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OPR: Future Drone Traffic Directorate, MOLIT

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#K-UAM#IntegratedDemonstration#GrandChallenge

UAM Experts Gather in South Korea For The K-UAM Grand Challenge

The Ministry of Land, Infrastructure and Transport (Minister Noh Hyeong Ouk, hereafter referred to as MOLIT) announced the start of the K-UAM Grand Challenge, a large-scale demonstration project to realize the commercialization of Urban Air Mobility (UAM).

MOLIT is expected to hold a briefing session (online and offline) at the Grand Hyatt Seoul on February 17 (Thursday) to participate in the UAM Grand Challenge Korea, which will involve organizations preparing for commercialization of urban air mobility around the world.

The Grand Challenge (organized by MOLIT, supported by KARI) is a large-scale demonstration project that tests new technologies for commercialization and future R&D achievements in an environment similar to the real world.

The concept was designed to sufficiently verify the safety of the urban air mobility system before commercialization and to establish operating concepts and technical standards suitable for domestic conditions.

The project is carried out in two phases with the first phase expected to be conducted at the Korea Institute of Aviation Safety Technology (Goheung) currently being equipped with necessary equipments.

The briefing session is the first step within Grand Challenge to explain the purpose of the project to domestic and foreign companies interested in the project and encourage participation.

With participation from domestic and foreign UAM operators, manufacturers, traffic management providers, domestic start-ups and small and medium-sized enterprises (SMEs) interested in operating Vertiports, the briefing session is expected to hold various discussions and end with fruitful outcomes including the operation of the UAM system and plan for future demonstrations.

Because the method and standards of urban air mobility have not yet been standardized worldwide, the government is expected to be able to obtain data necessary to prepare institutionalization standards through this demonstration.

In addition, the participating organizations will have the opportunity to prepare for commercialization synchronized with the institutionalization of relevant standards as well as accumulate flights and traffic management data necessary for commercialization.

< Key Participating Organizations >

Field (124)	Domestic (93)	Overseas (31)
UAM A/C manufacturer/operator (46 organizations)	32 including Hyundai Motor Company, Hanwha Systems, Boeing Korea, LIG Nex1	14 including Joby Aviation (US), Volocopter (Germany), Ehang (China)
UAM traffic management service provider (27 organizations)	14 including SK Telecom, Kakao Mobility, Incheon International Airport Corporation, Pablo Airlines	13 including Yves Air Mobility (BR), Thales (FRA), Anla Technology (US)
UAM Vertiport operation (9 organizations)	7 including Korea Airports Corporation, Hyundai E& C, Korean Air, Lotte E& C	Skyport (UK), Tri Vector (US)
Policy support, etc. (42 organizations)	Central government (7), local governments (13), academia (7), public institutions (13)	NASA(US), ASTM(US)

Starting with the upcoming briefing session, institutions wishing to participate are expected to start demonstration projects as early as the first half of next year by discussing the scope and method of demonstration with MOLIT and the Korea Aerospace Research Institute.

The session will also include the official announcement of the Grand Challenge plan, domestically and abroad, and extra time for open discussions on how to participate and exchange technical information.

Specific agendas will include the K-UAM Grand Challenge plan, the link of the plan to the policy roadmap and operation plan (ConOps 1.0), the UAM A/C and traffic management servicem as well as operation plan for Vertiports.

The government is also planning to start selecting test beds necessary to promote the second stage of the Grand Challenge (semi-city center and city center) and R&D integrated demonstration (urban environment).

The second stage of the Grand Challenge will be held in the urban area, and it will be carried out as early as 2024 after assessing the results of the first stage.

The integrated R&D demonstration is currently in the planning stage (22.2~) and aims to launch a preliminary feasibility study this year.

MOLIT Second Vice-Minister Hwang Sung-kyu said, "We ask for active participation from officials who will lead the domestic and foreign UAM industries."

He added, "We expect to share the empirical results obtained through the Grand Challenge with participants and utilize them for institutionalization of relevant regulations, and create a new internationally advanced traffic management system in the future."

For further information regarding the above article or request for covers,
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MINISTRY OF LAND, INFRASTRUCTURE AND TRANSPORT

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Appendix #1 Summary of the K-UAM Grand Challenge



#1. Infrastructure construction, 2021~2022

Designing and establishing test equipment and infrastructures for Dry-Run¹ on open land

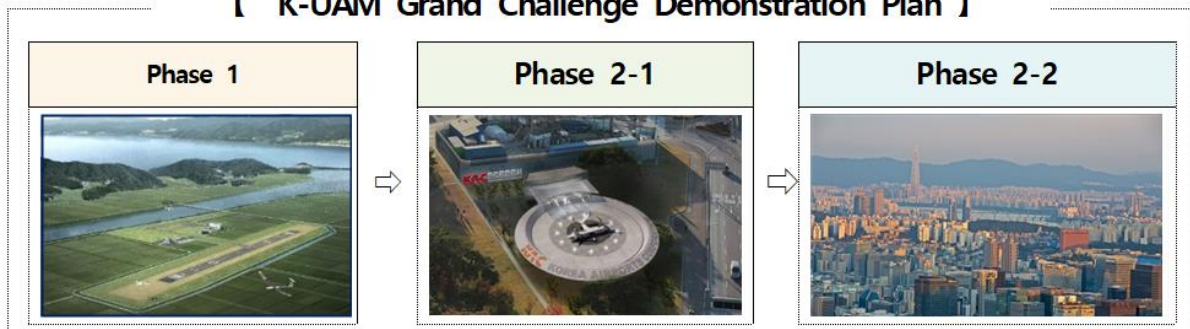
#2. Demonstration Phase 1, 2023

Checking the safety of UAM A/Cs and communication systems through pre-tests² at the flight test site (open land, Goheung), and conducting integrated operation demonstration

#3. Demonstration Phase 2, 2024

Integrated demonstration to and from semi-urban areas and urban areas using existing air routes expected to be air traffic lines for UAM drones in 2025 as test routes for demonstration

【 K-UAM Grand Challenge Demonstration Plan 】



【 Main Scope of Demonstration 】

- Integrated inspection of H/W and S/W safety of Vertiports and UAM traffic management service
- Responsibilities of relevant roles through communication, navigation, monitoring, information sharing, etc.,
- Response plan for abnormal situations including bad weather, system malfunction, etc.,

#4. Final preparation for start of commercialization, 2025

Final touches for the start of commercialization including the demonstration data analysis, provision of necessary technology and infrastructure to the private sector

#5. Synchronization with R&D projects 2022~2025

Demonstration in conjunction with R&D tasks³ for safety review such as aircraft location report during demonstration tests and provision of initial commercialization infrastructure

¹ Testing the operation status of infrastructures / systems using Surrogated A/Cs such as helicopters

² Pre-verification test using a specific UAM aircraft (or UAS aircraft)

³ Two new tasks (from 2022), including information acquisition/utilization system for initial UAM traffic management service and route deviation monitoring as well as integrated operation in a virtual environment to secure operational capabilities and procedures for each UAM object

Appendix #2 K-UAM Grand Challenge Briefing Session



#1. Outline

Time/Place) 17 FEB 2022(Thu) 09:00~17:00 / Grand Hyatt Seoul (online/offline participation)

Attendance) MOLIT 2nd Vice Minister, Head of KARI, MOLIT Director for Drone Transport, 180 organizations and companies in the field of the UAM aircraft, traffic management, and infrastructure.

#2. Main Content

Part 1, Policy) Introduction to the purpose and plan of the K-UAM Grand Challenge, policy roadmap and operation plan (ConOps 1.0) followed by expert discussion

Part 2, Business) Proposals from companies interested in operating UAM aircraft, traffic management service, and Vertiport followed by a Q&A session

#3. Detailed schedule

Order of progress			Content	Remarks
Part 1	Opening	09:00 ~ 09:30	- Opening of K-UAM GC Industry Day	Moderator
			- Congratulatory speech (online)	MOLIT 2 nd Vice Minister
			- Opening speech/congratulatory video(online)	KARI Director, NASA
	Policy presentation	09:30 ~ 10:00	- Goal of K-UAM GC Industry Day - K-UAM Policy roadmap/ ConOps 1.0	MOLIT
		10:00 ~ 10:30	- K-UAM GC Overview	KARI
Expert discussion	10:45 ~ 12:00	- UAM Aircraft manufacturer/operator - Traffic management service provider - UAM Vertieport Operator	KARI	
Part 2 (Business Proposal)	Aircraft manufacturing	13:30 ~ 17:00	- Participation plan from respective fields, Q&A	1 - 2 organizations per field
	Traffic control.			
	Vertiport, etc.			
	Q&A			