



# Current Arsenal of Air Launched Weapons and Future Capabilities Delivering Carrier Strike

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# The Future Air Wing

44 FA-18A-F/F-35C	5 EA-18G
5 E-2D	4-6 UCLASS
3 Navy V-22	8 / (5+6) MH-60S/R

*Electronic Protection*

*Netted Platforms, Sensors  
Weapons, and C2*

*SEAD, OCA/DCA  
and EA in A2AD  
environment*

*NIFC-CA*

*Low-Observable  
Technology*

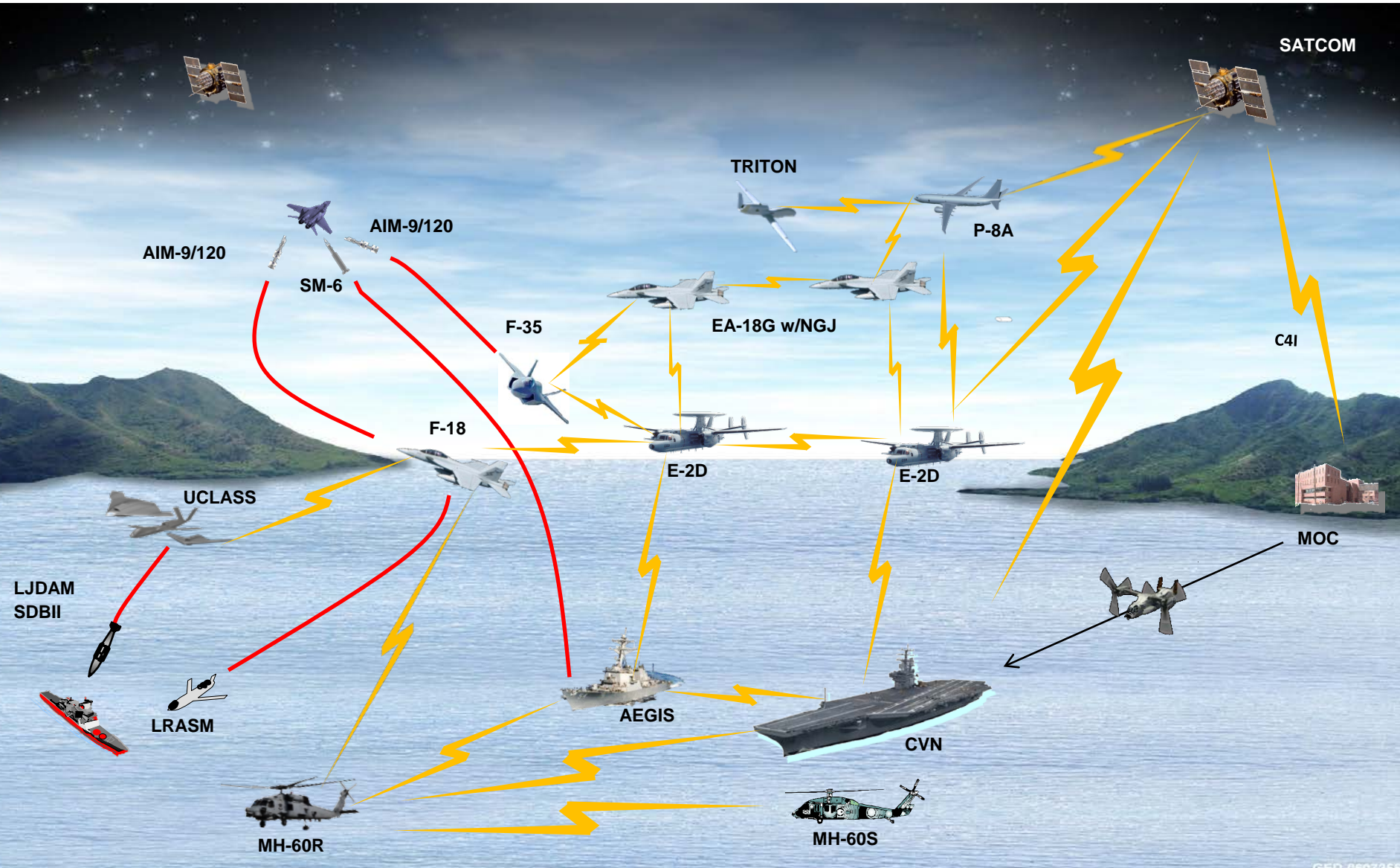
*Next Generation Jammer*

*Unmanned ISR /  
Organic Tanking*

*Find, Fix, Target,  
Track, Engage & Assess*

SEAD – Suppression of Enemy Air Defenses  
OCA – Offensive Counter Air  
DCA – Defensive Counter Air  
EA – Electronic Attack  
A2AD – Anti Access / Area Denial  
C2 – Command and Control  
NIFC-CA - Naval Integrated Fire Control – Counter Air  
ISR – Intelligence, Surveillance and Reconnaissance

# How the Future Air Wing Fights



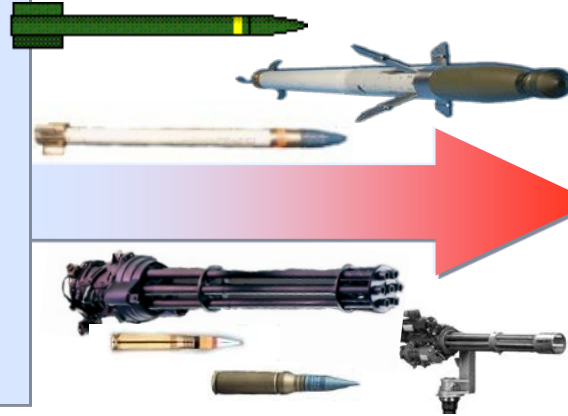
# Direct Attack Weapons Roadmap

## Unguided Rockets

- 2.75" (70mm) Rockets
- 5" (127mm) Rockets

## Machine Gun Ammo

- 20mm
- 25mm
- 50Cal

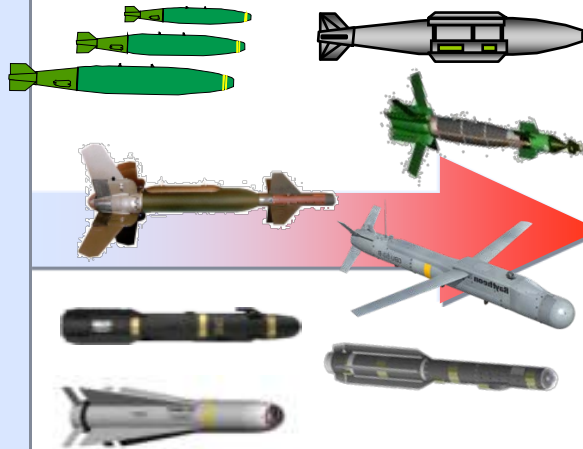


## Guided Rockets

- Advanced Precision Kill Weapon System (APKWS)
  - Semi-active laser guided rocket
  - 2.75" Rocket
  - 10lb warhead
  - Penetrator warhead
- 20mm / 25mm / .50 Cal

## Direct Attack

- Unguided Free Fall Bombs
- Laser Guided Bombs (LGB)
- GPS Guided Bombs - Joint Direct Attack Munition (JDAM)
- Multi-mode Guided Bomb
  - Dual Mode LGB (DMLGB)
  - Laser JDAM (LJDAM)
- Hellfire (Armed Helicopters)
- Maverick
- Guided Bomb Penetrator (GBU-24)



## Direct Attack

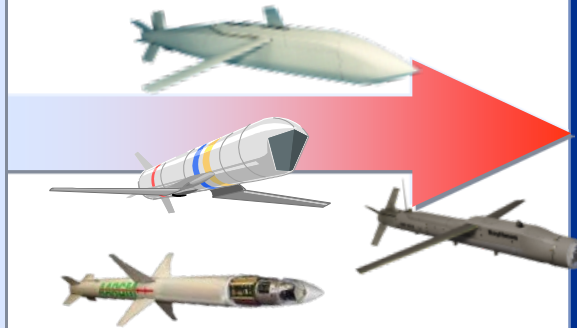
- Direct Attack
- Unguided Free Fall Bombs
- LGB
- JDAM
- Multi Mode Guided Bomb
  - DMLGB
  - LJDAM
- Small Diameter Bomb II (SDB II)
- Joint Air to Ground Missile (JAGM)
- Guided Bomb Penetrator (GBU-56)

**The Future: Integrated Net Enabled, Survivable, Modular, Moving Target Capable, Sustainable**

# Stand-off Weapons Roadmap

## Stand-off Land Attack

- Joint Stand Off Weapon (JSOW)
  - A – Cluster Munition
  - C – Broach Warhead
- Stand-off Land Attack Missile-Expanded Response (SLAM-ER)
- Advanced Anti-Radiation Guided Missile (AARGM)

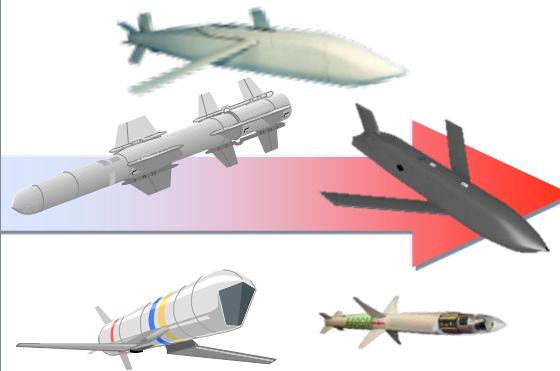


## Stand-off Land Attack

- Small Diameter Bomb II (SDB II)
- JSOW C/C-1
- AARGM Block 1
- AARGM Block 2 (ER)

## Stand-off Anti-Surface Warfare (ASuW)

- Harpoon 1C
- SLAM-ER
- AARGM



## Stand-off ASuW

- Long Range Anti-Ship Missile (LRASM)
- JSOW C-1 – Maritime Targets
- Harpoon Block II+
- AARGM Block 1
- AARGM Block 2 (ER)
- Offensive Anti-Surface Warfare (OASuW) Increment 2

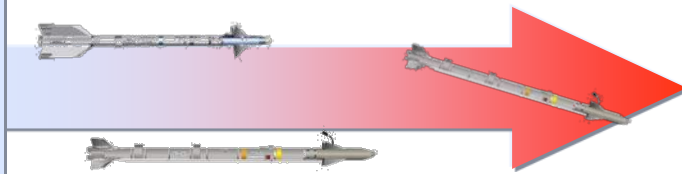
**The Future: Stand-off, Integrated Net Enabled, Survivable, Modular, Moving Target Capable, Sustainable**

# Counter Air/Counter Air Defense Weapons Roadmap

## SHORT RANGE

### Air Intercept Missile (AIM)

- AIM-9M (~2022)
- AIM-9X Block I
- AIM-9X Block II

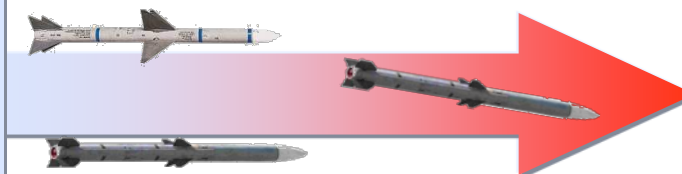


## SHORT RANGE

- AIM-9X Block II (F-35 Integration)

## MEDIUM RANGE

- AIM-7 (~2018)
- AIM-120A/B/C
- AIM-120D

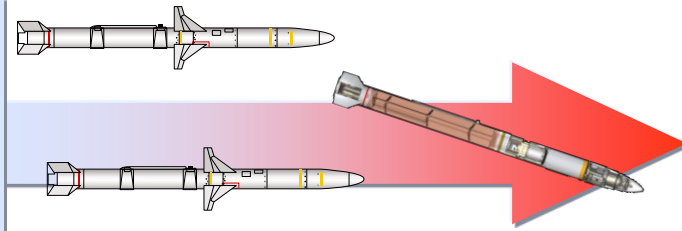


## MEDIUM RANGE

- AIM-120C3/4/5/6/7 Electronic Protection Improvement Program (EPIP)
- AIM-120D Software Improvement Program (SIP)

## Suppression of Enemy Air Defenses (SEAD)

- High Speed Anti-Radiation Missile (HARM) Block 3/5A
- AARGM



## SEAD

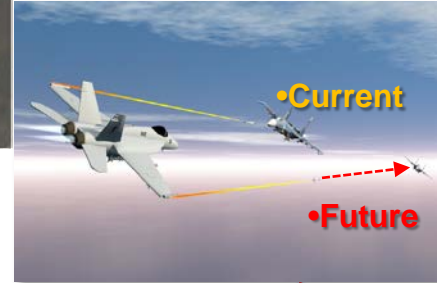
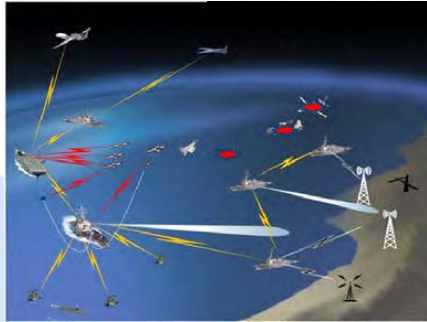
- AARGM Block 1
- AARGM Block 2 (ER)

**The Future: Kinematic Advantage, High Single Shot Lethality, Integrated Net Enabled, Survivable, Modular, Sustainable**

# Science and Technology Efforts

## CURRENT LIMITATIONS

- POST-LAUNCH RE-TARGETING
- RANGE
- SURVIVABILITY
- PLATFORM SPECIFIC INTEGRATION
- MULTI-ROLE / MULTI-MODE WEAPONS
- HARDWARE OBSOLESCENCE



## FUTURE

- INTEGRATED / NET ENABLED
- KINEMATIC ADVANTAGE
- SURVIVABILITY
- HIGH SINGLE SHOT LETHALITY
- INTERNAL CARRIAGE
- AGILITY
- MULTI-ROLE WEAPONS
- AIDED TARGET RECOGNITION
- MODULAR
- READY & SUSTAINABLE



# DISCUSSION

