

## **The First Step for Demonstrating K-UAM Working with 46 Companies**

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*Agreement on the first phase of the K-UAM Grand Challenge together with 7 consortiums for integrated demonstration and 5 consortiums in single field*

The Ministry of Land, Infrastructure and Transport (MOLIT, Minister WON Hee-ryong) announced that it will have an agreement ceremony with companies participating in the first phase of the Korean Urban Air Mobility Demonstration Project (K-UAM Grand Challenge\*) at 10:00 am on Wed. 22 February at the Grand Hyatt Hotel in Seoul.

\* Phase 1 [Aug. 2023 ~ Dec. 2024]: Open Terrain (Goheung, Jeollanam-do)

Phase 2 [July 2024 ~ June 2025]: Urban Area (Metropolitan Area)

At this agreement ceremony, EO Myeong-so, Vice Minister for Transport of the MOLIT (Host), President of Korea Aerospace Research Institute (KARI, Organizer), and representatives of leading companies by field (aviation, traffic management, and verti port) from seven consortiums participating in the integrated operation demonstration, as well as representatives of leading companies from five consortiums along with companies participating in the demonstration in a single field are expected to make attendance.

< K-UAM Grand Challenge Participating Institutions >

- △ (Korean Air/Incheon Airport Consortium): Korean Air (Operation), Incheon International Airport Corporation (Traffic Management/Vertiport)
- △ (UAMitra): UAM Association (Aviation), Davo E&C (Traffic management), Drone System (Vertiport), etc.
- △ (Hyundai Motor • KT Consortium): Hyundai Motor (Operation), KT (Traffic Management), Hyundai E&C (Vertiport), etc.
- △ (K-UAM Dream Team) SKT (aviation), Hanwha Systems (traffic management), Korea Airports Corporation (Vertiport), etc.
- △ (UAM Future Team): Kakao Mobility (Operation), LG U+ (Traffic Management), GS E&C (Vertiport), etc.
- △ (Lotte Consortium): Mint Air (Aviation), Lotte Information & Communication (Traffic Management), Lotte Rental (Vertiport), etc.
- △ (Daewoo E&C Jeju Air Consortium): Jeju Air (Operation), Daewoo E&C (Traffic Management/Vertiport), etc.
- △ (Single Sector): Plana, Voltline (Aviation), Kencore, FineVT, Rovigos (Traffic Management)

This agreement means that the preparations for demonstration have been completed, such as confirming the specific demonstration period and aircraft used for demonstration for each consortium or company participating in the Grand Challenge, and defining the roles and duties of participating companies.

Each consortium and companies plan to demonstrate the stability of integrated operation among aviators, traffic management operators, and vertiport operators in accordance with operating scenarios to be applied in the commercialization stage, and also measure noise to determine the range of access to the city center.

Overseas experts evaluate Korea's Grand Challenge as one of a major global demonstration projects\* along with the ones by the US, UK, and France, and this Grand Challenge is expected to bring together excellent technologies from Korea and foreign advanced countries to be such a competitive platform.

\* (Korea) Grand Challenge (2023~), (US) National Campaign (2018~), (UK) Future Flight Challenge (2020~), (France) Re.Invent Air Mobility Challenge (2024~)

In particular, the Grand Challenge is the first in the world to establish a traffic management system using commercial communication networks such as 5G, etc., to build an integrated operating system based on commercialization, and to utilize virtual integrated operating simulators getting much attention from overseas including NASA\*, etc.

\* Signed an MOU between the National Aeronautics and Space Administration (NASA), the organizing agency for the National Campaign of the US, and the Korea Aerospace Research Institute (KARI), the organizing agency for the demonstration (Oct. 2022) to share demonstration results, etc.

In addition, next year, it is scheduled to start demonstration in the city center (metropolitan area) through the second phase of the Grand Challenge, and it is comparable to the US, France, and the UK (2024), etc., which boast their fastest urban demonstration in the world.

Due to such an excellent demonstration environment, many excellent aircrafts from abroad, which are expected to be commercialized the fastest, will also participate in the Grand Challenge, and keen competition for pride among UAM aircraft\* manufacturing companies is forecasted.

\* (US) S4 (Joby aviation), Alia 250 (Beta technologies), (UK) VX4 (Vertical aerospace), (Germany) Prosperity (Autoflight), (Canada) Journey (Jaunt), etc.

Vice Minister Eo of the MOLIT emphasized, “Competition among leading countries to preoccupy the UAM market is expected to intensify, and it is most important for Korean companies to secure leadership in the global market.”

Especially, Vice Minister Eo also stressed, “In order to proceed with the national task of commercializing UAM in 2025 and to lead the global UAM market, we need to catch both rabbits: securing safety and fostering future sources for provisions.”

Adding, “To this end, the government will provide the world's best demonstration environment for private companies to experiment with various technologies while providing various support, including the early enactment of the UAM Act base on bold regulatory exemptions, R&D for the development of next-generation core technologies, and strengthening international cooperation to prepare global standards.”



Reference 1

Institutions Participating in K-UAM Grand Challenge

- **(Participating institutions)** 7 consortia (35 companies) for integrated operation including aircraft & navigation, traffic control and vertiport, etc., and 5 consortia & companies (11 companies) in single areas including aircraft and traffic control, etc.
- **(Korean Air & Incheon International Airport Corporation consortium)** Verification of operator, traffic controller and vertiport operating system through domestic development and integrated demonstration
  - (Aircraft & navigation) **Korean Air (Korea Aerospace Research Institute (KARI)-Korea, Optionally Piloted Personal Air Vehicle (OPPAV)**, (Traffic control) Incheon International Airport Corporation, (Vertiport) Incheon International Airport Corporation
- **(UAM cooperative consortium)** Demonstration of integrated operation of simulation S/W by domestic small & medium enterprises in the areas of ~~aircraft & drone~~
  - (Aircraft & navigation) **Urban Air Mobility Industry Technology Research Association (UAMITRA), etc. (Autoflight-Germany /prosperity)**, (Traffic control) Davo ENC, etc., (Vertiport) Drone System, etc.
- **(Hyundai Motor & KT consortium)** Demonstrated integrated operation including establishment of foundation for construction of urban-type vertiports through UAM navigation and traffic control service platform, and vertiport design optimization
  - (Aircraft & navigation) **Hyundai Motor & Korean Air, etc. (KARI-Korea, OPPAV)**, (Traffic control) KT, (Vertiport) Hyundai Construction, etc.
- **(K-UAM Dream Team)** Demonstration of integrated operation including in-house development, provision of service for linking traffic control operating system with T mobility, establishment of 5G commercial network (sky network) for UAM for the first time in the world, 3-dimensional geography information & urban weather forecast, etc.
  - (Aircraft & navigation) **SKT (Joby aviation-USA, S4)**, (Traffic control) Hanhwa System, etc., (Vertiport) Korea Airports Corporation (Additional information) 3-dimensional spatial information & weather (LX, Korea Meteorological Institute)
- **(UAM Future Team)** Demonstration of integrated operation including provision of MaaS platform-based 3-dimensional future mobility journey appropriate for the preference of customers and 5G communication-centered intelligent type traffic control and passenger entertainment services, etc.



- (Aircraft & navigation) **Kakao Mobility (Vertical Aerospace-England, VX4)**,  
(Traffic control) LG U+, etc. (Vertiport) GS Construction, etc.
- **(Lotte consortium)** Demonstration of seamless mobility service scenario through linkage with autonomous driving shuttle and demonstration of integrated operation through linkage with vertiport
- (Aircraft & navigation) **Mint Air (Jaunt-Canada, Journey)**,  
(Traffic control) Lotte Information Communication, etc. (Vertiport) Lotte Rental, etc.
- **(Daewoo Construction & Jeju consortium)** Establish foundation for construction of vertiports including review of building structure, etc. and demonstrate integrated operation of complex development and smart city model for selection of the optimal location for vertiport
- (Aircraft & traffic control) **Jeju Air (Beta technologies-USA, Alia 250)**,  
(Traffic control) Daewoo Construction, etc., (Vertiport) Daewoo Construction, etc.
- **(Single area)** Plana, Voltline (Aircraft & navigation), Kencoa, Rovigos, Fine VT (Traffic control)



Reference 2

Key Contents of the Agreement

- Duration and schedule for 1<sup>st</sup> stage of demonstration (August '23 ~ December '24, total of 17 months)

		2023												2024																										
Month		8				9				10				11				12				1				2				3				4						
Week		1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
GC-1	Integrated operation													G1-1				G1-2				G1-3																		
	Single area	R-1 Rovigos				R-2 Kencoa				R-3 Planas				R-4 Votline				KAL-IIAC				UAMitra				Hyundai-KT														

		2024																																		
Month		5				6				7				8				9				10				11				12						
Week		1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5
GC-1	Integrated operation	G1-4				G1-5				G1-6				G1-7																						
	Single area	K-UAM Dream Team				UAM Future Team				Lotte				Daewoo Construction - Jeju Air																						
										R-5				Fine VT																						

- Regulations on roles, obligations and responsibilities for each institution
  - (Organizing institutions, Ministry of Land, Infrastructure and Transport) Management and supervision of overall aspects of demonstration project
  - (Supervising institutions, Korea Aerospace Research Institute (KARI)) Overall responsibilities on operation of demonstration project including coordination and provision of support, etc.
  - (Participating consortium, private companies) Preparation and establishment of aircraft & integrated operating system, compliance with demonstration schedule, preparation for responsibilities and loss risks, and maintenance of confidentiality, etc.

□ Criteria for passing

- Establish quantitative and qualitative standards for aircraft safety\* and integrated operability\*\*, etc. (prior to commencement of the 2<sup>nd</sup> stage)

\* Refer to standards in overseas (USA & Europe) and discuss with airworthiness authority (Aviation Safety Agency)

\*\* (Navigator) Navigation, maintenance & control procedures, and aircraft monitoring, etc., (Traffic control) Establish, approve and revision of flight plan, and safety management, etc., (Vertiport) Surveillance and operation of vertiport zone, and management of passenger & security zone, etc.





Reference 3

Participating Aircraft in the 1<sup>st</sup> Demonstration Project for K-UAM GC

□ Key participating aircrafts

		
<p><b>(Korean Air &amp; Incheon International Airport Corporation consortium, Hyundai Motor &amp; KT consortium)</b></p> <ul style="list-style-type: none"> <li>• OPPAV (Korea KARI)</li> <li>• Single seater</li> <li>• Max. takeoff wt.: 650kg</li> <li>• Cruising speed: 200 km/h</li> <li>• Cruising range: 50km 이상</li> </ul>	<p><b>(UAMitra consortium)</b></p> <ul style="list-style-type: none"> <li>• Prosperity (Autoflight)</li> <li>• Germany, EASA certification application</li> <li>• 4-seater</li> <li>• Max. takeoff wt.: 1,500kg</li> <li>• Cruising speed: 200 km/h</li> <li>• Cruising range: 250km</li> </ul>	<p><b>(K-UAM Dream Team consortium)</b></p> <ul style="list-style-type: none"> <li>• S4 (Joby Aviation)</li> <li>• USA, FAA certification application</li> <li>• 5-seater</li> <li>• Max. takeoff wt.: 2,177kg</li> <li>• Cruising speed: 322 km/h</li> <li>• Cruising range: 321km</li> </ul>
		
<p><b>(UAM Future Team consortium)</b></p> <ul style="list-style-type: none"> <li>• VX4 (Vertical Aerospace)</li> <li>• England, CAA-UK certification application</li> <li>• 5-seater</li> <li>• Max. takeoff wt.: TBD</li> <li>• Cruising speed: 241 km/h</li> <li>• Cruising range: 161km</li> </ul>	<p><b>(Lotte consortium)</b></p> <ul style="list-style-type: none"> <li>• Journey (Jaunt)</li> <li>• Canada TCCA certification application</li> <li>• 5-seater</li> <li>• Max. takeoff wt.: 2,722kg</li> <li>• Cruising speed: 282 km/h</li> <li>• Cruising range: 129km</li> </ul>	<p><b>(Daewoo Construction &amp; Jeju Air consortium)</b></p> <ul style="list-style-type: none"> <li>• ALIA 250 (Beta)</li> <li>• USA, FAA certification application</li> <li>• 5-seater</li> <li>• Max. takeoff wt.: 2,721kg</li> <li>• Cruising speed: 270 km/h</li> <li>• Cruising range: 463km</li> </ul>



## Reference 4

## K-UAM Grand Challenge and Execution System

### K-UAM Grand Challenge

- **(Purpose)** Check **UAM aircraft** and **communication system safety** in preparation for commercialization in '25, establish **Korean Safety Standards** through **demonstration of integrated operation** of traffic control and vertiport, etc.
- **(Schedule)** Demonstration of **open terrain for the 1<sup>st</sup> stage** ('23.8~'24.12) (Goheung in Jeonnam, National Integrated Flight Performance Test Ground) and demonstration of the **2<sup>nd</sup> stage** ('24.7~'25.6) in capital region (quasi-urban center and urban center)
- **(Demonstration items)** Check integrated operation capabilities for aircraft safety, navigation & traffic control, and vertiport, etc., and measure noise generated for each stage of flight including takeoff & landing, etc.

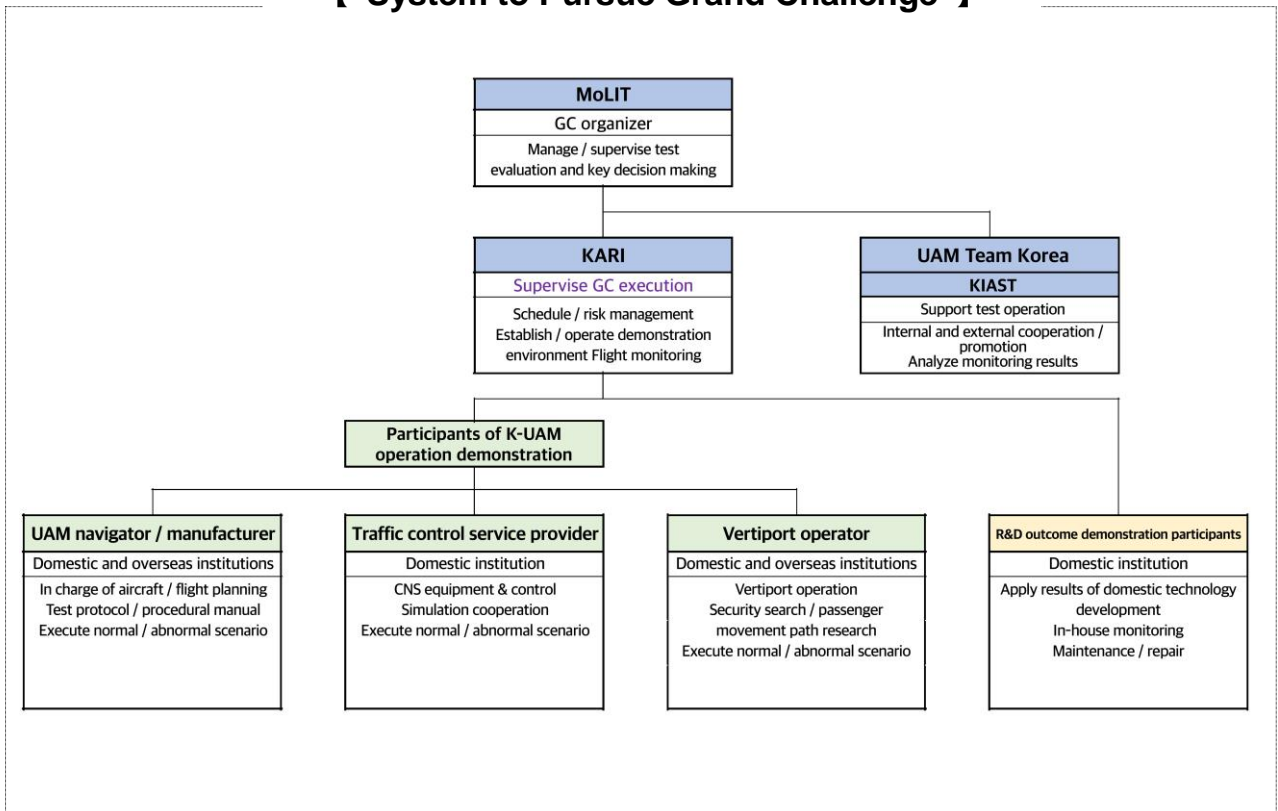
### Execution system

- Report and discuss key issues of progresses and decision making to and with **UAM Team Korea** by composing government and research institutions as the participants in demonstration of R&D outcomes
- It will be executed with **Ministry of Land, Infrastructure and Transport** as the organizer and **KARI\*** as the supervisor, participants included potential UAM navigator, manufacturer, traffic control provider and vertiport operator

\* Designate KARI as the delegated institution in accordance with Article 21 of the Drone Act and relevant subordinate law.



**[ System to Pursue Grand Challenge ]**





Reference 5

Structure of Traffic Control System for K-UAM (Operational  
Concept Manual 1.0)

