



# Annual Work Programme 2013

17 December 2012

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## 1. Introduction

### 1.1 Purpose of the document

The purpose of the Annual Work Programme is to outline the activities that will be performed by the SESAR Joint Undertaking (hereinafter the SJU or Joint Undertaking) during 2013 to reach its annual objectives and its expected achievements contributing to the mid-term strategic objectives related to the period up to 2014. This document describes how the resources made available by the European Union, Eurocontrol, and the other SJU Members, supported where necessary by the different Associate Partners, will be geared towards the 2013 achievements and onward by detailing the operational and administrative actions that will be performed during the year.

## 2. SESAR Joint Undertaking

### 2.1 Mission

The SJU is established by Council Regulation (EC) 219/2007, as last modified by Council Regulation (EC) 1361/2008. The aim of the SJU is to ensure the modernisation of the European air traffic management system by coordinating and concentrating all relevant research and development efforts in the European Union. It shall be responsible for the execution of the European ATM Master Plan and in particular for carrying out the following tasks:

- organising and coordinating the activities of the development phase of the SESAR project in accordance with the ATM Master Plan, by combining and managing under a single structure public and private sector funding,
- ensuring the necessary funding for the activities of the Development phase of the SESAR Programme in accordance with the ATM Master Plan,
- ensuring the involvement of the stakeholders of the air traffic management sector in Europe, in particular: air navigation service providers, airspace users, professional staff associations, airports, and manufacturing industry; as well as the relevant scientific institutions or the relevant scientific community,
- organising the technical work of research and development, validation and study, to be carried out under its authority while avoiding fragmentation of such activities,
- ensuring the supervision of activities related to the development of common products duly identified in the ATM Master Plan and if necessary, to organise specific invitations to tender.

### 2.2 2012 achievements and 2013 Horizon

At the end of 2009, the SJU management submitted to the Administrative Board, which endorsed it, a first mid-term “vision” covering the period 2010-2012 to ensure that the SESAR Programme was focused not only on the achievement of its mission but on concrete research and innovation progress, including quick wins.

The SJU vision for the period 2010 - 2012 was defined as follows:

**“By 2012 we have created the change in the European ATM that demonstrates our ability to deliver benefits to the community”.**

The strategic objectives together with an assessment of the expected achievement by year end 2012 are:

OBJECTIVE DESCRIPTION	EXPECTED ACHIEVEMENT RATIO at the end of 2012
<p><b>1. Initial 4D trajectory is validated in an operational environment supported by satellite-based technology</b></p> <p>The “Initial 4D trajectory”-based operations, were tested in an operational environment as part of the Releases 1 and 2. The performance of flight trials, done in Release 1 was a world premiere. Release 2 exercises were done with real time simulations, using operational platforms. It is expected that Release 3 activities in 2013 will complete the first part of this validation cycle with additional flight tests.</p>	85%
<p><b>2. 10,000 flights, including 500 military, are SESAR labelled</b></p> <p>In 2011 the number of flights, including AIRE and OPTIMI flight demonstrations, was above the 50% of the set objective of 10,000 flights. The SJU Administrative Board decided the launch of “demonstration activities” call where integrated trials during 2012 will allow the SJU to reach the target. Despite the SJU efforts, military organisations did not apply to participate in such trials.</p>	85%
<p><b>3. 80% of SESAR projects have tested their output in a real life environment</b></p> <p>In order to achieve the objective of 80% of validation exercises in real operational environment, a Validation Strategy has been established. Even though the results achieved in 2011 were not yet in line with this mid-term objective, in the execution of Release 2 exercises most of the validation exercises have been executed in real operational environment. This trend will continue in R3.</p>	100%
<p><b>4. First SWIM pilots are in place to exchange data across at least 5 domains</b></p> <p>In 2011 a SWIM Action Plan was introduced to respond to the risks identified in the related Projects, inter alia, the lack of a legal framework for SWIM. Considering the progress achieved by year end 2011 and the results of the implementation of the action</p>	50%

OBJECTIVE DESCRIPTION	EXPECTED ACHIEVEMENT RATIO at the end of 2012
<p>plan, SWIM has been brought back on track. However, it is unlikely that the specific mid-term objective will be met in the set timeframe.</p>	
<p>5. <i>The first remote tower is ready for operations</i></p> <p>In order to achieve this mid-term objective, Validation exercises for the Remote Tower have been performed as planned and have been completed during 2012. The readiness for operations relies on the regulatory approval of such operations, which is outside of the scope of activity of the SJU.</p>	90%
<p>6. <i>SESAR benefits are demonstrated on city pairs connecting 8 European airports</i></p> <p>The results of AIRE and the results achieved in the demonstration activities launched and already performed until 2012 allowed meeting the objective.</p>	100%
<p>7. <i>Airspace users have signed up to the SESAR business case for time-based operations</i></p> <p>This objective has many dimensions and the business case development process is not mature yet to encompass all the different stakeholders' perspectives. Following the mandate to the SJU to prepare a draft Common Pilot Project to support the European Commission in setting up the deployment of SESAR, the SJU is now working on developing the necessary business cases and their relative models. This work will be finalized by mid-2013.</p>	35%

## 2.3 2014 Vision and 2013 contribution to its achievement

In submitting the AWP 2012, the SJU management proposed a mid-term vision for the period up to 2014 included, together with related objectives.

Building on the 2012 results and looking forward at the 2014 vision, the SESAR management has established the intermediary targets to be achieved by the end of 2013 in relation to the 2014 Objectives and Vision.

In this respect, the 2013 objectives have been defined as a percentage progress to be realised within the year, towards the full achievement set for the 2014. It should be noted that the release of the European ATM Master Plan 2012 has required an alignment of the objectives set for the 2014; furthermore, in some cases, the success measurements indicators have been reviewed with a more realistic approach.

The table below shows the Vision 2014, the 2014 objectives and the 2013 qualitative and quantitative contribution to their achievement.

**“SESAR 2014**

***The SJU partnership has successfully introduced innovations, bringing measurable performance benefits to the worldwide aviation community”***

OBJECTIVE DESCRIPTION	SUCCESS MEASUREMENT INDICATORS	Progress achieved by end 2013
<p>1. <i>SESAR procedures, technology/tools and airspace design solutions enabled by the Initial 4D capability have demonstrated performance benefits in terms of efficiency, safety, capacity and predictability</i></p> <p>In 2013, activities will focus on the validation of the 4D trajectory coupled with CTA in mixed traffic environment conditions. ATC procedures using 4D capability will be further refined for traffic separation and sequencing and the benefits in terms of flight efficiency will be measured in different operating environments</p>	<p><i>Step 1<sup>1</sup> fuel efficiency target with significant improvements for other KPA 's</i></p>	<p>50%</p>
<p>2. <i>Technological and operational innovations in the airport domain are ready for deployment and SESAR AOP/AOC/NOP integration has demonstrated positive network performance</i></p> <p>In 2013, activities will focus on the surface management and the optimisation of the traffic flows on the platform as well as the validation of aircraft and ATC solutions aiming at delivering safety improvements. The first data services between AOP, AOC and the NOP will be validated in the area of pre-flight trajectory exchange</p>	<p><i>At least 10 Airports demonstrates increased predictability and less delays (MTS)</i></p>	<p>60%</p>
<p>3. <i>SESAR partners commit to SESAR Project innovative technological / operational results in their medium term investment plans</i></p> <p>The SJU is working on the delivery of “packages” which mark the end of R&amp;D activities on a given</p>	<p><i>&gt; 5 projects</i></p>	<p>40%</p>

<sup>1</sup> Refers to baseline performance targets for step 1

OBJECTIVE DESCRIPTION	SUCCESS MEASUREMENT INDICATORS	Progress achieved by end 2013
<p>operational procedure or technology. The mid-term investment plans of partners are their responsibility, outside of the remit of the SJU, but it is believed that the SJU communication on benefits linked to innovations will provide strong incentives for inclusion in mid-term investment plans.</p>		
<p>4. <i>SWIM-based applications contribute to efficient implementation of Airspace Users preferred flight routes and profiles.</i></p> <p>In 2013 the interoperability of flight planning systems supporting the free routing operations will be validated using SWIM profiles. It is expected that following this first step, the introduction of SWIM-based applications will accelerate making possible the matching of the set objective in 2014.</p>	<p><i>SWIM benefits demonstrated for Airline Operation Centres-Air Traffic Control services leading to Step 1 improvement of flight predictability</i></p>	<p>30%</p>
<p>5. <i>The SESAR Controller Working Position prototype demonstrates performance gains through its adaptability to efficiently integrate new functionality</i></p> <p>In 2013 activities will focus on the integration of new functionalities and decision making tools in the human machine interface of the controller working position.</p>	<p><i>SESAR CWP supports 4D trajectory management and complies with Human Factors requirements; and at least 5 service providers will start investing in CWP new functionalities</i></p>	<p>60%</p>

OBJECTIVE DESCRIPTION	SUCCESS MEASUREMENT INDICATORS	Progress achieved by end 2013
<p>6. <i>SESAR material to support standards has been proposed to the EC, ICAO and Industry Standardisation bodies for development into published standards and policies</i></p> <p>3 standards (ED-114A, ED-143, update of ED-75) are well advanced and will definitely be proposed; other will be progressively defined with preparatory activity performed in 2013</p>	<p><i>&gt; 10 standards proposed</i></p>	<p>40%</p>
<p>7. <i>Through the SJU PPP, SESAR Staff have become world leaders in creating a culture of innovation, cooperation and accountability to deliver</i></p> <p>In 2013 the SJU will further build on the outcome of ANC 12 to promote the SESAR concept of operations and will participate to the CANSO World ATM Congress with an objective to show the main achievements of Release 2</p>	<p><i>Positive result of Stakeholder, Staff &amp; Member Survey (satisfaction rate&gt;75%)</i></p>	<p>Success of SJU participation to CANSO World ATM Congress, ICAO Air Transport Conference and General Assembly</p>
<p>8. <i>Results from SESAR long term research activities are embedded into the SESAR Programme and prove the effective link between Innovation and R&amp;D.</i></p> <p>In 2013 the SJU will coordinate and participate in:</p> <ul style="list-style-type: none"> <li>-ACARE</li> <li>-Work Package E</li> <li>- Scientific Committee</li> <li>- EC Coordination (Framework Programme)</li> </ul>	<p><i>On going WPE process of research networks and projects have made a positive impact in other WP's (Three networks fully operating and delivering see section 4.5)</i></p>	<p>On going</p>

The 2014 Vision and objectives constitute an intermediate step towards the achievement of the Programme by 2016. It further contributes to consolidate the capacity of the SJU and its Members to deliver progressively mature results for deployment activities.

For each objective here above detailed, reference to the actions introduced to ensure an adequate management of the relative risks is made in the “2012 Risk Management” Annex III, which presents a high level synthesis of the main risks identified, and in the following sections of the present document. During 2012, the SJU has implemented on a regular basis a revision of the risk register, available in the Extranet for consultation by the Members, at the different organizational levels, with focus on Projects and Work Packages, which are then grouped at the level of Programme and Corporate Risks (see 2.4).

In 2013, the SJU staff will consist of 39 positions, unchanged compared to the previous years and in accordance with the Multi-Annual Staff Policy Plan. Annex IV provides an overview of the staff with indications of the functions and the areas of responsibility. In addition, it should be noted that a Eurocontrol’s Unit, the Programme Support Office (PSO) is hosted in the SJU premises; it contributes to provide support in the monitoring of the Programme activities under the responsibility of the SJU.

## 2.4 Risk Management

### 2.4.1 Risk Management: PC Tiger Team results

In 2012 in order to mitigate the risk of the Programme delivering results not fully aligned with stakeholders expectations, a Tiger Team, composed of Programme Committee representatives, was created to reinforce the links between Programme deliverables vs ATM stakeholder’s business needs and to explore opportunities to further enhance Programme Management principles.

With these goals in mind, the PC Tiger Team reviewed the Programme data, including planning information provided by projects.

The group concluded on the following key principles:

- Definition of 5 “priority strategic business needs” connected to the notion of groupings of projects and usage of Operational Focus Areas (OFAs) as vehicles for the development of consistent requirements that will be used, by system thread projects, for prototype development and, by operational thread projects, for operational validation supported by IBPs (Industry Based Platforms);
- Identification of an agreed initial baseline for the top-down approach in the form of a Release Strategy, linking priorities with future Releases;
- Identification of efficiency measures aiming at improving content development, quality and coordination across the programme;
- Identification of top-down principles to be considered for a future contribution re-allocation exercise.

The implementation of the conclusions of the PC Tiger Team has already started in 2012 but it will be completed during 2013, when the initial benefits are expected.

## 2.4.2 Risk Management: support to objectives' achievement

The complexity of the Programme managed by the SJU with its Members, in term of organization, content and resource management requires that adequate Risk Management processes are in place. An overall Risk Management exercise at SJU level is performed on a quarterly basis to assess the status of the most critical risks, the effectiveness of the mitigating actions implemented and to update programme exposure, should new risks have emerged between reviews.

Within the SJU, Risk management is performed at different levels, starting from the Project level, to the Work Package level and up to the Programme and SJU levels.

Risk Management activities have been run in continuity since 2010, focusing this year on:

- The review of main risks at the Programme and SJU levels, and their mitigation actions,
- The monitoring of the risk management process (on risks, issues and opportunities) at Project and Work Package level: quarterly review of the risks, issues and opportunities raised by projects and follow-up of key indicators.

At the Programme and SJU levels, the list and criticality of main risks have been reviewed in order to establish a shared vision of the SJU risk exposure and of the essential mitigating actions.

As a result, 31 risks have been identified at Programme and SJU levels, of which 12 are considered “top risks” of high or very high criticality (i.e. criticality above 6) at this stage.

They have been classified under the following 3 categories:

- 13 ‘Wide SESAR scope’ risks that, although not affecting directly the R&D activities, may affect the SESAR Programme negatively through the deployment of R&D results; these risks are monitored by the SJU due to its role to execute the European ATM Master Plan, but the ownership of the actions does not lay systematically with the SJU;
  - 2 of these risks have a criticality above 6;
- 16 ‘R&D’ risks that may impact the achievement of the objectives of the R&D activities directly;
  - 8 of these risks have a criticality above 6;
- 2 ‘Corporate’ risks may affect the functioning of the SJU internal processes and assets
  - These 2 risks have a criticality above 6.

Essential mitigations actions have been identified and allocated to action owners, answering each of these risks.

The more detailed presentation of the risks and essential mitigation actions is attached in Annex III.

### 2.4.3 Implementation of Audits and Review recommendations

During 2013, the SJU shall ensure that the improvements expected from the different reviews and audits of 2012 provide their benefits increasing the effective and efficiency of the activities. In this respect, during the first semester 2012, the Internal Audit Service (IAS) of the European Commission - and Internal Auditor of the SJU - performed an Audit on all steps of the execution phase of the Programme and project management processes, except for the third party and contract management and the assessment of controls for the Release management. The internal control system in place in the SJU was considered to be providing reasonable assurance regarding the achievement of the objectives set up for the programme and project management, except for the dependency management. The IAS therefore highly recommends strengthening the identification of the inter-projects dependencies.

6 other recommendations were also addressed to the SJU:

- To strengthen the synchronisation status of the projects
- To streamline change management
- To enhance coherence in gate reports assessments
- To enhance follow-up actions for the gate reports assessment
- To reinforce the SJU Members' Declaration in the annual co-financing requests.
- To ensure coherence & validation of quarterly dash boards indicators

The SJU Action Plan, proposed to address the IAS recommendations, contains a detailed analysis of inter-project dependency and of KPIs. Once the KPIs have been validated and the dashboard has been distributed at the different Programme levels, WP leaders and project managers will have an effective tool to improve information quality and to synchronise dependencies.

For every recommendation the SJU has identified specific measures that will be mostly put in place by the end of 2012 and expected to produce their results as of 2013. In fact, as of 2013, the revised processes will be monitored through a close follow up and with the support of dedicated management control reviews.

In addition, in 2012, the SJU requested an independent consultant to assess the Programme Management processes and procedures in view of the introduction as of 2013 of simplifications and in particular the elimination of those processes which do not bring any added value to the supervision of the execution of the Programme.

The recommendations provided to improve the SESAR management processes are in line with those issued by the IAS; therefore the Action Plan proposed to the IAS will also serve as tool to address the areas of improvements identified by the independent consultant.

Finally, the aforementioned recommendations further support the outcome of the work performed early 2012 by the Programme Committee Tiger Team to increase the overall efficiency of the Programme (see Section 2.4.1).

## 3. The Programme

The SESAR Programme consists of about 300 interrelated projects, grouped into 16 Work Packages, each encompassing a particular domain of Air Traffic Management.

The success in the Programme's implementation relies also on the synchronisation among the different Projects and on the achievements of interrelated Projects results.

The progress of the various activities is ensured through regular Programme and Project management activities in order to achieve the operational and technical coherence of project deliverables. A summary of the functioning of the Programme and a detailed description of it can be found in the Programme Management Plan<sup>2</sup>.

2013 represents a crucial year in the achievement of the SESAR Programme where tangible research results, at different maturity levels, are expected to be delivered. It is in particular expected that a large amount of work will be performed in order to capitalise on Release 1 and 2 results in order to prepare "packages" which represent the end state of R&D activities and enable the hand-over between R&D and implementation. On the other hand, Release 4, 5 and 6 will be the last batch of deliveries from the programme, and the release strategy enabled a top-down approach for their content definition, see Figure 4.

### 3.1 Programme management

The following sections describe the most important achievements so far, which will impact 2013 and the following periods in terms of research developments.

The Programme progress - which encompasses the already achieved and on-going Releases, as well all the other activities addressing the maturing and validation of the SESAR concept - is monitored on a quarterly basis. The graph below shows the progress reported at the 3rd quarter 2012. The links between the deliverables of Releases 2 and 3 with the Operational Improvements (OI) of the ATM Master Plan are presented in Annex IV.

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<sup>2</sup> SESAR Programme Management Plan, edition 02.00.00, 15 February 2011.

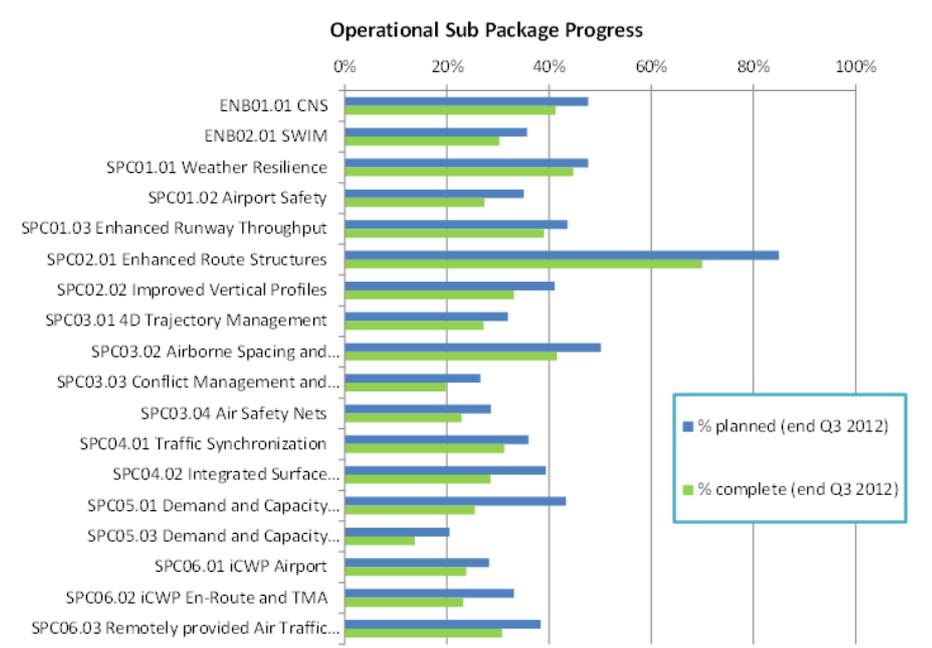


Figure 1

The under consumption of around 20% observed in 2011 was analysed, monitored and mitigating actions put in place during 2011 and 2012. The IBAFO reallocation gave then the possibility to the Members to review their plans in function of the actual situation and estimated resource consumption per Project. Nevertheless, taking into account the results of the Programme Committee Tiger Team on the Programme efficiency and priorities, the internal reviews and audit performed, there is scope for a more detailed revision of the resources allocation during 2013 which is expected to bring to a last IBAFO to be approved by the Administrative Board meeting of October 2013.



Figure 2

The graph here above shows that in the last four quarters the resources made available to perform the Programme activities appear having reached certain stability, just below 1500 FTEs per quarter. This may indicate that the Members, as overall, have reached a ceiling in the allocation of resources dedicated to the Programme. If this trend is confirmed in the coming quarters, the aforementioned review of activities and launch of IBAFO III (see also section 3.6) will be one of the core activities of 2013 needed to bring the Programme to successful and timely completion.

In terms of Programme progress, a positive trend can be recorded in the first two quarters 2012. In the figure below it can be observed that progress is slower than initially planned but that there is an improvement in terms of overall timely readiness. While in Q4 2011 projects progressively reached a completion ratio of 0.7, in Q2 2012 they reported a ratio of 0.8. According to industry standards and taking into account the R&D nature of the work done this can be considered as a good progress indicator. It should be noted that the dip in Q1, as far as % of planned vs complete is concerned, was caused by the IBAFO I and II reallocation that required the re-planning of the outstanding work.

Looking at the trend of data referring Actual % complete, the last five quarters, from Q2 2011 to Q2 2012, show a Programme completion of 4% per quarter. Extrapolating this trend, it is reasonable to indicate that at Q4 2013 the Actual % complete will be more than 50%.

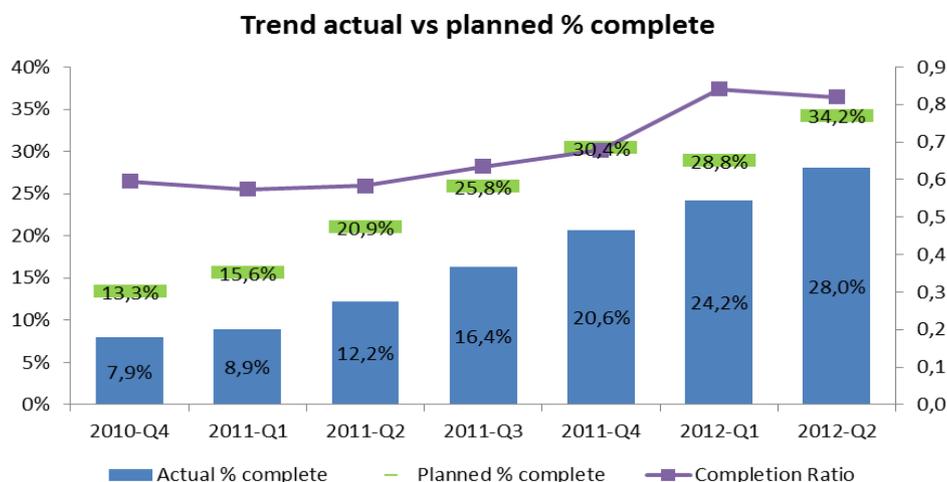


Figure 3

Between January 2011 and September 2012, the SJU received 1,300 project deliverables and, in accordance with the PMP procedures, it reviewed directly a subset of 600 priority deliverables providing the elements to reach conclusions on the overall quality of the Programme results. The SJU uses this direct review as a way to control quality and to take corrective actions before the output is used as input in interdependent Projects.

In 2013, about 1000 deliverables should be made available for SJU quality assessment and around 1/3 will be effectively assessed. Furthermore, following the recommendations of the PC Tiger Team, a more effective quality assessment is being developed for 2013: rather than focusing on single projects, Gates and deliverables' assessment will be performed at the level of OFAs. In addition, the SJU will complement the Programme activities through the launch of ad hoc studies and assess the relative deliverables as needed, such as in the case of a call on telecommunications ("Breaking Point of VDL Mode 2") expected for the first quarter 2013.

As already mentioned, the PC Tiger Team identified 5 "priority strategic business needs" together with a number of recommendations to optimize Programme management processes enabling a potential re-assignment of resources. These 5 "priority strategic business needs" are connected to the notion of groupings of projects and usage of Operational Focus Areas (OFAs):

- Airport Integration and throughput
- Conflict Management and Automation

- Moving from Airspace to 4D Trajectory Management
- Network Collaborative Management and Dynamic/Capacity Balancing
- Traffic Synchronisation

During 2013 and onwards, this “priority strategic business needs” approach will provide a better visibility on the Programme strategic priorities and on the results to be delivered.

This will be enhanced by a top-down process applied to future releases with clear end of V3 targets defined in time: this approach will enable the retro-planning of V1 & V2 activities - a substantial component of applied research -, a more effective management of the Programme and, finally, a re-prioritization of resources. The table below provides a first highlight, including Release 4, 5 and 6, identifying the OFAs and Operational Sub Packages contributing to the satisfaction of the “priority strategic business needs” with the identification of the target Operational Improvements (OIs)<sup>3</sup>.

As regards Release 4, 5 and 6, the content definition is still in an early preparatory phase and therefore other exercises and related Operational Improvements may be added as the work proceeds.

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<sup>3</sup> OIs definition can be found in Annex IV.

Priority Business Need	Operational Sub-Package	OFA	R1	R2	R3	R4	R5	R6	
Airport Ops & Throughput	SPC01.01 Weather Resilience	01.01.01 LVPs using GBAS				AO-0505-A			
	SPC01.03 Enhanced Runway Throughput	01.03.01 Time Based Separation			AO-0303				
		01.03.02 Dynamic Vortex Separation				AO-0304	AO-0310		
						AO-0306			
	01.03.03 Runway Occupancy Time Management			AUO-0702		AUO-0703			
	SPC01.02 Airport Safety	01.01.02 Pilot Enhanced Vision						AUO-0403	
		01.02.01 Airport Safety Nets				AO-0104-A		AO-0105	
								AUO-0605-A	
	SPC04.02 Integrated Surface management	01.02.02 Enhanced Situational Awareness				AO-0209		AO-0204	
		04.02.01 Surface Planning and Routing					AO-0205	AUO-0805	
		04.02.05 Guidance assistance to aircraft and vehicles					AUO-0602		AUO-0603-A
		04.02.03 Surface Management Integrated with Arrival and Departure Management			TS-0202		AO-0207		
						TS-0104			
SPC05.01 Demand and Capacity Balancing Airports	05.01.01 Airport Operations Management	DCB-0304					AO-0801		
Network Collaborative Management and Dynamic/Capacity Balancing	SPC05.03 Demand and Capacity Balancing En-Route	05.03.06 UDPP			AUO-0103			AUO-0102	
		05.03.03 Dynamic sectorisation and Constraint management			CM-0102-A		CM-0102-B	DCB-0305	
		05.03.04 Enhanced ATFM Processes			CM-0103-A	DCB-0208	CM-0103-B	AOM-0803	
		05.03.07 Network Operations Planning			DCB-0205	CM-0104-A	AOM-0804	CM-0104-B	
		05.03.01 Airspace Management and AFUA				DCB-0103-A	CM-0104-B	DCB-0103-B	
	SPC03.01 4D Trajectory Management	03.01.03 Free Routing				AOM-0501		AOM-0206	
		03.01.04 Business and Mission Trajectory				AOM-0403-A		AOM-0208-B	
								AOM-0403-B	
	Traffic Synchronisation	SPC02.02 Improved Vertical Profiles	02.02.01 CDA						AOM-0702
			02.02.03 CCD				AOM-0705		
		SPC03.02 Airborne Spacing and Separation	OFA03.02.01 ASPA S&M				TS-0105-A		
		SPC04.01 Traffic Synchronization	04.01.02 AMAN and Extended AMAN Horizon		TS-0303	TS-0305			
04.01.01 Integrated AMAN DMAN						TS-0104	TS-0304		
					TS-0203	TS-0309			
04.01.05 i4D + CTA				TS-0308					
Moving from Airspace to 4D Trajectory Management	SPC03.01 4D Trajectory Management	03.01.01 Trajectory Management Framework			IS-0302	AUO-0302-A		CM-0402	
						AUO-0303-A		AUO-0302-B	
						IS-0303-A		AUO-0303-B	
		03.01.08 System Interoperability with air and ground data sharing		IS-0301	IS-0302	AUO-0203-A		AUO-0203-B	
					AUO-0204-A		AUO-0204-B		
					AUO-0302-A		AUO-0302-B		
					AUO-0303-A		AUO-0303-B		
					IS-0303-A		IS-0303-B		
Conflict management and automation	SPC03.03 Conflict Management and Support Tools	OFA03.03.01 Conflict Detection, Resolution and Monitoring				CM-0204	CM-0403	CM-0401	
		OFA03.03.03 Enhanced Decision Support Tools and Performance Based				CM-0601		CM-0602	
	SPC03.04 Air Safety Nets	OFA03.04.01 Enhanced Ground Based Safety Nets						CM-0603	
		OFA03.04.02 Enhanced ACAS				CM-0802		CM-0807	

Figure 4

The progress planned for 2013 in the 5 Priority Business Needs is shown below:

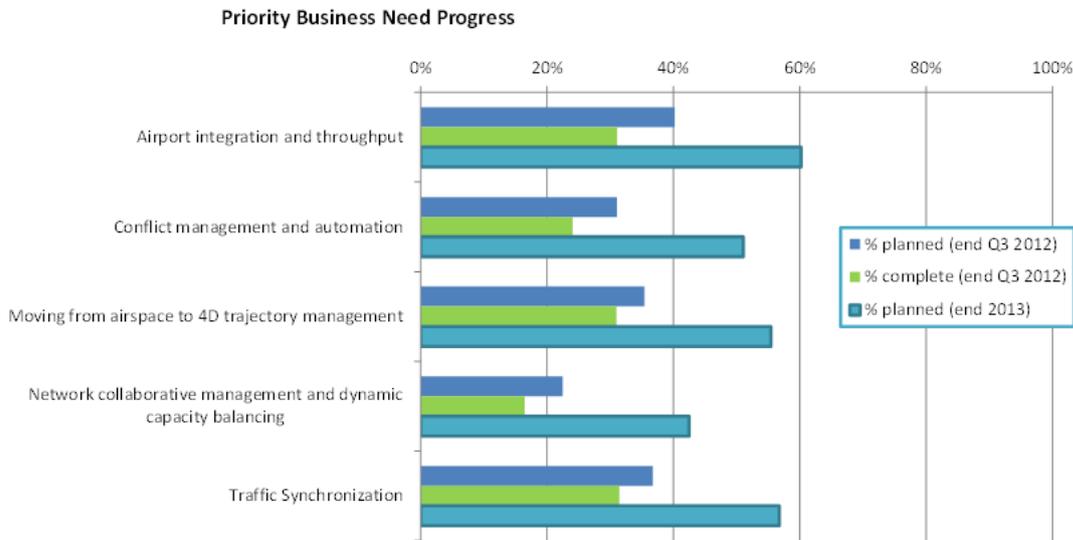


Figure 5

Beyond the activities related to Releases, all the programme projects will be progressed to reach a maturity level to be part of future releases. The overall progress planned for 2013 is reported in the graph below. A list of 2013 deliverables relating to activities not included in the Release3 is reported in Annex I.

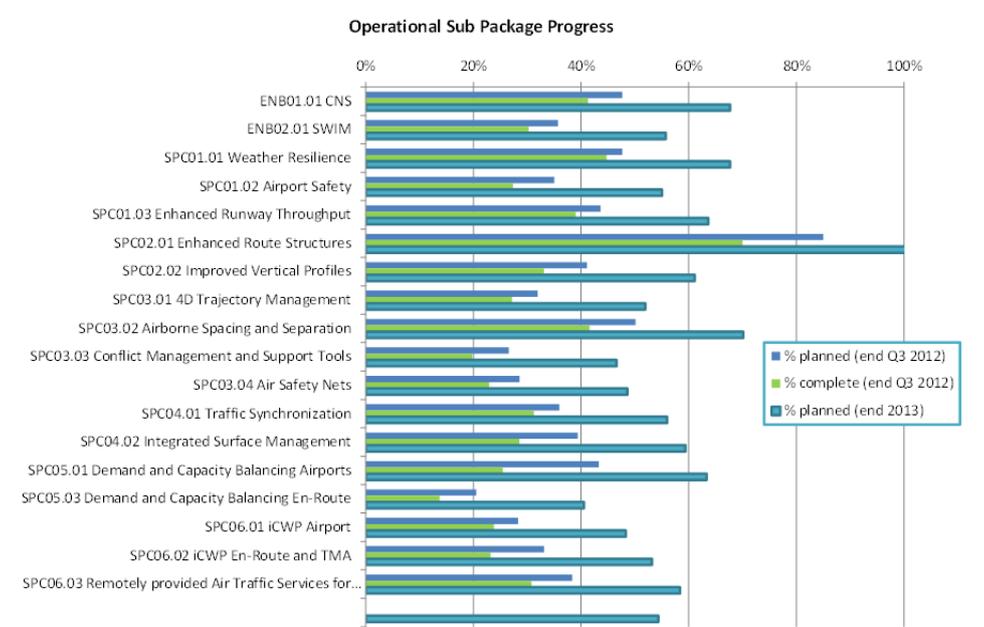


Figure 6

### 3.1.1 SESAR Programme Release 3 content

The definition of Release 3 content has started with the update of the V&V Roadmap in March 2012 and continued along the year in full coordination with the SJU's Members.

Building upon Release 1 and Release 2 results, Release 3 mainly encompasses

- the development and validation of additional Initial 4D features and data exchanges in order to further develop the synchronisation between the airborne and ground flight profiles,
- activities at airports, to improve safety on the airport platforms,
- improvements at the Network Operations level.

Release 3 includes 17 exercises (among which 3 are moved from Release 2) clustered into 12 OFAs. 2 additional exercises will have to be confirmed at the beginning of 2013, bringing the total number of exercises to 19, involving 13 OFAs. The type of delivery expected in the 2013 Release 3 is defined as a package of work having completed the V3 and on which a decision for industrialization and subsequent deployment can be made. The Projects not directly involved in the exercises will continue performing applied and pre-industrial research to ensure its reaching the necessary maturity levels in view of the next Releases.

The main operational improvements that Release 3 will deliver are:

- **Airport operations management and platform safety**
  - Detection of runway incursion and infringements of restricted areas by aircraft and vehicles and alert to the ATC controllers and vehicle driver.
  - Linking Airport Operations Plan with the Network Operations Plan for a better management of the arrivals.
- **Airborne Operations**
  - Synchronisation of airborne and ground flight profiles through i4D data exchanged through datalink;
  - Enhanced FPL processing based on 4D profiles and aircraft performance provided by AOC
- **ATC Operations**
  - Enhanced Short Term Conflict Alert system using down-linked aircraft parameters.
  - Streaming techniques in the frame of an extended horizon of the arrival manager for multiple airports
- **Network Management**
  - Further development of the Short Term ATFCM Measures

Priority Business Needs	OFA	Number of exercises
Traffic Synchronization	03.02.01 ASPA S&M <i>(to be confirmed by the end of January)</i>	2
	04.01.05 i4D + CTA	3
	04.01.02 AMAN and Extended AMAN horizon <i>(from Release 2)</i>	1
Airport Integration and throughput	01.01.01 LVPs using GBAS	1
	01.02.01 Airport safety nets	2
	01.02.02 Enhanced situational awareness	1
	01.03.03 Runway Occupancy Time Management	1
	05.01.01 Airport Operations Management	1
Moving from Airspace to 4D Trajectory Management	03.01.08 System interoperability with air and ground data sharing <i>(from Release 2)</i>	1
Network Collaborative Management and Dynamic Capacity Balancing	03.01.04 Business and Mission Trajectory	1
	05.03.04 Enhanced ATFCM processes	3
Conflict management and automation	03.04.01 Enhanced Ground Based Safety Nets	1
	06.03.01 Remote tower <i>(from Release 2)</i>	1

### 3.1.2 Release exercises' description

The following sections present the high level scope of Releases 1, 2 and 3 per Strategic Business Needs, describing the results of the validation exercises conducted in 2011, those of 2012 where already available, and the expected outcome and indicators of those to be conducted in 2013.

#### 3.1.2.1 Strategic Priority Business Need: Airport Integration and Throughput

OFA01.01.01 - LPV using GBAS					
Release 3					
<b>Achievement</b>	Procedures for transiting from RNP environment to GLS (GNSS Landing System) based on GBAS considering in particular pilot's workload, minimum Radius-to-Fix legs.				V3
<b>Deliverables</b>	OSED, VALR				
<b>Contributing Projects</b>	06.08.05				
<b>Contributing AU(s)</b>	NOVAIR, NetJets				
Exercise	OIs	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-06.08.05-VP-166	AO-0505-A AOM-0603	Real Time Simulation	Airbus cockpit simulator	N/A	20/11/2013

OFA 01.02.01 Airport Safety Nets				
Release 2				
Achievement	Validation of procedures and tools for the detection and presentation of conflicting ATC clearances to the Tower RWY controllers.			V3
Deliverables	Validation Report, Updated OSED & SPR			
Contributing Projects	06.07.01; 12.03.02; 12.04.03; 12.05.02			
Contributing AU(s)	None			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-06.07.01-VP-438	Shadow Mode	DFS TWR IBP Hamburg	DFS Prototypes for Conflicting ATC Clearances Alerts and for CWP	02/11/2012

Release 3				
<b>Achievement</b>	Safety improvement by the reduction of collision risk thanks to the early detection and alert to the controllers and to the vehicle drivers of detection of runway, taxiway and apron incursion and infringements of restricted areas by aircraft and vehicles. Integration of Airport safety support tools and enhanced ADSB, with the ATC System supervision. Remotely operate ATC services to airports without a control tower, and CWP Airport			V3
<b>Deliverables</b>	OSED, SPR,			
<b>Contributing Projects</b>	03.03.02, 03.03.03, 06.03.02, 06.07.01, 06.07.02, 06.09.02, 06.09.03; 09.33, 10.07.01, 12.01.09, 12.03.01, 12.03.02; 12.03.03, 12.04.07, 12.05.02, 12.05.04, 12.05.07, 15.04.05b			
<b>Contributing AU(s)</b>	None			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-06.03.02-VP-614	RTS	AENA HQ Pre-operational IBP-tower segment, Madrid	12.03.01-D22-Improved surveillance for surface management, INDRA, 12.03.02- Enhanced Surface Safety Nets, INDRA 12.03.03-D10-Enhanced Surface -routing, INDRA 12.05.03-D07-Enhance controller tools to manage all aspects of 4D trajectories, INDRA 12.05.04-D27-Integrated Tower Working Position, INDRA 12.05.07-D08-Performance Based, Monitoring and Decision Support within the HMI, INDRA 10.07.01-D29-ATS Enhanced Datalink features for all phase of flight, INDRA	31/10/2013
EXE-06.03.02-VP-652	RTS, Live Trials and Shadow mode	ENAV IBP Malpensa Airport, Milan	09.33-D06-ATS Datalink Operational Improvements, HONEYWELL 12.01.09-ATC Systems Supervision, SELEX 12.03.02-D05-Enhanced Surface Safety Nets, SELEX 12.05.02-Airport Safety Nets and wind-shear detection and alert for Controllers, SELEX 12.05.04-D08-Integrated Tower Working Position (CWP), SELEX 15.04.05b-D04-Surveillance ground system enhancements for ADS-B, SELEX 10.07.01-D11-ATS Datalink, SELEX	30/09/2013

OFA 01.03.01 Time Based Separation				
Release 2				
Achievement	Validated Tower controller operational procedures enabling the use of refined time based separation minima in an effective way in typical operational circumstances, challenging wind conditions and some off-nominal cases.			V3
Deliverables	Validation Report, OSED, SPR			
Contributing Projects	06.08.01, 05.03			
Contributing AU(s)	Air France, KLM,			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-06.08.01-VP-302 "In a Sequence"	RTS	NATS London TC	NATS Time separation prototype	Executed in June12, results expected in February 2013
EXE-06.08.01-VP-303 "In a Sequence"	RTS	NATS London TC	NATS Time separation prototype	Executed in March 12, results expected in February 2013

OFA 01.02.02 Enhanced Situation Awareness				
Release 3				
Achievement	Improved Runway-Taxiway Lay-out, Signage and Markings to Prevent Runway Incursions Validated operational procedures (Tower controllers, supervisor, Vehicle Drivers and Flight Crews); Validated operational requirements. Evaluation of the use of RWSL (RunWay Status Lights), automatic system based on A-SMGCS surveillance			V3
Deliverables	OSED, SPR, VALP, VALR			
Contributing Projects	06.07.01			
Contributing AU(s)	Air France			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-06.07.01-VP-232	RTS, Shadow Mode, Live Trial	DSNA CDG, Paris CDG	N/A	01/11/2013

OFA 01.03.03 Runway Occupancy Time Management		
Release 3		
Achievement	Enhanced voice procedure of brake to vacate, taking more benefit from advanced knowledge of the Arrival Runway Occupancy Time and Runway exit, and quantified performance.	V3

<b>Deliverables</b>	OSED, VALP, VALR			
<b>Contributing Projects</b>	06.08.02			
<b>Contributing AU(s)</b>	NOVAIR, EMIRATES			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Planned</b>
EXE-06.08.02-VP-048	Live Trials	Emirates scheduled A380 aircraft with BTV + other suitably equipped AUs ATC (NATS) at Terminal Control London and ATC at London Heathrow	BTV cooperative procedure with voice	31/10/2013

<b>OFA 04.02.01 Surface Planning and Routing</b>				
<b>Release 2</b>				
<b>Achievement</b>	Validated procedures and technical specifications for planning, assigning and modifying a route to individual aircraft and vehicles using data link for a safe, expeditious, and efficient movement from their current position to their intended position on the airport movement area.			V3
<b>Deliverables</b>	Validation Report (federating project considering OSEDs from others primary projects).			
<b>Contributing Projects</b>	06.03.02; 06.07.01; 06.07.02; 06.07.03; 06.08.04; 06.09.02; ; 10.07.01; 12.03.01 ; 12.03.02; 12.03.03 ; 12.03.04 ; 12.03.05 ; 12.04.04; 12.05.02; 12.05.04; 15.04.05b; 03.03.02; 03.03.03.			
<b>Contributing AU(s)</b>	None			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Exercise Completed</b>
EXE-06.03.02-VP-064	RTS	IBP-CDG DSNA	THALES-ATS Datalink THALES-Enhanced Surface Safety Nets THALES- Basic DMAN THALES-Airport Safety Nets	December 12
EXE-06.03.02-VP-065	Live Trial	ENAV IBP Malpensa	SELEX : Surface safety nets server Surface taxi clearances Integrated DMAN and SMAN platform Surface alert HMI Tower CWP ADS-B ground station	December 12

EXE-06.03.02-VP-401	RTS	AENA IBP Madrid	INDRA : Advanced Multi Sensor Data Fusion (MSDF) Surface -routing Sequencing tools DMAN-SMAN Tower CWP	December 12
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OFA 05.01.01 Airport Operations Management				
Release 3				
<b>Achievement</b>	The integration of Airports into the ATM Network implies the need of AOPs to be fully linked with the NOP to optimize Network and Airport management, moving from the current departure management (focused on CTOT) to arrival management (focused on TTA). The TTA exercise addresses both the feasibility assessment of the integration and the predictability performance enhancement validation. This exercise is an integrated exercise, prepared and executed by P6.3.1 and P7.3.2.			V3
<b>Deliverables</b>	OSED, VALP, VALR			
<b>Contributing Projects</b>	06.03.01, 06.05.01, 07.03.02, 07.06.01, 07.06.05, 03.03.02, 03.03.03, 12.06.02, 12.06.09			
<b>Contributing AU(s)</b>	Local Palma de Mallorca Aircraft Operators, Air Europa, Air Berlin, Easyjet.			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-06.03.01-VP-609	Live Trials	AENA Airport IBP at Palma de Mallorca airport and NOP	AOP (from P12.06.02) and AINS (from P12.06.09) V2 early prototypes	28/06/2013

### 3.1.2.2 Strategic Priority Business Need: Network Collaborative Management and Dynamic/Capacity Balancing

OFA 05.03.06 UDPP				
Release 2				
<b>Achievement</b>	Validated new procedures to enable Airspace Users to swap TTOT (Target Take Off Time) on a CDM airport in case of "significant" Demand/Capacity unbalance mismatch on the day of OPS. The swap of TTOTs is relies on close coordination between the different impacted AUs.			V3
<b>Deliverables</b>	Validation Report, OSED, SPR and INTEROP			
<b>Contributing Projects</b>	07.06.04; 12.06.08			
<b>Contributing AU(s)</b>	Air France & Regional; EBAA; British Airways; British Midlands			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed

EXE-07.06.04-VP-538	Live Trial	London Heathrow Airport CDM tools	Enhanced Airport CDM tools	Exercise Cancelled due to business implications for participating Airlines
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OFA 05.03.04 Enhanced ATFM processes				
Release 1				
<b>Achievement</b>	Validated Operational procedures, requirements, cases and CFMU Human Machine Interface (HMI) and Network Operational Plan Portal (NOP) enhancement for Short Term Air Traffic flow & Capacity Management Measures (STAM). STAMs are pre-defined scenarios aimed at improving the traffic flow between ATC sectors in coordination with the CFMU for optimising the related sectors capacities.			V3
<b>Deliverables</b>	OSED, SPR, INTEROP, Technical Specifications, Validation report			
<b>Contributing Projects</b>	7.6.5; 13.1.1; 13.2.3			
Exercise	Validation Technique	Platform		Exercise Completed
EXE-07.06.05-VP-314	Live Trial	Eurocontrol CFMU		November 2011
		ATSU unit of Reims		
		ATSU unit of London		
		ATSU unit of Frankfurt or Karlsruhe		
		ATSU unit of Maastricht		
Release 2				
<b>Achievement</b>	Validated procedures and supporting tools used in a high density traffic area that continuously monitor the traffic complexity and that support decision making to solve complexity issues through adapting the capacity to the traffic load by grouping or de-grouping sectors.			V3
<b>Deliverables</b>	Validation Report, OSED, SPR.			
<b>Contributing Projects</b>	04.03; 04.07.01, 04.07.07; 10.08.01; 13.02.03; 03.03.02; 03.03.03.			
<b>Contributing AU(s)</b>	None			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed

EXE-04.07.07-VP-006	Shadow Mode	Automated System of ATC (SATCA), AENA Barcelona ACC	DCB/ASM Local Prototype	01 December 12
EXE-04.03-VP-031	RTS	MUAC IBP	INDRA-Complexity Tool	Executed in March 12, results received in May 2012

### Release 3

<b>Achievement</b>	Management of the workload/complexity reduction based on the optimisation of sector combinations through a statistical approach. Early integration of AOP and NOP by sharing TTA information from NOP to AOP at planning stage. Process and procedures using STAM.			V3
<b>Deliverables</b>	OSED, SPR, INTEROP, VALP, VALR			
<b>Contributing Projects</b>	04.07.01, 10.08.01 07.03.02, 07.06.05, 03.03.02, 03.03.03, 13.02.03			
<b>Contributing AU(s)</b>	Air Berlin, Air Europa, EasyJet			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Planned</b>
EXE-04.07.01-VP-002	Shadow Mode	THALES Toulouse or EUROCAT equipped en-route Control Centre Coflight IBP TBD	10.08.01-D07-THALES	30/04/2013
EXE-07.03.02-VP-522	Live Trial	ECTRL ENMVP Bruxelles or Brétigny	13.02.03-D80-ECTRL (NM system enhancements)	04/10/2013
EXE-07.03.02-VP-632	Live Trial	ECTRL ENMVP Brussels or Brétigny	(IFPS + ETFMS prototypes)-ECTL	28/06/2013

### OFA 05.03.01 Airspace Management and AFUA

#### Release 2

<b>Achievement</b>	Validated operational procedures related to ATFCM Measures considering real time use of airspace and the activation/de activation of a restricted airspace. Validated technical specifications covering the interface of ASM support systems with ATFCM systems and with ATC working position (real time update of the airspace situation on the CWP)			V3
<b>Deliverables</b>	Validation report, OSED, SPR and INTEROP			
<b>Contributing Projects</b>	07.05.02; 13.02.01; 10.05.01; 03.03.02; 03.03.03.			
<b>Contributing AU(s)</b>	Flybe, LAG, EBAA & Novair			

Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-07.05.02-VP-016	Live Trial	ECTRL NMVP	INDRA-Dynamic DCB en route LARA & STANLY_ACOS	12/10/2012
EXE-07.05.02-VP-017	Live Trial	ECTRL MUAC	INDRA & LARA	17/12/2012

OFA 03.01.03 Free Routing				
Release 2				
Achievement	Validated recommendations covering procedures and tools for implementing User Preferred Routing operations inside European Airspace with a particular focus on the ECAC core area.			V3
Deliverables	Validation Report, OSED, SPR and INTEROP			
Contributing Projects	07.05.03			
Contributing AU(s)	SAS, Novair, IAOPA and ELFAA			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-07.05.03-VP-571	RTS	MUAC IBP	N/A	Executed in March 12, results expected in February 2013
EXE-07.05.03-VP-465	Live Trial	NORACON NEFAB Airspace	N/A	Might be postponed early 2013

OFA 03.01.04 Business and Mission Trajectory				
Release 2				
Achievement	Enhanced flight plan filing process based on calculated 4D profiles and aircraft performance information sent by the AOC and processed by the IFPS.			V2
Deliverables	Validation Report, OSED, SPR and INTEROP			
Contributing Projects	07.06.02; 13.02.01; 11.01.04; 03.03.02; 03.03.03.			
Contributing AU(s)	Air France ; EBAA ; EFLAA ; LAG			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-07.06.02-VP-311	Shadow Mode	ECTRL NMVP Brussels	CFMU System 11.01.04 FPL prototype	30/11/2012

Release 3				
<b>Achievement</b>	Interoperability between civil and military aircraft for the 4D trajectory management and the application of new separation mode (i.e. ASPA-S&M) in case of a concerned military aircraft. Enhancement of the current flight plan filing process which includes: <ul style="list-style-type: none"> <li>▪ The possibility for flight plan originator to send calculated 4D profiles and aircraft performance information (Enhancement of both ADEXP and B2B messaging for Flight Plan input);</li> <li>▪ The modification of IFPS to integrate the received additional data (4D profiles and performance information) for flight plan validation process and flight plan calculation</li> </ul>			V3
<b>Deliverables</b>	OSED, VALP, VALR			
<b>Contributing Projects</b>	07.06.02, 11.01.04, 13.01.01, 13.02.01, 03.03.02, 03.03.03			
<b>Contributing AU(s)</b>	Air France, EBAA, EFLAA, LAG			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-07.06.02-VP-616	Shadow mode	ECTL ENMVP, ECTL Brussels (IFPS + ETFMS prototypes) Fly4D FOC/WOC, Airbus Toulouse (AOC Flight Planning prototypes)	13.02.01-D11-ECTL 11.01.04-D01-Fly4D (LIDO & SABRE)	30/11/2013

### 3.1.2.3 Strategic Priority Business Need: Traffic Synchronisation

OFA 03.02.01 ASPA S&M				
Release 2				
<b>Achievement</b>	Validated operational procedures on the Airborne Spacing Sequencing & Merging Manoeuvres in preparation of the Flight trial. This includes the consideration of : the integration of lateral and vertical aspects with the longitudinal dimension, the integration with the CDA concept, the link with P-RNAV route structure in TMA, the integration of CPDLC (possibly including aircraft derived data) from both air and ground perspectives.			V3
<b>Deliverables</b>	Validation Report, OSED, SPR and INTEROP			
<b>Contributing Projects</b>	05.06.06, 09.05, 10.03.02 (10.04.04 TBC)			
<b>Contributing AU(s)</b>	None			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed

EXE-05.06.06-VP-198	RTS	AIRBUS Aircraft Integration Simulator - Toulouse  ENAV IBP Rome	AIRBUS-Integrated Airborne ASAS  SELEX-ATC Support to ASAS	19/10//2012
EXE-05.06.06-VP-392	RTS	AIRBUS Aircraft Integration Simulator - Toulouse  Thales IBP	AIRBUS-Integrated Airborne ASAS  THALES-ASPA S&M	Oct/Nov 2012
<b>Release 3</b>				
EXE-05.06.06-VP-199 <sup>4</sup>	RTS	AIRBUS Aircraft Integration Simulator, Toulouse  ENAV IBP Rome	09.05-D18-AIRBUS 10.03.02-D27-ATC Support to ASAS sequencing and merging operations, SELEX  10.04.04-D11-TBS, SELEX	28/02/2013
EXE-05.06.06-VP-200 <sup>5</sup>	Flight trial	AIRBUS Flight Test Aircraft, N/A  ENAV IBP Rome	09.05-D15-AIRBUS 10.03.02-D27-ASPA S&M, SELEX 10.04.04-D07-SELEX	31/05/2013

<b>OFA 04.01.02 AMAN &amp; Extended AMAN horizon</b>			
<b>Release 1</b>			
<b>Achievement</b>	Validated procedures on extending the arrival tasks to the En-route controllers within Arrival Manager (AMAN) horizon of a related airport.		V3
<b>Deliverables</b>	OSED, SPR, Validation report		
<b>Contributing Projects</b>	4.5; 5.5; 5.5.1; 5.6.1; 5.6.4; 12.4.1		
<b>Exercise</b>	<b>Validation Technique</b>	<b>Platform</b>	<b>Exercise Status</b>
EXE-05.06.04-VP-187	RTS	ENAV IBP Rome	October 2011

<sup>4</sup> Subject to final confirmation by the end of January 2013

<sup>5</sup> Subject to final confirmation by the end of January 2013

EXE-05.06.04-VP-187bis	RTS	LVNL Schipol	December 2011	
EXE-05.06.04-VP-188	RTS	NATS London TC	February 2012	
EXE-05.06.04-VP-189	RTS	NORACON Malmö	November 2011	
<b>Release 2</b>				
<b>Achievement</b>	Validated extended horizon arrival manager streaming techniques linked with AMAN-dependent point merge procedures in a multi-airport TMA P-RNAV procedures in a complex TMA Tactical Queue Management techniques			V3
<b>Deliverables</b>	Validation Report, OSED, SPR, Technical Specifications and INTEROP			
<b>Contributing Projects</b>	05.03; 10.09.01; 10.09.02; 10.10.03; 03.03.02; 03.03.03.			
<b>Contributing AU(s)</b>	ATA, SAS & Novair			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Exercise Completed</b>
EXE-05.03-VP-034	RTS	AENA IBP Madrid	INDRA : Queue Management/ Multiple Airport A/DMAN/ CWP TMA	Executed in May 12, results received in August 2012
EXE-05.06.04-VP-244	RTS	ENAV IBP Rome	N/A	24/10/2012
<b>Release 3</b>				
<b>Achievement</b>	Extension of arrival management horizon into the en-route phase including the arrival management for multiple airports and the integration of departing traffic from airports within the extended arrival management horizon, especially in complex TMAs: Controlled Time of Arrival (CTA) through use of datalink ; Arrival Management Extended to En Route Airspace			V3
<b>Deliverables</b>	OSED, SPR, INTEROP, VALP, VP, VALR			
<b>Contributing Projects</b>	03.03.02, 03.03.03, 05.06.01, 05.06.04, 05.06.07, 10.09.02			
<b>Contributing AU(s)</b>	DLH, SAS, NOVAIR			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Planned</b>
EXE-05.03-VP-580 (*)	RTS	NATS IBP at Southampton	Not Applicable	31/10/2013

(\*) Note that EXE-05.03-VP-580 is moved from Release 2 and will not be submitted to R3SE#1.

OFA 04.01.01 Integrated AMAN/DMAN			
Release 1			
Achievement	Validated procedures, requirements, for basic Departure Manager (DMAN) capabilities at a single airport. Validation of procedures for establishing the departure sequence with sufficient quality taking into account surface and departure management processes.		V3
Deliverables	OSED, Validation report		
Contributing Projects	6.8.4		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-06.08.04-VP-470	Life Trial	DSNA CDG	September 2011

OFA 04.01.03 AMAN & Point Merge				
Release 2				
Achievement	Validated procedures, requirements, and cases for using Point Merge in TMA-Extended concept (PMS-TE) for achieving Continuous Descent Approach from High level altitude in high level traffic load.			V3
Deliverables	OSED, Validation report			
Contributing Projects	5.6.7; 03.03.02; 03.03.03.			
Contributing AU(s)	NOVAIR, SAS, AF			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-05.06.07-VP-427	Live Trial	DSNA Athis-Mons	Not Applicable	31/03/2012

OFA 04.01.05 i4D + Controlled Time of Arrival			
Release 1			
Achievement	Validated procedures, requirements, prototype and technical specifications for both En-route and TMA environments covering: Computed and predicted Controlled Time of Arrival features exchanged between aircraft and ground using initial 4Dimension capability in traffic synchronisation; - Impacts on cockpit integration and human factors.		V3
Deliverables	OSED, SPR, Technical Specifications, Validation report		
Contributing Projects	4.3; 5.6.1; 9.1 ; 10.2.1; 10.7.1; 10.9.4		
Exercise	Validation Technique	Platform	Exercise Completed

EXE-04.03-VP-323	Flight Trial	ECTRL MUAC IBP & AIRBUS Flight Test Aircraft	February 2012	
EXE-05.06.01-VP-203	Flight Trial	ECTRL MUAC NORACON Malmo IBPs & AIRBUS flight test Aircraft	February 2012	
EXE-05.06.01-VP-205	Flight Trial	NORACON Malmo IBP	October 2011	
<b>Release 2</b>				
<b>Achievement</b>	Validated operational procedure for flying according to a CTA in the En-route and TMA airspace.		V3	
<b>Deliverables</b>	Validation Reports, OSED, SPR Technical Specifications and INTEROP.			
<b>Contributing Projects</b>	04.03; 05.06.01; 09.01; 10.02.01; 10.04.02; 10.07.01; 10.09.04 ; 03.03.02; 03.03.03.			
<b>Contributing AU(s)</b>	Lufthansa; Novair; SAS (EXE-05.06.01-VP-279) IATA, ELFAA (EXE-04.03-VP-29 & 330)			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Exercise Completed</b>
EXE-04.03-VP-029 "In a Sequence"	RTS	AIRBUS Aircraft Integration Simulator Toulouse ECTRL MUAC	INDRA-ATS Datalink ECTRL-ATS Datalink	Executed in March 12, results expected in February 2013
EXE-04.03-VP-330 "In a Sequence"	RTS	ECTRL MUAC	AIRBUS - Aircraft behaviour model (4D Predictor)	Executed in March 12, results expected in February 2013
EXE-05.06.01-VP-204 "In a Sequence"	RTS	AIRBUS Aircraft Integration Simulator Toulouse NORACON IBP Malmö	THALES : ATC Trajectory Management Design ATS Datalink CDA/CCD	19/10/2012
EXE-05.06.01-VP-279	Flight Trial	NORACON Stockholm	N/A	Exercise Cancelled for better preparing the exercise planned in R3

Release 3				
<b>Achievement</b>	<ul style="list-style-type: none"> <li>▪ Precision Trajectory Clearances (PTC)-2D Based On Pre-defined 2D Routes</li> <li>▪ Use of Aircraft Derived Data (ADD) to Enhance ATM Ground System Performance</li> <li>▪ Use of Predicted Trajectory (PT) to Enhance ATM Ground System Performance</li> <li>▪ Controlled Time of Arrival (CTA) through use of datalink</li> </ul>			V3
<b>Deliverables</b>	OSED, VALP, VALR, delivery sheets			
<b>Contributing Projects</b>	04.03, 09.01, 10.07.01, 03.03.02, 03.03.03			
<b>Contributing AU(s)</b>	ELFAA and IATA			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-04.03-VP-324	RTS	ECTRL MUAC	10.07.01-D11(updated for Step B)-ATS Datalink, INDRA 10.07.01-D44(updated for Step B)-ATS Datalink, ECTRL	08/03/2013
EXE-04.03-VP-463	RTS	AIRBUS Aircraft Integration Simulator, Toulouse ECTRL MUAC	09.01-D23-Integrated Airborne i4D simulator II, AIRBUS 10.07.01-D11(updated for Step C)-ATS Datalink, INDRA 10.07.01-D44(updated for Step C)-ATS Datalink, ECTRL	29/11/2013
EXE-04.03-VP-472	Flight trial	AIRBUS Flight Test Aircraft ECTRL MUAC	09.01-TBD-i4D Test Aircraft, AIRBUS 10.07.01-D11(updated for Step C)-ATS Datalink, INDRA 10.07.01-D44(updated for Step C)-ATS Datalink, ECTRL	29/11/2013

### 3.1.2.4 Strategic Priority Business Need: Moving from Airspace to 4D Trajectory Management

OFA 03.01.01 Trajectory Management Framework				
Release 1				
Achievement	Initial procedures and requirements for initial 4 Dimensions (i4D) concept for supporting the management of a single Controlled Time Arrival (CTA) constraint in the En-Route and TMA phase of flight. (VP 041 & 212) Validated procedures, and system requirements, for Trajectory Management revision considering : Flow rerouting scenario and, unexpected closure of airspace (VP 043)			V3
Deliverables	OSED, SPR, Technical Specifications & Validation Plan			
Contributing Projects	4.5; 5.5.1			
Exercise	Validation Technique	Platform	Exercise Completed	
EXE-04.05-VP-041	RTS En-route	ENAV Rome	November 2011	
EXE-05.05.01-VP-212	RTS En-route	ENAV Rome	November 2011	
Release 2				
Achievement	Validate that the performance of the ATC conflict detection & resolution tool in a high density Controlled Airspace improves when the underlying Trajectory Prediction is supported by AOC data.			V3
Deliverables	OSED and Validation Report			
Contributing Projects	05.05.02			
Contributing AU(s)	Novair, ELFAA, LAG, EBAA			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-04.05-VP-043	RTS	DSNA CoFlight V2 platform Toulouse	DSNA CoFlight V2 platform	30 November 12
EXE-05.05.02-VP-301	RTS	NATS' London ACC simulator	Modification to the iFACTS simulator	Executed in November 2011, results received in May 2012

OFA 03.01.08 System Interoperability with Air and Ground Data Sharing				
Release 2				
Achievement	Validated procedure for coordination between ATSUs through the utilization of Flight Object information			V3
Deliverables	OSED and Validation Report			
Contributing Projects	04.03, 10.02.05, 14.02.09			
Contributing AU(s)	None			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
Release 3				
Achievement	Integration of different operational improvements in Rome En-route and TMA: System integration with A/G data sharing, I4D + CTA; AMAN & extended AMAN horizon, ASPA S&M, Trajectory Management Framework, CWP and SWIM			V3
Deliverables	VALP, VALR, VR and other documents (Integration Report)			
Contributing Projects	04.03, 03.03.02, 03.03.03, 05.06.04, 05.06.06, 09.05, 10.01.09, 10.02.05, 10.03.02, 10.04.04, 10.10.03, 14.02.09			
Contributing AU(s)	Airline TBD			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-04.03-VP-022 (*)	Real Time Simulation	DSNA En Route IBP, Reims ECTRL MUAC, Maastricht DFS En Route IBP, Karlsruhe	10.02.05-D09-Coflight, SELEX-THALES 10.02.05-D10-INDRA, INDRA 14.02.09-D09-003-THALES, THALES 14.02.09-D09-002-INDRA, INDRA 10.02.05-D08-INDRA, IOP iTEC, INDRA	31/05/2013

(\*) Note that EXE-05.03-VP-580 is moved from Release 2 and will not be submitted to R3SE#1.

### 3.1.2.5 Strategic Priority Business Need: Conflict management and automation

OFA 03.04.02 Enhanced ACAS (previously Airborne Collision Avoidance System Monitoring)			
Release 1			
Achievement	Validated specifications and cases for : new altitude capture laws to avoid false alarm in high vertical rate encounter, link Airborne Collision Avoiding System to autopilot, and quantified overall safety gain.		V3
Deliverables	SPR, Technical Specifications, Validation report		
Contributing Projects	4.8.2		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-04.08.02-VP-054	Encounter Model Based Simulation Platform	DSNA Toulouse	February 2011
EXE-04.08.02-VP-480	Encounter Model Based Simulation Platform	DSNA Toulouse	February 2011

OFA 03.04.01 Enhanced Ground Based Safety Nets (previously Enhanced STCA)			
Release 1			
Achievement	Validated procedures, requirements, prototype and cases for enhanced Short Term Conflict Alert (STCA). This enhanced STCA will support controllers in identifying conflict between flights inside TMA wherein difficult operations are conducted (e.g. IFF/VFR traffic, complex interface with arrival/departure sectors, etc) and avoiding false alarms.		V3
Deliverables	OSED, SPR, INTEROP, Technical Specifications, Validation report		
Contributing Projects	4.8.1; 10.4.3		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-04.08.01-VP-140	RTS	THALES STCA prototype	December 2011

Release 3				
<b>Achievement</b>	Enhanced STCA: -ACAS Resolution Advisory Downlink -Enhanced Ground-based Safety Nets Using Wide Information Sharing Continued improvement in the performance of ground-based safety nets (G-SNETs) and their trajectory predictions through the use of Aircraft Derived Data (ADD) subject to quick variations and/or frequent updates (e.g. roll angle / track angle rate during turning manoeuvres, selected flight level to anticipate imminent departure from level flight or imminent level-off of transitioning aircraft).			V3
<b>Deliverables</b>	OSED, SPR, VALP, VALR			
<b>Contributing Projects</b>	04.08.01, 03.03.02, 03.03.03, 10.04.03			
<b>Contributing AU(s)</b>	None			
Exercise	Validation Technique	Validation Platform	Prototype	Planned
EXE-04.08.01-VP-239	Shadow Mode	ENAV IBP Rome	10.04.03-D19-Enhanced Safety Nets, SELEX	11/10/2013

OFA 03.03.01 Conflict Detection, Resolution and Monitoring			
Release 1			
<b>Achievement</b>	Validated procedures, requirements, prototypes and cases for a complexity prediction tool based on: controller capabilities to solve different complex situations in the airspace, but also possible controller resolutions in the traffic prediction through continuous simulations; breaking down the predicted complexity/workload in its constituent components, i.e. workload caused by coordination, workload caused by predicted conflicts etc.		V3
<b>Deliverables</b>	OSED, SPR, INTEROP, Technical Specifications, Validation report		
<b>Contributing Projects</b>	4.7.1; 10.8.1		
Exercise	Validation Technique	Platform	Exercise Status
EXE-04.07.01-VP-001	Shadow Mode	Eurocontrol MUAC	January 2012

## 3.1.2.6 Other Validation Exercises

OFA 02.01.01 Optimised RNP Structures			
Release 1			
Achievement	Validated procedures, requirements, cases and updated operational Guidelines on P-RNAV Guidelines- on PRNAV in complex TMA leading to an increased deployment in Europe		V3
Deliverables	OSED <sup>6</sup> , SPR <sup>7</sup> INTEROP, Technical Specifications, Validation Report		
Contributing Project	5.7.4		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-05.07.04-VP-142	RTS <sup>8</sup>	AENA IBP Madrid TMA	December 2011

OFA 02.01.02 Point Merge in Complex TMA			
Release 1			
Achievement	Validated Point Merge - procedures based on and exploiting the Flight Management System (FMS) without radar vectoring, constrained by controller instructions on speed and level. It will Facilitate the application of Continuous Descent Arrival and provide a baseline for Trajectory Based operations in the TMA		V3
Deliverables	OSED, SPR, INTEROP <sup>9</sup> , Validation Report		
Contributing Projects	5.7.4		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-05.07.04-VP-229	RTS	NATS TC London TMA	December 2012
Release 2			
Achievement	Validated Point Merge -procedures based and exploiting the Flight Management System (FMS) without radar vectoring, constrained by controller instructions on speed and level. It will Facilitate the application of Continuous Descent Arrival and provide a baseline for Trajectory Based operations in the TMA		V3

<sup>6</sup> OSED = Operational Service Environment Description is a document detailing Concept description for each Operational Focus Area. It develops the addressed Operational Service by allocating Operational Requirements to Operators, Application Services and Information Services.

<sup>7</sup> SPR = Safety and Performance Requirements is a document detailing the OSED for each Operational Focus Area in allocating Operational, Safety and Performance requirements to Systems.

<sup>8</sup> RTS: Real Time simulation, using an operational platform.

<sup>9</sup> INTEROP = Interoperability is a document providing interoperability requirements which are the minimum technical and functional requirements that provide the basis for ensuring compatibility among the various elements of the technical systems supporting defined services and using specific technology

Deliverables	Validation Report, OSED, SPR and INTEROP			
Contributing Projects	5.7.4			
Contributing AU(s)	None			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-05.07.04-VP-228	RTS	ENAV IBP Milan TMA	Not Applicable	Executed in January 12, results received in June 2012

OFA 02.02.04 Approach Procedure with Vertical Guidance				
Release 1				
Achievement	Validated Approach Procedures with Vertical (APV) guidance using Satellite Based Augmentation System (SBAS) leading to the ability to fly Instrument Landing System (ILS) type approaches to airport independently of ground based infrastructure.			V3
Deliverables	OSED, SPR, Technical Specifications, Validation report			
Contributing Projects	5.6.3			
Exercise	Validation Technique	Platform	Exercise Completed	
EXE-05.06.03-VP-224	RTS	NATS TC Southampt on APT	October 2011	

OFA 03.03.04 Sector team operations				
Release 1				
Achievement	Validated procedures to improve sector team organisation and coordination (roles & responsibilities) and initial requirements on tools support and information sharing.			V3
Deliverables	OSED, SPR, INTEROP, Validation report			
Contributing Projects	4.3 4.7.8			
Exercise	Validation Technique	Platform	Exercise Completed	
EXE-04.03-VP-032	Shadow mode	Brest ATCC	Completed in December 2012	
EXE-04.03-VP-237	Live Trials	Brest ATCC	Completed in December 2012	
Release 2				

<b>Achievement</b>	Defined Roles and Responsibilities for a Multi-Sector Planner operating environment and initial requirements on tools support and information sharing.			V3
<b>Deliverables</b>	OSED, SPR, Validation report			
<b>Contributing Projects</b>	4.7.8			
<b>Contributing AU(s)</b>				
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Exercise Completed</b>
EXE-04.07.08-VP-304	RTS	NATS London ACC Ops room platform	Not Applicable	Executed in March 12, results expected in December 2012

OFA 06.01.01 Controller Working Position Airport				
Release 1				
<b>Achievement</b>	Validated procedures for: -low cost and simple departure data entry panel to be deployed at airfields enabling them to be in electronic communication with CFMU concerning the departure status of aircraft under their control.			V3
<b>Deliverables</b>	Technical Specifications, Validation report			
<b>Contributing Projects</b>	12.4.1			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Platform</b>	<b>Exercise Completed</b>	
EXE-12.04.01-VP-391	Shadow Mode	NATS Southampton IBP	April 2011	
EXE-12.04.01-VP-404	Shadow Mode	NATS Southampton IBP	November 2012	
Release 2				
<b>Achievement</b>	Integration of the different systems and elements from the airport air side into one homogenous set of configurable and customizable Tower Controller Working Position (CWP) and associated operational procedures, accommodating the wide range of controller's skill levels and experience.			V3
<b>Deliverables</b>	OSED, SPR & Validation Report			
<b>Contributing Projects</b>	06.09.02; 12.05.02; 12.05.04; 03.03.02; 03.03.03.			
<b>Contributing AU(s)</b>	None			
<b>Exercise</b>	<b>Validation Technique</b>	<b>Validation Platform</b>	<b>Prototype</b>	<b>Exercise Completed</b>

EXE-06.09.02-VP-317	Shadow Mode	DSNA Roissy-CDG	THALES: Airport Safety Nets Tower CWP	21/09/12
EXE-06.09.02-VP-567	RTS	Aena HQ Pre-operational IBP TWR segment (Madrid).	INDRA Tower CWP	14/12/2012
EXE-06.09.02-VP-568	RTS	ENAV IBP Malpensa	SELEX Tower CWP	30/11/2012
EXE-06.09.02-VP-569	RTS	DFS TWR IBP Langen	FREQUENTIS/ DFS TWR CWP	Executed in June 12, results expected in December 2012

OFA 06.02.01 Controller Working Position Route and TMA			
Release 1			
Achievement	Validated specifications and prototypes for a new Human Machine Interface for TMA Controller Working Position (CWP) with improved design, addressing Human Factors related issues.		V3
Deliverables	OSED, SPR, INTEROP, Technical Specifications, Validation report		
Contributing Projects	5.9; 10.10.3; 10.10.2		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-05.09-VP-356	RTS	ENAV IBP	November 2011
EXE-05.09-VP-148	RTS	DSNA IBP	November 2011

OFA 06.03.01 Remote Tower			
Release 1			
Achievement	Validated procedures, requirements and prototype for-provision of ATC Services on a single airport from a remote site		V3
Deliverables	OSED, SPR, INTEROP, Validation report.		
Contributing Projects	6.9.3 12.4.6; 12.4.7; 12.4.8		
Exercise	Validation Technique	Platform	Exercise Completed
EXE-06.09.03-VP-056	Live Trial	NORACON Ängelholm Airport	November 2011

Release 2				
Achievement	Validated procedures, requirements and technical specifications for provision of ATC Services on a single airport from a single remote site.			V3
Deliverables	OSED, TS & Validation Report			
Contributing Projects	06.09.03; 12.04.07;			
Contributing AU(s)	AOPA, EBAA, Wioderoe, SAS, TAP			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-06.09.03-VP-057	Shadow Mode	NORACON Malmö ATCC	NATMIG Remote Tower Prototype	Executed in May 12, results received in September 2012
Release 3				
Achievement	Validated procedures, requirements and technical specifications for provision of ATC Services on a single airport from a single remote site.			V3
Deliverables	OSED, TS & Validation Report			
Contributing Projects	06.09.03; 12.04.07;			
Contributing AU(s)	AOPA, EBAA, Wioderoe, SAS, TAP			
Exercise	Validation Technique	Validation Platform	Prototype	Exercise Completed
EXE-06.09.03-VP-058	Shadow Mode	NORACON Vaerøy	NATMIG Remote Tower Prototype	14/12/2013

The experience gathered in 'Release Management' shows in particular a high risk of delay, in particular due to the availability of operational resources (platforms and operators). This will be monitored very closely by the SJU, since it also has an impact on external actors (Airspace Users, Staff, Military) who have specific operational constraints.

Moreover, a particular focus has been placed in the Release 3 definition on the expected outcomes of exercises, in terms of performance improvement. The SJU will insist on getting meaningful results, as soon as possible after the exercises, in order to be able to draw conclusions and trends on the most promising options.

### 3.2 The AUs in the SJU Programme

The SJU is driving deployment-oriented R&D, involving across the Programme all stakeholders, and, in particular, the airspace users, in order gain confidence that the Programme output would meet the performance needs expressed by the European ATM Master Plan.

In addition to their key role in the Administrative Board, their strategic participation to the SPP (see below) representatives and experts of the Airspace Users are heavily involved in the different Projects where they provide feedback on the different developments and results.

The AUs involvement in the Programme during 2013 has been extended to additional participants as a result of the procurement process that Eurocontrol executed on behalf of the SJU, in accordance with the SJU-Eurocontrol Agreement.

During 2013, the SJU will continue to manage the contribution of the AUs in the Programme improving its resource management through the support of a new software application. This will simplify the process and ensure a smoother organization of the participation of the AUs experts in the different activities. This arrangement will give increased visibility to the AUs and the rest of the Programme whilst reducing the SJU resource contribution required managing the activities. The contracts will be administered by Eurocontrol as part of its cash contribution to the JU while the engagement and content management will still be conducted by the SJU.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	4.2	4.2

### 3.3 Associate Partners of the SJU and their involvement

The category of stakeholders “Associate Partner of the SJU” was created to answer the need to complement and complete the expertise brought by the SJU Members to the SESAR Programme in specific ATM fields and from the specific categories of SMEs, Research Organisations, Universities and Institutes of higher education.

Ten (10) entities, assigned to 5 Lots (two for each lot) were appointed. The first framework partnership contract was signed in August 2011 with others following in 2012.

The lots awarded are as follows:

- Lot 1: Information Management;
- Lot 2: Network & Airport Collaboration;
- Lot 4: Airborne & CNS Systems;
- Lot 5: Modelling Support to Validation;
- Lot 6: UAV/UAS integration in SESAR.

Specific Agreements have been settled across Lots 2, 5 and 6 with others in progress. The award of work to the Associates is a progressive activity closely coupled to the needs of the Programme as well as of the SJU itself. During 2013 it is expected to continue the engagement of the Associates in activities across the programme and on specific tasks for the SJU.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	3.0	1.5

### 3.4 Demonstration activities and AIRE

Demonstration activities are pulling together stakeholders from airlines, air navigation service providers, the manufacturing industry and airports to show in a real life environment the benefits of SESAR solutions. Demonstrations are seen as a very powerful tool to engage operational users in SESAR, and continue to identify technical and operational issues which can be obstacles to implementation.

In 2012, 18 contracts were awarded on green flight trials and technological demonstration activities.

It is expected that a new call for tenders will be organised towards the end of 2013, to complement the demonstration activities in the following areas:

- UAVs insertion and operations into the civil airspace
- FAB-centred demonstration activities.

Contracts are expected to be signed by year end 2013 and implementation starting early 2014.

The successful achievement of this activity in 2013 will be measured against the successful transition from initiation to execution of all projects.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	10.0	4.5

### 3.5 IBAFO I and II Reallocation, IBAFO III

Following the aforementioned PC Tiger Team work on prioritisation conducted in 2012, the structure of the Programme is being progressively aligned with the “Strategic Priority Business Needs” derived from the European ATM Master Plan 2012. This organisation is associated with a set of efficiency measures that aims at rationalising the production of the Programme deliverables.

In 2013, the inclusion at operational level of these priorities will require an in depth analysis of the Programme resources and a possible re-allocation. This re-allocation may also offer the opportunity to identify and decide on activities connected to the current Programme as well as to allow the merging of projects under specific circumstances.

It is expected that this exercise will be possibly the last one in the current Programme period and it will be critical to focus the resources on the key priorities to enable their successful achievement.

The criteria for the re-allocation and a possible IBAFO III will be defined by the end of March 2013 at the latest, the Members will be required to assess their resources and needs for the reallocation in the following month(s) and the possible final IBAFO will take place during the third quarter 2013 for final ADB award decision at the meeting of October. The results will be entering into force on 1 January 2014.

## 4. SESAR Programme Specific Activities in 2013

### 4.1 The European ATM Master Plan 2012

The European ATM Master Plan identifies the performance needs of the future ATM system and provides primarily the operational, technological, standardisation and regulatory sequence that will contribute to the achievement of the performance needs.

The initial version of the ATM Master Plan has been produced during the SESAR Programme Definition Phase (2006-2008) and endorsed by the EU Transport Council on 30 March 2009.

The European ATM Master Plan was handed over to the SESAR JU, who is responsible since for its maintenance and execution.

Organised in 3 pillars (C1 - Master Plan Maintenance, C2 - Performance Deployment Planning, Financial incentives and Reporting, and C3 - Maintenance of Standardisation and Regulatory roadmap), Work Package C is the instrument within the SESAR Programme ensuring the maintenance of the European ATM Master Plan and providing a base reference to monitor the progresses related to the development and the deployment of SESAR.

Following significant works initiated during the summer 2011 taking into account the developments since the end of the definition phase, the European ATM Master Plan 2012 was adopted in principle by the Administrative Board in July and definitely in October 2012.

The document includes various developments like the updated Long Term Traffic Growth Forecast, as well as the results achieved and the indications emerged so far. Furthermore it rationalizes and simplifies the previous Master Plan introducing comprehensive views of the European ATM Master Plan per category of stakeholders.

The European ATM Master Plan 2012 outlines the essential operational and technological changes that are required to contribute to achieving the SES performance objectives, making the Master Plan a key tool in the context of SESAR deployment and providing the basis for timely and coordinated deployment of efficient technologies and procedures.

It constitutes also a concrete contribution to the ICAO Air Navigation Conference during autumn 2012 to support the definition of the short term transition steps (up to 2020) towards the Global ATM Concept and to ensure adaptation of the ICAO work programme for timely global standardization.

However, at the request of the Board, work has been initiated in September 2012 to perform in particular a review of the Business View Section as well as to provide some answers on additional issues pointed out by the European Commission. This work shall be finalized by mid-2013 The SJU is working together with its Members and the SPP to ensure that the revised Business View Section will meet the expectations.

Budget 2013	Commitment	Payment
Chapter 3.3 - EUR Mio	<i>see Programme Financials</i>	<i>see Programme Financials</i>

## 4.2 Support to the EC

The SJU is requested by the EC in different occasion to provide its technical expertise to support the preparatory activities in different domains.

### 4.2.1 Support to the preparation of the deployment

#### 4.2.1.1 Drafting a proposal on the content of a Pilot Common Project

Following the presentation by the Commission of the approach, including the governance model, it intends to adopt to ensure the deployment of SESAR R&D results, the Commission Services - DG Move requested the SJU to prepare a proposal on the content of a pilot common project including the methodology to move from the implementation view in the ATM Master Plan to a business view. This proposal will be used by the Commission to establish its legislative proposal for the first common project.

The pilot common project constitutes the first batch of technical and/or operational changes to be implemented in the 2014-2020 timeframe. It will be based on one or several essential operational changes identified in level 1 of the European ATM Master Plan 2012, whose need and maturity are demonstrated.

In order to submit a draft pilot common project to the Commission by the deadline set for end of April 2013, the SJU has established a work plan consisting of 3 phases:

**Phase 1 - Initiation and scoping phase:** By the end of October 2012, the objective will be to agree on success and selection criteria and on this basis, to pre-select 5-6 technological and/or operational changes relevant for the pilot common project.

**Phase 2 - Content definition and assessment phase:** From November 2012 to March 2013 with the support of expert groups, the following elements will be defined:

- Technical specifications of the selected technical and/or operational solutions (WHAT);
- Identification of Implementation Objectives (WHO, WHEN, WHERE) including deployment scenarios optimization;
- Performance and cost assessment consolidation (HOW MUCH), including compliance with safety requirements;
- Identification of conditions for successful deployment (HOW), including identification of regulatory and certification actions.

**Phase 3 - Final drafting phase:** During April 2013, a synthesis and consolidation of the work done by the expert groups will be performed. The proposal on pilot common project will then be drafted by the SJU to avoid any risk of conflict of interest.

The activities above-mentioned will be executed by a project team composed of a Steering Group, a Validation & Support Office and Expert Groups.

The Steering Group will be chaired by the SJU and will be composed of representatives of the different stakeholder groups. The Steering Group will support the SJU in executing the EC mandate and supervising the execution of the technical work, in particular by seeking the inputs of the Steering Group Members in their respective expertise domains.

The Validation & Support Office will be led by the SJU and composed of SJU staff, project C2 contribution, Eurocontrol/DSS resources and independent experts. It will provide the secretarial, administrative and technical assistance required for the execution of the mandate. Among other tasks, the Validation & Support Office will be requested to perform and deliver the Cost Benefit Analysis and the various impact assessments in liaison with the Expert Groups and with the support of a selected Contractor.

The Expert Groups will be initiated as of phase 2 and will be composed of relevant experts, independent or representing stakeholder groups (including the military). Each of the Expert Groups will provide the content elements required for one of the selected technological and/or operational changes.

#### 4.2.1.2 Other support

The SJU will continue work closely and provide the necessary support to the Commission to ensure the preparation of the Deployment Phase. The detailed activities will be defined during the year, and it is expected that they will require the allocation of one FTE within the existing SJU Staff Establishment Plan.

#### 4.2.2 Preparation for SJU's extension

In the context of the extension of the SJU beyond 2016, it is expected that the Commission will require the SJU to provide the necessary data, information, reports and overall evidence of the activities achieved and to be performed to build solid bases for the decision making process.

### 4.3 RPAs

The task of developing an initial roadmap for the integration of Remotely Piloted Aircraft Systems (RPAS) into non-segregated ATM environments from 2016 was decided by the European RPAS Steering Group (ERSG) chaired by the EC in July 2012.

The ERSG formed three groups which cover:

- the regulatory activities needed (WG1)
- the R&D activities needed (WG2) and;
- the societal matters involved (WG3).

The results of the three groups are being merged into an initial roadmap which will be delivered in December 2012.

The R&D related activities are to a large extent already covered in the current SESAR Programme even though there is no specific project or work package dedicated to RPAS as such.

Albeit the SESAR ConOps do cover the general conceptual operational requirements identified, further details and enhancements to fully cover the RPAs integration may need to be added in the Programme in 2013 and onwards, once the initial roadmap has been agreed and endorsed.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	<i>p.m.</i>	<i>p.m.</i>

## 4.4 Cyber security

The future European ATM System has to be trusted by the general public, as well as by the Member States; it therefore must be sufficiently secure, resilient and trustworthy to support EU goals of modernisation of the ATM sector in line with the perspectives of growth of the European air traffic.

Creating a trusted and effective security shield in a SWIM-enabled environment and critical infrastructure needs to endorse Cyber Security Solutions, to secure the information and protect against cyber threats with a proactive prevention and reactive remediation. Technical solutions to the Cyber threat exist and are already implemented in the SESAR Programme. Given the diversity and increasing number of Cyber threats however, it is necessary to evaluate the measures already taken and to strengthen and align the security policy defined in SESAR with already existing policies in other organisations.

The European Network and Information Security Agency (ENISA) will be requested to support SESAR in giving advice on good practices and recommendations to analyse SESAR existing security policy and to bring up the level of security to tackle the threats already known and those which will raise up in the future within the cyber domains.

The main action points to cover during 2013 are:

- Overcome IT risks to realize safety and security environment
- Implementation of a policy that comprehensively covers the viewpoints of ATM security, crisis management and user protection in cyberspace
- Establishment of an information security policy that contributes to the economic growth and build up trust within the ATM network.

Considering that there is an on going ATM security project awarded by the Commission to a private consortium within FP7 activities, the SJU has started discussions with the EC in order to identify the possible outcomes from this programme, and the need or not to launch specific complementary actions.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	<i>p.m.</i>	<i>p.m.</i>

## 4.5 Coordination of Long Term & Innovative Research

In accordance with Council Regulation (EC) 219/2007, the SJU is responsible for coordinating and concentrating all relevant Research & Development efforts in the European Union.

Consequently the SJU will continue to execute this role in 2013. In this respect, the following should be noted:

### a) ACARE

Specific areas of activity during 2012 included co-leading ACARE Working Group 1 where contribution of material on ‘meeting societal & market needs’ as well as coordination across all areas of the Strategic Research & innovation Agenda (SRIA) were performed, such that in 2013 the scope of relevant ATM research activities can be developed ready for Horizon 2020 in 2014.

The SJU will continue to participate in ACARE during 2013 with contributions to the General Assembly, Steering and Monitoring Groups.

#### b) Work Package E

Regarding the Long Term and Innovative Research activities included in the SESAR Programme, 2012 saw the final call and selection of new projects to Work Package E. During early 2013 it is expected to add around 20 additional projects to the scope of WPE, doubling its projects count and consuming the remainder of the original budget.

Continuing in 2013 are the two established Research Networks in Complexity and Automation as well as the new mini-network on Legal aspects for ATM launched from the ALIAS project during 2012. As an integral part of the research Networks the 20 PhD activities (13 associated to the automation network and 7 associated to the complexity network) continue in 2013.

Building on the second annual SESAR Innovation Days event in 2012, WPE results are further communicated in this scientific forum, building its reputation with Universities, Researchers, Research Organisations, and Industries in 2013.

As Work Package E is an integral part of the SESAR Programme and as such is covered by the established governance and communication arrangements information and results will flow to the other Programme WPs and Projects through the extranet and existing governing bodies (PCG, WPL, PC etc); furthermore, on a case by case basis closer working links will be established between projects where clear dependencies exist and this through the involvement of the respective SJU Programme Managers.

Budget 2013	Commitment	Payment
Chapter 3.1	4.9	4.9

#### c) Scientific Committee

The Scientific Committee provides advice, guidance, and conducts specific tasks in support of the SJU in order to reinforce its innovative and scientific approach to building the future Air Traffic Management systems and procedures.

Membership of the Committee is not permanent; consequently membership was refreshed in 2012 by a new call for members to fill vacant positions as well as establishing a new waiting list and permitting rotation of members.

During 2013 there will continue to be regular Scientific Committee meetings addressing the core activities, as well as exceptional meetings specifically focussed on dedicated topics or issues to be resolved.

The Scientific Committee shall support the SJU in recognising excellence within the SESAR Programme from the perspective of Science & Innovation as part of the Awards initiative with the first Young Scientist Award having been made in 2012 and annually thereafter at

the SESAR Innovation Days. In addition WPE is planning to recognise contributions to innovation at the SESAR internal meeting held at the annual ATM industry event in February 2013.

Budget 2013	Commitment	Payment
Chapter 3.1	<i>In 2012</i>	0.1

#### d) EC Coordination (Framework programme)

The SJU has established regular coordination with both DG MOVE and DG RTD and maintains a list of active and new framework projects relevant to SESAR in order to optimise overall research efforts.

Coordination between the projects funded by the Framework Programme for Research and Development, identified as relevant to the Programme, and projects in SESAR has taken place to ensure the SJU is '*coordinating and concentrating all European Union's relevant research and development efforts in ATM*'.

During 2013 the SJU will continue to offer independent support to the European Commission to ensure that proposals do not duplicate what is already scoped and funded in the SESAR work programme as well as linking to peripheral Framework Projects that have a close interdependency with ATM and therefore complement the objectives of ATM, aviation and air transport as a whole.

## 4.6 Military

Initiated in 2011, the Military Engagement Plan for SESAR (MEPS) has today a contribution of 96 military experts (10 % pilots, 20% air defence experts, 30% ATM experts, 40% engineers) from eight countries (DE, UK, FR, ES, BE, SW, PT and NL), channelled to the SJU through Eurocontrol.

Since April 2011, the European Defence Agency has been acting as focal point ensuring a larger contribution by States in order to achieve participation of national military authorities in all the relevant aspects of the Programme.

Henceforth EDA provides its expertise and/or organizes the necessary technical information fora where relevant results are presented and discussed with the wider defence community, including NATO. In particular, EDA ensures the appropriate information and collaboration of the defence community, including NATO, in specific areas such as:

- Defence Investment and procurement
- Planning for relevant military evolution
- Risk mitigation actions on the military implementation of SESAR

More specifically, EDA will have to support the inclusion of the military costs (step 1 and broad figures for steps 2/3) to contribute to the review of the Business View of the European ATM Master Plan 2012.

In the spirit of the "SESAR Military Avionics Study" conducted in 2012 by a consortium between ISDEFE and AIRBUS Military, it is expected that in 2013 the SJU launches a call for tender in order to make an inventory of existing military state of the art technologies, in particular for ground equipment, and their respective performance capabilities to fit in

SESAR Concept of operations and to provide a clear link with the Mission Trajectory concept. This study will in particular highlight how to ensure interoperability between Business Trajectory and Mission Trajectory, in order to reduce implementation cost for SESAR and for the overall benefit of European ATM Network.

Budget 2013	Commitment	Payment
Chapter 3.1	0.2	0.2

## 4.7 Professional Staff Associations

The framework Contract between the SJU and the Professional Staff Associations of IFATSEA, IFATCA, ATCEUC, ECA and the ETF is a contract procured by Eurocontrol on behalf of the SJU. The participation across the SESAR Programme has increased during 2012 and there is a greater interest to participate as the Programme evolves and delivers results. The operational expertise brought in by the Staff Association experts and buy-in is crucial for validating new procedures and/or technical and system solutions applicability.

It is expected that the International validation Team, which was set up in 2011 and currently comprises 65 members, will again participate in the 2013 R3 validation activities.

The trials for 2012 are coming to a close and further planning for staff presence in the validation exercises of Release 3 is being finalised. It is expected that the involvement of experts in Release 3 will be an estimated 200 man-days. The SJU also expects to organise in 2013 a SESAR Symposium for staff to raise awareness and start the change management process.

Given the evolution of the programme, the increasing interest of staff to be associated to SESAR work packages, the international validation team and the incumbent coordination between the Staff associations, an increase of the annual envelope per association is foreseen. The current contracts are under revision and their renewal is expected between end 2012 - beginning 2013.

Budget 2013	Commitment	Payment
Chapter 3.1	0.8	0.8

## 4.8 Aviation Authorities

The MoUs with the Authorities expire at the end of 2012. Thus, in order to ensure the continuous participation of National Aviation Authorities for the whole development phase of SESAR, the SJU has issued in June 2012 a call for expression of interest for the provision of Civil and Military Authority expertise, following the lines of the previous call. The new MoUs resulting from this call will be in operation from January 2013 to December 2016.

During 2013 the National Authorities will be required to review a number of deliverables and will participate in at least 10 Release 3 validation exercises of for which their view is considered valuable.

The SJU intention is to involve the authorities in the review of “packages” which will be the basis for handover from R&D to implementation.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	0.2	0.2

## 4.9 SESAR Performance Partnership (SPP)

During 2013 it is expected that approximately 3-4 meetings will take place. The primary focus of the SESAR Performance Partnership activities in 2013 will be related to the engagement of users of the systems in the hand-over process between R&D and implementation. In particular, it is expected that the SPP will act as a sounding board for the assessment of business cases, in particular in the framework of the ATM Master Plan business case update, and the Pilot Common Projects.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	0.1	0.1

## 4.10 Coordination with FABs

Many deliverables of the SESAR work programme relate directly to the performance of future organisation and operations as required under the SES legislation for FABs. The SJU has, through its ANSP Members, an established link to the FAB´ needs from SESAR, and tries to ensure appropriate coordination and complementarity between FAB work and SESAR.

It is the intention of the SJU to strengthen the link with FABs, in the perspective that their work moves forward from institutional and airspace design aspects to new operational procedures supported by new tools and technologies. It is in particular proposed to have specific demonstration activities targeted at FABs.

# 5. Coordination with other Programmes and Organisations

## 5.1 FAA/NextGen

The EU/USA Memorandum of Cooperation (MoC) in civil aviation research and development and its Annex 1 on SESAR-NextGen cooperation signed in March 2011 includes 5 headline areas of cooperation:

- Transversal Activities,
- Information Management,
- Trajectory Management
- CNS & Airborne Interoperability,
- Collaborative Projects.

Working Groups involving SJU members have been established for each of the cooperation areas with a focus on identifying R&D issues to develop interoperable operational or technical systems enablers.

During 2013, the work will focus on agreeing and evaluating concrete deliverables of the cooperative work. The outcome of the AN-Conference 2012 will be an important output for

the work and will constitute the framework for increased priorities in areas which are considered as essential at a worldwide level.

New areas of cooperation may therefore be created, as well as others could be put in sleeping mode.

Budget 2013	Commitment	Payment
Chapter 3.1 - EUR Mio	<i>See Programme Financials</i>	<i>See Programme Financials</i>

## 5.2 Clean Sky

Clean Sky includes within its scope two aspects of key interest for SESAR: the airborne flight management and trajectory aspect as well as environmental modelling to demonstrate what improvement is expected from the CleanSky technology developments. SESAR, with AIRE, has a complementary environmental programme of work and develops environmental modelling in Work Package 16 as well as Airborne trajectory management and communications improvements in Work Packages 9 and 15.

During 2012 meetings between the SJU and CleanSky were held at the management and Technology Evaluator (Work package 16) level. The main management task was to organise an independent technical review of the work being performed by Thales Avionics Systems (TAS) on both Cleansky and SESAR to ensure an effective and transparent allocation of work and funding. This review made a number of recommendations that will be followed up in 2013 looking at ways of more closely linking some of the FMS developments across the two programmes.

On the Cleansky Technology Evaluator and SJU Work Package 16 coordination there have been a number of activities, including

- alignment of modelling assumptions,
- common understanding target terminology, and
- methods of establishing consistent environmental claims.

During 2013, the objective is to maintain a clear and consistent approach to describing environmental improvements across the two Programmes. Furthermore, the SJU, including the common Members will remain ready to exchange relevant information to ensure that development of enhanced flight management capability do not contradict in any way and where possible complement each other.

## 5.3 EUROCAE

The SJU has already established a major involvement in the European industry standardisation body (EUROCAE) through its involvement in the governing Council and its support to the technical working groups from many of the SJU Projects and Members.

In March 2012, EUROCAE and the SJU established a formal Memorandum of Cooperation (MoC) to formalise the links between the programme and the necessary standardisation activities.

Currently, SESAR projects are involved in 10 of the 28 Working Groups of EUROCAE and this activity is expected to continue in 2013. The execution of the MoC during 2013 will also

allow a better alignment between SESAR Standardization Roadmap and EUROCAE Technical Work Program.

## 5.4 ICAO

At the ANC/12 conference, the SESAR contribution into the ICAO Global Plan and its associated Aviation System Block Upgrade modules was considered substantial and key input for the future ATM. As a consequence of this, certain SESAR programme topics need to be addressed for successful programme outcome of globally interoperable and standardised enablers, especially where these will need new or amended ICAO provisions.

SJU will, in its continuous deliberations, take this into account, and on a case by case basis suggest the best means of interaction with the ICAO working arrangements.

The SJU have identified key areas where standards and ICAO provisions are needed to support the SESAR Development and Deployment phases. These areas have been coordinated with the FAA under the EU-US SESAR-NextGen Coordination Plans and will be further worked on with the aim of having SESAR and NextGen coordinated positions in the work to be done post ANC/12. It is therefore necessary to make sure that there are clear links between the ATM Master Plan with its roadmaps, the EU-US SESAR-NextGen MoC CP's and the framework agreement between SJU and EUROCAE.

## 5.5 EASA

During 2012, the tripartite Letter of Agreement between the SJU, EASA and Eurocontrol which was signed the year before, has been put into full operation. By the end of 2012, EASA will be issuing recommendations to the SJU resulting from the review of up to seven deliverables.

An additional task that the SJU and EASA have initiated during the second half of 2012 is the alignment of the SESAR Regulatory and Standardization Roadmaps and associated documentation, with the EASA Rulemaking Plan, in order to provide a consistent contribution to the EC for the elaboration of the SES Roadmap. The updated version of these Regulatory and Standardization Roadmaps will be issued in March 2013. In this regard, the SJU became a member of the ATM/Aerodrome Thematic Advisory Group of EASA in 2012.

## 5.6 ESA

In the context of the SESAR Programme, in particular some of the Work Package 15 Projects (SatCom datalink) and the previous OPTMI and SAT-OPTIMI initiatives, there are technical (requirements and solution development), financial (operating costs estimation) and organisational (respective mandate) reasons to maintain a strong on-going relationship with the European Space Agency (ESA).

The SJU and ESA, through the IRIS programme, have already established a productive working arrangement where ESA staff actively participates in SJU Projects relevant to them, and SJU staff and Project participants meet to exchange relevant information. The SJU also participate directly to the Joint Iris Advisory Committee. These activities will continue in

2013 with a particular focus on the technical due-diligence of the Inmarsat commercial precursor option to support i4D and the technical options of extending this capability to meet full 4D needs or launching development of the Antares (bespoke) option.

## 5.7 External relations

The SJU continues to work on international relations in the context of the EU external aviation policy framework (see as an example the recently signed MoC with Singapore). At the initiative of the EC, the SJU will participate in specific activities or workshops in order to advertise and communicate worldwide the great achievements of the SESAR partnership.

Particular importance will be given, like in past years, to Eurocontrol non EU countries, in order to ensure an appropriate level of engagement from these countries.

## 5.8 Resources for studies and developments in support or complementary to the Programme

All the activities described in sections from 3.2 to 5.7 will be performed both through the use of internal resources and the acquisition of external support and expertise. The table below summarises the budgeted commitment and payment appropriations.

	Commitment Appropriations	Commitment Appropriations	Payment Appropriations
EUR Million	Budget 2012	Budget 2013	
Airport Expertise (ACI)		0,3	0,3
Airspace Users (*)	1,0	4,2	4,2
Associates of the SJU	-	3,0	1,5
Demonstration Activities (call 2012)	10,0		4,5
Demonstration Activities (call 2013)		10,0	0,0
Independent Experts	0,4	0,3	0,3
Industrial Support	-	1,6	10,0
NSA Advisory Group	-	0,2	0,2
Programme Support (Audit, Legal, Programme)	2,0	1,7	1,9
Scientific Committee	0,1		0,1
ATMPP Strategic Performance Partnership	0,1	0,1	0,1
Security Study	1,0		0,0
Ad hoc studies in complement to the core working programme	-	1,0	1,3
WP11 (*)	3,7	1,5	1,5
WPE (*)	5,1	4,9	4,9
Military and Professional Staff Associations (*)	0,5	1,0	1,0
<b>Total<sup>10</sup></b>	<b>23,9</b>	<b>29,8</b>	<b>31,8</b>

<sup>10</sup> Please note that the Industrial Support and WP11 activities are part of the Programme activities described in Section 3. With regard to the ACI and Programme Support contracts these are managed through framework contracts in place for the last few years. Expert contracts are made to answer specific operational needs.

## 6. Communication plan

The success of the SJU and the achievement of the SESAR Programme results depend from a proper communication of the correct messages to the staff involved in the Programme, to the SJU stakeholders and to the Air Transport community and the general public as well. Furthermore, the SJU will pay particular attention to raise political awareness on SESAR in strict collaboration with the European Commission, in particular, and its Members.

The “*Communication Plan SESAR JU*” encompasses and synchronises all the activities aiming at satisfying the above mentioned needs. Based on the lessons learnt in previous years, the Communication activities for the 2013 will strengthen the first results of awareness and proactive information attitude achieved so far. In 2013, different actions detailed in the Communication Plan will be performed:

- Joint communication activities with the SESAR Members & Associate Partners;
- Intense internal communication to the 2.500 SESAR dedicated staff;
- Strong presence at the World ATM Congress in Madrid with several conferences and workshops to inform the audiences on the SESAR WP progresses;
- Regular on-line communication + internal & external newsletters;
- Enriching databases to reach new air transport stakeholders;
- Selective participation at major conferences on ATM & Air Transport;
- Updated communication tools such as website, brochures, videos, etc
- Communication actions towards passengers at airports;
- Elaboration of communication packs on R&D achievements and handover to implementation.

Budget 2013	Commitment	Payment
Chapter 2.3 - EUR Mio	0.3	0.3

## 7. Administration & Finance

### 7.1 Ensure efficient support to the Programme implementation

The Directorate of Administration & Finance will continue to support the Programme implementation by ensuring the timely availability of the necessary resources, human and financial, and by providing the necessary internal control aiming at the respect of the principle of sound financial management and the legality of the underlying transactions.

It will support in particular the execution of the contracts with “*Associate Partners of the SJU*” and of “*Demonstration Activities*” as well as the organisation of a possible IBAFO III, and will ensure the amendment of the MFA as necessary to provide an effective legal framework to the execution of the Programme.

### 7.2 On time assessment of Contractual Deliverables and Project’s Interim Report

By the end of 2012 the SJU will have pre financed almost all the Programme projects with an overall disbursement of about EUR 117 million since 2009, and few pre-financing are expected to be granted in 2013 for an amount of EUR 3.4 million.

SJU Members will provide the Interim Financial Statements in April 2013, including eligible costs incurred by the Members during 2012; internal procedures ensure that the operational and financial requirements are satisfied in respect of the acceptance of contractual deliverables.

According to the provision of the MFA, the projects co-financing is granted to the Members on the basis of the Certified Interim Financial Statements referring to the incurred costs related to accepted deliverables and work in progress. In this respect and on the basis of the Certified Interim Financial Statements, the SJU estimates to disburse by the end 2013 EUR 80.4 million to the Members as co-financing, and plans to disburse EUR 62.7 million in 2013 which brings the total co-financing since 2010 up to EUR 188.7 million.

The deliverables acceptance and the payment authorisation processes are defined in the Financial Circuits ensuring full compliance with the terms of the Financial Rules necessary to receive financing from the European Union budget. The experience of the last years suggests that particular attention should be given by the Members on the timely and complete submission of the necessary documentation, whereas the SJU will make available the necessary resources to absorb the work peak.

Financial Initiation and Verification functions are performed respecting the four eyes principle with a clear separation of responsibilities. The process is supported by the use of the ABAC system. The delegation of authority for budget implementation and the assignment of Initiating and Verifying functions to staff ensure the necessary resources to implement the processes providing adequate segregation of functions and accountability of the actors involved.

### 7.3 Ensure effective implementation of ICS and risk management

The Administrative Board has approved in 2010 the SJU's Internal Control Standards for effective management derived from the communication of the European Commission "*Revision of the Internal Control Standards and Underlying Framework Strengthening Control Effectiveness*" SEC (2007) 1341. This provides the SJU's management and staff with a clear set of standards to comply with in performing their activity. Since then the SJU management and staff are effectively implementing them by developing and applying internal control processes and procedures including a periodical follow up of the risk exposure both at operational and administrative and financial levels. During 2013 the internal exercise will continue to assess the level of compliance with ICS and identify areas for improvements.

Building on the results achieved and on the findings of the 2012 Risk Report, the SJU will further progress in 2013 with the Risk management system. This is in line with the requirements of the European Commission concerning risk management contained in the Communication SEC (2005) 1327.

## 7.4 Project Audits' assurance

The Project Audit Sector, supports the Members to achieve the overarching result of maximising the benefit of the resources available for the Programme by raising awareness of best practice, guiding in the better implementation of the SJU Rules, MA, MFA and contributing to the proper, economic, efficient use of the resources.

In strict cooperation with operational functions, the Projects Auditors are responsible for checking the compliance with the principle of sound financial management and in particular to assess deliverables' value for money. In line with the Ex-Post Project Audit Strategy, approved by the ADB in December 2010 and the Project Audit Annual Plan, 10 audits have been performed in 2012 concerning 5 members.

The 2013 Project Audit Annual Plan will be established and submitted for approval to the Executive Director by the end of 2012, so that some of the audits can be already finalised at the beginning of 2013 as requested by the ECA. Following the agreed methodology, additional members will be selected and audited.

The Plan will contain the project audits to be performed

- At least 5 Members and 2 Service Contracts determined either through a statistical approach or on a risk based approach;
- Additional audits (value for money or other) as required by the SJU management taking into consideration different relevant elements.

Resources will be provided both by Contractor within the terms of a contractual agreement signed in 2010 and by the SJU Project audit team.

## 8. Internal Audit and audit co-ordination

Following Administrative Board Decisions taken in 2010<sup>11</sup> the European Commission's internal auditor (IAS) undertakes the overall responsibility of being the SJU Internal Auditor. An Internal Audit Capability (IAC) has been established under the authority of the Executive Director to undertake audits planned in co-ordination with the Internal Audit Service of the European Commission.

### 8.1 Internal Audit Work Programme 2012-2014

The Administrative Board adopted the Coordinated IAS-IAC Strategic Audit Plan for the three year period 2012-2014 at its 19<sup>th</sup> meeting on 17 November 2011. The plan has been established on the basis of an updated analysis of risks faced by the SJU in co-ordination with SJU management and Internal Audit Capability. The outcome of the updated risk analysis highlighted areas requiring further management action to upgrade aspects of the SJU Internal Control System to meet the expectations of an EU body charged with the management of a Public Private Partnership R&D programme.

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<sup>11</sup> ADB(D) 11-2010, dated 19.10.2010. ADB(D) 17-2010, dated 31.12.2010.

## 8.2 Co-ordination and oversight of public audit functions

The SJU Permanent Audit Panel established by the Administrative Board in 2008<sup>12</sup> co-ordinates the activities of the audit and control functions of the SJU's Founding Members and advises the Administrative Board on audit related matters. The SJU IAC also participates in the Auditnet for Agencies established by the IAS to share tools and methodology, and to co-ordinate the work of IACs in implementing the Coordinated IAS Strategic Plan.

## 8.3 Resources

The SJU has recruited one full-time internal auditor in 2012 to fulfil the IAC function undertaken by an auditor seconded from Eurocontrol for the period 2009-2011. The IAS, being the Internal Auditor for the SJU, provides audit tools and guidance on methodology through its Audinet for Agencies. The costs of the internal auditors from the IAS are borne by the General Budget of the European Union and not the SJU.

Therefore resource requirements in 2013 are expected to be maintained at the level of previous years.

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<sup>12</sup> ADB(D) 01-2008, dated 21.02.2008.

## 9. Glossary

4 D	4 Dimensions
ABAC	Accrual Based Accounting
ACAS	Airborne Collision Avoidance System
A-CCD	Advanced Continuous Climb Departure
A-CDA	Advanced Continuous Descent Approach
ADS-B	Automatic Dependence Surveillance-Broadcast
ADS-C	Automatic Dependence Surveillance-Contract
AeroMacs	Aeronautical Mobile Airport Communications System
AFUA/ASM	Advanced Flexible Use Airspace/Airspace Management
AMAN	Arrival Manager
ASPA	Airborne Spacing
ATM	Air Traffic Management
ATSA ITP	Air Traffic Situation Awareness- In-Trail Procedure
AU	Civil airspace users
CCD	Continuous Climb Departure
CDA	Continuous Descent Approach
CDM	Collaborative Decision Making
CNS	Communication, Navigation, Surveillance
CTA	Controlled Time Arrival
DCB	Demand and Capacity Balancing
DCMAC Euroc.	Directorate Civil Military ATM Coordination
DMAN	Departure Manager
GBAS	Ground Based Augmentation System
GNSS	Global Navigation Satellite System
I 4D	Initial 4 Dimensions
CWP	Controller Working Position
IOP	Inter Operability
LVP	Low Visibility Procedure
MSP	Multi Sector Planning
NOP	Network Operation Plan
OAT	Operational Air Traffic
P-RNAV	Precision Area Navigation
RNP	Required Navigation Performance
RTS	Real Time Simulation
S&M	Sequencing & Merging
SBT/RBT	Shared Business Trajectory/Reference Business Trajectory
STCA	Short Term Conflict Alert
SWIM	System Wide Information Management
TMA	Terminal Manoeuvring Area
UDPP	User Driven Prioritisation Process

10. Annex I - Projects in Execution Phase - 2013 planned delivery
11. Annex II - Programme Financials
12. Annex III - Risk Management overview
13. Annex IV - Staff Plan
14. Annex V - OIs Definition
15. Annex VI - Budget 2013