DoD spends $10 to $11 billion annually on EW capabilities; not expected to increase significantly

Net Assessment approach used instead of capability gap analysis to identify opportunities for advantage

Asymmetries

- Challenges DoD should attempt to mitigate
- Challenges DoD should attempt to alleviate or overcome
- Challenges that could be turned to opportunities
- Opportunities DoD should more fully exploit

Recommendations

1. Implement maneuver warfare in the EMS
2. Implement new operational concepts that employ maneuver and complexity
3. Adopt more opportunity-based, rather than requirements-based, innovation
4. Emphasize virtual and constructive EW and EMSO training at the expense of live events
Implementing maneuver warfare in EMS is only partly about technologies that enable agility. Maneuver requires treating EMS as a domain, shifting to passive, multistatic, or LPI sensing, implementing EMBM TTPs and technologies, networking spectrum dependent systems, and addressing interoperability.
DoD will need to treat the EMS as an operational domain for “EMS superiority” to have meaning.

EMS as a utility that is only relevant when in use, and provides point-to-point service

Assumes largely permissive EMS and slow move-countermove cycle

EMS is a domain that always exists, and in which each action affects many other activities

Assumes a congested and contested EMS and a real-time competition
Disaggregated forces can enable more adaptable EMS operations and create complexity for enemy.

DoD should rebalance the force to include fewer self-contained multimission platforms and a larger number of small, less multi-functional units and vehicles; machine-enabled control systems could help exploit the flexibility of rebalanced force.
DoD should adopt human command & machine-assisted control to enable all-domain maneuver

**Human command**
- develop operational plans
- craft task orders
- identify marketplace of capabilities

**Machine-assisted control**
- issues request for bids to accomplish task orders
- constructs kill chain sets from available capabilities

**Manned and unmanned units available for tasking**
- capabilities bid on orders
- quality of bid depends on ability to contribute to an effective kill chain (i.e. proximity, speed, material condition, key functions, success likelihood, efficiency of capability)
- nominate and refine execution tactics
Context-centric C3 could reduce impact of communication disruptions

Current operational concepts pursue communication architectures to support pre-determined C2 hierarchies.

- Including MDO, MDC2, and DMO
- Often with goal of enabling senior commanders to oversee operations over a wide area.
- Creates vulnerabilities to communications jamming and deception.

Contest-centric C3 establishes C2 relationships based on communications availability.

- Subordinate commanders in control of forces they can communicate with and are appropriate for tasks assigned by senior commanders.
- AI-enabled machine control allows junior leaders without staffs to plan and manage complex ops.
Live EW and EMSO training should be limited to ensuring safe operations

- Home station training facilities lack realistic threats and spectrum access
- Units often require remedial EW training at certification events
- Using realistic threats, technology, and tactics constrained by OPSEC and funding