



ASBU THREADS

☒ Concept of Operation

☒ Elements

Operational

NOPS

Network Operations

Operational

CONCEPT OF OPERATIONS BY BLOCK

Block Description

Block 0 The Air Traffic Flow Management (ATFM) is used to manage the flow of traffic in a way that minimizes delay and optimises the use of the entire airspace and available capacity. The management of airspace starts to be integrated with the management of the traffic flows. Some main processes are automated, however substantial procedural support is still required to balance demand with available capacity. Collaborative ATFM can manage traffic flows by:

- smoothing flows and managing rates of sector entry;
- re-route traffic to avoid flow constraint areas;
- level capping;
- collaborative airspace management;
- ATFM slot management including departure information planning;
- adjust flow measures by use of enhanced collaborative flight planning and enhanced tactical flow management.

Block 1 Many ATFM processes are automated, while some elements are still managed procedurally. This module introduces enhanced processes to manage flows or groups of flights in order to improve overall fluidity. It refines ATFM techniques, integrates the management of airspace and traffic flows through a holistic network operational planning dynamic/rolling process in order to achieve greater efficiency and enhance network performance. It also increases the collaboration among stakeholders in real time so as to better know the Airspace Users preferences, to inform on system capabilities and ATC capacity and further enhance Collaborative Decision Making (CDM) to address specific issues/circumstances, including Airspace Users flight prioritisation input as regards ATFM measures.

Airports operations planning starts to be integrated in the network operations planning.

ATFM includes the following main features:

- management of occupancy counts and application of ATFM measures;
- management of arrival/ overfly times (TTA/TTOs);
- enhanced Network Operation Planning;
- enhanced ATFM slot management;
- integration of network planning and airport planning;
- dynamic/rolling airspace management process;

- management of dynamic airspace configurations;
- complexity management;
- ATFM contribution to the extended Arrival Management.

Block 2 ATFM evolves to support Trajectory Based Operations (TBO). There will be an improved Trajectory Forecast based on the qualification and quantification of uncertainties, probabilistic approaches, and enriched en-route and airport information sharing.

Enhanced Demand and Capacity Balancing (DCB) provides capabilities which create a paradigm shift with all stakeholders expressing dynamically and precisely their needs which have to be accommodated within an agreed performance framework.

The Collaborative Network Operations Planning will be further enhanced.

Initial steps towards Airspace Users' driven priorities and the extended airports integration with the ATM Network Planning are envisaged.

Within this timeframe a considerable amount of traffic in high upper and lower airspace is flying. Due to the characteristics of this traffic, the principles of block 4 network operations are exhibited at higher airspace and within the UTM airspace.

Block 3 ATFM further supports trajectory based operations (TBO) based on the use of the more precise information provided by the different nodes of the air navigation system (aircraft becomes a node of information). All vehicles participate in intent sharing and airspace intent network is in place).

Collaborative Network Operations becomes cooperation in network operations. This means providing optimal flow planning for pre-flight and active flight trajectories that will be impacted by another network operational region supported by common procedures and exchanges.

Block 4 ATFM shifts from trajectory management to airspace constraints management. The availability of more timely accurate information allows for a shift on the provision of DCB, capacity accommodates demand and not vice versa therefore airspace users plan and execute their own business and mission trajectories based on real time management of the constraints by the ANSPs.

ELEMENTS

Element ID Title

NOPS-B0/1 Initial integration of collaborative airspace management with air traffic flow management

NOPS-B0/2 Collaborative Network Flight Updates

NOPS-B0/3 Network Operation Planning basic features

NOPS-B0/4 Initial Airport/ATFM slots and A-CDM Network Interface

NOPS-B0/5 Dynamic ATFM slot allocation

NOPS-B1/1 Short Term ATFM measures

NOPS-B1/2 Enhanced Network Operations Planning

NOPS-B1/3 Enhanced integration of Airport operations planning with network operations planning

NOPS-B1/4 Dynamic Traffic Complexity Management

NOPS-B1/5 Full integration of airspace management with air traffic flow management

NOPS-B1/6 Initial Dynamic Airspace configurations

NOPS-B1/7 Enhanced ATFM slot swapping

NOPS-B1/8 Extended Arrival Management supported by the ATM Network function

NOPS-B1/9 Target Times for ATFM purposes

NOPS-B1/10 Collaborative Trajectory Options Program (CTOP)

NOPS-B2/1 Optimised ATM Network Services in the initial TBO context

NOPS-B2/2 Enhanced dynamic airspace configuration

NOPS-B2/3 Collaborative Network Operation Planning

NOPS-B2/4 Multi ATFM slot swapping and Airspace Users priorities

NOPS-B2/5 Further airport integration within Network Operation Planning

NOPS-B2/6 ATFM adapted for cross-border Free Route Airspace (FRA)

NOPS-B2/7 UTM Network operations

NOPS-B2/8 High upper airspace network operations

NOPS-B3/1 ATM Network Services in full TBO context

NOPS-B3/2 Cooperative Network Operations Planning

NOPS-B3/3 Innovative airspace architecture
