COMPLEMENTARY INFORMATION ON THE PROPOSED CONTENT OF A PILOT COMMON PROJECT

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Edition 1.0

1 BENEFITS

For the elaboration of the separate CBAs and specifically the impact assessment of every ATM functionality, the PCP Steering Group requested support from the SJU SWPB.05 “Performance Analysis of ATM Target Concept” that is responsible for the evaluation of the expected ATM System performance based on validation results and Master planning information.

Through dedicated webex and meetings with the Experts Groups during January and February 2013, B.05 supported the initial estimations of AFs benefits based on expertise and the preliminary Step 1 Performance Assessment results (B.05 work that is available in the SJU deliverable D66 Initial Performance Assessment Step 1 based on Expectations, approved by SJU and submitted on 1 February 2013).

SWPB.05 support for the Initial “ATM Functionalities” Performance Estimations was done through the benefit estimations of Operational Improvement Steps (OIs) in PCP scope as SWPB.05 assessment is OFA based whilst PCP assessment is AF based. The links between these two groupings are the shared OIs.

This assessment was later refined by the Expert Groups to further reduce uncertainty. Finally, it must be recalled that the various assumptions used for the CBA lead to conservative figures in terms of benefits, and more generally to CBA results which remain on the safe side when being used for subsequent decision making.

1.1 The starting point: SWPB.05 reference material

D66 Initial Performance Assessment Step 1 based on Expectations presents the preliminary Step 1 performance assessment results undertaken by SWPB.05 within the SESAR programme.

These results were gathered and consolidated through a process of consultation and discussion with OFAs (Operational Focus Areas) in the form of face-to-face workshops, meetings and other exchanges. Following the workshops B.05 analysed and aggregated the data to obtain results at ECAC level or at a level relevant for each KPA (Key Performance Area).

For this assessment B.05 used the following KPAs and KPIs (Key Performance Indicators) previously agreed between B.05 and the SESAR programme, and as developed by the Performance Framework of B04.01:

- **Fuel Efficiency:** percentage reduction in fuel burn. The aggregation provides an overall estimation of the benefit ECAC-wide.
- **Airspace Capacity:** percentage of additional airspace throughput. This is considered as a capacity increase at already constrained or at-limit volumes of airspace and hence the aggregation is at this local level. Additionally, airspace capacity is considered separately for TMA (Terminal Manoeuvring Area) and en route airspace.
- **Airport Capacity:** percentage increase in additional runway throughput at already BIC (Best in Class) airports.
- **Predictability:** reduction in variability of block to block flight execution time compared to pre off block flight plan. This is initially assessed as a variance across each flight phase, with a final aggregation to a standard deviation value. This assessment focuses on ATM-related predictability and hence the turnaround process is not included in the measurement of the KPI.

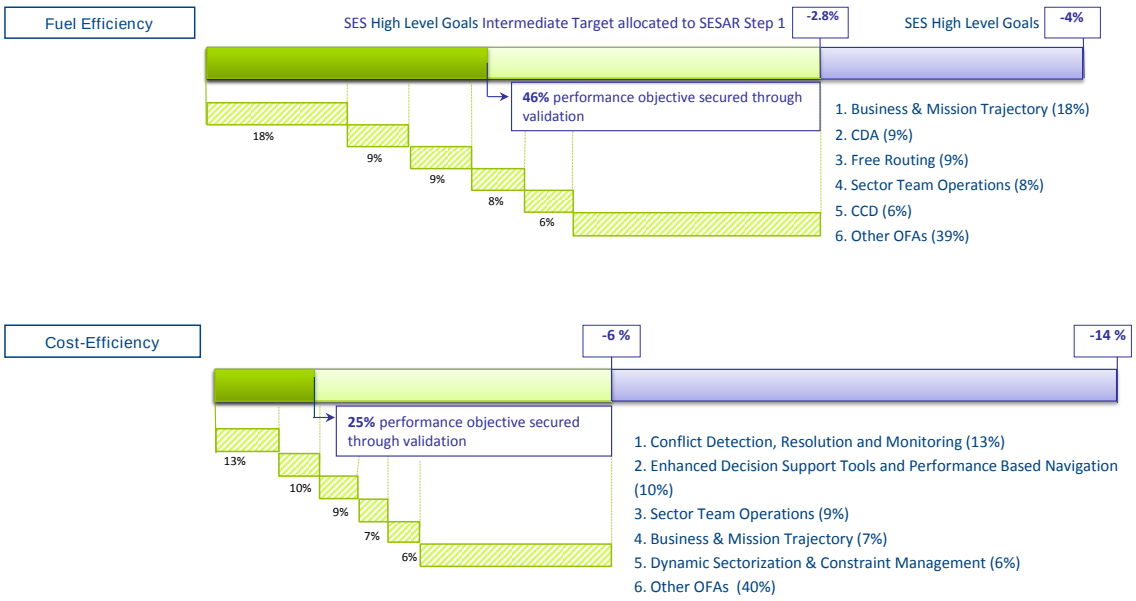
- **Cost Effectiveness:** reduction in the cost of ANS provision at ECAC level through improved ATCO in operations productivity[1].

The preliminary performance assessment focussed on the benefits that can be achieved for Step 1, which are in addition to the benefits of the Deployment Baseline[2]. Therefore, the assessment assumes that the benefits targeted for the Deployment Baseline are achieved.

This assessment provided an indication of the work being undertaken by the projects (at OFA level) to contribute to achieving the SESAR performance targets. Due to the various project development status, the data used for the assessment had varying levels of confidence. In some OFAs the assessment was made on the basis of recent exercise results, whilst in others the assessment was more based on the project team's expert judgements, in some cases exploiting results of programmes prior to SESAR.

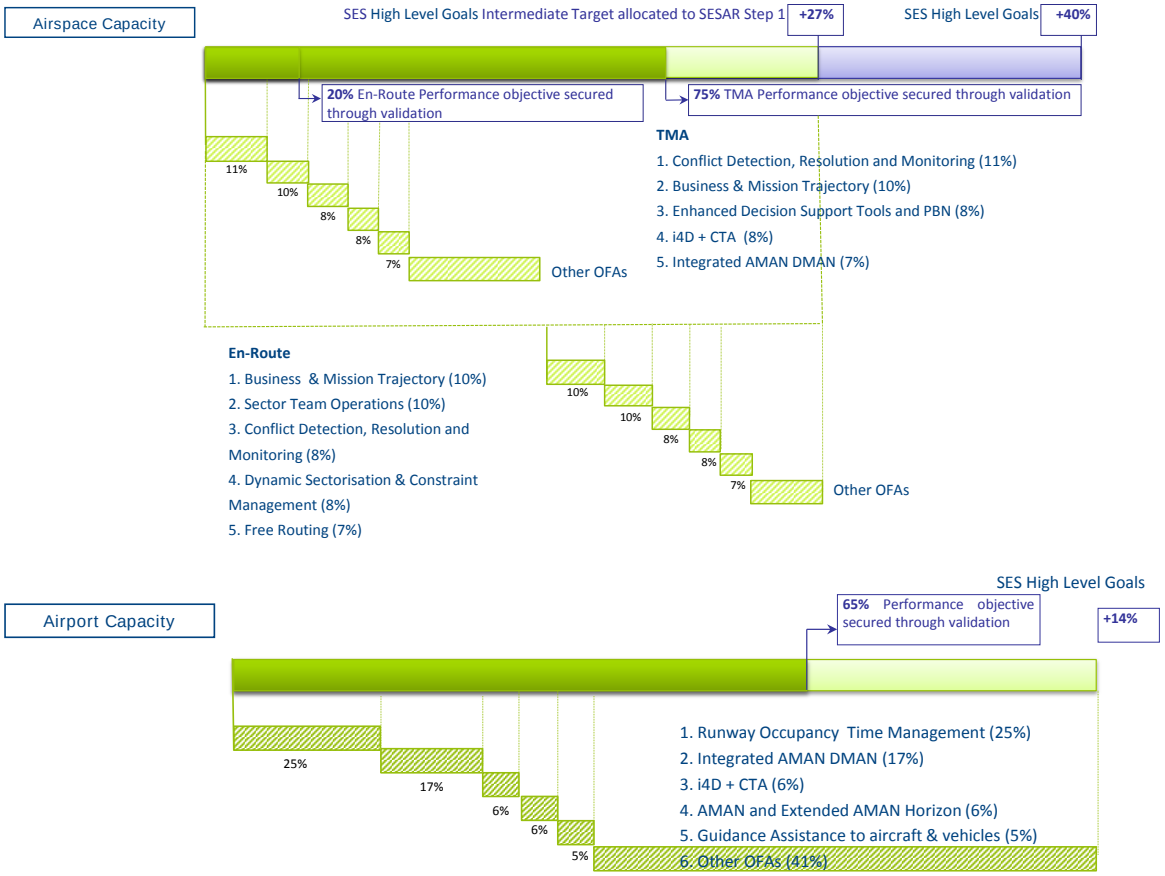
The assessments are OFA and Step 1 based.

The illustration below shows an illustration of % achieved through validation results in early 2013 per Key Performance Indicator.



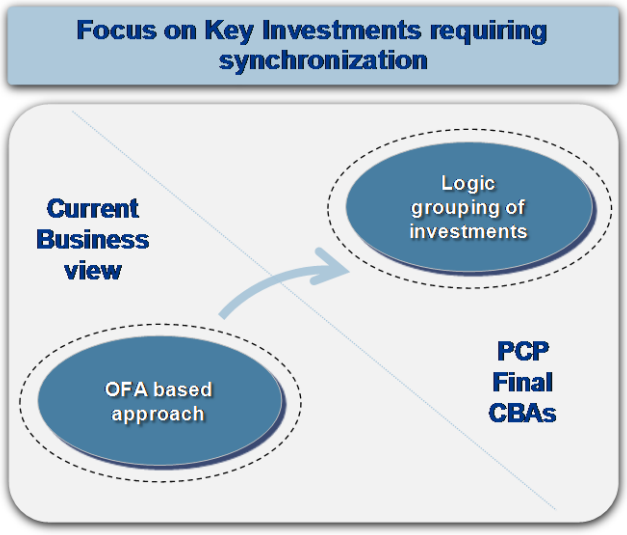
[1] ATCO costs account for approximately 27% of the overall ANS provision cost. Source : PRR 2011.

[2] The Deployment Baseline was previously known as IP1.



1.2 Initial "ATM Functionalities" Performance Estimations

PCP Methodology to elaborate CBAs aims at assessing costs and benefits focused on ATM Functionalities (logical groupings key Investments to be made by the stakeholders) rather than OFA groupings which are relevant for R&D primarily. And SWPB.05 assessments are OFA and Step 1 based.



In order to bridge the gap to support the estimations of benefits for each KPA to be considered in the PCP, the following steps were followed:

1. **OFA benefit allocation to PCP Operational Improvements Steps (OIs):** For each OFA in PCP scope, SWPB.05 provided the percentage of benefit for each KPA to be considered for the PCP OIs (based on D66 results and expertise).
2. **Through webex and workshops with Expert Groups, these results were refined.**
3. **OIs benefit allocation to PCP ATM Functionalities:** For each OIs in PCP scope, PCP Expert Groups provided the percentage of benefit of every OIs by considering the PCP enablers to be deployed for each OIs (this is out of scope of SWB.05 participation).

1.3 Finalization by the Expert Groups

On the basis of the initial allocation performed, Expert Groups refined the performance estimations in areas where the confidence was estimated to be “low” or “medium” always indicating the rationale for refinement. The final outcomes which in turn were used for the PCP are presented in Annex C Table 28.

The main areas for refinement were the following:

- Estimation of delay reduction related gains
- SWIM related ATCO productivity gains
- Free Route related fuel efficiency gains
- Confirmation of ATCO productivity gains and translation into ANS productivity gains

Note: updated SWPB.05 reference material taking into account actual validation results from Release 1 and 2 and mapped against the final changes included in the PCP is expected to be available at year end 2013. By then it will be possible to have a more accurate picture in terms of PCP estimations and Release outcomes.

2 VALIDATION PROGRESS AND PLANS

2.1 Validation progress and plans

In the attached file below you will find SJU restricted information on the details of the validation progress grouped per ATM Functionality that was presented to the Programme Committee in June.

Note: where maturity issues have been identified (amber colouring) mitigations actions (e.g. as part of the re-allocation process or BAFO3) have already been agreed to resolve the issue at Programme Committee level.

PCP Content
Expected Delivery v3

2.2 Scenario where the least mature changes are removed from the scope of the PCP

As presented in our previous meeting, the least mature AFs in relative terms are AF3, 5 and 6. Removing them from the scope of the PCP would have the following consequences compared with the initial objectives outlined for drafting the PCP proposal:

- Contribution to performance:
  - The overall CBA would be significantly impacted with a reduction of approximately 50% of the overall monetized performance gains (ANS Productivity gains and Fuel efficiency particularly impacted).
  - It must be noted that the overall technology investment level would be severely impacted with the resulting reduction of investments equivalent to approximately 1,8 EUR billion (or circa a reduction of 50% of investment volumes in new technologies in Europe). This would mean a significant reduction compared to ANSPs' current investment capacity if both capex and opex are strictly controlled in the next reference period. However the maturity risk related to some AFs has to be properly balanced with the risk of investments still being made but outside of SESAR technology.
- Need for synchronization and going "beyond business as usual":
  - AF3 and AF5 also have a strong technical interdependency. AF3 contains the main justification for ANSPs ground investments (Flight Data Processing system upgrades and related system interoperability). Without this AF, the change introduced by the PCP would not push ANSPs beyond "business as usual" resulting from the introduction of automated mechanisms to facilitate flight optimisation across FIR boundaries. It is also worth noting that these changes are already in the business plans of most of the ANSPs today, however they are unlikely to deliver significant performance benefits if not tight to technical scope defined in AF3 and 5.

- AF6 builds on the investments already mandated with regards to Datalink and prepares the next steps of i4D which are expected to be covered in the next Common Project. It is the only ATM functionality which requires a strong need for air/ground and ground/ground synchronization. Without this investment in particular on the ground (recalling that for the airspace users the PCP targets only the achievement of a critical mass) ATM stakeholders will not be able to identify discrepancies between air and ground vision of the aircraft path which is at the heart of the essential changes identified in the ATM Master Plan for Step 1 (IOC date 2018). The PCP specifies that ground system modifications should be fully implemented in Europe by 2024. The FAA's most recent roadmap outlines promotes the equivalent ground system implementation by 2021/2022. The implementation plans and corresponding standardisation activities are supported by both Airbus and Boeing as recently expressed in a joint position paper submitted to the standardisation bodies RTCA and EUROCAE.

Note: in conclusion, we are confident that the actions put in place can mitigate the risks related to achieving the maturity of the full PCP scope in time to allow a timely and synchronized deployment. The reduction of the scope of the PCP as a measure to address the likelihood and severity of this aforementioned risk, which may materialize in the future if not properly monitored, shall be measured against the continuation of significant investments of ANSPs in non-SESAR compliant technologies, with the likelihood that the overall deployment will be severely delayed.

3 PROPOSED OWNERS FOR HIGH PRIORITY RISKS IDENTIFIED

	Risk	ATM Functionality concerned	Proposed mitigation action	Proposed owner
1	Maturity of the solutions identified within PCP will not be fully achieved up to and within the scope of Release 4	All	Top-down approach for the definition of SJU Release 4 & 5 and strict monitoring of the progress of R&I activities.	SJU & its Members
2	Regulatory and standardisation needs are not resolved in time	AF # 1, 2, 5, 6	Monitoring of the standardisation and regulatory roadmaps	EC (Regulation), EUROCAE (Standards)
3	Charges modulation scheme is not set up in time	AF # 6 and possibly AF # 3	Start work as soon as possible to address the scoping, drafting, legal and technical aspects	EC
4	The high level definition of how the AFs will be deployed is not able to take account of specific constraints that come from the different local implementation baselines. This may impact on the detailed deployment and transition planning.	All	The Deployment Manger will need to carry out a deep analysis of the local baseline architecture and address any issues that arise due to the implementation of the new functionalities, in particular any transition issues.	Deployment Manager
5	Interoperability and global harmonisation will not be ensured	AF # 5 and # 6	Further examine solutions to ensure that the iSWIM concept and associated optimised deployment scenario is broadly adopted within the context of the supplement to the mandate. Further determine the needs and level of	EC & SJU

			interoperability related standards or ICAO provisions in the frame of European coordination of aligning the MP with the ICAO ASBU evolution as well as under the coordination activities of the EU-US MoC SESAR/NextGen with the FAA. Particular attention must be paid on the definition and timeframe of the ATN B2 (in relation to AF # 6) and on the definition of the FIXM (in relation to AF#5)	
6	Delays are experienced in the implementation of those Deployment Baseline elements identified as essential pre-requisites for the PCP	AF # 1, 2, 4, 6	Consider including in the scope of responsibility of the Deployment Manager (Deployment Programme) these essential pre-requisites Consider earmarking public funding to de-risk potential delays in implementation due to the economic crisis and business model specificities. Initiate level 2 and 3 procurement activities as soon as possible.	EC & Deployment Manager
7	Airspace User investments to reach initial critical mass of aircraft equipped not ensured	AF # 6	Ensure that conditions for successful deployment are implemented in time. Consider Implementing Rule ensure the timely implementation of ground related investments.	Deployment Manager

8	Governance and funding is not implemented in time to ensure successful deployment	All	Consider launching the procurement activities related to Level 2 and 3 of SESAR deployment governance as early as possible. Launch new cycle of Demonstration Activities focusing on PCP content in 2013/early 2014.	EC
9	Failure to manage Human Performance (Human Factors, Competency and Change Management) issues in the implementation phase	All	Deployment Manager to examine social dialogue implications of all deployment activities for all groups of operational aviation staff. Deployment Manager to ensure appropriate coordination between all stakeholders concerned to ensure consistency between initiatives related to Human Factors, Competency and Social Dialogue.	Deployment Manager