

STATE EMERGENCY OPERATIONS CENTRE (SEOC) TECHNICAL AND FUNCTIONAL REQUIREMENTS



Proposed SEOC



Objective



To enhance efficacy of emergency management by disseminating real-time location-specific information to affected community, strengthen incident management through the use of technology to enhance real-time operations.



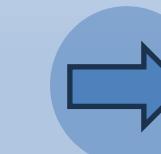
Technical Evaluation



SEOC's functional requirement was evaluated by a committee of technical members from various institutions i.e. IIRS, NIC, ITDA, USDMA and U-Prepare.



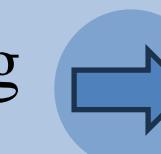
Financial Evaluation



Tentative Financial Costing(INR) : ₹ 65,00,00,000 /-

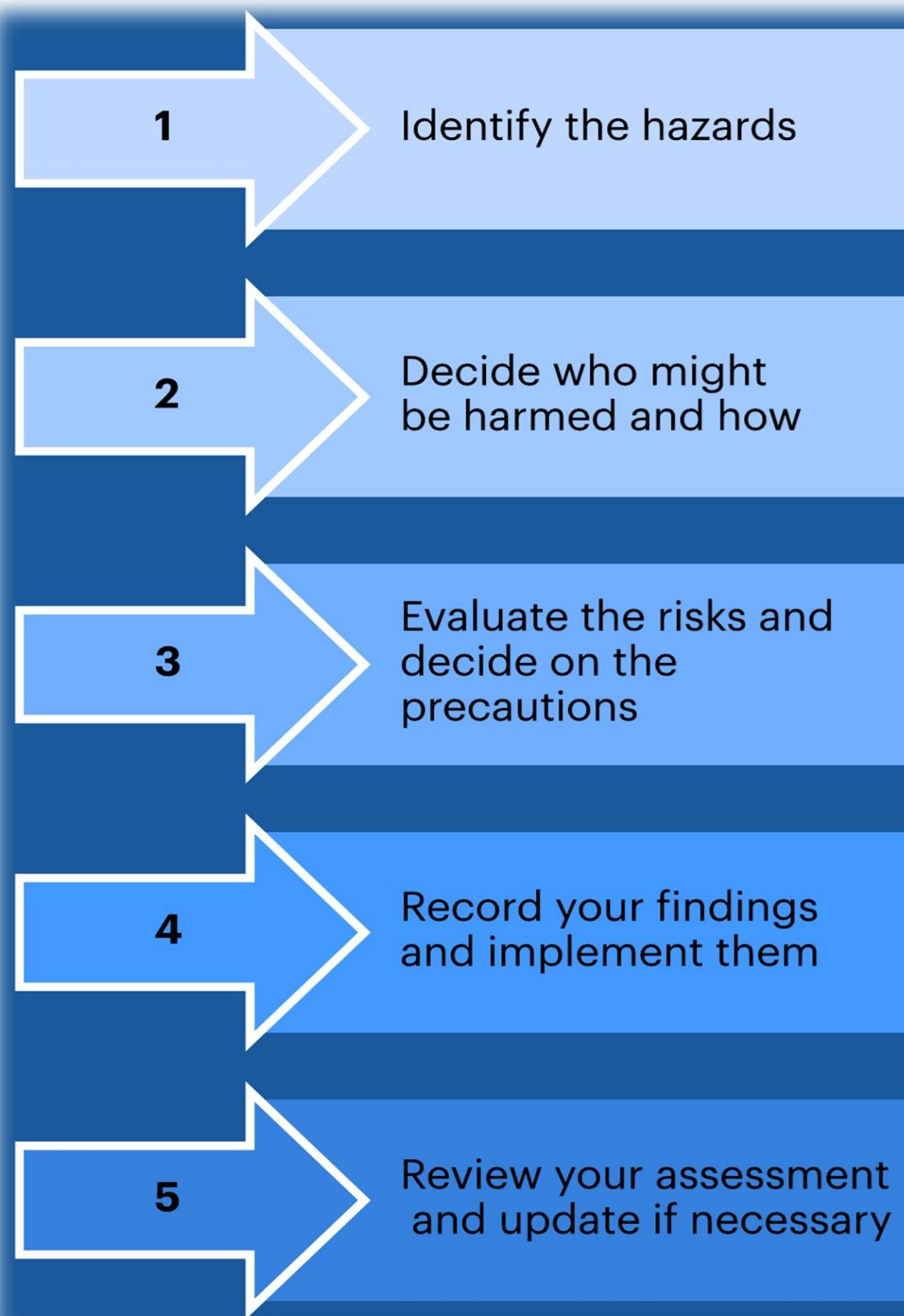


Implementing Organization



Uttarakhand State Disaster Management Authority and Project Implementing Unit – USDMA, U-Prepare.

Objective



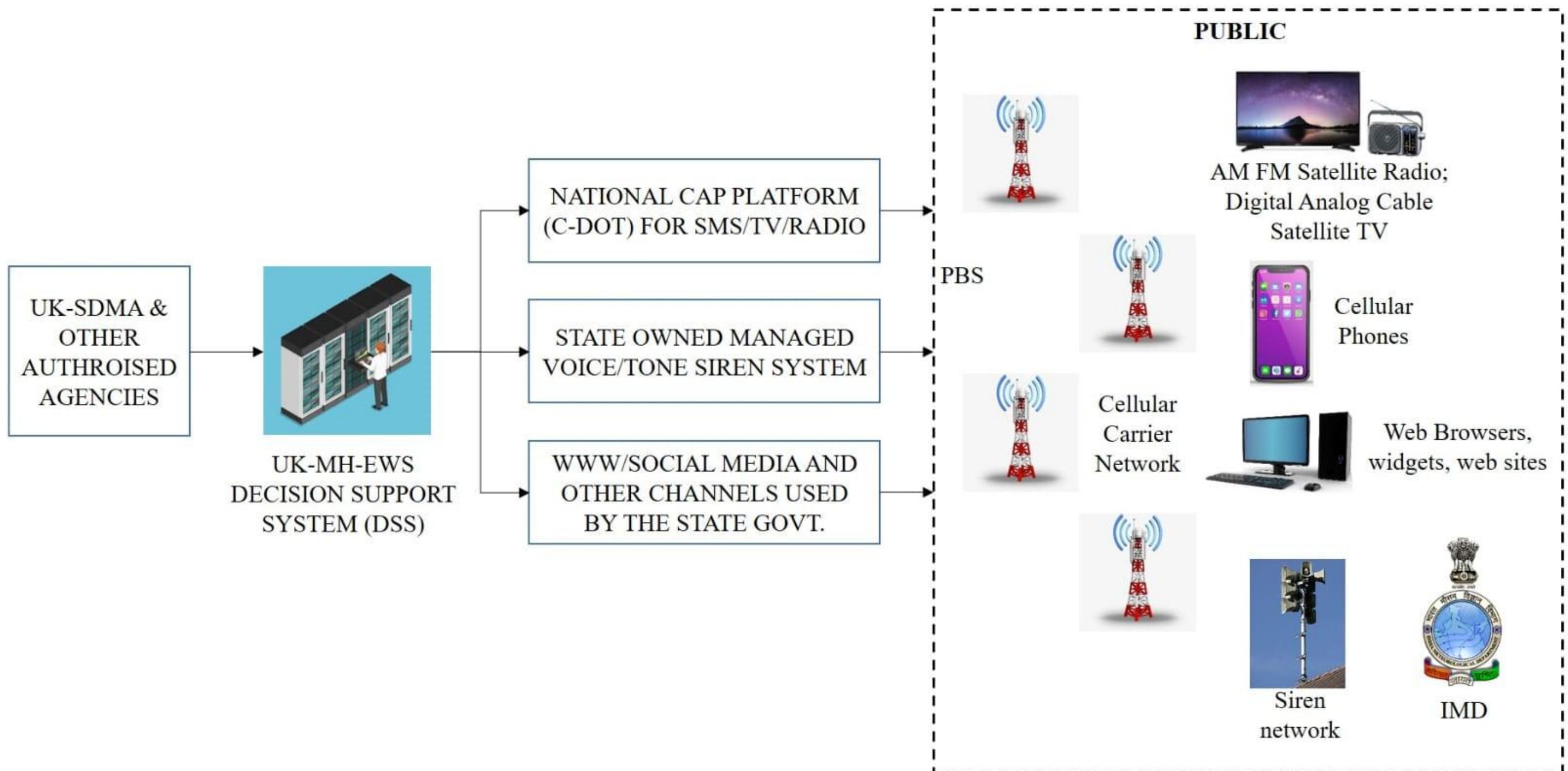
- Leverage Technological Advancement to enhance Disaster response and management efficiency.
- Automate Incident Response System (IRS).
- Enabling GIS platforms for better understanding disaster risks and implement disaster models for predictions.
- Li-Dar Survey and Town Planning.
- To make catastrophe management more robust and operational in real time.
- To enhance efficacy of emergency management, data aggregation, and analytics.
- To disseminate real time location specific information to the affected community.

SEOC's Usage and Application

- Risk database Portal & with Risk Maps, GIS layers, Models & Software.
- Integration for Real-Time data collection.
- Decision support system, CAP / Cell – broadcasting.
- Impact based forecasting.
- Scientific studies and implementation of best practices.
- MH-EWS



Multi-Hazard Early Warning and Dissemination System Architecture



Functionalities to be implemented in SEOC

1. Incident Management Systems.
2. Real-Time data collection and analytics.
3. Implementing GIS Platform.
4. Data Management and Analytics.
5. Resource / Asset Management Systems.
6. Dissemination Systems for alert and broadcast.
7. Multi Hazards Early Warning System.
8. Multi Hazards Modelling and Future prediction.
9. Capacity building and Simulation
10. Cyber-Security and Centric information



Data Collection

- Earthquake sensors,
- Automatic weather stations,
- Doppler radars at different locations,
- Integrated with third party weather stations for exchange data through API's,
- Satellite Images(Bi-yearly or more)
- LiDAR survey,
- Drone survey and field reports for Information gathering.



Information Gathering from sensors, aligned department, collaborated agencies, integrated API, field surveys and others.

Analytics for Decision Support System

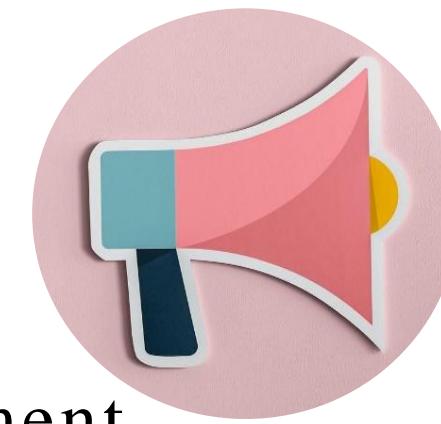
- Identification of vulnerable slope to analyze Risk.
- Data modelling and real-time analytics
- Appraisal of Disaster Risk Database(DRDB) for Decision Support System(DSS)



Analyzing information received and evaluate the risk calculating the affected areas

Information Dissemination

- Evaluating potential disasters, risk assessment
- Identify the potential threats for minimizing impact,
- Disseminate information



Disseminate information to the specific affected areas and public involve



Maintaining record for future and review findings and implement the best practices to minimize impacts

Disaster Risk Database

- Updating records of every disasters in Disaster Risk Database(DRDB).
- Created models for risk assessment.
- Identifying and monitoring potential threats periodically.
- Real-Time change detection modeling using satellite imaginaries.

SEOC Functionalities

Response/Forecast

- National Agencies
- International Agency
- Field Information



Warning Dissemination

- Existing Central and State System
- CAP Sachet



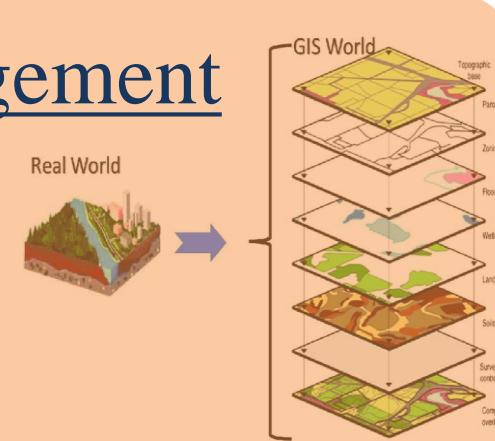
Early Warning Alerts

- Existing System (AWS, AWRG)
- Decision Support System (DSS)
- CAP – Common Alert Protocol - Sachet



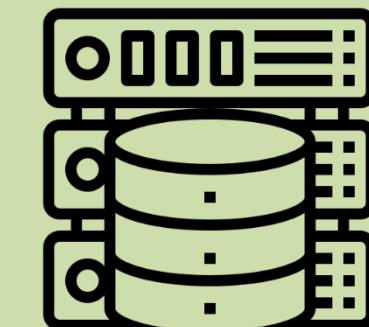
State-Level Resources Management

- Web Based GIS System
- Mapping & Modeling



Data Analysis & Storage

- Local Storage
- Cloud Based Storage



State Emergency Operation Center (SEOC)

Establishment of Technical committee

- In accordance with the State Disaster management requirements and the instructions given by the High-Power Committee(HPC), chaired by Chief Secretary, Uttarakhand, SEOC's tender tender will be issued consolidating all four components (Servers, Networks, Hardware and Audio-Visuals).
- The office order no. 25/01/SEOC/USDMA/U-PREPARE/2024 dated April 16, 2024, by Secretary Disaster Management has established the following technical committee:

1.	Program Director, U-PREPARE	Chairman
2.	Additional Secretary, Disaster Management	Member
3.	Additional Program Director, PMU, U-PREPARE	Member
4.	Nominated Expert from NIC	Member
5.	Nominated Expert from ITDA/SeMT	Member
6.	Nominated Expert from IIRS	Member
7.	Ankit Sati, IT Expert, U-PREPARE	Member Secretary
8.	Rohit Kumar, GIS Expert, USDMA	Member
9.	Hemant Bisht, System Expert, USDMA	Member
10.	Shivanshu Negi, Manager Procurement & Contract Management, U-PREPARE	Member

State Emergency Operation Center (SEOC)

Establishment of 03 Sub Technical committee

- An office order no. 121/01/SEOC/USDMA/U-PREPARE/2024 dated May 10, 2024, has established the 03 Technical Sub Committee (1. Servers & Networking, 2. Hardware, and 3. Audio Visual).

Sub Committee 1 – Servers & Networking

S.No.	Name & Designation	Dept.	Role
1	Dharmendra Kumar, Scientist/Engineer SF	IIRS, Dehradun	Member Secretary
2	Chandan Bhakuni, Scientist - D	NIC	Member
3	Navneet Shaunak, Senior Executive IT-Infra	ITDA	Member
4	Ankit Sati, Manager IT/MIS	U-PREPARE	Member
5	Hemant Bisht, System Expert	USDMA	Member

Sub Committee 2 – Hardware

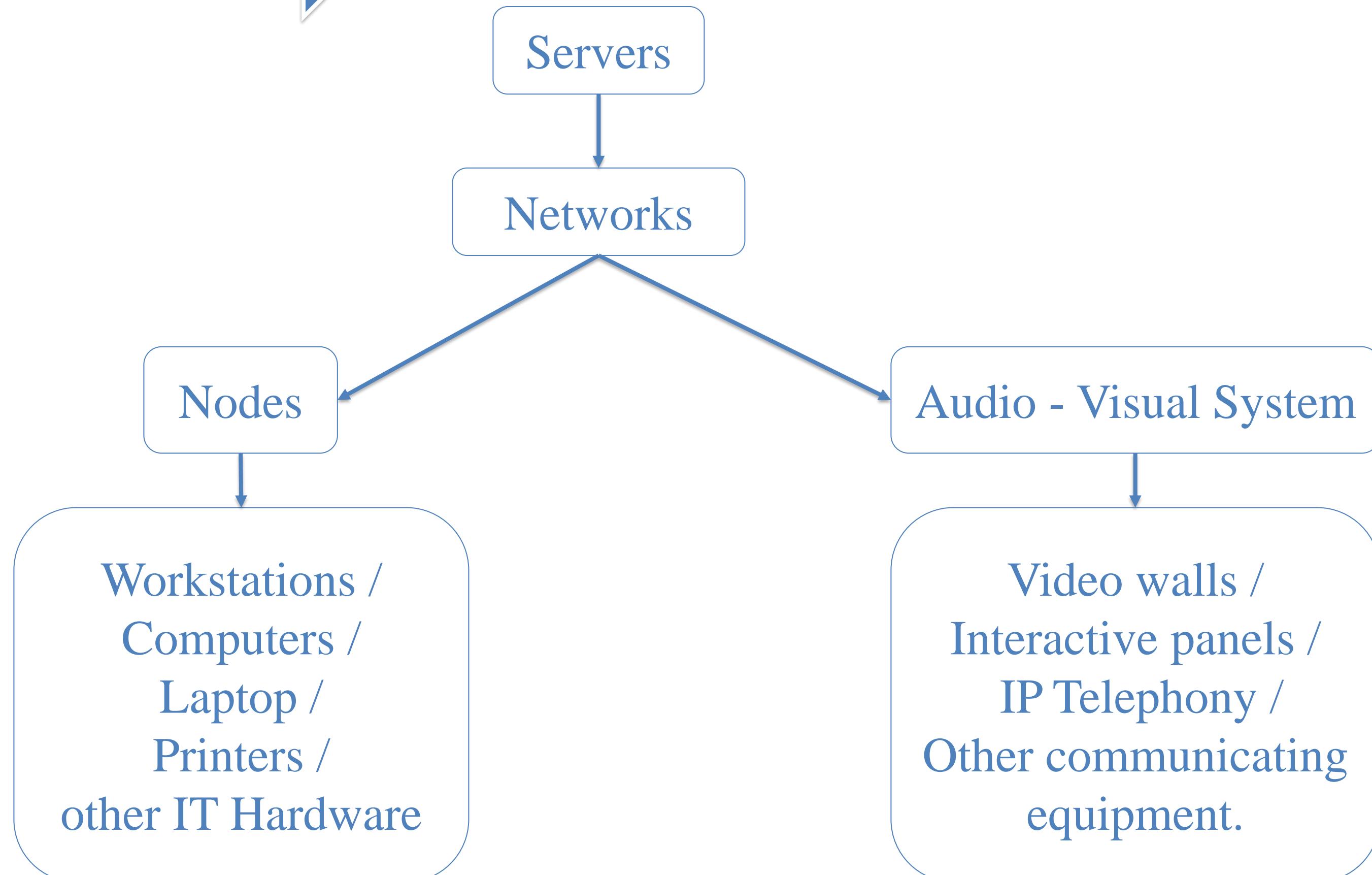
S.No.	Name & Designation	Dept.	Role
1	Chandan Bhakuni, Scientist - D	NIC	Member Secretary
2	Shivanshu Negi, MPCM	U-PREPARE	Member
3	Ankit Sati, Manager IT/MIS	U-PREPARE	Member
4	Hemant Bisht, System Expert	USDMA	Member
5	Rohit Kumar, GIS Expert	USDMA	Member

Sub Committee 3– Audio Visual (AV)

S.No.	Name & Designation	Dept.	Role
1	Dharmendra Kumar, Scientist/Engineer SF	IIRS, Dehradun	Member Secretary
2	Chandan Bhakuni, Scientist - D	NIC	Member
3	Navneet Shaunak, Senior Executive IT-Infra	ITDA	Member
4	Rohit Kumar, GIS Expert	USDMA	Member

State Emergency Operation
Center (SEOC)

SEOC Architecture



State Emergency Operation Center (SEOC)



Server Requirement



#	Description	Details
1	Total Applications	10+
2	Virtual Machines Required	40
3	Processor Required (Cores)	122 Cores
4	RAM Required	8 TB
5	Storage	134 TB
	Requested SEOC Server Details	
6	4 HCI node with 32 Core Dual Series Processor	128 Core (32 core * 4 nodes)
7	RAM	8 TB
8	Storage	275 TB

Servers Requirement Proposal

1

HCI Servers with 4 Nodes

- Dual Series Processor, **32 Cores** or more, 2 GHz or higher and **50 MB Cache**.
- **RAM** : 8 TB / Cluster
- **Storage** : 275 TB Flash All Flash / Cluster

2

Spine Switch

- Providing 10 Tbps switching bandwidth Performance.
- Providing 32 non-blocking interfaces, with 100G Transceivers for Spine-Leaf Fabric connectivity.
- Protecting unauthorized or DoS traffic by control plane protection policy.
- Role Based access control (RBAC) as per policy defined.

3

Leaf Switch

- Providing 3 Tbps switching bandwidth performance
- Providing 48 non-blocking interfaces, 10/ 25G for up-link & 40/ 100G for downlink Fabric connectivity.
- Verified Scale limits with Hardware/ Software lifecycle.
- Network Topology and Utilization of Operational like MAC, Route, Port and bandwidth utilization.
- Bug Scanning, Switch Analyzer and log collector.

Servers Requirement Proposal

4

Backup Software

- Providing 100% backup storage (275 TB) of proposed HCI servers.
- Licenses and associated hardware shall be provided for 5 years.
- Backup software license for 40 VMs.
- Providing facility to restore VMs to cloud (AWS, Azure or Google directly from the backup copy).

5

Backup Hardware

- Providing availability on various OS platform (Windows, Linux and UNIX).
- Supporting LAN/SAN based D2D backup via proposed protocol (NFS v3, CIFS, FC SAN ,OST/Catalyst ,API protocols).
- Certified for all proposed protocols to virtualized environments for following requirements :
 - ✓ Basic Retention: 7 Day(s)
 - ✓ Weekly Full : 5 Week(s)
 - ✓ Monthly Full : 12 Month(s)
 - ✓ Yearly Full- 5
 - ✓ Assuming Daily Change Rate : 1%

6

Server Security

- Providing security for at-least 40 VMs for a 5 years.
- Application Visibility & Dependency Mapping and Protection.
- Application Compliance & Monitoring with Cloud Workload Policy and Enforcement.

Servers Requirement Proposal

7	Backup Software <ul style="list-style-type: none">▪ Providing 100% backup storage (275 TB) of proposed HCI servers.▪ Licenses and associated hardware shall be provided for 5 years.▪ Backup software license for 40 VMs.▪ Providing facility to restore VMs to cloud (AWS, Azure or Google directly from the backup copy).
8	Microprocessor Based Transient Voltage Surge Suppression System with reset facility High/Low voltage protection <ul style="list-style-type: none">▪ Providing 100 KA Capacity.▪ UL 1449-2 and IEEE/ UL 1449/ IEC-6034-4 Certified.
9	Water Leak Detection System (WLDS) <ul style="list-style-type: none">▪ Providing electronic alarm panel, sensing cable, suitable alphanumeric display, and auxiliary equipment.▪ Comprising Cable-Sensors, Water Leak detection, I/O and sounders all connected to main Control Panel.

Servers Requirement Proposal

	Gas Suppression SYSTEM
10	<ul style="list-style-type: none">▪ Deploying nontoxic clean agents with properties such as Ozone Depleting Potential (ODP) of zero (0) and Global Warming Potential (GWP) of very low values, maximum one (1) without producing any toxic by-products.
	Rodent Repellent System
11	<ul style="list-style-type: none">▪ Transmitting high frequency waves inaudible & harmless to humans (above 20 KHZ) but audible / painful to pests.▪ Operating environment : Range of -4 deg C to 55 deg C, and in the 90% humid environment.▪ Sound output: 80 dB to 110 dB at 1 Mtr.
	Very Early Smoke Detection Apparatus
12	<ul style="list-style-type: none">▪ Consisting of highly sensitive short wavelength LASER- based Detectors with aspirators connected.▪ Is tested & approved / listed to the Standards by a Nationally Recognized Testing Laboratory (NRTL).▪ ISO 9001:2008 certified.▪ Using both 2D image sensing and at least five (5) photo-diodes spaced inside server room to detect various scattering angles.

State Emergency Operation Center (SEOC)



Networking Requirement



#	Description	Requirements
1	Core Switch	2
2	Non-POE Access Switches	26
3	POE Access Switches	16
4	Wireless Access Point Controller	2
5	Access Points	55
6	Router	2
7	Firewall	2
8	Network Access Control (NAC)	1
9	Element Management System(EMS)	1
10	IP Telephony (Unified Communication System)	1
11	SIP Basic Telephones and licenses	250
12	SIP VC - Telephones with 7" display	50
13	Operator PC based Console	1
14	Wired Headsets	40
15	Wireless Headsets	40

Networking Requirement Proposal

1

Core Switches

- Providing 48 x 1/10/ 25G SFP ports & 4 x 40/ 100G QSFP28 port connectivity.
- Providing 16 GB or more DRAM and 16 GB or more Storage.
- Providing 32 non-blocking Layer 2 switching and Layer 3 routing.
- Providing unicast / multicast blocking on switch port.

2

Non-POE Access Switch

- Providing 176 Gbps or more switching fabric and 130 Mpps or more of forwarding rate.
- Providing 2 GB or more DRAM and 2 GB or more Storage.
- Providing functionality static routing, Routing Information Protocol, Protocol Independent Multicast, Open Shortest Path First, Virtual Router Redundancy Protocol, Policy-Based Routing and Quality of Service.
- Providing 48 x 10/100/1000 Base-T ports & 4 x 1/10G SFP+ uplink ports connectivity.

3

POE Access Switch

- Providing 270 Gbps or more backplane capacity and 130 Mpps or more of forwarding rate.
- Providing 36 x 10/ 100/ 1000 Base-T, and 4 x 1/10G SFP+ ports connectivity.
- Providing 2 GB or more DRAM and 2 GB or more Storage.

Networking Requirement Proposal

1

Wireless Access Point Controller

- Providing 5 Gbps throughput dedicated hardware appliance, for Wi-Fi Control and management.
- Supporting minimum 200 Access Point with Guest Portal Management.
- Providing 2 x 1/10G SFP+ or more ports connectivity.

2

Access Points

- Providing 2.4 GHz. and 5 GHz. radios with integrated antenna and future ready for WiFi-6E (6 GHz).
- Providing 1 x 5G with PoE (802.3af/802.3at) port or better.

3

Router

- Providing at least 4 x 1G RJ-45 and 2 x 1/10G SFP ports supporting both LAN and WAN protocols.
- Providing 16 GB or more DRAM and 16 GB or more Storage.
- Providing routing performance as 4 Gbps iMIX & 8 Gbps on large packet and 3 Gbps of IPsec performance.

4

Firewall

- Providing 5 Gbps firewall throughput, 3 Gbps Ipsec & 5 Gbps IPS throughput.
- Supporting 1.5 Million Concurrent sessions & at-least 75,000 sessions per second and
- 32 GB or higher DRAM and 800 GB NVMe storage.
- Supporting customizable admin roles/ profiles and at-least 50 SSL remote access licenses.
- Providing 4 x 1/10G, 4 x 1G RJ-45, 4X1G SFP Ports.

5

Network Access Control (NAC)

- Providing Physical / Virtual 1000 license with highly powerful and flexible attribute-based access control.
 - ✓ Check operating system, service packs, hotfixes, update, configuration, other.
 - ✓ Check processes, registry, file & application.
 - ✓ Check for Antivirus / Antispyware installation, Version, Antivirus Definition Date
 - ✓ Run custom scripts and policies
 - ✓ Internal Users, Internal Endpoints, Active Directory, Azure Active Directory.

6

Element Management System(EMS)

- Providing 130 Infrastructure Devices License for
 - ✓ Network Fault Management,
 - ✓ Network Performance Management,
 - ✓ Server Performance Monitoring,
 - ✓ Event and Alarm management,
 - ✓ Auto-discovery of Network environment,
 - ✓ Correlation,
 - ✓ root cause analysis.
- Providing Unified Dashboard & Reporting for consolidate monitoring events from across layers such as Network, Server, Application, Database etc.

IP Telephony

- Providing 100% SIP Standards solution, with all essential hardware & software to operate from on-premises.
- Providing Session Boarder Control licenses for activating 100 Channel SIP Gateway & 300 SIP end-user.
- Having non-blocking architecture at all levels, like : system processing, switching fabric, power supplies, etc.

Voice Mail Features.

Unified Communication (UC) System.

SIP Telephones.

Operator PC based Console.

Wired Headsets.

Wireless Headsets.

State Emergency Operation Center (SEOC)



Hardware Requirement

#	Description	Requirements
1	Multi Function Mono Printer – All in One	37
2	Network A3 / A4 – Color Printer	2
3	Network A0 Printer / Plotter	1
4	Desktop – Workstations	18
5	Desktop (Single & Dual Display)	123
6	Laptop	12
7	Antivirus Software	150
8	Web Conferencing Software Licenses	20

Hardware Requirement Proposal

1

Laser MFD Wireless Printer & Scan - All in One

- Providing 38 ppm or more printing & 600 x 600 dpi or more scanning resolution.

2

Emergency Operation Center Workstation Desktop Computers with 4 Displays :

- ✓ CPU : Intel Xeon W5-3425 or AMD Ryzen Threadripper PRO 7945WX or higher.
- ✓ RAM : 64 GB (4 x 16GB / 2 x 32GB)DDR5
- ✓ Storage : 1 TB Flash NVMe and 512 GB boot drive.
- ✓ Display: 27" 4K
- ✓ Graphics : 8 GB GDDR6.

3

Emergency Operation Center Workstation Desktop Computers with 3 Displays :

- ✓ CPU : Intel Xeon W3-2435 or AMD Ryzen™ 7 PRO 8700G or higher.
- ✓ RAM : 64 GB (4 x 16GB / 2 x 32GB)DDR5
- ✓ Storage : 1 TB Flash NVMe and 512 GB boot drive.
- ✓ Display: 27" 4K
- ✓ Graphics : 6 GB GDDR6.

4

Emergency Operation Center Workstation Desktop Computers with 3 Displays :

- ✓ CPU : Intel Xeon W3-2435 or AMD Ryzen™ 7 PRO 8700G or higher.
- ✓ RAM : 32 GB (4 x 8GB / 2 x 16GB)DDR5
- ✓ Storage : 1 TB Flash NVMe and 512 GB boot drive.
- ✓ Display: 27" 4K
- ✓ Graphics : 4 GB GDDR6.

Hardware Requirement Proposal

5	Laptop <ul style="list-style-type: none">✓ CPU : Intel i7-1355U CPU or AMD Ryzen or higher (over 10 core, 12M Cache, and 5.00 GHz).✓ RAM : 32 GB (4 x 8GB / 2 x 16GB)✓ Storage : 1 TB Flash NVMe.✓ Display: 14"✓ Graphics : 4 GB GDDR6. (NVIDIA RTX A500 or higher)
6	User Work Desktops and PC Systems : <ul style="list-style-type: none">✓ CPU : 13th Gen Intel® Core™ i5-13500.✓ RAM : 16 GB (2 x 8GB) DDR5✓ Storage : 1 TB Flash NVMe and 512 GB boot drive.✓ Display: 27" 4K
7	Dual Monitor Computers for Citizen Helpdesk : <ul style="list-style-type: none">✓ CPU : Intel Core i5-13500K.✓ RAM : 32 GB (4 x 8GB / 2 x 16GB)DDR5✓ Storage : 1 TB Flash NVMe and 512 GB boot drive.✓ Display: 27" 4K (Two (02) Displays)
8	Antivirus & Unified Endpoint Cyber Security/EDR : <ul style="list-style-type: none">▪ Licensed for 150 users, supporting all operating systems: - Windows, Windows Server, Linux, MacOS, Red hat, CentOS, Ubuntu, Amazon Linux, Android, iOS, etc.▪ Dynamically analyze suspicious files in a separate virtualized environment and take accordingly.▪ Solution shall be able to analyze files of up to 250MB.

Hardware Requirement Proposal

9

Web Conferencing:

- Licensed for 20 concurrent – sessions.
- Supporting 300 participants joining in a single meeting/session.
- Supporting all devices i.e. Windows PC, Apple Mac, Android Phones and Tablets, Apple Phones, iPads, Linux PC, Unix, etc. through a dedicated application.
- Support recording on cloud with 1 GB of storage
- Support recording on Local Host PC or devices connected.

State Emergency Operation Center (SEOC)

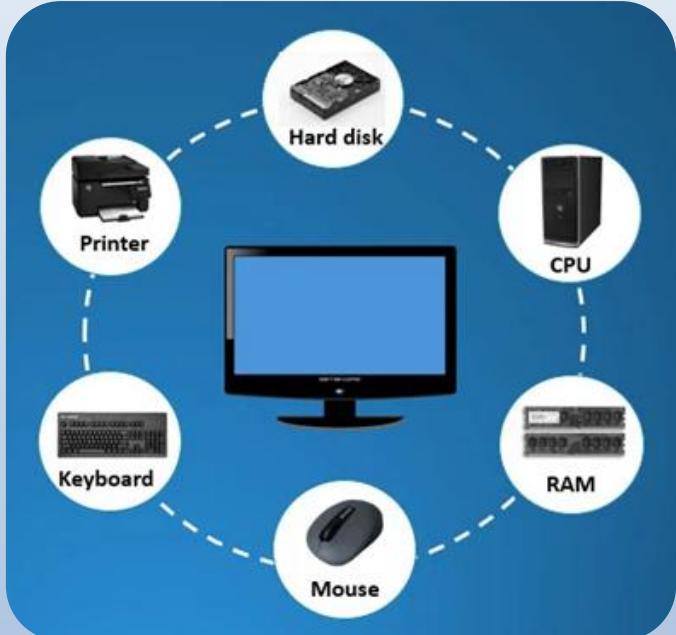
Audio - Visuals Requirement



#	Description	Requirements
1	4K UHD Display (65", 75", 85", 98")	12 (2, 5, 3, 2)
2	Interactive Display (75", 85")	10 (6, 4)
3	Active Videowalls (2m x 5m) & (3.7m x 6.9m)	2 (1, 1)
4	Matrix Video Wall(3 x 2 LCD)	1
5	Video Wall Control Processor (Type 1 & Type 1)	3 (2, 1)
6	All-in-one Soundbar with Camera : (VC End Point)	13
7	VC Codec (3 Camera & 2 Camera)	3 (2, 1)
8	4 x 1 : 1 HDMI Switcher	9
9	4K 4:4:4, HDBT Module Type	5
10	4K 4:4:4, AVoIP Wall / Floor Plate & Box Encoder	37 (15 , 22)
11	4K 4:4:4 & H.264 Multi-Codec Box Type Decoder	37
12	Audio-over-IP Transceiver	3

State Emergency Operation Center (SEOC)

Audio - Visuals Requirement



#	Description	Requirements
12	Digital Interactive Podium	1
13	Wireless & Wired Presentation System	3
14	Integrated Controller	3
15	10" Tabletop Capacitive Touch Panel	3
16	Network Based Keypad Controller	5
17	Touch Based 10" Room Scheduler	7
18	Audio Equipment and Amplifiers	47
19	UPS 200 KVA	1

Audio - Visuals Requirement Proposal

1

4K UHD Display (65", 75", 85", 98")

✓ 4K UHD 65", 75", 85" and 98" Display

- Suitable for 16 x 7 operations, 8-bit, 16.7 M, Contrast ratio over 4000:1
- 2GB DDR3 RAM, 16GB Storage, built in Double Core Mali 600 MHz GPU or higher.
- 2x HDMI, USB 2.0, 500 nit brightness or better, CE,FCC,UL,BIS certified displays.

2

Interactive Display (75", 85") :

✓ Interactive 4K, Multi-touch 75" Display and 85" or 86" Display

- 2GB DDR3 RAM, 8GB Storage, Mali GPU MP4@750MHz or faster, Quad-core CPU, Android/Tizen OS.
- Contrast ratio over 4000:1 and Refresh rate : 60~120Hz, Viewing angle : More than 170° (H) and 170° (V), 20 points or more touch-points.
- 2x HDMI, USB 2.0, Min 350 cd/m² Brightness.
- CE,FCC,UL,BIS certified displays.

3

Active Videowalls with 3 Displays :

✓ 2 Mtr height ($\pm 5\%$) x 5 Mtr length ($\pm 5\%$) and 3.7 Mtr ($\pm 5\%$) height X 6.9 Mtr length ($\pm 5\%$)

- 2x HDMI, USB 2.0, 18-bit or better, Min 350 cd/m² Brightness.
- Contrast ratio over 20,000:1 and Refresh rate : 3,840 Hz or better Frame rate : 60 Hz or better.
- Viewing angle : More than 150° (H) and 150° (V), 20 points or more touch-points.
- HDR or HDR10+ or HDR Pro or HLG or Dolby Vision, Over 100,000 hours LED life time.
- CE,FCC,UL,BIS certified displays.

Audio - Visuals Requirement Proposal

4

3 x 2 Matrix Video Wall(LCD)

✓ Full HD 50'' - 55'' (Diagonal) 6 Panel Display

- 1920 x 1080 Full HD Display
- 24 x 7 operations, 10-bit, 16.7 M, Contrast ratio over 1000:1
- 2x HDMI, USB 2.0, 500 nit brightness or better, Over 50,000 hours LED life time.
- Viewing angle : More than 170° (H) and 170° (V).

5

Video Wall Control Processor

✓ Video Wall Control Processor (Type 1)

- 1920 x 1080 Full HD Display
- 4 x HDMI input, 2 x 4K HDMI output and 4K better resolution, BIS, FCC certified.

✓ Video Wall Control Processor (Type 2)

- Powerful video processing platform with real-time non-compressed pixel to pixel image processing.
- Providing 24 x 7 rated and enabled with SSD to ensure long run and fast bootup.
- Providing 4K @60Hz and accepting customized/ nonstandard resolution.
- Dedicated high bandwidth video bus that delivers unparalleled real-time performance for future ready resolution.
- Handling 8K and more, 12 x HDMI input,
- Ensuring smooth cross functionality and operability, video processor, controller and remote management.
- BIS, FCC certified.

6

All-in-one Soundbar with Camera : (VC End Point)

- Support 30 fps with 1080p resolution.
- Shall 2 HDMI output and 2 HDMI inputs, for two laptops/PC 10 MP Camera 1080p @60fps
- 120 degrees Horizontal and 90 degrees vertical
- Laptop paired for content sharing without any wires also supports Miracast2GB

7

VC Codec with Cameras :

✓ VC Codec with 03 Cameras

- Supplied with codec, 3 no's of 1080p60 Full HD 20x or higher optical zoom PTZ Cameras
- Video feeds from 3 cameras shall be combined such that they can be displayed together.
- 6 Mic inputs, touch panel for operations.
- Supporting Wireless Content sharing via Airplay and Miracast.

✓ VC Codec with 03 Cameras

- Supplied with codec, 2 no's of 1080p60 Full HD 20x or higher optical zoom PTZ Cameras
- Video feeds from 2 cameras shall be combined such that they can be displayed together.
- 3 Mic inputs, touch panel for operations.
- Supporting Wireless Content sharing via Airplay and Miracast.

Audio - Visuals Requirement Proposal

8	<p>4 x 1:1 HDMI Switcher :</p> <ul style="list-style-type: none">▪ Supporting 4K 4096 X2160 @60 4:4:4 Transmitter .▪ 4 x HDMI inputs & 1xHDMI & 1xRJ45/Twisted Pair Output.▪ 2 x Line audio outputs ,2 x Mic Inputs, 2x Line Inputs.
9	<p>4K 4:4:4, HDBT Module Type :</p> <p>✓ VC Codec with 03 Cameras</p> <ul style="list-style-type: none">▪ 4K twisted pair / RJ45/ HDBT / HDMI Receiver.▪ 2 x HDMI 4096 X2160 @60 4:4:4, USB 2.0 data transmission.
10	<p>4K 4:4:4, AVoIP Wall / Floor Plate Type Encoder :</p> <ul style="list-style-type: none">▪ 4096x2160 @60 4:4:4 AVoIP with Dual Input Encoder Wallplate/Surface.▪ 1 x USB 2.0 port for KVM integration, 1 x HDMI inputs with Auto switching.▪ CE, UL, FCC Certified.
11	<p>4K60 4:4:4 Box type AVoIP Encoder :</p> <ul style="list-style-type: none">▪ 4096x2160 @60 4:4:4 Box type AVoIP with High-Quality, Low-Latency 4096x2160 @60 4:4:4 encoding.▪ 1 x USB 2.0 port for KVM integration, 1 x USB 2.0 Type C, 2 x HDMI inputs with Auto switching.▪ CE, UL, FCC Certified.
12	<p>4K60 4:4:4 & H.264 1080p Multi-Codec Box Type Decoder :</p> <ul style="list-style-type: none">▪ 4096x2160 @60 4:4:4▪ 1 x USB 2.0 port for KVM integration, 1 x Line Audio Input / Audio Output, 7.1 Surround audio, 1x RJ45 & 1X SFP Port.▪ CE, UL, FCC Certified.

Audio - Visuals Requirement Proposal

8	Audio-over-IP Transceiver: <ul style="list-style-type: none">▪ Supporting Audio-over-IP Transceiver.▪ Supporting independent digital and analog audio networks.▪ CE, UL, FCC Certified.
9	Digital Interactive Podium : <ul style="list-style-type: none">▪ Metallic Frame and Wooden Top with movable wheels.▪ Height 1.05M x Width 0.687M x Depth-0.86M2▪ 23" Interactive Display for Podium, digital pen pressure for precise drawing, writing, and annotating, in addition to multi-touch inputs, and Slot for Mounting Gooseneck Microphone.▪ Connectivity with PC include DVI-I or DP and USB 2.0, USB Type C, audio power socket.▪ Supporting Windows 10, 64-bit, Mac OSX 10.11 or latest operating systems.
10	Wireless & Wired Presentation System : <ul style="list-style-type: none">▪ 4x USB 3.0, 2x USB 2.0, 2x HDMI, 2x RJ-45 connector for gigabit Ethernet connectivity.▪ HDMI Resolution Up to 4K @30fps.▪ Analog stereo input as 1/8" mini-stereo jack.
11	Integrated Controller : <ul style="list-style-type: none">▪ 1 x RS-232/422/485 Ports or more, 2 x RS-232 Ports or more 8 x IR / One Way Serial Ports or more, 8 x Low voltage Digital IO Ports or more.▪ Supporting 24 x 7 x 365 days operations, Ultra-Fast 1600 MIPS processor, 512 MB onboard RAM, 8 GB SDHC FLASH Memory, Supports SD and SDHC cards up to 32 GB, External Storage -Supports USB mass storage devices up to 1 TB.▪ CE, UL, FCC Certified.

Audio - Visuals Requirement Proposal

12

10" Tabletop Capacitive Touch Panel :

- 10" Tabletop touch screen. Supporting H.264 and MJPEG formats streaming video.
- Minimum 1920 x 1200 Pixels.

13

Network Based Keypad Controller :

- 6 customizable capacitive buttons with replaceable labels.
- Supporting minimum 25 x pre-labeled icon & minimum 5 x blackout buttons or better.
- Controlled through Mobile Devices i.e. Android, ipad, iphone without any additional hardware.
- CE, IC, FCC Certified and Part 15 Class B digital device compliance.

14

Touch Based 10" Room Scheduler :

- 10"-10.1" Network based Room Scheduler.
- 1xUSB 2.0 host for connecting Light bar OR provide separate indicator connected to I/O or relay.
- 2 GB DDR3 and 16 GB eMMC pSLC storage.
- CE, IC, FCC Certified.

11

Audio Equipment and Amplifiers :

- ✓ Wireless digital handheld microphone with 18 or more channels, RF output 100 mW or more, super cardioid pickup pattern, 1880 to 1930 MHz, RJ-45, 10 or more hours Battery backup.
- ✓ Digital Handheld, Wireless digital lavalier, Gooseneck, Ceiling Type 1 and 2 Microphone.
- ✓ Antenna system
- ✓ Two-Way Line Array Column, Two-Way 4.0inch - 4.5inch loudspeaker and 3" Ceiling Speaker
- ✓ 2x300 W, 4x600 W Digital and 8x300 W Amplifier
- ✓ Digital Signal Processor
- ✓ Wall Mount Controller

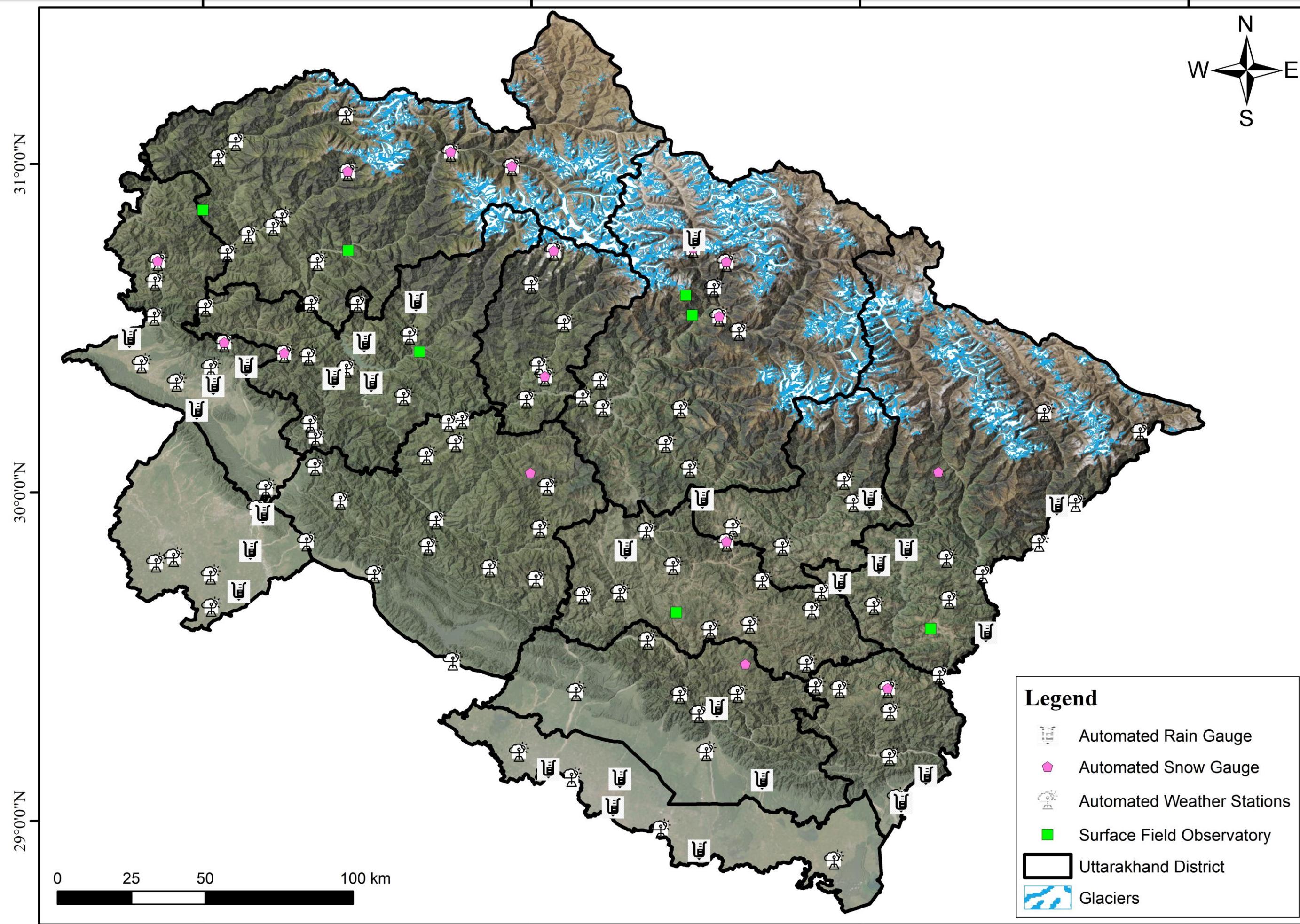
State Emergency Operation
Center (SEOC)

Final Technical specifications by Technical Committees

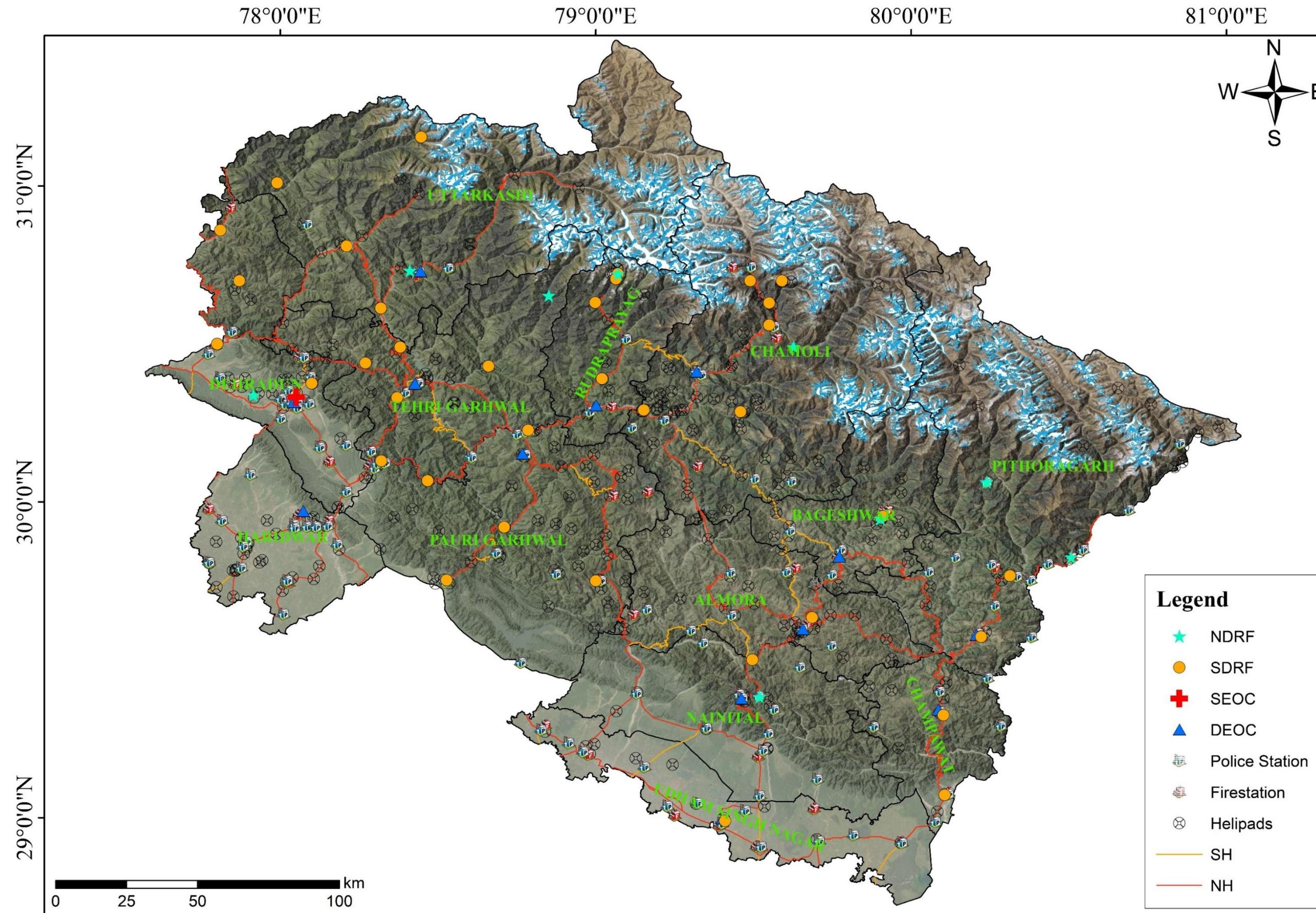
- In accordance with the instructions given by the aforementioned technical committees and the HPC's minutes of meeting Ref. no.-275/UDRP-AF/2023 dated June 30, 2023, the specifications for consolidating SEOCS were prepared. These specifications, attached as [Annexure-A](#), approved by the World Bank.
- Therefore, in line with the Technical Specifications submitted to the World Bank by PMU, information regarding the [various available Makes & Models](#) has been provided.

Application	VM Requirement	Processor Core	RAM	Storage	Current Hosting
Uttarakhand Geo Watch (GIS – Platform) https://usdmagis.uk.gov.in/home	5 (Web server, Imaging Server, 2 Application, DB)	30 6 core / VM	2.5 TB 512 GB / VM	40 TB 8 TB / VM	SDC - ITDA
(Weather Station Sensors Data Collections) https://mausamuttarakhand.uk.gov.in	2 (Web server, DB)	8 4 core / VM	512 GB 256 GB / VM	32 TB 16 TB / VM	SDC - ITDA
Disaster Risk Detail Data-Base http://drdb.uk.gov.in	4 (Web server, DB)	16 4 core / VM	1 TB 128 GB / VM	16 TB 4 TB per VM	NIC Cloud New Delhi
Decision Support System http://dss.uk.gov.in	2 (Web server, DB)	8 4 core / VM	512 GB 256 GB / VM	8 TB 4 TB / VM	SDC - ITDA
Disaster Management Web Portals http://usdma.uk.gov.in , https://usdma.uk.gov.in/sachet , https://usdma.uk.gov.in/punarvas	4 (IRS, IDRN(DB)+, IRS, Hospital Equipment Data)	8 2 core / VM	521 GB 128 GB / VM	4 TB 1 TB / VM	SDC - ITDA
Integrated Disaster Management System http://idms.uk.gov.in ,	2 (Web server, DB)	4 2 core / VM	128 GB 64 GB / VM	4 TB 1 TB / VM	SDC - ITDA
USDMA - Financial Portal (ICICI)	2 (Web server, DB)	4 2 core / VM	128 GB 64 GB / VM	2 TB 1 TB / VM	SDC - ITDA
ULMMC Web Portal http://ulmmc.in	2 (Web server, DB)	4 2 core / VM	512 GB 256 GB / VM	2 TB 1 GB / VM	Meity Approved Cloud (AWS)
Lidar Web & DB	12 ULMMC- LiDar	32 4 to 2 core / VM	2 TB 170 GB / VM	24 TB 2 TB / VM	Proposed SEOCServers
U-PREPARE – MIS https://u-prepare.com	2 (Web server, DB)	4 2 core / VM	512 GB 256 GB / VM	1 TB 512 GB / VM	Meity Approved Cloud (AWS)
UDRP / UDRP-AF MIS http://disasterrecovery.in	2 (Web server, DB)	4 2 core / VM	512 GB 256 GB / VM	1 TB 512 GB / VM	Meity Approved Cloud (AWS)
Total Requirement	39 VM	122 Core	8.75 TB	134 TB	

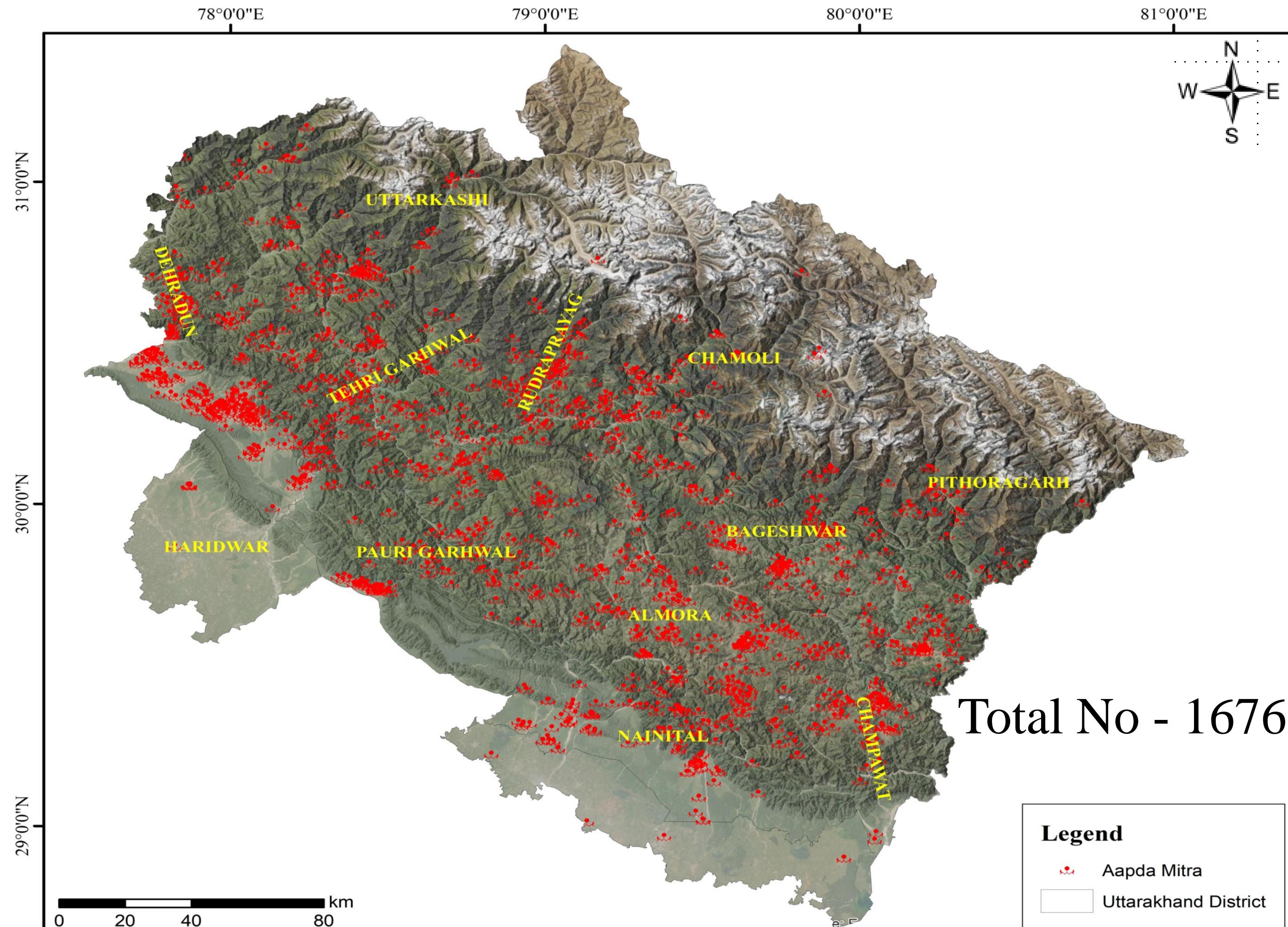
Geospatial Location of Hydrometeorological Instruments



Geospatial Location of Emergency Units



Geospatial Location of Aapda Mitra



Why USDMA's own Data Center?

- NIC (*National Informatics center*) - NDC (*National Data Center*), hosted applications were denied desired port access for internal communication as well as external communication which defeats the entire purpose of developing the application thus its was unable work properly.
- ITDA (*Information Technology Development Agency*) – SDC (*State Data Center*) - Joint Director, has informed us about their limited resource and their on-going hardware crisis, application hosted at SDC are unable to up-scale as their storage drives are exhausted, required compute and graphics were not provided to the GIS map service application which makes them very slow and thus modeling also can't be performed on them, while other applications have been restricted for connecting through API, which make data aggregation a tedious and manual task. e.g.: *Mausam Application, IMD*, third party satellite data providers thus, USDMA is proposing their in-house server.

Working Command Centre of SEOC, USDMA



Operations in DEOC





THANK YOU