

Small Arms Point Defense System (SAPDS)

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- **The US Navy commonly fields crew-served weapons from mounted positions**
 - Manned “bent-metal” mounts (Mk93, Mk97)
 - Remote Weapon Stations (RWSs), (Mk49, Mk50)
- **New and growing threats warranted investigating technology which could improve capabilities.**
- **Opportunity space to bridge capability between cost effective manned mounts and RWSs.**



Manned Mounts

- **Pros:**
 - Situational Awareness
 - Cost effective
 - Dismountable
- **Cons**
 - Relies solely on shooter's skills
 - Shooter exposed to elements/weapons fire

RWSs

- **Pros:**
 - Advanced fire control
 - Electro-optic systems
 - Active stabilization
- **Cons:**
 - Costly
 - Permanent install and power
 - Location for operator's station

There is an opportunity for advanced weapon technology to bridge the gap between existing cost effective manned mounts and expensive RWSs.

The principal error in manned, crew-served weapons fire is weapon pointing error induced from multiple sources

Shooter Aim Error

Weapon Burst Recoil



Vessel Motion

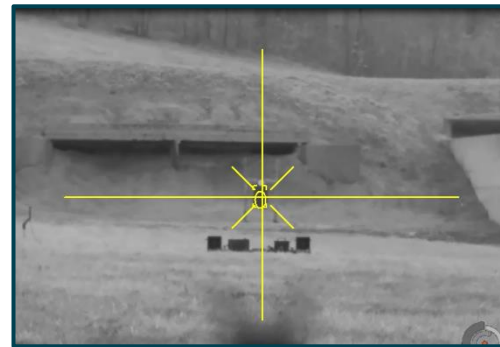
Target Speed and Range (Lead)



- **Other Errors**

- Meteorological conditions
- Wind (crosswind, range wind), Ranging
- Weapon and ammunition dispersion, Zeroing error

- **Fire-on-Coincidence/Trigger Interrupt**
 - Reduces shooter aim error and lead error
 - Demonstrator: SMASH weapon sight (Smart Shooter)

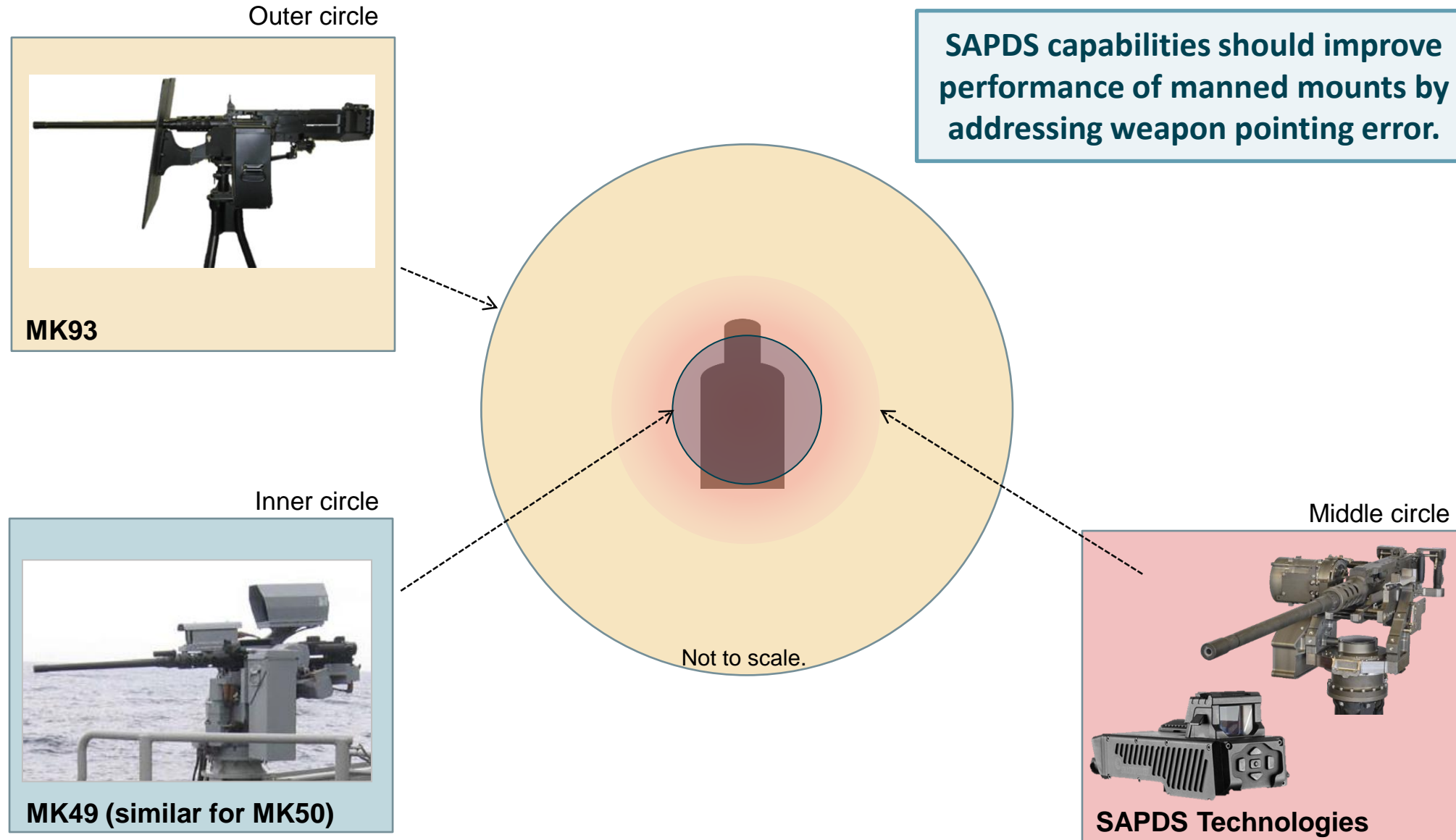


- **Active Stabilization**
 - Compensates for weapon recoil and vessel motion
 - Demonstrator: ASP (Flex Force)
- **Other Technologies**
 - Improved Optics to reduce shooter aim error
 - Target/Bullet Tracking to reduce lead error



*Technologies are for manned crew-served positions

Precision (Dispersion) Effects of SAPDS Tech



- **Conducted live-fire testing of technology demonstrators**
 - Fire on coincidence
 - Active stabilization
 - Combination of capabilities
- **Multiple platform motion levels on the Mobile Motion Platform System**
- **Collected dispersion and qualitative performance data for comparative analysis**
 - Data and conclusions can be made available to US government agencies



- **The SAPDS project is in its final year**
 - Processing data from recent testing
 - Report capability levels that can improve manned, crew-served weapon performance for different threats.
- **Refine and mature technology demonstrators through industry teaming**
- **Feed future weapon system technology research**

Questions?

