EUROCONTROL

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PARIS – CDG

Non compliant approaches

Vs

Loss of separation on interception

An example of trade off in a complex system

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PARIS – CDG

- **Non compliant approaches vs Loss of separation on interception**

  An example of trade off in a complex system

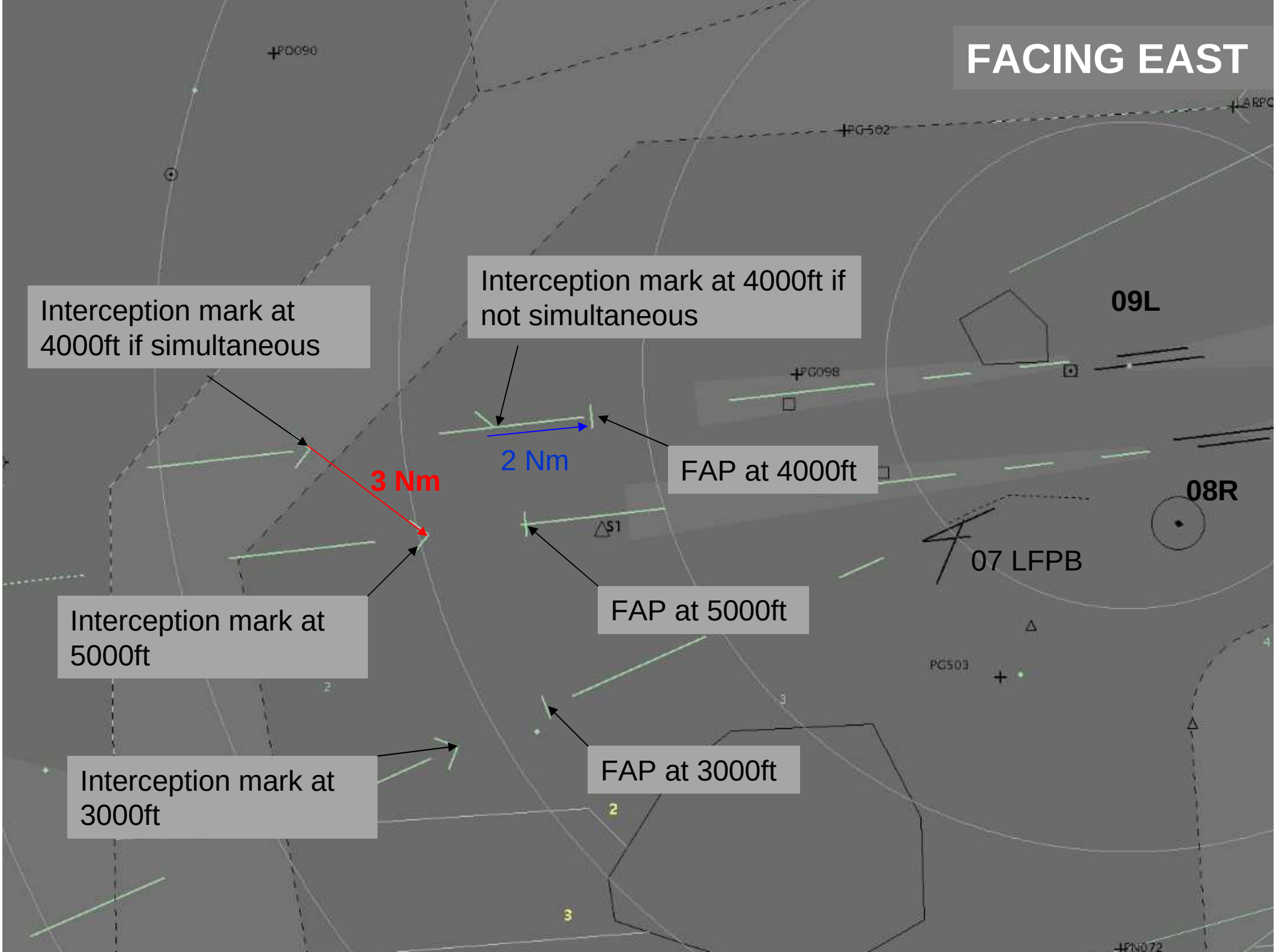
  - Complex simultaneous approaches'rules
  - CDG's Safety action plan
  - An illustrated example
  - A comprehensive approach
  - Conclusion / Way forward

Charles De Gaulle APP :

Complex simultaneous approaches' rules

To understand CDG specificities regarding simultaneous independent double (triple) approaches we have first to go through interception rules (we will take as an example an easterly configuration with ILS RWY 08R and 09L approaches in use) :

- Aircraft vectored on the finals have to be separated from each other. Only once aircraft on approach are established on the various LLZ courses they are considered as separated and independent
- For this reason specific interception marks, in case of simultaneous approaches, have been defined to ensure either 3Nm or 1000ft between aircraft intercepting final ILS approaches
- Since the distance between the LLZ courses is very close (2 Nm), any overshoot of the localizer course could potentially lead to a serious loss of separation


FACING EAST
Interception mark at 4000ft if simultaneous
Interception mark at 4000ft if not simultaneous
09L
2 Nm
3 Nm
FAP at 4000ft
08R
07 LFPB
FAP at 5000ft
Interception mark at 5000ft
FAP at 3000ft
Interception mark at 3000ft


S AFR3009
73] 25
-1380 ft/mn
N AFR153
35 25
POI
0 ft/mn
N AAF104
55] 21
-960 ft/mn
N JAL41
25] 19
-1020 ft/mn
S AFR897
16] 12
-660 ft/mn
S AFR3591
-2] 13
-720 ft/mn
D POF75
47[15
1500 ft/mn
BGW
S AFR3093
79] 27
-420 ft/mn
X TAY53X
270- 40
0 ft/mn
2
3

CDG's Safety Action Plan

- A number of actions have been undertaken with some success by CDG's Operations Department in the last two years to decrease significantly the number of loss of separation on interception (LOS)

- Reflexion as been initiated to ensure that decrease in LOS does not generate precursors to other potential safety events (especially non compliant approaches that could lead to potential unstabilised approaches)

  Illustration about the difficulties to fight against NCAs without consequences on LOS on interception

A comprehensive approach :

Understand more efficiently the issues to increase the global level of safety

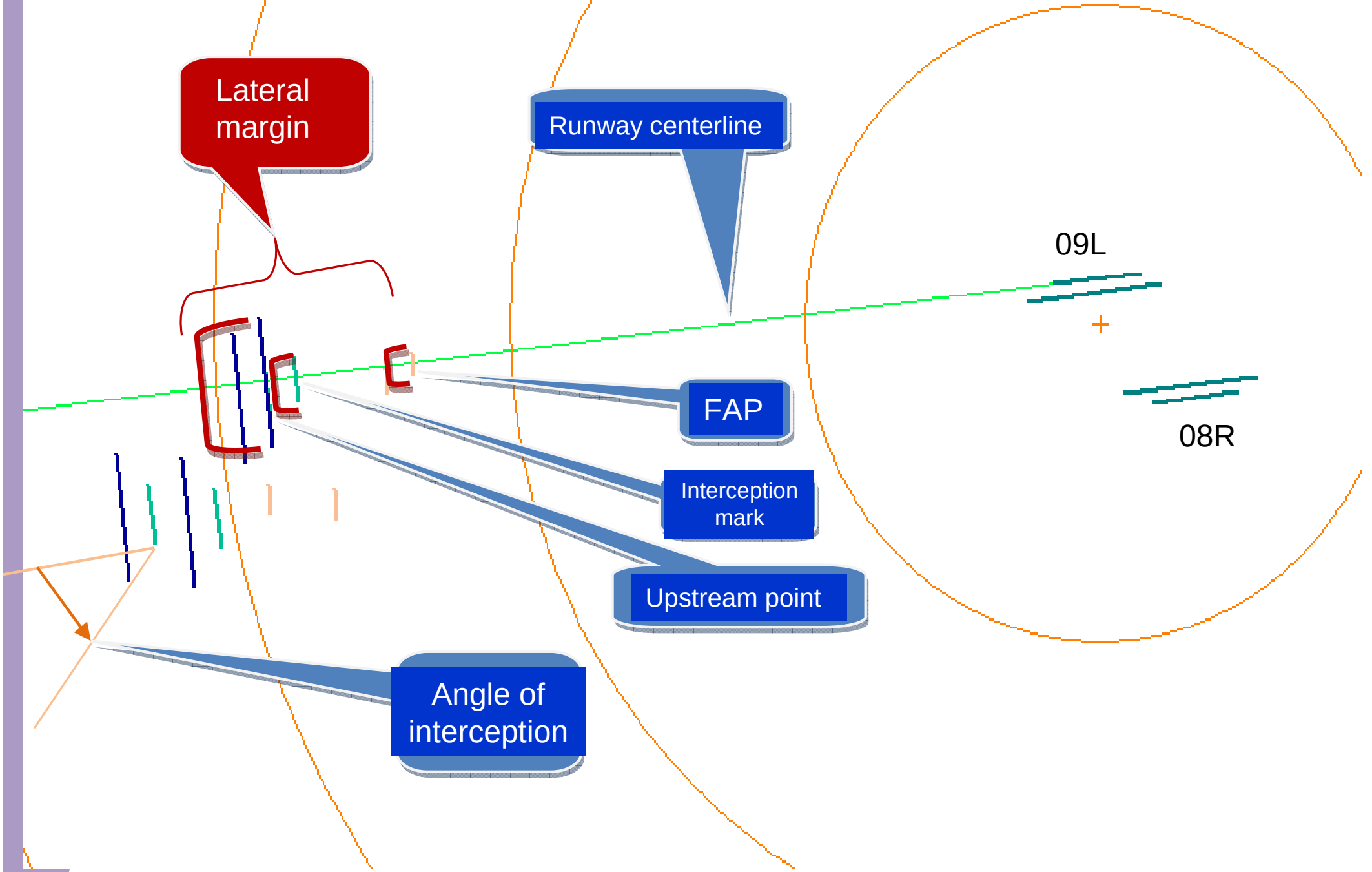
- Due to the complexity of CDG's ATC system, the need to have a thorough and comprehensive view on the various safety issues at stake was felt
- First step on NCAs issue was to analyse whether defined rules of interception where complied with
- For that only an automatic detection could fulfill the requirements and thus creation of a specific analysis tool

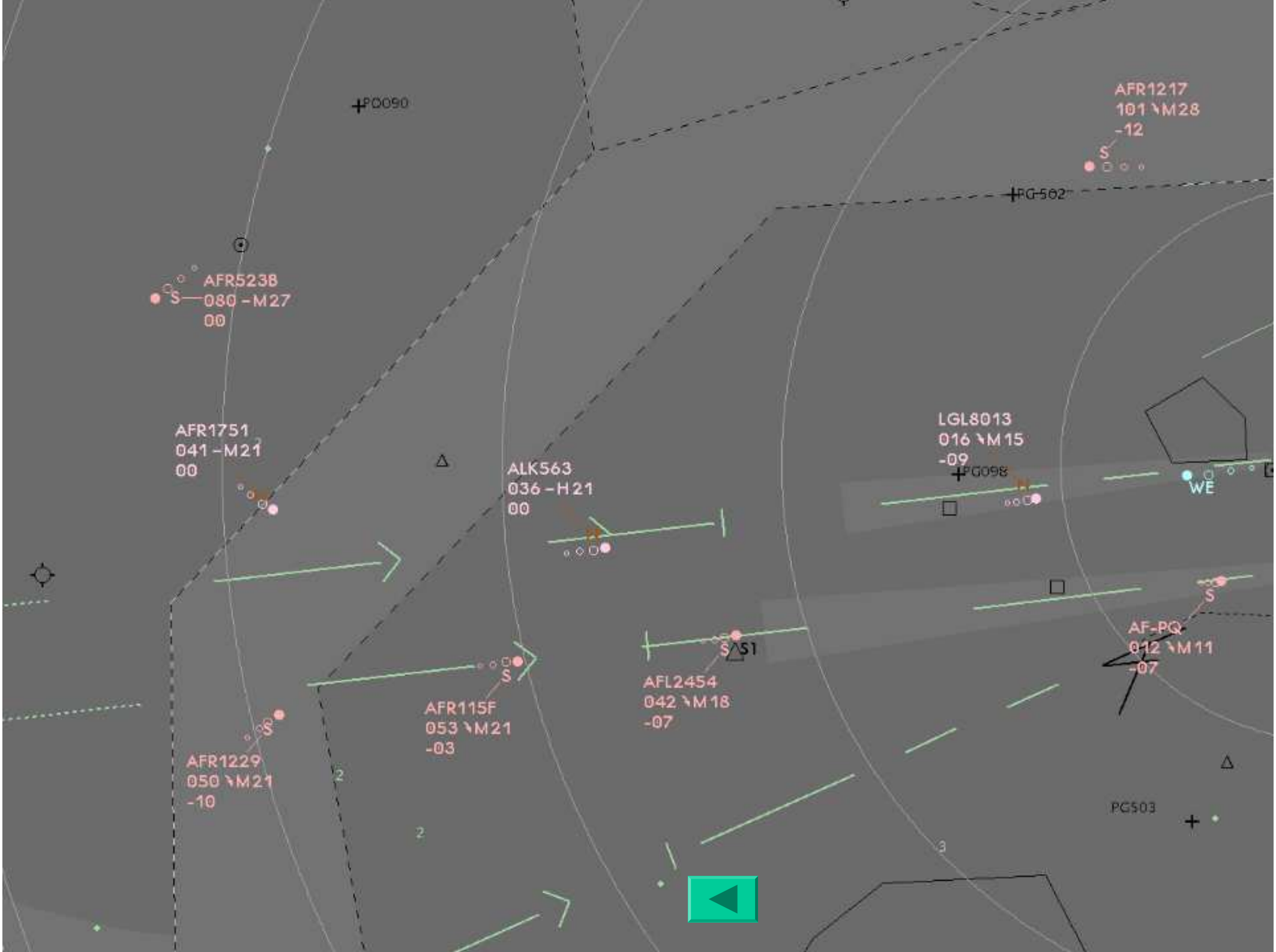
- Beginning of study and first results

CONCLUSION / WAY FORWARD

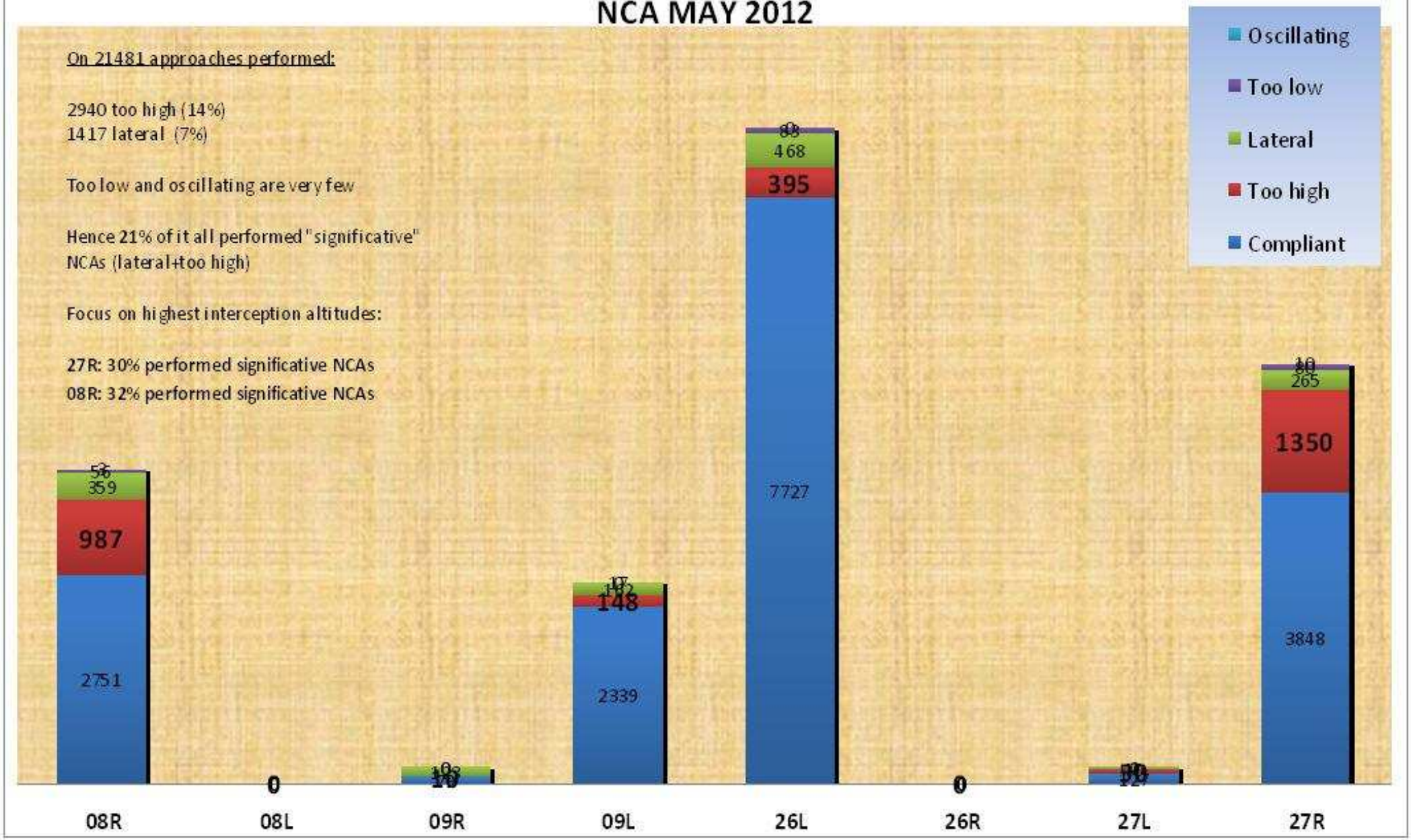
- Validation of assumptions
- Levers of action

- Reflexions :
  - Thorough study of relations between NCA ⇔ NSA ⇔ Safety event (CFIT or RWY excursion)
  - Analysis of Regulatory environment

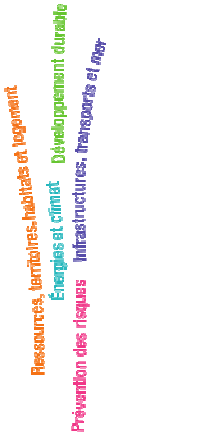

Lateral margin
Runway centerline
09L
FAP
Interception mark
08R
Upstream point
Angle of interception


PG090
AFR1217
101 \M28
-12
S
PG502
AFR5238
S
080 -M27
00
AFR1751
041 -M21
00
ALK563
036 -H21
00
LGL8013
016 \M15
-09
PG098
WE
S
S S1
AFR115F
053 \M21
-03
AFL2454
042 \M18
-07
AF-PQ
012 \M11
-07
S
AFR1229
050 \M21
-10
2
2
3
PG503

NCA MAY 2012


On 21481 approaches performed:
2940 too high (14%)
1417 lateral (7%)
Too low and oscillating are very few
Hence 21% of it all performed "significative" NCAs (lateral+too high)
Focus on highest interception altitudes:
27R: 30% performed significative NCAs
08R: 32% performed significative NCAs
Oscillating
Too low
Lateral
Too high
Compliant
359
987
2751
0
148
2339
468
395
7727
0
265
1350
3848
08R
08L
09R
09L
26L
26R
27L
27R

Thank You



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