Naval Surface and Mine Warfighting Development Center (SMWDC)

West 2018

THE OVERALL CLASSIFICATION OF THIS BRIEF IS:
UNCLASSIFIED

$$R = f\,(W, T, P)^{*}$$

R= Warfighting Readiness
W= Weapon & Sensor Capability
T= TTP Effectiveness
P= People (Training Effectiveness)
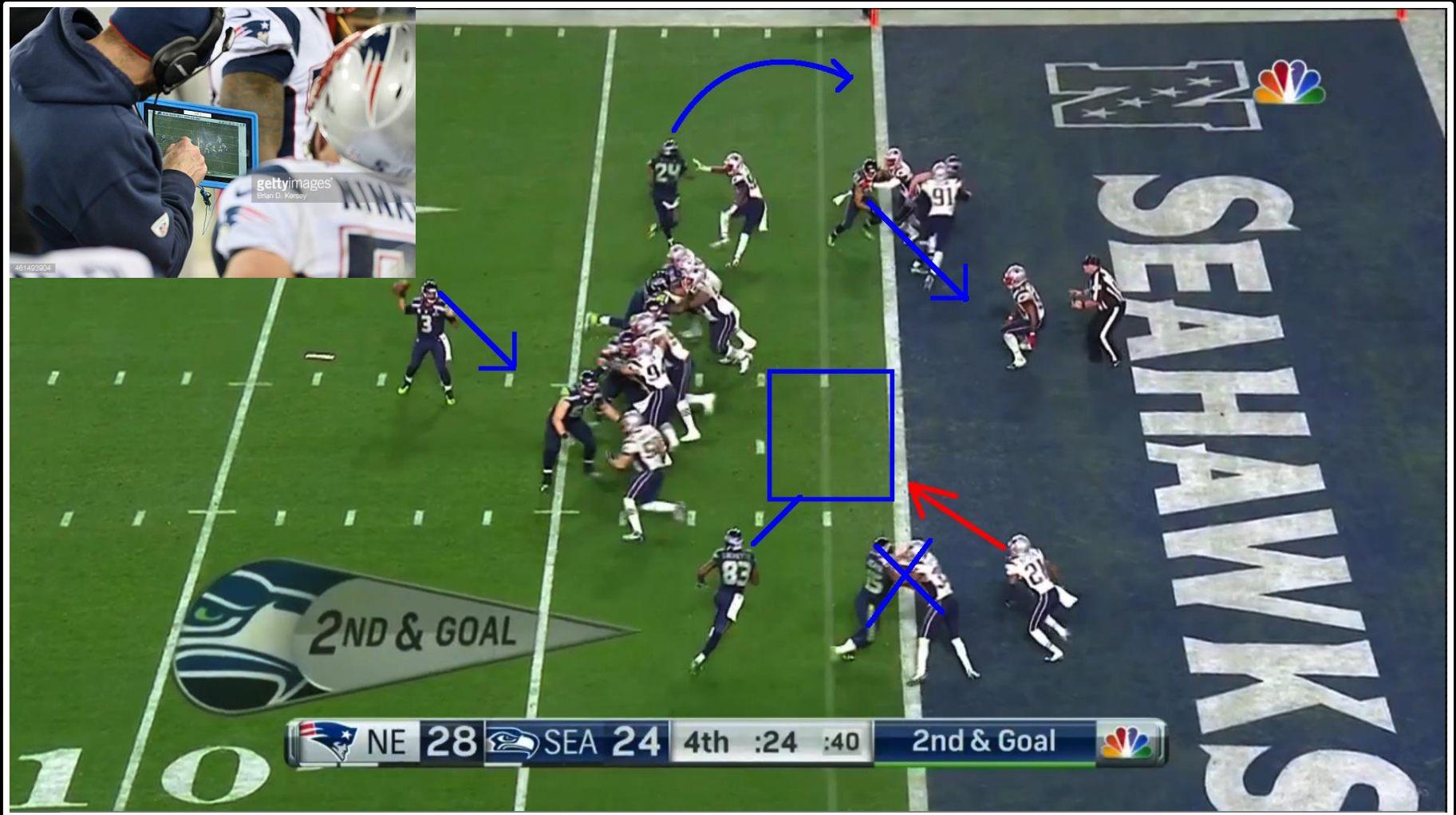
*General Paul Gorman, USA (Ret)

TRUTH   DATA   LEARNING

Plan Brief Execute Debrief (PBED) Impacts

➢ **Prior to SWATT, no disciplined Surface Warfare PBED Process:**
  - **Formalized tactical planning and debriefing were non-standard**

➢ **Shifting focus to tactical mission planning and event debriefing**
  - **Mentoring Unit, SAG, and Warfare Commanders**
  - **Adds rigorous process to event planning**
  - **Integrate replay tools and post-event analysis**
    - **Work with Range Ops Centers, Corona (SIMDIS), and NUWC (Vista-4)**

➢ **What we have learned:**
  - **Debriefs increase SA and lead to improved performance**
  - **Robust debrief replay identify performance deficiencies**
  - **Align the PBED process across the continuum**

PBED Execution Increases Tactical Proficiency

MSLEX / Live Fire With a Purpose (LFWAP)

- ➢ **LFWAP restarted in Mar '12:**
  - • **CSG / ARG / SAG / Independent Deployers**
  - • **Move from scripted events to scenarios**

- ➢ **Support to OCE / OTC and Firing Units:**
  - • **Mission Planning**
  - • **TTP, Firing Train, and PBED Training**
  - • **Debrief**
  - • **Data collection to support post firing analysis**

- ➢ **33 firings / 31 ships in '17**

- ➢ **Collaboration with NSWC Corona**
  - • **Data Analysis Working Group (DAWG)**
    $$R = f(W, T, P)$$

- ➢ **What we've learned / done:**
  - • **Material issues feedback to NAVSEA / IWS**
  - • **TTP revision and development**
  - • **Training feedback to TYCOM / ATG / CSCS / SWOS**

USS SAMPSON SM2 launch from both forward and aft launchers during TRSG MSLEX
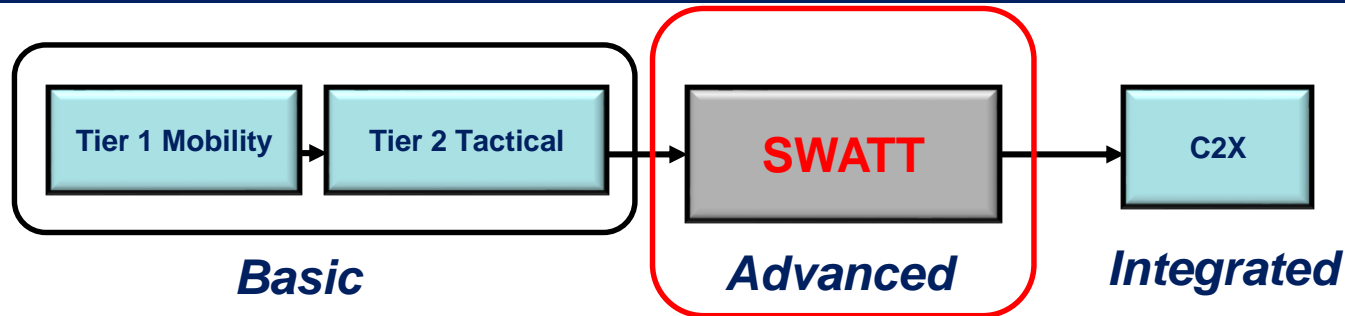
SWATT – Surface Warfare Advanced Tactical Training

Background:

- **Improve tactical proficiency of the Surface Force**
- **Dedicated tactical training…. Unit and Warfare Commander Staff**
- **Iterative development**
  - **Feedback: TYCOM / ATG, CSG 4/15, real world ops**

Impacts:
$$R = f(W, T, P)$$

- **PBED**
- **MSLEX… more realistic & complex**
- **Improvements in AD, ASW, SUW and IW**
- **Improved MIW performance**
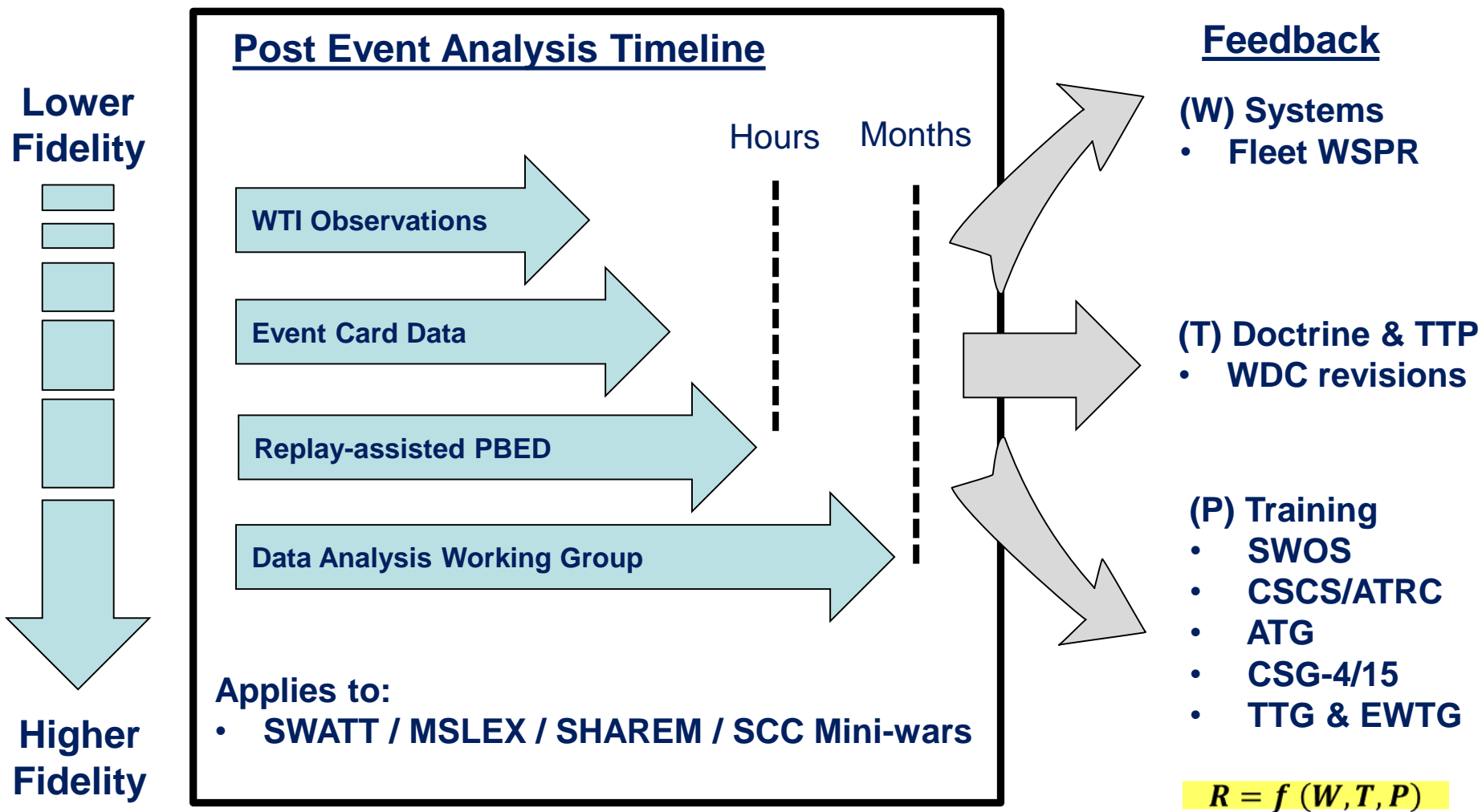- **System, TTP, Training and Human Factors discoveries**

| Tier 1 Mobility | Tier 2 Tactical | SWATT | C2X |

Basic   *Advanced*   *Integrated*

2017

NIMSG	*TRSG*
AMA ARG	*HSTSG*
	CDS-15
	IWO ARG

2018/2019

ESX ARG	BOX ARG	*CDS-15*
JCSSG	ABESG	*CTF-76*
KSG ARG	BAT ARG	

Performance Analysis

Post Event Analysis Timeline

Lower Fidelity

Hours   Months

WTI Observations

Event Card Data

Replay-assisted PBED

Data Analysis Working Group

Higher Fidelity

Applies to:
- **SWATT / MSLEX / SHAREM / SCC Mini-wars**

Feedback

(W) Systems
- **Fleet WSPR**

(T) Doctrine & TTP
- **WDC revisions**

(P) Training
- **SWOS**
- **CSCS/ATRC**
- **ATG**
- **CSG-4/15**
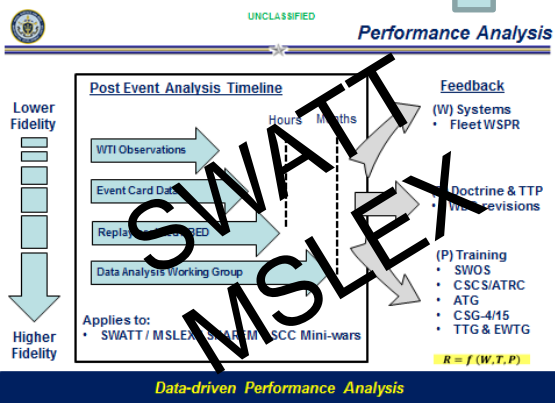- **TTG & EWTG**

$$R = f(W, T, P)$$

Data-driven Performance Analysis

8

Supporting the Needs of the Future

Warfare Assessment

- **AMW WIP**
- **IAMD WIP**
- **MIW WIP**
- **SUW WIP**

- FFC Led Integration & Interoperability (I&I)
- OPNAV N96 Led NCWG – From the Sea
- OPNAV Led NCWG -- From the Air
- Real World Post Event Analysis/ Exercises & Ops

Requirements

- Surface & Expeditionary Warfare Training Committee (SEWTC)

- Fleet Training Wholeness (FTW)

- Input to Program Offices & OPNAV via CNSF, FFC, PACFLT

Experimentation
'Potential Gap Solutions"

BEWARE OF SHARKS
WITH LASER BEAMS ATTACHED
TO THEIR FRICKEN HEADS

UxS/OTH-T

EMW & Future Systems

C-UAS

SWATT MSLEX

Performance Analysis

Post Event Analysis Timeline

Lower Fidelity

WTI Observations

Event Card Data

Replay

Data Analysis Working Group

Applies to:
- SWATT / MSLEX / SCC Mini-wars

Higher Fidelity

Feedback
(W) Systems
- Fleet WSPR

Doctrine & TTP revisions

(P) Training
- SWOS
- CSCS/ATRC
- ATG
- CSG-4/15
- TTG & EWTG

$R = f(W, T, P)$

Data-driven Performance Analysis

Warfare Assessment Support

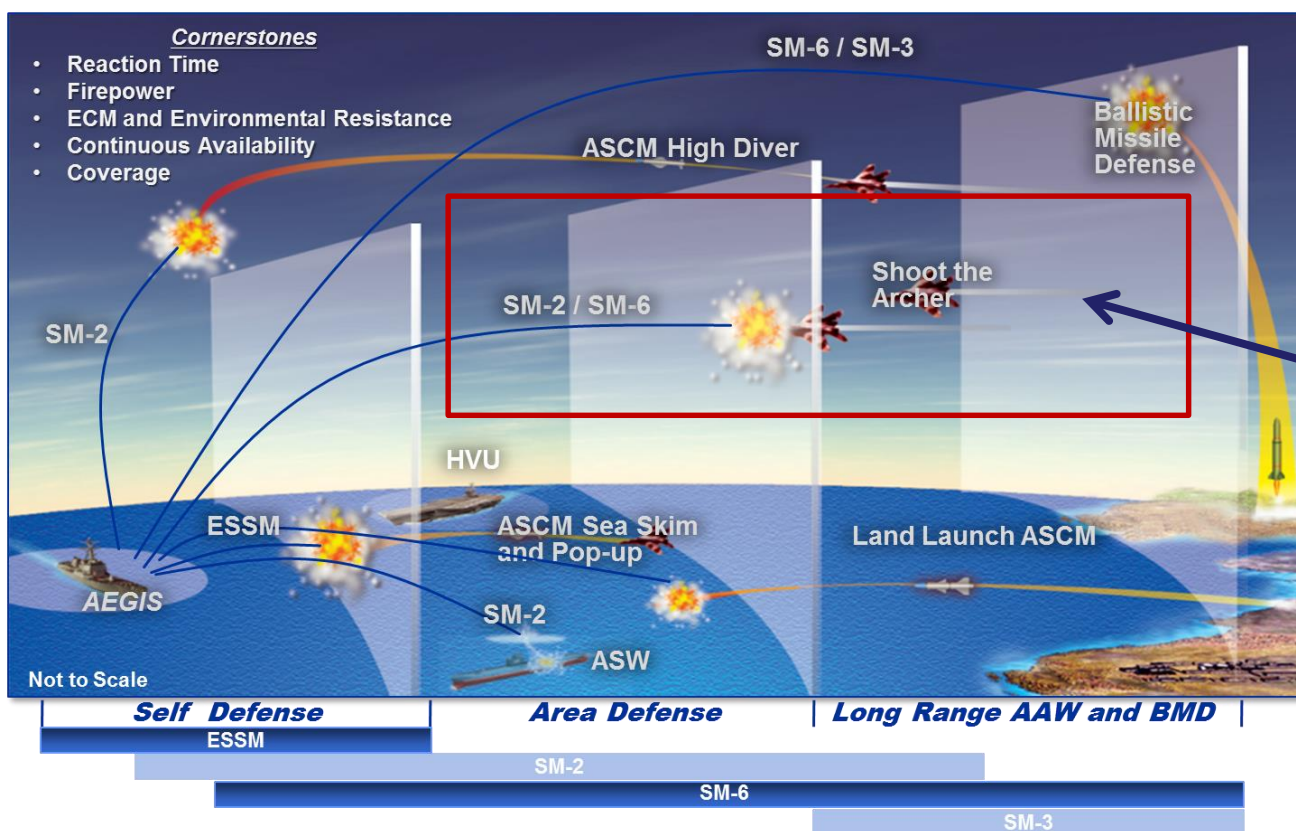## Navy CONEMPS Working Group

- Kill Web focus
- Force on Force
- 8 – 10 Year timeframe

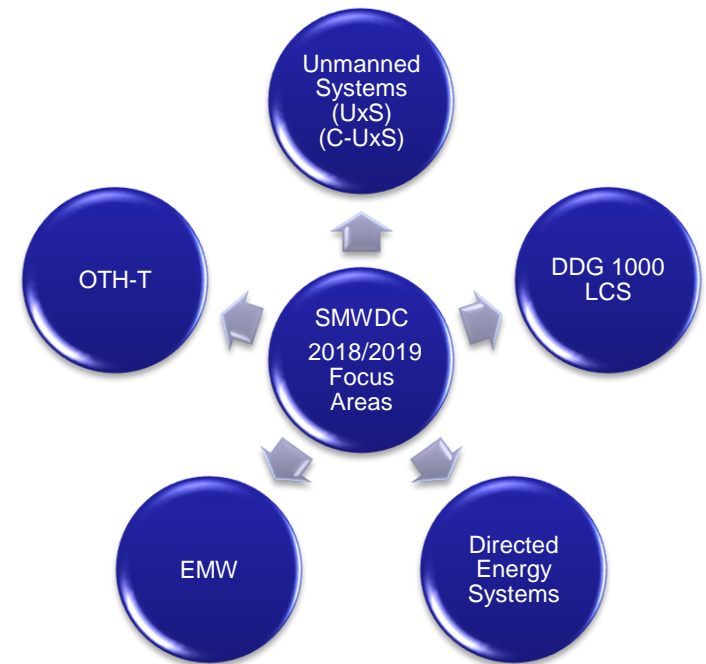## Fleet Exercises

Real World Operations

Cornerstones

- **Reaction Time**
- **Firepower**
- **ECM and Environmental Resistance**
- **Continuous Availability**
- **Coverage**

SM-6 / SM-3

ASCM High Diver

Ballistic Missile Defense

SM-2 / SM-6

Shoot the Archer

SM-2

HVU

ESSM

ASCM Sea Skim and Pop-up

Land Launch ASCM

AEGIS

SM-2

ASW

Not to Scale

Integration & Interoperability

- Kill Chain focus
- Weapon-Target Pairing
- 1 – 3 Year timeframe

Self Defense	Area Defense	Long Range AAW and BMD
ESSM		
	SM-2	
	SM-6	
		SM-3

➢ **Identify and prioritize innovative solutions**

- **Maintain awareness of threat systems**

- **Develop tactics, techniques, and procedures (TTPs), doctrine, and fleet concepts**

- **Conduct experimentation with emerging technologies to:**
  - **Close identified capability gaps**
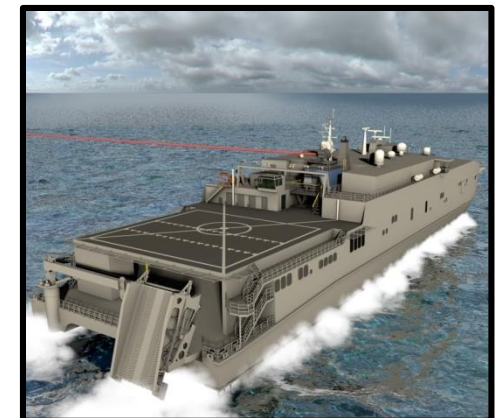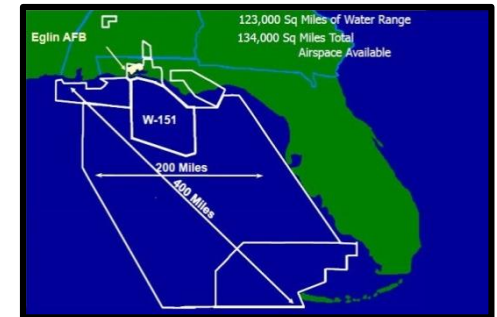 - **Enhance tactical capability**
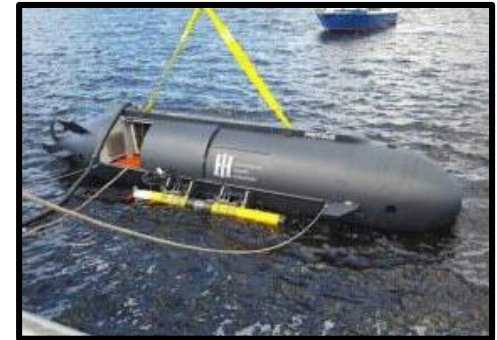 - **Enhance lethality of the Surface Force**

Unmanned Systems (UxS) (C-UxS)

DDG 1000 LCS

OTH-T

SMWDC 2018/2019 Focus Areas

EMW

Directed Energy Systems

2017 Experimentation outside SWATT

➢ **Operation Sea Eagle:**

- **Expeditionary XLUUV testing**

➢ **Black Dart 2017:**

- **Demonstration of C-UAS capabilities**

➢ **Red Nitrum 2017:**

- **Evaluation of AEGIS, SSDS, and E-2 performance in Advanced EA environments**

➢ **Trident Warrior 2017:**

- **Evaluation of Tactical Data Link Risk Reduction Tactics**

➢ **Solid State Laser SIMEX 17-5:**

- **Development of Helios and ODIN**

2017 Experiments during SWATT

Sea Hunter Control from DDG

Experimentation increased awareness on the Medium Displacement Unmanned Surface Vehicle (MDUSV) capabilities and achieved seamless C2 at >70 nm.

Helped focus future experimentation efforts:

- TALON UAV tethered to Sea Hunter
- Integrated Maritime Picture
- Multi-ship controlling event (swap control)

Low Probability of Counter Detection (LPCD)

Experimentation to provide the warfighter with techniques to conduct effective EMW operations within a potential adversaries kill chain

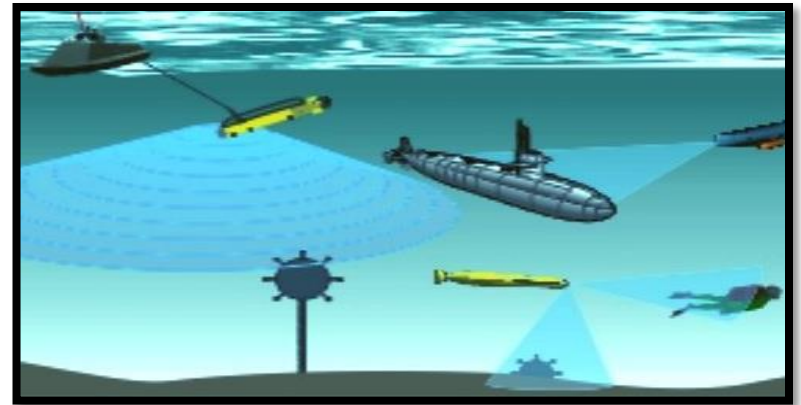Helped focus 2018/19 SWATT follow on LPCD testing

2018/2019 – UxS and C-UxS

Unmanned Mine Neutralization

Experiment will leverage the combination of USVs and ROVs to alleviate requirements to place human operators in danger areas

- End-to-end UxS MCM operations

UAS and UXS

Experimentation to evaluate new UxS systems which help close gaps and validate new variants of MQ-8C Firescout and MQ-4C Triton.

Black Dart Maritime 2018

Experiment will examine near-term C-UAS capabilities in response to urgent operational needs and current events in the maritime environment:

- Validation of C-UAS TTP

LPCD

Experimentation to continue refining capabilities and techniques for radar employment to support EMW operations.

Spectral Tsunami 2018

Testing warfighting capability with emphasis on non-kinetic effects and EMW.

- Forum for operators, program managers and S&T developers to collaborate on EMW imperatives.

Data provided OTH using LOS

Experiment will provide enhanced OTH capabilities and promote use of Group 1 & 2 UAS:

- Establish the foundation for 3+ UAS to conduct "daisy chain" coordinated operations

2018/2019 - Future Capabilities

DDG 1000

Experimentation with Saildrone, Stratollite, and Latitdue will provide BLOS ISR.

- Establish experimentation efforts aboard DDG 1000

Directed Energy Systems

Experimentation will evaluate the use of DES and LAWS and provide the foundation for concept development.