Week 1 Lecture Notes

Definition: Weapon System   A weapon system is a collection of components (hardware or software) necessary to support the specific functionality of a weapon (or weapons).

Detect

Detecting is a means to determine if an object is present.

Sensors

- Radar, IR, optics
- Passive listening devices

Network Information

- Data link

Track

Regardless of how an object is detected, the combat system must revisit the object periodically to give the warfighter the best overall description of the area.

Willing Participants

- Is friend or foe (IFF)
- Missle communications

Non-Willing Participants

- Unidentified objects
- Threats
- Low-observable (stealth) objects

Control

Control systems tell the combat system how to fight. - Collects and aggregates available information - Determines appropriate course of action

Observe $\rightarrow$ orient $\rightarrow$ decide $\rightarrow$ act

Definition: Engage   A means to neutralize the object with a specific weapon

Types of Weapon Systems

- Anti-Air Warfare (AAW)
  - Engage airborne threat
- Anti-Surface Warfare (ASuW)
  - Engage threat at water surface
- Anti-Submarine Warfare (ASW)
  - Engage underwater threat

Seekers

Active   Transmit and receive RF

Semi-Active   Friend transmits signal, bounces off target, seeker receives

Passive   Listen only.