



**MINISTÈRE
CHARGÉ
DES TRANSPORTS**

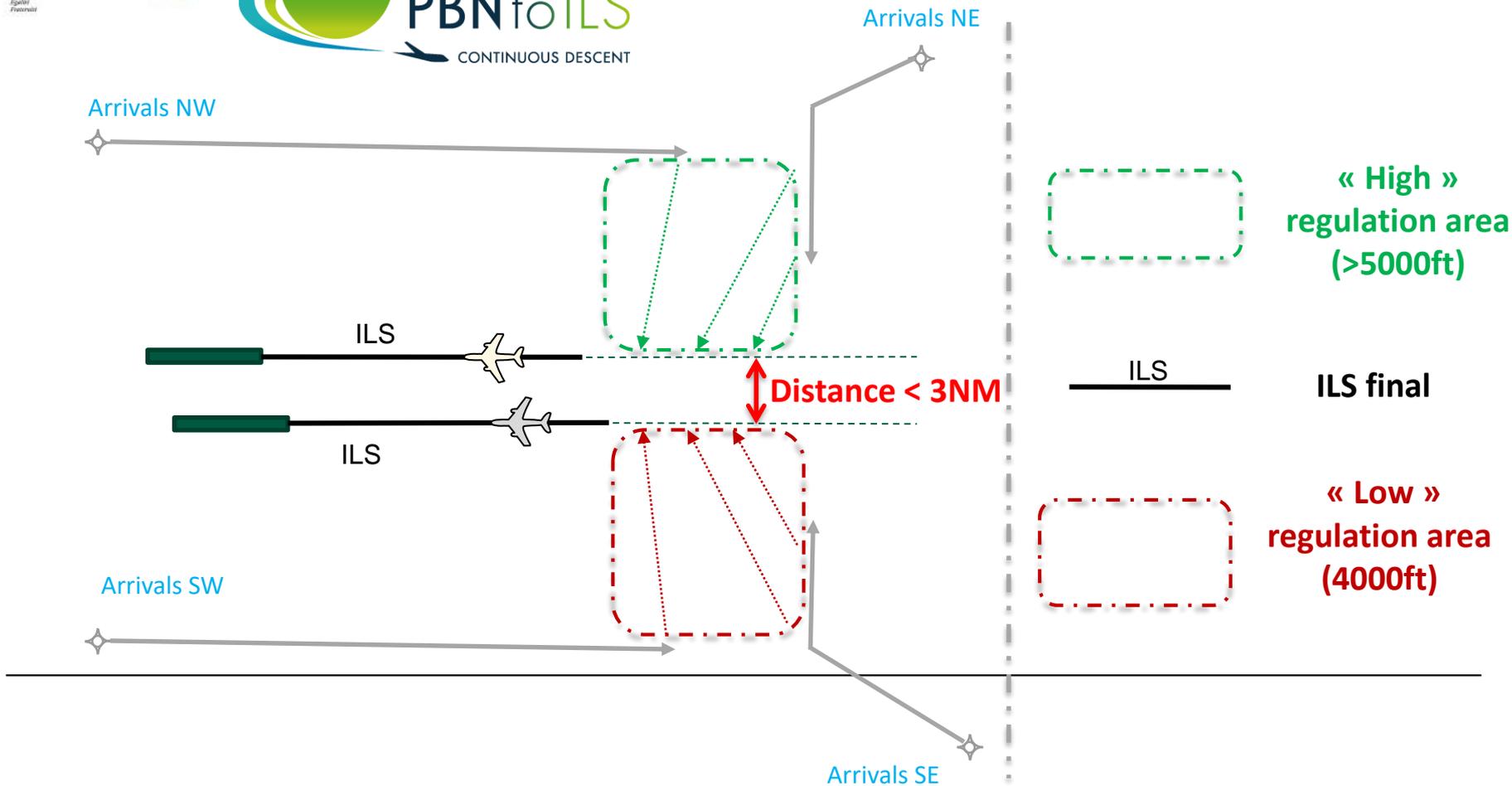
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Égalité
Fraternité*



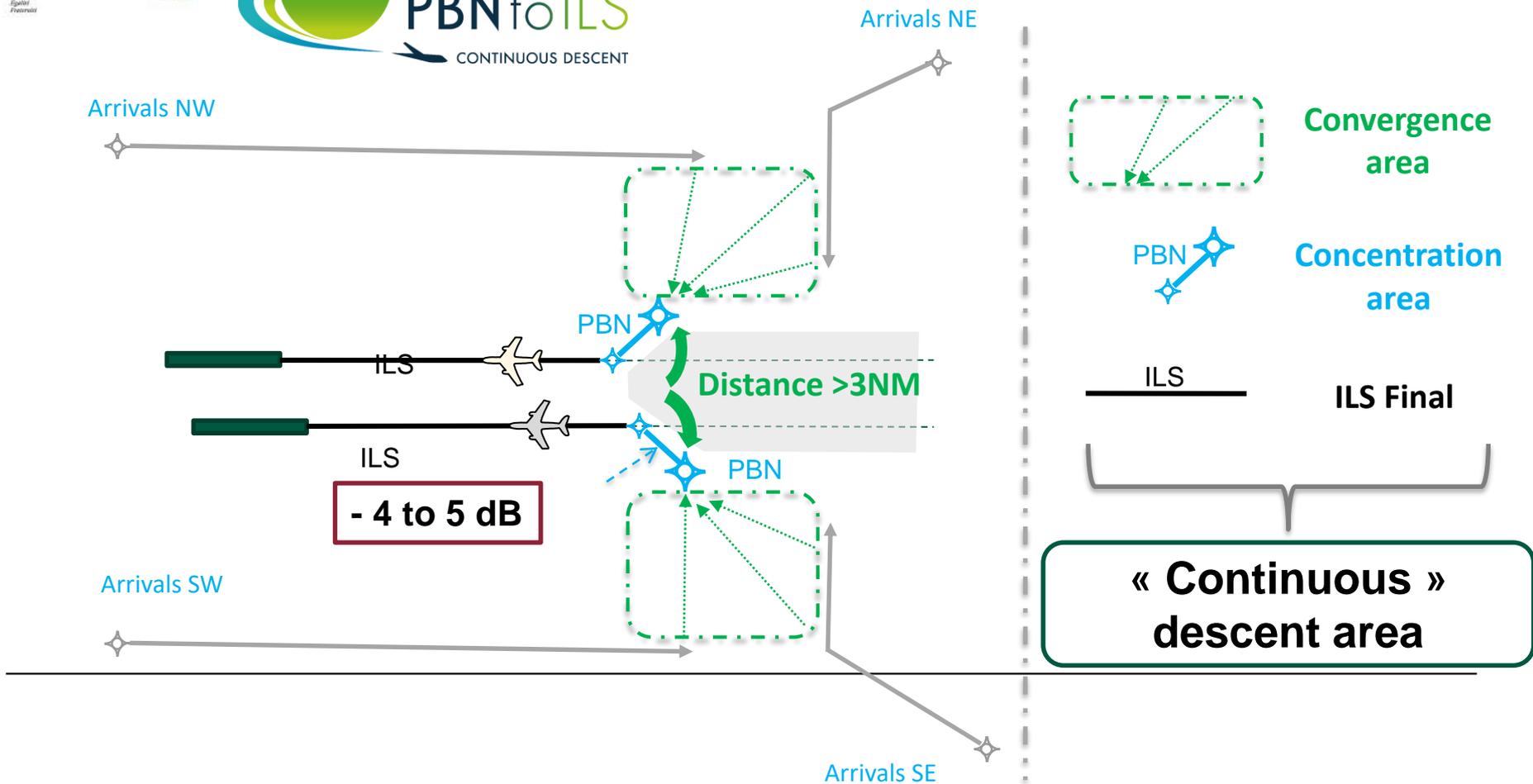
PBN TO ILS AT PARIS CDG

The benefits of vertical efficiency

CDG actual operations



PBN to ILS concept



System simulation : estimated gains

➤ Global fuel gains :

Eastern configuration

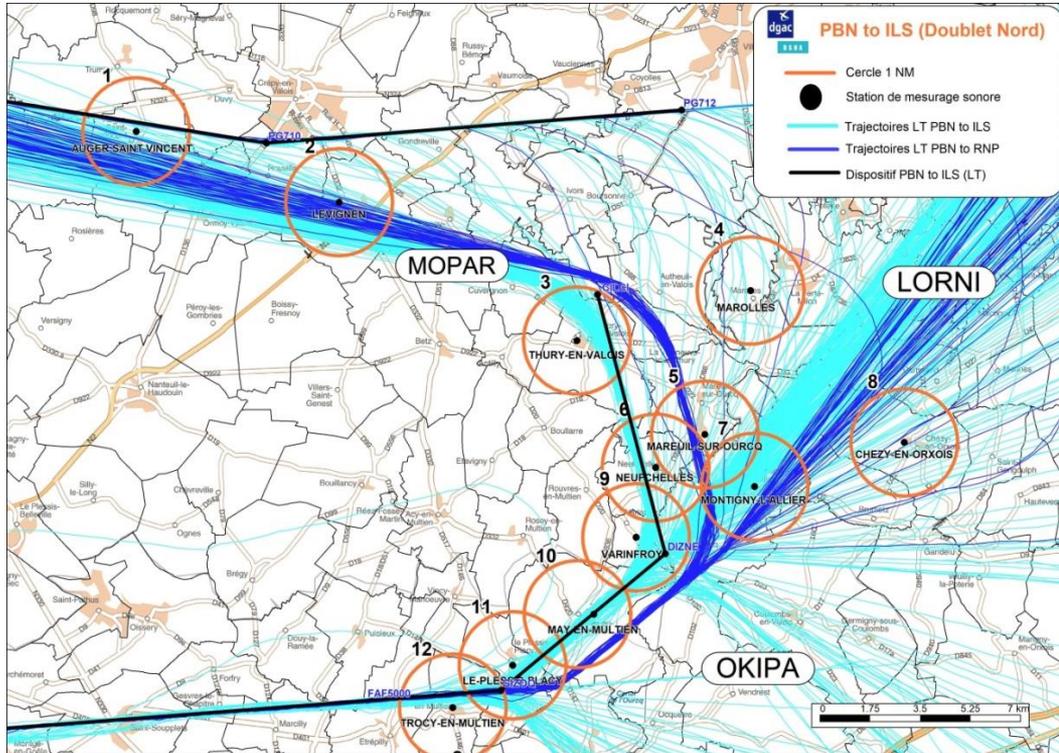
- 120 Nm radius **-7,6%**
- TMA **-8,15%**

Western configuration

- 120 Nm radius **-6,84%**
- TMA **-11,85%**

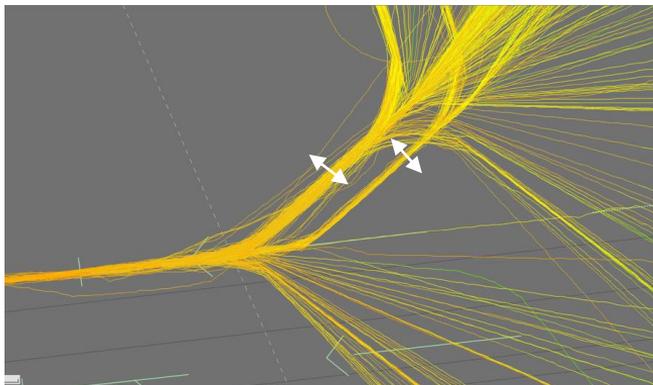
➤ Noise

- « 5 000ft » runways **-1 to -2 dB**
- « 4 000ft » runways **-2 to -5,5 dB**



- **Runway 27R**
- Published procedures for **3 IAF** : MOPAR/LORNI/OKIPA
- **RNP1** required
- **PBN to ILS** (light blue) and **PBN to RNP** (dark blue)
- **12 noise measurement locations**
- **756 flights** between 18/01/2021 and 22/04/2021

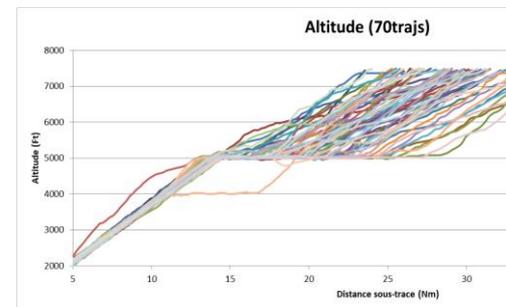
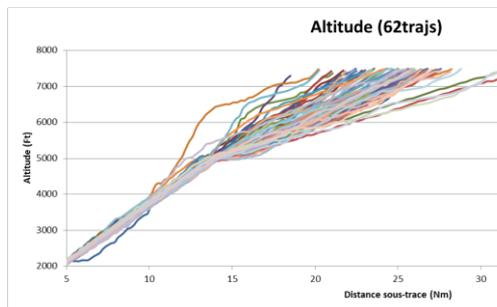
Safety



Analysis of lateral precision :

- Overall good precision
(**≈0,3NM**)

Environment



Analysis of vertical profiles :

- Need to be improved
- Wide range of results

CDO profiles

Inf 8 000 ft

37%

Inf 20 000ft

26,3%

- And also **long level off**



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Thank you for your attention