Strike, Land Attack, and Air Defense (SLAAD) Division Overview

Prepared for The Precision Strike Technology Symposium 2014

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Chairman, 6th Annual "State of IAMD" Symposium

22 October 2014

Agenda
--- SLAAD Division Overview

- *Brief History of the Strike, Land Attack and Air Defense (SLAAD) Division*
- *What SLAAD Division does*
- *SLAAD Division Organization*
- *Examples of Recent Studies*
- *Example of Output from our most recent, approved study for the Navy*
  - ***The "Global IAMD" Study (2010)***

National Defense Industrial Association (NDIA) and the Creation of SLAAD Division

- *Did you know that the NDIA was formed in the fall of 1997 through the merger of the National Security Industrial Association (NSIA) and the American Defense Preparedness Association (ADPA)?*
- *Today, NDIA is America's leading Defense Industry association promoting national security*
  - *NDIA provides a legal and ethical forum for the exchange of information between Industry and Government on National Security issues*
  - *Members foster the development of the most innovative and superior equipment, training and support for our warfighters and first responders through our divisions, local chapters, affiliated associations and events*
  - *As of this week, the NDIA includes 37 Divisions, 5 Industrial Working Groups, and 52 local and area Chapters*
  - *There are four affiliated organizations: the Precision Strike Association (PSA), the Association for Enterprise Information (AFEI), the National Training and Simulation Association (NTSA), and Women in Defense (WID)*
- *When the NDIA was created in 1997, the NSIA "AAW Committee" --- active in the NSIA since 1982 --- was renamed the NDIA Strike, Land Attack, and Air Defense (SLAAD) Division*
  - *All together, since 1982, the NSIA AAW Committee and then the NDIA SLAAD Division --- industry teamed with the Navy, other government organizations, FFRDCs, and laboratories --- have performed 83 significant studies and analyses, pro bono, for the Department of the Navy*

Strike, Land Attack, and Air Defense (SLAAD) Division
--- Mission, Purpose & Focus

- *SLAAD Division **Mission and Purpose***
  - *Provide open and objective communication channel between U.S. Navy, Department of Defense, and industry*
  - *Address threat, operational concepts, combat architectures, system technology, systems development, systems integration, acquisition, and manpower issues*
- *SLAAD Division **Focus***
  - *Conduct and report out on **formal studies and analyses** related to Strike, Land Attack, and Air Defense issues*
  - *Studies are scoped to provide unbiased, useful and timely results*
  - *Study participation by industry, government and others is voluntary*
  - *Reports are prepared and distributed to government and industry*
- *SLAAD Division **Study Process***
  - *Our pro-bono study process, in effect since 1982, was interrupted due to a legal issue by long-time Host, OPNAV (N8) in April of 2010*
  - *Our process was resurrected in July of 2012 with the support of the Honorable Sean Stackley, DASN (RD&A), in his Memo on the conduct of "No-Cost" Studies*
  - *We are currently working with the Surface Warfare Division (N96), to become our new OPNAV Sponsor for "No-Cost" Studies*
  - *This year, we began doing **SLAAD Division White Papers** --- a shorter version of a study --- our first was a White Paper prepared for the Air-Sea Battle Office in OSD*

Strike, Land Attack, and Air Defense (SLAAD) Division

--- What Else Does SLAAD Division Do, Besides Conduct Studies?

- *We conduct an **Annual Symposium**, teamed with the NDIA Missile Defense Division --- SECRET level, no media, no notes, all discussion "not for attribution"*
  - *The past five of our teamed, classified symposia have been on the topic of "The State of Integrated Air and Missile Defense (IAMD)"*
  - *Our 6th symposium on the "State of IAMD" is planned for Thursday, the 25th of June 2015, at JHU APL --- don't miss it!*
- *We conduct an **Annual Fleet Visit***
  - *Alternating between Atlantic (Norfolk commands) and Pacific Fleets (San Diego commands)*
  - *2014 was a LANTFLT Visit --- 2015 will be a PACFLT visit*
- *We hold four **Quarterly Executive Committee (EXCOM) Meetings** each year*
  - ***Winter** --- hosted by corporate member*
  - ***Spring** --- held in conjunction with Annual Fleet Visit*
  - ***Summer** ---- **Annual Meeting** --- held in conjunction with Annual Symposium*
  - ***Fall** --- hosted by corporate member*
- *We now host periodic, classified **Executive Roundtables***
  - *Thus far, we have had Rear Admiral Ron Boxall / Deputy, Surface Warfare Division (N96B); Vice Admiral Joe Aucoin, USN / DCNO Warfare Systems (N9); William "Yeti" Dries and Staff / Air-Sea-Battle Office, OSD; and Mr. Alan Shaffer / Principle Director, ASD (R&E)*

Strike, Land Attack, and Air Defense (SLAAD) Division Organization

OPNAV Sponsor for NDIA SLAAD Division "No Cost" Studies

Director, Surface Warfare Division (N96)

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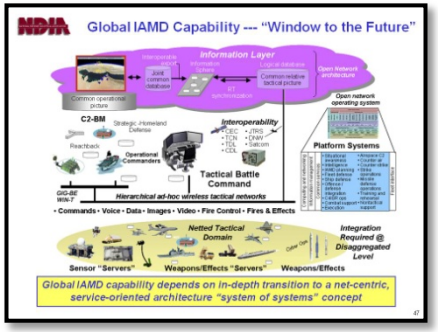
VADM JAMES "JD" WILLIAMS, USN (RET)	FORMER VICE CHAIRMAN, CONSULTANT
VADM JAMES H. DOYLE, USN (RET)	VICE CHAIRMAN EMERITUS

Selected SLAAD Division Studies

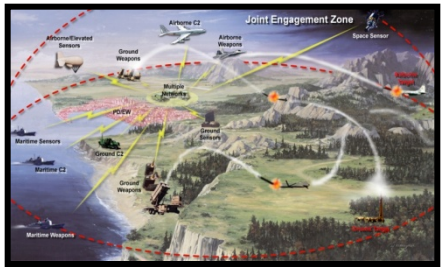
- *The Navy Path to Greater Roles in Global Integrated Air and Missile Defense Study (Global IAMD – GIAMD Study) (2010)*
  - *Addresses the path the Navy might take toward assuming greater roles in Global Integrated Air and Missile Defense (GIAMD), including issues of:*
    - *Future force structure, C2 and Battle Management requirements for Global IAMD --- including for European Phased Adaptive Approach (PAA)*
    - *Consideration of the ideal path toward acquisition of a Joint Integrated Fire Control (JIFC), including integration of electronic warfare (EW) sensors and measures required for execution of the Global IAMD capability*
  - *Hosts: VADM Bernard J. "Barry" McCullough III, USN / VADM John T. "Terry" Blake, USN (Deputy Chief of Naval Operations for Integration of Capabilities and Resources (N8)), and Fleet Hosts, VADM Samuel J. Locklear III, USN / VADM Richard W. Hunt, USN (Commander THIRD Fleet)*
  - *IMPACT: Add ideas and alternatives to the discussion on ways the US Navy can improve its overall capability in Global IAMD --- a mission area of steadily increasing importance to the future of the US Navy, Allies, and Coalition Partners*
  - *NOTE: This was our last study "accepted" by the Navy since 2010*
- *Navy OASuW Cruise Missile Replacement Study*
  - *Addressed what missile attributes and related technologies would be the ideal for the Navy's investment in new OASuW capabilities --- ideas and recommendations still apt*
  - *Host: (then) N86, N88*
  - *NOTE: This was our last study completed by NDIA SLAAD Division in 2010, although this study was not formally "accepted" by the Navy*

Selected SLAAD Division Studies, Continued

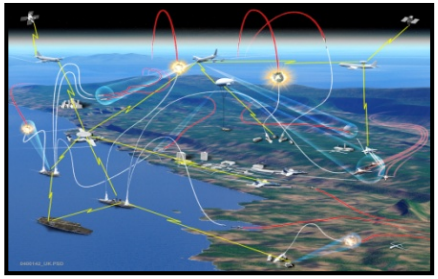
- *Command and Control and Battle Management Implications of Maritime Integrated Air and Missile Defense Study (Maritime IAMD – MIAMD Study) (2008)*
  - *Examined implications of rapidly emerging air and missile threat to naval forces*
  - *IMPACT: Provided industry look at how path to fielding NIFC-CA, while showing way ahead for Joint Integrated Fire Control (JIFC) capabilities --- while emphasizing importance of Maritime and Joint IAMD to Navy in defense of the US, Allies, and Coalition Partners --- reinforced arguments for creation of "NAMDC" command --- introduced importance of Maritime IAMD capability development as an "Arleigh Burke moment"*



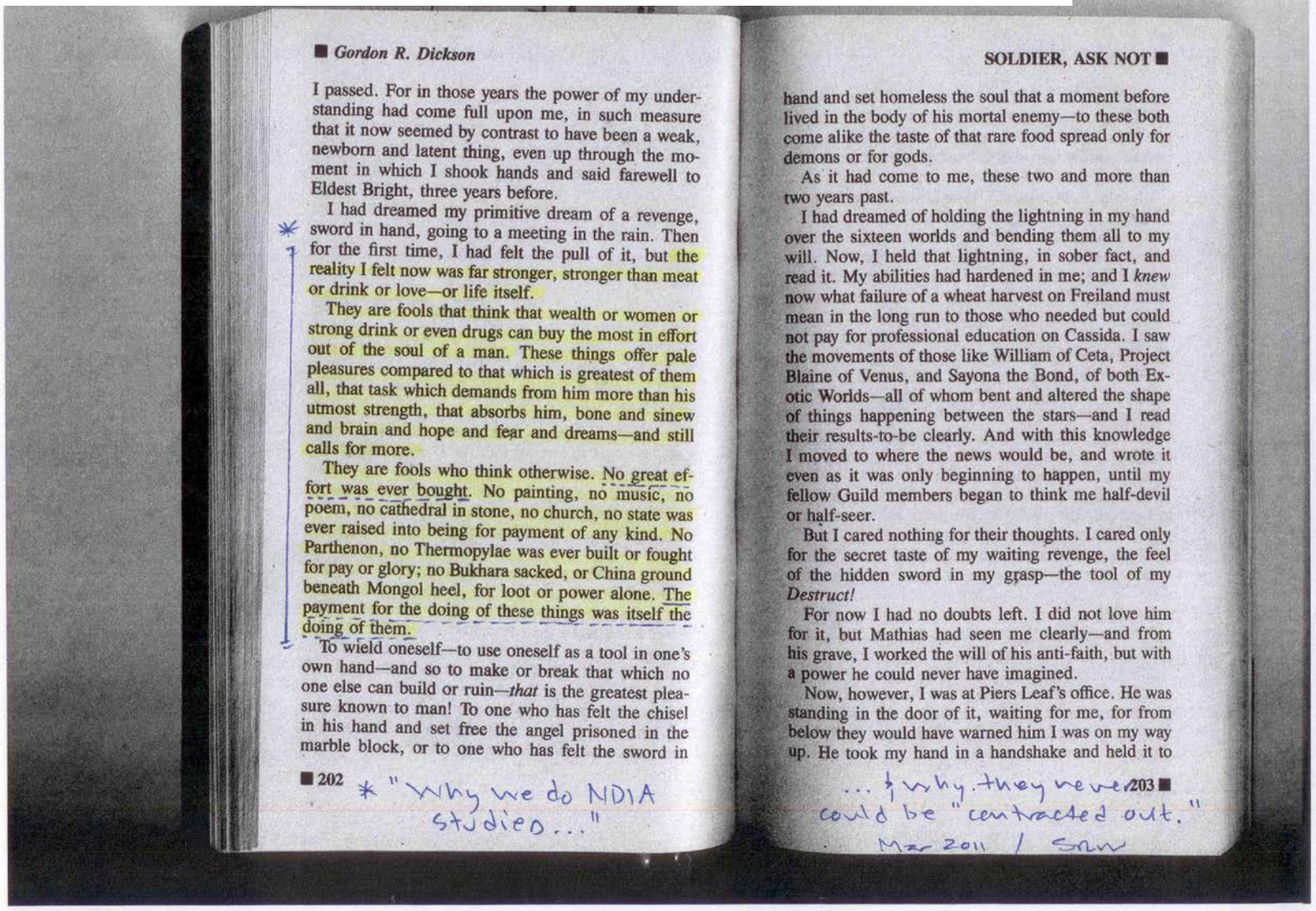
- *Joint Integrated Air and Missile Defense Integration and Interoperability Study (JIAMD II Study) (2007)*
  - *Determined appropriate and minimum essential sea-based JIAMD capabilities, integrated with other Services and our partners, including specific investments in interoperability, required over next 10-20 years*
  - *IMPACT: Provided outside source reinforcement of Navy analysis results and specific ideas and recommendations on JIAMD way ahead*



- *The Future of the Navy in Joint Integrated Air and Missile Defense Study (JIAMD I Study) (2005)*
  - *Focused on vision and CONOPS for future of Navy in JIAMD with specific recommendations made for platforms/systems/sensors and related FORCEnet and JBMC2 capabilities*
  - *IMPACT: Influenced increased level of Navy interest in missile defense; raised awareness and interest in key issues related to Joint interoperability between and among C2/Battle Management capabilities in JBMC2 and C2BMC; many recommendations have since been implemented --- coined term "JIAMD"*



Why "No-Cost" Studies?
--- No Great Effort Was Ever Bought



■ *Gordon R. Dickson*

I passed. For in those years the power of my understanding had come full upon me, in such measure that it now seemed by contrast to have been a weak, newborn and latent thing, even up through the moment in which I shook hands and said farewell to Eldest Bright, three years before.

I had dreamed my primitive dream of a revenge, sword in hand, going to a meeting in the rain. Then for the first time, I had felt the pull of it, but the reality I felt now was far stronger, stronger than meat or drink or love—or life itself.

They are fools that think that wealth or women or strong drink or even drugs can buy the most in effort out of the soul of a man. These things offer pale pleasures compared to that which is greatest of them all, that task which demands from him more than his utmost strength, that absorbs him, bone and sinew and brain and hope and fear and dreams—and still calls for more.

They are fools who think otherwise. No great effort was ever bought. No painting, no music, no poem, no cathedral in stone, no church, no state was ever raised into being for payment of any kind. No Parthenon, no Thermopylae was ever built or fought for pay or glory; no Bukhara sacked, or China ground beneath Mongol heel, for loot or power alone. The payment for the doing of these things was itself the doing of them.

To wield oneself—to use oneself as a tool in one's own hand—and so to make or break that which no one else can build or ruin—*that* is the greatest pleasure known to man! To one who has felt the chisel in his hand and set free the angel prisoned in the marble block, or to one who has felt the sword in

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* "Why we do NDIA studies..."

SOLDIER, ASK NOT ■

hand and set homeless the soul that a moment before lived in the body of his mortal enemy—to these both come alike the taste of that rare food spread only for demons or for gods.

As it had come to me, these two and more than two years past.

I had dreamed of holding the lightning in my hand over the sixteen worlds and bending them all to my will. Now, I held that lightning, in sober fact, and read it. My abilities had hardened in me; and I *knew* now what failure of a wheat harvest on Freiland must mean in the long run to those who needed but could not pay for professional education on Cassida. I saw the movements of those like William of Ceta, Project Blaine of Venus, and Sayona the Bond, of both Exotic Worlds—all of whom bent and altered the shape of things happening between the stars—and I read their results-to-be clearly. And with this knowledge I moved to where the news would be, and wrote it even as it was only beginning to happen, until my fellow Guild members began to think me half-devil or half-seer.

But I cared nothing for their thoughts. I cared only for the secret taste of my waiting revenge, the feel of the hidden sword in my grasp—the tool of my *Destruct!*

For now I had no doubts left. I did not love him for it, but Mathias had seen me clearly—and from his grave, I worked the will of his anti-faith, but with a power he could never have imagined.

Now, however, I was at Piers Leaf's office. He was standing in the door of it, waiting for me, for from below they would have warned him I was on my way up. He took my hand in a handshake and held it to

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... & why they never could be "contracted out."
Mar 2011 / Snw

Final Report
Executive Version

The Navy Path to Greater Roles in Global Integrated Air and Missile Defense (Global IAMD) Study

Stephen R. Woodall, Ph.D.
Director, Global IAMD Study

Study Hosts:
VADM John T. Blake, USN (OPNAV (N8)) and
VADM Richard W. Hunt, USN (Commander, THIRD Fleet)

National Defense Industrial Association (NDIA),
Strike, Land Attack, and Air Defense (SLAAD) Division

19 January 2010

Global IAMD Study Report Elements

- **Introduction**
  - *Objective, Global IAMD Defined, Navy Hosts and POCs, Participants*
  - *Process & Plan*
  - *Highest Priority Recommendations*

- **Findings and Recommendations:**
  - *Navy Roles, Missions, and Force Structure Alternatives for Global IAMD*
    - *Coalition Opportunities and Considerations*
  - *Command and Control & Battle Management Capabilities for Global IAMD*
  - *Acquisition Path to Global IAMD*

- **Summary**
  - *Key Observations and Recommendations*

- **List of Appendices to the Final Report**

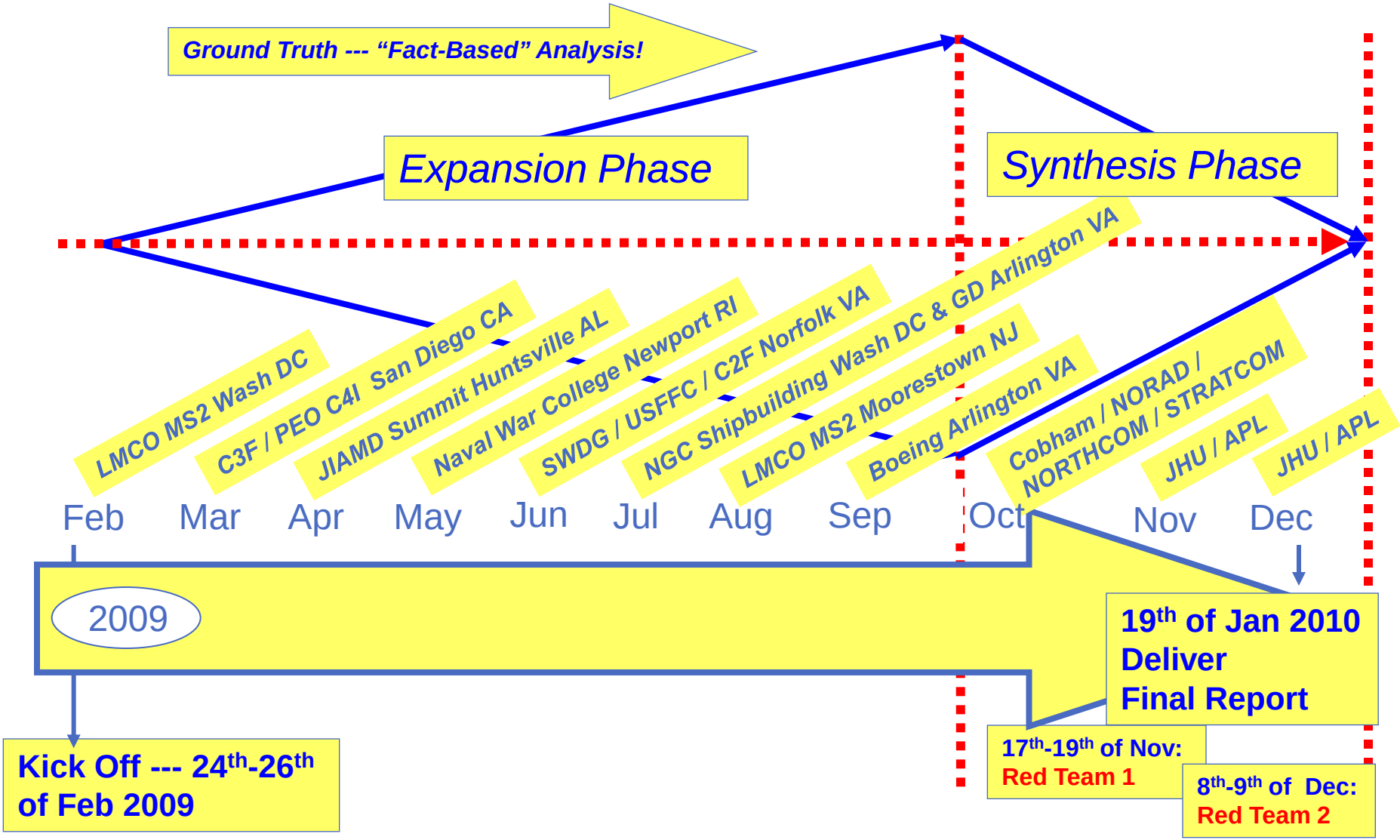
Study Objective
From the Terms of Reference (TOR)

Conduct Industry study, teamed with key Government stakeholders, addressing the path the Navy might take toward assuming greater roles in Global Integrated Air and Missile Defense (Global IAMD)

Global IAMD --- Defined

- **Global Integrated Air and Missile Defense (Global IAMD) is integration of these elements into a unified system of systems:**
  - *Force Structure, providing capability for*
    - *Homeland Defense against all current and emerging air, cruise missile, and ballistic missile threats*
    - *Joint Integrated Air and Missile Defense (Joint IAMD)*
    - *Traditional Maritime Integrated Air and Missile Defense (Maritime IAMD) of battle forces, expeditionary forces, including sea bases, and all defended assets ashore*
  - *Interoperable, integrated Joint and Maritime Command and Control and Battle Management capabilities, maritime sensors, and weapon systems*
  - *Interoperability and integration with Allies and Coalition Partners*

Process and Plan --- How and Where We Worked



Credits --- Global IAMD Study Participating Organizations

- ***Industry (@ 75 in Study Group)***
  - *Aleut Technologies*
  - *BCI*
  - *Boeing*
  - *CACI*
  - *CSC*
  - *Cobham Analytic Solutions*
  - *Curtiss Wright Controls*
  - *DLB Consulting*
  - *General Dynamics*
  - *ISSAC Corporation*
  - *JDW Associates*
  - *Lockheed Martin*
  - *Northrop Grumman*
  - *PeopleTec*
  - *QinetiQ North America*
  - *Raytheon*
  - *Solipsys*
  - *Strategic Insight*
  - *Strategic Synthesis*
  - *Teledyne CollaborX*
- **FFRDC / UARC (6 in Study Group)**
  - *JHU Applied Physics Laboratory*
  - *MIT Lincoln Laboratory*
  - *MITRE*
- **SME Briefers (137 to Study Group)**
  - *85 from the Government*
  - *44 from Industry*
  - *8 from FFRDCs*
- ***Government (@ 45 in Study Group)***
  - *ARSTRAT / BMDSM*
  - *ASN (RD&A)*
  - *CDSA Dam Neck*
  - *DASN (Ships)*
  - *FACT Program*
  - *JPEO JTRS*
  - *JPEO SIAP*
  - *MDA / Aegis BMD*
  - *MDA / DE*
  - *Maritime Missile Defense Forum (MMDF)*
  - *Navy Air & Missile Defense Command (NAMDC)*
  - *Naval War College / Halsey Group*
  - *NAVSEA 05*
  - *NAVNETWARCOM*
  - *Navy IO Command (NIOC)*
  - *Navy Computer Defense Operations Command*
  - *NORAD / USNORTHCOM*
  - *NSWC Dahlgren Division / NSWC Dam Neck*
  - *OPNAV N8 / N86 / N6*
  - *OSD (AT&L)*
  - *PEO C4I*
  - *PEO IWS7*
  - *PMW 150/160/170/750/760/790*
  - *SECOND Fleet*
  - *SMDC / JADO-H*
  - *STRATCOM (JFCC-IMD) / MDIOC*
  - *THIRD Fleet*
  - *USFFC*

Credits --- Global IAMD Study Navy Hosts and POCs

- **Global IAMD OPNAV Study Hosts and POCs**
  - *VADM Bernard J. 'Barry' McCullough III, USN / VADM John T. Blake, USN (OPNAV N8)*
    - *Key OPNAV Points of Contact:*
      - *RADM Victor Guillory, USN / RADM Frank Pandolfe, USN (N86)*
      - *RDML Michael Mahon, USN (ret) / RDML (sel) Ann Phillips, USN (N86B)*
      - *RDML Randy Hendrickson, USN / CAPT Mark Sedlacek, USN (N865)*
      - *LCDR Justin Orlich, USN (N865 / NIFC-CA POC)*
      - *CAPT Terry Mosher, USN (N866)*

- **Global IAMD Fleet Hosts and Other Operational POCs**
  - *VADM Samuel L. Locklear III, USN / VADM Richard W. Hunt, USN (Commander THIRD Fleet)*
    - *CAPT Steve 'Bones' Kelly, USN (THIRD Fleet, Code N8/N9)*
  - *Other Key Operational Points of Contact include:*
    - *CAPT Michael Viland, USN (ret) / CAPT Alan Abramson, USN (JFCC-IMD / Deputy J5/J8 STRATCOM)*
    - *CAPT Brian Hinkley, USN (Director, Fleet EW Center, NAVNETWARCOM)*
    - *LCDR James Kenny, USN (USFFC N803D / Missile Defense Officer)*
    - *Mr. Tom Forbes (Science Advisor to Commander, SECOND Fleet)*

Navy Roles, Missions, and Force Structure Alternatives for Global IAMD

Roles & Missions Findings

- ***Demand signals from COCOMS for regional BMD and force protection mission capability increasing --- force structure "in being" under pressure***
  - ***Assured Access increasingly challenged***
- ***President, SECDEF, and policy makers have declared BMD as a critical capability for the defense of Europe***
- ***Importance of integrating air and missile defense capabilities in every capable platform --- need to maintain and improve force protection capability***
  - ***Emphasizes value of making what we have better***
  - ***Emphasizes value of collaboration, integration, and interoperability with Allies and Coalition partners with Maritime and Global IAMD potential***

Given the Administration's recent policy revisions for conduct of BMD from the sea, the Navy has a significant opportunity and responsibility for increasing capability and capacity for conduct of Global IAMD

Force Structure Recommendations (1)

- **Increase Aegis BMD capacity**
  - *Accelerate IAMD conversions of Aegis warships, and increased acquisition of additional, advanced IAMD-capable ships*
  - *Accelerate development of and field Naval Terminal BM Defense Interceptor*
  - *Accelerate and increase production of SM-3 & other interceptor missiles*

Marine Corps General James Cartwright (right), vice chairman of the Joint Chiefs of Staff, speaks during a joint news briefing with Secretary of Defense Robert Gates at the Pentagon in Washington on Thursday. YURI GRIPAS / REUTERS

A sea-based defense offers more flexibility against changing threats, including from Iran, Pentagon officials say (17 Sept 2009)

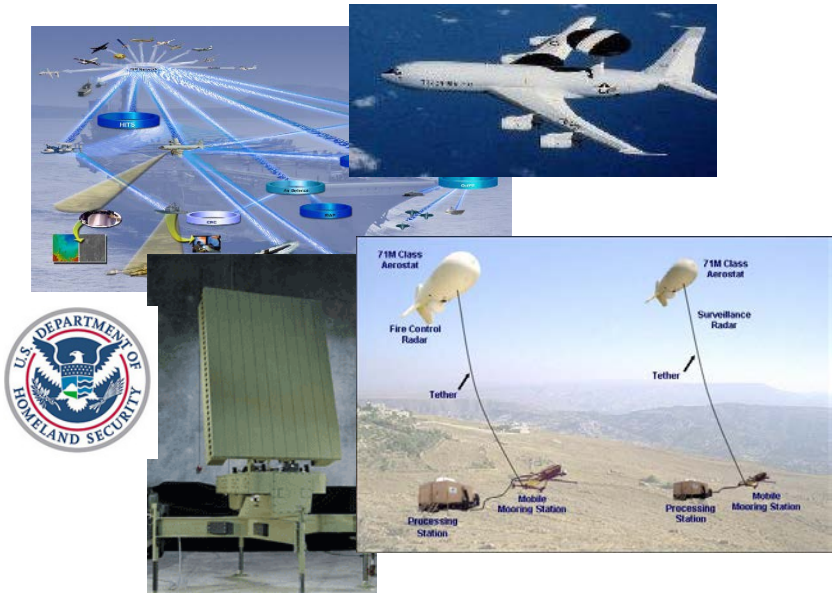
Phased, Adaptive Approach Missile Defense in Europe

Phase	IOC	Capabilities
I	2011	Aegis Ships with SM-3 Blk IA, THAAD, and Patriot using cue from sensor network (TPY-2, etc)
II	2015	Sea & Shore Aegis Systems with SM-3 Blk IB, THAAD, and Patriot using fire control quality data from sensor network
III	2018	Sea & Shore Aegis Systems with SM-3 Blk IIA, THAAD, and Patriot using fire control quality data from sensor network
IV	2020	Shore Based Aegis Systems with SM-3 Blk IIB, THAAD, and Patriot using fire control quality data from sensor network

- **Extend the regional capability which will be created in Euro BMD into other regions, and then to a true global IAMD capability, in all regions of interest**
  - *Employ international approach which facilitates cost sharing in the of creation of regional BMD and IAMD infrastructure*

Force Structure Recommendations (2)

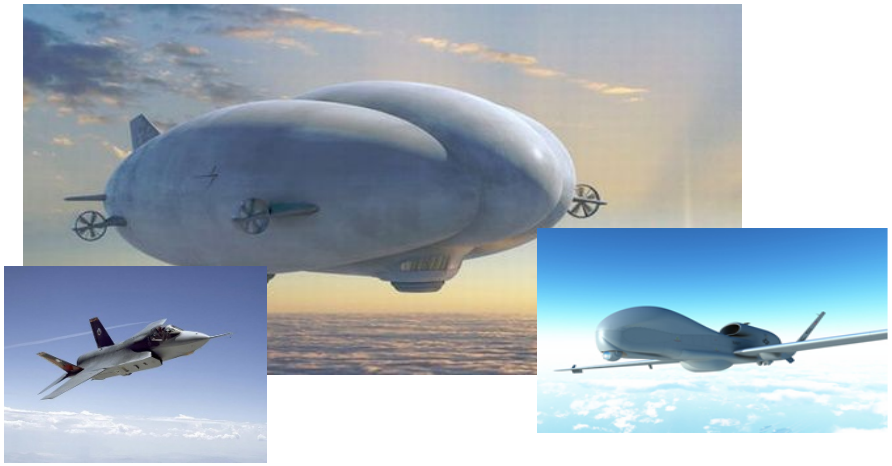
- **Examine capabilities of Standard family of missiles to perform more broadly as interceptors in anti-ICBM role**
  - *Building on innate capabilities demonstrated in current operations and test flights with "engage on remote"*

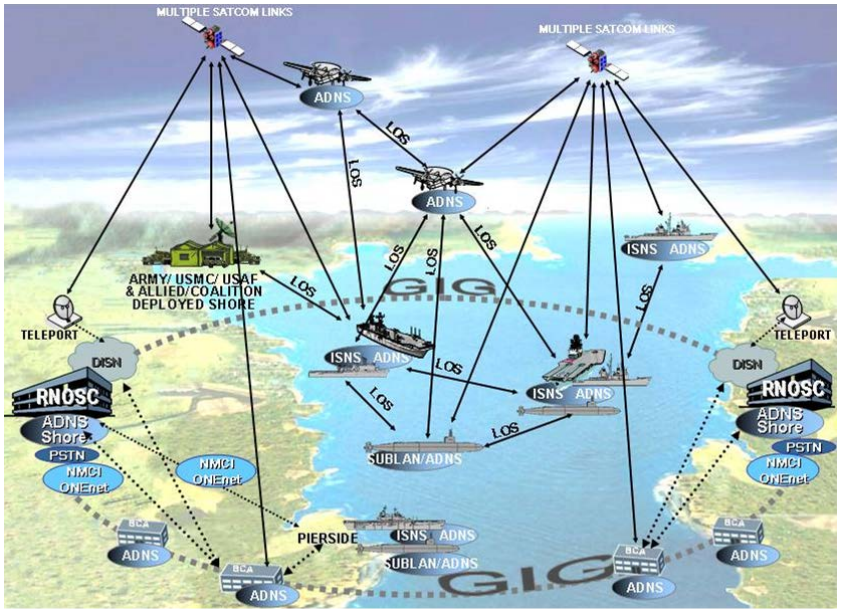


- **Increase integration with IAMD capabilities of other Services as well as Defense and Government Agencies**
  - *US Marine Corps, Air Force, US Army*
  - *Homeland Security Operations Centers*
    - *Including FBI, USCG, CIA, CBP, US Secret Service, DIA, NSA, …*

Force Structure Recommendations (3)

- ***Networks as Warfighting Structure***
  - ***SIAP cancelled, CEC is node-limited, CEC is air-defense only, Army using CEC in JLENS with demise of SIAP***
- ***Investigate:***
  - ***CEC node expansion techniques***
  - ***Expanding CEC to BMD, and CEC technology to NIFC-CA and future Global IAMD "Netted Sensor Grid"***
  - ***Path from CEC to CEC-TCN integration, to expand Joint force-wide composite track capability, toward achieving Joint IFC***
  - ***Critical bottleneck --- network teleports***

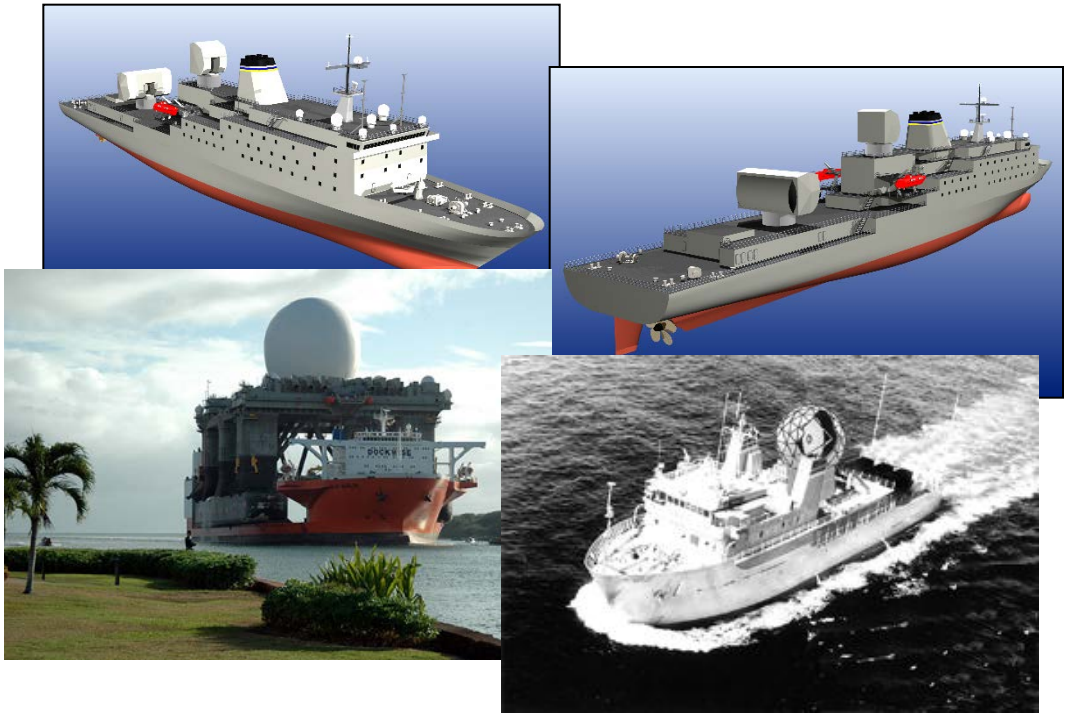


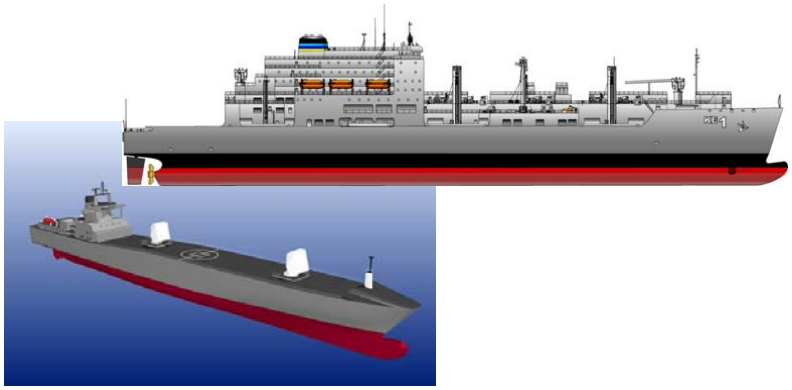


- **Examine value of elevated sensors, to add depth of broad, long-dwell-time, persistent coverage to NIFC-CA over-sea and over-land capability**
  - *Borrow from the Army JLENS development, and other NIFC-CA technological and operational advances*
  - *Examine roles for hybrid airships / UAS's / Fighters as sensors in the "Netted Sensor Grid" and NIFC-CA*
  - *Secondary, but critical, role --- communications & data link relay node*

Force Structure Recommendations (4)

- ***Develop disaggregated, netted maritime sensors***
  - ***Multiple distributed netted sensors could significantly augment future surface combatant performance, as elements of Netted Sensor Grid supporting Global IAMD and IFC***
  - ***As examples, consider:***
    - ***COBRA JUDY (R)-type ships***
    - ***GRAY STAR / GLOBAL GEMINI TAGOS-hulled surveillance ship***
    - ***SB(X)***
    - ***Relevant Allied / Coalition Partner sensors***





- **Examine disaggregated maritime remote launchers**
  - *Could add depth of capability to strategic defense missions*
  - *Investigate SM3 and TRIDENT variants / candidates*

Force Structure Recommendations (5)

- ***Perform engineering analysis of submarine-launched weapons --- what is technically possible --- as contributors to Global IAMD***
  - ***SSBNs with modified TRIDENT D5 booster for an interceptor payload --- engage on remote***
  - ***SSGNs / SSNs with AAW Missiles --- engage on remote --- engineering challenge, but worth examining***
  - ***Submarine-launched Conventional Ballistic Missiles***
    - ***Offensive Counter Air (OCA)***
    - ***"Silver Bullet" for the President to handle "special" targets ("Prompt Global Strike")***
- ***Consider Submarine-launched satellites for rapid reconstitution of warfighting networks***

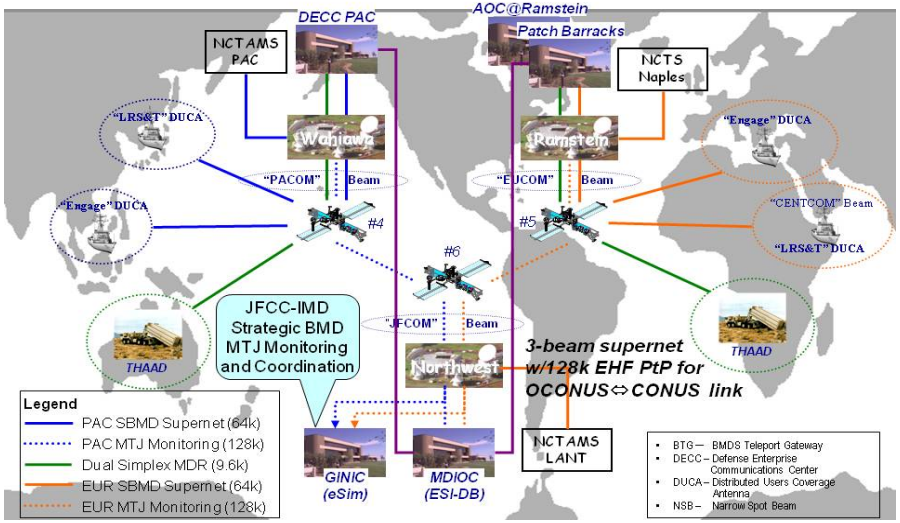
Force Structure Recommendations (6)

- ***Examine capabilities of current and future Fighter aircraft with appropriate missiles as interceptors, integrated into our Global IAMD "distributed aperture" concepts & capabilities***
  - ***Especially as contributors to Global and Fleet IAMD***
  - ***Possible future role for UCAS-D***
    - ***Force defense, boost phase, …***
  - ***Opportunity for USAF-USN cooperation***

- **Examine and accelerate fielding of innovations in force counter-targeting**
  - *Remember "Rubber Ducks," or FEWSG Counter-Targeting Vans?*
  - *Critical element of integration of EW into IAMD*

Strategic Ship-Shore Interface for Global IAMD Findings and Recommendations

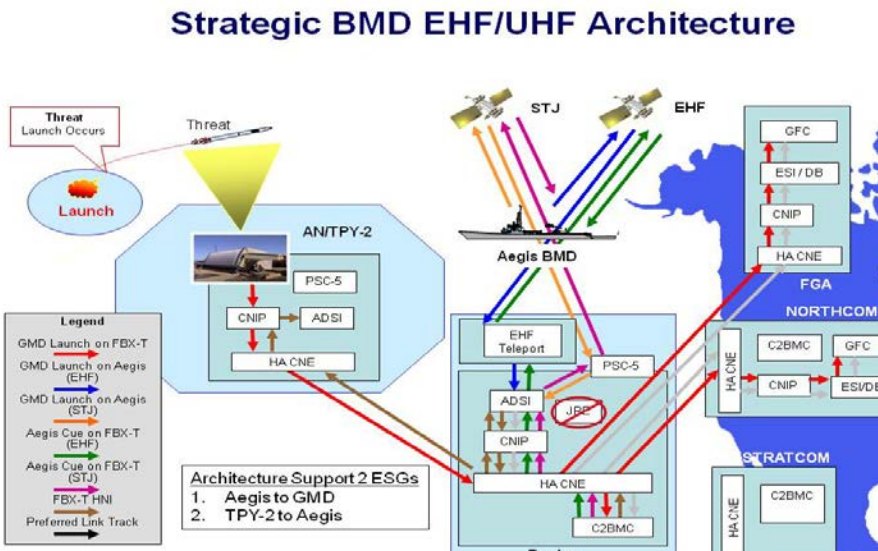
Findings: DoD SATCOM *"Teleport"* at Ramstein facilities offers C2 situational awareness capabilities --- BMDS Teleport Gateway is link between Navy's ADNS WAN and MDA's C2BMC WAN --- *COMTHIRDFLT RMG 091850Z DEC 09 cites requirements for:*



- *TELEPORT Onsite Support (Near/Long)*
- *Teleport Troubleshooting*
- *Crypto Load Procedures (S-TADIL J & EHF)*
- *Link Filtering*
- *Circuit Discipline (Strategic C&W)*
- *LK16 & EHF MTJ Net Loading*
- *ADSI Limitations (COM7THFLT (MOC))*
- *Strategic Security & Integrity (EHF MTJ)*
- *Terminal Base Address Changes*
- *MTJ Re-establishment Procedures*

Recommendations:

- *Develop synergy with NATO-ALTBMD for Europe and Pacific, across JOAs, stressing afloat MOCs*
- *Develop Navy acquisition strategy to address:*
  - *Ship availability for Global IAMD upgrades for 2012, 2014 (2016) and 2018 force (ship) availabilities*
  - *Engage on Remote (EOR) capabilities*
  - *"Essential data demands" for DoD Teleports*



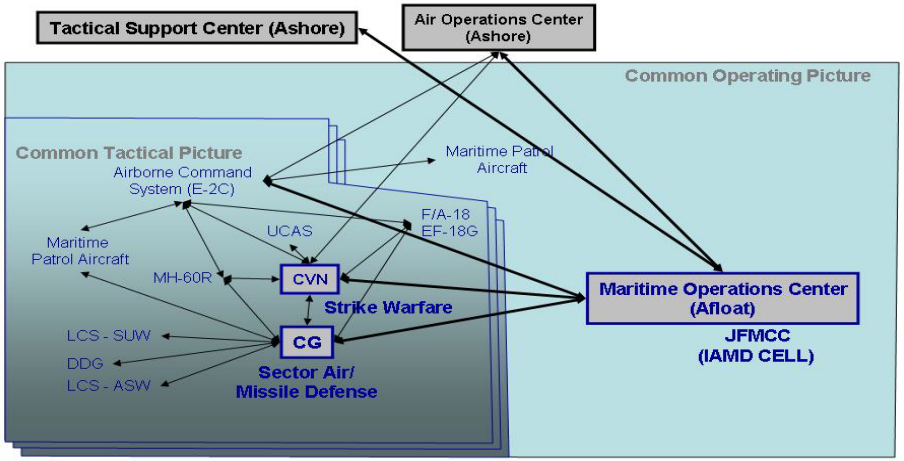
LCC SLEP versus LCC(R) for MOC (Afloat) Findings and Recommendations

National Defense Industrial Association

Findings:

- ***Existing hulls, commissioned in 1970-71, peaked in capacity (hull, plant, ops/plans spaces, topside)***
- ***Roles and missions of MOC (MHQ) to support Operational levels of War / C^2 and Tactical Battle Management for IAMD of supported maritime forces evolving --- MOC Afloat critical to Fleet Commanders***

Notional Air/Missile and Strike C2 Architecture



Recommendation

- ***Examine long-term relevance and value gained in extending life of LCC 19/20 Class Command Ships as cost effective alternative to investments in new replacement command ships w/MOC-Afloat***
- ***Examine feasibility of building a modern operational level platform capable of accommodating emerging war-fighting requirements --- including full-up MOC capabilities with sensors /launchers, providing a balanced "force-wholeness" Global IAMD Maritime Domain***

NDIA
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QUESTIONS?

BACKUP

More Selected SLAAD Division Studies

- *Integration, Control, and Deconfliction of Joint Fires, Phase 2, Volume 1: Architecture and Technology, and Volume 2: Definition of Key Terms on Joint Fires (2003)*
  - *Addressed the issues, provided recommendations*
  - *IMPACT: At both Navy and Joint levels, influenced and energized the discussion of the need for and the importance of "dynamic deconfliction" of the battlespace in complex Naval and Joint operations; supported initial Joint efforts in the a number of Joint Fires ACTD events carried out by JFCOM J9; influenced efforts toward creating of Automated Battle Management Aids (ABMAs), such as recent Distributed Weapons Coordination (DWC) research*
- *FORCEnet, The Naval Component of the GIG --- Enabling The Joint Warfighter Through Network Centric Warfare (2002)*
  - *Concentrated on the minimum essential infrastructure necessary to create a FORCEnet capability, including a Single Integrated Picture (SIP) capability, taking a systems engineering approach, with a focus on both Naval and Joint Warfighters*
  - *IMPACT: Significantly influenced initial SPAWAR approach to the systems engineering of FORCEnet, as well as NETWARCOM approach; recently, all the main recommendations of the study have been revisited and addressed by DASN(IWS); many of the original recommendations of this study have been implemented by the Navy*
- *Roadmap to the Single Integrated Picture (SIP) (2001)*
  - *Provides a systems engineering construct toward the creation of a Single Integrated Picture for the Warfighter, including the sub-surface, surface, ground, air, space, and cyberspace domains*
  - *IMPACT: Reinforced efforts of DoD to further their Family of Integrated Operational Pictures (FIOP) efforts; influenced early thinking on what was to become FORCEnet, which ideas arose from work of the CNO's Strategic Studies Group (SSG) in 2001-2002*

SLAAD Division Symposia since 2001

- *2014: 5th Annual "State of IAMD" Symposium*
- *2013: 4th Annual "State of IAMD" Symposium*
- *2012: 3rd Annual "State of IAMD" Symposium*
- *2011: 2nd Annual "State of IAMD" Symposium*
- *2010: 1st Annual "State of Integrated Air and Missile Defense (IAMD)" Symposium*
- *2009: Command and Control and Battle Management Implications for Maritime Integrated Air and Missile Defense (MIAMD)*
- *2008: Integration and Interoperability with Allies and International Partners in Enhancing Global Security*
- *2006: The Navy's Role in the 21st Century*
- *2005: The Future of the Navy in Joint Integrated Air and Missile Defense (JIAMD)*
- *2004: Naval Network Warfare Command, Operational Agent for FORCEnet --- Netting the Force for Transformational Capability*
- *2003: Naval Aviation in Strike Warfare*
- *2002: FORCEnet --- the Naval Component of the GIG --- Enabling the Warfighter through Network Centric Warfare*
- *2001: Roadmap to the Single Integrated Picture (SIP)*

2015 SLAAD Division Symposium Planning

- *2015 Symposium*
  - *Maritime implications of Integrated Air and Missile Defense (IAMD)*
  - *Our sixth joint NDIA SLAAD and Missile Defense Division symposium --- planned for Thursday, the 25th of June 2015 at JHU/APL*
  - *Continuation of a valuable, new venue in NDIA for an annual symposium focusing on the latest status of maritime programs and technologies concerned with Integrated Air and Missile Defense (IAMD)*
- *Provides a complementary setting to existing MDA-sponsored and other symposia focusing solely on Ballistic Missile Defense*
- *Our "State of IAMD" Symposium vision, continues:*
  - *Has become a popular, anticipated annual event*
  - *Local Venue: Kossiakoff Conference Center, Johns Hopkins University Applied Physics Laboratory, Laurel, MD*
  - *Classification level remains SECRET*
  - *Continue as venue with no press / media --- all speakers can speak freely, at the SECRET level*
  - *All briefings and discussions continue to be "not for attribution"*