Ground Robotics Capabilities Conference
Joint Ground Robotics Enterprise

NDIA Quarterly Meeting

August 2015

Agenda

- Enterprise Update

- Enterprise Thrust Updates

- Summary
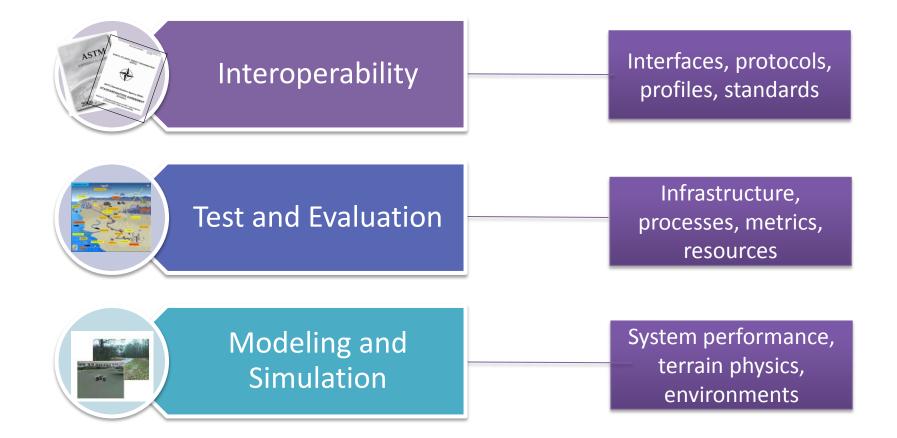
Joint Ground Robotics, The Enterprise

- OASD(A) Unmanned Systems (UxS) oversight and management structure is undergoing a re-alignment.
  - UAS TF is being restructured to transition functions back to standing DoD organizations and to broaden focus on all UxS domains for the enduring functions.
    - IPTs will focus on all UxS domains
  - Focus on cross-domain enablers, capabilities, and issues.
- Pursuit to this re-alignment, possible recommendations to JGRE SSG
  - Recent JGRE expansion (Class 1 UAS programs & I-IPT) aligns with OASD(A)
- UxS Integrated Roadmap planning/proposal to SSG will resume, delay was due to contracting delays.
- First Interoperability IPT meeting scheduled for October FY16
  - Focus will be on cross-domain interoperability strategy

Enterprise Thrusts

Interoperability — Interfaces, protocols, profiles, standards

Test and Evaluation — Infrastructure, processes, metrics, resources

Modeling and Simulation — System performance, terrain physics, environments

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Interoperability

- First Interoperability IPT meeting scheduled for October FY16
  - Working groups for land, naval, and air domains
    - Assess current state of DoD cross-domain interoperability
    - Participate (provide inputs) in UxS Integrated Roadmap
    - Identify and agree on gaps
    - Develop/Update strategy/charter to address gaps

- Common Controller Architecture
  - Multi-robot Operator Control Unit (MOCU)
    - develop a software collaboration environment to enable the community to develop and support the Multi-robot Operator Control Unit (MOCU)
  - Support findings and recommendations from NAMC Common Controller Study
  - Support findings and recommendations from IOP study

- Communications Cyber Assurance
  - Partnership with DoD CIO to develop UGS Communications Architecture
  - Standardize UGS Encryption
  - COMSEC Policy
  - NSA Crypto Core Modernization

Test and Evaluation

- Interoperability Compliance/Conformance Testing
  - Community has high fidelity standards (JAUS, IOP, UCS) but lack homogeneous methods for verification.

- UxS Autonomy Test & Evaluation and Verification & Validation
  - Expedite the acceptance of autonomous systems
    - Trust and certification of autonomous systems
    - Quantify the performance difference between autonomous and manually conducted tasks with modeling and simulation

Modeling and Simulation

- – Expedite and enhance presence of unmanned ground systems on the battlefield

  - • Integrate unmanned ground system capabilities into the Army/Marine Corps Combined Arms Analysis Tool for the 21st Century (COMBATXXI)

  - • The goal of the integration is to be able to assess the utility of unmanned ground systems in future warfighting by addressing such areas as the benefits and risks of different levels of autonomy and human/unmanned system teaming.

Summary

- Moving forward JGRE will take a more holistic Enterprise approach with supporting the Services.
  - Provide policy clarity
  - Support standardization efforts that advance the Enterprise and align with DoD initiative and other UxS domains
  - Support targeted efforts that advance or expand the use of UGS on the battlefield.
  - Track and monitor Enterprise activity to identify unproductive issues and re-act accordingly