

#### Military aviation / Windturbines Coexistence in France Windeurope event Sep 2018/

LTC (OF4) Laurent LESAGE (FAF) Obstacles Division



# **DirCAM** missions

- Coordinate MOD policy with regards to windfarms,
- Preserve armed forces capabilities to fulfill their missions while participating to the development of the windpower energy,
- Ensure the detection of the Homeland Air approaches both at High and Low altitudes,
- Garanty our capability to operate/train at low and very low Levels,
- General air safety.



## Briefing Scope

# Windfarms Deployment 2018 Interministerial Workshop Radar issues - DEMPERE

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### 1) Windfarms deployment analysis:

#### Free service - Will to assist green power devpt

-Initial Assessment: no deadline, advice for the Windturbine Companies, no compulsory answer (900+ case files submited yearly)

-Formal consultation: 2 months time limit, Mandatory answer. Very long cascading process. (400+ yearly)



# Winfarms represent obstacles to flying & to radar propagation





#### Windfarm Clearance process



VARIOUS MINISTRIES: Ecology, Transportation, Historical Monuments.
Assessing potential impact on Civil aviation, Natura 2000 areas,
Forests preservation, Wildlife, etc...



### 2) Interministerial Workshop:

-Perform the 2nd Major Operational revision (2018 version): « Reassess the Minimun number of zones and sectors necessary to fulfill our missions »

- Study where windfarms projects could be implemented more easily inside military areas (Helicopters or jet fighters training zones);

-Conditionnal Lighting : **Permanent lighting and conditional blinking.** 



#### 3) Radar issues:

# We do need a tool to assist the development of Green Energy in a dense Radar environment.





**Eurocontrol Windfarms/Radar assessment** 





#### **Radars Constraints**

#### Protection, Coordination and Agreement zones





## 3) Scientific assessment: DEMPERE

DEMPERE= DEMonstrateur de PErturbations Radars générés par les Eoliennes

-Ambitious project - State of the Art technology, -Demonstrator development is ongoing, -Version is still in computer evaluation phase, -Latest experimentations with airplanes realized; -Data mining ongoing to compare software simulation predictions with the recorded reality; -Demonstrator  $\rightarrow$  Software development; -Software deployment & operational evaluation by Ecology and Defense ministries.

## SIMULATION PLATEFORM







# Questions ?

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