



# The SESAR Joint Undertaking: *A model for public-private partnership in Europe*

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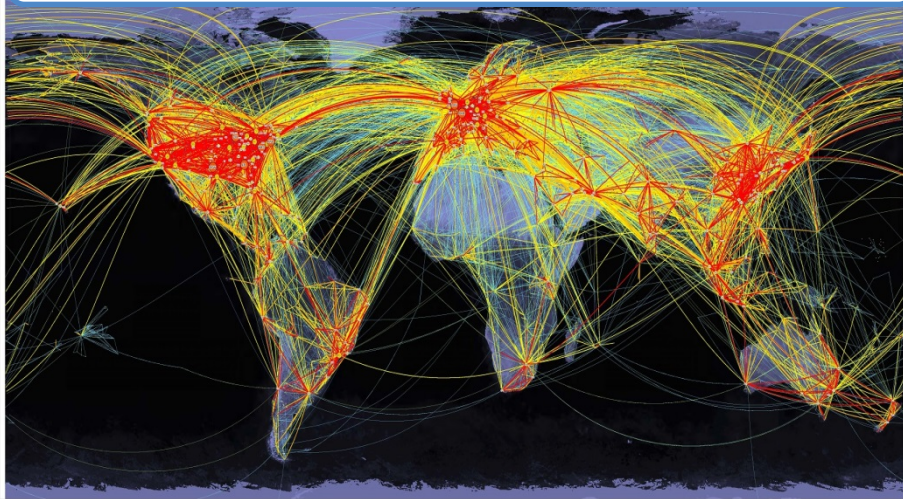


Founding Members

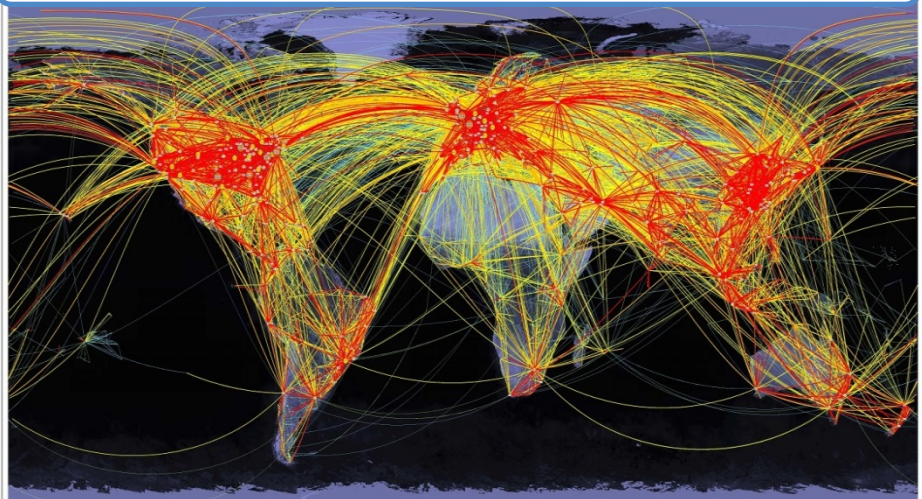


# Global aviation forecast

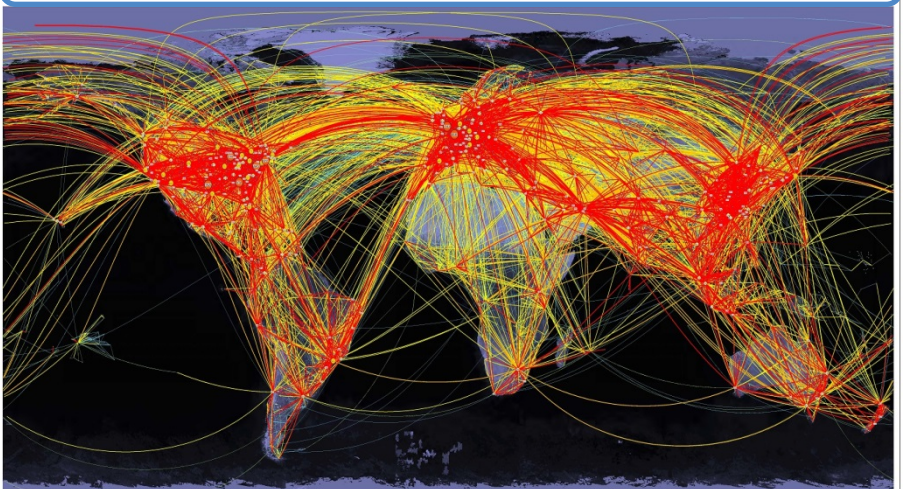
2010



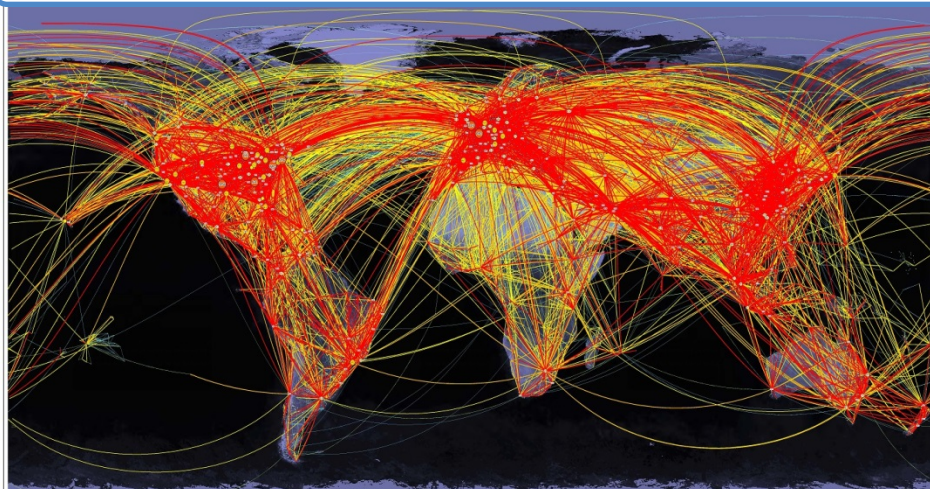
2020



2030



2040





# Europe's appetite for air travel

## 2012

9.5 million flights



0.7 billion  
passengers

## 2035

14.4 million flights



1.4 billion  
passengers

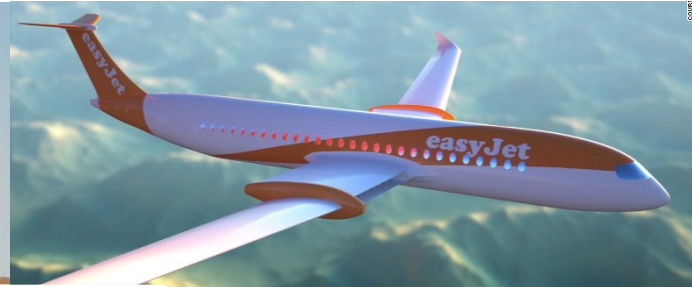
# Today's aviation infrastructure





# Delivering a new era in air mobility

7.4M drones in activity in 2050



A new era of (air) mobility is emerging with new actors

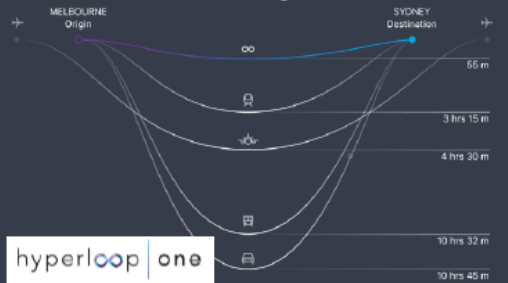
By 2025, autonomous features in vehicles representing \$42B market



TESLA



We're not selling transportation, we're selling time



hyperloop one



AIRBUS



# Delivering the digital transformation



Increased **virtualisation**,  
regarding provision of services  
irrespective of the location of  
physical infrastructure

**Integration of all  
vehicles** into Europe's  
airspace, including  
drones

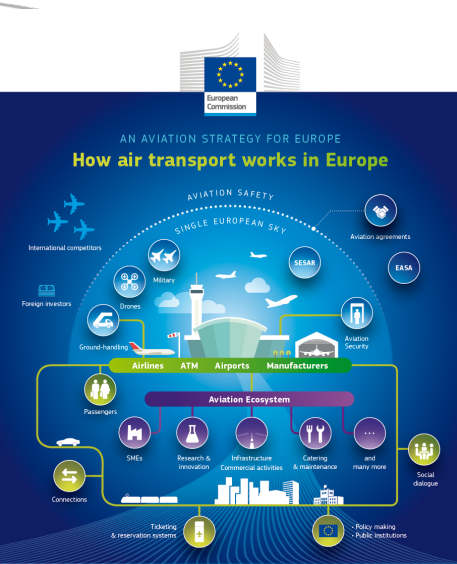
## OUR VISION

With SESAR, the future of  
air traffic management is  
characterised by:

**Flight-centric operations**,  
so airlines can fly their  
preferred routes

**Improved information sharing**,  
creating an intranet of services and  
applications accessible by all aviation  
stakeholders

**Interoperable systems**, allowing  
connectivity of systems across  
borders





# SESAR lifecycle



# SESAR public-private partnership



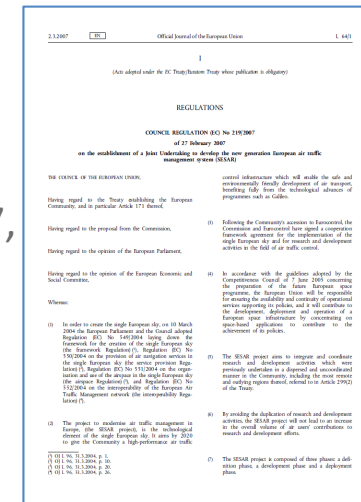


# SESAR Joint Undertaking Established by EU Regulation



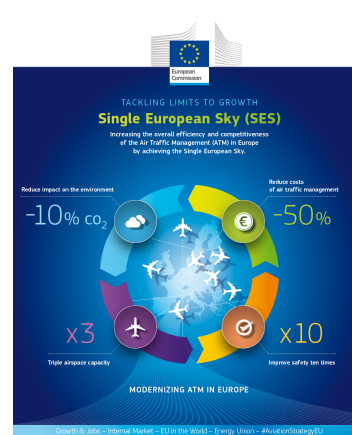
**SESAR Joint Undertaking (SJU)** established in 2007, based on EU Treaty Article 171 with Council Regulation (EC) No 219/2007, amended in 2008 and 2014:

- Belgian not-for-profit, then since 2008 a Community Body operating under EU Financial Regulation Article 208 (“legal personality and ability to receive contributions charged to the budget”);
- Time-limited duration, extended once in 2014 (duration now to end 2024);
- Defined link to EU Policy (Transport, Aviation & SES), global ATM interoperability and charged with the adoption and maintenance of an ATM Master Plan;
- SJU Regulation and its Statutes define the Governance organs (Administrative Board and Executive Director), the mandatory stakeholders and their block-voting rights;
- Administrative Board is chaired by the EC (on behalf of the EU) and has not less than 25% of the vote;
- Regulation includes provision for later incorporation of private members to form a partnership with the founding international (public) bodies (EU & Eurocontrol);
- Regulation defines SJU scope; to drive technological improvements and converge fragmented R&D efforts in line with an ATM-Masterplan (endorsed by the Transport Council in March 2009).



# An initiative strongly coupled with the Regulation of Aviation & Air transport

EU  
Strategy



Supervision and  
Recommendations



THE ROADMAP FOR DELIVERING HIGH PERFORMING AVIATION FOR EUROPE  
**European ATM Master Plan**

Executive View

Edition 2015



Unique specific  
regulation

Plan of  
Direction



# SESAR JU partnership



SCHEDULED & CHARTER AIRLINES	
AIRFRANCE	American Airlines
BRITISH AIRWAYS	IBERIA
Lufthansa	novair
SAS	TUIfly.com
EL AL	TURKISH AIRLINES
LOW FARE AIRLINES	CARGO OPERATORS
ELFAA	DHL
Jet2.com	Lufthansa Cargo
RYANAIR	
BUSINESS AVIATION & GENERAL AVIATION (INCL. HELICOPTERS)	
ACAS	DASSAULT AVIATION
EHA	IATA
NET-JETS	



# SESAR Joint Undertaking

## Membership and partnering



The founding Regulation makes provision for possible Membership of the SJU beyond the two in particular for:

- the European Investment Bank;
- any other public or private undertaking or body including those from third countries that have concluded at least one agreement with the European Community in the field of air transport.

The SJU managed a competitive dialogue procedure to select private and public Members that are:

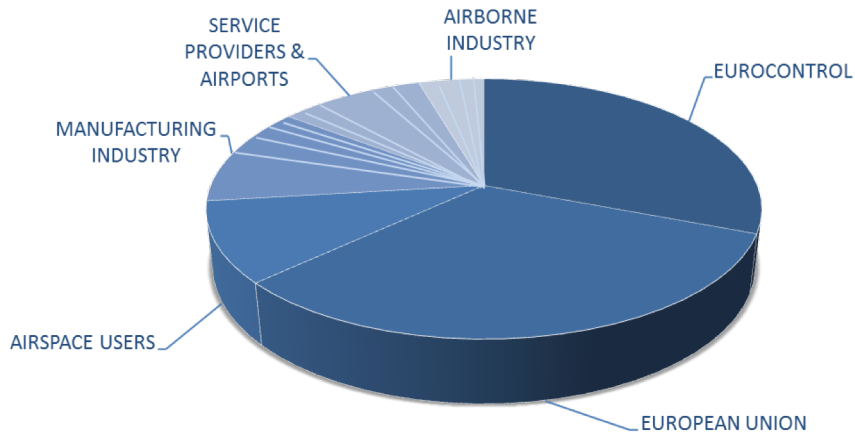
- Service providers, including Airports
- Industry (Ground and Airborne)
- Research Organisations

Membership process resulting in 15 additional Members which has recently increased to 18 Members as a result of a new call in 2015 and subsequent signature of a Membership Agreement that sets the partnering rules, obligations and rights:

- General obligations and liabilities of partnership
- PPP Membership Accession,
- Contributions & Voting Rights
- PPP Governance
- Confidentiality & Data Protection
- Entry into Force, Term and Termination
- In-Kind and In-Cash contributions



# SESAR Joint Undertaking Governance



“LEAN”

“SUBSIDIARITY”

“ACCOUNTABILITY”



# SESAR Joint Undertaking Contributions



The means of realising the In-Kind and In-Cash contributions is through the award of research work to groups of Members through SESAR JU co-financing and/or grants:

- Master Plan and Multi-Annual Work Programme inform the Members of the possibilities for funding before Membership
- SESAR JU publish calls (restricted to the SJU Members and Eurocontrol)
- SESAR JU encourage competition and partnering within the members to secure high quality and performing proposals for research activity
- SESAR JU members agree to work together (across the awarded grants/contracts) with the objective to validate and deliver ATM Solutions ready for deployment



- Engages over 3,000 skilled operational, engineering and research staff



- Open calls for contribution beyond the Membership where the skills are not part of the Membership and that wider stakeholder involvement is required.



Total Investment in Research & Deployment through SESAR: 3.6Bn €

Total Investment in Deployment in progress through SESAR: -6Bn €

# Delivering the digital transformation

63 tech solutions delivered



**+11%**  
Airport  
capacity



**-39%**  
flight  
variance



**-5,3%**  
costs



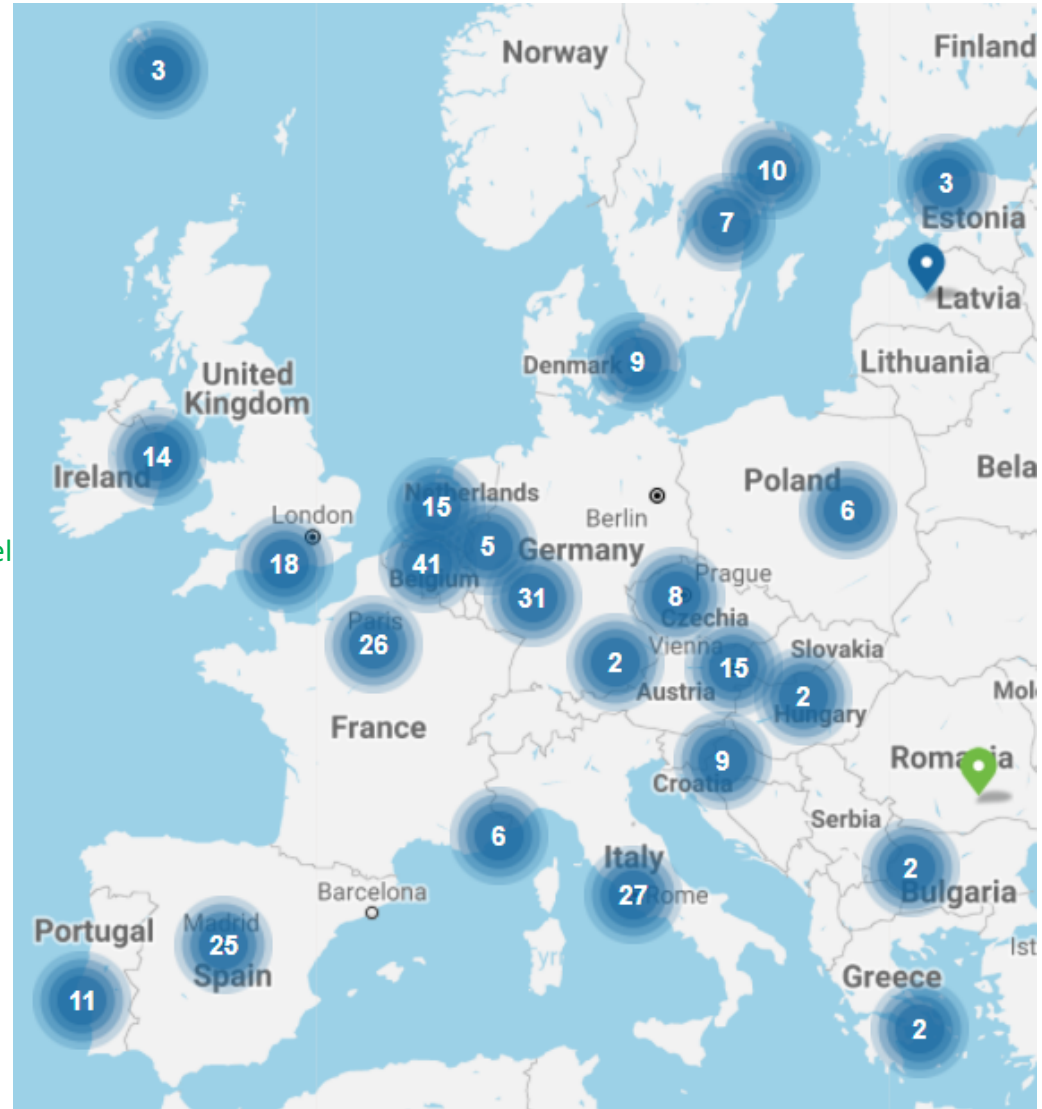
**-2,4%** fuel  
per flight



**60% synchronised deployment**  
(Pilot Common Project & Common Project 2)

**€ EUR 12.1 billion performance  
gains per year by 2035** (PCP)

**20% in local deployment**





# Next wave of digital transformation (SESAR 2020)



## 60+ projects underway

Exploratory research, industrial research, demonstrations



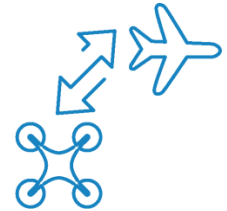
Virtual technologies



Mobile, terrestrial & satellite-based communications



Digital & automated tools



Higher levels of autonomy & connectivity



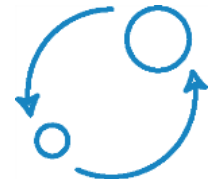
Video, synthetic & enhanced sensor tech



Big data analytics & open source data usage



System modularity



System flexibility

# Integrating all air vehicles



2017

**U-space blueprint delivered  
9 U-space projects launched**

U-space concept definition  
Higher level of automation  
Ground based technology  
Datalink  
Drone information management  
Security & Cyber-resilience  
Aircraft systems

U-space



DroC<sup>2</sup>om



**Demonstrating U-space**  
- Large-scale demos  
- Geo-fencing project

2018



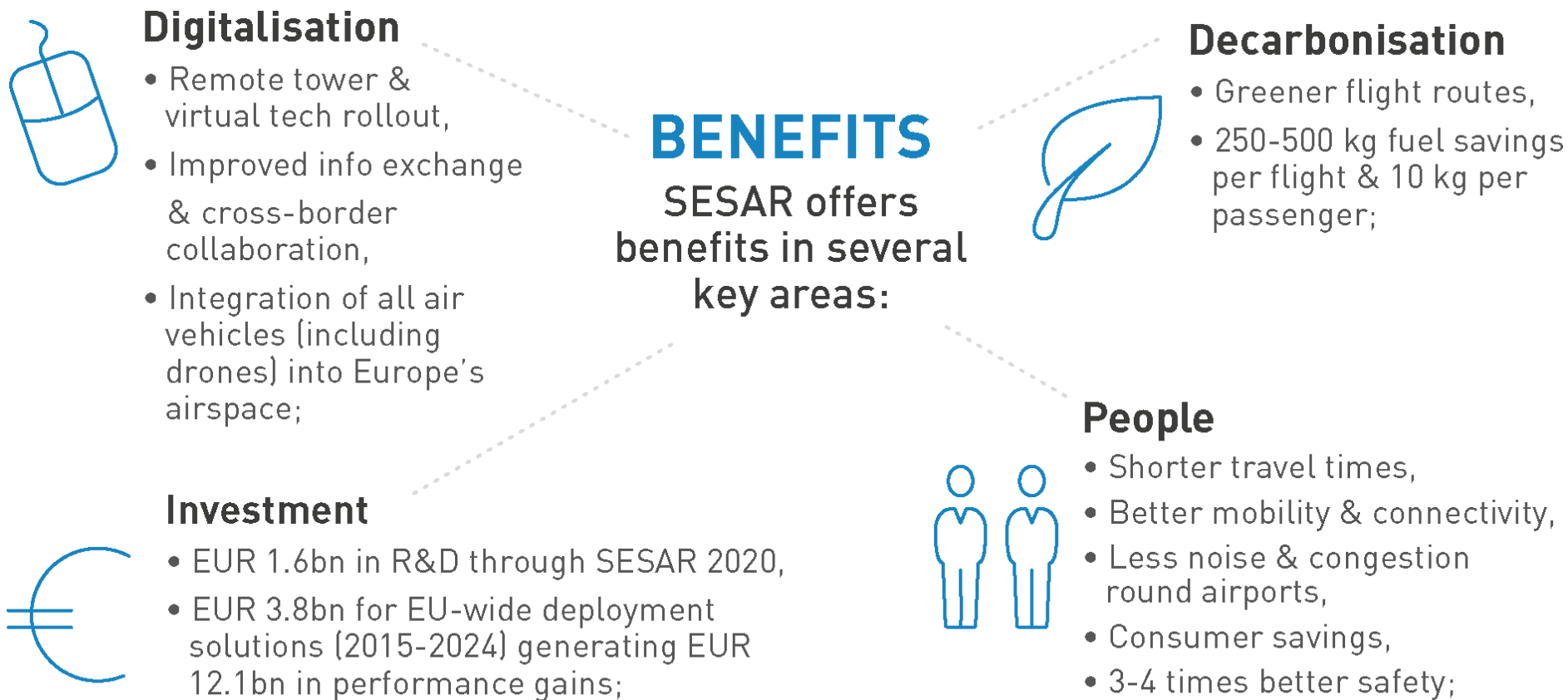
# U-space demonstrators



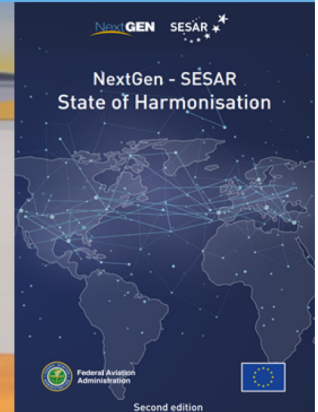
- Main objective is to comprehensively prepare and de-risk a **rapid deployment of U-space** all the way to **urban areas**
- Projects establishing a connection with the **EU Smart Cities** initiative are particularly encouraged
- **5 and 10** demonstration sites expected across different EU Member States
- Demonstrations to be completed in **2019**



# Benefiting Europe's economy and people



# Creating global impact





The SESAR Joint Undertaking Model

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Thank you very much  
for your attention!



Founding Members



EUROPEAN UNION



EUROCONTROL