## LIST OF EXHIBITORS

### MORE EFFICIENT AIRPORT OPERATIONS

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### IMPROVING NETWORK MANAGEMENT AND FLIGHT PLANNING

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## EFFICIENT FLIGHT OPERATIONS AND AIR NAVIGATION SERVICES

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DESCRIPTION OF EXHIBITIONS

MORE EFFICIENT AIRPORT OPERATIONS

SESAR 1 developed 22 solutions contributing to more efficient airport operations, including collaborative better planning, optimising departure-arrival flows, time-based separation and precision navigation with satellite aids, enhanced awareness of ground control in all weather, remote tower, improved taxiing and airfield ground lighting usage. The exhibition provides a flavour of just some of these solutions.

1. Integration of the passenger process into A-CDM and TTA management

Contributing to which solution(s):

Airport operations plan (AOP) and its seamless integration into the network operations plan (NOP) (Solution 21)

Exhibiting organisations:

![Acciona](https://example.com/acciona.png) ![aena](https://example.com/aena.png) ![AirEuropa](https://example.com/aireuropa.png) ![ENAIRE](https://example.com/enaire.png) ![IBERIA](https://example.com/iberia.png) ![Indra](https://example.com/indra.png)

Description:

Monitoring the passenger flow on the landside provides airport stakeholders with early alerts of any disruptions in the landside passenger process. This allows for mitigation actions to be put in place in order to adapt flight departure times according to the airlines’ and passengers’ needs and to minimise departure delays. The project also contributes to the seamless integration of the airport operations plan (AOP) with the network operations plan (NOP) by reducing actual prediction variability. The target time of arrival (TTA) procedure will allow better adherence to the AOP when facing a regulation at an airport arrival sector by sharing the airport impact assessment of that regulation.

2. Future airports

Contributing to which solution(s):

Solutions include precision approaches using GBAS Category II/III (Solution 55), time-based separation (Solution 64), automated assistance to controllers for surface movement planning and routing (Solution 22), guidance assistance through airfield ground lighting (Solution 47), extended arrival management (E-AMAN) (Solution 5), virtual block control in low-visibility procedures (Solution 48), airport operations plan (AOP) and its seamless integration into the network operations plan (NOP) (Solution 21)
Many European airports are reaching saturation point and need to find ways to maximise their ground operations, while maintaining high levels of safety. SESAR members and partners have developed surface movement planning and routing tools so that airports might make better use of infrastructure such as taxiways and runways. Together they have also delivered a portfolio of solutions to improve the efficiency and predictability of arriving traffic in all weathers, as well as more efficient departure flows. A significant number of airports still have very little real-time information exchange on flight arrivals and departures. SESAR also aims for airport operations to become fully integrated into the ATM network. Due to the unique operating characteristics of individual airports, the SESAR Concept of Operations takes local variations into account while providing benefits to the wider ATM network. The stand will present a number of key solutions that have been developed by SESAR members and partners, including SEAC, to future-proof airport operations.

3. Integrated surface management and airport safety nets for controllers

Contributing to which solution(s):

Airport safety nets for controllers: conformance monitoring alerts and conflict detection (Solution 2), automated assistance to controllers for surface movement planning and routing (Solution 22), guidance assistance through airfield ground lighting (Solution 47)

Exhibiting organisations:

Description:

Through the integrated tower working position (ITWP) a number of SESAR Solutions have been demonstrated, including:

- Airport safety nets for controllers (Solution 2), which enhance existing runway incursion alerting with conflicting ATC clearances detection (CATC) and conformance monitoring alerts for controllers (CMAC).
• Automated assistance to controller for surface movement planning and routing (Solution 22), which enhances ground movement predictability and efficiency by providing accurate ground taxi times and optimised ground path for improved guidance of mobiles on the surface.

• Guidance assistance through airfield ground lighting (Solution 47), which improves safety and efficiency of aircraft and vehicles movements.

4. More efficient airport operations with taxi routing solutions

Contributing to which solution(s):

D-TAXI service for controller-pilot datalink communications (CPDLC) application (Solution 23) and manual taxi routing function (Solution 26)

Exhibiting organisations:

AIRBUS ENAV LEONARDO THALES

Description:

The D-TAXI service allows the exchange via datalink of non-safety critical messages between the controllers and flight crew. The service aims to reduce radio transmissions, thereby avoiding potential misunderstandings, and to improve efficiency. On board the aircraft the D-TAXI service includes a dedicated datalink message display, a graphical display of expected and cleared taxi routes on an airport moving map. The manual TAXI service allows pilots to enter, modify taxi routes given by voice by the controller. Such routes are graphically displayed on the airport moving map.

5. High-level A-SMGCS functions supported by an open architecture

Contributing to which solution(s):

Airport safety nets: conformance monitoring alerts and conflict detection for controllers (Solution 2), automated assistance to controllers for surface movement planning and routing (Solution 22), D-TAXI service for controller-pilot datalink communications (CPDLC) application (Solution 23)

Exhibiting organisations:

DFS Deutsche Flugsicherung FREQUENTIS
Description:

The advanced controller working position prototype combines air and ground situation display and electronic flight strips in one integrated user interface, enriched with the new SESAR advanced surface movement guidance and control system (A-SMGCS) functions routing, guidance (D-TAXI, Follow-the-Greens) and enhanced safety nets (conflicting air traffic control clearances and conformance monitoring). The integration is supported by an open architecture based on a common middleware, sharing the internal information as well as external information received via system-wide information management (SWIM). This architecture provides modularity and flexibility for scalable and operative solutions, and can be easily completed with upcoming functionalities.

6. Improving airport traffic management and enhancing airport safety for pilots, vehicle drivers and controllers

Contributing to which solution(s):

Runway status lights (Solution 1), airport safety nets for controllers: conformance monitoring alerts and detection of conflicting ATC clearances detection (Solution 2), enhanced traffic situational awareness for vehicle drivers (Solution 4), automated assistance to controllers for surface movement planning and routing (Solution 22), D-TAXI service for controller-pilot datalink communications (CPDLC) application (Solution 23), manual taxi routing function (Solution 26), guidance assistance through airfield ground lighting (Solution 47), virtual block control in low-visibility procedures (Solution 48)

Exhibiting organisations:

DSNA and its SESAR partners have defined and validated new airport safety support tools for pilots, vehicle drivers and controllers and new tools for integrated surface management. A total of nine SESAR Solutions are currently in the pipeline, which aims to make airport operations even safer and to improve the management of airport surface operations. They will significantly improve the safety and predictability of airport traffic, while reducing its environmental impact.
7. 3D modelling for remote tower operations

Contributing to which solution(s):

Remote tower solutions

Exhibiting organisations:

![Images of project partners]

Description:

The project partners have developed workflows, techniques and algorithms for the extraction and use of 3D geospatial content to support a number of remote tower functionalities:

- Synthetic augmentation of vision to increase situational awareness;
- 2D-3D integration supporting object tracking and real world distance computation;
- Methods for camera calibration via use of 3D modelling techniques;
- 3D visualisation with projected imagery from remote tower cameras.

The project has provided in several test fields (2 airports in Norway and 4 in Italy) answers to the research question of «how can 3D modelling support the remote tower concept?». These answers include potential improvements to the key performance areas (KPAs) of cost efficiency (through more affordable ground surveillance methods) and safety (through improved runway incursion detection/prediction).

8. Augmented Approaches to Land

Demonstrating which solution(s):

Enhanced terminal operations with automatic RNP transition to ILS/GLS [Solution 9]

Exhibiting organisations:

![Images of exhibiting organisations]
Description:

The Augmented Approaches to Land (AAL) demonstration project aims to demonstrate new approach and landing solutions that will increase the capacity of the European airport network (especially in degraded weather conditions), while reducing the environmental impact. Over 200 demonstration flights, to be completed in 2016, are validating new approach and landing technologies on a significant number of aircraft types and in an extensive range of airport environments. The solutions are expected to provide benefits to all segments of airspace users, including large commercial, regional, business and general aviation.

9. Improved weather information systems

Contributing to which solution(s):

Meteorological information exchange (Solution 35), airport operations plan (AOP) and its seamless integration with the network operations plan (NOP) (Solution 21), and initial system-wide information management (SWIM) (Solution 46)

Participating organisations:

Leonardo Thales

Description:

The improved weather information system (IWIS) presents the current and forecast weather situation (up to 7 days) to airport stakeholders in a user-friendly way. It also raises met alerts and warnings in cases when pre-defined thresholds are exceeded.
IMPROVING NETWORK MANAGEMENT AND FLIGHT PLANNING

SESAR R&D in the area of network management and flight planning aims to:

- Ensure efficient airspace usage through flexible use of airspace and collaborative decision making (CDM)
- Improve flight scheduling
- Increase predictability by an optimum balance of capacity and demand.

The exhibition provides a flavour of just some of these solutions.

10. Implementation of dynamic capacity management in a high-density area

Contributing to which solution(s):

Automated support for dynamic sectorisation (Solution 66)

Exhibiting organisations:

[Images of ENAIRE, LEONARDO, NATS]

Description:

This solution refers to a supporting tool for the operations supervisor to evaluate the most suitable area control centre sector configuration eight to two hours before operations in terms of capacity matching the forecasted demand. The tool takes into account not only the refinement of demand data but also the number of available controllers and sectors. Validation exercises confirmed the usability of the supporting tool; a continuous improvement in the quality of demand forecast is continuously improved; a reduction of saturation periods by 10%; and increased number of flights capable of entering airspace volume by 10%. The solution is expected to improve efficiency by adjusting air traffic control sectors to traffic flows, as well as increase capacity and cost-efficiency due to better use of available resources.

11. Dynamic airspace configurations and dynamic mobile areas

Contributing to:

Management of dynamic airspace configurations, dynamic airspace configuration supporting moving areas
The project addresses dynamic airspace configurations (DACs) that incorporate all airspace components, including airspace reservations and ATC sectors, into new forms of airspace configurations. These configurations are designed to be dynamically managed to respond flexibly to different performance objectives which vary in time and place. Dynamic mobile areas (DMA) as part of DAC are volumes of airspace designed to satisfy specific airspace user (AU) operational requirements (civil, state or military flights) and to ensure safety for the rest of AU community. Expected benefits of DAC include improved capacity management and use of resources; improved cost-efficiency thanks to the optimisation of ATC opening schemes. Through the integration of airspace configurations solutions within demand capacity balancing (DCB) processes, DAC also enables AUs to fly their preferred trajectory. Ultimately the tool paves the way towards seamless and coordinated airspace design and management at local, sub-regional and regional level. A DAC research prototype will be demonstrated at the stand.

12. Initial collaborative network operations plan (NOP)

Contributing to which solution(s):

Initial collaborative network operations plan (NOP) (Solution 20)

Exhibiting organisations:

A standard process has been elaborated to support the selection of diversion aerodromes in case of significant reduction of the arrival capacity at a major European airport. What will make the difference compared to today’s situation will be the ability to plan massive diversion beyond local plans, based on business requirements and preferences and provide all users with real-time information.
Bringing together all ATM partners (ANSPs, airports, airlines, the Network Manager), the concept relies on tool-sharing information among actors and supports collaborative-decision processes to identify the best option to divert aircraft and to prepare the recovery at the end of the non-nominal situation.

13. iStream

Demonstrating which solution(s):

Calculated take-off times (CTOT) and target time of arrival (TTA) (Solution 18)

Exhibiting organisations:

![Images of exhibiting organisations]

Description:

iStream aims to demonstrate how locally-generated target times [as a complement to departure regulation] can be used to improve arrival management at two major European airports, Paris Charles de Gaulle and Zurich. The demonstration is performed using commercial flights from Air France, Hop!, Lufthansa and Swiss, and focuses on the peaks of traffic occurring in the early morning, when air traffic flow and capacity management (ATFCM) delays are at their most critical. iStream will assess the operational feasibility for airspace users, airports, air traffic control and the Network Manager, and benefits in terms of predictability, capacity, efficiency and flexibility. The showcase will provide an opportunity to see the first results from the Zurich trial, and to hear about the expectations from the trials in Paris, and Reims and Maastricht Upper Area.
TRANSVERSAL

The operational and technical SESAR Solutions are very much the end-product of the SESAR research and innovation pipeline. However these solutions would not see the light of day if it were not for a number of important transversal elements and activities that support and frame the operational and technological work. These transversal elements, working in the shadows of the programme, ensure that the end-products fully fit with the SESAR vision and meet the necessary criteria, whether it has to do with the system, service and operational architectures, the key performance ambitions or the required cost-benefit analysis and business case. These elements are complementary to one another and are regularly reviewed to ensure alignment with the SESAR vision.


Contributing organisations:

Description:

The stand will showcase the European ATM Portal, both publically accessible and restricted versions. The portal provides an integrated R&D view of the European ATM system with detailed information on the planning and implementation of the changes needed to deliver high-performing aviation in Europe. More specifically, the content of the portal shows the coherence and alignment of the three levels of the Master Plan. It allows the user to drill down from the “Executive View” of the Master Plan (level 1) to the underlying data (Level 2/3). The restricted version, accessible to SESAR JU partners, provides additional support to R&D and deployment planning activities by displaying the links between solution information and the European ATM architecture.

15. European ATM Architecture - EATMA

Contributing to which solution(s):

Architectural work and EATMA is contributing (indirectly) to all SESAR Solutions.
**Exhibiting organisations:**

![Exhibiting organisations logos](image)

**Description:**

The European ATM architecture (EATMA) represents a set of shared views capturing performance, operational, business, technology and systems elements, services, standards and the relationships between them. These views describe what needs to be changed, by whom and by when and assist both the development and decision-making processes of ATM stakeholders and SESAR.

EATMA is the result of a collaborative work with the whole set of SESAR partners and projects. They complement and support the development and maintenance of a comprehensive view of European ATM and enable the process of managing its evolution over time.

EATMA enables achieving a better global, shared and common understanding of the existing European ATM performance, requirements, concepts and technical solutions; and allows for the identification of any gaps and/or overlaps and rooms for improvements.

EATMA serves as a common ground for discussions and facilitates the impact assessment of the proposed evolutions, by providing the means for early issue detection in terms of consistency, coherency, interoperability and synchronisation; and finding solutions and potential opportunities for cooperation and collaboration between the SESAR projects and the ATM stakeholders at a European level.

EATMA is accessible through the European ATM Portal that provides a web-based presentation of the key elements of the European ATM architecture. The portal is intended to be used primarily for internal SESAR purposes when developing the future ATM system and support the planning for its deployment with architecture information. The portal is also intended to be used for disseminating the SESAR results. Therefore, the portal is made of public and restricted areas. This latter area provides several views, both at a high level and very detailed, of architecture-related content.
16. Business aviation - Flexible operations through advanced aircraft capabilities

Contributing to which solution(s):

Transversal

Exhibiting organisations:

Honeywell NETJETS

Description:

Flights performed by business aviation take a significant share of the airspace while they face a demanding challenge. Business aviation is complementary to scheduled airlines, flying three times more city-pairs with ten times less traffic volume. Flexibility is key in business aviation operations since the customer base demands tailored flight schedules allowing them to take off from almost any airport at any possible time. This category of airspace user must also be ready to fly whatever flight level is available, for instance using high altitude airspace, and so contributes to optimising all available resources – both on the ground and in the air. SESAR technology can support this market segment. The wide range of SESAR technologies responding to business aviation needs will be presented on the stand.

17. SESAR Concept of Operations

Contributing to which solution(s)

Transversal

Exhibiting organisations:

AIRBUS
Deutsche Flugsicherung
DSNA
ENAIRE
indra
NATS
Noracon
SAT
THALES

Description:

The SESAR Concept of Operations (SESAR CONOPS) describes the operational target of moving ATM to a trajectory-based operations concept whereby aircraft
can fly their preferred trajectories, taking into account the matching between constraints and optimisation. The SESAR CONOPS allows all ATM stakeholders, from the civil and military airspace users, air navigation service providers, to the Network Manager, airports and the manufacturing industry to gain a common understanding of the ATM system and a clear view of the steps to achieve the target. In this context, the SESAR CONOPS illustrates the European ATM Master Plan. Furthermore the SESAR CONOPS is an important reference for global interoperability and harmonisation, as it has been adapted for Europe from the ICAO Global Air Traffic Management Operational Concept.
EFFICIENT FLIGHT OPERATIONS AND AIR NAVIGATION SERVICES

SESAR 1 delivered 21 solutions for more efficient flight operations and business considerations embedded in ATM performance, more freedom to airspace users with new and more cost-efficient business models for virtual air traffic services, which can also accommodate the integration of remotely-piloted aircraft systems (RPAS). The following exhibition stands showcase some of these solutions.

18. Traffic display to support visual operations

Contributing to which solution(s):

ASAS spacing applications ‘remain behind’ and ‘merge behind’ (Solution 16)

Exhibiting organisations:

![Airbus](image1.png)  ![DSNA](image2.png)  ![Honeywell](image3.png)

Description:

Airborne traffic situational awareness (ATSAW) is the first application of automatic dependent surveillance – broadcast (ADS-B) in the cockpit. It provides pilots with traffic situation awareness, otherwise mentally inferred from voice communications (party line). The following process is the typical baseline of improvement: when cleared for a visual separation operation, the flight crew checks the displayed traffic and can select the specific flight, then can precisely monitor its relative evolution (speed trends, heading, altitude, etc.). The system provides additional visual information supporting the flight crew to maintain a minimum distance from the targeted flight.

19. Free route airspace Maastricht and Karlsruhe (FRAMaK)

Demonstrating which solution(s):

Free route through the use of direct routing (Solution 32), free routing for flights both in cruise and vertically evolving above a specified flight level (Solution 33), user preferred routing (Solution 65)

Exhibiting organisations:

![Lufthansa](image4.png)  ![Deutsche Flugsicherung](image5.png)  ![Eurocontrol](image6.png)
Description:

The FRAMaK demonstration project showed that free route capabilities are possible within complex airspace that cross national borders and ANSP boundaries. The project also showed that these capabilities can lead to reduced flight times and fuel burn. A total of 62 cross-border user-preferred routes (UPR) were published for a high-density airspace comprising of the Karlsruhe Upper Airspace Centre (UAC) and MUAC. The routes facilitated actual route length reductions of 3.7 NM (56.4 kg less of fuel or 178.1 kg less of CO₂) per flight. Total annual savings were estimated at more than 1.5 million NM (9 million kg of fuel/30 million kg of CO₂). The project demonstrated that with UPRs airspace users can calculate the most cost-efficient routes, by taking advantage of tailwind-inducing jet streams.

20. Cooperative planning in the TMA

Contributing to which solution(s):

Arrival management into multiple airports (Solution 8)

Participating organisations:

[Images of participating organisations]

Description:

The project looked at traffic synchronisation and demand capacity balancing (DCB) concepts applicable to a complex multi-airport TMA. Departure information accuracy was investigated and a new demand prediction tool was assessed. Human-in-the-loop real-time simulations were conducted to fully bring to deliver the SESAR Solution «arrival management into multiple airports». Work on integrating both arrival and departure information to resolve complex interacting traffic flows in the TMA focused on presenting to the extended TMA controllers accurately predicted sector entry times for aircraft in all phases of flight.
21. Testing civil RPAS insertion on a regional airport (TEMPAERIS)

Contributing to which solution(s):

Not applicable

Participating organisations:

Description:

The objective of the TEMPAERIS SESAR demonstration project is to investigate the impact of remotely-piloted air systems (RPAS) integration into non-segregated airspace in a mid-traffic density environment. The project is demonstrating procedures to achieve a safe multi-aircraft and manned flight traffic management. The impact on the traffic safety and regularity as well as on service provision is also being evaluated. In the same way the project is highlighting ATM constraints to be taken into account by RPAS systems. The project is based on trials of simulated and real flights. The latter are being carried out at the Bordeaux-Mérignac airport addressing the approach phase and air traffic control services.

22. Point merge in the Paris area

Contributing to which solution(s):

Arrival management (AMAN) and point merge (Solution 108)

Exhibiting organisations:

Description:

Point merge in an extended TMA coupled with the use of an arrival manager corresponds to the SESAR aim of a more efficient traffic synchronisation mechanism. The solution replaces radar vectoring and/or holding patterns with a linear holding in the shape of an arc at higher altitude. The stand will present the results from SESAR real-time simulations and live trials to point merge implementation in Paris TMA at the end of 2013. Point merge provides benefits in terms of safety thanks to an improved predictability of flight paths for both air crews and controllers, but it also offers environmental benefits, making possible continuous descent operations in high density traffic environment.
23. TOPFLIGHT

Contributing to which solution(s):

Solutions aimed at achieving the gate-to-gate optimisation of flights

Exhibiting organisations:

![Airbus](image1), [Barco](image2), [Boeing](image3), [British Airways](image4), [NATS](image5), [Nav Canada](image6)

Description:

The TOPFLIGHT project demonstrated procedures designed to allow transatlantic flights to follow a trajectory as close as possible to their reference business trajectories (RBT) while remaining de-conflicted and meeting their arrival manager (AMAN) sequenced times of arrival. More than 20,000 flights were involved in the trials, achieving gate-to-gate optimisation through the application of procedures and resulting in significant fuel savings. TOPFLIGHT also assessed the use of cross-border arrival manager (XMAN) by extending the arrival manager horizon for London Heathrow inbounds to 350 NM. It showed that extended arrival management can help absorb delays and reduce fuel burn and emissions.

24. ATC support to ASAS sequencing and merging operations

Contributing to which solution(s):

Airborne separation assistance system (ASAS) spacing applications ´remain behind´ and ´merge behind´ (Solution 16)

Exhibiting organisations:

![DSNA](image7), [Indra](image8), [Leonardo](image9), [Thales](image10)

Description:

SESAR validation activities have demonstrated the technical feasibility and the safety benefits of airborne separation assistance system (ASAS) sequencing and merging procedures. By using the aircraft’s on-board ASAS to monitor distances between aircraft, the flight deck can maintain the spacing requested by air traffic control. Separation provision is still the controller’s responsibility, but the pilot needs one instruction, rather than several speed commands by the controller. On-board automation is automatically generates and executes the appropriate
speed commands. The ASAS solution has been successfully validated with other solutions, such as extended arrival management (E-AMAN) and initial four-dimensional (i4D) trajectory management.

25. Integrating rotorcraft into future European ATM concepts

Contributing to which solution(s):

Work in this area started in SESAR 1 and will continue to deliver solutions in SESAR 2020.

Exhibiting organisations:

[Images of logos]

Description:

The stand presents the rotorcraft research and development work addressed in SESAR 1.

Specifically the validation activities looked at procedures, such as low-level instrument flight rules (IFR) routes, point-in-space IFR approaches and departures to and from non-IFR installations within the terminal area of a medium density and complexity area control centre, and simultaneous non-interfering (SNI) operations at airports. These routes and procedures have the potential to enable rotorcraft users to gain further access to airspace.

26. Remote tower services

Contributing to which solution(s):

ATC and AFIS service in a single low-density aerodrome from a remote controller working position (CWP) (Solution 71), single remote tower operations for medium traffic volumes (Solution 12), remote tower for two low-density aerodromes (Solution 52), remotely-provided air traffic services for contingency situations at aerodromes (Solution 13)

Exhibiting organisations:
Description:

Single and multiple remote tower services offer the possibility to provide air traffic services (ATS) from a remote location. It allows pooling of operators which will increase the cost efficiency of ATS. For single remote towers, one operator can provide ATS remotely to one airport at a time whereas with multiple towers one facility can provide ATS to two low-traffic density aerodromes simultaneously. The concept enables the full range of ATS to be provided while maintaining safety, capacity, human performance and the overall level of service to the same high standard as with current operations. Meanwhile, the contingency solution focusses on providing increased resilience in contingency situations when the local tower is not available due to disruptive circumstances.
ENABLING INFRASTRUCTURE AND SYSTEMS CAPABILITIES
ENABLERS

Advanced communication navigation and surveillance capabilities enhance interaction between air and ground systems to ensure the execution of eco-efficient and safer operations based on users preferred trajectory and to ensure the availability of updated and accurate information to all ATM stakeholder categories.

27. One step towards civil-military interoperability

Contributing to which solution(s):

Interoperability between civil and military aircraft into the ATM

Exhibiting organisations:

![Leonardo](image1.png)  ![Thales](image2.png)

Description:

The project aims to determine how automatic dependent surveillance – broadcast (ADS-B) can be enabled in military aircraft that are not equipped with standard ADS-B avionics. This includes the assessment of interoperability opportunities offered by the re-use of different types of military identification friend or foe (IFF) equipment capabilities. The project received the 2014 SESAR ‘Best in Class’ Project Award for its work to accommodate military aircraft in a mixed-mode SESAR surveillance environment, taking into account new separation modes and trajectory-driven solutions where ADS-B is a fundamental element. The tests conducted during the flights, using C-27J aircraft and airborne prototypes, demonstrated the feasibility of proposed solutions.
28. Airport surface datalink (AeroMACS)

Contributing to which solution(s):
Aeronautical mobile airport communication system (AeroMACS) (Solution 102)

Exhibiting organisations:

Description:

The aeronautical mobile airport communication system (AeroMACS) offers a solution to offload the saturated VHF datalink communications in the airport environment and support new services. The technical solution AeroMACS is based on commercial 4G technology and uses the IEEE 802.16 (WiMAX) standard. Designed to operate in reserved (aeronautical) frequency bands, AeroMACS can be used for ANSPs, airspace users and airport authority communications, in compliance with SESAR’s future communication infrastructure (FCI) concept. The stand will summarise the work performed by two SESAR projects and present their contributions for the development of AeroMACS, focusing on the prototype testing and the support towards standardisation and international harmonisation.

29. Aeronautical Information Management/Integrated Digital Briefing

Contributing to which solution(s):
Digital integrated briefing (Solution 34)

Exhibiting organisations:

Description:

Demonstrating and validating the SWIM-compliant production, provision and usefulness of aeronautical and meteorological information made available in modern data exchange formats such as AIXM5.1, DigitalNOTAM and ICAO iWXXM, provided in a service oriented manner, by means of a standardised technical infrastructure. In today’s operations, the extensive use of text-based NOTAM and MET information can result in large paper-based briefings which can be difficult to use for pilots and dispatchers. The integrated digital briefing solution demonstrates the vast potential for the improvement of derived aeronautical
products such as the pre-flight information bulletin – now known as “enhanced-” or “e-PIB” – by exploiting the intrinsic value of aeronautical data enriched with structured information, easily understood by interconnected modern situational awareness information services, now able to offer a greatly enhanced geo-temporal granularity and graphical representation.

30. ADS-B - 1090 higher performance study

**Contributing to which solution(s):**

Improved hybrid surveillance (Solution 101), ADS-B surveillance of aircraft in flight and on the surface (Solution 110)

**Exhibiting organisations:**

![AIRBUS](image1)  ![Honeywell](image2)

**Description:**

Automatic dependent surveillance – broadcast (ADS-B) is a key enabler for current and especially future ATM surveillance applications. The ADS-B communication link, 1090 MHz channel, can suffer in congested environments, which may negatively impact the performance of corresponding surveillance applications. The ADS-B - 1090 higher performance study explored possible improvements for the reception of ADS-B messages especially in high interference environments. The main focus of the exhibition will be on backward compatible mitigation techniques investigated within the study and possible ways of their implementation in order to extend the short- and mid-term service life of the current 1090 MHz link.

31. Ground weather monitoring system (GWMS)

**Contributing to which solution(s):**

Meteorological information exchange (Solution 35), airport operations plan (AOP) and its seamless integration with network operations plan (NOP) (Solution 21), initial system-wide information management (SWIM) (Solution 46)

**Exhibiting organisations:**

![ENAV](image3)  ![LEONARDO](image4)  ![THALES](image5)
Description:

The ground weather monitoring system (GWMS) is a conceptual approach towards harmonised and tailored local MET services. The system can be directly used for MET impact assessments by stakeholder systems. A prototype of the system, in which standard and enhanced sensor equipment was integrated, was deployed and externally verified in a test bed at Braunschweig Airport in Germany. The testing has also contributed to the validation of the airport operations centre (APOC), for which specific MET services were provided. These will be shown by means of a web-based decision support system.

32. Providing effective ground and air data sharing via EPP (PEGASE)

Contributing to which solution(s):

Controlled time of arrival (CTA) in medium-density medium complexity environments (Solution 6)

Exhibiting organisations:

Description:

The PEGASE demonstration project is analysing the performance of extended projected profile (EPP) information from multiple live trials involving aircraft equipped with prototypes of the next generation flight management system and datalink communication systems (ATSU). Through live flight trials across high density continental airspace, the project will aim to show that the EPP information regarding the trajectory flown is accurate and reliable and that the sharing of this information improves the performance of the systems on the ground, as well as in the air. Greater predictability also leads to reduced fuel burn, CO₂ emissions and noise.