

## SESAR Solution

### Multi Sector Planning (IP-2T) – Quick-Win

#### Contextual note

**Purpose:**

This contextual note is a vehicle to summarize the results stemming from Release delivery activities. It provides a summary of the SESAR Solution in terms of results of the Validation exercises and achievements as well as additional activities to be conducted before or as part of deployment.

This contextual note is part of a package prepared for each SESAR Solution for which exercise results are conclusive and sufficient to support a decision for industrialisation. It complements a technical data pack comprising available deliverables required for further industrialization.

In addition, adequate consideration of the recommendations on the regulatory and standardisation frameworks and the regulatory and certification activities is required. These recommendations are detailed in the ‘SESAR Solution Regulatory Overview – Multi Sector Planning (IP-2T)’ included in the technical data pack.

#### Improvement in ATM Operations

The Multi Sector Planning (MSP) concept reconsiders the usual ATC team composed of 1 Planner and 1 Tactical controller. The MSP concept proposes a structure whereby a single Planner Controller (P) is planning and organising the traffic for two Tactical Controllers (T), each of whom is controlling a different sector (1P-2T configuration).

In order to guarantee that the workload of the Planner remains comfortable, even when the Executive Controllers face traffic levels not especially low, some enhancements to the planning tools are needed (look-see, what-if, electronic strips..), improving the efficiency of the planning and decision-making processes.

#### Operational Improvements – OI Steps

##### CM-0301 : Sector Team Operations Adapted to New Roles for Tactical and Planning Controllers

Depending on local needs, new operating procedures are in place such as the Planning Controller providing support to a number of Tactical Controllers operating in different adjacent sectors. In this configuration, the Planning Controller filters predicted conflicts with a focus on conflict-free trajectories to alleviate or smooth the tactical workload of the Tactical Controllers, thus ensuring that potentially critical traffic situations and the associated workload are manageable for the TCs at the time of occurrence.

#### Background and validation process

The Multi Sector Planning (MSP) concept was tested through a series of three real-time simulations, which were performed in March 2012, at the London ACC as part of the exercise EXE-04.07.08-VP-304.

The NERC-iFACTS platform was used in order to demonstrate that the developed concepts and enablers work coherently together and are capable of delivering the required benefits. The validation included an assessment of roles and responsibilities in a complex operating environment and taking advantage of advanced Planner support tools developed on the NATS – iFACTS system.

### **Results and performance achievements**

The validated configuration brings better efficiency and flexibility in manning ATC sectors, in the context of low and medium traffic densities. In particular, it avoids unnecessary split of one sector into two, each one being manned with one Planning and one Executive Controller (1P-1E) when the level of traffic does not require it.

The SESAR validation exercises demonstrated that the 1P-2T configuration:

- Provided an environment where all controllers reported a comfortable level of workload for the operations; and
- Proved to be viable in a range of sector types (high-level, en-route, Terminal Manoeuvring Area (TMA) interface, vertically split sectors, etc.) over a wide variation in traffic levels and complexities at the London ACC.

It is not expected that the MSP concept, as validated, is applicable to all sectors at all traffic levels, but that there should generally be a number of sector groups that could safely be combined in this way and operate efficiently at reasonably high traffic levels (that, today, would demand separate Planners).

The SESAR validation activities of the 1P-2T concept also introduced a new support tool, which showed:

- An improved situational awareness and task sharing;
- Less need for tactical intervention resulting in a reduced workload per flight and increased controller productivity through automatic calculation of optimal arrival sequences and coordination support;
- Reduced ATCO workload resulting in better usage of ANSP workforce, thanks to a more balanced distribution of workload among ATCO teams; and
- Flexibility in sourcing and deploying ATCOs resulting in improvements in cost-effectiveness, as well as improvement in the ability to resource demand, providing significant reduction in costs associated with staff overheads.

The concept is a first stage concept for Step 1 operations and requires the internal boundary (i.e. tactical sector to tactical sector) to be co-ordinated in exactly the same manner as an external boundary (i.e. planner sector to planner sector) prior to transfer of the flight from one sector to the other. As such, this phase was deemed a Quick Win and the validation conducted with that approach.

A further phase of concept development will extend the concept from 1P-2T to 1P-nT (i.e. several Tactical Controllers under the responsibility of a single Planner Controller) and will develop the manner in which boundary transfer is dealt with from the traditional co-ordination model to a more

flexible "collaboration" model where there is no longer the requirement for prior co-ordination for every flight between sectors.

#### **Additional activities**

Nihil

#### **Actors involved**

Actors are ATC Controllers (ACC or APP potentially) :

- Planning Controller
- Executive Controller 1
- Executive Controller 2

#### **Impact on A/C system**

No A/C Enablers were identified as necessary.

#### **Impact on ground systems**

No IBP or SUT have been used, the London ACC system (iFACTS) was configured for the validation with enhancement of the Planning Support Tools. Hence technical specification and description of the enabler is not available.

#### **Consideration of Regulatory Framework**

There is no specific topic in the field of the regulatory framework to be considered in deployment, beyond the applicable regulations currently existing.

#### **Consideration of Standardisation Framework**

There is no specific topic in the field of the standardisation framework to be considered in deployment, beyond the applicable standardisation currently existing.

#### **Considerations of Regulatory Oversight and Certification Activities**

The local safety argument should take into consideration the local impact on several functions. (See SESAR Regulatory Overview.

#### **Intellectual property rights (foreground)**

The foreground is owned by the SJU.