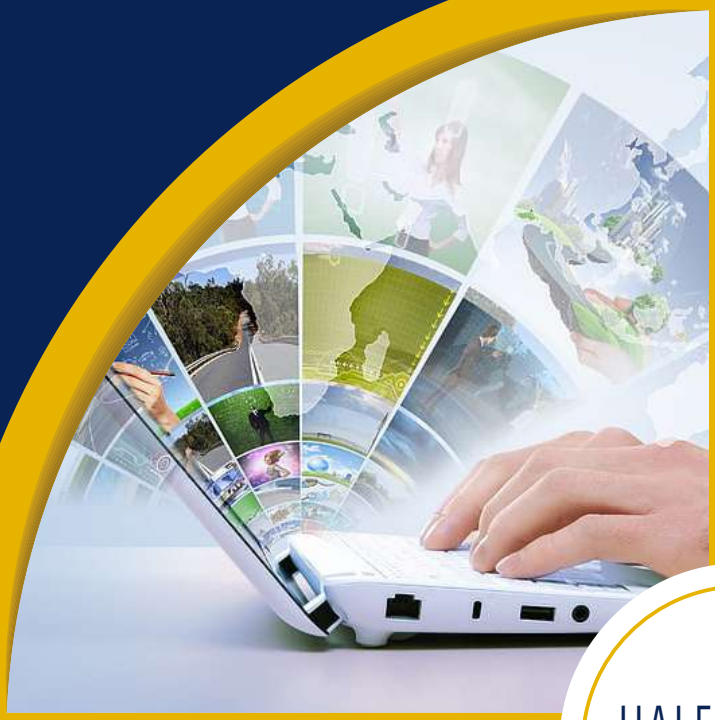
NASSCOM®
Center of Excellence-IoT & AI
A MeitY Initiative with Govt. of Karnataka, Haryana, Gujarat & AP



HALF-YEARLY REPORT

GURUGRAM COE

APRIL – SEPTEMBER 2021

Ministry of Electronics & Information Technology
Government of India

MEITY STARTUP HUB

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STARTUP HARYANA
FIRST STEP OF SUCCESS

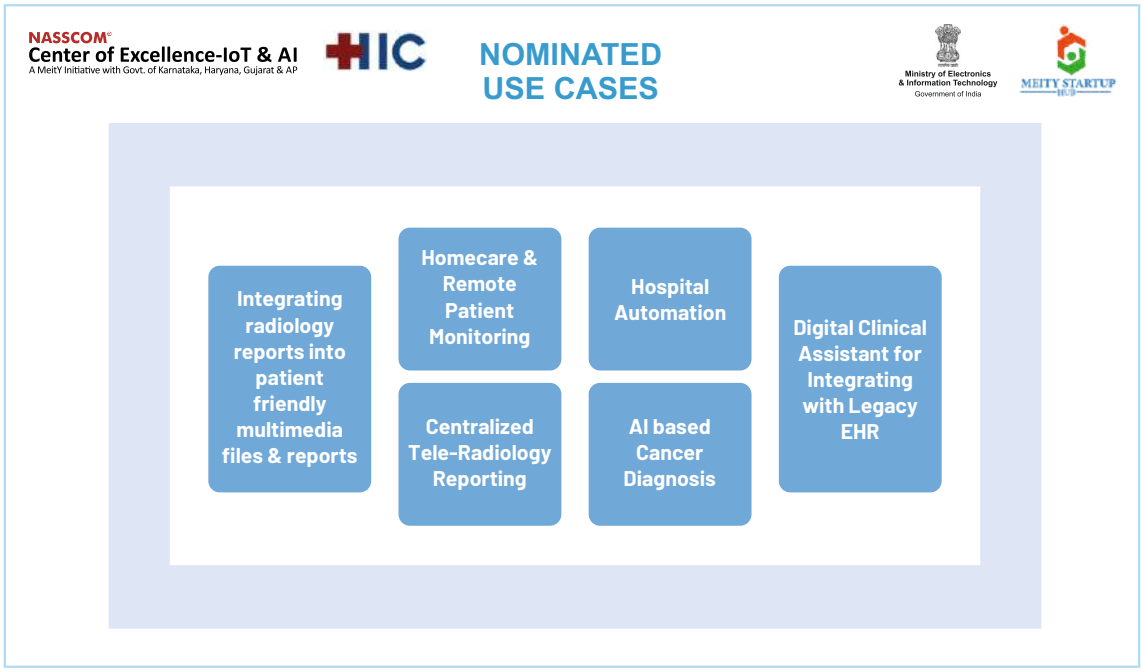
Healthcare Innovation Challenge 2

After the success of Healthcare Innovation Challenge 1 (HIC1), NASSCOM Center of Excellence IoT & AI came up with the second edition i.e. HIC2, a use case focused program to accelerate the adoption of Digital Technology based solutions in the Healthcare sector and mitigate the risks associated with it.

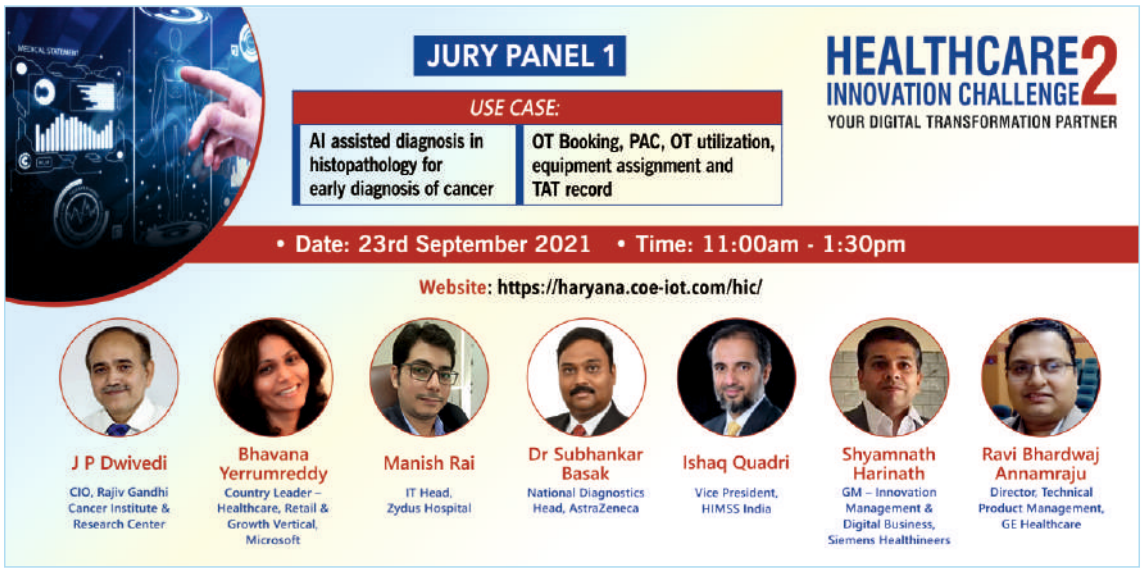
Rajiv Gandhi Cancer Institute and Research Center, Zydus Hospitals, Sankara Nethralaya, Mahajan Imaging and KIMS HEALTH were the Use Case Sponsors and Microsoft was the Technology Partner for HIC2.

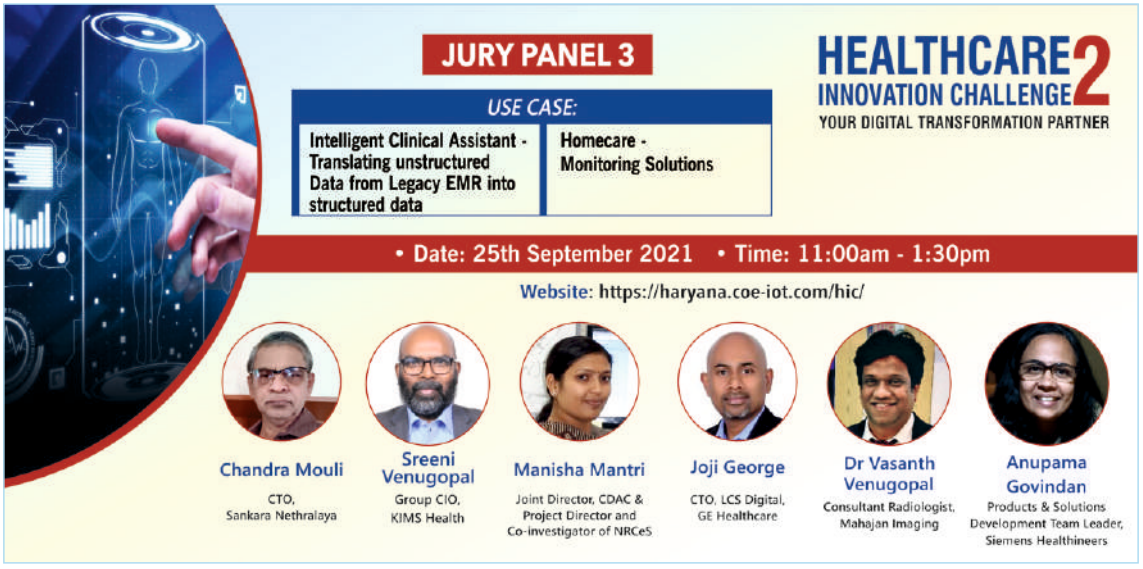
The nominated use cases are:

- Translating unstructured Data from Legacy EMR into structured data using SNOMED CT
- Converting radiology reports into multimedia images and patient friendly reports
- AI based Cancer Diagnosis
- Centralized Tele-radiology Reporting
- Remote Patient Monitoring
- Hospital Automation



The applications from the solution providers were invited at a national level for all the nominated use cases which were then evaluated during the jury rounds by key stakeholders from the healthcare ecosystem. Winners and runners up were announced during the Finale.





The finale saw eminent panelists - **Padma Shri Awardee Mr Kiran Karnik**, Former President, NASSCOM; **Padma Shri Awardee Dr (Prof) Mohsin Wali**, Former Physician to the President of India & Sr. Consultant, Sir Ganga Ram Hospital; **Mr Dileep Mangsuli**, Executive Director, Siemens Healthineers; and **Ms Shayanika Hazarika**, Director – Healthcare, Microsoft.

The Healthcare provider panel moderated by **Dr Keren Priyadarshini**, Regional Leader – Healthcare, JAPAC, Microsoft, saw participation from:

- **Mr J P Dwivedi**, CIO, Rajiv Gandhi Cancer Institute
- **Dr Vasanth Venugopal**, Consultant Radiologist & Head of Imaging Research, Mahajan Imaging
- **Mr Sreeni Venugopal**, Group Chief Information Officer, KIMS Health
- **Mr Chandra Mouli**, CIO, Sankara Nethralaya
- **Mr Manish Kumar Rai**, Head – IT, Zydus Hospitals

HIC2 Use Case Winners

	WINNER	RUNNER-UP
Digital Clinical Assistant for Integrating with Legacy EHR	EZDI	ibis.ai
Integrating radiology reports and images into multimedia files	endimension	Teleradiology
Centralized Tele-Radiology Reporting	endimension	Teleradiology
Homecare & Patient Monitoring Solutions	HELYXON	JioVio
AI based Cancer Diagnosis	GRITIVE	AIRA MATRIX / Onward Assist
Hospital Automation	KareXpert	CrelioHealth

Currently, the use case sponsors i.e. the Healthcare Providers are working with the use case winners i.e. the startups to initiate the PoCs.

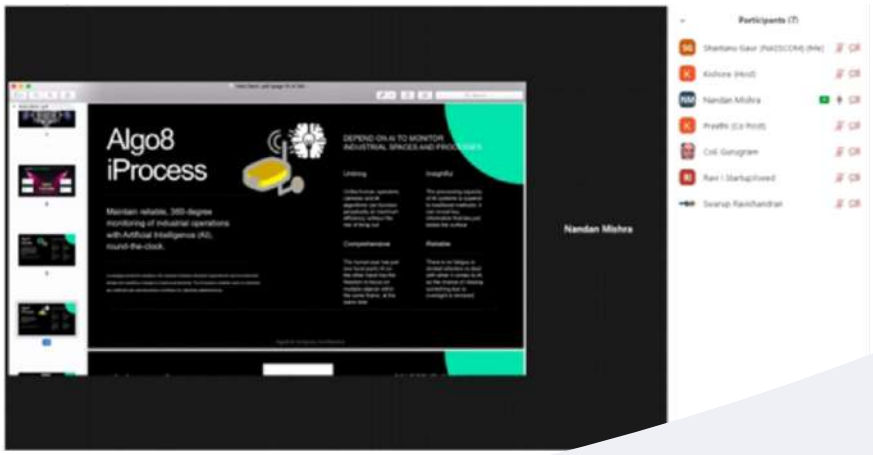
For more information, visit https://haryana.coe-iot.com/hic/ or reach out to us at hic@nasscom.in

Investor hours with StartupXseed

Investor Hours with StartupXseed was organized on **2nd July 2021** and **7th July 2021**, with focus on DeepTech startups in B2B space. Investor Panel consisted of:

- BV Naidu, Founder & Managing Partner, StartupXseed Ventures
- Ravi Thakur, Co-Founding Partner, StartupXseed Ventures
- Kishore Kumar D, Principal, StartupXseed Ventures

Startups that pitched include Health Vectors, Avrio, Simbo.AI, NOOS Technologies, Datacultr, AB Circuits and Research Labs, Trucknetic, Monitra Healthcare Private Limited, Darius Knight Solutions Private Limited, In-Med Prognostics Pvt Ltd, Adapt Ideations, StimVeda Neurosciences and WIANLEAF.



EVENTS

Cracking the Early-Stage Funding

Sat, July 24, 2021: NASSCOM Center of Excellence - IoT & AI hosted a session to guide the Startups on Early-stage Funding. This session was led by an Israeli investor, **Lev Mikulitski**. Lev discussed various fundraising strategies for early and growth-stage companies. He further informed startups about various funding options Seed / Angel / Venture Capital and Institutional round of funding. The event was attended by over 100 startups, entrepreneurs & innovators from different domains.

Lev also talked about leveraging funding opportunities in covid-like period. “Over 90% of startups fail during the first year of operation because of lack of funds. Funding constitutes the lifeline of any business. A systematic planned approach to fundraising is therefore essential to ensure startup success”, said Lev.

AI for Cancer Care & Research

In a perfect world, we wouldn't have any casualties due to diseases like cancer, however we are not living in perfect world. The evidence suggests that more than a million people are diagnosed with cancer every year in India alone. We have been in a continuous struggle in the fight against cancer for a long time.

Cancer diagnosis is a very complex process and there is a huge burden on radiologists & pathologists for fast & accurate results. Up to now it was left totally to the pathologists to analyze the samples and provide result, however with the advancements in Artificial Intelligence based solutions it is possible to reduce this burden. AI based solutions are also capable of helping in improving accuracy, reducing the turnaround time and decreasing the costs associated with cancer diagnosis. It also allows the radiologists & pathologists to focus on more critical tasks in patient care, and improves the overall productivity.

Drug Development is also a resource & capital-intensive process. Imagine, if there could be tools available that made the drug discovery process faster & cheaper. Certain Artificial Intelligence based solutions can achieve this by providing the analytics of large volumes of life sciences data and cutting down the long time taken in lab experimentations with different molecules.

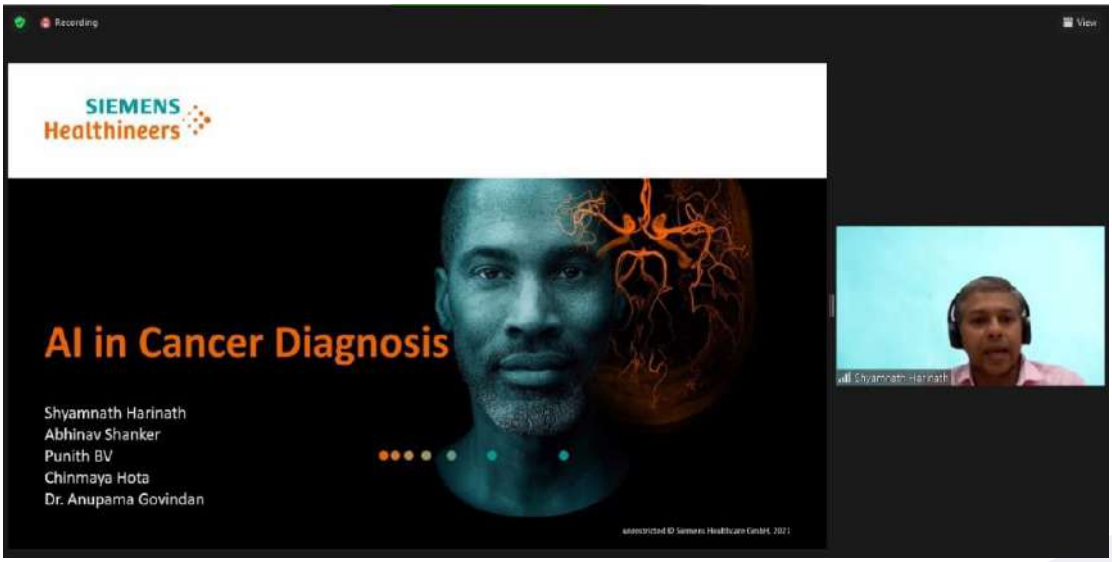
Genomics plays a crucial role in personalized therapeutics and Precision oncology, but the associated costs are tremendously high. There is a need for solutions that can bring down the costs, in order to make Precision Oncology more accessible.

NASSCOM Center of Excellence – IoT & AI, Gurugram organised a conference on **AI for Cancer Care & Research** on **30th July 2021**, in which esteemed panellists from the leading Cancer Institute, the global leader in bio-pharmaceutical sector, the most innovative Medical Technology Enterprise and DeepTech solution providers shared their insights on how AI is enabling Cancer Diagnosis & Drug Discovery.

No one can articulate the challenges associated with Cancer Care better than Healthcare Providers. **Mr Rakesh Chopra, Chairman, Rajiv Gandhi Cancer Institute & Research Center**, spoke about the role played by Artificial Intelligence based solutions in mitigating the challenges faced by their Cancer institute while **Dr Arvind Kumar Chaturvedi, Chair Radiology, Rajiv Gandhi Cancer Institute & Research Center**, discussed how technology in improving the productivity of radiologists.

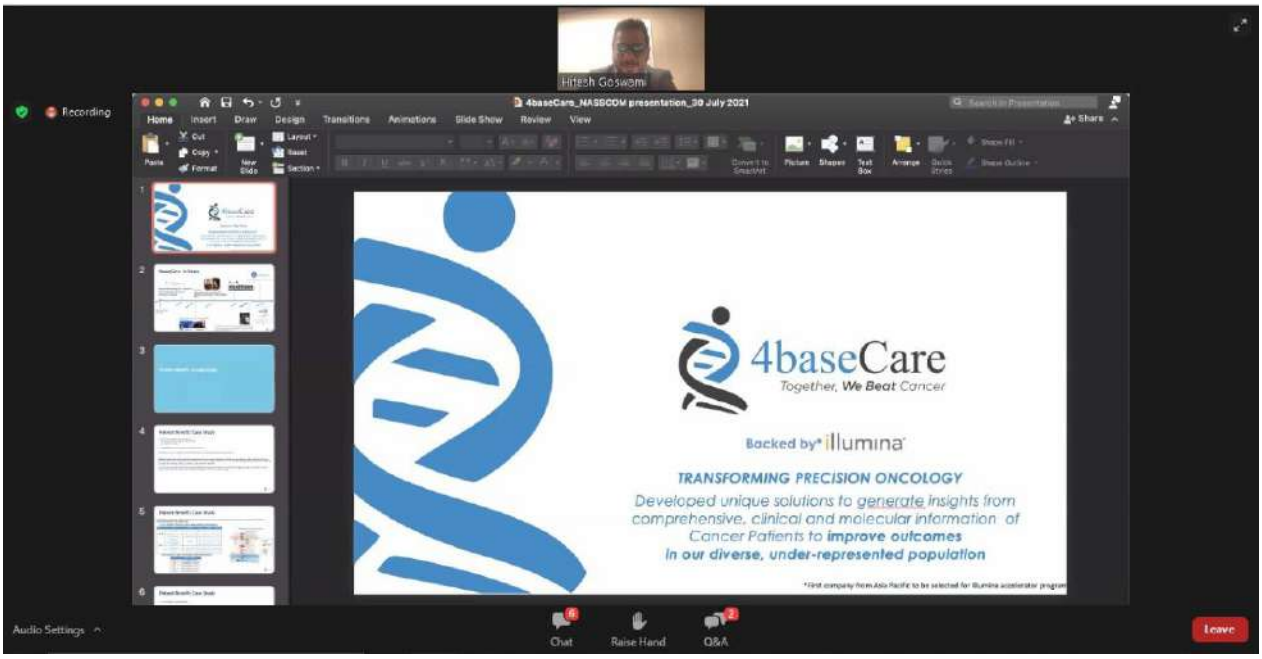
The pharma sector plays an extremely critical role in the success of healthcare service delivery. **Dr Kavita Lamror, Director - RWE, Sanofi**, shared her experience in leveraging technology for analyzing real world evidence data for accelerating drug discovery.

Medical Device companies are leading adopters of technology for improving cancer diagnosis. The **team from Siemens Healthineers, consisting of Mr Abhinav Shanker, Mr Shyamnath Harinath, Dr Anupama Govindan, Mr Chinmaya Hota & Dr Punith BV** spoke about **AI based Applications for Cancer Care: Diagnosis & Clinical Decision Support Systems.**



The impact created by DeepTech solution providers can be demonstrated by Case Studies. The conference ended with case studies by solution providers. **Dr Juergen Scheele from Innoplexus** showcased their data platform that connects trillions of data points to enable the exploration, detection and building of various direct and indirect connections between drug, target, pathway and disease.

Dr Vidya Veldore & Hitesh Goswami from 4BaseCare, which is engaged in Genomics, showcased their cutting-edge precision oncology solutions, which is a unique set of comprehensive genomic panels which allows oncologists to gain access to make advanced genomic testing more affordable and reduce the turnaround time on test results.



Design Thinking

Sat, Aug 14, 2021: NASSCOM Center of Excellence – IoT & AI organized a webinar on Design Thinking. The session was led by **Akshay Kumar**, CTO, Agua Wireless Systems, where he discussed various convergent & divergent ideation techniques, rapid prototyping, and practical use-cases to make a product more desirable. He further added that design thinking builds creative confidence & is a critical part of any product development.

"Design thinking is an actionable approach that enables us to look at a problem from a completely different perspective. It is a proven problem-solving protocol that helps businesses to identify, understand and address the problem.", said Akshay

EVENTS

Innovation and IPR for Startups

Sat, Sep 4, 2021: NASSCOM Center of Excellence – IoT & AI organized a webinar on **Innovation and IPR for Startups**. **Bindu Sharma**, Founder & CEO, Origiin IP Solutions led the session. She discussed keeping innovation protected through IPR and how it helps the businesses in the long run.

> "The startup idea needs to be protected at the right time to increase the valuation of the company as well as to maintain the USP in the market", said Bindu

The webinar also covered different kinds of processes and confidentiality agreements that startups should opt to make IP processes effective and leak-proof to avoid later disputes with respect to confidentiality and IP of the products.

Success Stories

Hope grows in a dump:
Wastefull Insights - Working towards a cleaner world

India generates **62 million tonnes** of waste each year. About 43 million tonnes (70%) of waste gets collected, out of which only 12 million tonnes is treated and about 31 million tonnes are dumped in landfill sites. The major reason for most of this waste ending up in landfills is inadequate segregation. Due to the lack of appropriate segregation practices, Waste in India is segregated manually making the process tedious, time-consuming, inaccurate and creating an unhealthy environment for ragpickers.

NASSCOM CoE incubated startup, Wastefull Insights has developed a robot "Automatic Waste Sorting Unit (AWSU)" that uses Artificial Intelligence, Deep Learning, Computer Vision and Robotics to reduce landfill waste by improving the waste segregation technique while providing ragpickers decent jobs. The robot is robust and can fit into any facility, it picks around 3600 waste items per hour which is much higher when compared to the manual load of picking and segregating waste.

The AWSU is installed in Hyderabad Integrated Municipal Solid Waste Plant (HIMSW) which is owned by Ramky Enviro Engineers Limited. About 3000 tonnes of mixed waste is received by the plant every day. **Rishabh Shah**, Founder, Wastefull Insights, said, the technology will aid the waste management industry and help India to tackle environmental problems associated with Waste by turning most of it into a valuable resource.

The company has also developed an improved version of the existing product called "H.O.P.E" which is ready to be installed. This robot can categorise waste on the basis of colour, categories, grades, brands etc. The company works as the developer and manufacturers of the AWSU and sell it directly to the Recycling companies or Waste Management units.

Image from testing done at HIMSW

TechEagle Innovations becomes Asia's first Drone delivery startup to provide cold chain vaccine delivery through Drones

9th Sep 2021: NASSCOM CoE incubated **TechEagle Innovations** became the first company to launch the Medicine from Sky Project. The project was launched by Civil Aviation Minister **Sh. Jyotiraditya Scindia** & Minister for ITES & I&C **Sh. KT Rama Rao** in Vikarabad, Telangana. The project, a collaboration of the Telangana government, World Economic Forum, HealthNet Global and NITI Aayog, seeks to deliver medicines, vaccination and units of blood to remote, rural areas by means of drones.

TechEagle's drone (Peregrine X) has flown with 100 doses of the Covid vaccine, which was around 4kgs of payload. Peregrine X is fully capable of maintaining the cold chain for safe & reliable transport of vaccines, which maintains a 2.4-degree Celsius temperature throughout the flight.

TechEagle is a deep-tech startup dedicated to making world-class Drone delivery solutions for healthcare, e-commerce, hyperlocal, maritime, and defence applications. They became one of the first companies to receive approvals from DGCA, MoCA, AAI & MHA to conduct Beyond Visual Line of Sight (BVLOS) trials for package delivery via Drones in different parts of India. TechEagle recently closed a **$500K seed round** of funding from India Accelerator, Vinners Group & other seasoned investors.

Vikram Singh Meena, Founder & CEO of TechEagle, said "TechEagle is working towards building the world's largest Drone logistics airline to save and improve billions of lives. Drone rules 2021 & PLI Scheme for Drones are landmark moves by the Union Govt. for enabling Drones for masses, we feel that entire policy is helpful and progressive for the industry."

TechEagle Drone launch at MFTS

TechEagle Drone Peregrine X

TechEagle Peregrine X at MFTS about to launch

TechEagle Aquila X2 Hybrid VTOL - Delivery Drone

BharatRohan: Transforming agriculture with UAV/Drone based Decision Support System (DSS)

NASSCOM CoE incubated startup, BharatRohan is empowering the Indian agriculture industry with an extraordinary in-depth understanding of land and crops by using smart UAV/drone-based hyperspectral Remote Sensing and artificial intelligence. BharatRohan partners with farmers and provide them with UAV/Drone Hyperspectral imaging enabled the Decision Support System. These technology-based services act as an anchor to enabling them to follow sustainable farming practices.

Bharat Rohan's technology is based on Hyperspectral Imaging which determines minuscule colour changes occurring in the plants due to physiological and phonological changes. With Hyperspectral imaging, BharatRohan is able to identify the colour changes occurring in the leaves due to these biochemical changes - even at just the onset of the infestation which helps them in providing early predictions and forecasts to the growers so that losses can be prevented.

Amandeep Panwar, Founder and CEO of BharatRohan, said, "The technology helps the farmers reduce their crop losses, water wastage & agri-inputs and, consequently, increasing the profit margin per acre. Simultaneously, the agribusinesses get to procure the commodities of interest with complete traceability of farm activities (variety, agri-inputs and quality) with the minimum rejection rate."

Mentha arvensis (Japanese Mint) is a crop whose distilled oil is widely used to extract Menthol to meet demands of the pharmaceuticals, cosmetic, FMCG, flavours and confectionery Industries. Nearly 75% of India's Japanese Mint oil is exported g
The Uttar Pradesh state of India contributes to around 80% of India's pr
60% production takes place in its Barabanki District.

BharatRohan has more than 3600 Japanese Mint farmers registered on its platform in 6 Tehsils of Barabanki district whose day-day farm activities are closely monitored through ICT platforms and validated by village level BharatRohan Sehyogis and Tehsil level BharatRohan's Success Executives network. These 3600 farmer fields contribute as to the ground truths and have been instrumental in achieving high accuracy of the results.

Prior to BharatRohan's intervention, these farmers were spending ₹15,000 on Agri inputs and were losing around 30-40 % of their crops due to pests and disease outbreaks. Also, they used to irrigate their fields 8 times during the whole season. After these farmers joined Bharatrohan, the cost of Inputs was reduced to ₹11,380, resulting in the saving of ₹3,620 per acre. On top of which the irrigation cycle was reduced to 7 times, thereby generating water saving.

Rishabh Choudhary, Co-Founder and CTO of BharatRohan said that the farmers' yield was increased from 50 kg per acre to 70 kg per acre by following a package of practices generated by BharatRohan's Decision Support System. This increase in yield due to crop saving has resulted in the generation of an additional income of around ₹20,000/acre. A BharatRohan Mint farmer earns around ₹23,600 per acre more than a traditional farmer.

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