AOP-NOP connection under PCP

ACI EUROPE - SDAG meeting

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Agenda

1 • **PCP view on AF4 – AOP-NOP**

2 • **Deployment Plan view on AF4 – AOP-NOP**

3 • **Deployment Plan (DP) vs PCP**

4 • **Data requirements**
  - **SESAR development (recommended)**
  - **NM (to start with)**

5 • **Technical requirements for connecting**

PCP view on AF4 – AOP-NOP (1/3)

- Airport **configurations constraints** and weather and airspace information shall be integrated into the NOP.

- **Where available**, the airport constraints shall be derived from the AOP.

- The ATFCM target times **may be** used as input to arrival sequencing. **Where available and required** for traffic sequencing, the Target Time for Arrival shall be derived from the AOP.

- **Where Target Times are used** by ATFCM to address airport congestion, these Target Times **may be** subject to AOP alignment as part of ATFCM coordination processes.

- Target Times **shall also be** used to support airport arrival sequencing processes in the en-route phase.

- The integrated airport configurations and weather and airspace information **shall be able** to be read and modified by authorised operational stakeholders participating in managing and operating the network.

- *System requirements*

  - Operational stakeholders **shall be granted access** to the data they need **through queries within the NOP** — Operational stakeholder ground systems shall be adapted to interface with network management systems.

  - **AOP systems shall interface with the NOP systems to implement a Collaborative NOP** — Interface between operational stakeholder systems and network management systems shall be implemented using System-Wide Information Management services once available

- Interdependencies with other ATM functionalities

    - **Where available**, AOP system shall make use of DMAN as specified in Point *(AF)* 2

    - Downlink trajectory information as specified in Point *(AF)* 6, **where available**, shall be integrated into the NOP to support TTO/TTA

Shall be…

Where used…

May be…

Where available…

Where available and required…

Deployment Plan view on AF4.2.4 – AOP-NOP

- Family 4.2.4 requires the integration of the basic A-CDM (2.1.3)

- Family 4.2.4 requires the integration of the initial AOP (2.1.4)

- Family 4.2.4 will integrate the meteorological information provided (AF5 SWIM)

- Family 2.1.4 initial AOP - The Airport Operations Plan (AOP) is a single, common and collaboratively agreed rolling plan available to all airport stakeholders whose purpose is to provide common situational awareness.
  - The AOP reflects the operational status of the airport.

Deployment Plan (DP) versus PCP

- PCP defines A-CDM being integrated with DMAN (pre-departure sequencing) as pre-requisite for AOP

- DP refers to **basic** A-CDM (*definition is not clear and does not appear in PCP*)

- PCP defines collaborative NOP with some information being provided through AOP

- DP identifies **initial** AOP (*definition is not clear and does not appear in PCP*)

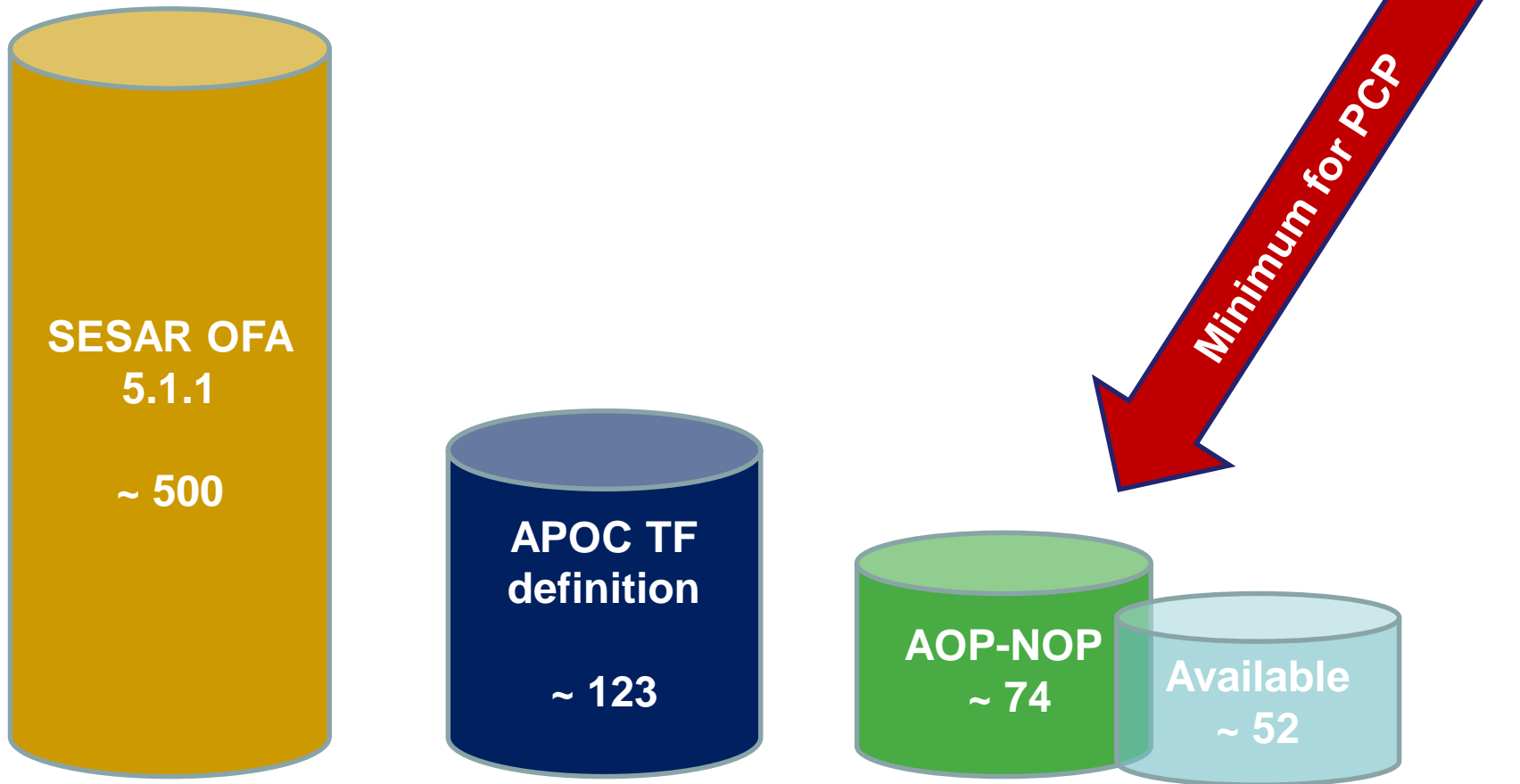# Data requirements - SESAR development (recommended)

- D16 – OFA 05.01.01 Operational Service and Environment Definition for Airport Operations Centre

- Deliverable of the APOC project 6.5 in SESAR

- Defines around ~**500** data elements to be generated or received in AOP

FL ID	Flight identification	AOC	AOP	→	NOP
Code Share ID(s)	All code shared flight Identifications	AOC	AOP	→	NOP
ARCID	ICAO call sign	AOC	NOP	→	AOP
DOF	Date of scheduled Flight	AOC	AOP	→	NOP
ARRDEP	Arrival / Departure indicator	AO	AOP		
GUFI	Global Unique Flight Identifier	AOC	NOP	→	AOP
IFPLID	Initial Flight Plan Identifier	NM	NOP	→	AOP
AC OP	Aircraft Operator	AOC	NOP	→	AOP
FL type	Type of flight	AOC	NOP	→	AOP
FL ST	Flight Priority	AOC	NOP	→	AOP
Prioritisation Tag	Flight Priority Indicator	AOC	NOP	→	AOP
REG	Aircraft Registration	AOC	NOP	→	AOP
ARCCOD	Aircraft Code (IATA Aircraft Type)	AOC	AOP	→	NOP
ATYP	Aircraft Type (ICAO Aircraft type)	AOC	NOP	→	AOP
WTC	Aircraft Wake Turbulence Category	AOC	NOP	→	AOP
TERM ID	Terminal ID	AO	AOP	→	NOP
FL ID next	Flight Identification of next movement	AOC	AOP	→	NOP
ARCID next	ICAO call sign of next movement	AOC	AOP	→	NOP
GUFI next	Global Unique Flight Identifier of next movement	AOC	AOP	→	NOP
AAST	Airport Arrival	AO	AOP	→	NOP
SIBT	Scheduled In-Block	AOC	AOP	→	NOP
SLDT	Scheduled Landing	AOC	AOP		
ADEP	Aerodrome of Departure (ICAO)	AOC	NOP	→	AOP
DEP	Departure Airport (IATA)	AOC	AOP	→	NOP
FL ID previous	Flight Identification of previous movement	AOC	AOP	→	NOP
ARCID previous	ICAO call sign of previous movement	AOC	AOP	→	NOP
GUFI previous	Global Unique Flight Identifier of previous movement	AOC	AOP	→	NOP
ADST	Airport Departure Slot Time	AO	AOP	→	NOP
SOBT	Scheduled Off-Block Time	AOC	AOP	→	NOP
STOT	Scheduled Take Off Time	AOC	AOP		
ADES	Aerodrome of Destination (ICAO)	AOC	NOP	→	AOP
DEST	Destination Airport (IATA Code)	AOC	AOP	→	NOP
Flight Plan status	Flight Plan status (Pre-departure, suspended, airborne)	AOC	NOP	→	AOP
API status	Status of the API message (Initiate, update or cancel)	Local ATC	AOP	→	NOP
Flight Status – SCH	Scheduled - The aircraft operation is scheduled but not confirmed	AOC	NOP	→	AOP
Flight Status – CNX	Cancelled - Flight has been cancelled		NOP	→	AOP
Flight Status – INI	Initiated - The aircraft operation has been confirmed by the AO. This status has the equivalent objective as the "Initial"		NOP	→	AOP
Flight Status – AIR	Airborne - The aircraft has just taken off from the departure airport	AOC	NOP	→	AOP
Flight Status – FIR	Within FIR boundary - The aircraft has entered local FIR in which the airport is located	Local ATC	NOP	→	AOP
Flight Status – IDH	Indefinite Holding - Flight in indefinite holding, unable to continue		NOP	→	AOP
Flight Status – DIV	Diverted - Flight has been diverting		NOP	→	AOP
Flight Status –TMA	Within TMA Boundary - The aircraft has entered local TMA	Local ATC	AOP	→	NOP
Flight Status –FNL	On Final Approach - The aircraft has got to the FAF or FAP (Final Fix point) and proceeds to fly the final approach segment towards the runway	Local ATC	AOP	→	NOP
Flight Status – GOA	Go-around - Flight has made a go around	Local ATC	AOP	→	NOP
Flight Status –TXI	Landed / Taxi-in - The aircraft is on ground and rolling to the stand	A-SMGCS	AOP	→	NOP
Flight Status –IBK	In-Block - The aircraft is on the stand.	A-SMGCS	AOP	→	NOP
Flight Status –DBR	De-Boarding - The de-boarding of passenger has started	GH	AOP		
Flight Status –DBC	De-Boarding Completed - The aircraft is on stand and all passengers disembarked the aircraft	GH	AOP		
TTA	Target Time of Arrival - status Scheduled (TTA-S) for inbound flight Calculated from Scheduled Time of Arrival as published by the Airline / Aircraft operator	AOC	AOP		
	Target Time of Arrival - status Proposed (TTA-P) as initially proposed by Destination airport for medium term planning	Local ATC	AOP	→	NOP
	Target Time of Arrival - status Estimated (TTA-E) as flight plan filed by the airspace user	AOC	NOP	→	AOP
	Target Time of Arrival - status Revised (TTA-R) as provided by the Destination Airport	Local ATC	AOP	→	NOP
	Target Time of Arrival - status Coordinated (TTA-C) as outcome from collaborative process between origin and destination airports and en-route centres	NM	NOP	→	AOP
	The coordinated Target Time of Arrival - status Agreed (TTA-A) as accepted by Airspace User.	AOC	NOP	→	AOP
CTA	Controlled Time of Arrival at hand over fix (not landing) - with some level of tolerance.	Local ATC	NOP	→	AOP
TIAT	Target Initial Approach Fix Time	Local ATC	NOP	→	AOP
EIAT	Estimated initial Approach Fix Time	NM	NOP	→	AOP

Data – NM requirements (to start with)

THE GOOD NEWS!

SESAR OFA 5.1.1

~ 500

APOC TF definition

~ 123

AOP-NOP ~ 74

Available ~ 52

Minimum for PCP

Network Manager
nominated by
the European Commission

Technical requirements for connecting

Airport-Network Integration

APOC, Ground Coordinator ⟷ Network Manager

AOP-NOP Integration

AOP — SWIM-compliant B2B — NOP

Process Layer

Data Layer
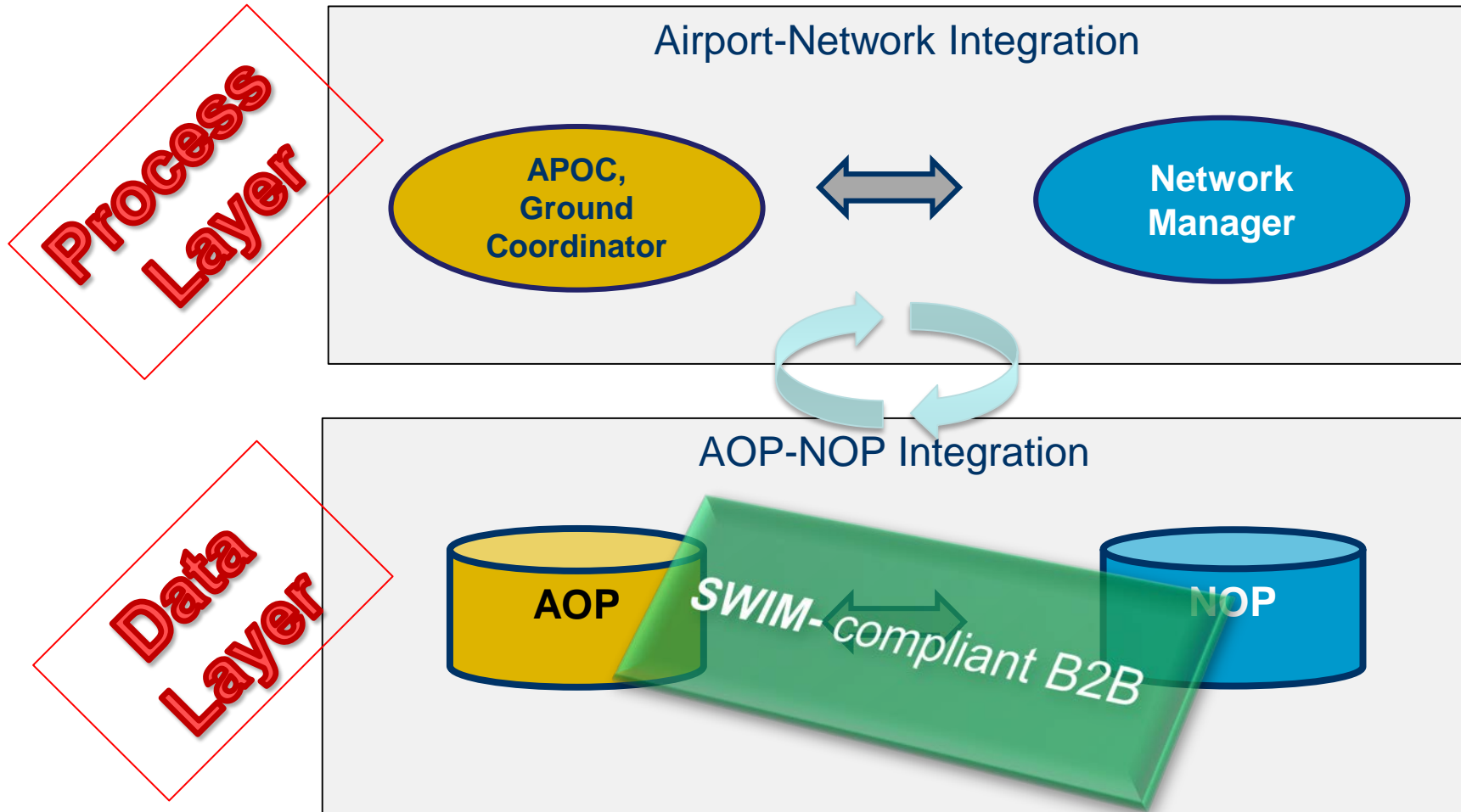
Conclusion

- PCP is vague on what is a hard requirement for the AOP and for AOP-NOP connection

- Deployment Plan has definitions that are not consistent with PCP

- NM sees SESAR output as a starting point but not all is necessarily needed or requires potentially change

- To comply with PCP the technical connection via B2B webservices is needed (SWIM)

- To comply with PCP at data level, the scope as defined in the APOC TF is desirable but the scope as defined in the AOP-NOP CEF projects should be sufficient