# EUR/NAT Air Navigation Status and Issues

## Agenda Item 4.2 ii)

Mr.Sven Halle

Mr.Chris Keohan

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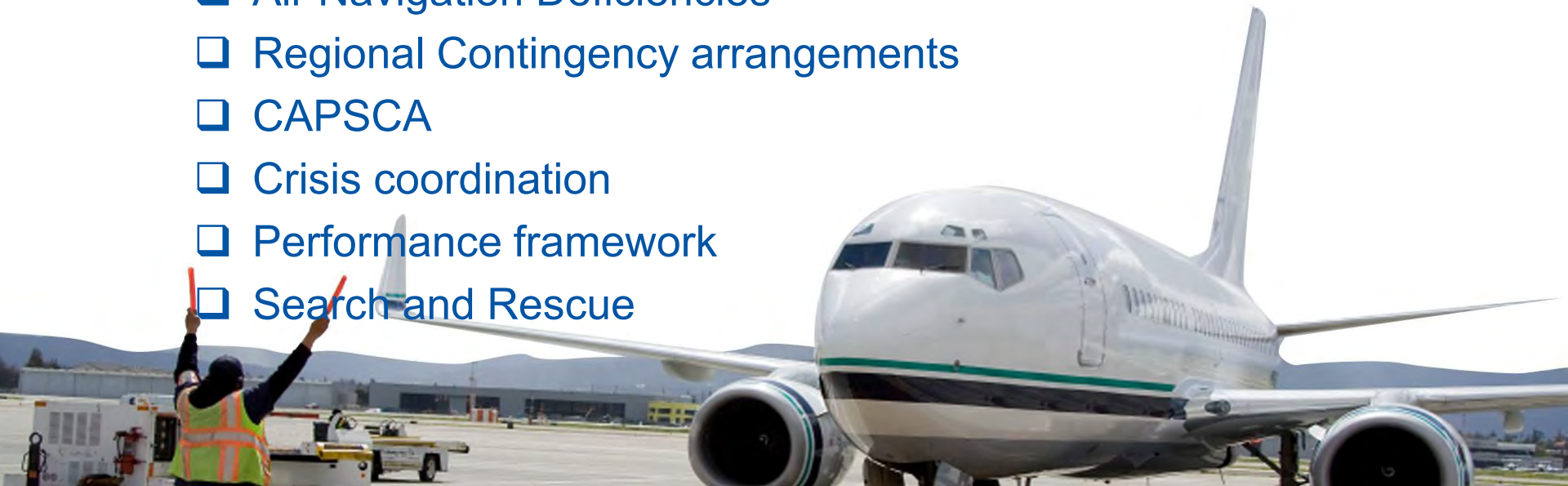Mr. Elkhan Nahmadov

**ICAO EUR/NAT**

EURNAT-DGCA/2017

Paris, 5 May 2017

- ❑ EUR and NAT GANP/ASBU Implementation reports
- ❑ EUR and NAT safety performance reports
- ❑ Air Navigation Deficiencies
- ❑ Regional Contingency arrangements
- ❑ CAPSCA
- ❑ Crisis coordination
- ❑ Performance framework
- ❑ Search and Rescue

# EUR and NAT GANP ASBU implementation reports

ASBU Implementation
Monitoring Report

ICAO EUR States

Reference Period 2015

- Is developed on an annual basis by EUROCONTROL and ICAO EUR/NAT Office
- Uses combined data, from the ESSIP/LSSIP mechanism and questionnaire, in order to avoid duplication of reporting from stakeholders
- Gives an overview of the planning dates and implementation progress for the ICAO ASBU Block 0 Modules (15 out of 18 B0 modules) within the ICAO EUR Region during the reporting year 2015
- Was presented to COG and endorsed at EANPG/58 in November 2016
- Following the formal EANPG endorsement, the report has been submitted for inclusion into the annual ICAO Global Air Navigation Report so that the regional developments/deployment actions can be coordinated across the regions and global interoperability can be ensured at the highest level
- For the 2015 Report, 52 out of 55 States were included into the EUR ASBU Implementation Monitoring Report
- Has been included into EUR eANP and published as Doc 7754, Vol III
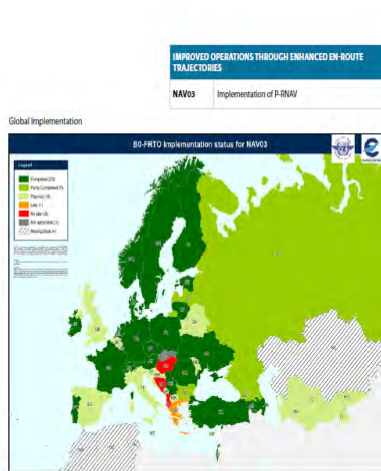
# Example : ASBU implementation B0-APTA example



Global Implementation Status.

## Outlook for 2018

| ASBU B0 Module | Number of States foreseen to be Completed by the end of 2018 | Not Applicable States | Completion foreseen by the end of 2018 (%) - Excludes States where the module is Not Applicable |
|---|---|---|---|
| ACAS | 45 | 0 | 87% |
| APTA | 39 | 1 | 76% |
| DATM | 47 | 0 | 90% |
| FICE | 40 | 0 | 77% |
| SNET | 40 | 0 | 77% |
| SURF | 30 | 16 | 83% |
| ACDM | 27 | 19 | 82% |
| ASUR | 24 | 1 | 47% |
| CDO | 33 | 13 | 85% |
| FRTO | 34 | 1 | 66% |
| NOPS | 9 | 0 | 18% |
| RSEQ | 22 | 18 | 65% |
| TBO | 32 | 10 | 76% |

## NAT ASBU priorities

| NAT priority modules | Progress |
|---|---|
| FRTO - Reduced longitudinal separation | Phase 1-implemented Phase 2- tbd 2018 |
| FRTO - Reduced lateral separation | Phase 1 –implemented Phase 2 – tbd 2018 |
| TBO - FANS 1/A data link | Phase 1/2a – implemented Phase 2b – Dec 2017 |
| FICE- AIDC | Implemented |
| ASUR- ADS-B | Ongoing Space based ADS-B CONOPS TBD |
| OPFL – ITP ADS-B | implemented |

## NAT ASBU implementation for 2016



| Module | Number of fully or partially implemented | Number of N/A | % of implemented with N/A excluded |
|---|---|---|---|
| ACDM | 1 | 4 | 25 |
| APTA | 3 | 2 | 50 |
| RSEQ | 1 | 4 | 25 |
| SURF | 1 | 4 | 25 |
| WAKE | 1 | 5 | 33 |
| AMET | 6 | 1 | 88 |
| DATM | 5 | 2 | 83 |
| FICE | 4 | 3 | 80 |
| ACAS | 3 | 4 | 75 |
| ASEP | 1 | 5 | 33 |
| ASUR | 3 | 2 | 50 |
| FRTO | 5 | 2 | 83 |
| NOPS | 4 | 2 | 67 |
| OPFL | 1 | 5 | 33 |
| SNET | 5 | 2 | 83 |
| CCO | 4 | 3 | 80 |
| CDO | 4 | 3 | 80 |
| TBO | 5 | 2 | 83 |

# EUR/NAT Air Navigation Safety

❑ Regional continuous monitoring mechanisms:
  - EANPG in the EUR Region
  - NAT SPG in the NAT Region
❑   Annual safety reports based on:
  - Quantitative data through regional monitoring agencies (EUR RMA, EURASIA RMA, NAT CMA)
❑ Quantitative and qualitative assessment of operational issues (ICAO EUR and NAT technical groups, Eurocontrol EVAIR system)

# EUR Air Navigation Safety (2015 data)

| Monitored by 2 Regional Monitoring Agencies (2015 and partly 2016 data) | | |
|---|---|---|
| Safety Objective 1 | computed technical vertical collision risk | Meets TLS of $2.5 \times 10^{-9}$ fapfh |
| Safety Objective 2 | overall vertical collision risk | Meets TLS of $5 \times 10^{-9}$ fapfh |
| Safety Objective 3 | continuous operations in EUR RVSM have not adversely affected the overall risk of en-route mid-air collision. | Confirmed |
| Safety Objective 4 | all identified have been addressed satisfactorily | Confirmed |

# EVAIR (EUROCONTROL Voluntary ATM Incident Reporting) in cooperation with Air Traffic Management Group Eastern Part of the ICAO Region (ATMGE)

# EVAIR Emerging Issues
# RPAS



Drones
2012-2016
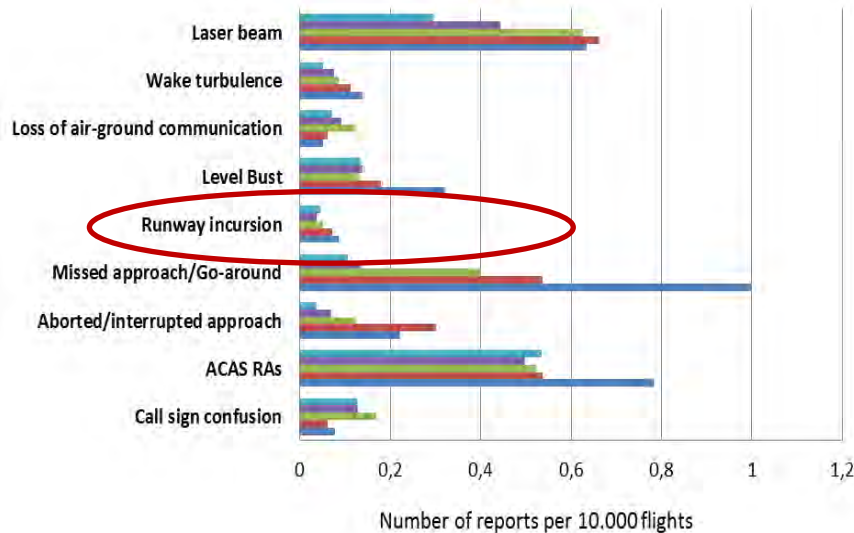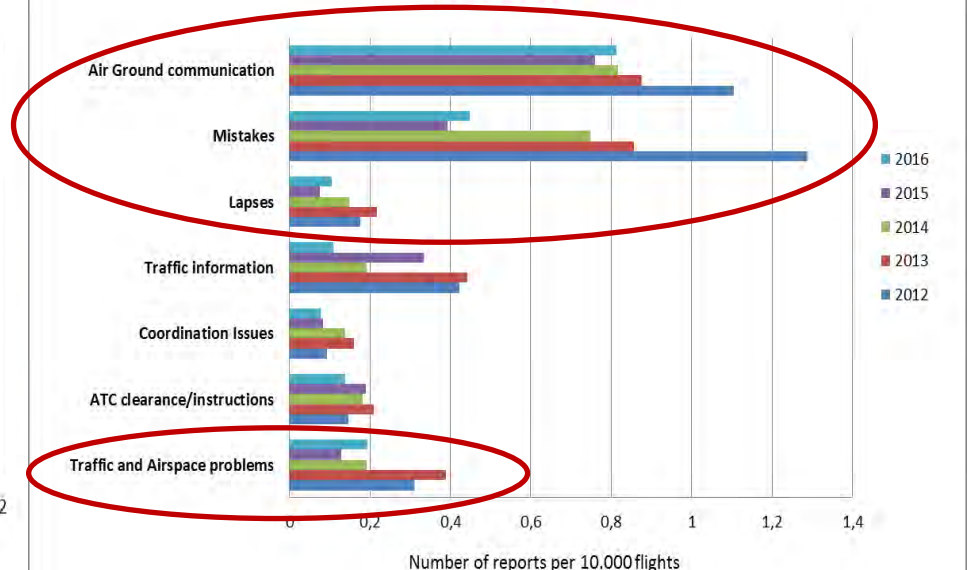


Drones - Phases of flight
2012-2016
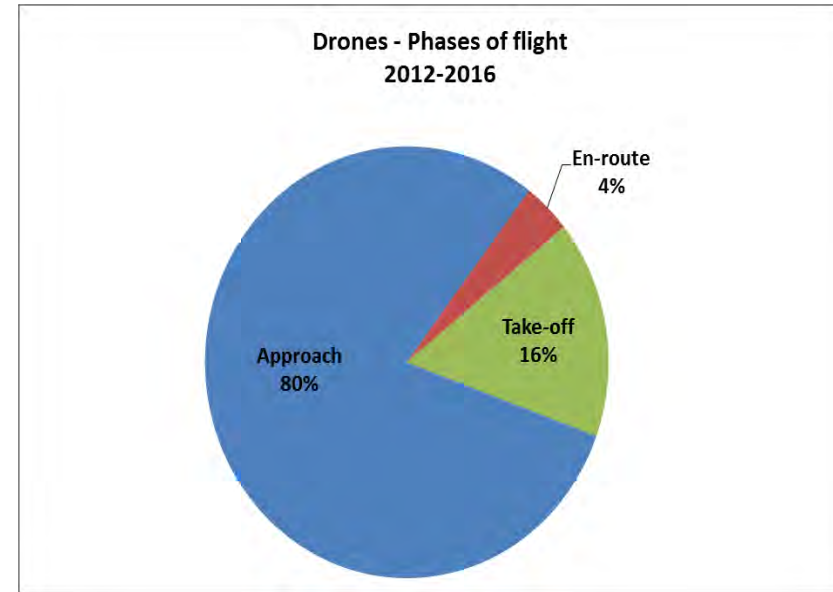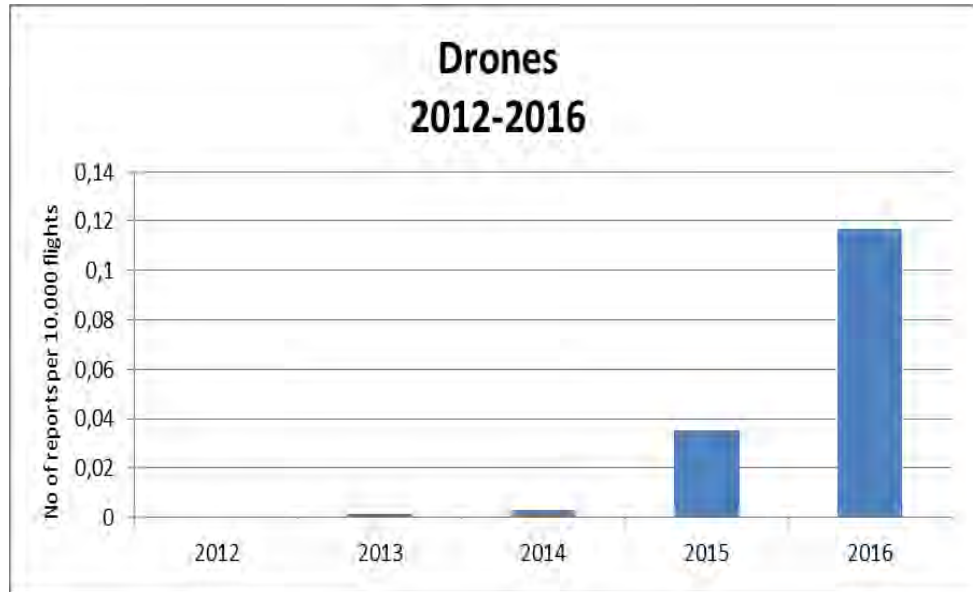
# EVAIR Emerging Issues
# GNSS Outages
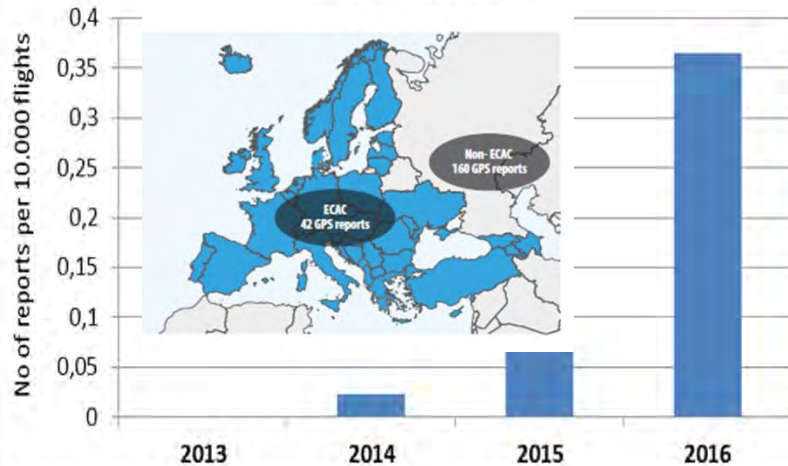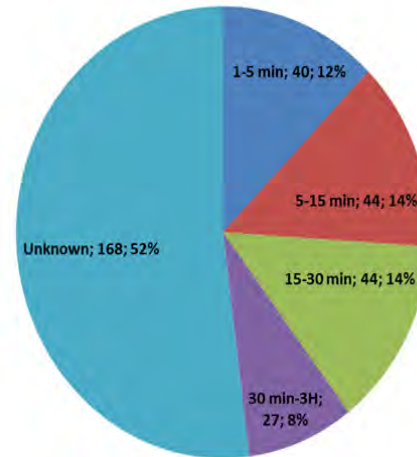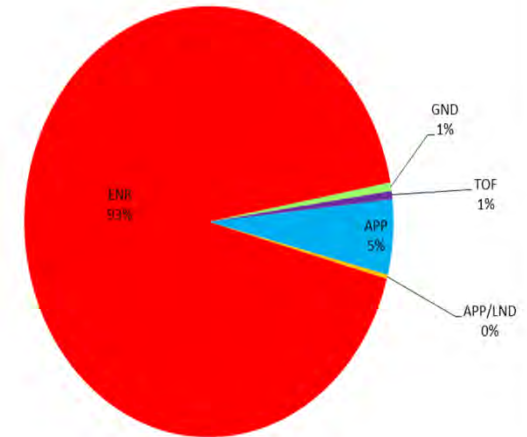
# NAT Air Navigation Safety (2015 data)

| 2015 Reported Events | | Primary error(s) as defined by the NAT SG |
|---|---|---|
| Vertical Large Height Deviations (LHDs) | 100 | Climb/descent without Air Traffic Control (ATC) clearance (31) |
| | | ATC failure to correctly record, coordinate or follow through on FL changes and/or other clearances (28) |
| | | Aircrew not maintaining level as cleared (20) |
| Lateral deviation <25 Nautical Mile (NM) | 88 | Crew error (50)* |
| | | Incorrect transcription of ATC clearance or re-clearance into the FMS (25)* |
| | | Wrong information faithfully transcribed into the FMS (17)* |
| | | Weather (9)** |
| | | Other (9)** |
| | | Crew error (8)** |
| ATC Interventions *and* Preventions to prevent a Gross Navigation Error (GNE) | 137 | |

| | Safety KPI | | Target | 2012 Value | 2013 Value | 2014 Value | 2015 Value |
|---|---|---|---|---|---|---|---|
| i | Number of hull loss events | | 0 | 0 | 0 | 0 | 0 |
| ii | Number of Airborne Collision Avoidance System (ACAS) Resolution Advisory (RA) events | | Target not set | 1 | 1 | 1 | 1 |
| iii | Number of LHD events involving data link equipped aircraft | | 1) Not exceeding 85 events per year by 2018 (total LHDs) | 42[2] | 54 | 69 | 73 |
| iv | Number of LHD events involving non data link equipped aircraft | | 2) Eliminate LD LHD events by end of 2018 (total LHDs) | 51 | 51 | 32[3] | 26 |
| v | Number of minutes that data link equipped aircraft spent at the wrong flight level | | Target not set | 490[4] | 153 | 288 | 116 |
| vi | Number of minutes that non data link equipped aircraft spent at the wrong flight level | | Target not set | 251 | 69 | 315[5] | 144 |
| vii | Performance in the vertical dimension against the vertical TLS | | $5 \times 10^{-9}$ fapfh | $16.8 \times 10^{-9}$ fapfh[6] | $11.5 \times 10^{-9}$ fapfh[7] | $15.9 \times 10^{-9}$ fapfh[8] | $16.4 \times 10^{-9}$ fapfh[8] |
| viii | Number of GNE events involving data link equipped aircraft | GNEs ≥ 25 NM | Target not set | 6 | 4 | 8 | 6 |
| | | GNEs ≥ 10 NM < 25 NM | Target not set | 9 | 8 | 18 | 23 |
| | | Total GNEs DL a/c | Target not set | 15 | 12 | 26 | 29 |
| ix | Number of GNE events involving non data link equipped aircraft | GNEs ≥ 25 NM | Target not set | 22 | 12 | 23 | 4 |
| | | GNEs ≥ 10 NM < 25 NM | Target not set | 12 | 16 | 24 | 1 |
| | | Total GNEs non DL a/c | Target not set | 45 | 28 | 47 | 5 |
| x | Performance in the lateral dimension against the lateral TLS | | $20 \times 10^{-9}$ fapfh | $0.0 \times 10^{-9}$ fapfh | $0.2 \times 10^{-9}$ fapfh | $0.0 \times 10^{-9}$ fapfh | $0.0 \times 10^{-9}$ fapfh |
| xi | Number of losses of separation | | Target not set | 44 | 32 | 42 | 46 |

# EUR List of Air Navigation deficiencies

❑ A deficiency - a facility, service or procedure does not comply with the regional air navigation plan or ICAO SARPs with a negative impact on the safety, regularity and/or efficiency of international civil aviation

❑ Complementary to the ICAO USOAP continuous monitoring system

❑ Maintained by the EANPG and reported to the ICAO Council and ANC

❑ Requires a coordinated action

| Defficiency | State(s) |
|---|---|
| Provision of airspace safety monitoring data | 3 States (Algeria, Moldova, Morocco) |
| Validation of RVSM approvals | 7 States (Andorra, Bosnia-Herzegovina, Bulgaria, Croatia, Morocco, Tunisia, Turkmenistan |
| WGS-84 | 4 States (Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan) |
| QMS for AIS | 6 States(Bosnia-Herzegovina, Greece, Malta, Kyrgyzstan, Tajikistan, Turkmenistan |
| Publication of obstacles | 4 States (Bosnia-Herzegovina, Bulgaria, fYROM, Ukraine) |
| Non-adherence to AIRAC cycle | 1 State (Kyrgyzstan) |

| Defficiency | State(s) |
|---|---|
| Aeronautical Information Publication | 1 State (Russian Federation) |
| eTOD areas 1 and 4 | 44 States |
| Aeronautical charts and PANS-OPS | 9 States (Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Uzbekistan, Tajikistan, Turkmenistan) |
| METAR availability | 1 State (Monaco) |
| WAFS forecasts | 5 States (Belarus, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan) |
| 24h TAF | 1 State (Tajikistan) |
| ATS coordination procedure | 2 States (Cyprus, Turkey) |

**Draft EURNAT-DGCA Conclusion 2017/WP/04_1–  ICAO EUR list of air navigation deficiencies**

That EURNAT-DGCA:

a)  confirm the need to address, as a matter of priority, the air navigation deficiencies identified by EANPG;

b)  urge States to allocate necessary resources to resolve the identified deficiencies by developing and implementing immediate corrective actions and plans;

c)  for similar air navigation deficiencies affecting several States:

> i.  invite States concerned to work in close cooperation with the EUR/NAT Office of ICAO and other partners to develop, within the framework of the ICAO EUR/NAT NCLB programme, a prioritised action plan to address them; and

> ii. invite States to share their best practices in order to support other States in the EUR Region in the resolution of identified air navigation deficiencies; and

d)  report progress to the next EURNAT-DGCA meeting.

# Regional Contingency arrangements

# VOLCANIC ASH



❑ VOLCEX/SG
  – One exercise per year
    • Typically, Iceland every other year that impacts NAT, NW EUR
    • Other years, rotation between Atlantic (Portugal) – NAT, SW EUR and Mediterranean (Italy) – SE EUR
  – **Next exercise: VOLCEX17: 29-30 November 2017 (0800 – 1600 UTC) – Mediterranean States**
❑ EUR (EAST) VOLCEX/SG
  – One exercise per year
    • Kamchatka or N Kurile Islands
    • Impacts trans-east, NOPAC, PACOTS routes
  – **Next exercise: VOLKAM17: 20-21 April 2017 (2200 – 0130 UTC) – RF, Japan, U.S. & Canada**

❑ Input from exercise
  – To improve response by NSA; ANSPs – ATS, AIS, ATFM, MET and airspace users
  – Update merged EUR/NAT Volcanic Ash Contingency Plan (EUR Doc 019, NAT Doc 006, Part II)

# Nuclear



❑ **IACRNE Exercise Manual for ConvEx-3 (2017) objectives**

 – **Exercise: ConvEx-3 (2017): 21 – 22 June 2017 – Paks, Hungary**

 – Objectives for ICAO (as part of Joint Radiation Emergency Management Plan of International Organizations – JPLAN)

   • Test provision by WMO of information received concerning the release of radioactive materials into the atmosphere, in the area for which it maintains watch or adjacent areas, to its associated ACC/FIC

   • Test issuance of SIGMET and NOTAM for radioactive cloud

   • Test notification by VAAC London to ACCs concerned about the release

❑ **Evaluation and exercise report**

 – To be reviewed and agreed upon at Fifth Task Group Meeting (TGM) in Vienna in Nov/Dec 2017

# CAPSCA-EUR (Collaborative Arrangement for the Prevention and management of public health events in Civil Aviation)

❑ <u>Objectives:</u> Public health protection ,general public, air travelers and aviation personnel. Assistance to States to establish national aviation pandemic preparedness plans and assure:

- *Adherence to Article 14 of the Convention on International Civil Aviation*
- *Compliance with related ICAO SARPs (Annexes 6, 9, 11 and 14) and Procedures (PANS/ATM)*
- *WHO IHR (2005) regulations.*

❑ <u>Activities:</u>

- Establishing and maintaining a EUR network of public health and aviation medicine experts. CAPSCA- EUR doubled the number of the participating States during the last two years. Organize, jointly with WHO, annual CAPSCA EUR meetings –expanding to the Eastern Part of Europe.

- Training of airport evaluators, evaluation of airports, development of core capacities, and provision of advice to States .CAPSCA EUR is developing the first aviation medicine ICAO Training Package (ITP), according to Doc 9941, to standardize the training of ICAO and States experts with the support of WHO, and an ICAO Regional Training Centre of Excellence (RTCE) .

- Coordination to develop and implement ICAO, WHO, ACI and IATA guidelines.

- Cooperation amongst civil aviation authorities, public health authorities, airports, air traffic services, and airlines, both during preparedness period and crisis.

- There is no membership fee or any associated cost to join and be member of the CAPSCA EUR, All EUR NAT states are welcome and invited to join CAPSCA EUR .

**Draft EURNAT-DGCA Conclusion 2017/WP/04_2 – Support to CAPSCA EUR implementation and other activities as deemed necessary**

That the EURNAT-DGCA:

a)         commit to support the CAPSCA EUR related activities by allocating necessary resources in order to  improve coordinated responses to address health events with the potential to impact the international civil aviation system; and

b)         invite those  States not yet members to join the CAPSCA EUR Project and actively participate in its activities.

# Crisis Coordination

❑ Recommendation 4/8 from the 12th ICAO Air Navigation Conference

❑ EANPG/56 (24-26 November 2014) endorsed the Crisis Management Framework Document (EUR Doc 031):

a)  Ensures a link to major disruption contingency plans;
b)  Builds on arrangements and experience of the European Aviation Crisis Coordination Cell (EACCC);
c)  Includes guidance for States for enhancing the level of preparedness to threat scenarios and disruptive events;
d)  Provides a framework for coordination with other crisis management organisations both within the EUR Region and in neighbouring Regions (e.g. MID Region Crisis Coordination Teams).

**Draft EURNAT-DGCA Conclusion 2017/WP/04_3 –** **Support to crisis exercises/arrangements**

That EURNAT-DGCA:

a)	commit to support crisis-related activities by allocating necessary resources required in the work of EANPG, NAT SPG and RASG-EUR and their contributory bodies;

b)	invite the ICAO Regional Director, Europe and North Atlantic, on the behalf of the EURNAT-DGCA to remind States, relevant international organizations and operators of the need to continue supporting crisis related preparation activities (e.g. volcanic ash and nuclear emergency exercises) by providing the necessary human and financial resources to plan, conduct and evaluate these exercises.

# EUR Regional Performance Framework

- ❑ A performance framework for the EUR Region, to improve the performance of the aviation system and identify areas where improvements are possible
- ❑ Based on ICAO EUR Doc 030
- ❑ Applicable for the all States within the EUR Region
- ❑ Fully aligned with the EU Performance Scheme
- ❑ Pre-filled templates prepared by Eurocontrol for their Member States
- ❑ First exercise had low response rate, work in progress
- ❑ More detailed EUR performance report expected by the end of 2017

| KPA | OBJECTIVES | FOCUS AREAS | INDICATORS |
|---|---|---|---|
| SAFETY | Ensure safety continuous improvement through reduction of ATM related safety occurrences and implementation of uniform safety standards | | Effectiveness of Safety Management (Safety Maturity Questionnaire) |
| | | | Level of State Safety/Just culture (Safety Culture Questionnaire) |
| | | | Adoption of an harmonized occurrences severity classification methodology |
| CAPACITY | Capacity meets demand for en-route and at airports | En-route ATFM Delay | Average en-route ATFM delay generated by airspace volume |
| | | Airport ATFM Delay | Average ATFM delay per flight in the main airports (to be identified by States) |
| EFFICIENCY | Ensure users may use most efficient routes | Horizontal Flight Efficiency | Average horizontal en route flight efficiency (length of the en route part of the actual trajectory/last flight planned route vs great circle) |
| ENVIRONMENT | Contribute to the protection of environment (fuel/CO2 emissions reduction) | | CO2 emissions related to inefficiencies in route extension |
| COST EFFECTIVENESS | Contribute to optimization of costs for ANS | ATCO Productivity | IFR Flights (en-route) per ATCO hour duty |
| | | | IFR flight hours per ATCO hour on duty |
| | | | IFR movements per ATCO hour on duty |
| PARTICIPATION BY ATM COMMUNITY | Ensure States' participation to Regional planning and implementation activities | | Level of participation to meetings |
| | | | Level of responses to planning activities |
| | | | Level of provision of performance results |

### Input

- ICAO framework (ANC, Assembly, etc.)
- EU-ECTL (Single European Sky and Performance Scheme)
- FAA
- Russian Federation
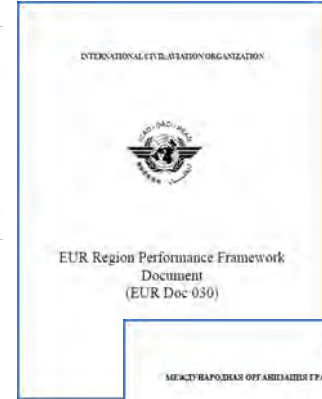- ICAO EUR Workshops (Rome, Bishkek, Baku, Madrid)
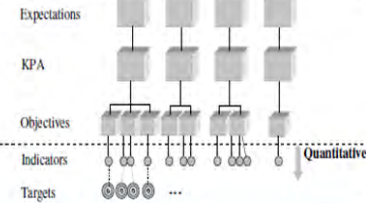
**Pragmatic approach in developing the proposal**



EUR Region Performance Framework Document (EUR Doc 030)

### Output

- Development of a comprehensive framework
- Identification of 6 KPAs out of 11 ICAO KPAs
- Definition of focus areas, objectives and KPIs
- Definition of Processes, Roles and Responsibilities
- Guidance material

Safety · Environment · Cost Effectiveness · Access and equity · Predictability · Flexibility · Capacity · Global interoperability · Security · Efficiency · Participation by ATM community

**To assess the Regional performance and
to identify areas where improvements are possible**

**Draft EURNAT-DGCA Statement 2017/WP/04_4 –** **Implementation of the ICAO EUR Region Performance Framework**

That in order to ensure comprehensive and mature regional performance reports, the EURNAT-DGCA commit to allocating the necessary resources required to actively participate in the regional performance framework and provide the necessary data in accordance with the EUR Region Performance Framework Document (EUR Doc 030) provisions.

# Search and Rescue

- ❑ An ICAO European Search and Rescue Task Force (EURSAR/TF)
  - ▪ assist States to coordinate the resolution of some common problems/issues in the SAR area;
  - ▪ develop an EUR SAR Plan (EUR SAR/TF/2 was presented with the first draft of the EUR Region SAR plan)
  - ▪ Search and Rescue Exercises (SAREX).
- ❑ Cross Border Cooperation initiative
  - ▪ A common SAR Agreement sample
- ❑ SAR Training - efforts to establish internationally recognised SAR Training Centres
- ❑ Support the Memorandum of Understanding (MoU) on Regional SAR cooperation (involving Bosnia and Herzegovina, Serbia, Slovenia, Slovakia and The former Yugoslav Republic of Macedonia)

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THANK YOU!