



# Manifesto of Intent

## Urban Air Mobility

**SMART MOBILITY in SMART CITIES: WALK. RIDE. DRIVE. FLY.**

**'How do you want to commute today?'**

**Demonstrator Project in "Ingolstadt Region"**

*(City of Ingolstadt in the centre of the metropolitan area of Munich, Nuremberg, Augsburg and Regensburg)*

## 1. CONTEXT

- Enabling efficient and effective mobility in urban areas is a key challenge in a context where traffic congestion currently costs more than €100 billion a year in EU and it is expected to be closer to €300 billion per year by 2030. In addition, expectations from citizens when it comes to mobility are increasing and more attention is paid to sustainability, reliability, affordability and efficiency.
- At the same time, technological innovations and new business models offer great potential for new approaches to urban mobility, including Urban Air Mobility.
- The reason behind the Urban Air Mobility (UAM) Initiative is to contribute to bringing urban mobility into the third dimension in Europe – the airspace (flying vehicles).
- The UAM Initiative is part of the Marketplace of the EIP-SCC Action Cluster of Sustainable Urban Mobility (SUM).
- The Marketplace brings together cities and regions (incl. Governmental Authorities) with companies, academia and other stakeholders to showcase innovative urban mobility solutions and support their replication at scale in key market segments. The 2017 Helsinki Declaration confirmed the commitment to safe, secure, green drone operations that also respect privacy; and open the EU drones services market by 2019; by working on: (1) *Legal requirements for operations, airspace and U-Space services*; (2) *An effective standard setting process* and (3) *Further investment in demonstrators and the establishment of a European U-Space Demonstrator Network*. The UAM Initiative could contribute to all 3 aspects outlined above, and particularly on developing demonstration projects that are developed in close collaboration with local and/or regional authorities.
- The UAM Initiative will be part of and further mobilise the regional and cross-regional innovation and mobility ecosystems.

## 2. GOALS ("PROJECT")

The demonstrator project in the "Ingolstadt Region" will be defined and run in the frame of the European Innovation Partnership (EIP) on Smart Cities and Communities (SCC). To this end, the UAM Initiative of the EIP-SCC-SUM:

- Allows pioneering smart cities, regions and companies, particularly SMEs, to join forces in order to minimize the timeframe, to optimize the costs and to increase the collaboration between and with cities and regions.
- Aims to bring together relevant communities to jointly work on accelerating Urban Air Mobility market uptake, increasing public acceptance, and sharing innovative ideas.



- Aims to match cities across Europe with stakeholders interested in launching practical demonstration studies and activities in committed cities.
- Encourages investors to join and finance this new form of mobility (including inter alia real estate and infrastructure investors).
- Envisages enabling the development of strong interfaces between air mobility and urban planning communities (e.g. for flying vehicles to transport people, drone medical services etc.).
- Anticipates fostering cross-fertilisation of best practice among cities for addressing UAM integration challenges and issues in urban environments. To this end, collaborative schemes and complementarity among cities will be sought after.
- Anticipates reinforcing the regional and cross-regional innovation and mobility ecosystem by pioneering mobility solutions featuring air mobility through new innovative technologies, business models, infrastructure and innovation culture.
- Anticipates increased focus on standardisation as driver for mobility innovation -by building on the EC joint initiative for standardisation (JIS) - to contribute towards formalised interoperability and sharing of new knowledge, practices across mobility sectors.

### 3. STAKEHOLDERS

- Airbus, as a global leader in aeronautics, defence, space and related services is the lead of the UAM Initiative within the EIP-SCC Action Cluster of Sustainable Urban Mobility. Its main tasks are to coordinate the consortium, liaise with the European Commission, organisations like EASA, Eurocontrol and SESAR JU, as well as with the managers of the European Innovation Partnership on Smart Cities and Communities (e.g. events, progress reporting, networking). In addition, it can make the liaison among cities and partners (including in-house Airbus resources) for them to explore partnership opportunities.
- The *City of Ingolstadt*, has expressed its willingness to set up a demonstration project to address the mobility needs of urban and inter-urban mobility in its region. Located in the centre of Bavaria, Ingolstadt is Germany's fastest growing city with a population of 140.000 inhabitants. Due to its geographic position Ingolstadt covers within an 80-kilometre radius a population of six (6) million people including Munich, Nuremberg, Augsburg and Regensburg. Munich Airport is located 50 kilometres south-east of Ingolstadt.
- Ingolstadt and its region are economically prosperous (GDP > 320 billion Eur) and dedicated to mobility with prominent industrial leaders established in the city and its outskirts. Audi has its headquarters in Ingolstadt and is currently expanding in an area of innovative mobility services. Airbus (Defence & Space), located five 5 kilometres south of Ingolstadt, features a testing area for unmanned flight vehicles (UAV). Other leading entities include Bauhaus Luftfahrt (south of Munich) as an internationally renowned aviation think tank, the Technische Hochschule that focuses on study programs and research in mobility as well as the Ingolstadt Start Up Center "Brigk" that is dedicated to digitalisation in mobility applications.
- As an innovation and technology hub Ingolstadt advances its focus on smart mobility services by approaching partnerships with industry, businesses and research institutions. Ingolstadt, the "City of Digital Transfer", is on the way to get Bavaria's Centre in Smart Mobility Services. The City Council of Ingolstadt has announced its decision since February 2018 to position Ingolstadt as a pilot region for new technologies in autonomous and digital mobility and to provide testing areas for testing and exploring those technologies.
- The prosperous growth of Ingolstadt and its metropolitan area is causing massive traffic problems. Especially the motorway passing Ingolstadt in the direction to Munich and Nuremberg counts more than 105.000 vehicles per day. The traffic jam in the cities of Ingolstadt, Munich and Nuremberg counts more than 500.000 vehicles per day. Emergency services are often caught up in this situation. It is envisaged



that using the third dimension for urban and inter-urban mobility should contribute to address these ever-increasing problems to the benefit of the population in this regional area. To this end, Ingolstadt intends to explore urban air mobility because of the following three motives: (1) the increased use of new mobility services integrated in public transport; (2) the effective use for ambulance services and the use for public safety.

- To meet the above 'Goals' (Section 2) and related mobility challenges and opportunities in the 'Ingolstadt Region', this Manifesto will be signed by an initial set of organisations (Step 1 of the UAM Initiative; see Section 5, 'Roadmap'), who agree to support the work of the UAM Initiative, initially, during Step 2; this step will require principally allocation of necessary human resources (time & expertise) to participate regularly in project definition and planning meetings and carry out jointly agreed tasks towards the completion of the project proposal. Their names and signatures are listed in the Annex; additional partners such as: public entities, manufacturers, operators, investors, infrastructure providers, insurance companies, realtors, organisations involved in relevant SESAR JU<sup>1</sup> and other projects, are welcome to join.
- When other partners join, this Manifesto will be updated accordingly.

## 4. PROCESS

The UAM Initiative will steer its activities on smart mobility initiatives by ensuring input from and to, as well as, stimulating the regional and cross-regional innovation ecosystems. Ultimately, the UAM Initiative will fertilise and initiate the development of either local, or regional, or national or international UAM business ecosystems by addressing topics around the following four main, parallel thematic pillars:

- **UAM interfaces with public transport** ➔ *ensure optimized synergies between the available ground transport systems and the Urban Air Mobility solution. For example, this involves evaluating the feasibility to integrate air mobility into existing urban transport systems (service aspects)*
- **Mobility as a Service** ➔ *ensure that all modes of transport feature equivalent standards of service quality in terms of, for example, availability, travel comfort and safety as well as insurance and legal coverage.*
- **Ground infrastructure for UAM** ➔ *build the necessary infrastructure (physical -e.g. real estate- and digital -e.g. IoT, Comms-) to welcome UAM in public transport networks (dedicated or shared infrastructure with other modes of transportation – e.g. charging infrastructure).*
- **Integration in a single sky operation** ➔ *align, at early stage, the technology innovation efforts to ensure that the European vision for integrated, single sky operations is realised; at the same time, develop inputs for the shaping of new regulatory frameworks, standards and associated economic approaches for ATM/UTM (U-Space) in the frame of sustainable urban mobility.*

## 5. ROADMAP

The timeline for the development of demonstration project proposals with cities/regions (incl. 'Ingolstadt Region') as well as for running approved proposals is as follows:

### **Step 1: now up to June 2018:**

- 1.1. Reaching out to candidate cities to discuss their mobility needs and willingness to commit in line with the EIP-UAM Initiative objectives.
- 1.2. Signing the *Manifesto of Intent* with a number of Smart Cities and Regions in Europe; selection of cities is based on criteria related to a city's mobility needs and vision as well as its commitment to work for the definition of a demonstration project.

<sup>1</sup> Notably, city and regions that are part of SESAR JU funded project in the 2018 call on demonstrators <http://www.sesarju.eu/node/2952>



**Step 2: June-November 2018:**

- 2.1. Developing the detailed demonstration project proposals (including deliverables, work packages, partners, advanced methods for mapping and aligning complex stakeholder setups, budget and financing/investment attraction leads,) jointly with each city/region.
- 2.2. Establishing the corresponding business and technical ecosystem by linking local and international stakeholders (e.g. SMEs, Start-ups, DFS (German Aviation Safety Authority), Hamburg Airport etc.).

**Step 3: June 2018-February 2019:**

- 3.1. Involving early in the demonstration project definition, potential funding and investing stakeholders and mechanisms (e.g. EIB, H2020, Juncker Plan).
- 3.2. Seeking the appropriate fast-track access to public and private funding, depending on the resource characteristics and requirements of each city project (e.g. scope and ambition; budget level, stakeholders engaged).
- 3.3. Deciding on the GO-NoGO decision for launching a demonstration project; a city/region-driven decision based on partners' commitment, project attractiveness and financing secured/raised. Two main options for launching a demonstration project:
  - 3.3.1. *Option 1: With own resources of the consortium formed.*
  - 3.3.2. *Option 2: With a mix of own resources and investment/funding secured and raised.*
- 3.4. Based on a GO decision, proceed with the framing and signature of a Memorandum of Understanding (MoU) for the demonstration project consortium declaring the commitment from each city, region and partners.

**Step 4: Q1 2019 (if GO decision):**

- 4.1. Launching the realisation of the city/region demonstration project.
- 4.2. Involving and integrating new coming partners.

**Step 5: Q2-Q4 2019 + Q1 2020:**

- 5.1. Organising and executing the actual demonstration projects across cities/regions according to their specific project planning.
- 5.2. Concluding demonstrations by deriving lessons learnt from each city demonstration project and making recommendations for a UAM deployment strategy and roadmap.
- 5.3. Providing a mapping of relevant existing, in-development and needed for the future UAM standards.
- 5.4. Disseminating the achievements of the UAM Initiative and preparing the way forward.

**6. MANAGEMENT TEAM FOR 'INGOLSTADT REGION' (EIP-UAM INITIATIVE DEMONSTRATION)**

Name	Surname	Organisation
Renate	PREßLEIN-LEHLE	City of Ingolstadt, Town Councillor
Robert	FRANK, Dr.	Ingolstadt Municipal Transport Organisation
Ulrich	REINFRIED	Federal Ministry of Transport and Digital Infrastructure
Dietmar	SCHNEYER	Bavarian Ministry of Economic Affairs, Energy and Technology
		Bavarian Ministry of Internal Affairs and Integration
Ute	SCHINNER-STÖR, Dr.	Bavarian Ministry of Housing, Construction and Transport
Alexandra	WONISCH	Bavarian Ministry of Science and Art
Andreas	FREY, Prof. Dr.	Technische Hochschule Ingolstadt
Gabriele	GIEN, Prof. Dr.	Catholic University of Eichstätt Ingolstadt
Vassilis	AGOURIDAS	EIP-UAM Initiative Lead (AIRBUS)



## Manifesto of Intent – ‘Ingolstadt Region’

*City of Ingolstadt in the center of the metropolitan area to  
 Munich, Nuremberg, Augsburg, Regensburg*

By signing this Manifesto of Intent, we are committed to support the objectives of the UAM Initiative as part of the European Innovation Partnership on Smart Cities and Communities, by engaging in the definition of a UAM demonstration project proposal in ‘Ingolstadt Region’. It is acknowledged that there is no binding commitment and consequently no liability for parties in case of failure to define a feasible demonstration project proposal.

It is noted that the execution of the demonstration project will be subject to approval of the submitted project proposal by the formed consortium led by the City of Ingolstadt; the execution agreement among all partners will be part of future framing and signatures through a Memorandum of Understanding (MoU).

Signatories of this Manifesto of Intent are aware that this is a publicly available document in the context for the EIP-SCC-SUM UAM Initiative outreach and dissemination activities.

### List of initial core supporting authorities and EIP-SCC stakeholders

<b>Munich, Ministry of Economic Affairs, Energy and Technology, 19<sup>th</sup> June 2018</b>	<i>Signature<sup>2</sup></i>
Bavarian Ministry of Economic Affairs, Energy and Technology Franz PSCHIERER, MdL, <i>Bavarian State Minister</i>	
Bavarian Ministry of Science and Art Marion KIECHLE, Prof. Dr. med., <i>Bavarian State Minister</i>	
Bavarian Ministry of Internal Affairs and Integration Gerhard ECK, MdL, <i>Bavarian State Secretary</i>	
Bavarian Ministry of Living, Construction and Traffic Josef ZELLMEIER, MdL, <i>Bavarian State Secretary</i>	
<i>City of Ingolstadt</i> <i>Christian LÖSEL, Dr., Lord Mayor of the City of Ingolstadt</i>	
Landkreis Eichstätt Anton KNAPP, <i>District Administrator of the Landkreis Eichstätt</i>	
Landkreis Neuburg-Schrobenhausen Roland WEIGERT, <i>District Administrator of the Landkreis Neuburg-Schrobenhausen</i>	
Landkreis Pfaffenhofen an der Ilm Martin WOLF, <i>District Administrator of the Landkreis Pfaffenhofen an der Ilm</i>	
Bayerischer Städtetag Bernd BUCKENHOFER, <i>Executive Council</i>	

<sup>2</sup> The digital publicly available version of this Manifesto of Intent does not show the actual signatures which are available only in the original hard copies. This is in accordance with the local personal data protection regulations and the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regards to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (GDPR). Signatories have the rights of access to rectify their data. Please, send your request to the email addresses mentioned below, enclosing a document evidencing your identity, and expressly indicating the right you want to exercise. You may also, for justified reasons, be opposed to the data processing concerning your personal data. Email addresses: [sustainablemobility@eu-smartcities.eu](mailto:sustainablemobility@eu-smartcities.eu) and [vassilis.aqouridas@airbus.com](mailto:vassilis.aqouridas@airbus.com)



European Innovation Partnership on Smart Cities and Communities  
 Building a Market for Smart Cities and Communities  
 Sustainable Urban Mobility Action Cluster

Bundeswehr Technical Centre for Aircraft and Aeronautical Equipment (WTD 61) Dieter KRÄHER, <i>Director</i>	
Bauhaus Luftfahrt Mirko HORNING, Prof. Dr., <i>Executive Director Research and Technology</i>	
German Aerospace Center (DLR) Pascale Ehrenfreund, Prof. Dr. <i>Chair of the Executive Board</i>	
European Aviation Safety Agency - EASA Patrick KY, <i>Executive Director</i>	
Eurocontrol Phillipe MERLO, <i>Director of Pan-European Civil –Military ATM &amp; Performance</i>	
The Urban Software Institute Lutz HEUSER, <i>EIP-SCC-SUM Action Cluster Leader</i>	
AIRBUS Vassilis AGOURIDAS, <i>EIP-UAM Initiative Leader</i>	



**European Innovation Partnership on Smart Cities and Communities**  
**Building a Market for Smart Cities and Communities**  
**Sustainable Urban Mobility Action Cluster**

<b>Berlin, Chancellery 20<sup>th</sup> June 2018</b>	<i>Signature</i> <sup>3</sup>
Federal Ministry of Transport and Digital Infrastructure Andreas SCHEUER, MdB <i>Minister</i>	
Federal State Minister of Digitalisation Dorothee BAER, MdB	
City of Ingolstadt Christian LOESEL, Dr. <i>Lord Major of the City of Ingolstadt</i>	
AIRBUS Grazia VITTADINI <i>Chief Technology Officer</i>	
AUDI AG Abraham SCHOT <i>Interim Chairman of the Board of Management,            Board Member for Sales and Marketing</i>	

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**Manifesto of Intent – ‘Ingolstadt Region’**  
*City of Ingolstadt in the center of the metropolitan area to  
 Munich, Nuremberg, Augsburg, Regensburg*

**List of Initial Interested Partner signatories**

No.	Organisation	Name and Role of the signee	Signature <sup>4</sup>
1	AIRBUS	Eduardo DOMINGUEZ-PUERTA <i>Head of Urban Air Mobility</i>	
2	AirMap	Sebastian BABIARZ <i>Head of Strategic Business Development</i>	
3	AUDI AG	Bernd MARTENS, Dr. <i>Member of the Board of Management Procurement</i>	
4	B2M (Urban Software Institute)	Bernhard KEMPEN <i>CEO</i>	
5	Bauhaus Luftfahrt	Kay PLÖTNER, Dr. <i>Head of Economics and Transport</i>	
6	Bavarian Red Cross	Theo ZELLNER <i>President</i>	
7	Brigk (Digital Start-up Centre)	Franz GLATZ, Dr. <i>CEO</i>	
8	Catholic University of Eichstätt-Ingolstadt	Gabriele GIEN, Prof. Dr. <i>President</i>	
9	Chamber of Crafts (HWK)	Hartwig von BÜLOW, Dr. <i>Department Manager</i>	
10	Chamber of Industry and Commerce (IHK)	Manfred GÖBL, Dr. <i>Deputy CEO</i>	
11	Eurocontrol	Munish KHURANA <i>Senior Manager, Business Development</i>	
12	European Aviation Safety Agency - EASA	Maria ALGAR RUIZ <i>UTM-SESAR Coordinator, Innovation Cell, Executive Directorate</i>	
13	Fraunhofer Institute for Transportation and Infrastructure Systems IVI, Dresden	Matthias KLINGNER, Prof. Dr. <i>Director</i>	
14	German Aerospace Center (DLR)	Rolf HENKE, Prof., <i>Executive Board Member for Aeronautics</i>	
15	House of Knowledge	Magnus HAKVAG <i>CEO</i>	
16	Ingolstadt Municipal Transport Organization	Robert FRANK, Dr. <i>CEO</i>	
17	Involi	Mélanie GUITTET <i>Co-Founder, Business Development</i>	
18	Klinikum Ingolstadt	Monika RÖTHER <i>CEO</i>	

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**European Innovation Partnership on Smart Cities and Communities**  
**Building a Market for Smart Cities and Communities**  
**Sustainable Urban Mobility Action Cluster**

No.	Organisation	Name and Role of the signee	Signature <sup>4</sup>
19	Media-Saturn-Holding GmbH	Martin WILD <i>Chief Digital Officer</i>	
20	Munich Airport	Frank NEUMANN <i>Head of Planning and Masterplan</i>	
21	Quantum Systems	Florian Seibel <i>CEO</i>	
22	Technische Hochschule Ingolstadt	Walter SCHOBER, Prof. Dr. <i>President</i>	
23	Unify	Jürgen VERSTAEN <i>Chief Business Development Officer, Co-founder</i>	
<i>... more partners to be added during Step 2 (Section 5, Roadmap, demonstration project definition phase) ...</i>			