



Indian Institute of Remote Sensing
Indian Space Research Organisation
Department of Space, Govt. of India
Dehradun

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Virtual IIRS Academia Meet - 2021
Technological Trends in Capacity Building for Disaster Management Support
March 16, 2021

Virtual IIRS Academia Meet – 2021 Report

Prepared By

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About :Indian Institute of Remote Sensing

Indian Institute of Remote Sensing (IIRS) is a constituent Unit of Indian Space Research Organisation (ISRO), Department of Space (DoS), Govt. of India (GoI). The training and education programmes of the Institute are designed to meet the requirements of professionals at various working levels, fresh graduates, researchers, academia, and decision makers. About 40 courses are conducted every year and 12,428 professionals and students have been trained/ educated so far. IIRS also organises on-demand tailor-made short courses.

To widen its outreach, IIRS has started live and interactive distance learning programme (DLP) since 2007. As on date, 1040+ Universities/ Colleges and other organizations are networked with IIRS and about 1.18 Lakh participants have attended various basic and advanced courses conducted so far. IIRS has also launched e-learning courses on Remote Sensing and Geo-information Science since August, 2014. E-learning content for various Remote Sensing and GIS applications are developed and will be launched soon.

The Institute has a strong, multi-disciplinary and solution-oriented research agenda that focuses on developing improved methods/ techniques for processing, visualization and dissemination of EO data & geo-information for various societal applications and better understanding of the Earth's system processes. Data processing and their applications of emerging remote sensing sensors (such as microwave, hyperspectral, lidar and high-resolution sensors) are presently the main research focus. The state-of-art laboratory and field-based instrumentation and observatories network help meeting the research goals and objectives.

IIRS hosts headquarters of Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP), affiliated to the United Nations and provides support in conducting the Remote Sensing and GIS training & education programmes.



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Theame for Virtual IIRS Academia meet : “Technological Trends in Capacity Building for Disaster Management Support”

Event Date : March 16, 2021

Objectives of the Meet :

To remain in the forefront for capacity building in Remote Sensing, Geoinformatics and their applications, constant dialogue with the users/stakeholders is of paramount importance. Realising this, IIRS has been organising Academia Meet (earlier called as IIRS User Interaction Meet) in its campus at Dehradun every year since 2013. This year, considering the COVID pandemic situation, Virtual IIRS Academia Meet (VIAM)-2021 is being organized on March 16, 2021. The theme of VIAM-2021 is “Technological Trends in Capacity Building for Disaster management Support.”

The main objectives are following:

- Synergise the EO and geospatial technology applications driven knowledge transfer among Government institutions, Academia and Industry for Disaster Management
- Appraise the user ministries/stakeholder departments and geospatial community on emerging remote sensing technologies and their applications vis-à-vis role of IIRS in capacity building and research
- Understand and explore new opportunities with user organisations in government, non-government and private sectors on the capacity building requirements
- Interface with geospatial industry on the current and future requirements and explore the placement opportunities for IIRS students and collaborative research.



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As a nodal centre coordinator i have registered for the Vitual IIRS Academia Meet 2021.

I got confirmation mail on 13th March 2021 with my registration number and login password for event portal.

All over india total 1500 nodal and section coordinator registred for event some are present at various centers physically rest all joined virtually.

Approval for attending online event of IIRS-ISRO Inbox x

IIRS Outreach Programme <websupport@irs.gov.in>
to me ▾

Sat, Mar 13, 12:38 PM (4 days ago) ▶

Dear Vijaya Kamble,
Congratulations.

Your application for **Virtual IIRS Academia Meet VIAM - 2021** with Registration number **20217012729314** is approved by Organizing committee.
Your login credentials to attend the live event is as below:

Date of the Event:- 16-03-2021

URL: <https://eclass.irs.gov.in>

User Name: vijaya_kamble@spit.ac.in

The technical programme is available at : <https://www.irs.gov.in/EDUSAT-News>

Wish you all the best
with Regards

Dr. Harish Karnatak
Head, GIT&DL Department
Indian Institute of Remote Sensing,
Indian Space Research Organization
Dept. of Space, Govt. of India, Dehradun India
Tel: 01 325 2504100 /Course content delivery

Live Feed For Program:

<https://youtu.be/LUsInbOGVAQ>



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**Schedule for Virtual IIRS Academia Meet - 2021 on March 16, 2021
as Follows**

**This time theme for Academia meet is “Technological Trends in
Capacity Building for Disaster Management Support”**

Inaugural Ceremony (09:45 - 10:50 hrs)		
09:45 - 09:50 hrs	Invocation and Lighting of Lamp	
09:50 - 10:00 hrs	Welcome & Opening Remarks	Dr. Prakash Chauhan <i>Director, IIRS</i>
10:00 - 10:10 hrs	Address by Guest of Honour	Dr. Krishna S. Vatsa <i>Member, NDMA</i>
10:10 - 10:30 hrs	Address by Guest of Honour & Lead Talk on SATCOM Applications for Disaster Management Support	Dr. Nilesh Desai <i>Director, SAC</i>
10:30 - 10:35 hrs	Release of IIRS Annual Report, Placement Brochure, IIRS Distance Learning Program Achievements – 2020 and Geoॐ Portal	By Chief Guest
10:35 - 10:45 hrs	Address by Chief Guest	Shri. Naveen Tomar <i>Surveyor General of India, SOI, Dehradun</i>
10:45 - 10:50 hrs	Vote of Thanks	Dr. S. K. Srivastav <i>Dean (Academics), IIRS</i>
10:50 - 11:10 hrs	Group Photograph & Tea Break	

Technical Session (11:10 - 13:30 hrs)		
Co-Chairs: Shri. B. P. Shantanu, Director, EDPO, ISRO HQ & Shri. P. L. N. Raju, Director, NESAC Rapporteur: Shri. C. M. Bhatt, IIRS		
11:10 - 11:15 hrs	Opening Remarks	Session Co-Chairs
11:15 - 11:30 hrs	EO missions with specific reference to supporting disaster management activities	Shri. B. P. Shantanu <i>Director, EDPO, ISRO HQ</i>
11:30 - 11:45 hrs	Capacity building requirements in space applications for disaster management	Shri. Vijay Singh Nemiwal <i>Joint Advisor, NDMA</i>
11:45 - 12:00 hrs	Space-based applications for disaster management support	Dr. K. H. V. Durga Rao <i>Group Head, DMSG, NRSC</i>
12:00 - 12:15 hrs	Recent initiatives in space applications for disaster risk reduction in the North Eastern Region	Shri. P. L. N. Raju <i>Director, NESAC</i>
12:15 - 12:30 hrs	Technological interventions in community-based disaster risk management	Dr. Janki Andharia <i>Dean, TISS</i>
12:30 - 12:45 hrs	Capacity building requirements in disaster management for administrators	Dr. P. K. Singh <i>Associate Professor, CDM, LBSNAA</i>
12:45 - 13:00 hrs	Implications of new geospatial guidelines on capacity building and services	Shri. Sanjay Kumar <i>CEO, Geospatial Media & Communications</i>
13:00 - 13:15 hrs	Recent capacity building initiatives with specific reference to disaster management and salient space-based observations during recent Uttarakhand disaster	Dr. Arijit Roy <i>Head, DMSD, IIRS</i>
13:15 - 13:20 hrs	Wrap-up of the Technical Session	Session Co-Chairs
13:20 - 13:25 hrs	Concluding Remarks	Dr. Prakash Chauhan <i>Director, IIRS</i>
13:25 - 13:30 hrs	Vote of Thanks	Dr. Hari Shanker <i>Group Head, PPEG, IIRS</i>



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Inaugural Ceremony (09:45 - 10:50 hrs):

Event started with Sarsawati Vandana & lightening lamp .
Followed by Welcome & Opening Remarks by Dr. Prakash Chauhan Director,
IIRS
Brief Address given by Guest of Honour given by Dr. Krishna S. Vatsa Member,
NDMA

Release of IIRS Annual Report, Placement Brochure, IIRS Distance Learning
Program Achievements - 2020 and Geo क ं ष Portal By Chief Guest
Address by Chief Guest Shri. Naveen Tomar Surveyor General of India, SOI,
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**Inaugural Ceremony ends with Vote of Thanks given by Dr. S. K.
Srivastav Dean (Academics), IIRS**





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Technical Programme overview:

Address by Guest of Honour & Lead Talk on "SATCOM Applications for Disaster Management Support" by Dr. Nilesh Desai Director, SAC

The slide illustrates the DMS Infrastructure, divided into three main sections:

- Aerospace & Ground Systems:** Includes High-Res Imaging, Laser Terrain Mapper, Real Time Mapping, Emergency Communications, All weather mapping, and GPS.
- Institutional Interface:** Connects CWC, IMD, GSI, MOES, DOO, DST, PSI, etc. to the Decision Support Centre (DSC).
- User Community:** Includes MHA, NDMA, MoA, PMO, State Agencies, and NOEM, Hazard Zonation, Risk Assessment, etc.

Additional components include Technology Development (Forecasting/ Simulation Models) and a Communication Network (VPN, Support - MSS Terminal, WLL VSAT, ...).

The E-CLASS interface displays a live session with a presenter (Dr. Nilesh Desai) and a slide titled "Space Applications Centre : Mandate".

SAC Prime Activities:

- Payloads:** Communication & Navigation, Total of Remote Sensing, Microwave Remote Sensing.
- Applications:** Communications, Navigation, Remote Sensing.
- Activities:**
 - Technology Development
 - Payload Design
 - Payload Realization
 - Application Development
 - Software Development
 - Technology Transfer
 - User Interface
 - Capacity Building

The chat window shows a message from Vijaya Kambale: "Congratulations to IIRS for 33 years !!".



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Saving Human Life from 'Space'

Human Casualties

Year	Cyclone	Human Casualties
2017	Cyclone Bala	14200
2018	Andhra Cyclone	9899
2019	Odisha Cyclone	46
2020	Cyclone Hudhud	25
2020	Cyclone Amphan	118

Amphan: 20 May, 2020

Flowchart: Cyclone Forecasting → Cyclone Preparedness → Cyclone Preparedness → Cyclone Preparedness → Cyclone Preparedness → Cyclone Preparedness

Dr. Pankaj Kumar Sharma .

Prof.(Dr.)Pankaj Kumar Sharma

10:43 AM

Vijaya Kamble

excellent efforts by disaster management cell...

10:43 AM

Type your message

Services For Fishermen

NavCom tools for DMSP

Coastal Surveillance

GIS MAP CONTROL STATION

Services to Indian Railways

Real Time Aircraft Tracking System

Real Time Aircraft Tracking System

Shubham Bhatt

I am also confused. How i can i marked attendance

10:39 AM

Vijaya Kamble

these transceivers designed with our Indian gps?

10:39 AM

Type your message

As we all know India is a disaster-prone country where 12% land is flood-prone, 7500 km coastline is cyclone-prone, over 65% of land is drought-prone and 25% land is earthquake-prone & Himalaya & Western Ghats are landslide-prone. The theme is selected this time as valid & all technical sessions by ISRO & IIRS team help us all understand how ISRO space programme and IIRS team help in saving human life by developing different mobile apps connecting them with satellite data. There are excellent applications developed for human safety by ISRO team.



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Shri. B. P. Shantanu Director, EDPO, ISRO HQ talked about EO missions with specific reference to supporting disaster management activities in detail.

EO MISSIONS - PROPOSED

KU-SCATTEROMETER 13.515 GHz ; 14 Orbits/ day ; ECT: 06:00 AM/ PM ; 2 day Repeat	DF-SCAT (C & Ku) C & Ku band ; 5 km regional & 25 km global ; Accuracy < 1.5 m/s
GIMS : Geo-Imager & Sounder Imager- 500 m (VIS/ NIR/ SWIR) ; 1 Km (MIR/ TIR) ; Hyp IR Sounder - 5 Km; (850- 2600 cm-1); Lightning mapper at 777.4 nm. Scan: Indian Region: 5 min, Full Disk: 15 min	DM-CSAR Agility by steering beams electronically & inclined orbit (~ 40°) for sub-daily coverage C-Band (5.35 GHz), 6 to 60 m; 55 to 440 km Swath, Full Polarimetry

NATURAL DISASTERS - INDIAN SCENARIO

Indian Sub-Continent is among the World's Most Disaster-prone Areas

- 12% of land (40 mha) - Flood prone
- 7500 km coastline - Cyclone prone
- Over 65% of land - Drought prone
- 25% land - Earthquake prone (zone IV-V)
- Himalaya & Western Ghats - Landslide

Based on Extent affected (Population, Area), Loss to Economy, Lives, Frequency of incidence

Landslides	~ 10
Tornado	~ 10
Thunderstorms	~ 10
Hailstorms	~ 10
Earthquakes	~ 10
FOREST FIRES	~ 10
Pest & Diseases	~ 10
Cyclones	~ 10
Drought	~ 10
EARTHQUAKE	~ 10
Flood	~ 10

Av. Population (in million) affected by natural disasters each year

Poor	~ 55
Middle	~ 35
Rich	~ 15



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Dr. K. H. V. Durga Rao Group Head, DMSG, NRSC talked in detail about Space-based applications for disaster management support

Dissemination
All the flood maps, VAPs, and reports are disseminated directly to MHA, NDMA, SDMAs, SRCs, etc directly through e-mail.

Through Geo-portals
NDEM: Multi scale geospatial data repository coupled with DSS tools for authorized users.
Bhuvan: A Geo-portal offering services on disseminating disaster specific products for users.

End Use

- Very useful input in Disaster Risk Reduction
- Valuable input in relief and rescue operations
- In planning relief, rescue, and health centers
- Controlling developmental activities
- Important input in crop insurance
- Critical input in "Build Back Better" in reconstruction and reconstruction

Capacity Building

Dr. Janki Andharia Dean, TISS talked and expressed her views about Technological interventions in community-based disaster risk management

Technological Interventions in Community-based Disaster Risk Management

Janki Andharia, PhD
Professor and Dean
Jansetji Tata School of Disaster Studies
Tata Institute of Social Sciences, Mumbai

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Shri. Sanjay Kumar CEO, Gespatial Media & Communications talked about “Implications of new geospatial guidelines on capacity building and services”



Programme Ended with Thank you note from Dr. Hari Shanker
Group Head, PPEG, IIRS IIRS-ISRO centre Deharadun.





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As a nodal center coordinator i have filled feedback for Virtual meet 2021.

THANK YOU!



Thank you for your valuable time and opinions.

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I am very much thankful to our beloved Principal Dr Chaudhari sir , Vice Principal Dr Rao Sir ,Academic dean Dr Sutar Sir,Dr Sawant sir,Dy HoD Dr Sonkusare madam for allowing me to attend the meet by shuffling my load.

Prof Vijaya Kamble
Assistant Professor
Electronics and Telecommunication Dept.
Co-ordinator IIRS-ISRO Outreach Programme
Sardar Patel Institute of Technology, Andheri West, Mumbai