

Background and Motivation

- Modeling Virtual Environments Simulation (MOVES) course MV3500 Networked Graphics and Simulation is first of two-course sequence examining distributed Live Virtual Constructive (LVC) defense applications.
- Theme: LVC is major gap in global C2, badly needed. Distributed Interactive Simulation (DIS) standard links.
- Three pairs of students pursued opportunity to write point-papers for NPS...Next transformation planning, assessing value of MOVES M+S links to NPS and DoD.
- **External connections have major potential benefits.**

Test and Evaluation (T+E) Orientation

- Test and Training Enabling Architecture (TENA) software suite, can emulate (and perhaps connect to) operations on all DoD test ranges. GOTS software, includes DIS.
- Directly relevant to NPS field experimentation (FX) and CRUSER activities at both Camp Roberts and the Sea Land Air Military Robotics (SLAMR) beach facility.
- Recent National Academy of Sciences (NAS) study on Test Range of Future exactly aligns with NPS designs.
- **NPS can pattern after DoD test ranges without fees.**

Network Infrastructure Connectivity

- Joint Mission Environment Test Capability (JMETC) is SIPRNET connectivity for all DoD test ranges. Uses TENA.
- NMETC is a similar NIPR enclave, UNCLAS allowed, supported by individual allied nations. Likely a good pattern for NPS Field Experimentation (FX) to pursue.
- NPS needs to provide connectivity to JMETC so that students and faculty can observe test range activities.
- **NPS requires SDREN connectivity so external partners have visibility into our capabilities and contacts.**

Engaging DoD and Coalition Partners

- C2SIM is emerging work to bridge C2 with M+S led by Simulation Interoperability Standards Organization.
- Part of NATO Federated Mission Networking (FMN) working groups with ongoing NPS participation.
- Students connected using Calytrix Australia software for voice communications using standard IEEE DIS protocol.
- Improved recognition of coalition importance by CTF59 operationalization of warfighter-deployed robotics.
- **Establishing links improves NPS engagement, relevance.**