



# Cir 330 upgrade

## Framework of the task

- Circular → Manual
  - Updated content
  - Allows for future updates
- ATMOPS Job-card
  - Enhance CDM Civ/Military
  - Mitigate lack of flexibility of segregated airspace
  - Include FUA but not limit Civ/Mil cooperation to FUA.

## Objective

- Increase “*implementability*”
- Serves as basic building bloc for Civ/Mil cooperation
  - → Support ASBU



# Document outline

- Objectives and Safety
- Security
- Coordination
- Airspace management
- Interoperability
- Crisis and SAR
- Performance
- State aircraft operations
- High-seas operations



# Work Status

- Extensive work since Nov-16
- Panel Sub-group finalizing the draft
- Draft ready for ATMOPS Panel early-July
- Unedited version ahead of GANIS/SANIS



## *Sustainability and enhancement of safety and air navigation system performance*

- **Two back to back symposiums from 11 – 15 December 2017 in Montréal, Canada**
  - 2nd **Global Air Navigation Industry Symposium (GANIS)** to discuss issues and chart next steps to achieve a seamless global aviation system
  - 1st **Safety and Air Navigation Implementation Symposium (SANIS)** to offer Air Navigation implementation Strategies, as well as a forum to discuss Safety and other Air Navigation topics
- **Includes an Industry exhibition of current and emerging technologies**
  - Showcase solutions which will provide a snapshot of the global air navigation industry
  - Provide insight on how all stakeholders can work together to address technical, operational, regulatory and economic challenges
- **A crucial networking and knowledge-sharing opportunity**
  - Presentations from ICAO, international and regional organizations, standards-making organizations and leading industry stakeholders
- **Will lay the foundation for the 13th AN-Conference in 2018**



ICAO

GANIS/2 - 11-13 Dec 2017

SANIS/1 - 13-15 Dec 2017

MON AM

MON PM

TUE AM

TUE PM

WED AM

WED PM

THU AM

THU PM

FRI AM

FRI PM

Welcome

→

D/ANB

Intro to GANIS & SANIS

→

GANP & ASBU framework

### Innovative and Emerging Ops

- Concept of operations above FL600/FL660 near term
- UTM (UAS traffic management) interoperability with ATM
- RPAS C2 link
- Detect and avoid
- Concept of Ops above FL600 /FL660
- Future of space Ops and impact on ANS
- Future of transportation

President Opening to Global RASG & PIRG Forum and Safety and Air Navigation Implementation Symposium

### Future of CNS and Avionics

- Data link comms
- GNSS evolution
  - Dual-frequency, multi-constellation
  - GBAS/SBAS
- PBN evolution
- Phasing out legacy systems
- CNS integration
- SURV evolution
  - Space-based ADS-B
  - ACAS evolution
- Service and performance-based CNS
- Standardization roadmap

### Cyber threats

- Current and future threats
- A global SWIM enabler
- Solutions
- Risk mitigation
- Cross-domains impacts

### Information management

- SWIM developments
- SWIM implementation and global interoperability
- SWIM demonstrations and applications

### Airport operational performance

- Aerodrome capacity and efficiency
  - Airport master planning and design
  - A-CDM
- Aerodrome obstacle management

### Civil-military cooperation

- Airspace, a single continuum, are we there yet?
- Mission trajectories
- Cyber threats
- State aircraft operations
- RPAS integration
- SWIM
- Interoperability

### MET

- Evolution of MET services requirements
- Future aviation MET service delivery

Global RASG & PIRG Forum

### Safety Implementation

- NCLB
- GASP 2020-2022
- RSOOs global strategy
- RASG/PIRG global strategy
- Safety Management implementation

### Air Navigation implementation strategies

- GANP & Templates ASBU
- Optimizing resources: Six step ICAO Performance Method
  - Step 1 & 2: Know your system
  - Step 3: Quantify objectives
  - Step 4: Select solutions to exploit opportunities and resolve issues
  - Step 5: Implement solutions
  - Step 6: Assess achievements of objectives
- Global, regional and national planning
  - GANP
  - Electronic Regional Air Navigation Plan
  - National air navigation plans

### Airports

- Runway safety
- Ground handling
- Certification
- A-CDM
- Fuel burn reduction

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### Perf-based aerodrome operating minima

SABs: Phased implementation Facilitating access to airports Operational credits implementation examples

### Civil-military cooperation

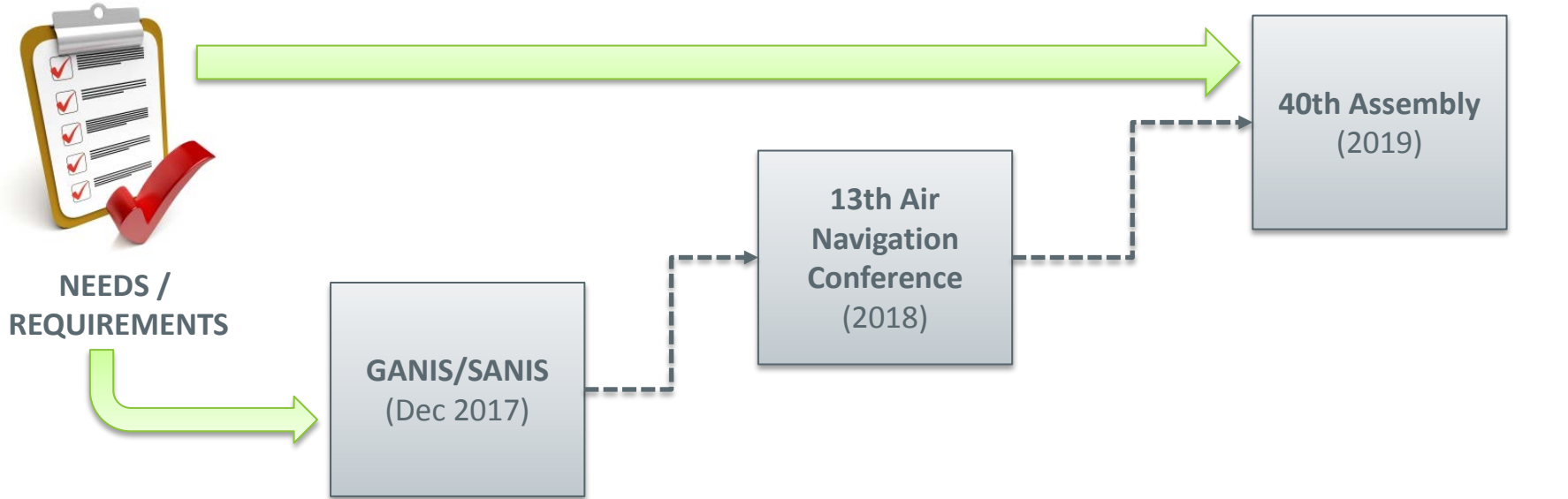
- Increasing implementation of Civ/Mil cooperation
- Implementation success and return of experience
- Flexible use of airspace and airspace management tools
- Advanced cooperation and integration

### From concept to operation and success stories

- Free route airspace and BOREALIS project
- Implementing beyond "borders" (Remote TWR)
- Pre-Flight coordination (Flight data exchange)
- Deployment strategy
- TBS (Time-based separation) (on final)

Closing session

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***GANIS/SANIS will facilitate the planning of technical work for AN-Conf/13, and also the budget discussions leading up to A40***



# Military dimension in GANIS/SANIS

- Key stakeholder
- Support Civil-military cooperation
- Discuss future challenges
- Increase implementation



# Tentative Topics

## GANIS

- Airspace, a single continuum, are we there yet?
- Mission trajectories
- Cyber threats
- State aircraft operations
- RPAS integration
- SWIM
- Interoperability

## SANIS

- Increasing implementation of Civ/Mil cooperation
- Implementation success and return of experience
- Flexible use of airspace and airspace management tools
- Advanced cooperation and integration





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# CAPACITY & EFFICIENCY



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North American  
Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU