EUROCONTROL

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DSNA
PARIS – CDG

From Safety I to Safety II

CDG's SMS Evolution

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

Présent pour l'avenir

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Safety I to Safety II : CDG's SMS

- Introduction
- CDG's approach and organisation
- Safety Action Plan KPIs and Results
- Way Forward
- Conclusion

Safety I to Safety II : Introduction

- Evolution of SMS
  - Why
- Background and personal experience
  - ATCO
  - Management
  - CDG's demands and specific environment

Paris-CDG : specific environment

- **Infrastructure**
- 2 pairs of runways

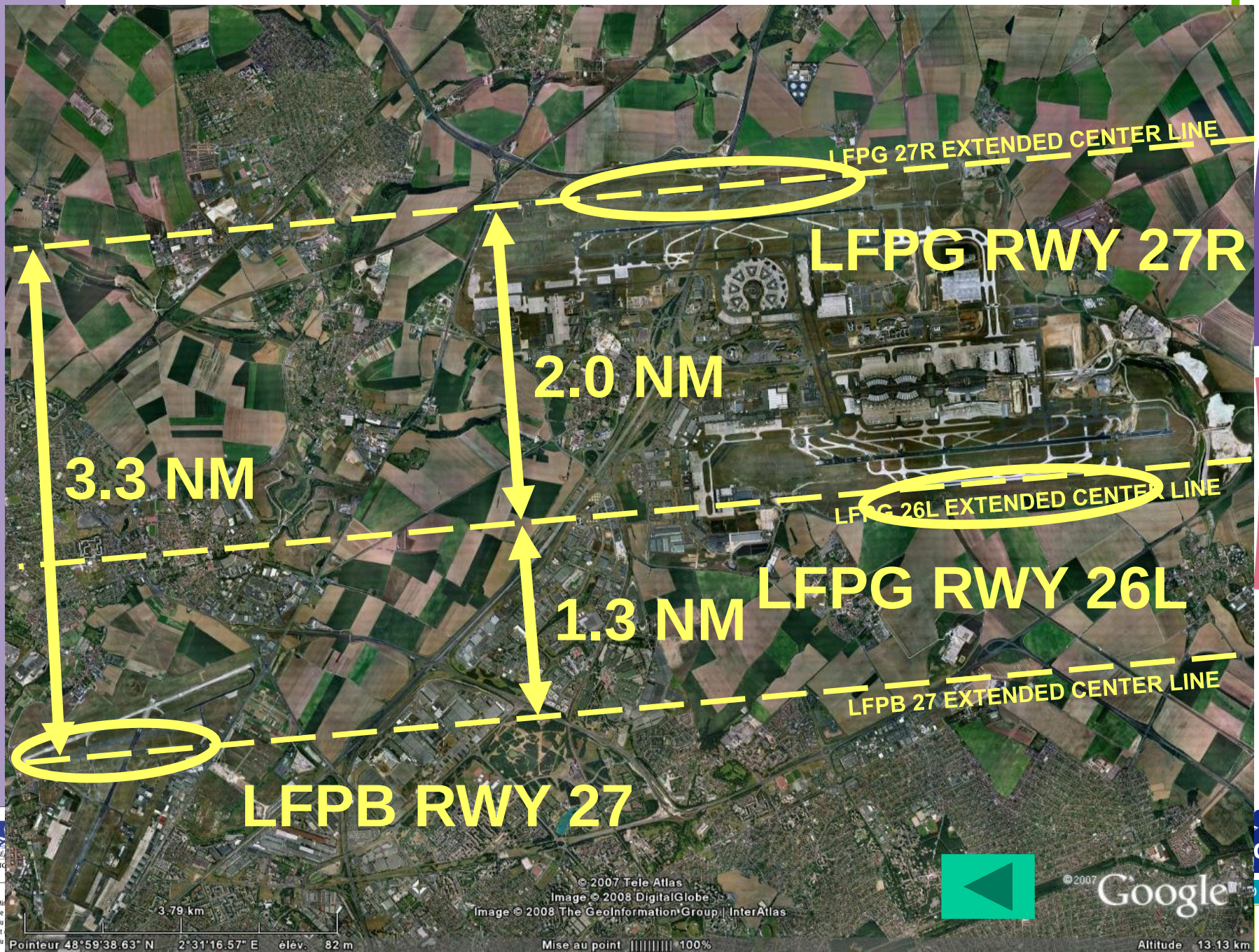
single mode operations

- Over 100 kms taxiways
- Peak day : 1773 mvts

- Paris-Orly 20 miles
- City of Paris 11 miles
- Le Bourget 2 miles

Constrained environment

TRIPLE PARALLEL RUNWAYS OPERATIONS



Safety I to Safety II : Introduction

- Issues
  - Operational regulatory environment
  - Risk and performance management
  - Operational vs Management Safety vision

CDG's Safety Organisation : 1/3

Safety Assessment :

- CTL's Safety notifications
- Automatic detection events by thorough analysis of safety nets (STCA, RIMCAS, APW, MSAW)
- Air Safety reports
- Safety division daily analysis and weekly coordination

=> Thorough and comprehensive view of safety issues

Safety Meetings :

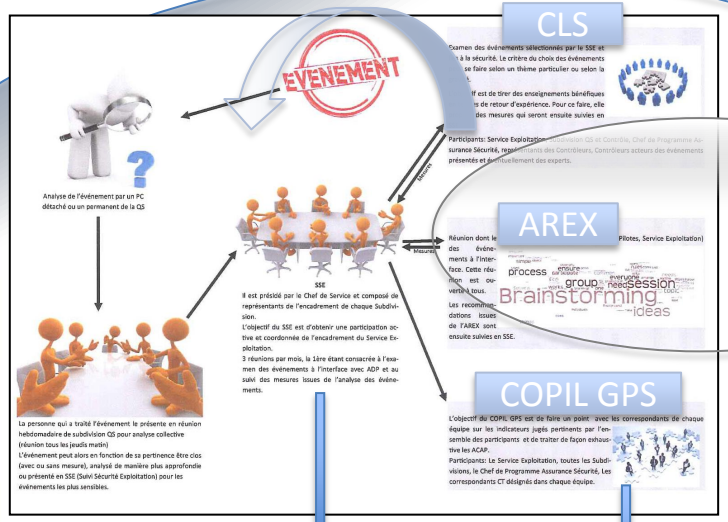
- Twice monthly safety events joint analysis and trends
- Monthly follow up implementation ATC's system modification safety related events, ground events (Airport Operator)and on actions defined
- Every three months follow up on safety action plan
- Every three months sharing with watch managers on safety trends and actions (Safety Steering Committee)

CDG's Safety Organisation : 2/3

Safety Interfaces :

- Monthly coordination with Airport Operator on common ground safety events and definition of joint action plans
- Every three months sharing and return of experience between operational controllers and airlines Safety Officers of ground/air interface safety events
- Bi annual LRST's meetings and annual Safety Promotion Committee
- Annual CDG's Safety meeting with French NSA
- Specific meetings on CDG's Winter Plan elaboration and coordination (Runway state assessment, braking action and PIREP procedure) as well as return of experience with airline Safety Officers (Air France, Easy jet, Lufthansa)

CDG's Safety Organisation : General Overview



ATS CDG

Airline (AF) SMS

DSNA SMS

SMS CDG

Indicators

Watch managers Dialogue

Experts' suggestions

DSAC (NSA) Safety Review

DSAC (NSA) Winter Review

Safety Promotion Committee

Investment Management Committee

Safety Steering Committee SNARP/ADP

Safety Steering Committee DO / AF

Projects

AO (ADP) SMS

CDG's Safety Organisation : 2/3

Safety Action Plan :

- Triple simultaneous approaches
- Runway incursions
- Risk perception / Risk management
- Night related operational methods

Just Culture

Front line actors'

Sense of responsibility

CDG's Safety Organisation : 3/3

Evolution of SM Approach :

- Positive and non judgmental approach
- Defining systemic and individual factors
- Clarifying Regulatory environment (Operations Manual vs Good Practices Guide)
- Construction of a management process allowing constructive dialogue and bridging gap between operational and management views
- Empowerment of operational Management
- Sharing on Safety performance (Definition Safety KPIs)
- Follow up on Safety action plan and open space dialogue on Safety issues
- Team Safety performance briefings
- Accountability of individuals and operational managers

CDG's Safety Management Organisation

Analyse de l'événement par un PC détaché ou un permanent de la QS

Safety Unit

La personne qui a traité l'événement le présente en réunion hebdomadaire de subdivision QS pour analyse collective (réunion tous les jeudis matin)
L'événement peut alors en fonction de sa pertinence être clos (avec ou sans mesure), analysé de manière plus approfondie ou présenté en SSE (Suivi Sécurité Exploitation) pour les événements les plus sensibles.

Local Safety Committee

Mesures

Mesures

SSE

Il est présidé par le Chef de Service et composé de représentants de l'encadrement de chaque Subdivision.
L'objectif du SSE est d'obtenir une participation active et coordonnée de l'encadrement du Service Exploitation.
3 réunions par mois, la 1ère étant consacrée à l'examen des événements à l'interface avec ADP et au suivi des mesures issues de l'analyse des événements.

CDG's Safety Action Plan

CLS

Examen des événements sélectionnés par le SSE et liés à la sécurité. Le critère du choix des événements peut se faire selon un thème particulier ou selon la gravité.

L'objectif est de tirer des enseignements bénéfiques en termes de retour d'expérience. Pour ce faire, elle propose des mesures qui seront ensuite suivies en SSE.

Participants: Service Exploitation, Subdivision QS et Contrôle, Chef de Programme Assurance Sécurité, représentants des Contrôleurs, Contrôleurs acteurs des événements présentés et éventuellement des experts.

AREX

Réunion dont le but est d'analyser conjointement (ADP, Pilotes, Service Exploitation) des événements à l'interface. Cette réunion est ouverte à tous.

Les recommandations issues de l'AREX sont ensuite suivies en SSE.

COPIL GPS

L'objectif du COPIL GPS est de faire un point avec les correspondants de chaque équipe sur les indicateurs jugés pertinents par l'ensemble des participants et de traiter de façon exhaustive les ACAP.

Participants: Le Service Exploitation, toutes les Subdivisions, le Chef de Programme Assurance Sécurité, Les correspondants CT désignés dans chaque équipe.

Local Safety Commission
Experts suggestions / REX
- ATC System Issues

PIL – CTL Committee
Experts suggestions / REX
- Ground/Cockpit Issues

Safety Performance Steering Committee
Watch Managers / Managt
- Safety Action Plan
- Safety Indicators
- Safety Issues

Safety Performance Indicators

Watch managers Dialogue

CDG's SKPIs and Results 1/6

Risk Management vs Risk Perception :

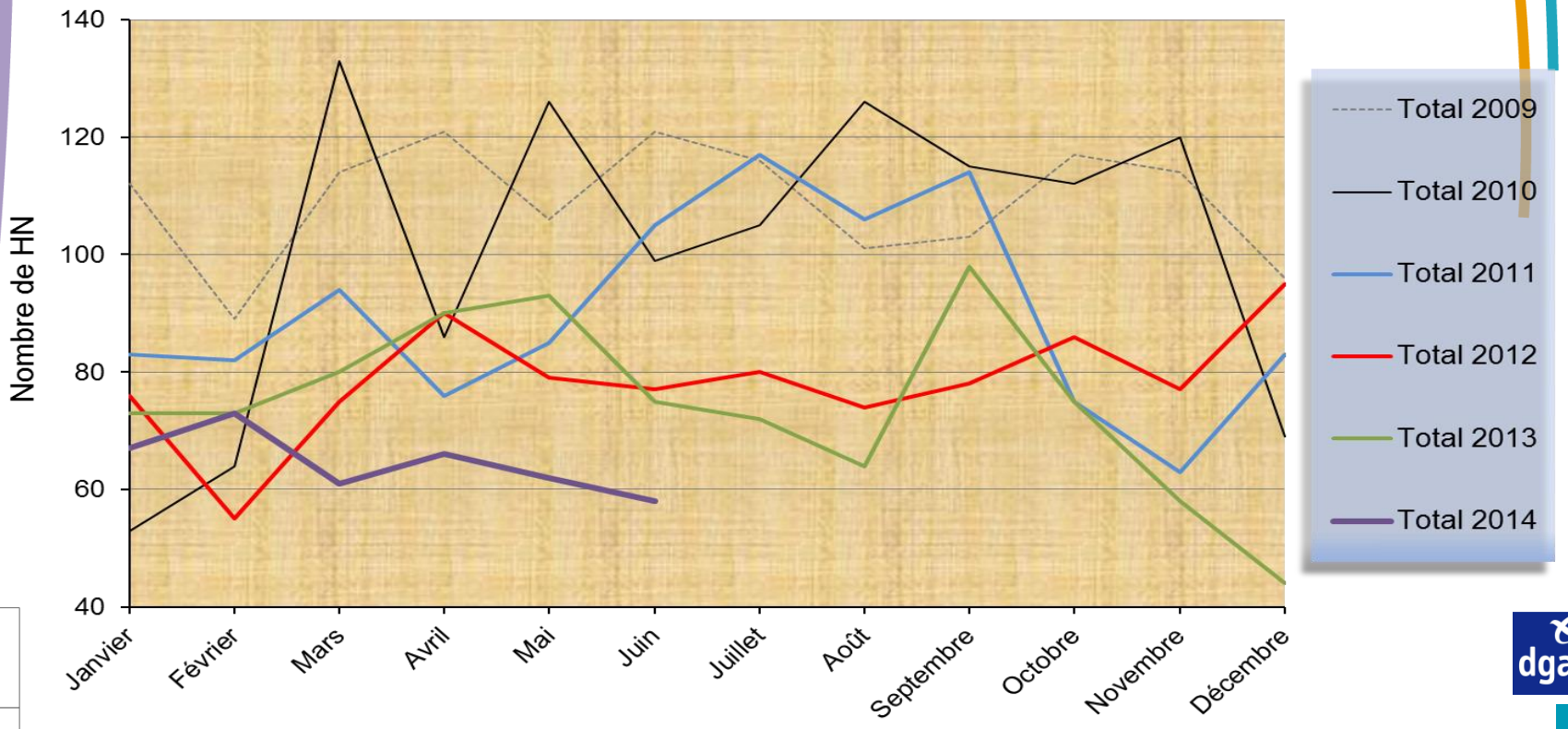
- Automatic detection and analysis of safety events
- Follow up on CTLs' Notification Rate (Risk perception)

		HN70	HN50	NUIT	INCURSIONS
TOTAL 12 derniers mois	nbre d'évènements	137	18	8	34
	nbre de FNE	68	14	2	21
Taux de report moyen 12 derniers mois		**50%**	**78%**	**25%**	**62%**

CDG's SKPIs and Results 2/6

Separation Minima Infringement :

- Global reduction of SMIs especially during simultaneous approaches operations
- Global safety analysis with specific care brought to risks due to non compliant approaches



CDG's SKPIs and Results 3/6

	janvier 2013 - décembre 2013			janvier 2014 - juin 2014		
	Nbre d'évènements	moyenne mensuelle	variation / 12 mois précédents	Nbre d'évènements	moyenne mensuelle	variation / 6 mois précédents
Total HN	895	74,6	-5,0%	387	64,5	-20,4%
HN majeurs	7	0,6	-50,0%	3	0,5	-40,0%
HN significatifs	17	1,4	-19,0%	1	0,2	-92,3%
HN 50	19	1,6	-45,7%	5	0,8	-54,5%
HN 70	168	14,0	-33,9%	66	11,0	-26,7%

Interception ILS

	Nombre	Evolution en %
2011	417	
2012	259	-37,89
2013	139	-46,33
2014	75	-11,76

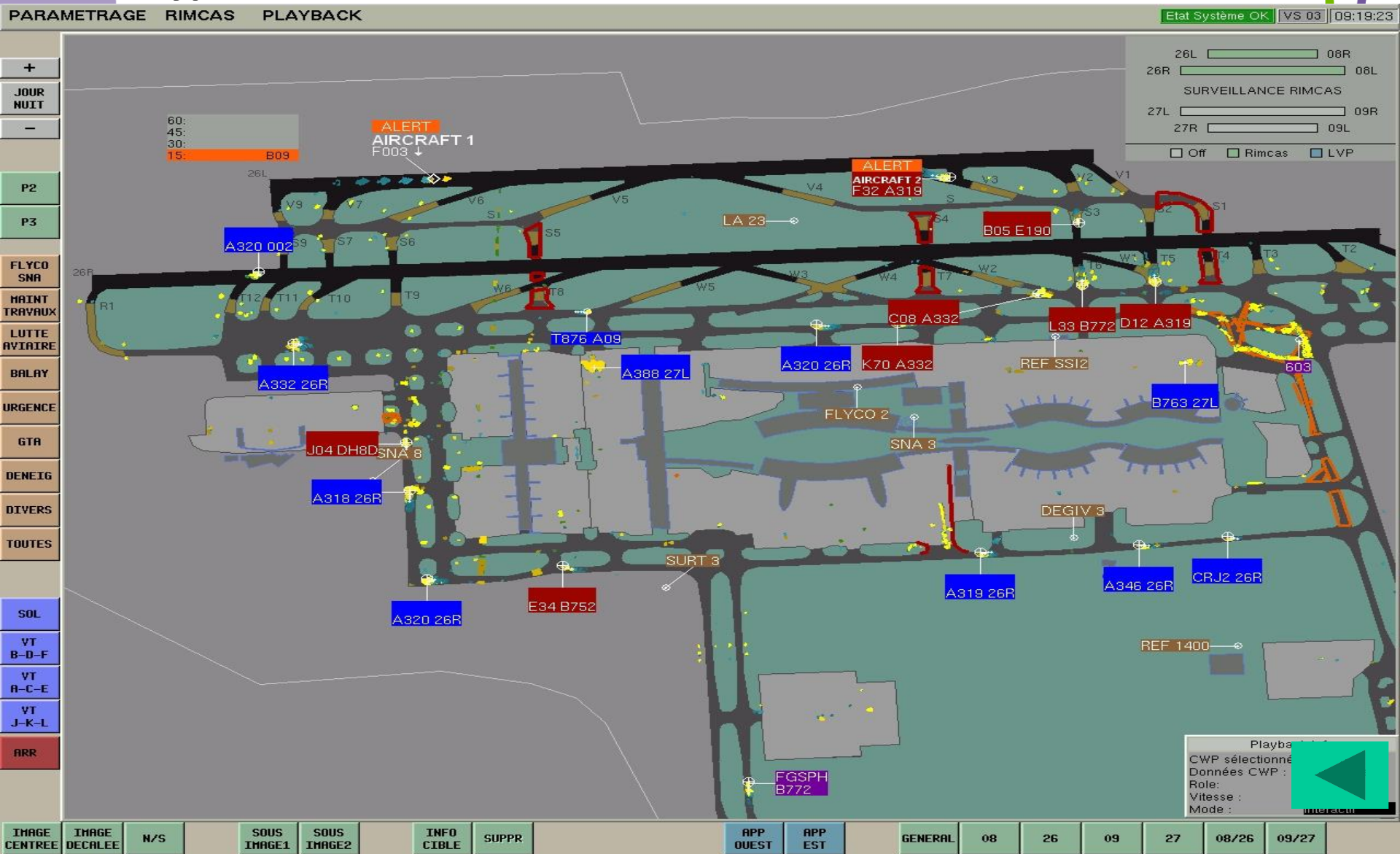
CDG's SKPIs and Results 4/6

Runway Incursions :

- Automatic detection and analysis of RI related safety events (RIMCAS) since march 2012
- Dramatic increase in number of RIs especially under category : Conflictual clearances (Safety performance vs Risk perception)
- Intentional vs Non Intentional : Management dialogue on performance
- Definition of different typologies :
  - Type I
  - Type II
  - Type III
- Risk management based approach (Defining in common the marginal boundary)

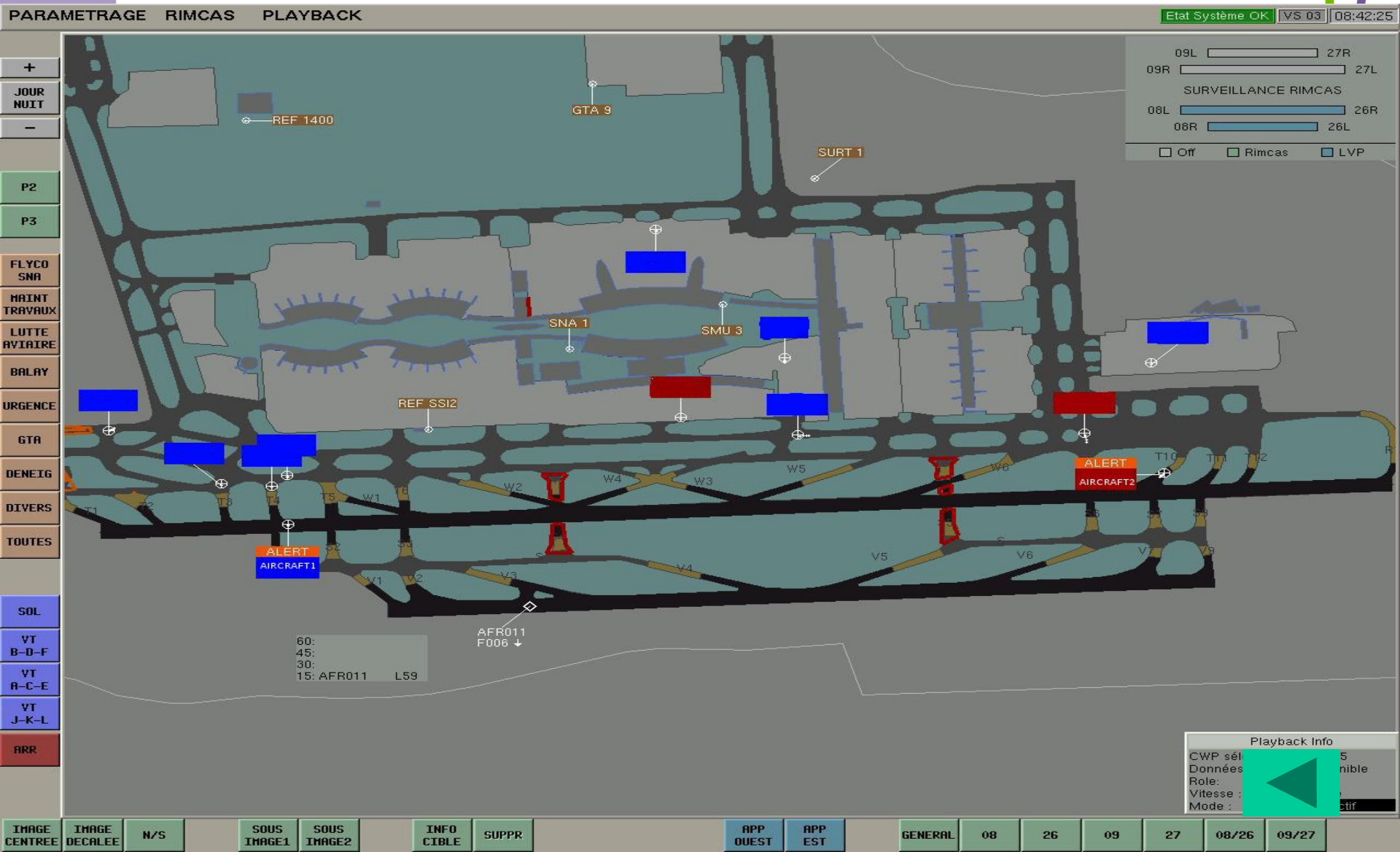
CDG's RIs Typologies 1/3

Type I :



CDG's RIs Typologies 2/3

Type II :



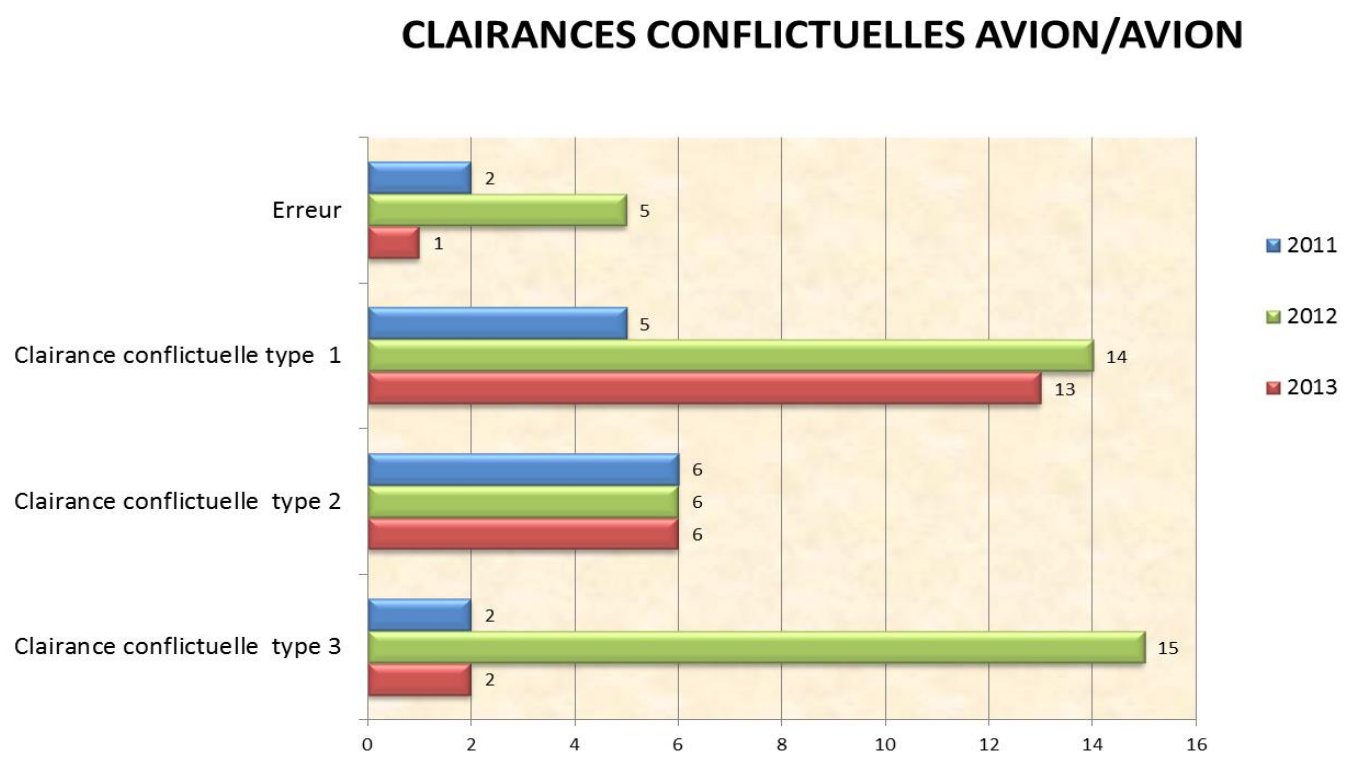
CDG's RIs Typologies 3/3

Type III :

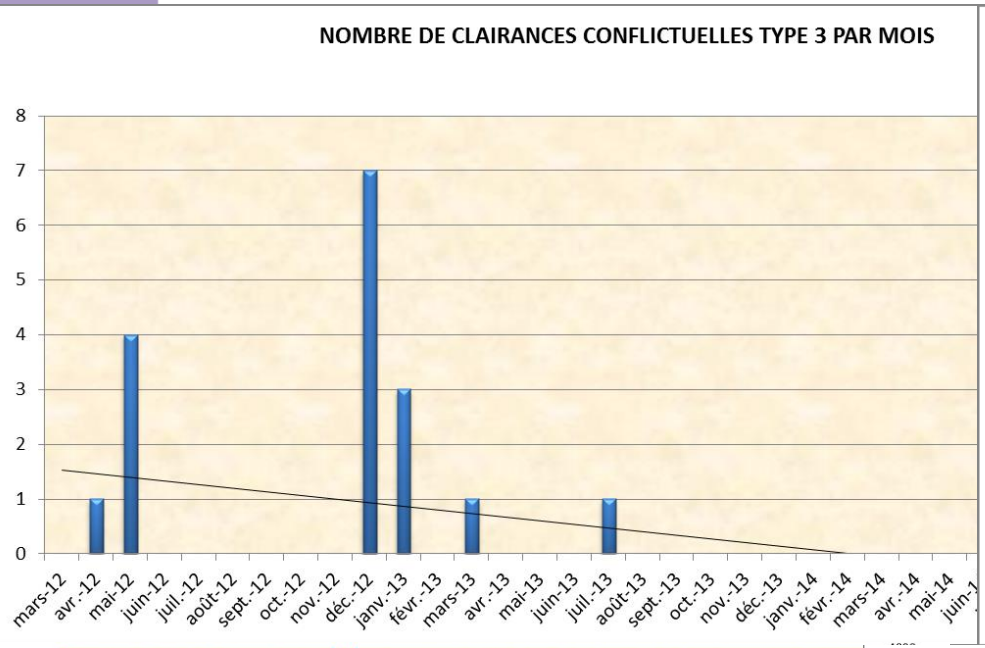
CDG's SKPIs and Results 5/6

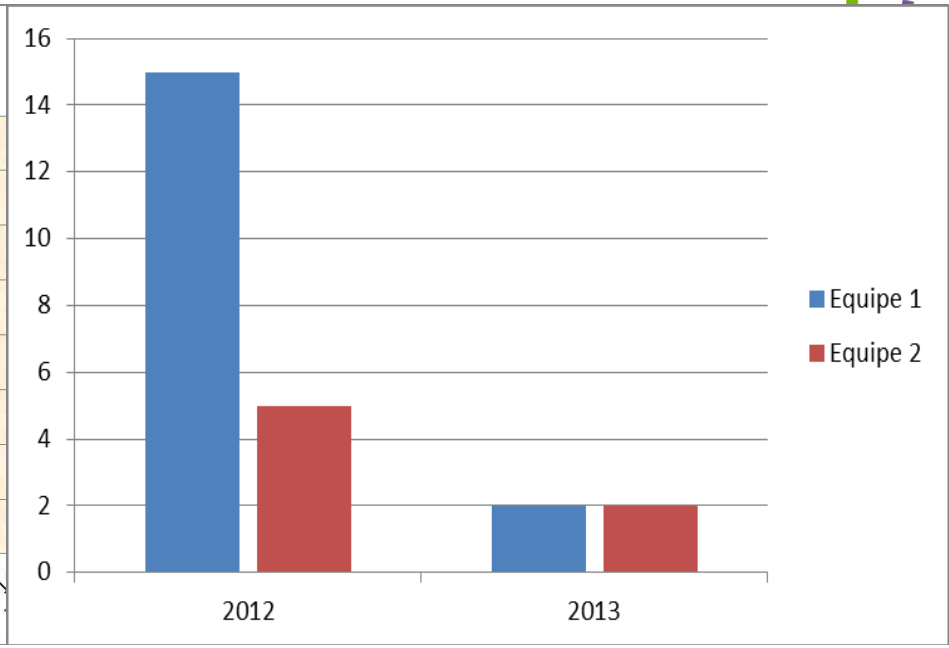
	2013	2012	2011
Nombre d'incursions	**39**	59	46
Nombre pour 100 000 mvts	**8,2**	11,9	13,4

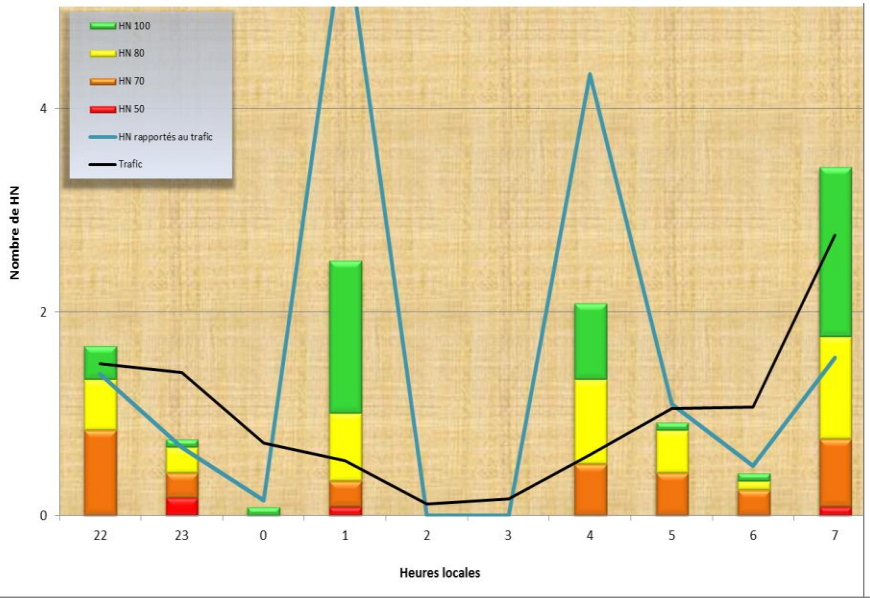
	2013	2012	2011
Nombre incursions avec contribution ATC	**30**	48	40
Nombre pour 100 000 mvts	**6,3**	9,7	11,6

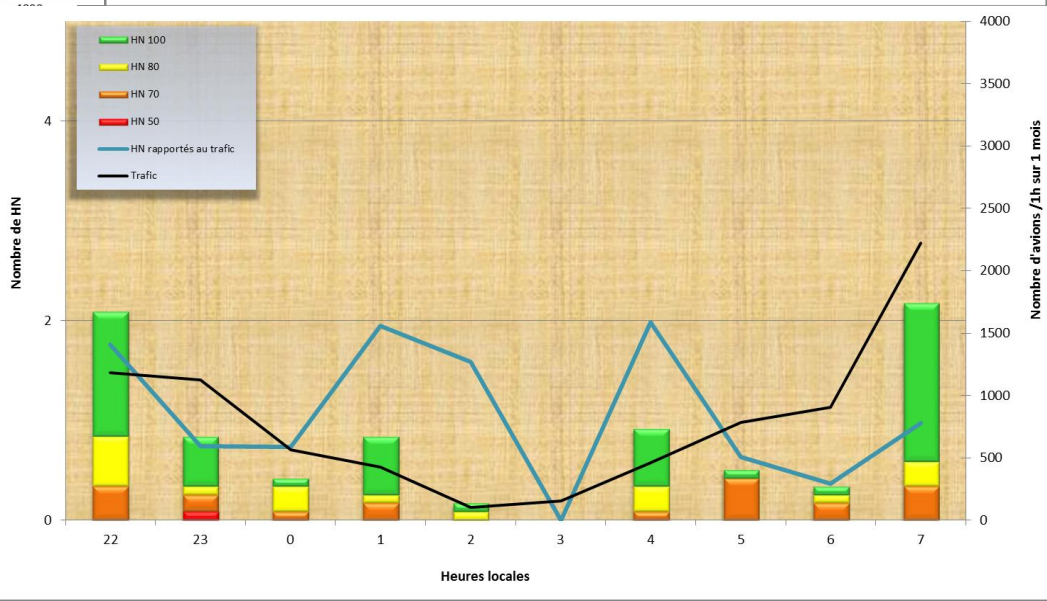


CDG's KPIs and Results 6/6
Specific Actions









Safety I to Safety II : CDG's Way Forward

CDG's 2020 Strategy :

- Technical Roadmap
- Global performance targets (Identify how system copes with increased pressure)
- Front line actors involvement and competency

System Performance :

- Comprehensive and thorough Safety Analysis focusing on trade-offs and variability to ensure system's resilience
  - *Analysis system's global level of safety (SMIs vs NCAs and UAs - RIs)*
  - *Analysis of global performance and its prerequisites (Identify sources of resilience)*
- Improvement Ground – Cockpit Issues
  - *Understanding of shared threats management*
  - *Shared analysis of system's weak signals and strengths*
  - *Identification and mutual understanding of system's "Need to Know"*

Management Dialogue / Performance based management :

- Common definition/steering of performance targets and global strategy (OPS Managt)

Safety I to Safety II : Conclusion

In our complex system => Need to ensure Resilience :

- Thorough and comprehensive analysis of safety events and performance
- Accept variability and leave room for operational actors to adjust according to operational demands and conditions
- Identify and reinforce best practices and conditions allowing global performance
- Where possible simplify system and ensure operational actor at the fore front of decision making
- Non judgmental approach but accountability of all actors
- Initiate management dialogue with operational actors
- Give purpose and share on Safety action plan and Safety indicators / Reconcile operational Safety and SMS
- Trade-offs are part of everyday work => Share on risk perception and risk management issues

Safety performance as an enabler of capacity improvement


MERCI!
THANK YOU!