


# THE CHAMPIONS PLAYGROUND

Technological improvements promoted by ATM's champions are boosting the sector's capabilities and accelerating digitalization

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 Air traffic management big champions are multinational institutions, ANSPs and other ATM stakeholders, who are working together to deliver improved operational performance, increase cost efficiency and to meet sector sustainability targets by improving ATM technology.

They must lead the development of mission critical technologies into applicable and effective solutions. Promoting the use of

technological evolution, considering technology's current pace of change, implies smart investment that is not only financial, but also includes significant time and effort from their own resources, that must be leveraged by a cultural change and a clear motivation in making things happen.

The focus of this article is on some of these big champions: the SESAR Joint Undertaking (SJU), the iTEC Alliance, and EUROCONTROL.

## An ambitious vision

Innovation policy has become a central element of the European Commission (EC) in their attempt to improve performance in innovation. In 2004, the EC launched the Single European Sky (SES) initiative to modernize and reform the architecture of European ATM. SES is a legislative approach to meet future capacity and safety needs at a European level, rather than at country level. SES is supported by the SES ATM Research

iTEC network of centres in Europe



(SESAR) Joint Undertaking (SJU) public-private partnership, which is responsible for the coordination of European Union research and development (R&D) activities in ATM.

As pointed out by the SJU Airspace Architecture Study, European airspace used to be locally optimized according to national needs and preferences. It was also reliant on the local physical infrastructure. As a result, available capacity in air traffic management systems was geographically constrained and could not dynamically accommodate air traffic demands.

Driven by the objectives of the SES, ATM partners are coordinating their expertise in research, development and validation activities in Europe to help focus efforts and resources to deliver innovative technical and operational solutions in line with the priorities of the SES, to improve air transport safety levels, reduce emissions and ATM costs and increase ATM capacity.

The ambitious vision for the SES has succeeded in promoting awareness of the problems that air traffic management are facing to the whole aviation community, promoting initiatives that have already brought significant improvements.

As an ATM stakeholder providing worldwide ATM solutions, Indra has been committed to the SES and SESAR from the very beginning of the initiative, aligning its

research and development activities with SESAR objectives.

### Leveraging digital opportunities

iTEC Alliance partners are focused and committed to continued development of the new generation of ATC systems over the long term, delivering improved operational performance and increased cost efficiency, and shaping how digital technology can handle traffic growth and diversity safely and efficiently, leading to a more automated, interconnected, resilient, flexible and digital European sky.

The collaborative efforts of the iTEC partners are providing opportunities to reach higher levels of automation, leveraging digital technologies together with ATM network connectivity, interoperability and resilience.

The alliance continually considers its operational and technical services as envisaged by its end users and customers and, as a common ATM system in operation, iTEC is enabling ATM to support emerging technologies, including drones and autonomous aircraft, among others.

iTEC's advanced automation functionality contributes to the supply chain ecosystem in the reduction of the CO<sub>2</sub> footprint, through implementation of direct routes, dynamic airspace configurations and many other solutions that help reduce the average flown

distance of flights and holding times, leading to less fuel consumption. Advanced automation and AI-based algorithms can optimize traffic flows and minimize flight delays. Big data analysis will provide valuable information to make further efficient and sustainable use of the airspace. The exploitation of digital technologies is significantly contributing to reduce fuel burn and CO<sub>2</sub> emissions.

In addition to these opportunities for innovation and sustainability through interoperability, iTEC's compatibility with private cloud data centre architecture is supporting the mitigation of emergent cyber threats. iTEC based centres are able to provide geographically unconstrained geo-redundant virtualised data centre capabilities and enable the building of a resilient ATM network.

### Expanding frontiers

iTEC is the world's largest ATM System alliance and comprises seven of the most important European ANSPs (DFS, ENAIRE, NATS, LVNL, Avinor, Oro Navigacija and PANSA), with Indra as the technology partner. It supports the largest network of Air Traffic Control Centres in Europe, and iTEC ANSPs control more than seven million flights a year.

iTEC makes continuous efforts to extend its mutual collaboration and to further



**Left:** iTEC members at World ATM Congress 2022

**Below:** NAV CANADA, NATS, Avinor and Indra at World ATM Congress 2022

As part of the signature of the framework contract between EUROCONTROL and Indra for the iNM, Ignacio Mataix, Indra chief executive officer says, “The combination of Indra’s dimensions with our worldwide leadership and experience in the development of the most cutting edge Air Traffic systems, together with our unique ability to create a multidisciplinary team of specialists that respond to all aspects of the project, has played a key role in placing Indra in a unique position to meet this challenge.”

**A common vision**

ATM digitalization promoted by these ATM big champions is boosting commitment by the ATM sector to accelerate the use of available new technologies and drive solutions for the future. The SJU continues to drive research and development activities in air traffic management; the iTEC Alliance is responding to the complex challenges through a common vision, to enable the evolution to a new digitalized European airspace architecture; EUROCONTROL NM will maximise the efficiency, safety and sustainability of the European aviation network through a new generation of ground breaking, resilient and scalable operational systems.

Indra is contributing to this view by harnessing the power of technology, innovation and collaboration.

ATM big champions are driving the future of the sector, helping ATM to achieve its goals; they play a significant role that deserves recognition. ❖

expand its frontiers and strengthen its alliance, and is facing an extremely remarkable opportunity.

NAV CANADA, who own and operate Canada’s civil air navigation system, recently announced that they are commencing a twelve-month evaluation of iTEC, in collaboration with iTEC Alliance members NATS, Avinor and Indra. Although the project is in the evaluation phase, it fits in with NAV CANADA’s strategic priorities; in NAV CANADA’s iTEC evaluation press release published the 22 June 2022, Raymond G. Bohn, NAV CANADA president and CEO, said, “as the global aviation sector evolves to meet the demands of the future – for air travel, for operational efficiency and environmental sustainability – leveraging partnerships and collaboration are key”.

These digital solutions will also increase the level of collaboration and automation of the iNM’s operations and airlines, airports and control centres through innovative technologies including virtualization, cloud computing, AI, data analytics and machine learning, within a cyber secure ecosystem.

Indra’s leadership as iNM’s main technology partner is the result of their consistent growth in the air traffic sector over the last twenty-five years. Indra is utilizing its existing capabilities as the basis to further develop and strengthen their competencies through a continuous learning process and by working together with their iNM peer companies, which is crucial to be able to meet the needs of EUROCONTROL and their customers.

**Defining solutions for the future**

The European Organisation for the Safety of Air Navigation (EUROCONTROL), under its mandate as network manager (NM), has launched the integrated network manager (iNM) program that will define solutions for the future of air transport throughout Europe – and which may be used beyond.

iNM will maximize the efficiency, the safety and sustainability of the European aviation network through the development of a new generation of ground breaking, resilient and scalable operational systems. From 2021 to 2030, the incremental renewal of all the NM’s main operational systems will result in a new digital architecture that will harness the power of innovation and enable NM to deliver ever more integrated business services and products to its stakeholders.

