

WEBINAR: UNPACKING THE SESAR PERFORMANCE FRAMEWORK

Questions and Answers



24 March 2022

Playback webinar and access presentations: <https://www.sesarju.eu/node/4063>

Question	Answer
Will the public acceptance be included as a KPA in particular for U-space/Urban Air Mobility?	<i>Yes, social acceptance will be included in the Environment KPA with special focus on noise and visual impact for the society.</i>
PBA - performance based approach - provides ATM behaviour measured at Network Level, but in my opinion, misses the low-level perspective of the performance perceived by users. Is SESAR 3 JU planning to fill the Gap in between PBA vs performance perceived by users?	<i>The current Performance Framework does not contain any section on AU-perceived performance, being the most related area Access and Equity. It would be interesting to explore this complementary view and might be an area of interest in SESAR 3 JU evolution of Performance Framework. Thanks a lot for proposing it: we will definitively consider it a candidate feature.</i>
How well or to what extent are the ATM simulation models generalizable in real-world systems? What is the confidence we usually have in these simulation results in terms of representing reality?	<i>It depends on the modelling effort at project/solution level but in general, models including a single concept have demonstrated good accuracy when compared to later Real-Time simulations / live trials. The accuracy when different independent models interact to simulate a multi-solution environment is generally lower and some caveats needs to be usually considered.</i>

<p>How is accountability for a certain KPI ensured also for successful delivery of the promised results at the beginning of your activities in SJU? It should be avoided 1 organization promises something and the accountability for the delivery is followed somewhere different...</p>	<p><i>There is no "promise" of results from any solution, as it would be unrealistic. Initial qualitative estimations of results, when provided, are not used to rank solutions in any way. When there are some initial estimations of benefits, they are considered in the definition of initial reference (the so-called Validation Targets/Performance Estimations), certainly influenced although not necessarily directly translated from them. These initial estimations will be checked with the final results in the Gap Analysis section of PAGAR, which is not just at program level but also at solution level. For now, no cases of projects/solutions unrealistically "promising the moon" (thereby huge gaps) have been identified; the trend is usually to be conservative.</i></p>
<p>...How is ensured that the KPI philosophy is applied in a synchronized manner throughout all phases of ATM modernization from R&D to deployment from all affected bodies and organizations (Eurocontrol, SJU, SDM, PRB...) Thx Michael</p>	<p><i>There is no explicit mechanism to ensure or monitor that, although there is coordination between all bodies, transparency on results, and common actors between these organizations (PRB is supported by Eurocontrol which also strongly participates in SJU and SDM, although as explained there different considerations in research domain). On SESAR side, mapping from Performance Framework to the related metrics in other domains is provided. At this point, based on background and experience, it can be said that there is a high level of synchronisation between them.</i></p>
<p>1 kg of saved fuel can only be weighted and measured once. Cost saving only exist once, at the bank account of us airlines...</p>	<p><i>A saving of 1kg per flight is a constant benefit, and that is what is usually assessed (certainly in SESAR). Savings of fuel impact positively in the cost reduction of AUs, also on the passengers, and most important, on the environmental impact, being a constant gain in efficiency.</i></p>
<p>In the slide from Jose "PAGAR – where we are?" Do you intend, also, to "close the loop" with "post analysis" and compare V3 results shown in this slide and real achievement with actual data/results after industrialisation & deployment?</p>	<p><i>It is an intention at Program level to improve the Master Plan reporting, which includes this direction. The difficulty is twofold: gain access to operational data from the different stakeholders, and be able to decouple the benefits from individual improvements, and rather usual a set of benefits is deployed together. There is awareness on these needs and alternative views to address it are being explored.</i></p>

<p>In the future, will the PAGAR distinguish ATM and U-space (e.g. for Capacity)?</p>	<p><i>It is a bit too early to confirm but the plans go in this direction. The definition of a U-Space Performance Framework implies that assessment will be required in SESAR 3 and so their benefits accounted. Thereby, this section is likely to be present, as potentially another on the cross-influence of these domains.</i></p>
<p>If correct, Validation Targets corresponds to improvements compare to a baseline/reference. What will be the baseline/reference for U-space?</p>	<p><i>Excellent question. The next edition of ATM Master Plan may look at extending ambitions into U-Space, thus becoming a similar reference.</i></p>
<p>I am surprised not to see "separation" as an indicator for performance. Is that captured under "capacity"? I will concede that they are related, but they are also different...</p>	<p><i>Separation will be captured under the safety KPA and methodology proposed for the U-space Performance Framework. Nonetheless, both are intrinsically linked so we are attempting to identify the cross-effect between them.</i></p>
<p>Interoperability has been discussed in the performance framework since SESAR 1 but no metrics were ever defined. How are you planning to define and measure interoperability now?</p>	<p><i>Totally agree. Interoperability is a difficult area to propose indicators and the team working on it is having difficulties to derive such indicators. However, U-space projects identified this as one of the main areas of interest in terms of performance for them, so we will provide indicators to help them measure interoperability.</i></p>
<p>Is no change expected for Environment between ATM and U-space?</p>	<p><i>There will be a change in terms of new indicators, but what we wanted to express in the slide is that no increase in environmental impact is foreseen for the U-space.</i></p>
<p>The performance measurements of aviation stakeholders different will vary for each stakeholder? How you will give performance achievement target for each group?</p>	<p><i>Targets are not defined per operational stakeholder in SESAR. Those targets correspond to SES Performance Scheme. In addition, it should be noted that solutions have to pass a set of (maturity) criteria to reach a new maturity stage (v1, v2, v3). Reaching a certain level of performance is not one of these criteria. However, assessing the targeted KPAs is one.</i></p> <p><i>In short: nobody is blamed for "underdelivering" on performance with respect to the initial estimations; however lack of performance assessment may result in failure of the maturity gate</i></p>
<p>In many other research areas (outside aviation) research is publicly predefined. As a result of this, everyone knows that the research is being done. Negative results will not be hidden by not</p>	<p><i>Executive view from PAGAR is public, as most individual Performance Assessment reports from solutions. Transparency in performance reporting is essential, and the Program encourages the presentation of negative findings (The SESAR JU Scientific</i></p>

publishing it. Should this be also done in ATM or Aviation in general?	<i>Committee have made explicit recommendations on this, that are being followed by Solutions).</i>
Does the PAGAR only consider completed V3 / TRL6 solutions?	<i>No, PAGAR focuses on estimation of performance benefits expected by V1/TRL2 to V3/TRL6 operational and technological solutions (industrial research).</i>
How do you plan to match PAGAR with SESAR 3 JU open calls? Will there be special sections related to the PAGAR in the proposal template?	<i>No, there will not be any specific 'PAGAR' related section in the template of SESAR 3 JU calls. However, applicants will be requested to provide their qualitative view on the expected KPAs, which will be impacted by their solution project (e.g. solution project 'X' is expected to have a high level impact on sustainability and a low impact on cost-efficiency).</i>
Does PAGAR actually deliver true ex post facto assessment? Is this coordinated with the SESAR Deployment Manager?	<i>PAGAR makes an educated guess on performance expectations by the year 2035.. Coordination with the SESAR Deployment Manager is in progress.</i>
The performance assessment will be part of the research activity (solution) requirements? The validation and measurement of useful KPIs may involve a research activity itself.	<i>The performance assessment is a mandatory activity in SESAR. Any public funding should be justified with a clear description of the expected contribution to the ATM Master Plan performance ambitions. Through the measurement of expected performance contribution, Solutions will demonstrate their role in providing a more efficient and high performing ATM system.</i>
Please can you explain the difference between a KPI and a benefit mechanism?	<i>A benefit mechanism is a conceptual way to identify an impact in performance area and its driving factors (e.g. en-route capacity will increase by reduction of capacity buffer due to higher predictability). A KPI is the way to quantify this impact (in the example, movements/hour).</i>
Can you provide indications on how to figure out CEF2 enhancement for Airports?	<i>CEF2, ATCO productivity, applies as well to tower environments. Any improvement (e.g. through a reduction of workload) will reflect in CEF2 by the ability to manage more flights in the same amount of time (measured normally in peak hours).</i>
Can you give some examples on particular projects that have resulted in significant improvements and also the opposite?	<i>It would potentially be counterproductive to consider the value of a given solution in terms of direct contribution to performance (being of course important), as some solutions are enablers or catalysts to others. Thus, it is not about which are the</i>

	<i>most contributing individual solutions but which is the most contributing set of solutions, and that is something on which PAGAR throws some light on but also an information considered in the definition of Common Projects for deployment. In any case, PAGAR contains ranks of the top contributors per KPA, including a rationale.</i>
In the PAGAR, how contributions from ATM and technological solutions are consolidated?	<i>Technological solutions are expected to assess performance exactly as any other solution. Normally they will not influence operational KPA except Cost Efficiency. Their links with other solutions are key on the consolidation.</i>
Of course there are no such the system-beneficial projects which indicated substantive improvements (if implemented) because most of them have had the purpose for themselves.	<i>Having an intention or expectation to contribute to one or more KPAs needs to be confirmed by experimental evidence. The v3/TRL6 results displayed in PAGAR are factual. Is important to note that in most cases local benefits have a positive impact at network level, as well.</i>
Indicators developed by each solution may compromise standardisation...	<i>Absolutely. That's why a common Performance Framework is defined and used as a reference</i>
This is some different wording - terms used about performance scope but covering the known things on ATM system - How do these address the preferences of stakeholders involved?	<i>The concept development, including the stakeholder preferences as a multi-objective cost function, are addressed by Solutions. The trade-off between the different KPAs impacted by solutions may vary depending on the concept/operational improvement, which of course may have different modes of operation, each one of them delivering a different balance of performance impacts.</i>
With a new understanding of Network Resiliency with regard to COVID pandemic and Ukraine airspace closure, is SESAR 3 JU going to dedicate projects on tactical resiliency to assure network performance in unpredicted situations?	<i>SESAR 3 JU will open its doors to any projects that will help ATM to improve its performance. Resilience is definitely one of the main KPAs (as already part of the SESAR performance framework) which is expected to play a major role in the future, in particular following the dramatic events occurring in Ukraine.</i>
These things are already well-know for a long time.	<i>Some of them are, some others are application of known techniques to new problems, and some features, particularly in the field of performance consolidation, are innovative. There is not an intention to reinvent the wheel but to provide a performance management process which supports the program. This is</i>

	<p><i>exactly the scope of this webinar - actually to disseminate so all things, old and new, became known by all SESAR participants.</i></p>
<p>The last slide of Riccardo's presentation mentions some percentages of CO2 reductions (during cruise and at landing). Could you elaborate a little more about the solutions leading to these reductions? Thank you very much.</p>	<p><i>The top 5 contributors to Environmental efficiency during SESAR 2020 wave 1 (those reflected on Riccardo slides) are:</i></p> <ul style="list-style-type: none"> <i>-PJ06-01 (Optimised traffic management to enable Free Routing in high and very high complexity environments), saving 15,8 kg of fuel burn per flight</i> <i>-PJ02-01 (Wake turbulence separation optimisation, saving 11,8 kg of fuel burn per flight</i> <i>-PJ02-02 (Enhanced arrival procedures), saving 10,9 kg of fuel burn per flight</i> <i>-PJ.02-08 (Traffic optimisation on single and multiple runway airports), saving 4,9 kg of fuel burn per flight</i> <i>-PJ.02-03 (Minimum-Pair separations based on Required Surveillance Performance), saving 4,1 kg of fuel burn per flight</i> <p><i>Note: Translation to CO2 is direct through a multiplying factor.</i></p>
<p>Has it ever been considered to set investment targets, rather than cost cutting targets? Now the situation is a little bit that ANSPs are required to save cost at the same time they are asked to invest in new technologies that do not provide a ROI.</p>	<p><i>This is a very interesting question, which I am afraid falls under the umbrella of the PRB responsibility :) My personal view is that you should look at the global picture. Some technological innovations might not be remunerative for an individual ANSP but when widely deployed then they might make the difference for the global community. Think of CPDLC. If only one ANSP and a few airlines invest on this technology then this is obviously a loss-loss situation and spending time and financial resources makes no sense for any implementing stakeholder. On the other hand, when all stakeholders invest on this type of technology, then the return on investment can be significant.</i></p>

<p>What about Merging both SES and SESAR programs? Which will be Cost and Resources saving in addition to the decrease of the global Implementation period.</p>	<p><i>The merging of these two programmes might not bring significant cost savings as such given their different nature and scope. However, a close cooperation between the activities developed by these programmes would certainly provide significant benefits in terms of monitoring, reporting, efficient and effective allocation of resources in R&D as well as performance improvements for airspace users and ultimately passengers.</i></p>
<p>Until now very basic things.</p>	<p><i>A follow up webinar is being prepared to present a concrete example on how the SESAR performance methodology should be applied by technological and operational solutions.</i></p> <p><i>The background of the audience in the matter was unknown and thereby a basic starting point was set (which seems to have been appreciated according to the feedback poll). We hope that later contents showed a higher level of complexity.</i></p> <p><i>A follow up webinar is being prepared to present a concrete example on how the SESAR performance methodology should be applied by technological and operational Solutions.</i></p>
<p>Please try to precisely indicate what is innovative compared to already exist about the topic. It seems that SESAR regarding this issue is just turning around about a little of innovative things.</p>	<p><i>If the question is about innovation in the performance methodology applied by SESAR so far, the SESAR 3 JU will also focus (besides the defined KPAs) on new performance areas such as digitalisation and U-Space. Furthermore, new entrants will be given the freedom to provide and measure benefits in any other areas beyond those, which are duly described in the performance framework (e.g. passenger experience).</i></p>
<p>What is the purpose of estimating performances of the system? EUROCONTROL an FAA already have indicators they need for both planning and operational purposes. These are known for a long time.</p>	<p><i>The value of estimating benefits in research phase is to facilitate decisions on deployment, as expressed. The specific indicators are instrumental here, many could play the same role (actually they have evolved through time). Simulation domain implies some constraints as well in considering one or another.</i></p>

<p>How close is the alignment between the SESAR Performance Framework and the Performance Scheme set up by the European Commission and administered by the Performance Review Body?</p>	<p><i>There is a strong link and influence between the two performance frameworks despite the fact that their scope, time reference and actors impacted do not completely match. The future deployment of SESAR Solutions being matured today will certainly have a significant impact on the actual performance measured by the SES performance scheme in the future.</i></p>
<p>Please take care about using terms: "Research activities" are certainly not "solutions".</p>	<p><i>SESAR is a Research & Development programme whose objective is to mature new or improved operational procedures or technologies that aim to contribute to the modernisation of the European and global ATM system. As such, SESAR solutions are the output of transversal activities between R&D projects.</i></p>
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