DSNA - Charge de mission 4-FLIGHT

As the deployment of 4-FLIGHT will result in significant training needs, discussion begins with an overview of the training programme's structure and development, and the way in which the latter can be adjusted within a CDM context.

At the beginning of the programme, experts from the air control centres visited different ANSPs in order to gain experience about similar deployments. An average duration for that kind of deployment was 12 days.

Each controller will receive 13 days of training, split into 5 modules where functionalities will be introduced step by step, alongside selected new tools, giving the trainees the time to practice in a high quality representative simulator and gain confidence in new working methods.
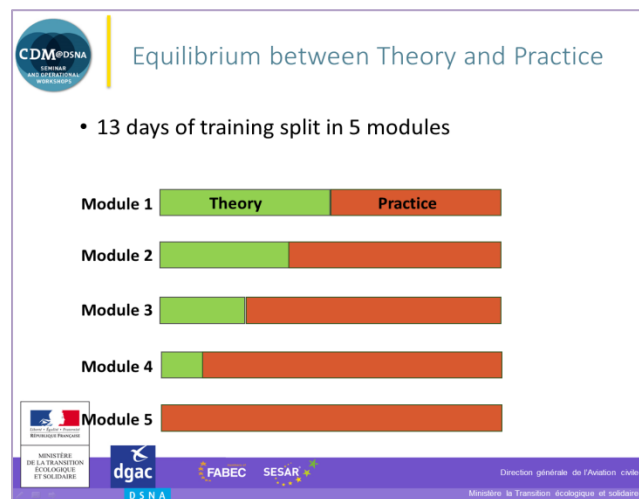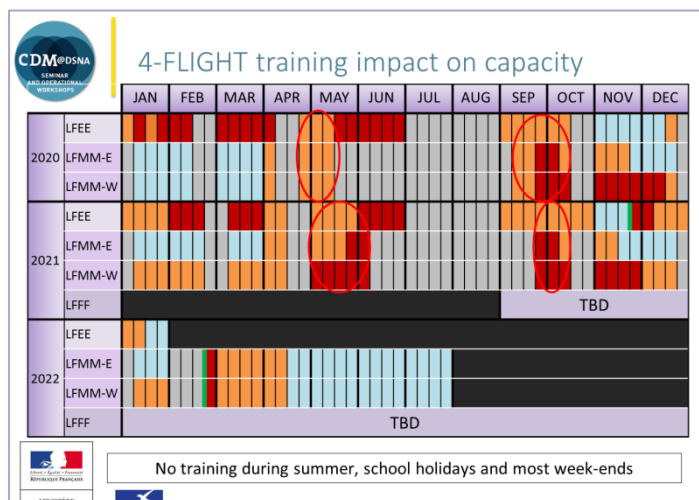

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The first 2 modules are about the basic skills. Modules 3 and 4 deal with advanced skills: change of mapping, user fall-backs in adverse conditions, bad weather conditions, etc. Module 5, the last, is aimed at reinforcement and examination, as per the regulatory requirement that each training module concludes with an exam. The final simulation carried out in Module 5 could thus be hte exam. The certificate earned would not be a new licence however; it could be seen as a qualification on a new HMI.
Alongside this, numerous live trial sessions will be run, to give air traffic controllers the opportunity to use the system under real conditions.

As for the impact of 4-FLIGHT (and not the overall ACC capacity), **the grey areas in the diagram projected indicate days with no training. The areas shaded in light blue are those during which training impact is expected to be quite low, about 1 sector dropped, orange and red period for roughly 2 and 3 sectors reduction.**

The first training session is in progress at the Reims ACC (LFEE) with instructors. The training of all controllers will begin on 6 January 2020. There will be two summer breaks in summer 2020 and summer 2021 in order to be ready for deployment at the end of November 2021.

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At Marseille ACC (LFMM-East zone and LFMM-West zone), the activity being much more seasonal than Reims, the training can be more condensed during winter. The training of instructors will begin in the first semester of 2020, there will be a summer break in 2020 and the training of all controllers will begin in September 2020. A further break is planned summer 2021 in order to be ready for deployment at the beginning of 2022.

At the end of 2021, the Paris ACC should also start its training. However, work is still in progress on this aspect; more information will be provided next year.

Ms Sarah de Mazancourt explains how DSNA worked to reduce the impact of training in 2020, doing so along three lines:

- The first consisted in optimising the training agendas. Consequently, no training is run during summer. Every effort has also been made to avoid training on the weekends; almost all weekends are free of training, as are school holidays, these being high-traffic periods, during which it is important to have as many ATCOs in the room as possible.
- Work is also continuing with Network Manager and Razvan Bucuroiu's team to prepare strategical, pre-tactical and tactical measures that can be instituted, in an attempt to help airlines avoid the more congested areas, mainly Reims for the beginning of the year and then Marseille ACC as well.
- Thirdly, the teams are exploring how collaborative processes might be put in place to minimise this impact and at least inform airlines a few days in advance, so that they can prepare and better cope with the impact.

Scenarios have been worked on with NM to alleviate the impact on Reims for winter 2020. In essence the measures will consist in pushing to the east on north-west/south-east tracks, (e.g., Italy to UK or Switzerland to UK), as well as some flights to the west on Scandinavia to Portugal tracks, in order to avoid Reims airspace. For summer 2020, **negotiations are still ongoing with the Network Manager and neighbouring ANSPs** to take 4-FLIGHT training impact into account in the large-scale eNM initiative planned for summer 2020. As a result, DSNA can only show its requests at this workshop. The final outcome will be announced at the end of next week, with validation to come in late-January.
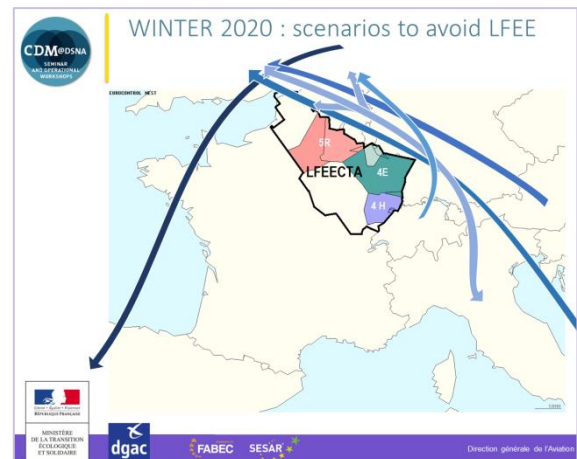
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As for the CDM processes, audience members are invited to criticise the proposals made, or voice their own ideas. In essence, DSNA will aim to provide information about the capacity expected for the next week. Furthermore, in order to help airlines with re-routing to avoid Reims and Aix, **DSNA will provide alternative routing and scenario activation information as soon as it becomes reliable enough to be used. It commits to publish information as early as possible nonetheless, potentially via the DSNA portal.**

AIRFRANCE	Mr Raphael Eyrolle asks whether there is a willingness to push some traffic into Skyguide, ENAV or DFS airspace. If so, given that these areas are still in a crisis situation, is there any certainty that they will be able to help DSNA time and time again?

AIRFRANCE	Mr Raphael Eyrolle asks DSNA to be as flexible as possible. The scenario is a good thing for the winter and needs to be balanced between the RAD measure scenarios not to generate excessive workload in the OCCs. Is DSNA working with the NM in this regard? These are the key partners to help with this transition.

Mr Razvan Bucuroiu, being intentionally blunt, states that the situation in 2020 will worse than in 2019. There will be approximately 3 sectors less in each ACC than in summer 2019. The measures required at the network level thus need to be proportional.

The situation is as follows.

- The upcoming negotiations will take place with everyone in the network given the impact of the measures. All parties involved had to be invited, to ensure their support for the final agreement in January; no time can be wasted in these negotiations.

- In essence, the measures applicable in September 2019 will be implemented once again, except where amendments have been provided.

- Another set of measures completely dedicated to the situation at Reims and Marseille is tested. The idea is to move the flows to the east, options that airspace users took themselves during the summer of 2019. A priority was given to the northwest to southeast flow, as it is a massive flow; up to 300 flights had to be removed the Reims airspace. By doing so, a number of ANSPs lose a significant number of flights because of the measures and react to this proposal. Indeed, money cannot be "re-attributed" in the same way delays are.

- Measures will come into operation gradually, depending on the final opening schemes for the summer peak in July and August, during which time there will be no training – but holidays. Overall, more flights will be pushed into Karlsruhe UAC. The global result at the network level is better than keeping those flights in Reims. Nevertheless, the delay generated will not be normal through Karlsruhe airspace. Thus, a delay reattribution will also be proposed between DFS and DSNA.

- Lastly, the airspace users are also being called upon to give us their reaction on particular flows and aircraft types, etc., so that those can be excluded from the very start, so as to avoid the 2019 pitfall.

Based on the scenarios that will be used for the winter season, it might be possible to use these scenarios during the summer season, though to a limited extent, as the negotiation of those scenarios at the peak of the summer will not be easy.

easyJet	Mr Geoffrey Kingston inquires as to the robustness of the roster: can ATCOs scheduled for training be removed from that training to substitute for colleagues on short-term sick leave in the Ops Room?
dgac DSNA	Mr Vital Bride, ATS Manager for Reims ACC, responds that at the time, DSNA does not have stand-by ATCOs option for the Ops Room.

EUROCONTROL	Mr Razvan Bucuroiu specifies that lessons from Prestwick's incident have been learned and the rosters were received just in time to finalise the measures. DSNA will know on 5-6 December which of these will actually be accepted, and on that basis, be able to provide an impact assessment of the delays. He would have preferred that this be possible much further in advance, to leave time for negotiation and preparation.

EUROCONTROL	Mr Razvan Bucuroiu explains that the major question outstanding concerns the strategy for the transition to 4-FLIGHT at Paris ACC, where in contrast to other ACCs, there are no solutions for re-routing and, instead, flows that diverge and converge around Paris. With two years remaining before the Paris ACC transition, the time has come to develop a strategy for the transfer, using the lessons already learned and experience-sharing.

dgac DSNA	Mr Eric Bruneau, Director of Operations, reiterates that the presentation reflects the worst-case scenario. Negotiations for a new social agreement, applicable for the next 5 years, are underway. In these, the main difficulty lies in finding the possible one-off solution for the 4-FLIGHT transformation combined with a long-term solution to improve the flexible rostering. DSNA is negotiating with the trade unions to ensure to be able to mitigate the consequences of a red or orange day by adding new shifts. That being said, it is difficult to build the short-term response without jeopardising the long-term negotiation for structural measures concerning flexible rostering. DSNA asks for a few days or weeks to find an agreement and alleviate red and orange days.

Lufthansa	Mr Gerd Mattes recognises that the strategic approach presented does appear designed to take into consideration all standpoints. In the last two years, Lufthansa and Germany were fortunate to have the agreement found for Karlsruhe, as it mitigated a large part of the effect in Summer 2019 and did provide noticeable relief

Lufthansa	Mr Gerd Mattes states that mitigation measures for small capacities can be combined and achieved through a coordinated CDM approach in Central Europe area. This will definitely improve the situation during high-impact phases. He asks whether DSNA is building towards work in conjunction with Karlsruhe and Maastricht with its CDM tool.
dgac D S N A	Ms Sarah de Mazancourt, on the assumption that Gerd Mattes was referring to the customer initiative portal, indicates that Reims has planned to enter the initiative. DSNA has also attempted an initiative with Air France under SESAR XStream project on the same principle: taking the airline's priorities into consideration for arrival management at Paris airports through B2B connexion. It is reviewing both these options but will definitely seek airlines' input. Mr Vital Bride adds that Reims ACC will join the customer portal initiative by the end of March. However, as training will begin on the 6th of January, an alternative solution will be needed for operations, within the DSNA portal. He foresees that such a solution will be in place by early-2020.

Lufthansa	Mr Gerd Mattes requests that Lufthansa have a collaborative tool that incorporates Karlsruhe, Maastricht and Reims, rather than having to access the information via a distinct portal reserved for customers. It is very difficult, not only for the airlines, but also the other ANSPs and ACCs, to see which priorities prevailed. He would prefer to cooperate with the others to build a single tool that aligns priorities, so that operational purposes are better served.

EUROCONTROL	Mr Razvan Bucuroiu supports Gerd Mattes' suggestion. Maastricht and DFS discussed this topic quite intensively over the last 6 months, with the involvement of DSNA. Eventually, that tool will become network-wide, once the appropriate steps are taken at the operational level. He would prefer that this initiative not be continued in isolated, however, due to the current tricky situation, which requires a special response.

easyJet	Mr Geoffrey Kingston voices his appreciation for "worst-case scenario" data, which enable airlines to be ready. He invites DSNA not to be afraid to share information as early as possible.

dgac DSNA	Mr Benoît Matthieu, ATS Manager for Marseille ACC, hopes that, as ATCO human resources will grow in the next two-three years, the currently-predicted impacts will prove less intensive. He reiterates that the training sessions were scheduled to avoid weekends, giving priority to the mid-weeks, with minimal impacts on Fridays and weekends. This could help during mid-season. The training period in May and early June will be also reduced, with a number of people in training being half that of other seasons, to bring more ATCOs into the Ops Room. As to the 3- or 2-sector reduction, the actual situation will vary day by day or even by hour, and always be visible to the airlines. In any case, there will be no major changes from one week to the next.

"4-FLIGHT deployment" wrap-up

4-FLIGHT Workshop - Wrap-up

- Comprehensive description of training phases
- Proposals of CDM processes
    - Scenario implementation information
    - Capacity impact information
    - Help for rerouting
    - *Information on AO specific needs*
- Assessment of the impact
    - Reims/Marseille : Preparation at NM level
        - 5-6/12 : negotiation of the plan
        - 20-21/01 : validation of eNM for summer 2020
    - Need of anticipation of Paris ACC deployment
- Airlines expectations
    - Transparency (eg. worst case scenario)
    - Use of portal for tactical improvements

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"CDM LITE @ REGIONAL AIRPORTS" WORKSHOP

Erwan Page, Program Director CDM

"CDM Lite @ regional airports" presentation

At airports, CDM is processed by various airport stakeholders including: the ATC, the airport operator, the MET services, the network manager, the airlines and the handling agents. All of these stakeholders apply CDM at different levels: the strategic, pre-tactical, tactical and business levels. They use these CDM processes to improve the airport's performance in arrival and departure management. The purpose of this is to address different situations.

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- In the nominal situation, CDM will help improve flight efficiency and network predictability and the environmental impact of the airport.

- During peak traffic, CDM will help optimise demand capacity balancing, and minimise delays and the economic impact of domain capacity measures.

- Under adverse conditions, CDM will help to improve the airport's resilience, and speed up the return to the nominal situation.
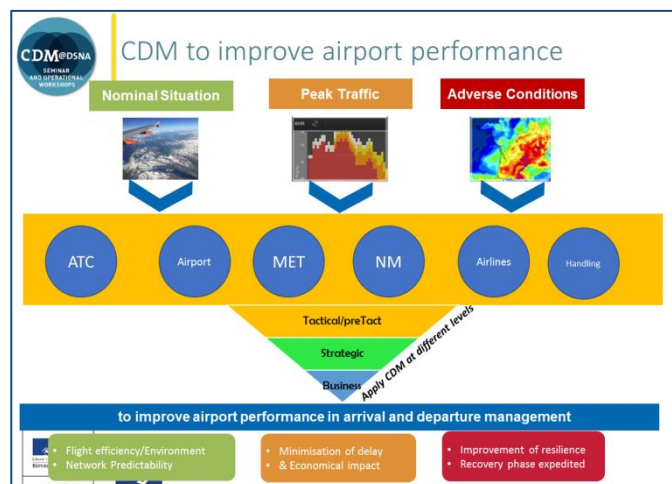
Moreover, the airport is not isolated; it is part of a European network. If it is true that the largest airports have the strongest impacts on network performance, **the amount of regional airports with lower impact is significant enough to be considered on network performance.**

The regulatory framework in Europe offers incentives for more CDM and more network integration, as stated in the PCP IR and the SE objectives. However, a CDM is a heavy and complex investment, having been designed for the top 20 major European airports. There also exists an ACC tower option, much less expensive, but with very few actual CDMs inside. **The general idea of this workshop is to find a scalable CDM solution to match each airport.**

As far as Airport CDM is concerned, DSNA has deployed airport CDM at 4 airports (Charles de Gaulle, Orly, Lyon and Nice are switching to Airport CDM mode today at 6 pm). Advanced ATC tower connections could be deployed to the network, for a number of regional airports. Project with Marseille and Toulouse airports are also under consideration, possibly followed by others.

CDM is composed of a wide range of building blocks: arrival and departure milestones, network integration, disruption management, MET services.

The first step thus consists of determining the level of integration sought for the network, asking questions such as:

- Is the advanced ACC tower certification level appropriate?

- Is a local adverse condition protocol in place to organise the operation during adverse conditions ?

- Has there been agreement on a partnership to involve MET services in CDM processes?

- Have we developed common skills and training kits in order to maintain a common culture between the various staff members?

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- Have some recommendations been organised together to address difficult situations and maintain a common dashboard using common performance monitoring?
- Can the whole process be improved through a common action plan and common management of this action plan?
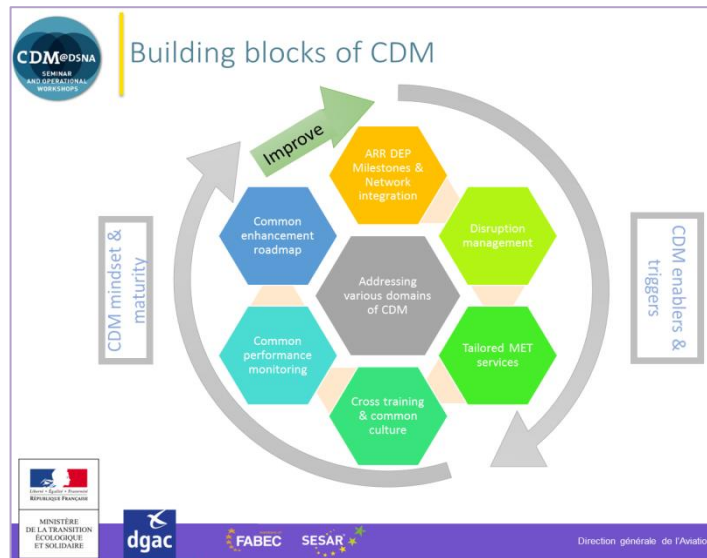
These questions must be addressed to build efficient CDM on the airport and make it sustainable.

At first sight, a regional airport's CDM proposed by DSNA could be:
- The adequate level of protection needed at various hours,
- a shared CDM flight list between the airport, the ACC and the network manager, for arrival and departure,
- local data sharing, coordination support,
- CDM services used as material for training, experience feedback and lessons learnt and action plans.

Workshop B proposes to explore this vast area for discussion. All those interested in improving punctuality, safety and other areas of airport performance, and who share the belief that airport performance is the result of all partners and stakeholders' performance combined are welcome to attend.

"CDM at regional airports" Workshop

Panel member: **Alain Mardsen - *Representative of Head of Airport Unit at NM,***
Anne Vincent – *DSNA - ATS Manager for Bordeaux APP,*
Didier Lucas – *DSNA - SNA RP CDG infrastructure, airport program,*
Fabien Masson - *Météo France - Aeronautical Director,*
Olivier Sciara - *Chargé de mission Safety, Air Navigation and Technique for UAF,*
Facilitators: **Erwan Page – *DSNA – Program Director for CDM,***
Jérôme Dufossez – *DSNA - Airlines relations manager in airspace department,*
Charlotte Chambelin and Sixitine Hegron– *DSNA - Experts from Directorate Technique and Innovation*

After greeting all members of the workshop, Erwan Page explains the conduct of the workshop made up around 5 sequences, each of them lead by a 5-minute speech beforehand a debate. On 4 paperboards, will be collected feedbacks from the audience according 4 topics: operational issues to be addressed, what regional airport-CDM should provide, difficulties and best practices. On the grounds of these gathered information, DSNA will be able to give the follow-up expected by the present stakeholders.

The first sequence is the airport view hosted by the opening speech of Mr Olivier Sciara from UAF.

He explains that France has a very dense network of airports with notably 55 airports certified EASA. **Regional airports deal with no less than 50 % of the regional commercial traffic and 50% for passenger traffic.** Alongside the 4 CDM airports, 5 regional airports are above 5Mpax and 8 of them are above 1M/pax.

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UAF rolls up a study to analyse the relevance of a possible widespread AAT solution for French airports. Results have been presented to their congress in May. **The main benefits identified for now by UAF is the connexion to the NM implying a better visibility by airlines, a better management of internal resource of airports (i.e. parking stand allocation at peak period) and a better anticipation and management of any event by taking fully advantage of strategical, pre-tactical, tactical phases.** Besides, the work of UAF with ACI Europe keeps them posted on interesting ACDM experimentation conducted through Europe.

In this basis, UAF figures 6 airports where A-CDM could bring benefits (Toulouse, Marseille, Bâle-Mulhouse Bordeaux, Nantes, Le Bourget). However, the target is not technical but above all a win-win solution between airports and NM.

Erwan Page asks to the audience if they share the need as described by UAF, and, from their experience view if they have felt the need for a CDM approach.

NANTES ATLANTIQUE AÉROPORT	Mr Guilhem de Saint Exupery confirms the need. Nantes Atlantique Airport is mindful of CDM approach. Moreover, an experimentation has been locally conducted on the subject. The need to exchange FUM and DPI messages with NM is prominent although they don't have a tool to do so. Optimization of TOBT is also very meaningful for them. Mr Guilhem de Saint Exupery has the feeling that ATC, airlines, airport operator on the same platform are in silos and being aware of constraints from the others seems difficult. Currently, it is solved by too many phone calls. Beside the heavily CDM process of 16 milestones, Nantes Atlantique airport is very interesting in sharing solutions and participating to this DSNA reflexion.
dgac DSNA	Ms Gladys Surmely, air traffic controller on Nantes APP, wholeheartedly supports the Mr Guilhem de Saint Exupery's opinion. From a platform view, when infrastructure improvement is needed, crossed-experiences let airport operators make the right choice. From operational view, during increasing traffic with saturation parking or taxiway announced, CDM would help to share about particular feature on parking stands, taxiways. CDM would definitively provide better service to our customers.
aéroport marseille provence	Mr Fabien Garnier totally supports the position. Currently Marseille-Provence airport is about to replace its system. They don't have the resource of CDG airport to invest in a complex CDM system. Marseille Provence airport would seek for something simple, convenient and understandable by every stakeholder. The main target for the airport operator remains an efficient management of resources.

The second input is the ATC view given by Ms Anne Vincent from Bordeaux ATC.

Bordeaux ATC manages a traffic featured by a seasonal profile and a global increase in traffic (+ 10% movements between 2018 and 2019). Many national and international events are planned in this attractive region generating complex situations. The customer profiles are very different with different needs (i.e. lowcost airlines or Dassault with Rafale training).
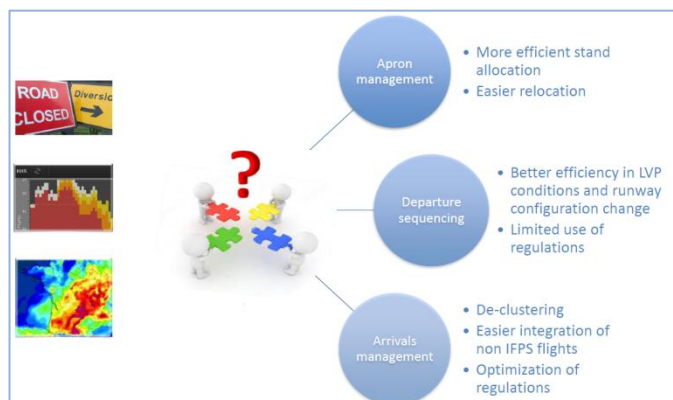
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In response, airport operator is deploying a whole politics for greeting more passengers in the upcoming year, notably with the implementation of 2 additional taxiways.

In this very dynamic context, the ground management or the parking stand management is quickly critical with a big dominos effects. A With CDM process, all stakeholders could share their information and build a common vision of a situation. For instance, from ATC's view, the only way to regulate departure on a single one parking stand is to apply a global regulation. It penalizes everybody while a simple CDM-light tool could easily solve this kind of situation.

Ms Anne Vincent concludes by giving the Bordeaux ATC feedback on G7 experience where a CDM approach was used. The result was very positive and satisfactory. The workflow for circulating information and making decision was tremendously short. Delays implied by the event were mastered to a minimum impact.

Erwan Page asks for reactions to this ATC view

|	
dgac DSNA	Mr Marc Azoulay from FMP Paris ACC, confirms this feeling that the global regulation is not the right way to manage the situation. A CDM-light all the more relevant for a seasonal situation. CDM-light in airports like Chambery, Grenoble besides those listed by UAF could be appropriate. CDM-light could bring a real gain in capacity from the ground to the en-route and TMA traffic flows.
dgac DSNA	Mr Alain Landart from Basel-Mulhouse APP, gives his testimony. As many regional airports, Basel-Mulhouse airport has seen its traffic increase rapidly in regard to the infrastructures which could not cope with the pace. As said previously, each regional airport has its particularity: Basel-Mulhouse has a curfew, international events, receives its traffic from Paris, Geneva Reims, Zurich, Langen (cross ACC and cross ANSP), the continent climate generates adverse meteorological situations (thunders in summer and snow in winter). Airport operator has set up an AOM (airport operator management) to better coordinate ground support, security and smoothen the parking allocation. This first step is in the same trend as a CDM-light concept.
dgac DSNA	Ms Anne Vincent sees also in a context of HR shortage, with CDM approach, a way to better deploy ATC team.

dgac DSNA	Mr Pascal Avon, Head of Nice APP and in charge of South-East TMAs, confirms that the common feedback he has from the various airports of different size in the South-East of France is a difficult collaboration, sometimes stormy and often confused, moreover in adverse situation. Regional Airport CDM solution shall not add workload and strain for operational experts on ANSP side.

The third sequence about the NM view is led by Mr Alan Marsden, representative of Head of Airport Unit at NM. *[The questions, coming up during the presentation, have been integrated directly in the presentation.]* CDM concept is a win-win exchange for airport receiving time of incoming flights to better prepare its resources on ground and for NM receiving time of departure to better integrate them in the network. For the time being, there are 3 types of airports for NM :

- the full CDM airport which share the entire list of CDM milestones with NM. It corresponds to 34% of departure in NM area.
- The Advanced-tower which share DPI on leaving blocks. It corresponds to 7% of departure in NM area.
- The standard airports sharing no DPI with NM corresponding to the rest of the NM area.

Based on the 16 milestone of the full-CDM concept, NM extracts only milestones essential to meet NM criteria and keeps 7 milestones.

This 7-milestone chain was tested at Alicante with a 1-week live trial. The mechanism was based on the calculation of an automatic TOBT (with manual intervention if necessary), an automatic TSAT (with TT known) and an EOBT updated by airlines when warned of a difference.
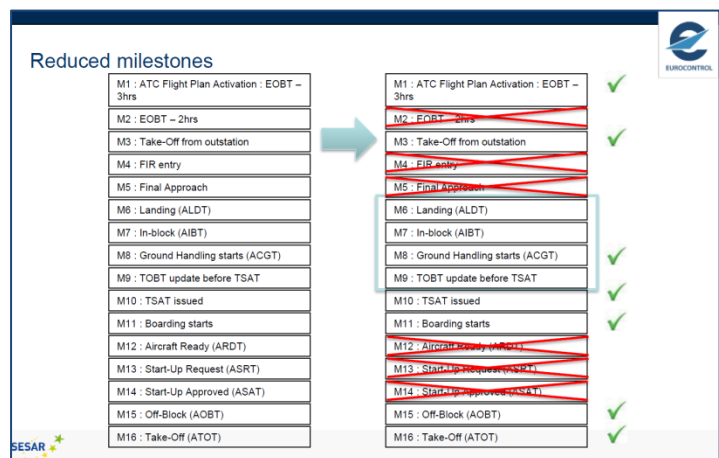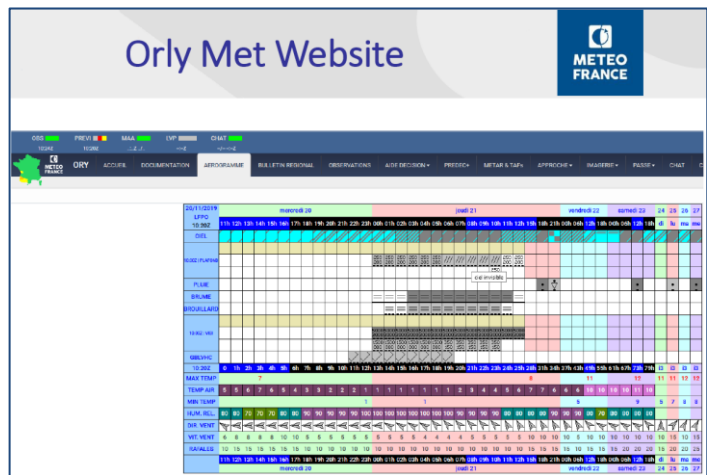

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This trial demonstrates that information provided was accurate enough according to NM criteria to consider the airport as A-CDM. Mr Alan Marsden confirms that CDM Lite could give A-CDM certification without obligation to give a manual TSAT.

The next step would be to really send this information to NM and see real interaction with the network. France is warmly invited to participate to the next step of this CDM Lite process. A manual about CDM Lite should be published at the beginning of the year 2020.

The fourth sequence is the Met service view presented by Mr Fabien Masson from Météo France. Météo France provides an extranet website in 16 major French airports.

The website gives the opportunity to have met information more complete and accurate than the limited format of TAF/METAR. Moreover, some dedicated information, closest to the platform needs, can be highlighted (i.e. tailwind for Bordeaux).

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As met information is a very specific domain, a CDM team needs to practise before handling an adverse weather situation. However, **this met website remains an essential tool for CDM to build a common view of meteorological situation.**

AIRFRANCE HOP	Mr Russel Olivier wishes to extend Mr Pascal Avon experience by expressing his fear about possible negative effects that could arise from sharing internal information with external stakeholders.

SWISS	Mr Andre Rungger explains that there is no other solution than sharing information at European level for having the most seamless coordination possible. For Swiss operations, the widespread of CDM concept is wholehearted expected.

dgac DSNA	Mr Jérôme Dufossez concedes to Mr Russel Olivier that the CDM Lite concept like every CDM approach has to be reality checked over a longer duration, with adverse situations and high pressure on operational staff. Nonetheless, the main feeling among ANSP and stakeholders is not suspicion.

AIRFRANCE HOP	Mr Russel Olivier also explains the difficulty for a dispatcher to check all these different websites. He urges ANSP, NM, MET service provider to provide information usable on a single platform.

The workshop concludes by the highlight on the best practices given by Didier Lucas and Jaufré Planchons from CDG ATC airport.

CDG has been experiencing CDM process since 2010. Their feedback can be outlined as followed :

- A technical frame is needed with new tools. CDM team must learn to read a met aerogram.

- A structural frame is also required with clear procedures, briefings, focus point.
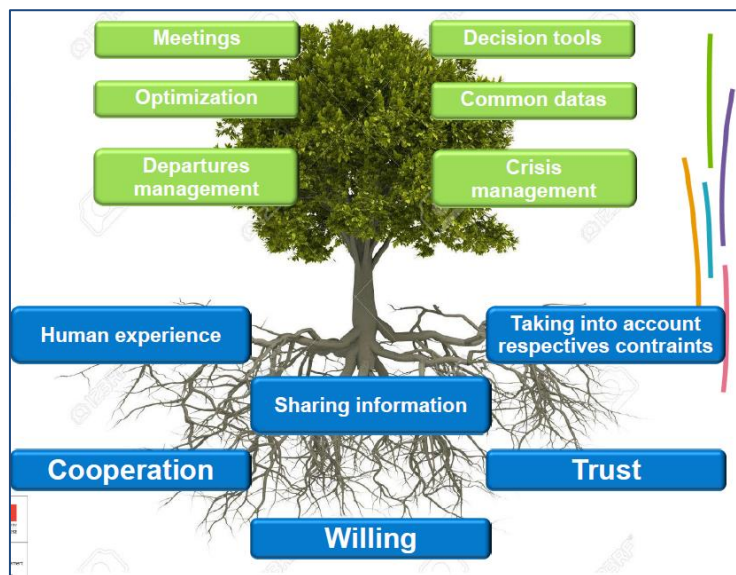
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But, above all, CDM team must be ready to understand and take into account others' constraints in their decision making. Common objectives must be clearly identified to avoid burn-out feeling and ease the decision process for reaching a common decision supported by all stakeholders.

Honest discussion must lead to solutions to allow sharing critical information from and with airlines because **roots of CDM are not tools and process**, but rather a real willingness to cooperate trustfully for the sake and the benefit of all stakeholders.

"CDM at regional airports" Wrap-up

Atelier : Wrap Up

Operational issues to be adressed

- Traffic/Workload **anticipation** (transparency of ATC constraints, expected holding...)
- **Optimisation** of airport performance and ressources allocation (including environmental perf.) especially in or after degraded situation (i.e. improvement of resilience and recovery after disruption)
- **shared situation awareness**, tailored to local needs, shared with partners, better knowledge of partners activities, to support collaborative decisions
- Minimise impact of ATFM constraints (departure regulations, reduce delays, collaborative choice of impacted flights...)
- **Better data quality** between systems, NM systems in particular

What RA- CDM should provide

- **simplified access to traffic/workload** data display.
- **Sharing of operational information** and constraints,
- KPI and warnings : CTOT monitoring, program shift, curfew protection...
- **Support instant (chat) and regular communication** to make collaborative decisions (snow, industrial action, AOs preferences, pushback/tow management ...)
- **Standardised data access, limiting the number of interfaces** (B2B and B2C, local or wide area systems)
- Adress small seasonal airports congestion with impact on ACCs
- **Reduced** set of milestones to reach ACDM accreditation

Best practices

- Best effort / Business Critical
- Sharing intentions on data usage (impact assesment of data usage)
- « Reasonable » use of data (especially with forecast)
- **Light deployment solutions**, easy evolutions
- **Harmonisation** for airlines (standard)
- Get used to talk to each other

Difficulties

- **Full ACDM complex**
- **Seasonal need** for CDM collaboration
- Lack of coordination : chain of unilateral, non coordinated decisions, increasing instability / issue.
- Multiple systems, multiple and heterogeneous data sources

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HIGHLIGHT OF THE DAY AND INSIGHT OF 2020

Eric Bruneau – DSNA - Director of Operations

Eric Bruneau summarises the key principles for DSNA's action, as brought out by this day:
- ensuring consistency between the airlines' demands and the capacity of the air traffic services
- making recovery capacity robust from a technical point of view
- stabilising the air traffic services' internal staffing, addressing precisely the issue of weekdays versus weekend. Extending from the last point, it is important to realise that the average traffic increase figures can hide sizeable disparities between months, days and weeks. In 2019, main ACCs posted a traffic increase of 5 to 7%. This figure was much higher in the summer. The implications of these gaps should not be ignored.

He asks stakeholders to share their expectations and forecasts for the next two or three years. It must be able to make the appropriate choices in order to build the flexible rostering of the future.

The social agreement currently being negotiated must provide solutions for the future and align the framework as closely as possible with expected developments in demand.

Three examples support this:
- DSNA intends to implement remote tower control by the middle of the next decade. By having multi-qualified ATCOs, it will be able to adapt the schedule and rostering to the developments in commercial flights on small airports from one season to another.
- Time-to-ops is another example. The way in which systems are delivered to the Ops room needs to be adapted. Thanks to the social protocol, DSNA intends to modify the organisation of the Technical Departments to reduce time to ops, and implement improvements yearly.

- Another key issue is the training phase. ATCO recruitment will be improved for 2020; recruitment is of no value, however, if the ATCO are not qualified. The aim of with the social protocol is therefore to reduce the length of training phases for the main ACCs by 20%. Thus, as soon as the ATCOs are qualified, more capacity can be provided.

On this note, insofar as capacity is needed to improve safety, the 50% improvement target by mid-2025 is confirmed. Improvements are also needed in on-board equipment (i.e. datalink). In the next few days or 2 weeks, DSNA will have defined the appropriate social measures to alleviate the consequences on the traffic. Working with the various constraints and scope issues, the main goal will be to minimise the consequences and reduce to a minimum the need for transferring flows.

As for the CDM, it concerns as much the en-route phase as the approach phase; it should furthermore be seen from a strategic, pre-tactical and tactical viewpoint. It is hoped that more CDMs will be implemented by next summer and over the following year, so that French airports can provide more safety, more capacity and more direct routes.

We hope you will be satisfied to the results by April.

*See you on the **DSNA Strategic Consultation Meeting the 12nd of May 2020.***