

Mission Composeable C2 in DIL Information Environments using Widgets and App Stores

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SPAWAR Systems Center Pacific



Strategic Landscape









Optimizing Navy's Primacy in the Maritime and Information Domains





Information Environment





What is a Widget?

Widgets are lightweight, single-purpose web-enabled applications that users can configure to their specific needs. Widgets can provide summary information or a limited view into a larger application and can be used alongside related widgets to provide an integrated view as required by the user.



How Widgets Make C2 Composeable



Surface Warfare Widgets





Air Warfare Widgets









Operations Architecture



SPAWAR PEO C4I Storefront Integration with an Afloat Systems Center Systems Center





PEO C4I Storefront/NTCM End State





"The only response to change is innovation."

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BACKUPS

Department of the Navy



AirSea Battle: Power Projection in the Mature Guided Munitions Era

Hon. Robert O. Work Under Secretary of The Navy

AIE Counter A2/AD Conference



Modern "A2-AD" networks with guided weapons will greatly expand the contested zone that US joint forces will have to cross





AirSea Battle (III) is a new operational concept for fighting through A2-AD networks that employ guided munitions

- The ability to conduct operational maneuver from strategic distances that is, the ability to project dominant military force across transoceanic ranges underwrites US conventional deterrence
- The appearance of integrated A2-AD networks as well as the proliferation of guided rockets, artillery, mortars, and missiles (G-RAMM) will make future US power-projection operations more difficult
- AirSea Battle will enable future US transoceanic and inter/intra-theater power projection operations against opponents with capable A2-AD networks that employ guided munitions
 - AirSea Battle will soon be a necessary precursor before deploying the reminder of the joint force
 - AirSea Battle will naturally transition to AirLand Battle (II), updated to account for operations on battlefields swept by enemy G-RAMM



At its core, AirSea Battle (III) is about winning a guided munitions salvo competition

- Key aim: to disrupt and destroy enemy A2-AD networks and offensive guided systems in order to enable US freedom of action to conduct concurrent and follow-on operations. ASB does this by winning a two-sided force and counter-force competition:
 - FORCE/SCOUTING/C3I: Effectively attacking/disrupting/destroying the enemy's A2/AD network (force) by:
 - "Scouting" the enemy's battle network
 - "Attacking effectively first"
 - Coordinating operations and salvos using widely dispersed forces
 - Sustaining effective salvos
 - Using both kinetic and non-kinetic means



Attacking the enemy's network is only one side of the salvo competition...

- COUNTERFORCE/ANTI-SCOUTING/ANTI-C3I: Capacity to reduce the effect of enemy-delivered firepower, by:
 - Reducing the total number of effective enemy guided munitions salvos
 - "Scouting" the enemy's network
 - Blinding, disrupting, destroy the opposing battle network
 - "Anti-scouting" activities to prevent targeting
 - Reducing the potential density of effective enemy guided munition salvos
 - "Scouting" for guided munitions delivery systems
 - Eliminating as many guided weapon systems as possible: Killing the archers
 - Riding out actual enemy salvos
 - Passive defenses (spoofing, deception, etc)
 - Active defenses



Other key considerations

- Posturing for effective operations
 - Solving the basing asymmetry problem
 - Base hardening, dispersion, etc.
 - Building stealthy and long-range or long-endurance strike forces (e.g., bombers, SSGNs)
 - Designing operations to account for salvo density rings
- Preparing to fight through a first (surprise?) salvo
 - US forces may have to take a first salvo before launching their first attacks
 - Violates the key principle of "Attack effectively first"
 - I&W becomes critical
- Sustaining ability to launch salvos
 - Depth of magazine
 - Reload capabilities
 - Battle network "train"
- Preparing for technical and tactical surprises
 - Some weapons and tactics will be more effective than planned; some not as effective 17 as planned



AirSea Battle (III) will require new levels of joint integration between the Navy and Air Force

- Like AirLand Battle before it, AirSea Battle (III) sees the solution primarily in terms of joint operations—in this case involving naval and aerospace forces
- AirSea Battle (III) builds upon the successful partnerships and integrated operations between the Navy and Air Force during AirSea Battle II, Desert Storm, OAF, OEF, and OIF
- Successful demonstrations of AirSea Battle (III) in exercises and field tests will:
 - Strengthen US conventional deterrence;
 - Reassure allies; and
 - Improve regional crisis stability





- AirSea Battle (III) is a new joint operational concept about projecting power against an opponent with rough guided munitions and battle network parity that will:
 - Underwrite US power-projection capabilities
 - Reassure allies
 - Improve regional crisis stability
- AirSea Battle focuses on winning a two-sided guided munitions salvo competition in order to facilitate concurrent and follow-on operations
 - Much more than just kinetic attack
 - Force and counterforce
 - Scouting and anti-scouting
 - C3 and anti-C3
- Will lead to new Navy-Air Force tactics, techniques, and procedures in the near term, and new platforms, sensors, and weapons in the future



Future Spirals include operational support for Widgets, Apps, App Bundles, and an Update Manager

