

## TRAN Hearing 25 May 2011

### Patrick KY, Executive Director, SESAR Joint Undertaking

*Honourable Members of the Parliament, Ladies and Gentlemen,*

It is an honour and a pleasure for me to be here and brief you on the progress made in SESAR.

Last time I updated the TRAN Committee, I explained to you the particular nature of the SESAR programme and of the Joint Undertaking, which is the first public private partnership ever constructed in this field.

(SLIDE 1: partners + associated partners)

We have since extended the partnership to 13 additional industrial partners, with two particular goals in mind:

- 1) To extend our basis of Air Navigation Service Providers, in particular towards the central part of Europe, but also with countries which have strong operational connections with Europe, such as Canada, which is the neighbour of the EU over North Atlantic and Morocco.
- 2) To have more non EU industry, in order to guarantee that SESAR technologies will be interoperable with other regions of the world. The idea there was that EU industrial partners would be sponsoring in particular US companies in exchange of reciprocal arrangements across the Atlantic, and that they would be the prime contractors for their associates' activities in the programme; we were thus mirroring the constraints put on non US industry participation to NEXTGEN

We have also signed agreements with airspace users, certification authorities and staff representative associations. We have now some 200 experts from airlines working with us, and we set up an international validation team made of 60 staff representatives.

(SLIDE 2: key figures)

SESAR is one of the most ambitious and complex programmes taking place today in Europe. 300 projects, 16 work packages, 110 companies involved, 2200 experts working in 23 different countries.

We have therefore invested a significant amount of efforts in order to set up the “working together” principles, the tools to be used by the 2000 experts, as well as programme management and monitoring capabilities. I have to confess that this has required more time than what we had initially foreseen, but we, together with our partners, succeeded into making it work and I am proud to say that, 2 years after the launch of the programme, we have been successful in ramping up the projects and performing all the expected technical activities, in time and within cost.

The first challenge that we had set for ourselves, which was to put the programme together and launch it, has therefore successfully been met.

The next challenge is to make sure that the programme delivers meaningful results. And let’s face it, this is a real challenge, since in the last 20 years, about 200MEUR were invested every year in ATM research, by the EC, Eurocontrol in particular, and virtually no result of this R&D has ever been put to operations.

(SLIDE 3: validation sites)

We therefore decided, and agreed with our partners, that all SESAR deliverables would need to be validated in an operational environment. In the past, too many research projects were tested in research labs, showed great results, but could not pass the reality check of real traffic with real operations. The approach we have taken is to use operational systems, with operational traffic and real-life conditions to validate our new tools and operational procedures. Thus, air traffic controllers, pilots and engineers will be in a situation where they can really assess the benefits and drawbacks of such tools in their every day working environment. The international validation team, made of staff representatives, will also help us in the assessment of the impact of changes on workload, safety and efficiency. The principle idea in this approach is to reduce the time between operational assessment and implementation. Basically, if a SESAR deliverable goes successfully through tests in an operational environment, it is suitable for deployment...

(SLIDE 4: releases)

The second important decision we took was to deliver each year a SESAR release, which is a set of all SESAR products that are validated, and, if this validation is successful, are ready for deployment. The first SESAR release is due this year, and it will feature interesting items, such as remote towers, synchronised arrival and departure management tools to increase airports efficiency, and the first 4D trajectory flights which will take place onboard Airbus Test aircraft in the Maastricht and Stockholm airspaces.

(SLIDE 5: AIRE results)

We also decided to deliver concrete Green results, through 18 projects that we are funding; the principle is that we ask groups of airlines, ANSPs and airports, to work together on green operational procedures, better exchanges of information and optimised flight trajectories.

This part of our programme, called AIRE, has in particular green trans-atlantic flights, where all procedures are optimised with our colleagues from the USA and Canada, UK and Portugal, and can result in significant savings, for instance 1.4 tons of fuel savings on a New York to Paris flight. We are also working on green operations at and around airports, such as in Amsterdam, Zürich, Vienna or Madrid. In total, SESAR sponsors some 5500 green flights, and this is very successful, with more and more airlines asking to join the programme. We are now working with them on transforming these green flights into everyday operations.

It is also a way to test how we will be able to implement SESAR results into operational world.

Let me now talk about deployment.

(SLIDE 6: McKinsey)

We have just finished a study on SESAR's impact on EU's economy. This study was performed for us by the McKinsey Company, and, in order to avoid any bias towards aviation, we formed a team of economic experts coming from OECD (Organisation for Economic Cooperation and Development), Member States and the EC, who reviewed the economic models and the methodology.

We looked at 4 scenarios:

- the do nothing scenario which is a “business as usual” scenario in which no major investments are made on ATM modernisation
- Scenario B: SESAR as planned in the European Plans, a nominal SESAR implementation scenario
- Scenario C: SESAR “de-synchronised”, assuming a de-synchronised implementation of SESAR across different stakeholders groups, leading to delays in achieving the associated benefits
- Scenario D: SESAR delayed with a 10 year delay.

The results are presented on this slide:

The cumulative impact until 2030 of implementing SESAR would amount to 419 BEUR (0.16% of EU GDP) and represents 328 000 jobs.

A desynchronised scenario versus the nominal amounts to a loss of 117 BEUR, putting 72 000 jobs at risk, and a 10 year delay would mean a 268 BEUR loss and 189 000 jobs.

This study shows, but it is not a complete surprise, that the current infrastructure cannot sustain a green and efficient aviation in Europe. Moreover, it shows the importance of synchronisation in the deployment of SESAR. The question is then: “how can we make it right?”

The European Commission is currently working on a proposal for the deployment of SESAR, so I will leave it to them to formalise their position. Nevertheless, I would like to give you what in my view are the two foundations for a successful deployment of SESAR.

The first foundation for a successful deployment is to have **an appropriate governance**.

(SLIDE 7: Governance)

The experience of the SESAR development phase under our responsibility, shows the importance of working together. Group dynamics are often, in our experience, greater than the individual rhythm, in particular when it comes to make difficult changes; the amount of positive competition within stakeholder groups makes it easier to promote new operational paradigms, taking the principle of “if they can do it, why can’t we?”. But this working together has also to obey to a certain number of rules, and, most importantly, relies on one single referee, who is a trusted accountable authority that can take decisions when needed. I believe this is essential for the deployment of SESAR: to have one single authority which is fully accountable for the programme, and can make decisions where individual stakeholders groups are unable to reach agreement—which happens all the time--. It is also equally important from an international standpoint, that the FAA, China, Brazil have a single interlocutor in front of them to discuss and negotiate on standards and timelines.

The second foundation for a successful deployment is **funding**.

(SLIDE 8: Funding)

The core principle of SESAR is to integrate all aviation operational actors into a single aviation system. The aircraft will therefore be fully connected to the ground, as will airports, air control towers, airlines operations, etc...it is something that we call SWIM (System Wide Information Management) which is an intranet for aviation.

This looks nice and easy, but in practice, this integration is extremely complex, because it creates dependencies between investments of stakeholders groups which can have diverging interests. I will take the example of VHF radio, which is today’s only means of communication between the aircraft and the ground—a 1950 technology--. We want to replace this antiquity by state of the art digital communication, like what you find in Brussels Taxis for instance. The issue is that you cannot get rid of VHF until each and every aircraft flying is equipped. The airlines are therefore looking at each other, waiting for the other to invest, because the more aircraft are equipped, the cheaper it becomes. On the ground, ANSPs do not want to equip until a minimum number of aircraft are equipped. The result is a stalemate.

The SES regulations can set a target date for implementation, but first, we would need to be sure that they are respected at a local or national level, and second, they give an absolute limit which favours last mover's advantages.

I believe that we should provide incentives to early movers; this can be done through operational benefits, or financial benefits. On the operational benefits, we are currently working on the notion of "Best equipped- Best served", which will help, but this faces a lot of resistance in particular from operators. On the financial incentives, we are currently looking at different types of financial instruments, such as project bonds, airlines equipage fund, which could be used in order to at least initiate the change process. The vast majority of SESAR investments are going to be made by industry, but I believe that public money can serve as a seed which will leverage private investments into the successful and timely deployment of new technologies. This leverage power will be even stronger if it is consistent with public policies and can be backed by public guarantees.

(Slide 9: Conclusion)

Honourable Members of the Parliament, ladies and Gentlemen, in conclusion, I would like to say that the SESAR programme is working well, and we have started to deliver concrete results in 2011. We have also started to establish our presence on the international scene, with a MoC signed this year between the EU and the USA, which gives us the mandate to coordinate our activities with our US counterparts. We are also working with ICAO in order to make sure that our standards can become world standards. It is essential that all this work is not done for nothing, and that the EU institutions can take on board the experience gathered in this phase to build a deployment programme for SESAR which can be as successful as we are today.