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**LIST OF EXHIBITORS**

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| **EXHIBITOR NAME** | **PROJECT ID/TYPE** | **DESCRIPTION** |
| **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 shadow 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. | | |
| 1. **Digital European Sky Architecture** | **SESAR 2020: PJ.19 W2** | SESAR 2020 takes an integrated approach to modernising Europe’s air traffic management (ATM), with over 18 projects developing solutions addressing different aspects of system. To ensure that the solutions delivered are interoperable, the programme relies on the Content Integration (PJ19) project.  Participants will receive a guided walkthrough of the target Digital European Sky (DES) Architecture. Through a visually animated format including a curated examples on key domains (e.g. U-space Operations, Virtualisation and Airport), participants will witness a live demonstration on how the SESAR Solutions integrated and consolidated into the target DES Architecture support the Stakeholders decision-making about ATM transformation. |
| 1. **Engage 2 – SESAR 3 JU Knowledge Transfer Network** | **Exploratory Research** | The SESAR 3 Knowledge Transfer Network aims to share the resources and findings of the SESAR Research and Innovation programme, with a view to informing future fundamental research, as well as transferring results towards application-oriented work. Engage 2 will have a strong impact on the future of the ATM sector by attracting students to a career in ATM and, at the same time, by bridging the gap between academia and industry. |
| 1. **PEARL** **- Performance Estimation, Assessment, Reporting and simulation** | **Exploratory Research** | The digitalisation and modernisation of air traffic management will bring many advantages to aviation, but these will come with challenges in managing cyber vulnerabilities. The project aims to introduce cyber security components into the state-of-the-art security risk assessment methodology (ies) currently already in use in ATM. The project will also investigate the potential of applying the concept of people analytics (PA) to increase cyber security awareness in ATM organisations. The project results will be validated and demonstrated through two real use cases, involving relevant stakeholders. |
| **MULTIMODALITY**  Flightpath 2050, Europe’s long-term vision document on aviation research, has set the goal that 90% of travellers within Europe should be able to complete their journey, door-to-door (D2D), within 4 hours by 2050. Optimising D2D mobility for people and goods is essential in meeting citizens’ expectations for increasingly seamless mobility, where they can rely on the predictability of every planned door-to-door journey and can choose how to optimise it (shortest travel time, least cost, minimal environmental impact, etc.). The role of ATM in the door-to-door chain of a passenger’s journey may seem small, but the punctuality of flights, and passengers’ perception of flying, is highly dependent on the smooth functioning of the entire journey. This SRIA will, therefore, lead to an improved passenger experience by supporting an integrated transport system. | | |
| 1. **SIGN-AIR- Implemented Synergies, data sharing contracts and Goals between transport modes and AIR transportation** | **Fast Track** | SIGN-AIR platform is an enabler of data sharing agreements and smart contracts between different stakeholders to allow them to reach a goal such as single ticketing, timetables synchronization, disruption management etc. The development, deployment and testing of the platform and its functionalities could improve the integration of land modes and air transport. In that way it will improve passenger centric vision of ATM.  SIGN-AIR’s consortium would like to present the functionalities of the platform, mainly the registration and onboarding process, the potential benefits, and the set of Key Performance Indicators per stakeholder involved in a multimodal ecosystem. (presentation of concept) |
| 1. **MultiModX - Integrated Passenger-Centric Planning of Multimodal Transport Networks** | **Exploratory Research** | Air and rail are natural multimodal partners and their collaboration is key to assuring a more efficient, predictable, and environmentally sustainable door-to-door passenger journey. The project will develop a set of innovative solutions and decision-making tools to support the coordinated planning and management of multimodal transport networks. Specifically, the project will develop a modelling and evaluation framework, and a solution to enable the coordinated design of air and rail schedules according to expected demand behaviour. |
| **U-SPACE AND URBAN AIR MOBILITY**  Over the next 10 years, the implementation of this SRIA aims to unlock the potential of the drone economy and enable urban air mobility (UAM) on a wide scale. To that end, a new air traffic management concept for low-altitude operations needs to be put in place to cater safely for the unprecedented complexity and high volume of the operations that are expected. This concept, referred to as U-space, will include new digital services and operational procedures and its development has already started within the SESAR 2020 programme. U-space is expected to provide the means to manage safely and efficiently high-density traffic at low altitudes involving heterogeneous vehicles (small unmanned aerial vehicles, electric vertical take-off and landing – eVTOLs - and conventional manned aircraft), including operations over populated areas and within controlled airspace. U-space will have to integrate seamlessly with the ATM system to ensure safe and fair access to airspace for all airspace users, including UAM flights departing from airports. | | |
| 1. **SAFIR-Ready** | **Fast Track** | The project aims to develop new U-space advanced services together with a central command and control centre (C2C), as well as an automated ground integration (Drone Cargo Port - DCP) to facilitate automated time-critical drone-based services for medical and non-medical use cases. Specifically, research will focus on a dynamic capacity management system (U3), detect and avoid algorithms (U3) and machine-to-machine communication and decision-making (U4). The project will extend use cases to non-medical critical missions, such as shore to ship for the transport of materials and the inspection of railway and electric grids in case of unforeseen issues with the infrastructure (e.g. tree fallen on high tension cable). |
| 1. **U-ELCOME** | **Digital Sky Demonstrator** | U-ELCOME is a three-year SESAR Digital Sky Demonstrator project, involving 51 partners whose overall objective is to support the implementation of services for the safe integration of drones. With demonstrations taking place in three European countries, the project aims to support the interoperability and harmonisation of services within the framework of U-space. The demonstrator is co-financed by the Connecting Europe Facility. |
| 1. **EUREKA - European Key solutions for vertiports and UAM** | **Fast Track** | EUREKA is a FTIU project to shape the future of UAM. The consortium will develop operationally demonstrated industrial solutions supporting the EU’s roadmaps, to accelerate and harmonise the development of UAM, VTOL operations and vertiports across Europe.  EUREKA will fully integrate vertiports into the airspace through four solutions:  1. Arrival/departure to/from vertiport, encompassing route and trajectory planning.  2. Vertiport collaborative traffic management, optimizing resource utilization and capacity allocation.  3. Vertiport disruption & emergency management, preparedness for unforeseen circumstances.  4. Vertiport Network Flow, Capacity & Operational Management, coordination and operations across the network. |
| 1. **ENSURE - atm-uspacE iNterface and airSpace reconfigURation sErvice** | **Fast Track** | Ensuring an interoperable and effective interface between unmanned and conventional traffic and air traffic control is critical for the delivery of the future Digital European Sky. This project aims to refine and complete the definition of a common interface and services for U-space and ATM. The project will develop a standardised data model, architecture and an operational methodology. The project will also develop a dynamic airspace configuration service to help ATC actors in charge of airspace reconfigurations to maintain traffic segregation and to avoid proximity between manned and unmanned aircraft within the designated U-space airspace. |
| 1. **BURDI - BeNe U-space Reference Design Implementation** | **Digital Sky Demonstrator** | The BURDI project is about the implementation of a fully reliable, sustainable and safe solution for UAS integration in a U-space airspace and Urban Air Mobility context via U-space airspaces implementation. Through such implementation of reliable and efficient U-space airspaces and provision of associated U-space services, BURDI should enhance a safe and sustainable integration of multiple and complex UAS missions in a same relevant area.  The project intends to demonstrate the maturity level TRL 7 and 8 of the systems supporting U-space services provision via real time implementation of a complete U-space airspace executing several specific and diversified use cases.  \* Presentation of the BURDI U-space CONOPS  \* Presentation of the single CISP CONOPS, especially some functionalities supporting USSP requirements (e.g. aggregation of Network Identification data)  \* Procedures used within BURDI project to conduct U-space airspace risk assessment and Coordination mechanism |
| 1. **ÉALÚ-AER - Enhanced Automation for U-Space/ATM integration** | **Digital Sky Demonstrator** | ÉALÚ-AER is a technology infrastructure integration and demonstration project. ÉALÚ-AER aims to establish Ireland’s first Digital Sky Demonstrator, located at Future Mobility Campus Ireland’s recently established vertiport site, in Shannon, Ireland.  The ÉALÚ-AER project has already completed Phase 1 of the project, which included the first live flight demonstrations with U-Space services. The project has scoped routes with different stakeholders to complete meaningful flights, routes that can be re-used for commercial traffic in future. The integration of ATC radar, low level RADAR and C2 connectivity will enhance this ecosystem. |
| 1. **ImAFUSA - Impact and Capacity Assessment Framework for u-Space Societal Acceptance** | **Exploratory Research** | Citizens’ confidence and acceptance is critical to the further development of the drone services market in Europe, especially urban air mobility (UAM). The project will develop an impact and capacity assessment framework for U-space societal acceptance to assist local authorities, other U-space stakeholders and users with the implementation of socially acceptable and beneficial urban air mobility in cities. The framework and its tools will address matters which influence public opinion, such as the environment (e.g. noise, visual pollution and air quality), and safety and socio-economics (e.g. affordability, accessibility, economic development, public space use and connectivity). |
| 1. **OperA – Operate Anywhere** | **Fast Track** | Innovative Air Mobility (IAM) has the potential to revolutionise last-mile transportation. To pave the way and accelerate market uptake, the project will validate complex IAM operations (piloted air taxi and unmanned cargo) in real-life air traffic control conditions, including contingency and non-nominal situations. It will specifically address air/ground integration and the critical transition from piloted towards automated flights, making use of several key autonomy-enabling technologies. In addition, it will ensure environmental sustainability compared to the next-best transport alternative, and enhance it, by optimising flight routing for minimum noise footprint and aircraft energy utilisation. |
| 1. **AI4HyDrop - An AI-based Holistic Dynamic Framework for a safe Drone’s Operations in restricted and urban areas** | **Exploratory Research** | Drones are already used in an array of sectors, from agriculture, construction and surveillance to film-making, healthcare and emergency services. Given the scale and complexity of drone operations that are expected in the coming years, a holistic approach needs to be taken to managing the airspace. The project will develop a framework that incorporates various AI-based tools and associated information flows to enable future drone operations at scale. The proposed framework will represent a digital step change in ATM, using AI as a means to move to more automated U-space services. |
| 1. **SPATIO – u-Space Separation Management** | **Fast Track** | Keeping aircraft safely separated is one of, if not the core function of air traffic management today. As larger numbers of unmanned aerial systems (UAS) take to the skies, separation management becomes more important to avoid mid-air collisions. The project will address separation between unmanned air vehicles, in particular, strategic and tactical conflict resolution services and the relationship between separation and capacity in U-space airspace. |
| **AVIATION GREEN DEAL**  The objective of net-zero greenhouse gas emissions by 2050 set by the European Green Deal, in line with the EU’s commitment to global climate action under the Paris Agreement, requires accelerating the shift to smarter and more sustainable mobility. This implies the need for aviation to intensify its efforts to reduce emissions, in line with the targets set in Flightpath 2050. To this end, a set of operational measures to improve the fuel efficiency of flights will have to be put in place. At the same time, to ensure sustainable air traffic growth, it is necessary to speed up the modernisation of the air infrastructure to offer more capability and capacity, making it more resilient to future traffic demand and adaptable through more flexible air traffic management procedures and a charging scheme that does not make it interesting to fly unnecessary distance. Furthermore, reducing aircraft noise impacts and improving air quality will remain a priority around airports. | | |
| 1. **CONCERTO- Dynamic Collaboration to Generalize Eco-friendly Trajectories** | **Industrial Research** | The project aims to make eco-friendly trajectories an everyday occurrence in order to reduce the CO2 and non-CO2 impact of aviation. The project aims to integrate green ATC capacity into the system, with the appropriate level of automation, and support stakeholders in balancing regularity and environmental performance at local and network levels. The project will do so by leveraging state-of-the-art climate science and data to allow ATM stakeholders to take their “eco-responsibility” to the next level. At the same time the project aims to demonstrate that mitigation measures can be deployed progressively at network level, in sync with scientific progress. |
| 1. **GEESE - Gain Environmental Efficiency by Saving Energy** | **Industrial Research** | GEESE wants to develop the introduction of Wake Energy Retrieval operations within Europe with 2 solutions: Enable Europe to North Atlantic WER Operations, and Scaling up the WER concept to continental Europe. |
| 1. **CICONIA - Climate effects reduced by Innovative Concept of Operations** | **Industrial Research** | CICONIA’s ambition is to improve the understanding of the generation of non-CO2 emissions with regards to the current aircraft/engine technologies and operating fleet, and their climate effects, with the objective to evaluate and develop impact reduction solutions. CICONIA wants to define and assess CONOPS strategies with engagement from all concerned stakeholders: Airlines with their OCC, Network, Met providers and Air Traffic Control. CICONIA mitigation options will offer the best proposal for reduction in climate impacts, taking into account both CO2 and non-CO2 climate effects. |
| 1. **ECHOES - Extended Communications in vHf Over Enhanced Satellite segment** | **Industrial Research** | The objective of ECHOES is to demonstrate the feasibility of space-based solution for very high frequency (VHF) communications (voice and datalink) in air traffic management. Building on initial technical proofs of concept carried out by the VOICE project, the ECHOES Digital Sky Demonstrator will investigate some key functionalities, such as inter-satellite links, on-board processing of data in the satellite or simultaneous transmission and reception of VHF communications. In addition, the Demonstrator will focus on operational aspects of the technologies will also comprise operational topics, involve more stakeholders (airlines and ANSPs) and contribute to the regulatory and standardisation of the space-based VHF technology based on the analysis of end-to-end system performances. |
| 1. **GALAAD- Green Aviation – Lean Arrivals And Dynamicity** | **Industrial Research** | The project will develop and validate a concept for dynamic required navigation performance (RNP) route allocation in the terminal area in order to make air traffic control operations more sustainable, resilient, responsive and adaptive towards changes in operational conditions and variations in traffic demand. The aim is to deliver an end-to-end concept, including relevant decision-support tools evolution and taking into account cross-border operations. A move to dynamic routing is expected to result in improved fuel efficiency and environmental sustainability without negatively impacting capacity, while improving safety and cost efficiency. |
| **CONNECTED AND AUTOMATED ATM**  Europe’s ATM infrastructure operates with low levels of automation support and data exchange, leading to rigidity, lack of scalability and resilience, and an inability to exploit emerging digital technologies, including in support of new airspace users. The future architecture of the European sky requires increased automation in air traffic control and an infrastructure commensurate with the performance required by each airspace user type and environment, including those in the transition areas between Europe and neighbouring ICAO regions which may have specific regulations and challenges. | | |
| 1. **Airborne trajectory sharing** | **SESAR 2020:**  **PJ38 W3 ADSCENSIO/Airborne trajectory sharing** | PJ38 ADSCENCIO is a SESAR 2020 demonstration project that has achieved the following results :  - Operational evaluations demonstrate early benefits of using ADS-C data: flight track reductions are observed and controller task to identify flight plan discrepancies is facilitated.  - ADS-C data collection from revenue flights has been continued. Analysis shows the ways to improve operations in a wider range of conditions.  - An ADS-C Common Service infrastructure has been developed and tested to systematize data exchange between ANSP and minimize the impact on global datalink network.  - The SATCOM/VDL2 complementarity to convey ADS-C messages has been validated.  In particular operational evaluation of most relevant ADS-C EPP (Extended Projected Profile) information display have been performed in 2022 using data received via a first instance of an ADS-C Common service using SWIM interfaces. The SWIM interface defined and used in this project is the main input to the standardisation process under the Operational Excellence Program.  The presentation will aim at presenting main project results in support of CP1 AF6 such as EPP data availability and use on the ground and ADS-C common service demonstration with SWIM. |
| 1. **JARVIS - Just a rather very intelligent system** | **Industrial Research** | JARVIS is a new SESAR project which aims to deliver three AI-based ATM solutions in the form of digital assistants (DA) to support pilots, ATC operators and airport operators in non-safety and safety critical operations.  The three digital assistants will be:  -Airborne DA (AIR-DA), increasing the level of automation in the flight deck and enabling reduced crew operations and single pilot operations  -Air Traffic Control DA (ATC-DA), increasing the level of automation in control towers  -Airport DA (AP-DA), increasing the level of automation in airports, enhancing safety and security for intrusion detection scenarios. |
| 1. **FCDI - Future Connectivity and Digital Infrastructure** | **SESAR 2020: FDCI-SOL-4 LDACS End to-End Integration (building on SESAR 2020 Research: PJ14)** | The project aims to specify and develop the future communications, navigation and surveillance technologies to support and manage the operational services, like the four-dimensional trajectory management, in the future ATM system. Performance requirements for CNS systems are becoming increasingly complex and demanding and need to be considered as part of an integrated and holistic system of systems, which includes air and ground CNS solutions considering convergence towards a common infrastructure, and a unified concept of operations, where possible. In parallel, CNS systems and infrastructure for both airborne and ground must take a more business- and performance oriented approach with efficient use of resources delivering the required capability in a cost-effective and spectrum efficient manner.  • FDCI-SOL-4 will continue the work done in PJ.14-W2-Sol60 with the goal to solve all the gap and finally have a complete TRL6 LDACS ground and air system.  • FDCI-SOL-4 validation will allow to exchange ATN B1and ATS B2 Services through LDACS Access Network, ensuring and maintain ATN/OSI and ATN/IPS supporting ATS and AOC service |
| **AIR GROUND INTEGRATION AND AUTONOMY**  Current ATM systems and technologies are not designed to allow the accommodation or full integration of an increasing number of new forms of mobility and air vehicles which have a high degree of autonomy and use digital means of communication and navigation. The future ATM needs to evolve, exploiting existing technologies as much as possible, and developing new ones in order to increase global ATM performance in terms of capacity, operational efficiency and accommodation of new and/or more autonomous air vehicles, i.e. supporting the evolving demand in terms of diversity, complexity from very low-level airspace to high level operations. This progressive move towards autonomous flying, enabled by self-piloting technologies, requires closer integration and advanced means of communication between vehicle and infrastructure capabilities so that the infrastructure can act as a digital twin of the aircraft. Ultimately, manned and unmanned aerial vehicles should operate in a seamless and safe environment using common infrastructure and services supporting a common concept of trajectory-based operations. Future operations should therefore rely on direct interactions between air and ground automation, with the human role focused on strategic decision-making while monitoring automation. | | |
| 1. **IRINA - IFR RPAS Integration in EuropeaN Airspace** | **Industrial Research** | Remotely-piloted aircraft System (RPAS) is a specific set of unmanned aircraft, which is remotely operated by a pilot in a control station. Managing RPAS traffic is challenging for controllers since RPAS fly significantly slower than conventional jet airliners and experience latency in communicating or loss of communications link with the ground. The project will build on the results of the ERICA project to continue the research work on the integration of IFR RPAS into the airspace, addressing the required infrastructure, services and detect and avoid functionalities. |
| 1. **ECHO - European Concept of Higher Airspace Operation** | **Exploratory Research** | The higher airspace (airspace approximately 60,000 ft) is no longer exclusive to space rockets and military planes, but hosts an expanding range of vehicles, including long-endurance balloons, high altitude platform stations (HAPS), supersonic and hypersonic aircraft. With missions varying from connectivity and surveillance to passenger transport and satellite services, these vehicles with vastly different operating characteristics present a new airspace management challenge.  The ECHO project did not work on specific Master Plan operational improvements or enablers. However, the ConOps especially for the long term includes TBO related Operational Improvements and Enablers as well as Improvements related to 4D Operating Zones.  ECHO delivered a comprehensive demand analysis and the concept of operations for higher airspace to allow safe, efficient and scalable operations. Validation activities and further research is currently envisaged in SESAR3 ECHO2 project to move the current theoretical concept of operations (TRL 2) closer to daily operational use (up to TRL 6) by providing EUROCONTROL Network Manager with real time mission monitoring capabilities, cross-border validated trajectory data from HAPS test flights and enhanced network, airspace and continency management procedures. |
| 1. **Network TBO** | **Industrial Research (building on SESAR 2020 research: PJ07 S38, PJS39, NETWORK solutions 1, 2 3)** | The NETWORK TBO project is just starting and it’s scope is the design of future services to support TBO operations at network level.  Three SESAR solutions cover respectively the pre-flight phase, the strategic execution and all trajectory synchronisation processes in execution involving the Network Manager.  The consortium includes 22 partners offering a wide range of expertise including Airspace users operations and systems, Network management, local flow management, ATC and industry.  This strategic SESAR project is at the interface of many developments in progress related to TBO: FF-ICE/1 implementation, FF-ICE/2 definition, iINM requirements to support the Network 4DT CONOPS and the high level TBO IOP coordination group.  The NETWORK TBO project is mainly a continuation of the Wave 2 PJ07 project. We take his opportunity to present also videos of V3 mature concepts like protection hotspot, pro-active F-DCI and UDPP from PJ07 that will progressively go to implementation. |
| **CAPACITY-ON-DEMAND AND DYNAMIC AIRSPACE**  For the last decades, capacity has not been available when and where needed and it has often been available when and where not needed. New airspace users including RPAS/HAO traffic will increase by 2030 and will require an increased level of capacity and its variability. Integrated Air Traffic Management- requires agility and flexibility in providing capacity where and when it is needed, particularly for maximising the use and performance of limited resources, i.e. airspace and ATCOs. It will require the dynamic reconfiguration of resources and new capacity on-demand services to maintain safe, resilient, smooth and efficient air transport operations while allowing for the optimisation of trajectories even at busy periods. | | |
| 1. **IFAV3 - Increased flexibility of ATCO validations - V3** | **Industrial Research** | Air traffic controllers are a key resource in air traffic management. Deploying controllers more flexibly to specific portions of en-route airspace, sectors and working positions, when and where needed, can help ATM become more resilient and responsive to unexpected events, changes in traffic demand or staff shortages. The project aims to advance the concept behind increased flexibility of controller validations (IFAV) based on technical enablers, such as specific controller assistance systems that provide support on sector specific procedures and rules. The project will focus on the use of IFAV in upper area control and in remote tower centres. |
| 1. **FASTNet - Future Data Services and Applications for airports and Network** | **Industrial Research** | Every flight begins and ends at airports, which makes them essential nodes in the aviation network. The project will make use of advances in data technologies to help fully integrate airport operations into the network (AOP-NOP integration). The project will focus on the pre-tactical and strategic planning, using artificial intelligence to enable airport-to-airport collaborative planning within the network operations plan. The project also aims to extend the timeframe of the AOP-NOP integration, from months to days in advance of departure. The project will rely on state-of-the-art technologies to integrate new datasets available at local level, such as local restrictions, pre-tactical flight information and strategic local information in order to enrich demand and capacity balancing information and ensure efficient planning from the strategic phase.  Expected results of FASTNet:  -Solution 1: performance benefits of all connected airports and the network, such as improved punctuality, optimized use of ground and airspace capacity, thus leading to higher network efficiency.  -Solution 2: The focus on strategic and pre-tactical phases relies on the fact that airport plan in these phases face a very large number of errors and approximations.  As demand planning is usually driven by flight schedules and passenger forecasts based on static models, there is a  need of late adjustments during the tactical phase to make up for what was poorly planned in strategic and pre-tactical phases which in turn negatively impacts the network. |
| 1. **ISLAND - Intelligent suite for local and network demand and capacity balance** | **Industrial Research** | Managing demand for access to the airspace and available capacity is a balancing act in ATM. The project will develop dynamic airspace configuration solutions by leveraging artificial intelligence (including machine learning), various virtualisation models, digital integrated network and ATC planning (INAP) applications, as well as network-wide monitoring. The project addresses the need for on-demand air traffic services reflective of traffic demand, and the continuity of ATM services despite disruptions. The solutions are expected to enable increased en-route capacity and improved cost-efficiency of air traffic service provision, without compromising the current safety levels. |
| 1. **HARMONIC - Harmonised network through smart technology and Collaboration** | **Industrial Research** | The project completes key aspects of the demand and capacity balancing (DCB) operational concept in those areas where improvements would make the implementation of the operational concept more efficient. Solutions will cover automatic support for spot analysis and resolution, integration of constraints and dynamic airspace configuration (DAC). The overall aim prepare these solutions for early deployment, integrating the new architecture of integrated Network Management (iNM).  The Solution supports local actors and NM Operations Centre to define DCB solutions based on improved flight selection and measure choice, to tailor the demand to the available capacity.  Additionally, it will provide more flexibility and equity to airlines and harmonize all actor’s request  identifying network wide solutions. The DAC-DCB toolbox will offer a broad collection of services that provide automated support to the operator to perform demand and capacity operations, including from the design of the sector configuration to the selection of measures and target flights. |
| 1. **PJ.02 W2 AART: Airport Airside and Runway Throughput and PJ.05 W2 DTT: Digital Technology for tower** | **SESAR 2020:**  **PJ.02-W2-21.1: Extended airport safety nets for controllers at A-SMGCS airports PJ.02-W2-21.3: Digital surface management for airport vehicles PJ.02-W2-21.6: Surface route planning and management operations**  **PJ.05-W2-97.2 ASR: Automatic Speech Recognition** | PJ.02-W2, Airside, Airport and Runway Throughput (AART), was a SESAR 2020 project, which aimed to improve the efficiency and resilience of arrival and departure operations at capacity-constrained airports and access to secondary airports by delivering operational and technical improvements to enhance infrastructure and increase traffic throughput whilst providing environmental benefits and preserving safety.  The results achieved through the validations show the following benefits: - PJ02 Sol2.1/3/6 contribute to enhancement of safety alerts to Controllers lead to increased safety and situational awareness. Increased safety and driver’s awareness with introduction of on-board graphical guidance for surface vehicles. ; - PJ05 Sol 97, through the validations, shows the following benefits: • Workload reduction • Increase of situational awareness • Highlight of call sign  • Recognition rate between 70% and 80%  PJ02: Leonardo will show a integrated A-SMGCS system e composed at least of ground and tower Working Positions and a diver position. A synthetic scenario will able to show the main alarm runway incursion, taxi deviation, runway busy, the system 2 capability to calculate route both for aircrafts and vehicles.  PJ.05: Leonardo will show a novel Speech recognition tool composed at least of one Working Position equipped by ATC headset. A synthetic scenario will able to show the capability to issue the main clearance for Ground and Tower: Taxi, StartUP, pushback, takeoff and landing clearance, using only the ATC radio phraseology. |
| 1. **SMARTS - Smart sectors** | **Exploratory Research** | Optimising airspace capacity is a key to accommodating current and future air traffic, while maintaining safety, improving efficiency and reducing aviation’s environmental impact. The project will focus on dynamic airspace configuration and the design of “smart sectors”. This covers the design of basic volumes of airspace with optimal distribution of workload, tailored around specific safety and operational requirements, including complexity. As a by-product, the application of cost-efficient capacity actions allows for more accurate demand and capacity balancing planning, thus reducing the number of required demand measures. |
| **VIRTUALISATION AND CYBER-SECURE DATA SHARING**  The Airspace Architecture Study (AAS) highlighted the lack of flexibility in the sector configuration capabilities at pan-European level. This is caused by the close coupling of ATM service provision to the ATS systems and operational procedures, preventing air traffic from making use of cloud-based data service provision. A more flexible use of external data services, considering data properties and access rights, would allow the infrastructure to be rationalised, reducing the related costs. It will enable data-sharing, foster a more dynamic airspace management and ATM service provision, allowing air traffic service units (ATSU) to improve capacity in portions of airspace where traffic demand exceeds the available capacity. It furthermore offers options for the contingency of operations and the resilience of ATM service provision. | | |
| 1. **SEC-AIRSPACE - Cyber SECurity Risk Assessment in virtualized AIRSPACE scenarios and stakeholders’ awareness of building resilient ATM** | **Exploratory Research** | The digitalisation and modernisation of air traffic management will bring many advantages to aviation, but these will come with challenges in managing cyber vulnerabilities. The project aims to introduce cyber security components into the state-of-the-art security risk assessment methodology (ies) currently already in use in ATM. The project will also investigate the potential of applying the concept of people analytics (PA) to increase cyber security awareness in ATM organisations. The project results will be validated and demonstrated through two real use cases, involving relevant stakeholders. |
| 1. **VITACY - VIrtual center with Triangle Architecture and CYber-resilience** | **Industrial Research** | Today, ATM in Europe mostly consists of country-based systems and processes, which require customised systems and solutions at each ATM provider. This has led inevitably to a lack of interoperability and higher costs of air navigation services across Europe and an inefficient usage of resources. The virtual centre refers to the decoupling air traffic management (ATM) data services, such as flight data, radar, and weather information, from the physical controller working position (CWP). The project will a “triangle architecture”, a powerful type of architecture based on disaggregating services currently offered by one main ATM data service provider (ADSP) into new specific functionality-oriented ADSPs for arrival ,management, time-based separation and conflict detection and resolution. The project will also develop cyber-resilience tools focused to monitor attacks and display alerts if detected. |
| 1. **iSNAP - iTEC SkyNex ATC platform** | **SESAR 2020: PJ.10-W2-93B, PJ.32-W3-01** | iSNAP project aims at evolving the current iTEC platform architecture to support the virtual centre concept, by making use of state-of-the-art digital technologies, underlying architectural principles, and taking advantage of commercial off-the-shelf products to reduce development and implementation costs. |
| **MEMBER SPECIFIC STANDS** | | |
| 1. **Boeing SESAR Participation** | **Various** | This exhibit will showcase how Boeing Research & Technology-Europe is contributing SESAR research and development. |