

COBONEWS

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विज्ञान और प्रौद्योगिकी विभाग
Department of
SCIENCE & TECHNOLOGY



NM-ICPS



iitdelhi



IHFC

Technology
Innovation Hub
of IIT Delhi

DEFENCE

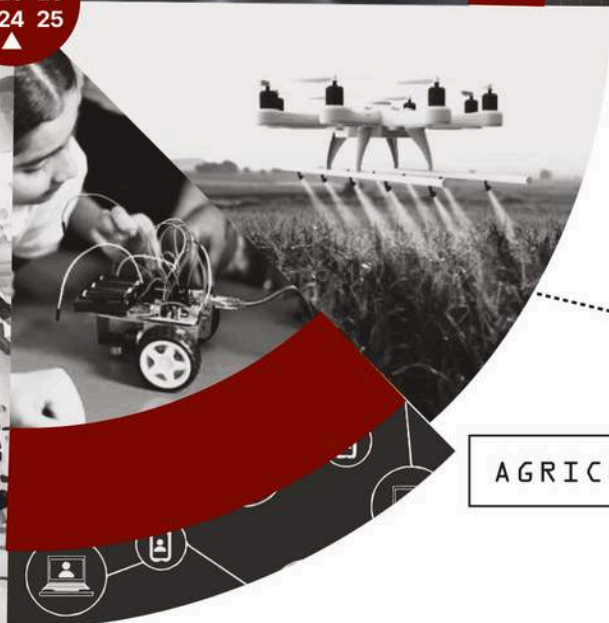


INDUSTRY X.0

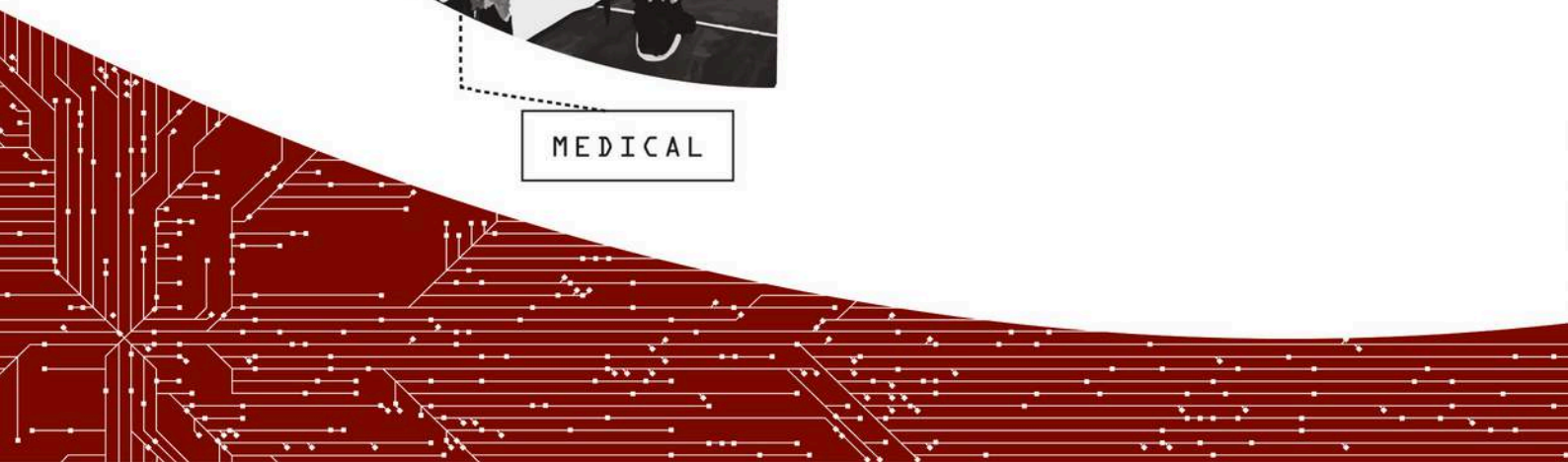


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AGRICULTURE



MEDICAL



Message from Director, IIT Delhi

I have great pleasure in introducing this edition of CoboNews. The team of IHFC has been working hard to enable research, product development and create impact for cobotics. We have initiated a Drone Technology Park at our Sonapat Campus to create an ecosystem to enable innovation in drone technology design and implementation for different payloads. Besides the students and start-ups of IIT Delhi, I am sure the state of Haryana will significantly take advantage of its presence by training their college and school students besides supporting their start-ups in drones.

The Medical Cobotics Centre (MCC) of IHFC in the Okhla campus of IIT Delhi has started functioning for the training to medical students and nurses using the Human Patient Simulator (HPS). We are also planning to house start-ups in the MCC who were selected through a special call after its inauguration in September 2023. We are happy to link with other Technology Innovation Hubs (TIHs) to come up with healthcare solutions for the country.

We look forward to your support, ideas and partnership in taking IHFC and Cobotics forward for helping the society.

All the best!



Prof. Rangan Banerjee

Director, IIT Delhi

Message from Director, NM-ICPS, DST, Govt. of India

Reflecting on the journey of IHFC through the past years, it's heartening to see the advancements it has made in the past few years. Its consistent efforts in the field of Cobotics, meeting the goals and extending the reach, reflect its commitment to progress.

IHFC's focus on technology, entrepreneurship, skill development, and international collaborations has yielded tangible results, with accelerated progress witnessed in recent months. The impact of the hub extends to the youngest minds, with initiatives like the Delhi Robotics League, Delhi Hackathon, and various programs fostering Cyber Physical Systems education among school children.

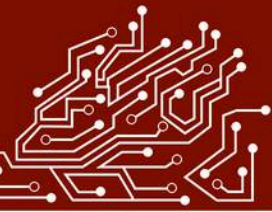
IHFC's commitment to empowering educators through programs like the Teacher Training Program further underscores our dedication to nurturing talent and driving innovation. The vision and action displayed by the hub serve as a promising indication of the mission's continued success.

I congratulate IHFC for their unwavering commitment to shaping a brighter future.



Dr. Ekta Kapoor

Director, NM-ICPS
Department of Science and
Technology (DST),
Government of India



Message from Project Director, IHFC

At the end of four years, our focus is to become independent as soon as possible as our funding agency DST, Govt wanted it that way. We got a good traction in Education and Training in the last two years. The boards of CICSE and Delhi school, Punjab S&T, and International Telecommunication Union (ITU) in Geneva are our partners. IHFC has framed courses like Robotics, AI, and Coding for them, and helped to conduct competitions like Delhi Robotics League (DRL), Delhi Hackathon, AI for Good (Robotics for Good Youth Challenge), etc. Developments based on competition-based education are creating a new paradigm in the domain of, mainly, school education. They are making the trainees industry ready. In parallel, IHFC is exploring to introduce entrepreneurship early in the education system so that the future generation opts for building start-ups to create jobs for others rather than seeking jobs for themselves, thereby, making a positive change in the society.

While working towards product-oriented R&D, Start-up funding, Skill development, and international relation development, as mandated by the DST, it is important to review ourselves. Hence, an internal review was recently carried out in the presence of industry experts drawn from technology and commercial domains, and senior faculty drawn from IIT Delhi. While they acknowledged the difficulty of converting the proof of concepts with various R&D projects in a short span of 4-5 years, their advice was to look for alternative revenue models, e.g., CSR funds, consultancy services, etc. I am sure with the support from the industry-linked members of the Hub Governing Body (HGB), Board of Directors, and those from the internal review committee, IHFC will soon be seen as one of the best self-sufficient independent technology hubs in its class.

Jai Hind!



Prof. Subir Kumar Saha

Project Director, IHFC
Professor, Dept. of Mechanical
Engineering, IIT Delhi

Message from CEO, IHFC

It gives me immense joy to announce, that the year so far has only seen IHFC in limelight, may it be at, TIPS4.0 where IHFC once again was acknowledged as one the best performing Hubs of the NMICPS mission or being in the news for our partnerships and collaborations.

The success that surrounds IHFC can only be attributed to our continuous efforts to be the best and doing things differently. It is reflected in the way we have been handholding our Grand Projects which have now started showing results and are fast tracking their way to commercial success. This has encouraged us to launch Grand Projects 2.0 which will further see IHFC reaching greater heights of success by 2025. Our vision towards an 'Aatmanirbhar' Bharat comes out clearly with this plan and our mission is to now empower 25 more startups this year, trying to attain the goal of creating 50 successful start-ups by end of 2024.

Our immersive way of launching challenges and competitions has made us the talk of the town and the preferred hub for STEM programs. We are supporting some of the prominent Education Boards (like CISCE, DBSE) with implementation of new age curriculum in line with the National Education Policy 2020. Our recent international collaboration with United Nations (UN), as national partner (India) for ITU Robotics for Good Challenge has surely put us on the global map. It's a matter of great pride that in just 4 years such milestones have been achieved. But, we do things differently. So always expect something new and different from IHFC.

Jai Hind!



Mr. Ashutosh Dutt Sharma

Chief Executive Officer
(CEO) IHFC, IIT Delhi

About IHFC

In the past few years, the world especially India, has rapidly seen advancements in sensing, computing, algorithm research, and development. This has further ushered in the growth of robotics research and its adaptation to the real world. Today, it's very obvious that robots are being used in every sector, from the life of a simple farmer planting and harvesting crops to the wholesaler who needs to manage his inventory in his vast warehouse of all agricultural produce. Using drones in agriculture, defence, and industry has taken a turn only for the better. Robots, in collaboration with doctors, are used in long intensive surgeries. All over the world, this kind of collaborative work with robots will increase with time. Robots will play an essential role in society in the coming years in all sectors, so intelligent robotic teammates have the potential to expand human capabilities, reduce the risk of harm, increase safety productivity, and ultimately, improve the quality of life for our people. Therefore, developing technology and products that enable the population to work alongside robots is the need of the hour.

With this aim, the I-Hub Foundation for Cobotics (IHFC), the Technology Innovation Hub of IIT Delhi, was established partnering with the Department of Science Technology (DST), Ministry of Science and Technology, Govt. of India under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS). This brings together three significant pillars of success: Academia, Government and Industry. Established in June 2020 as a Section 8 company, IHFC has four mandates: Medicine, Agriculture, Industry and Defence. The mandates are R&D, Entrepreneurship and Startups, Skills and Training and International Collaborations such as with Japan and NSF, USA. Under R&D, we are working on 7 Grand Projects, and a few are in International Collaboration with the National Science Foundation (NSF) and NEDO, Japan. We are hand-holding many startups, and many young entrepreneurs are already incubating and accelerating with IHFC under the READY (Research Entrepreneurship and Development for You) program. Our first successful startup from READY is SeiAnmai Technologies, which is already in talks with many IHFC industry partners for commercialization, and there are many more in the pipeline.

Startups Incubated & Accelerated



Ayudyog



Arka Aerospace



Aviate



BotLab
Dynamics



CYRAN AI
Solutions



ENORD



I4-Marine
Technologies



Kaidoko



Kelvin6K



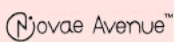
LightRay
(Retro Panda Labs)



Mountford



Nawe Robotics



Novae Avenue
(Papli Labs)



Pixuate
(Cocoslabs)



Rancho Labs



SeiAnmai
Technologies



Simhatel



Systemantics



The Innovation
Story



Trouve



TSAW
Drones

Grand Projects

- Rehabilitation Robotics
- Human-Robot Interaction
- Healthcare Robotics
- Industry 4.0 & Beyond
- Drone Applications
- Intelligent Sensing and Secured Communication
- Nanorobotics

IHFC Major Highlights

TIPS 4.0 (Mumbai, May 2024)

IHFC showcased its Medical Cobotics Centre and Drone Technology Park at TIPS 4.0, enabling startup pitches.



Drone Technology Park

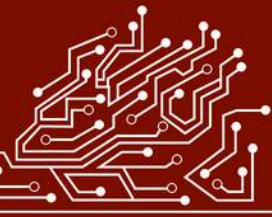
IHFC launched Drone Technology Park at IIT Delhi Sonapat Campus for training and R&D in drone ecosystem.



Delhi Hackathon

IHFC- the knowledge partner for the Delhi Hackathon for the year 2023-25.





1. BotLab Dynamics

Incubated at IIT Delhi and accelerated by IHFC, BotLab Dynamics is a DIPP-recognized tech start-up founded in 2016 by Dr Sarita Ahlawat & IIT Delhi graduates Tanmay Bunkar & Anuj Kumar Barnwal. DST ranks them among India's top ten for developing intelligent drones for terrain analysis, navigation, and more.

IHFC SUCCESS STORIES

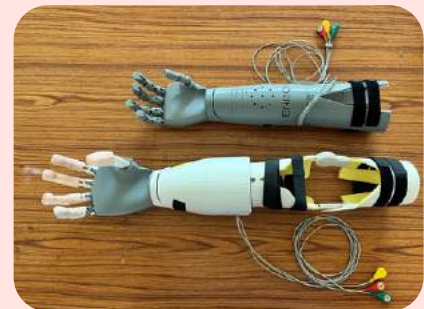


2. TSAW Drones

TSAW Drones, incubated by IIT Delhi's IHFC in 2023, pioneers in revolutionizing last-mile delivery with drone technology. They offer instant delivery solutions across e-commerce, healthcare, and logistics. Achievements include India's first mid-surgery oncological tissue delivery, reducing transportation time significantly. Their Drone Cloud Intelligence System (DCIS 2.0) cuts flight operation costs by 25% through advanced autopilot features like automatic path planning. Led by Sudhanshu Mishra, TSAW Drones emphasizes safety, efficiency, and sustainability, aiming to transform goods delivery across India with their drone network.

3. EMG Controlled Prosthetic Hand (ENRICH)

ENRICH is a bionic arm to help Indian amputees, led by Professor Nayan M Kakoty. The arm uses EMG sensors for intuitive control, suited for all amputation levels. With IIT Delhi's IHFC support, ENRICH overcame regulatory and technical hurdles, aiming to be 50% cheaper than current options. After successful trials, it's set to be a cost-effective, homegrown solution, changing amputees' lives nationwide. ENRICH is part of IHFC's R&D Grand Projects.





4. SeiAnmai Technologies Private Limited

SeiAnmai Tech, incubated at IIT Delhi's IHFC, is making strides in robotics with its flagship product TOTO. Led by Srikrishna S. (CEO), TOTO is a versatile robot designed for various tasks including remote connection, security, personal assistance, medical assistance, warehouse optimization, teaching and as a leisure companion. It features advanced technologies like autonomous navigation and tablet integration. The company seeks funding and partnerships to broaden TOTO's impact.

5. Pixuate

Pixuate, incubated with IHFC, specializes in advanced video analytics for enterprises, utilizing AI and machine learning for real-time insights from CCTV footage. Their main product, Plant360, enhances monitoring, efficiency, and operations insights. They also offer solutions like VIDS, SCS, and AI-NVR. Designed for easy deployment and integration, Pixuate prioritizes customer support and experience.



6. Kaidoko

Kaidoko, an innovative AI-powered psychology program, is revolutionizing childhood learning and development. Supported by major institutions like NASSCOM, it leverages "First Serve Psychology" to enhance young lives. In only four years, it's impacted many, offering weekly plans, activities, workshops, and counseling. Results are positive: 91% of parents see psychological improvements in six weeks, 68% note better learning, and 75% of users feel happier. Aimed at empowering children for success and happiness, Kaidoko is making strides in education and mental health.

From cutting-edge technology to empowering youth for a brighter tomorrow, IHFC aims to establish a community of innovation and thought leaders.

Visit our website www.ihfc.co.in or scan the QR code to explore more about our diverse initiatives and how you can be part of our journey. Join us as we pave the way for a bold and dynamic future.



Register For Our Upcoming Events

AI For Good Challenge (in collaboration with ITU & UN at Geneva)


Robotics for Good Youth Challenge India

IHFC, the Technology Innovation Hub of IIT Delhi, has been appointed as the national organizer in India for the Robotics for Good Youth Challenge 2024-2025. This challenge, to be held in India for the first time, will put Indian students and their robotics expertise on the global map. The International Telecommunication Union (ITU) is UN's specialized agency for information and communication technologies.


Participants under IHFC mentorship will design, build, and program a robot that completes a mission addressing natural disasters like earthquakes, seismic risk prediction, and soil and subsurface studies.

IHFC is the key enabler for this event and will organise the India Qualifying Tournament for this challenge, for the Grand Finale in Geneva during the AI for Good Global Summit 2025.




 **17 October 2024**

 **New Delhi, India**

 **Junior (Class 6th-8th)
Senior (Class 9th-12th)**

Delhi Hackathon

Hackathon competition


 **To be decided**

 **New Delhi, India**



DD Robocon

National DD Robocon 2024

 **12-14 July 2024**

 **Thyagraj Stadium,
New Delhi, India**

(Registrations Closed)



CoboTalks: A Monthly Academic Seminar Series

36 **17th January, 2024**



Prof (Dr) Chandrashekhara S H (AIIMS, Delhi)
Title: Telerobotic Ultrasound:
Will it be a game changer in medicine?

37 **14th February, 2024**



Prof Shyamanta M Hazarika (IIT Guwahati)
Title: Artificial Intelligence Augmented
Robotic Neurorehabilitation

38 **17th April, 2024**



**Krithiga RS (CEO, Jet Aerospace Drone
Manufacturing Hub)**
Title: Advancement in Drone
Technology and Entrepreneurship

39 **8th May, 2024**



Prof. Indra Narayan Kar (IIT Delhi)
Title: Control Challenges in Non-linear
Robotic Systems

Summer Bootcamp on Working with Emerging Technologies for a Sustainable World!




IMMERSE WITH EMERGING TECHNOLOGIES FOR A SUSTAINABLE WORLD!


Learn from eminent professors of IIT Delhi


**Dates: June 10-22 '24
(Class dates 10-14 and 18-22)**


Venue: IIT Delhi


Designed for school students Grade 9-12


Bootcamp seats: 60


Course fees: INR 40,000 + 18% GST

Summer Bootcamp on "IoT for Sustainability Transitions: Environment"


Program Features:

- Work with sensors & electronic systems
- Learn the technical nuances of measuring air pollution, temperature & humidity
- Understand energy metering
- Interactive kit Experience
- Project-based Learning
- Certification course offering


Key Insights:

- Exploring sustainability through hands-on prototyping
- Understanding the challenge at hand
- Critical problem-solving
- Collaboration and teamwork
- Environmental awareness



SCAN TO APPLY

Contact Details

- ✓ Email: contact@ihfc.co.in
- ✓ Contact: 8800200211 (Available: 2 PM - 5 PM)
- ✓ Website: www.ihfc.co.in

Activity Highlights

LAUNCH OF DRONE TECHNOLOGY PARK (MAY, 2024)

IHFC's most recent venture has been the launch of Drone Technology Park (DTP) at IIT Delhi Sonipat Campus, inaugurated by Prof. Rangan Banerjee, Director, Indian Institute of Technology Delhi.

DTP serves as a hub for drone training, R&D on drones for startups, training students and professionals on Drone Technology, and also conducts hands-on workshops for all interested. This COE (Center of Excellence) has all the advantages, space, equipment and infrastructure one might need for their drone applications and testing.



IHFC'S AI DAY FOR STARTUPS (MAY, 2024)

AI Day for Startups event, powered by IHFC, Google for Startups, and Social Alpha was a huge success. Startups from all over joined us offline and online with around 100+ attendees to deep dive into the latest AI trends from Google. This workshop was specially curated for start-ups to accelerate their start-up growth by using AI.



Recent Call for Proposals



January

IHFC invited seed-stage startups in healthcare, industry 4.0, defence, and agriculture, offering up to 25 lacs investment, mentoring, and support for incubation, industry-academic collaboration, and branding assistance.

February

IHFC and NECTAR call for startups in Defence, Medicine, Agriculture, and Industry tech to develop Northeast India. Selected startups showcased at Northeast Startup & Entrepreneurs Conclave 2024, fostering regional innovation.



March

IHFC and Google India, in partnership with SheThePeople launched a 'Call For Proposal' on International Women's Day, seeking tech innovations from women in STEM for funding and mentoring under the theme 'Invest in Women: Accelerate Progress.'

April

The Medical Cobotics Centre and Dalvkot opened a call for Healthtech proposals, offering startups & researchers guidance, ecosystem & financial backing to promote indigenous medical products from lab innovation to market realization.



May

IHFC launched The Grand Project 2.0, offering investments up to ₹2 Cr, to empower innovators to take their healthcare and rehabilitation Hardware/Cobotic products to the next level with expert guidance.



Around The World in Cobotics



Researchers at MIT are currently developing real-life 'Transformers' i.e. shape-shifting robots that can assist us in diverse tasks!



Researchers at Delft University of Technology have created an autonomous drone that may soon be able to mimic the size, agility, and intelligence of flying insects or birds!



D'Youville University in New York invited Sophia, a humanoid robot developed by Hanson Robotics to address students at their commencement ceremony.



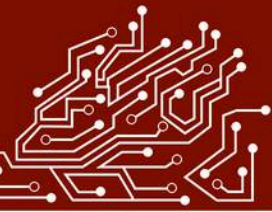
NITI Aayog initiative has created Iris, an AI teacher robot, with ability to understand & communicate with students in multiple languages for a unique, personalized learning experience.

Appttronik created Apollo, a general-purpose humanoid robot, now set to be added to Mercedes-Benz's factories.



Meet Mika, developed in Hong Kong, the first-ever humanoid robot CEO, that guarantees all strategic decisions will be based on the company's best interests.





Other Highlights

STARTUP MAHAKUMBH

IHFC incubated startups Kaidoko, and SeiAnmai Tech showcased innovations at Startup Mahakumbh, attracting investors, incubators, accelerators, and industry leaders.



DRONE AERIAL PHOTOGRAPHY WORKSHOP

At IIT Delhi, IHFC in collaboration with Jet Aerospace hosted a drone aerial photography workshop, offering hands-on experience to over 40 students under the READY program



TRYST TECH FEST

At IIT Delhi's TRYST tech fest, IHFC sponsored Robosoccer and HoverHurdle competitions under the READY program.



CoboNews Crossword #3

Rules:

- Use the clues to fill in the words above.
- Words can go across or down.
- Letters are shared when the words intersect.

ACROSS

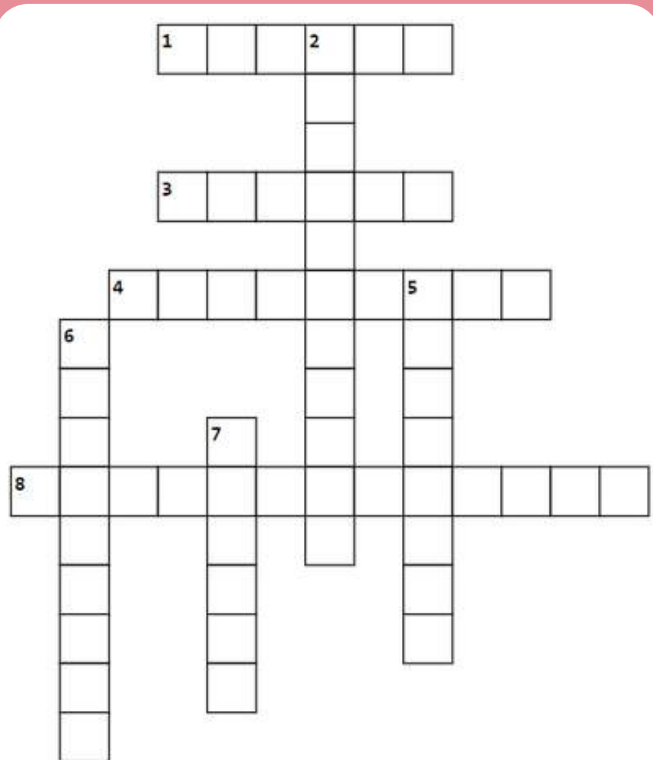
- The movie "The Imitation Game" is inspired from his story (6)
- Father of Robotics ((6)
- Point where two systems meet/interact. (9)
- Working together in a work setting. (13)

DOWN

- Process of combining different elements (11)
- Component responsible for moving and controlling a system. (8)
- A set of rules for problem-solving. (9)
- The condition of being protected from or unlikely to cause danger. (6)

Mail your answers to piya@ihfc.co.in by 15th August 2024.
The First three correct entries will win IHFC goodies!

**Terms and conditions apply*





India International Science Fair (IISF)



31st Convergence India Expo



Workshop on Emerging
Technologies for Environment



Team IHFC



Drone Training at DTP, Sonipat



Workshop on Simulation based Surgical Skills Training at MCC



Bharat Drone Manthan



Drone Training at NECTAR

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