Roadmap for the Future

Technology Enabled Sensor-Decision-Shooter Superiority
Seminar & Exhibition

30 June 2023

Guest of Honour
Gen Anil Chauhan,
PVSM, UYSM, AVSM, SM, VSM
Chief of Defence Staff

Venue
Kothari Auditorium, DRDO Bhawan, New Delhi

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Technology Enabled
Sensor-Decision-Shooter Superiority

Strategic & Multi-domain Awareness, Information Sharing and Rapid & Effective Decision-Making are essential pre-requisites to success in military operations in any domain. This requires harnessing the latest technologies in the Electronics & Communication Systems, Micro-electronic Devices, Computational Systems and Cyber Systems.

Aim

The aim of the seminar is to bring domain experts together in order to exploit technologies towards Strategic & Multi-domain Awareness, Ianformation Sharing, Rapid & Effective Decision-Making and Targeting.

Outcomes

The desired outcome of this seminar is to arrive at recommendations on shaping policy, strategy, plans, exploit innovation and give direction to investment in innovation and core research areas in the selected fields.

Some components of the 'Call to Action' will require inter-ministerial, inter-departmental cooperation. Recommendations will be made to the MoD and NSA.

Stakeholders

A collaborative approach is required with other ministries and departments as well as Industry to build Defence S&T capability as the best of talent, thought leadership and expertise are required to power Innovation.

Focus Areas

To make the Sensor-Decision-Shooter loop more efficient and superior, cutting-edge technologies need to be exploited and capabilities built. Some of them are listed here

SYSTEMS/ OPERATIONAL PERSPECTIVES

Strategic & Multi-domain Awareness
- Distributed, Multi-domain Sensing
- SIGINT, MASINT, GEOINT, Cyber, OSINT
- Principle-Need to Know or Need to Share
- Space Based ISR, HAPS
- MUM-T, Autonomy, Swarming
- Robotics & Autonomous Systems
- Integrated Unmanned & Manned Assets
- Future AWACS, AEW&C and ISTAR

Information Sharing: Networks And Communications
- Resilient Data Links- Degraded Environments
- NW Architecture, Data Centres, Clouds
- SDR, MESH, MANET NW (Including Joint)
- Integrated Service & Tri-Service Networks
- Unmanned Nodes & EW Platforms
- 5G/6G Military IoT

Analysis, Intelligence & Decision Making
- Speedy & Decentralised Decision-making
- Interoperability- C4ISR Systems/ Sub-Systems
- Edge & Cloud Computing
- Data Fusion & Visualisation
- Threat Modelling
- Integrated Air/Missile/Near Space RASP
- Big Data & Predictive Data Analysis (AI/ML)

Prompt & Multi-domain Targeting
- Loitering & Smart Munitions
- Long Range Precision Systems-C2/Guidance
- Laser, Directed Energy Weapons, Rail Guns
- C-UAS, C-RAM & Anti-Radiation capabilities
- Hypersonic Weapons & FOBS
- Cross-Domain Cuing

TECHNOLOGY PERSPECTIVES

Strategic & Multi-domain Awareness
- Multi-static, Counter Stealth Radars, LIDAR.
- Quantum Sensing
- Hyperspectral Sensing
- Micro-electronics, MEMS. MOEMS
- Interoperability- GIS, Integrated Sensors
- NAVIC, Autonomous PNT
- Cross-Domain Cuing, Space Based MTI
- MetaData, Data Dictionary Standards

Information Sharing: Networks And Communications
- Quantum Communications
- Collaborative Autonomous Systems
- Through Life Interoperability & Upgradability
- Open Systems Approach & Standards
- NW and Cloud Security
- Signature & Bandwidth Management

Analysis, Intelligence & Decision Making
- NLP & Cognitive Computing
- UX/UI Designs
- Trust in AI HW (GPU) and SW
- Machine-assisted Decision Making
- LVC Experimentation, Simulation & Modelling
- AR/VR Technology
- Kill Chains to Kill Web Framework

Prompt & Multi-domain Targeting
- Hypersonic Technologies & Materials
- Critical and Rare Earth Materials/ Minerals
- Integrating Long Range & Non-Kinetic Effects
- BVR Technologies
- Speed, Agility, Flexibility & Auotonomy
- Precision Guidance Kits & Course Correction

Roadmap for the Future

TECHNOLOGY ENABLED SENSOR-DECISION-SHOOTER SUPERIORITY

Friday 30 June 2023

0830 - 0930 hrs   Registration and Refreshments

INAUGURAL SESSION (0930-1030 HRS)

0930-0935 hrs	Opening Remarks. **Lt Gen Sunil Srivastava,** AVSM, VSM** (Retd), Director, CENJOWS
0935-0945 hrs	Horizon scan for science and technology developments relevant to defence. **Dr Samir V Kamat,** Secretary Dept of Defence R&D &Chairman DRDO
0945-0955 hrs	Industry Perspective. **Speaker from 3DS Dassault Systemes.**
0955-1010 hrs	Keynote Address. Military Capability Development. **Gen Anil Chauhan,** PVSM, UYSM, AVSM, SM, VSM, Chief of Defence Staff.
1010-1015 hrs	Vote of Thanks. **Dr Subrata Rakshit,** DG Technology Management, DRDO HQ
1015-1045 hrs	Refreshments and Exhibition

SESSION 1 - STRATEGIC & MULTI-DOMAIN AWARENESS (1045 - 1230 HRS)

Systems/ Operational Perspectives
- Distributed, Multi-domain Sensing
- SIGINT, MASINT, GEOINT, Cyber, OSINT
- Principle-Need to Know or Need to Share
- Space Based ISR, HAPS
- MUM-T, Autonomy, Swarming
- Robotics & Autonomous Systems
- Integrated Unmanned & Manned Assets
- Future AWACS, AEW&C and ISTAR

Technology Perspectives
- Multi-static, Counter Stealth Radars, LIDAR.
- Quantum Sensing
- Hyper spectral Sensing
- Micro-electronics, MEMS. MOEMS
- Interoperability- GIS, Integrated Sensors
- NAVIC, Autonomous PNT
- Cross-Domain Cuing, Space Based MTI
- Meta Data, Data Dictionary Standards

Chairman: **Dr BK Das**, OS & DG Electronics & Communications Systems

1045-1100 hrs	Introduction of speakers and Opening Remarks by Chairman
1100-1115 hrs	Joint Multi Domain Integration. **Smt Rose Abraham,** Scientist 'F', LRDE.

Services/User Sensors & ISR Perspectives

1115-1130 hrs	Air Force
1130-1145 hrs	**Maj Gen Ranjit Singh,** Addl DG Artillery, Army HQ.
1145-1200 hrs	Navy
1200-1215 hrs	**Presentation by MKU Ltd**
1215-1230 hrs	Discussion / Q&A

SESSION 2 – INFORMATION SHARING: NETWORKS AND COMMUNICATIONS (1230-1400 hrs)

Systems/ Operational Perspectives
- Resilient Data Links- Degraded Environments
- NW Architecture, Data Centres, Clouds
- SDR, MESH, MANET NW (Including Joint)
- Integrated Service &Tri-Service Networks
- Unmanned Nodes &EW Platforms
- 5G/6G Military IoT

Technology Perspectives
- Quantum Communications
- Collaborative Autonomous Systems
- Through Life Interoperability &Upgradability
- Open Systems Approach &Standards
- NW and Cloud Security
- Signature &Bandwidth Management

Chairman: **Dr Subrata Rakshit,** DG Technology Management, DRDO HQ

1230-1240 hrs	Introduction of speakers and Opening Remarks by Chairman
1240-1250 hrs	Multi-domain Networking &Communications. **Lt Gen MU Nair,** AVSM, SM, (SO-in-C)
1250-1300 hrs	DRDO Perspective. **Sh LC Mangal,** OS and Sc'H', Director DEAL

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User Perspectives

1300-1310 hrs	Air Force
1310-1320 hrs	Army
1320-1330 hrs	Navy
1330-1340 hrs	Creating a Digital Backbone for Defence. **Sarabjit Singh Madan,** Principal Solution Architect, Red Hat.
1340-1400 hrs	Q/A and Discussion
1400-1500 hrs	Lunch

SESSION 3 – ANALYSIS, INTELLIGENCE & DECISION MAKING (1500-1630 hrs)

Systems/ Operational Perspectives
- Speedy & Decentralised Decision-making
- Interoperability- C4ISR Systems/ Sub-Systems
- Integration of C4ISR with Cyber and Space
- Edge & Cloud Computing
- Data Fusion & Visualisation
- Threat Modelling
- Integrated Air/Missile/Near Space RASP
- Big Data &Predictive Data Analysis (AI/ML)

Technology Perspectives
- NLP & Cognitive Computing
- UX/UI Designs
- Trust in AI HW (GPU) and SW
- Machine-assisted Decision Making
- LVC Experimentation, Simulation & Modelling
- AR/VR Technology
- Kill Chains to Kill Web Framework

Chairman: **Ms Suma Varughese,** Outstanding Scientist and Director General MED, CoS&CS (MCC)

1500-1515 hrs	Introduction of speakers and Opening Remarks by Chairman
1515-1530 hrs	DRDO Perspective. **Sh Lakshminarasimhaiah DR,** Scientist 'F', CAIR

User Perspectives

1530-1540 hrs	Air Force
1540-1550 hrs	Army
1550-1600 hrs	Navy
1600-1610 hrs	Secure Your Networks and Communications. **Naresh S,** Solutions Manager, Parasoft APAC
1610-1630 hrs	Discussion / Q&A

SESSION 4– PROMPT & MULTI-DOMAIN TARGETING (1630-1755 hrs)

Systems/ Operational Perspectives
- Loitering &Smart Munitions
- Long Range Precision Systems- C2/Guidance
- Laser, Directed Energy Weapons, Rail Guns
- C-UAS, C-RAM &Anti-Radiation capabilities
- Hypersonic Weapons &FOBS
- Cross-Domain Cuing

Technology Perspectives
- Hypersonic Technologies &Materials
- Critical and Rare Earth Materials/ Minerals
- Integrating Long Range &Non-Kinetic Effects
- BVR Technologies
- Speed, Agility, Flexibility & Auotonomy
- Hypersonic Technologies &Materials

Chairman: **Air Marshal BR Krishna,** PVSM, AVSM, SC (Retd), Former CISC

1630-1640 hrs	Introduction of speakers and Opening Remarks by Chairman
1640-1650 hrs	DRDO Perspective. **Sh Ajit B Choudhary,** Sc 'G', Programme Leader – HCM, DRDL

User Perspectives

1650-1700 hrs	Air Force
1700-1710 hrs	Army
1710-1720 hrs	Navy
1720-1730 hrs	**Industry Presentation.**
1730-1745 hrs	Discussion / Q&A
1745-1750 hrs	Key Takeaways. **Dr N Ranjana, Director, DSTA, DRDO**
1750-1755 hrs	Vote of Thanks. **Lt Gen Sunil Srivastava,** AVSM, VSM** (Retd), Director, CENJOWS
1755 onward	Refreshments and Departure

Rate Card

DELEGATE PASS
VALID FOR FULL DAY

₹2,950

Delegate Pass Price includes:

1. Attending Inaugural and sessions 1 & 2 of seminar
2. Visit exhibition booths.
3. Interacting with sponsors, exhibitors, speakers and delegates
4. All refreshments and lunch
5. Video link of proceedings after the event.

Not Transferable.

PANELIST PASS
PANELIST SEAT IN ONE SESSION

₹23,600

1. Panelist seat in one chosen session (1 to 4) for discussion.
2. Panelist biodata (75 words with photo and contact details in event guide)
2. Attend all sessions
3. Visit exhibition booths.
3. Interact with sponsors, exhibitors, speakers, delegates
4. All refreshments and lunch
5. Video link of proceedings after the event.

Not Transferable.

SOLD OUT

ECO, MSME OR STARTUP EXHIBITION BOOTH
LOW COST FEATURE RICH

₹94,400

1. One furnished octonorm exhibition booth 2X2M.
2. Company profile 200 words with Logo and contact details
3. Two delegate passes with full benefits
4. Contact data of all delegates and video links after the event.
5. All facilities mentioned under Exhibition Booth.

3 LEFT

PRIME SPONSOR
MULTIPLE BENEFITS WITH BRANDING

₹236,000

1. One furnished octonorm exhibition booth 3X3M.
2. All facilities mentioned under Exhibition Booth.
3. Company profile 400 words with Logo and contact details
4. Half-page advt in Event Guide
5. Two full day delegate passes and five passes up to session 2
6. Contact data of all delegates after the event.
7. Video links of proceedings after event
8. Company Logo at Venue, Lobby and on Stage as Sponsor
9. Distribute your Company literature in all Delegate Bags

FOUR LEFT
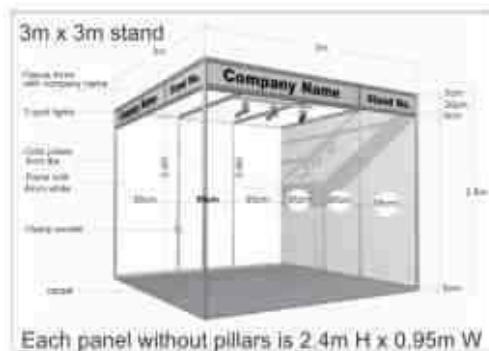
FEATURES OF EXHIBITION BOOTHS

2x2m Eco furnished booth:
Company Logo and Fascia.
1 Table, 2 chairs, carpet, 2xlights, elect box, dustbin

3m x 3m furnished booth:
Company Logo and Fascia.
1 Table, 4 chairs, carpet, 3xspot lights, elect box, magazine rack, dustbin

Additional items like LCD, tables, chairs etc are available on hire at the venue at reasonable rates

3m x 3m stand
Company Name

Each panel without pillars is 2.4m H x 0.95m W

PRINCIPAL SPONSOR
MULTIPLE BENEFITS WITH SPEAKING SLOT

₹354,000

1. One speaking/ presentation slot in Session 1 - 4 of 10 mins.
2. One furnished octonorm exhibition booth 3X3M in premium location.
3. All facilities mentioned under Exhibition Booth.
4. Company profile 500 words with Logo and contact details
5. One full page advt in Event Guide (190x2 x277mm).
6. Three full day delegate passes and seven passes up to session 2
7. Contact data of all delegates after the event.
8. Video links of sessions after event
9. Company Logo at Venue, Lobby and on Stage as Sponsor
10. Your Company literature in all Delegate Bags

ONE LEFT

IMR Media Pvt Ltd

Kothari Auditorium
DRDO HQ
Dara Shikoh Road
New Delhi

Dining Lounge

Refreshments

Refreshments

Wash Room

ECO Booths 2x2m

14	13	12	11	10	9
2x2m	2x2m	2x2m	2x2m	2x2m	2x2m
		Jisnu	Comsol	Invas	

REFRESHMENTS

REFRESHMENTS

5	6	7	8
3x3m	3x3m	3x3m	3x3m

Doors

Wash Room

Side Passage

4
3x3m
MKU

3x3m
3 Red Hat

F
O
Y
E
R

3x3m
2 Parasoft

4x3m
1 3DS Dassault Systemes

Main Entrance to Auditorium

Auditorium

CENJOWS
2x2m

X-ray

REGN COUNTER

Aquarium

Ramp/

REGN COUNTER

Entrance