UIC2
Urban air mobility Initiative
Cities Community

WALK.RIDE.DRIVE.FLY

Driving the Sustainable & Responsible Transition of Urban Mobility to the Third (Vertical) Dimension

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An Initiative of EU Smart Cities

Head of Public Co-Creation & Ecosystem Outreach
AIRBUS, Urban Mobility

Overview of UIC2

10 December 2021

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UIC2
Urban air mobility Initiative Cities Community

WALK.RIDE.DRIVE.FLY

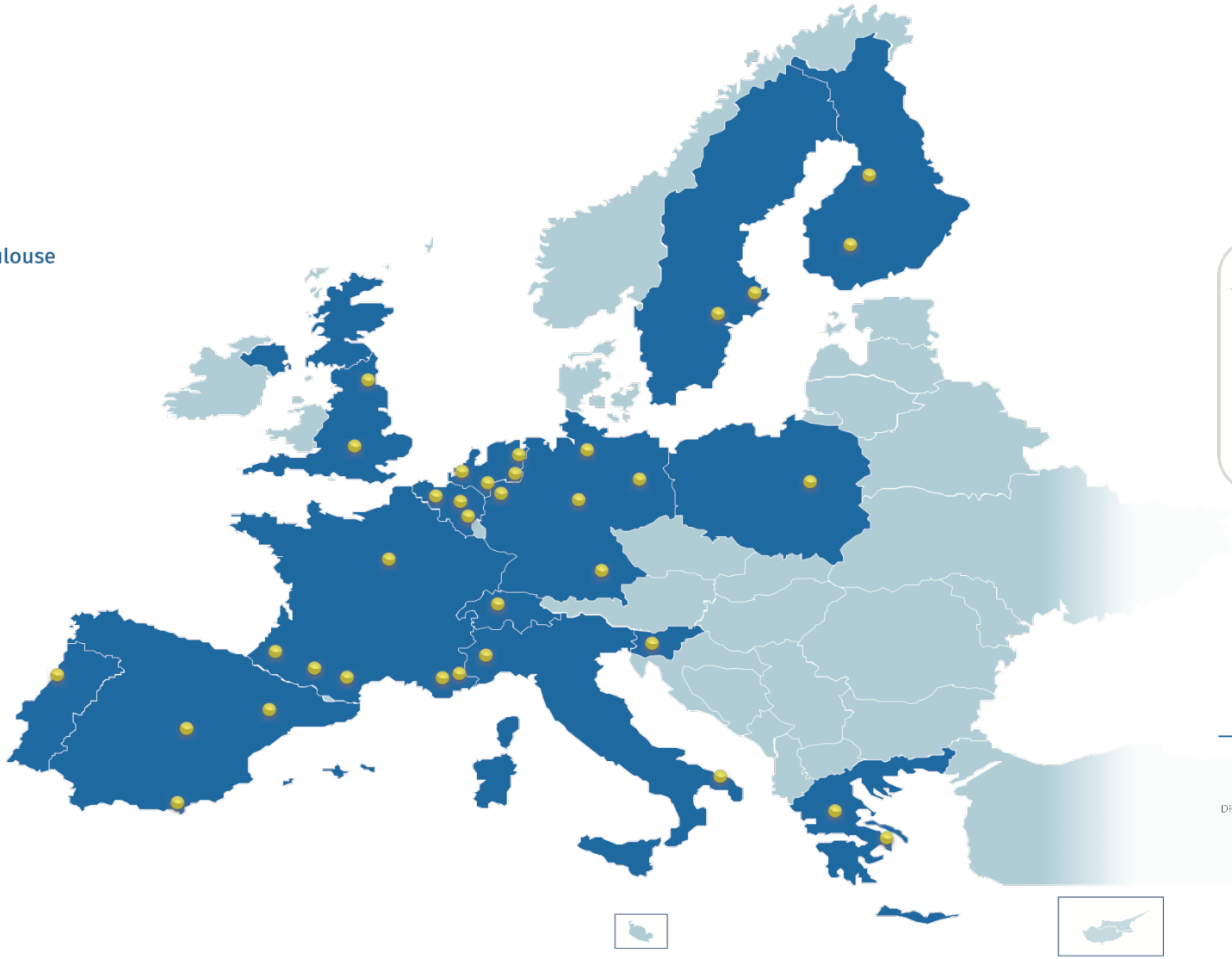
Urban Air Mobility Initiative Cities Community

The voice of cities and regions in urban air mobility

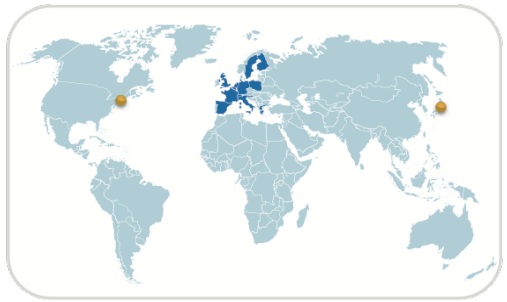
Driving the Sustainable & Responsible Transition of Urban Mobility to the 3rd Dimension

City & Region Members

- Antwerp, Hasselt & Liege (MAHHL)
- Oulu, Tampere
- Aix-Marseille, Albi, Ile de France, Region N. Aquitaine, Region Sud, Toulouse
- Aachen (MAHHL), Berlin, Hamburg, Ingolstadt, Region Northern Hesse
- Egaleo, Trikala
- Bari, Turin
- Amsterdam, Enschede, Heerlen & Maastricht (MAHHL)
- Metropolia GZM
- Porto
- Ljublijana
- Madrid, Malaga, Zaragosa
- Norrkoping, Stockholm
- Canton of Geneva
- Durham, Oxfordshire County



International City & Region Partners



- Mie Prefecture
- Commonwealth of Massachusetts

Knowledge Partners

ARCTIC DRONE LABS · JUTM · DTA Distretto Tecnologico Aerospaziale · anci · ERTICO · POLIS · CEiJA

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Latest update: 10 Dec. 2021

Mobility solutions in smart cities

Motto of UAM initiative:

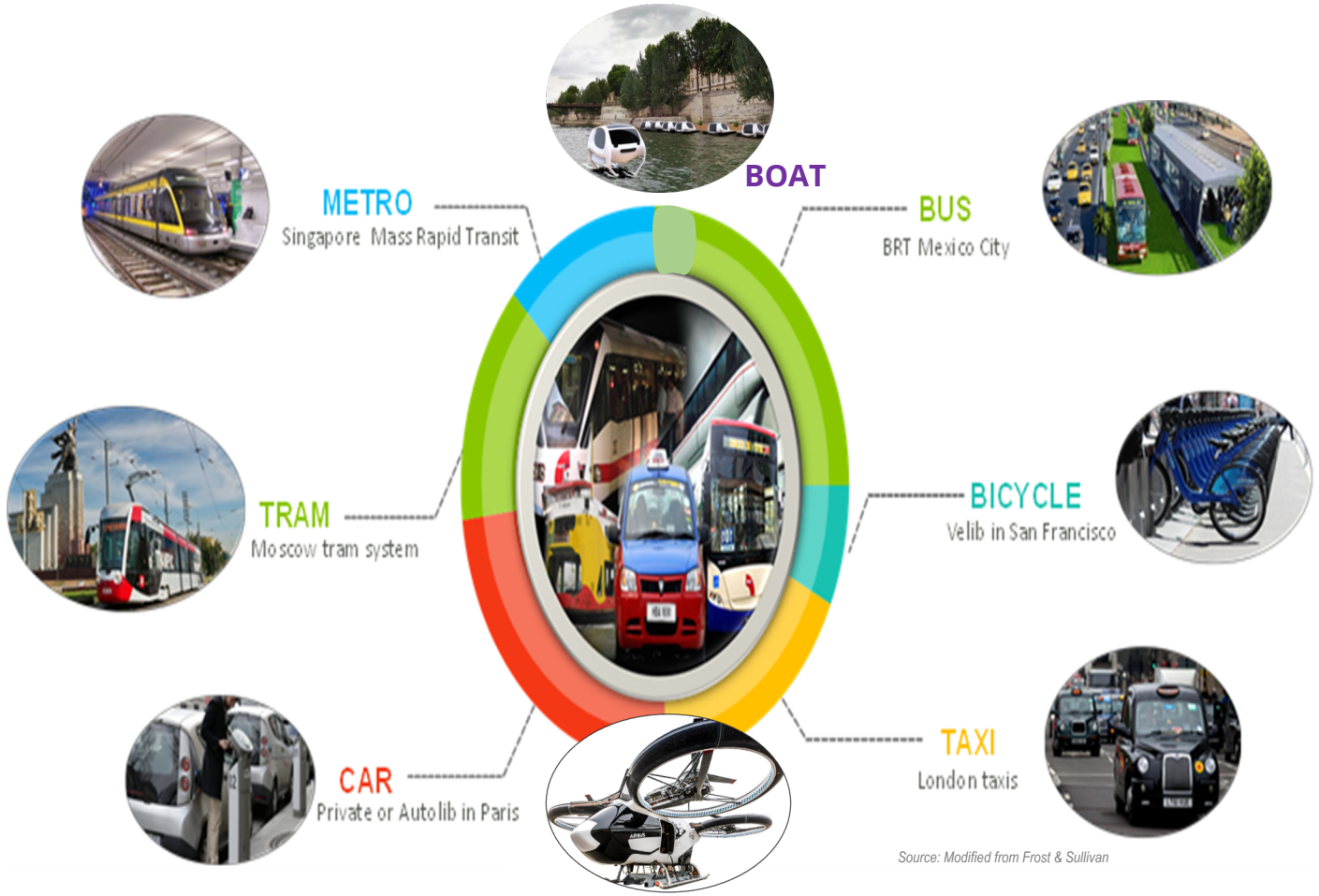
Smart mobility in smart cities:

WALK.

RIDE.

DRIVE.

FLY.



Typical multimodal mobility solutions in smart cities/regions **do not consider air mobility**

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A definition of Urban Air Mobility (UAM)

Urban? Suburban? Regional? Advanced?....

'Urban' is simply used as a semantic to indicate…

Very-low altitude airborne traffic*, above populated areas, at scale, that is sustainably integrated with surface mobility systems

* *Traffic manifested by various types of suitable airborne vehicles*

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Scope of the UAM Initiative

City-centric & Citizen needs-driven

Sustainable Urban Mobility Policy & Demonstrators
focused on UAM by addressing:

1. **UAM interfaces with *public transport**
2. **Mobility as a Service**
3. **Ground infrastructure for UAM**
4. **ATM / UTM concepts** for UAM in accordance with the U-Space framework

** Or other interfaces: e.g. logistics platform, emergency services hubs, etc.*

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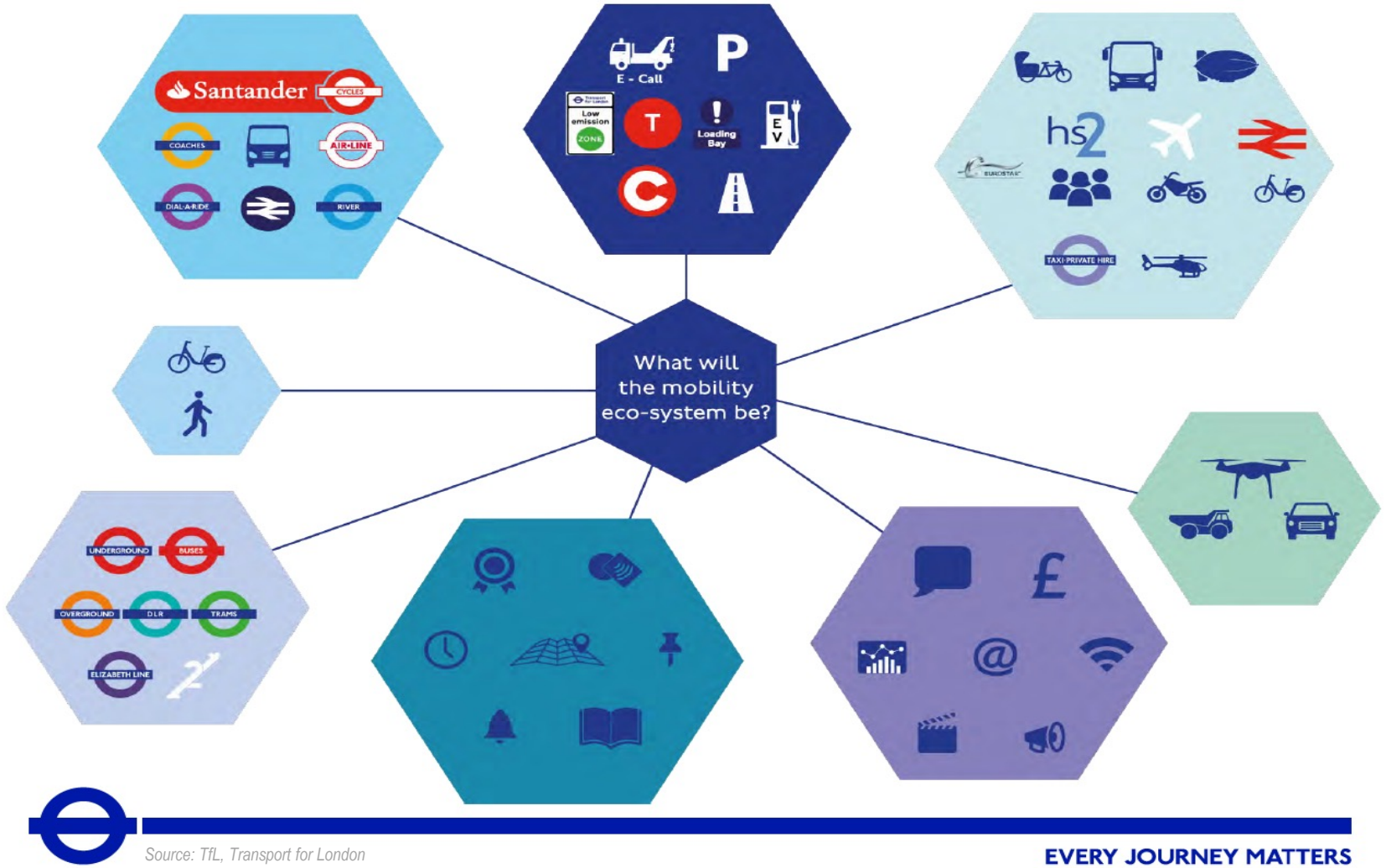
Illustration of the urban mobility ecosystem



Urban air traffic is only fractional when compared to the total footprint of urban traffic ….

…nevertheless,

‘Co-Existence’

&

Integration

are a prerequisite

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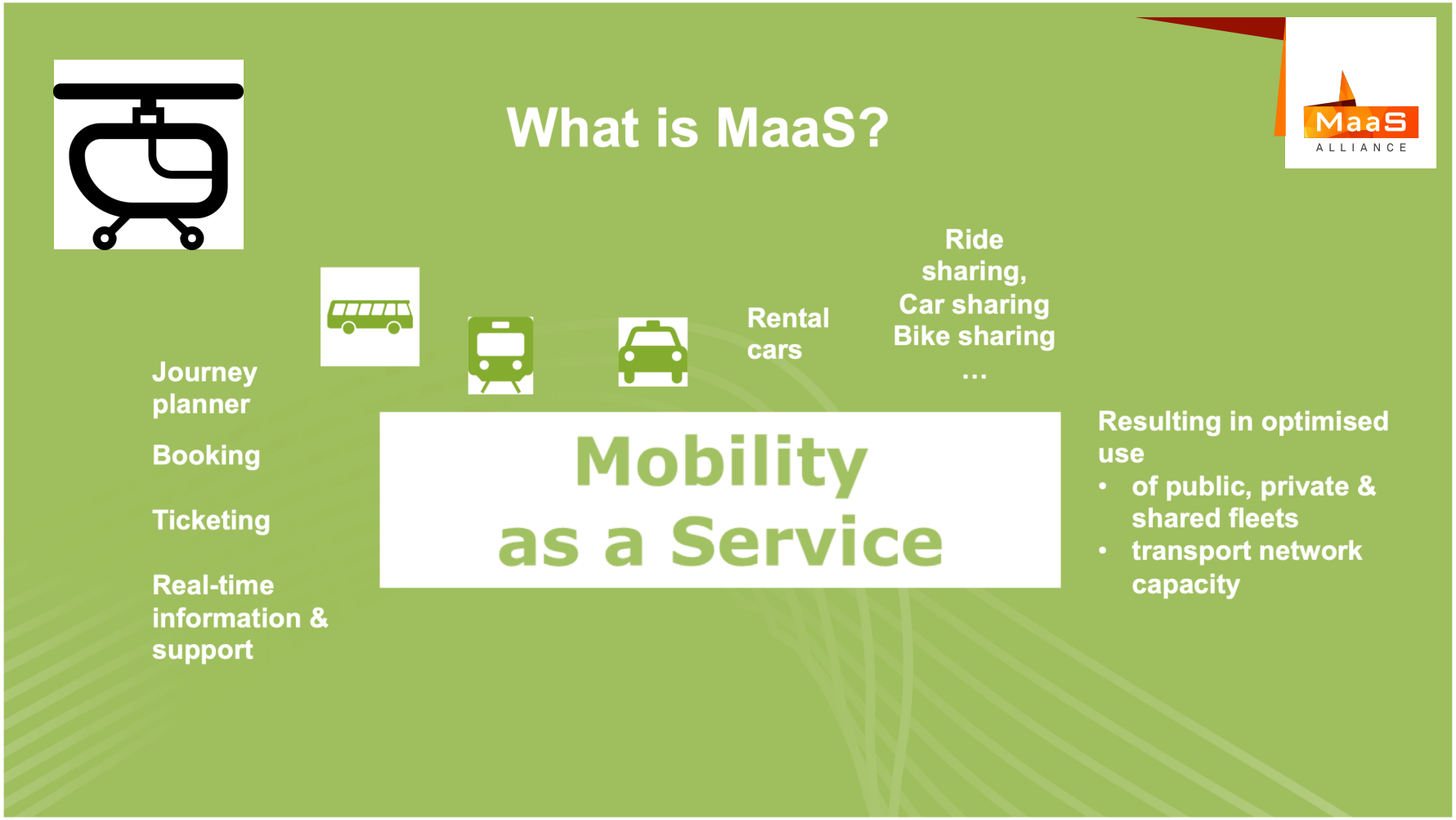
Towards Integrated Sustainable Urban Mobility 1/2



The imperative for *air and ground* traffic integration

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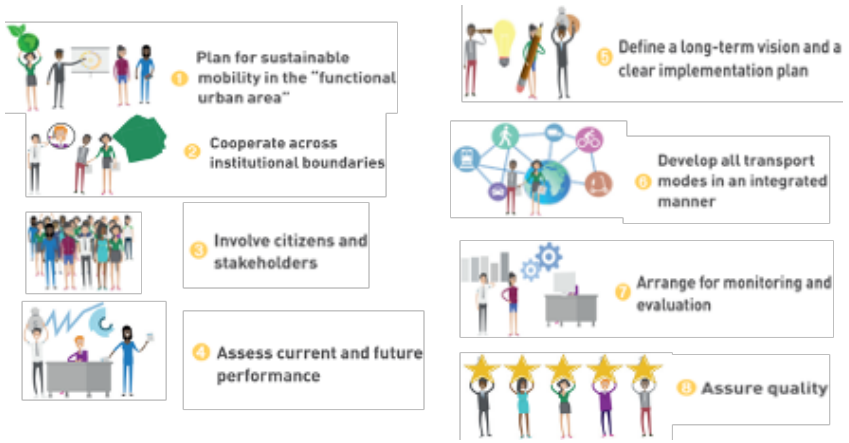
Towards Integrated Sustainable Urban Mobility 2/2



UIC2 citiies and regions, experience, lessons learnt and reflection

The SUMP-UAM Practitioner Briefing

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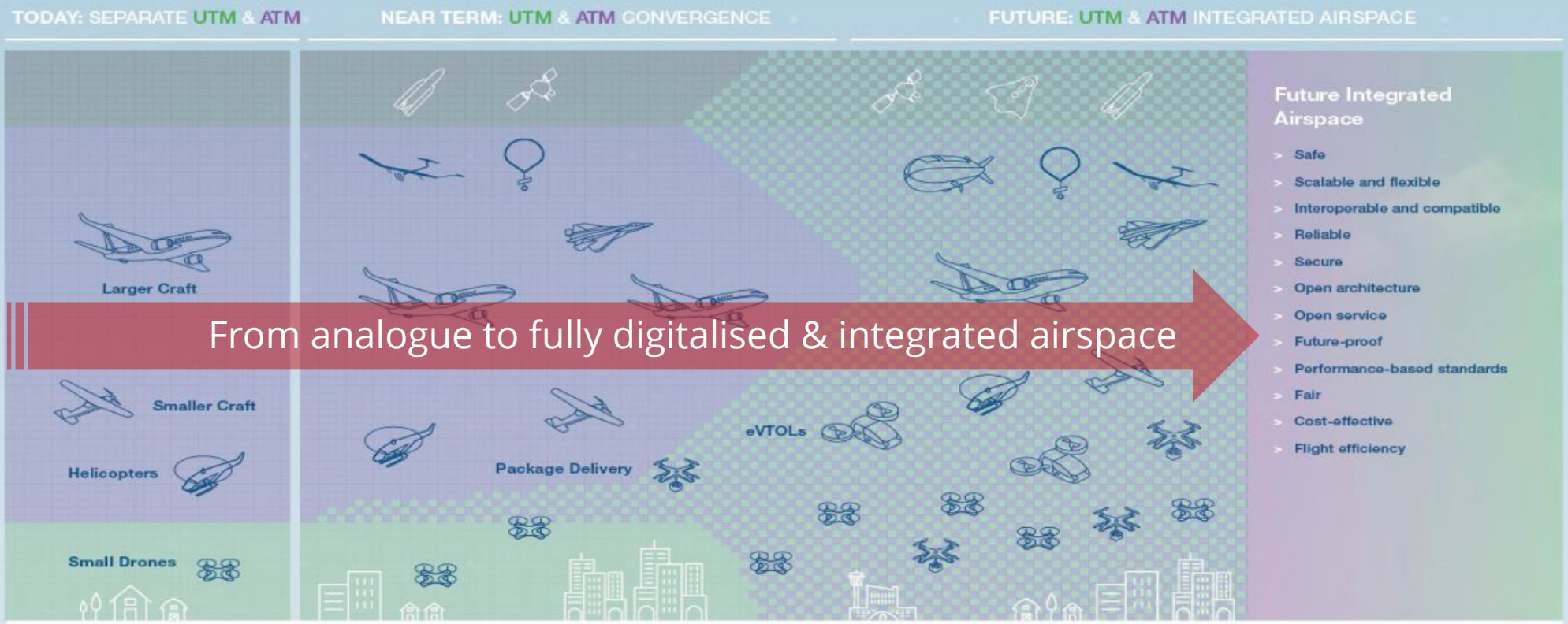
Towards Integrated Airspace

AIRBUS BOEING

Source: Airbus Boeing Joint Paper: A New Era of Aviation, 2020

Modernizing ATM



ATM: Air Traffic Management
UTM: Unmanned Traffic Management

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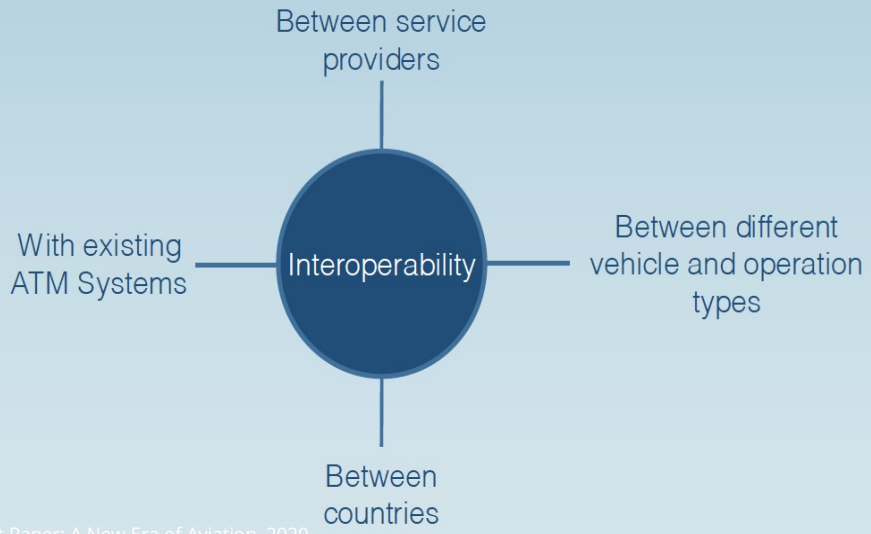
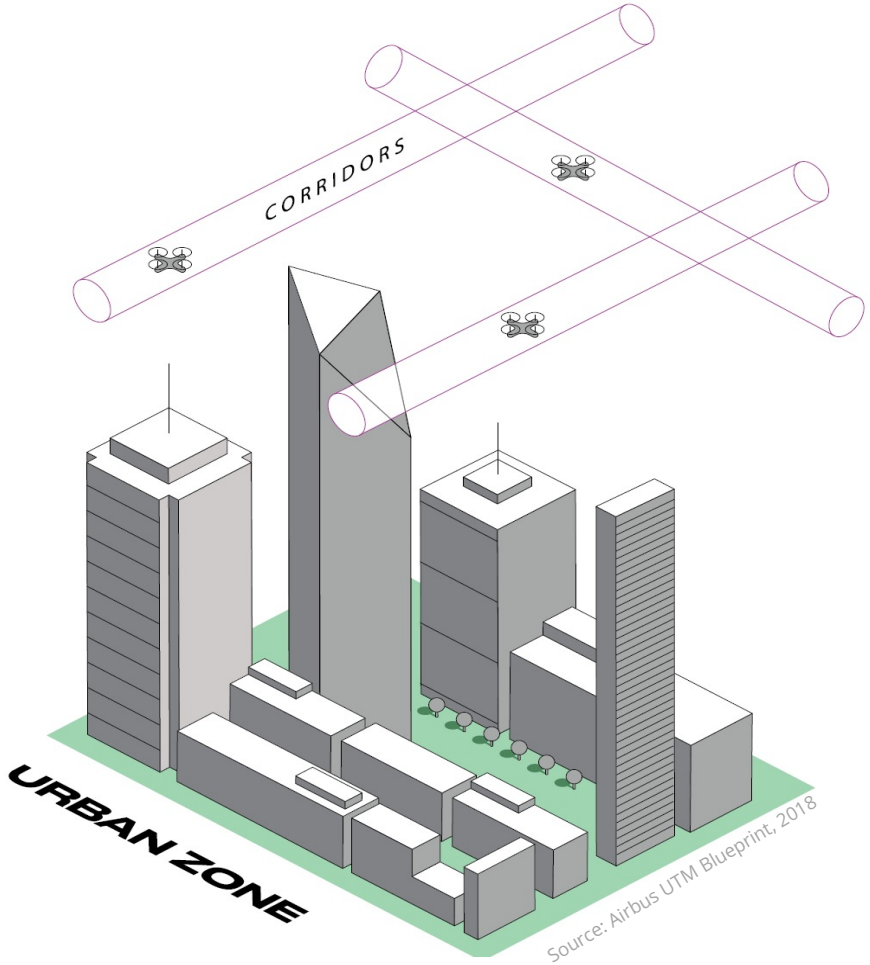
Urban traffic goes to the third dimension!

AIRBUS BOEING

UTM: Interoperability



Source: Airbus Boeing Joint Paper: A New Era of Aviation, 2020

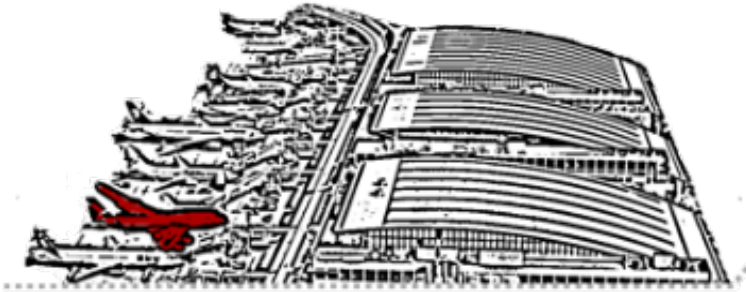


Source: Airbus UTM Blueprint, 2018

***'Urban'* implies more than increased levels of safety and security**

Urban air traffic sets . . .

- ✓ Airspace digitalisation
- ✓ New infrastructure *(aviation + mobility)*
- ✓ New interfaces *(aviation + mobility)*
- ✓ New business / services
- ✓ New mindset for policy and regulatory approaches *(e.g. embracing innovation)*



Source: Free and Hanseatic City of Hamburg, 2020

New perspectives for industry | **New economic spaces above cities** | **New perspectives for mobility**

. . . a new 'status quo'

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UAM offers cities new opportunities . . .

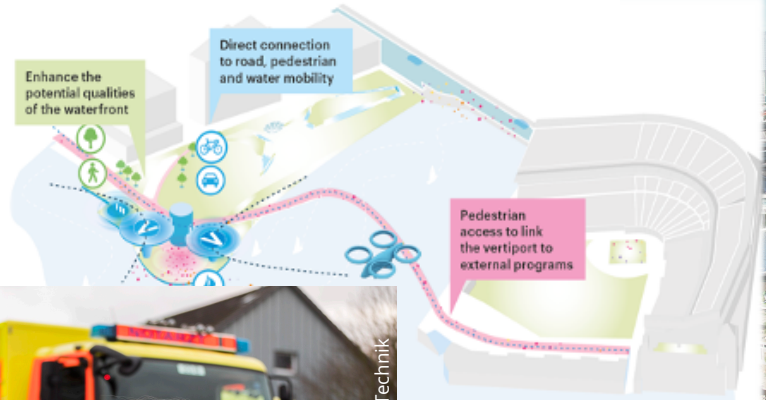
- ✓ **But** also new tasks and responsibilities for them
- ✓ At the same time, **cities**, as a layer of government closest to citizens, are an essential player in having **an influential / deciding role** in the governance of the urban airspace / U-Space

Source: Lilium

Source: Vertical Aerospace

Source: Volocopter

Source: AIRBUS



Source: Lufthansa Technik

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UIC2 Manifesto on the

Multilevel Governance of the Urban Sky

AMSTERDAM DRONE WEEK 2020 hybrid

www.amsterdamdroneweek.com/manifesto

Manifesto on the Multilevel Governance of the Urban Sky
by the UAM Initiative Cities Community – UIC²

Amsterdam, 01 December 2020

The UAM Initiative Cities Community (UIC²) of the EU's Smart Cities Marketplace - formerly known as EIP-SCC Urban Air Mobility (UAM) Initiative- is thankful to the European Commission for supporting it through its smart cities marketplace platform since October 2017.

The members of the UIC² recognise the importance for harmonised and universal U-Space regulation at EU level. We acknowledge the need for approval of urban flight operations at national level, in alignment with U-Space regulation. Moreover, we recognise the need for national and regional competent civil aviation authorities to lead the legal implementation and approval of urban flight operations in accordance with the principles of subsidiarity and proportionality.

The members of the UIC² also recognise and request that **the role of the cities and regions as one of the competent authorities in the governance of the urban airspace, is explicitly acknowledged and referenced** in the prospective U-Space legislative clauses of Member States. This is an imperative in the context of multilevel governance of U-Space and responsive decentralised policy implementation.

In specific, the UIC² members request that:

1. Cities/Regions have a deciding role for allowing the operation of UAM services of public interest (e.g. future public transport, postal-deliveries, emergency services) in alignment with the needs and preferences of their citizens.
2. Cities/Regions have a deciding role in establishing to what extent UAM/U-Space operations can be conducted in their territories.
3. Cities/Regions have a deciding role where UAM/U-Space flight operations are permitted within their territories (e.g. geo-fencing, day- / night-time restrictions, noise and visual abatements).
4. Cities/Regions have a deciding role where take-off and landing sites are to be built.
5. Prosecution of infringements of the public use of the urban airspace over a city/regions remains a local task.

The members of the UIC² trust that the above requests will be treated with consideration and attention in: a) the forthcoming European U-Space Regulatory Framework by acknowledging the imperative for multilevel governance of U-Space; and b) the legislative processes of U-Space Regulation by Member States.

EU Urban Air Mobility
A Community and the Voice of 42 cities / regions
FrontRunners [-] 12 demonstrator projects (17 cities / regions, incl. 2 Cross-border)
EIP-SCC
UIC² UAM Initiative Cities Community

Background

The UAM Initiative of the Smart Cities Marketplace has enabled cities and regions to become UAM role models and to discuss their opinions and concerns directly with European and State Member authorities and policy making bodies, including DG-Move, EASA, Eurocontrol and SESAR JU. For example, the German UIC² members are building a partnership, since 2019, that is supported by the BMVI (Federal Ministry of Transport and Digital Infrastructure) to focus on open exchange and collaboration as well as standard-setting for more future UAM cities and regions.

The efforts and engagement of UIC² alongside with the European Commission's support have resulted in fruitful interactions and concrete actions towards sustainable and integrated urban mobility, some of which are highlighted below:

- The invitation to UIC² to become member of U-Space Network of Demonstrators in October 2018. This has helped us to be in contact and discuss with ANSPs (Air Navigation Service Providers), industry actors and national authorities regularly;
- The inviation to UIC² Task Forces (representatives, including Mayors/Vice-Mayors) to meet with the former Commissioner of Transport (Violeta Bulc, DG-Move) in May 2019. This has allowed us to share the progress of the community's work as well as the specific challenges faced by the local authorities in sustainably nurturing and safely advancing the UAM ecosystem.
- The invitation to UIC² to participate in U-Space regulation drafting workshops at EASA headquarters in May 2019. This allowed UIC² to further emphasise the importance of the role of cities and regions in the governance of urban airspace.
- The preparation of an EIB (European Investment Bank) Advisory Hub assignment for UAM since 2019, and its launch in February 2020 to both support UIC² members towards the development of their business models and carry out an early market assessment of the UAM sector.
- The development of two UAM-dedicated calls for funding in the context of sustainable urban mobility under the H2020 framework (2019-2020); namely, the UAM Research and Innovation Action (RIA, MG-3.6) and the UAM Coordination and Support Action (CSA, LG-1.12) calls. These enabled some UIC² members and their industrial and academic partners to participate in consortia and be awarded respected funding for their projects starting in Q1 2021.
- The invitation and assignment to the UIC², in December 2019, of the task to develop the Practioners Briefing on UAM in the context of the Sustainable Urban Mobility Plan process (SUMP-UAM). The ongoing city/region-led work sheds light, based first-hand experience from the UIC², into the challenges, opportunities, lessons learnt and initial recommendations to effectively integrate UAM aspects in the SUMP processes of cities and regions across Europe.

UIC² highly acknowledges and appreciates the European Commission's support and dedication towards this community that has led to its recognition as the leading city/region-driven community on UAM.

1/2

Cities and Regions already supporting …

… as of 30 Nov 2021

Hamburg
City of Enschede
Górnośląsko-Zagłębiowska Metropolia
stadt aachen
Région Nouvelle-Aquitaine
Stadt Ingolstadt
Regionalmanagement NordHessen
(Trikala)
OULU
Gemeente Amsterdam
Liège
City of Ljubljana
THE CITY OF TAMPERE
NORRKÖPING
Gemeente Heerlen
Ayuntamiento de Málaga
Área de Gobierno de Innovación y Digitalización
Gemeente Maastricht
MÖNCHENGLADBACH
Stockholms stad
HASSELT HEEFT HET.
VILLE d'ALBI www.mairie-albi.fr
albi | la Cité épiscopale www.albi.fr
(Egaleo)
economía, innovación y empleo | MADRID
Den Haag
Zaragoza AYUNTAMIENTO
(Plovdiv)
OXFORDSHIRE COUNTY COUNCIL
ΔΗΜΟΣ ΑΙΓΙΝΑΣ The Municipality of Aegina Island – GREECE
Gemeente Rotterdam
Porto.
(Bari)

Organisations / Associations already supporting …

BAIA · BESCO Bulgarian Startup Association · CASTRA · Invest Sofia · ARCTIC DRONE LABS · JUTM JAPAN UTM Consortium · envisa · DTA DISTRETTO TECNOLOGICO AEROSPAZIALE · anci · POLIS CITIES AND REGIONS FOR TRANSPORT INNOVATION · LUXMOBILITY WORLDWIDE MOBILITY SOLUTIONS · ARC AIRPORT REGIONS COUNCIL

International (outside the EU) Cities and Regions already supporting …

Mie Prefecture (Japan)

Commonwealth of Massachusetts (USA)
MassDOT, Aeronautics Division

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Article 18(f) of the Regulatory Framework for U-Space

Extract from the Commission Implementing Regulation (**EU) 2021/664** of 22 April 2021 on a regulatory framework for the U-space.
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R0664

Article 18

Tasks of the competent authorities

The designated competent authorities shall:

(a) establish, maintain and make available a registration system for certified U-space service providers and single common information service providers;

(b) determine what traffic data, whether live or recorded, U-space service providers, single common information service providers and air traffic service providers are to make available to authorised natural and legal persons, including the required frequency and the quality level of data, without prejudice to personal data protection regulations;

(c) determine the level of access to the information for different users of the common information, and ensure it is made available in accordance with Annex II;

(d) ensure that data exchanges between air traffic service providers and U-space service providers are made in accordance with Annex V;

(e) define the manner for natural and legal persons to apply for a U-space service provider or single common information service provider certificate in accordance with Chapter V;

(f) establish a mechanism to coordinate with other authorities and entities, including at local level, the designation of U-space airspace, the establishment of airspace restrictions for UAS within that U-space airspace and the determination of the U-space services to be provided in the U-space airspace;

(g) establish a certification and continuous risk-based oversight programme, including the monitoring of the operational and financial performance, commensurate with the risk associated with the services being provided by the U-space service providers and single common information service providers under their oversight responsibility;

require the providers of common information and U-space service providers to make available all necessary information to ure that the provision of U-space services contribute to safe operations of aircraft;

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Driving a sustainable & responsible transition:

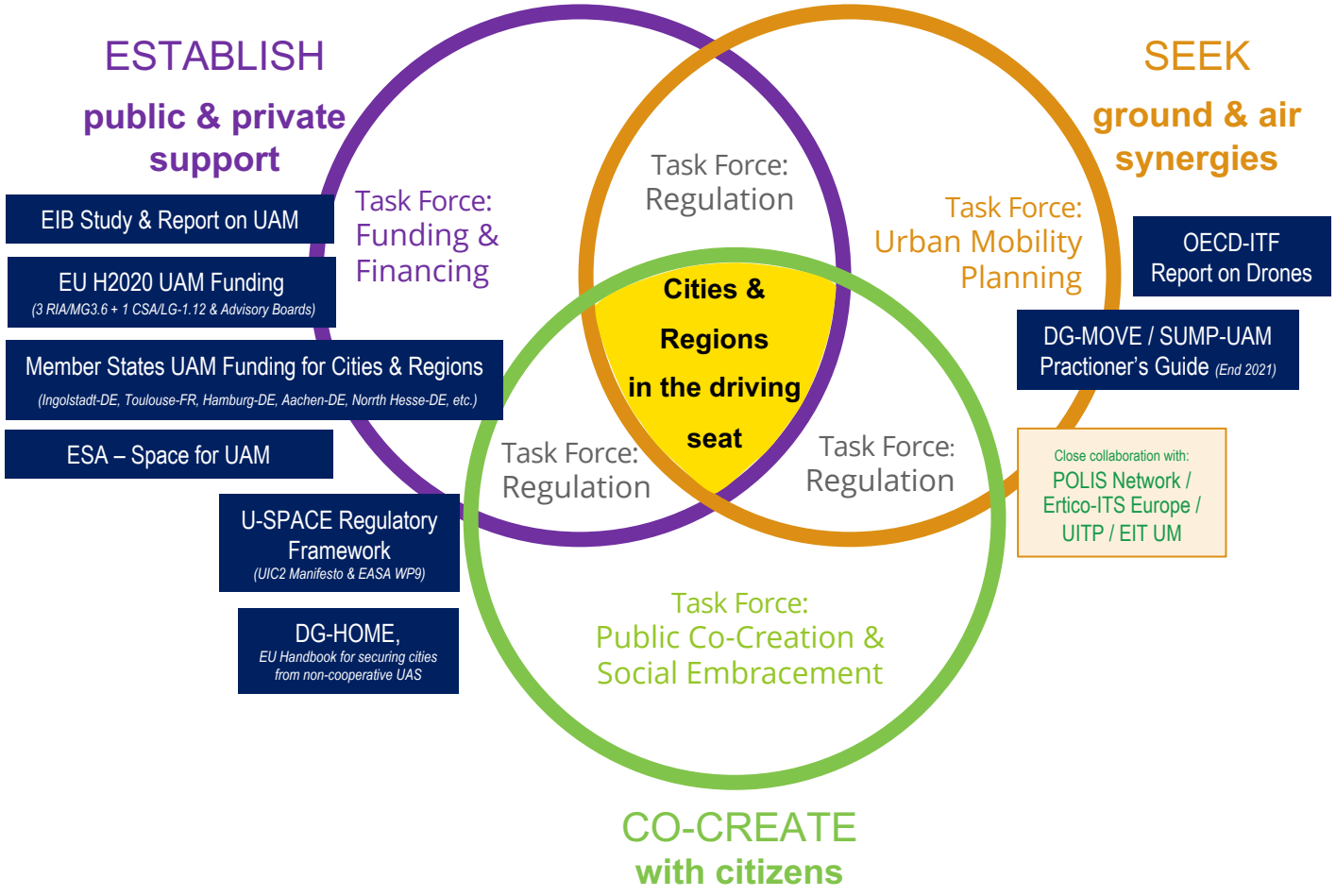
The UIC2 Task Forces

Reminder of Prerequisites

- ✓ **integrated sustainable urban mobility solutions**
- ✓ **demonstrable benefits to citizens**
- ✓ **socially & environmentally acceptable solutions**

Towards a sustainable & responsible transition to UAM

A three-fold approach is required



UIC2 serves as a **city-centric platform** to:

- ✓ Ensure a **holistic** approach to urban mobility
- ✓ **Proactively** engage with citizens
- ✓ **Co-create** with public and private actors (incl. citizens)

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Towards a worldwide UAM community of cities and regions

World Economic Forum AAM/UAM Cities and Regions Coalition

The World Economic Forum's Advanced & Urban Air Mobility (AAM/UAM) Cities and Regions Coalition will be announced in January 2022 at Amsterdam Drone Week.

The coalition will create a forum for **extending** the conversations that have taken place within UIC2 in Europe to a worldwide level.

Its goals are to support policy makers in **responsibly** integrating new aerial platforms into urban and regional transportation networks.

Cities and regions will **set the agenda** for the groups work and will be supported by industry as needed.

The Forum is seeking to announce a group of high ambition city/region partners as founding members at the January launch.

These cities and regions will have the opportunity to be leaders in the area of AAM/UAM and will help shape its implementation as a **service** by:

- **Undertaking** policy development exercises.
- **Implementing** pilot programs to assess the real-world impacts of policies.
- **Sharing** their findings with other cities and regions to help identify best practices.

It is all about a Social Business Ecosystem

*i.e. it's not about what technology **can do** for us but what **we want** technology to do for us!*

Source: AIRBUS

Thank you!

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URBAN_AIR_MOBILITY INITIATIVE CITIES COMMUNITY
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