USE OF TECHNOLOGY FOR DEVELOPING TRAINING MODULES

ADDRESSING ASYMMETRIC THREATS IN PEACE OPERATIONS ENVIRONMENT

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USE OF TECHNOLOGY FOR DEVELOPING TRAINING MODULES

ADDRESSING ASYMMETRIC THREATS IN PEACE OPERATIONS ENVIRONMENT

Sequence

- ✓ Asymmetric Threats in Peace Operations Environment
- ✓ Use of Technology – Asymmetric Threats
- ✓ Use of Technology – Relevant Training Modules
- ✓ Use of Technology – ITS, Feed Back
- ✓ Recommendations

ASYMMETRIC THREATS IN PEACE OPERATIONS ENVIRONMENTS

- The rapidly changing nature of asymmetric threats has adversely impacted peacekeeping efforts, affecting both peacekeepers and civilians
- The operational environment has become more lethal, shifting from inter-state to intra-state conflicts. This shift allows state and non-state actors to sabotage fragile peace agreements, which often face delays in implementation
- Political instability and limited state authority hinder governance and effectiveness, creating space for armed groups to challenge the state's authority and peace operations

ASYMMETRIC THREATS IN PEACE OPERATIONS ENVIRONMENTS

- At times, delayed responses from stakeholders have emboldened actors to commit crimes against humanity with impunity. Peacekeepers face unconventional tactics such as hostile attacks, ambushes, and IEDs, necessitating adaptive and dynamic responses.
- The challenging mandate, which includes **Protection of Civilians**, mine action, **human rights promotion**, and support for restoring state authority, makes maintaining **credibility** difficult and impacts the host state's **consent.**

ASYMMETRIC THREATS IN PEACE OPERATIONS ENVIRONMENTS

- In the context of asymmetric threats, **what is the impact of technology?**
  - Are armed groups using AI, strategic communication, cyber warfare, or other technological tools to challenge peacekeepers?
  - Do these groups possess superior weapons, drones, armed vehicles, or innovative tactics?
- In the operational environment, the identification of the foe, their unconventional tactics, knowledge of the terrain, connection with the local population, and use of human shields are more threatening than their weapons and equipment.
- Peacekeepers should leverage technology as a **FORCE MULTIPLIER** to counter adversaries and fulfill their mandate effectively

ASYMMETRIC THREATS IN PEACE OPERATIONS ENVIRONMENTS

- As peacekeepers are facing asymmetric threat, the focus should be how can we incorporate modern technological tools in our planning, training and operation/ execution at both operational and tactical level. The end objective is to:-
  - Enhance safety and security of peacekeepers
  - Increase there capacity and performance to improve mandate delivery
  - Improve use of digital technologies, foster innovation to address gaps/ challenges in a asymmetric threats environment, at different levels

USE OF TECHNOLOGY IN PEACE OPERATIONS ENVIRONMENT

Operational Level

Technology is essential to visualize threats, understand their unfolding in a given scenario, and assess their operational impact on the mission. Potential tools include:

- Geographic Information Systems (GIS)
- Satellite imagery
- Digital mapping
- Unmanned Aerial Systems (UASs)
- Night-vision Gear

Tactical Level

- Identifying adversaries, their tactics, and weaponry
- Training, equipping, motivating, and empowering peacekeepers for effective and timely response.
- Focusing on drone, encrypted communication, modern mapping, mobility, and armored protection to ensure operational capability

USE OF TECHNOLOGY IN PEACE OPERATIONS ENVIRONMENT

Training of Leadership

- **Leadership:** Effective leadership can significantly improve outcomes by analyzing threats/ challenges by leveraging technology for uniformed peacekeepers
- Benchmarks of selecting leaders (Military, Police and Civilians) should include their understanding of the digital technology landscape to make timely/ informed decisions
- **Challenges:** Availability of skilled and trained technological experts to develop and support content for training leaders, at different tiers, and addressing about data security and digital data archiving

USE OF TECHNOLOGY IN PEACE OPERATIONS ENVIRONMENT

Relevant Training Modules

Integrating technology provides unique opportunities to:

- Develop adaptive training content
- Improve decision-making skills through simulations
- Enhance situational awareness through VR and data analysis
- Foster collaboration among peacekeeping forces

However, integrating technology into training modules requires:

- Accessibility, scalability, and realism
- Addressing ethical concerns to provide peacekeepers with authentic, real-world conflict experience

USE OF TECHNOLOGY IN PEACE OPERATIONS ENVIRONMENT

Relevant Training Modules

Challenges in leveraging cutting-edge technologies, especially in multidimensional missions, include:

- Ensuring interoperability
- Maintaining technical reliability
- Securing adequate funding- Including Contingents' Owned equipment (COE)
- Managing legal implications of technical deployment

USE OF TECHNOLOGY IN PEACE OPERATIONS ENVIRONMENT

Relevant Training Modules

Technology has been gradually introduced to enhance peacekeepers' preparedness at CIPS-PKT:

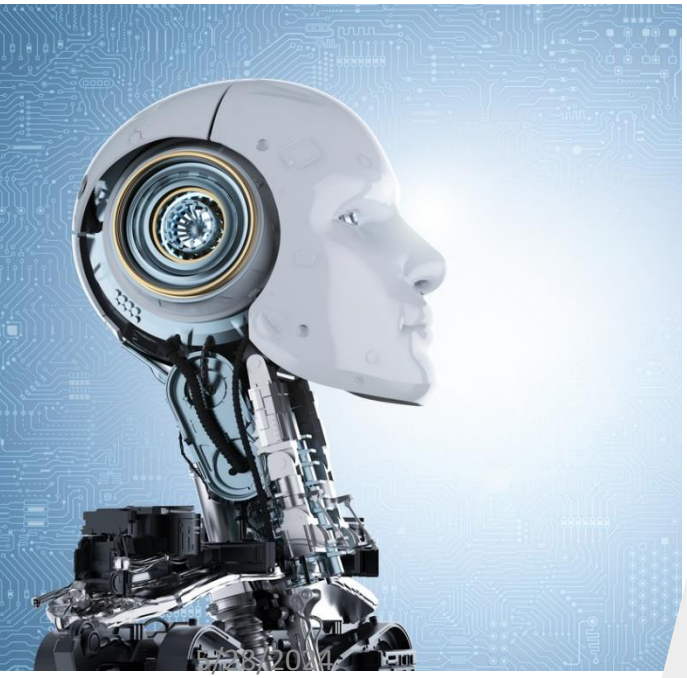
Situational awareness | **Intelligence collection** | **Decision making**

CIPS-PKT is situated at NUST *Defining futures*

MULTIDISCIPLINARY STRENGTH

#7 In South Asia

#367 In World



31 Hi-Tech Labs under One Roof

04 Centres for Excellence

NATIONAL CENTRE FOR ARTIFICIAL INTELLIGENCE

NATIONAL CENTRE FOR ROBOTICS & AUTOMATION

Peacekeeping Training CIPS-NUST

NATIONAL CENTRE FOR BIG DATA & CLOUD COMPUTING

NATIONAL CENTRE FOR CYBER SECURITY

PROJECT: TRAINING THROUGH VIRTUAL REALITY (VR)

Project Definition: VR Training Module

Immersive Technology in Training

- **AI-based VR Learning System:** Developed in collaboration with VR experts and software engineers, incorporating 3D digital replicas of operational environment
- **Smart Integration:** Combined inputs from mission areas, best practices to integrate smart characters with databases, hardware/ software gadgets, including motion tracking sensors
- **Immersive Experience:** Created multifaceted avatars to interact with peacekeepers in realistic mission environments, with built-in difficulty levels making avatars reluctant to answer all questions

USE OF TECHNOLOGY: VIRTUAL REALITY (VR)

Desired Outcome and Benefits:

Core Objective:

- To train participants physically, mentally, and emotionally in mandated tasks, focusing on conflict resolution and peacebuilding activities such as negotiation, mediation, liaison, investigation, and media relations with all mission stakeholders.

Training Approach:

- Participants engage in a realistic mission-like socio-cultural environment to enhance their communication skills, intelligence collection, information exchange, and decision-making abilities.

Cost and Resources

- Pakistan Army

USE OF TECHNOLOGY: VIRTUAL REALITY (VR)

Project Responsibility

- VR Software Engineers and Peace Operations Training Team / Research and Analysis Cell

Issues/ Risk

- **Software/Hardware Upgrades:** Scheduled upgrades every few years, budget allocations
- **Procurement:** Acquisition of viable technologies and their integration into mission settings
- **Personnel Placement and Training:** Strategic placement of trained personnel in appropriate locations, ensuring continuity of stay and ongoing training for all staff, including those at various Headquarters


SPEAK

USE OF TECHNOLOGY: ARTIFICIAL INTELLIGENCE (AI)

AI-Driven Adaptive Training

- **Adaptive Training Simulations:** AI technologies create realistic training scenarios for peacekeepers, enhancing professionalism in a controlled environment
- **Data-Driven Insights:** AI algorithms analyze vast data to identify patterns, generating insights for adaptive training programs
- **Enhanced Decision-Making:** AI enhances decision-making in tough environments by immersing peacekeepers in diverse situations and analyzing outcome
- **Current Implementation:** AI algorithms are currently employed for data analysis via the Situational Awareness Geospatial Enterprise (SAGE) database and the Unite AWARE platform

USE OF TECHNOLOGY: ARTIFICIAL INTELLIGENCE (AI)

AI-Driven Adaptive Training

- PKT-CIPS has embarked upon an initial advancement and have analyzed peacekeeper fatality data across multiple missions (**in collaboration with Centre of AI at NUST**) Through AI algorithms, we analyze malicious attacks, revealing patterns, dynamics, and trends not easily understood through qualitative approach and analysis
- During PDT Modules, participants engage with AI algorithms to craft responses to scenarios, improving decision-making and enhancing early warning systems leading to peacekeeper safety and security
- ***Challenges and Limitations:*** Need for high-quality, diverse training data for accurate algorithms, ethical considerations, financial costs, and the requirement for technical expertise

PROJECT: EOD / IED TRAINING — AWARENESS COURSE

Project Definition

- IED/EOD threats have emerged as the most devastating factor in numerous peacekeeping missions
  - In Mali (MINUSMA) alone, IED/EOD incidents accounted for 50% of the fatalities in 2022. Similar challenges have been encountered in MONUSCO and MINUSCA.
- Pakistan Army also faced casualties due to this threat, prompting the establishment of **CIEDO**. It integrates advanced technologies like electronic countermeasure equipment, IR telescopic cameras, EOD robots, recoilless disrupter-mounted drones, and VR/AR-enabled tools to neutralize the IED/EOD threat

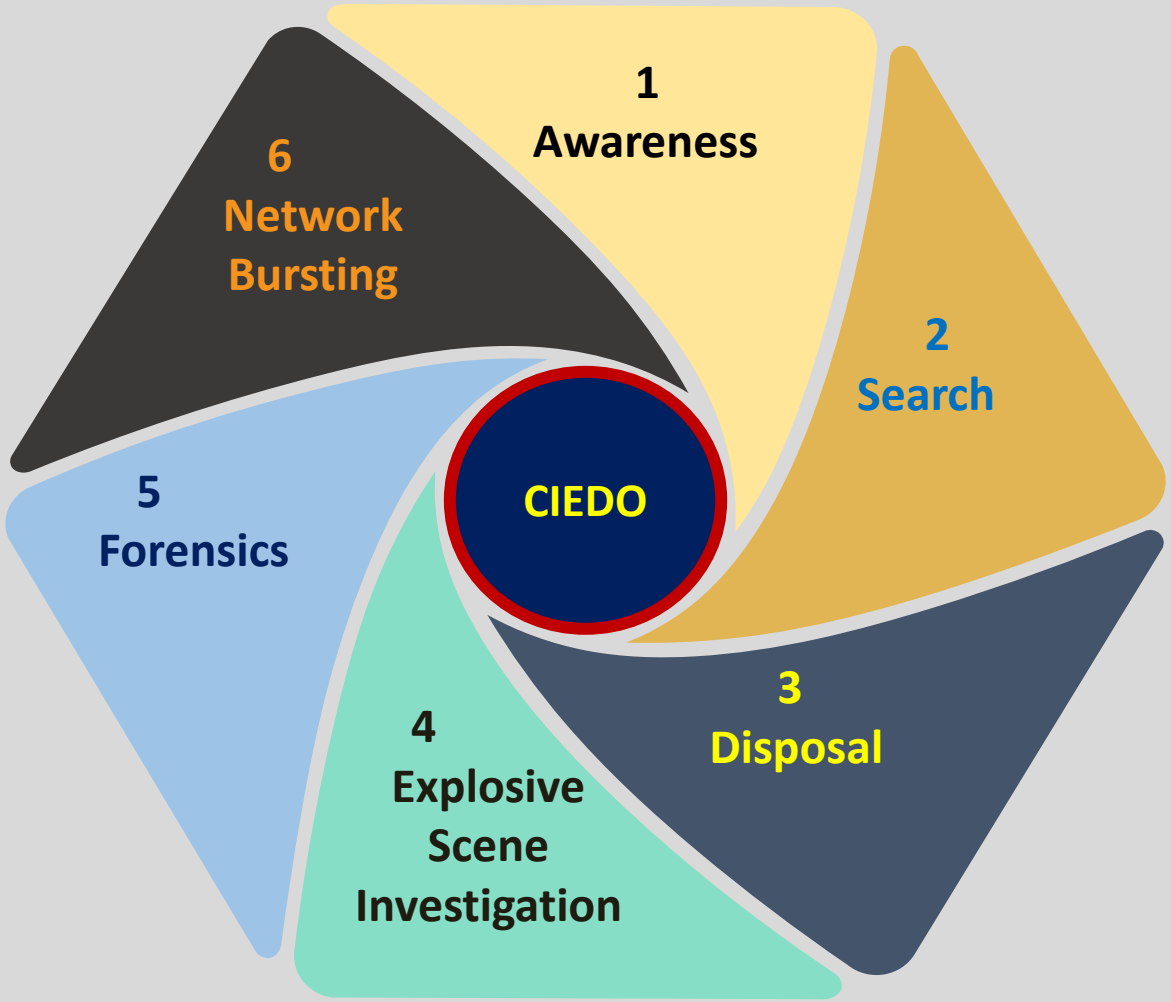
Responsibility

- Corps of Engineers/ Pakistan Army

Resources

- Pakistan Army

COUNTER IED **CYCLE**



COUNTER IED TRAINING

TECHOLOGY IN CIED

INTEGRATING TECHNOLOGY
EOD/IED TRAINING AWARENESS COURSE

Outcome and Benefits

- In February 2024, the PKT Department requested accreditation from ITS/DPO for a dedicated IED and CIED Awareness Course, which will be offered to TCCs. The objectives include:
  - Countering IED/EOD threats through technological integration into broader military strategies
  - Enhancing the overall safety and security of peacekeeping forces
- This initiative aligns with the broader 2023 work plan of the DPO, which focuses on leveraging technology for uniformed peacekeepers. This includes the establishment of a digitally enabled central forensic exploitation laboratory

USE OF TECHNOLOGY:

DRONES FOR PEACEKEEPING

- Most TCCs are infantry-heavy & lack drone utilization capacity
- The current **Statement of Unit Requirements (SUR)** for infantry units includes minimal drone capability, with limited operator training and insufficient data.
- Utilizing drones for simulating real-world challenges (e.g., mine detection) or employing AI for security threat detection requires fundamental changes in TCCs' organization, training, and equipping.
- **(7)** Seven ongoing peacekeeping missions enforce national restrictions on drone deployment

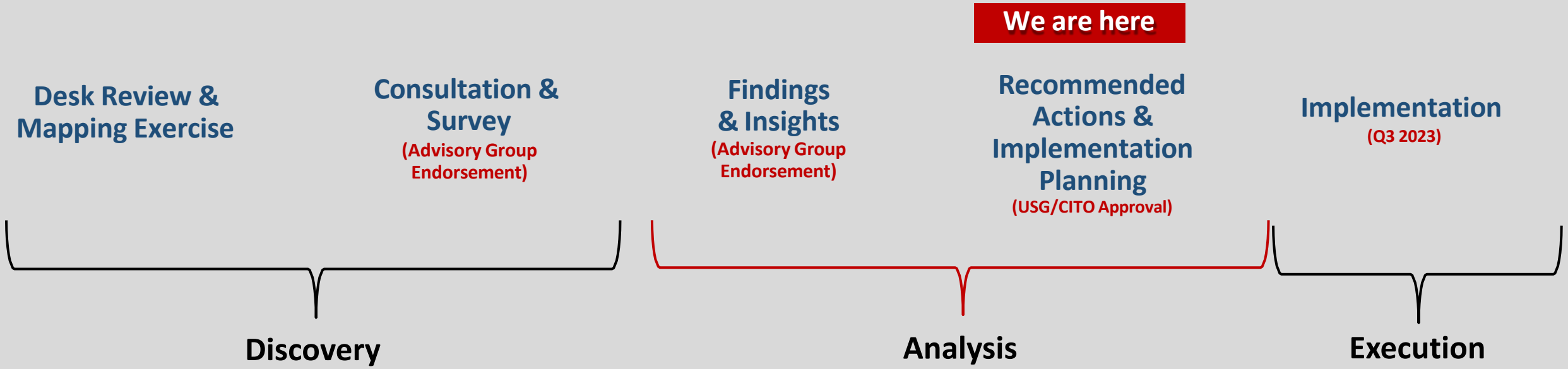
USE OF TECHNOLOGY

FEEDBACK & INSIGHTS

- The ITS Secretariat is exploring emerging technologies, including AI, cyber defense, information integrity (C/mis-dis-info), UAVs, C/drone systems, and advanced indirect fire detection systems
- In conjunction with T/PCCs, ITS will soon release training materials for Force Protection and Countering misinformation and disinformation threats
- Significant effort has been invested in the SG's new peace initiatives. The work plan **Leveraging Technologies for Uniformed Peacekeepers,** as shared by Maj Gen (R) Hugh van Rossen who led the study, is now in the implementation planning stage

LEVERAGING TECHNOLOGY FOR UNIFORMED PEACEKEEPERS

WORKPLAN



Project Goals:

- Enhance safety and security, capacity, and performance of uniformed peacekeepers
- Improve mandate delivery
- Improve use of digital technologies
- Foster innovation to address operational needs, gaps, and challenges

LEVERAGING TECHNOLOGY FOR UNIFORMED PEACEKEEPERS

SUMMARY- RECOMMENDATIONS

On Training Initiatives

- Introduction of **new Digital Technology Training Courses**
- Conducting **TRAINING NEEDS ASSESSMENTS**
- Implementing Digital Technology **LEADER/PLANNER FAMILIARIZATION TRAINING**

- Utilizing technology to assess local attitudes and social cohesion
- Exploring expanded use of counter-UAS capabilities for improved protection
- Establishing a digitally-enabled Central Forensic Exploitation Laboratory
- Continuing technology studies to explore the suitability, feasibility, and acceptability of using robotics

USE OF TECHNOLOGY IN PEACE OPERATIONS ENVIRONMENT

Recommendations

Enhancing Collaboration & Technology Integration

- The current efforts to utilize cross-cutting technologies (AI, VR, cyber warfare, drones/UAVs, simulations) **lack a collaborative knowledge-sharing approach** among stakeholders, which is essential for fostering partnerships and improving performance
- The DPO should **establish a technology data hub** dedicated to supporting **in-missions training** of TCCs, serving as a valuable training tool for commanders, staff and units
- Training Need Assessment by ITS to **introduce new Digital Technology Training Courses,** that address skill gaps, promote the use of technology, and foster innovation should also involve Peace Operations Training Institutes/ Centres/ Departments

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THANK YOU