



**Karnataka Jnana Aayoga**  
(Karnataka Knowledge Commission)  
Government of Karnataka

**In association with**  
**National Institute of Advanced Studies**

Is Organizing

**State Level Workshop on**  
**“Unmanned Aerial Systems for Governance”**

**Date: 27-28 October 2016**

**Venue: Auditorium, National Institute of Advanced Studies,**  
Indian Institute of Science Campus  
Bangalore - 560 012

**BACKGROUND**

Unmanned Aerial Systems (UAS) or mini drones have vast applications in civilian sector apart from military uses. The various civilian applications are urban mapping and surveys, monitoring of agricultural crops, crop survey, disaster management, coastal surveillance, forest survey and inspection, power and pipeline inspection, engineering site inspection, homeland security, water and pollution monitoring, aerial photography, mine monitoring, event security and crowd monitoring, medical kit transportation and many many more. A few countries have already deployed these systems for a few civilian applications and the results show benefits compared to conventional methods. Our Country has begun to realize the potential and need for deploying UAS technologies in civilian and governance sector. The deployment of UAS for governance is expected to democratize and empower governance right at the grass-root level by giving real-time reliable data for immediate decision making. The effective deployment of such technologies would certainly propel our state and our country to reach greater heights.

There are a few technological and logistical challenges that need to be addressed in order to deploy these systems in our national air space. Realizing its importance many enthusiasts are developing these systems for hobby purpose, data collection and aerial photography; however these systems are not being effectively used for societal applications. Most of the components are being imported and there is a need for encouraging indigenous development in this niche area to encourage Indian Industry. Introduction of courses on UAS technologies into the engineering curriculum at university level would help in building up of capacity within our country which in turn will support the Indian Industry in meeting global challenges.

## ABOUT KARNATAKA JNANAAYOGA (KJA)

- Karnataka Jnana Aayoga (KJA) ([www.karnataka.gov.in/jnanaayoga](http://www.karnataka.gov.in/jnanaayoga)) has been formally notified by Government of Karnataka in December, 2013. KJA aims to provide professional and knowledge recommendations for improving governance in state, benefit to society and enabling citizens of Karnataka. As an independent professional-expert body, KJA Members bring new ideation, undertake extensive brain-storming and wide consultations on important and relevant issues for the state's development and make specific actionable recommendations to the government.
- KJA has already submitted many recommendations/reports to the government – Establishment of Karnataka-GIS (through IT/BT Department); Establishment of Cauvery Gallery in Mysore University (through Tourism Department); Establishment of a Biodiversity Park at Madivala Lake (through Forest and Environment Department); recommendations on Education Technology usage and Edusat Utilisation in HE institutions; recommendations for a Karnataka Sports Policy; a pilot project for medicinal plants pharmacopeia and traditional health knowledge; results of a pilot on studying archaeological sites using Remote Sensing and GIS etc. Apart from these, KJA is in the process of formulating recommendations for a Karnataka Skill Development Plan, Karnataka State Education Policy, Karnataka Public Health Policy, developing a unique Nursing Training Simulator, recommendations for arts administration and management and study for digital archive of heritage and culture in the state etc.
- KJA has recognized that Unmanned Aerial Systems (UAS) are important technology and application elements for society and that UAS will make an impacting drive for governance and betterment of society. To come out with a comprehensive recommendation report on UAS Technology, Applications and Policies that will help the Govt. of Karnataka to develop the sector comprehensively and also use UAS in governance, KJA has constituted an Expert Study Group on 'UAS technology, Applications and Policy: A Karnataka Vision' with the following objectives- one, bring out a comprehensive report on UAS Technology, Applications and Policies as a strategy plan for the nation where Karnataka can lead; two, undertake specific demonstrative application projects in the state, involving departments of the Karnataka Government, where examples of UAS value gets demonstrated end-to-end for governance and Karnataka-GIS AND three, UAS research and technology can get embedded into the higher education system of the state.

## ABOUT NATIONAL INSTITUTE OF ADVANCED STUDIES (NIAS)

- National Institute of Advanced Studies (NIAS) ([www.nias.res.in](http://www.nias.res.in)) was conceived and founded in 1988 by the late Mr. J. R. D. Tata, who sought to create an institution to conduct advanced multidisciplinary research. The Institute is unique in its integrated approach to the study of intersections between science and technology, philosophy, social issues and leadership. NIAS nurtures a broad base of scholars, managers and leaders who would respond to the complex challenges that face contemporary India and global society, with insight, sensitivity, confidence and dedication.
- The current aims of NIAS are to integrate the findings of scholarship in the natural and social sciences as well as technology, the humanities and arts through multi-disciplinary research on the complex issues that face Indian and global society, and to assist in the creation of new leadership with broad horizons in all sectors of society by disseminating the conclusions of such research through appropriate publications and courses as well as through dialogues with leaders and the public.

- NIAS addresses advanced technologies and policies – issues of societal interest and requiring fresh and new outlook and perspectives. NIAS has experts in UAS and GIS/Remote Sensing technologies/policies. NIAS aims to develop a common-good vision for UAS.

#### **SCOPE AND OBJECTIVES OF THE WORKSHOP:**

KJA, in association with NIAS, is organizing a 2-day State Level Workshop at NIAS on October 27/28, 2016. The workshop will have experts discuss on UAS and also for industries to show-case UAS products and technologies.

Apart from addressing and discussing various issues related to operation of UAS, the workshop will be a first-of-its platform for debate and discussion on UAS Technologies, Applications and Policy. Generating technical scenarios, application cases, operational guidelines and policy directions for UAS is the need of the hour – this is the main aim of the workshop. In specific, the seminar will also:

- Review the current status of UAS Technology
- Discuss and learn from best UAS practices, experiences and applications case-studies
- Discuss solutions and approaches which are sustainable and have a long-term perspective with regard to UAS for Governance.
- Look at issues and challenges that go towards creating an eco-system for UAS – including commercial sector in India
- Address broad strategy and guidelines for UAS in Education

#### **UAS SHOW-CASE**

It is planned to have a Show-Case of UAS products and technologies – for this registration and requests are mandatory. The KJA SG will limit/select show-casing – due to space and time limitations. Interested agencies may send in their requests immediately.

#### **EXPECTED OUTCOME OF THE WORKSHOP**

The outcome of the workshop will help the Study Group in bringing out a comprehensive study report on UAS Technologies, Applications and Policies. The discussions will help in defining:

- Demonstrative application projects in the state, involving departments of Karnataka Government, where examples of UAS value gets demonstrated end-to-end for governance.
- Roadmap for industrial sector development in UAS addressing commercial aspects of manufacturing and services.
- Roadmap for adoption of UAS research and technology into the higher education system of the state.
- Policy and Practice recommendations for overall UAS eco-system.

#### **WHO SHOULD PARTICIPATE?**

The seminar is aimed at bringing together knowledge experts related to UAS who can deliberate on the national perspective with an emphasis on Governance. Experts from the State/Central governments, industries, academia, Societies and R&D institutions are expected to participate



and address the issues relating to UAS. Key national experts are also expected to participate. Participation for the workshop will be by registration.

Private sector involved in UAS and its applications can participate and show-case their capabilities. Academia and universities/colleges would also benefit from the workshop.

**For participation/registration and more details, please contact:**

**Mr. R. Vijay Krishna**

**Member Secretary, SG-UAS**

**Address: No. 3, Dr. Ambedkar Veedhi, National Design and Research Forum, The Institution of Engineers India, Karnataka State Centre, Bengaluru – 560 001**

**Contact No.: +91 80 22268626/ 222035102; Mobile: +91 9243104008**

**Email: [kjauasworkshop@gmail.com](mailto:kjauasworkshop@gmail.com)**

**Web: [www.karnataka.gov.in/jnanaayoga](http://www.karnataka.gov.in/jnanaayoga)**

## TENTATIVE PROGRAMME SCHEDULE

OCTOBER 27, 2016

(0900 HRS ONWARDS)

0900-0930	Registration	
0930-1100	<b>Inaugural/Opening</b>	
1100-1130	Tea Break	
1130-1215	<b>Session 1: Building the Case for UAS in Karnataka</b>	<b>Co-Chair: Dr. Baldev Raj, Director, NIAS and Ms V. Manjula, PS, IT/BT Department</b>
	Focus of the Session: <ul style="list-style-type: none"> <li>• Why UAS are becoming important</li> <li>• Thinking and perspective of KJA on UAS</li> </ul>	
1215-1330	<b>Session 2: UAS Applications Perspective for Karnataka</b>	<b>Co-Chair: Dr. B. V. Naidu, KJA Member And ACS, UDD</b>
	Focus of the Session: <ul style="list-style-type: none"> <li>• Application Perspectives of UAS</li> <li>• Potentials of applications in Karnataka</li> <li>• Private Sector presentations of capabilities</li> </ul>	
1330-1430	Lunch Break	
1430-1600	<b>Session 2: UAS – Technology Ecosystem</b>	<b>Co-Chair: Dr. K. Ramachandra, Director, NDRF and Prof. A. K. Ghosh, IIT Kanpur</b>
	Focus of the Session: <ul style="list-style-type: none"> <li>• Present UAS Technology Readiness Level in the Country</li> <li>• Manufacturing / Maintenance, Capability and Capacity</li> <li>• Test Beds for UAS</li> <li>• Private Sector Offerings of Technologies</li> </ul>	
1600-1630	Tea Break	
1630-1800	<b>Session 3: UAS Policy and Regulations</b>	<b>Co-Chair: Dr. MYS Prasad and DGCA Representative</b>
	Focus of the Session: <ul style="list-style-type: none"> <li>• DGCA Policy</li> <li>• State UAS Policy</li> <li>• UAS Certification and Training</li> </ul>	

OCTOBER 28, 2016

0930-1100	<b>Session 4: UAS in Higher Education</b>	<b>Co-Chairman: ACS, HED And Mr. K R Sridhara Murthy, Director Jain University</b>
	Focus of the Session: <ul style="list-style-type: none"> <li>• Embedding UAS in HE</li> <li>• R&amp;D for Future UAS Technologies and Applications</li> <li>• Participation of Universities of Karnataka in UAS</li> </ul>	
1100-1130	Tea Break	
1130-1245	<b>Concluding Panel: UAS - Way Forward</b>	Moderator: Dr Mukund Rao, Member Secretary, KJA  <b>Participants:</b> Dr K Kasturirangan, Chairman, KJA Principal Secretary, IT/BT Dept ACS, Higher Education ACS, Urban Development Dept ADG of Police ACS, Agriculture Department Dr. Baldev Raj, Co-Chair of SG Dr. BV Naidu, Co-Chair of SG
1245-1300	Closing Remarks and wrap-up	Dr. Mukund Rao, Member Secretary, KJA
	Vote of Thanks	Mr. Vijay Krishna, Member Secretary, UAS-SG
1300-1400	Lunch	