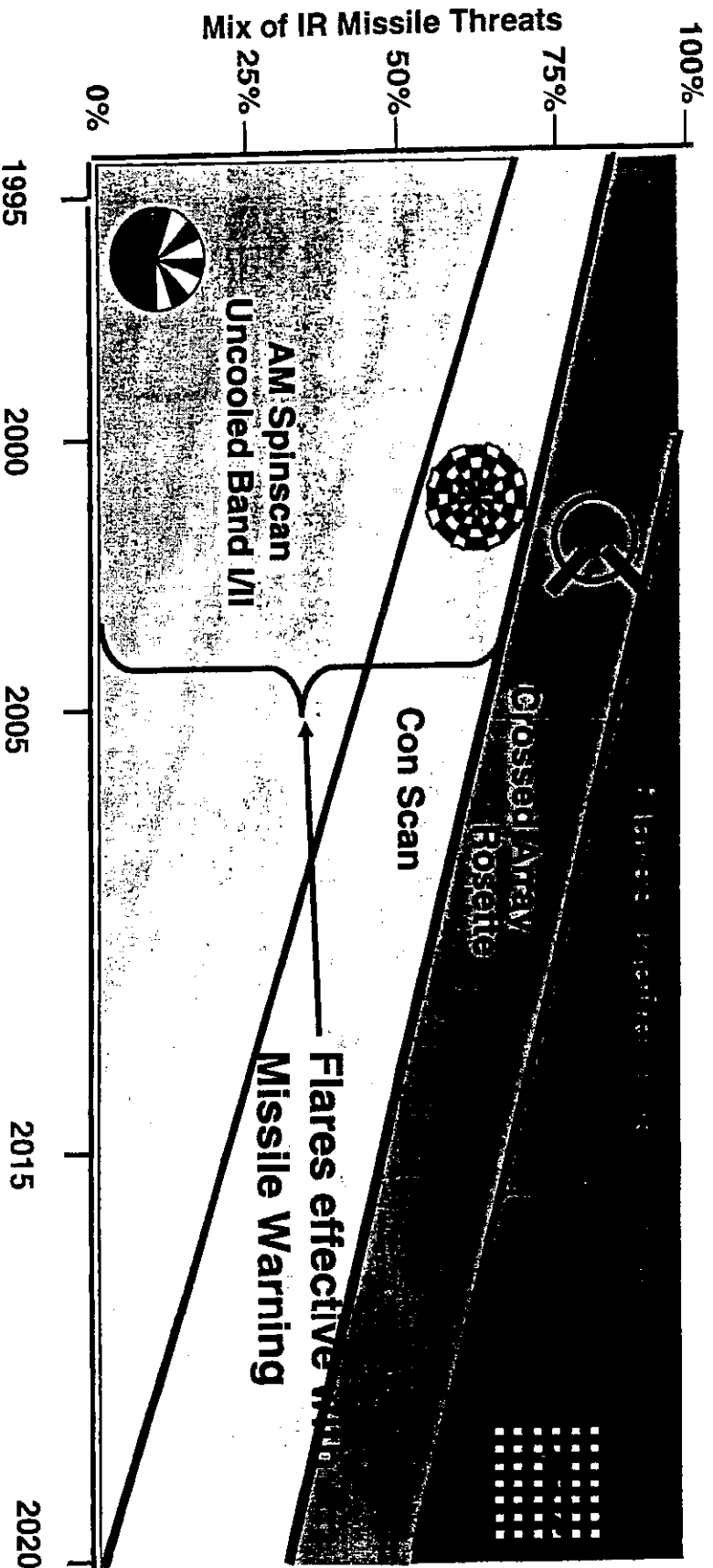




Navy IRCM Requirements Overview



IRCM - An Expanding Capability Gap

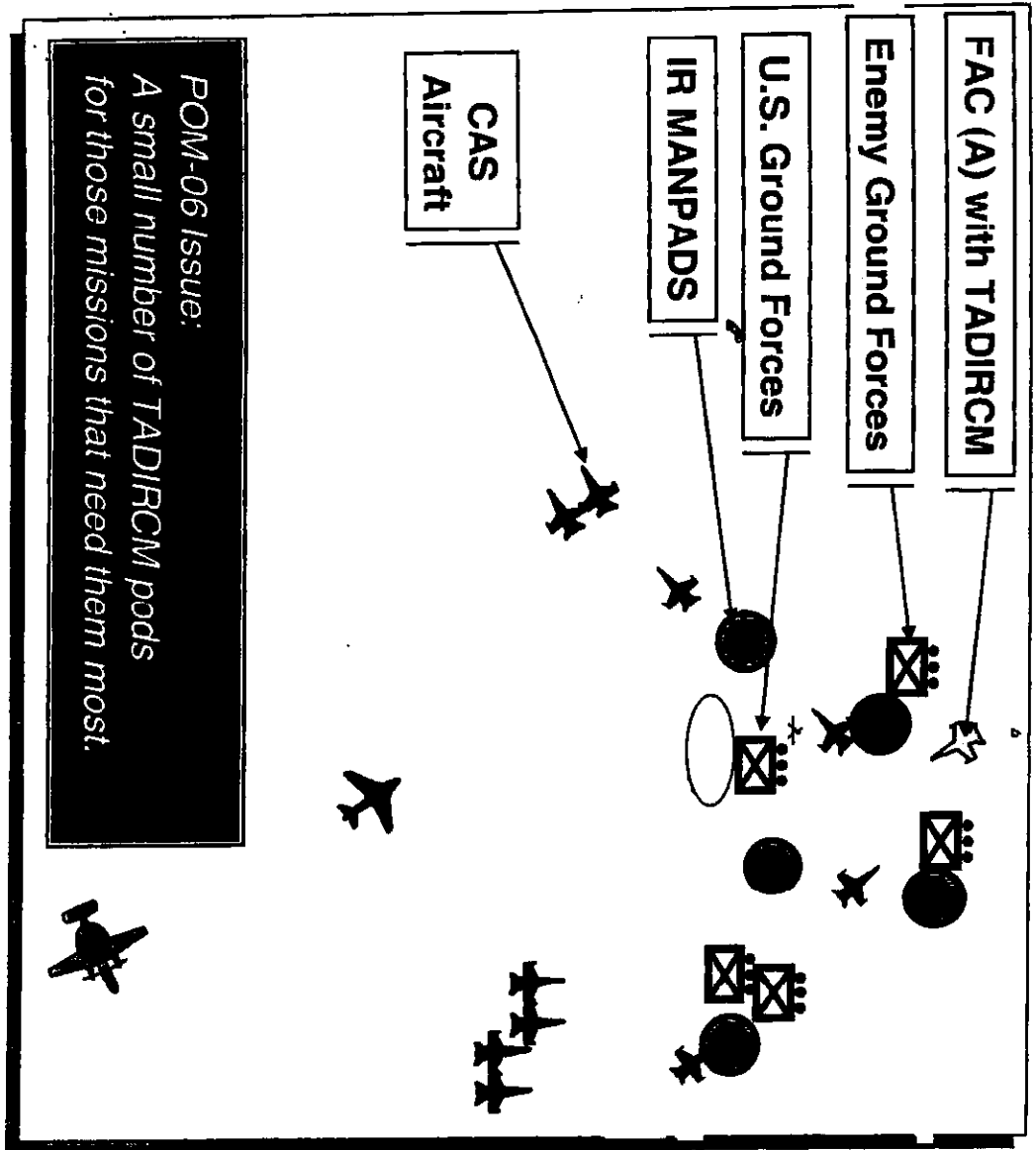


- The percentage of IR missiles in the world with flare rejection technology will increase over time as older missiles are expended and new ones are manufactured.
- Flares are ineffective against imaging seekers
- Directed IRCM (DIRCM) will beat all IR missiles including imagers.

DOD IRCM Solutions

- Suite of Integrated Infrared Countermeasures (SIIRCM)
 - U.S. Army Lead Service
 - Post Milestone C
 - Helicopters
- Large Aircraft Infrared Countermeasures (LAIRCM)
 - USAF Lead Service
 - Post Milestone C
 - C-17 and other large aircraft
- Tactical Aircraft Directed Infrared Countermeasures (TADIRCM)
 - Navy Lead Service
 - Pre-Milestone B
 - Pod for FA-18, F-16, AV-8B etc

IR Threat Self Protect EW Suites for CAS 2010



POM-06 Issue:
*A small number of TADIRCM pods
 for those missions that need them most.*

2 Different IR suites

- Legacy
 - ALE-39
 - ALE-47
- Future
 - TADIRCM
 - ALE-47

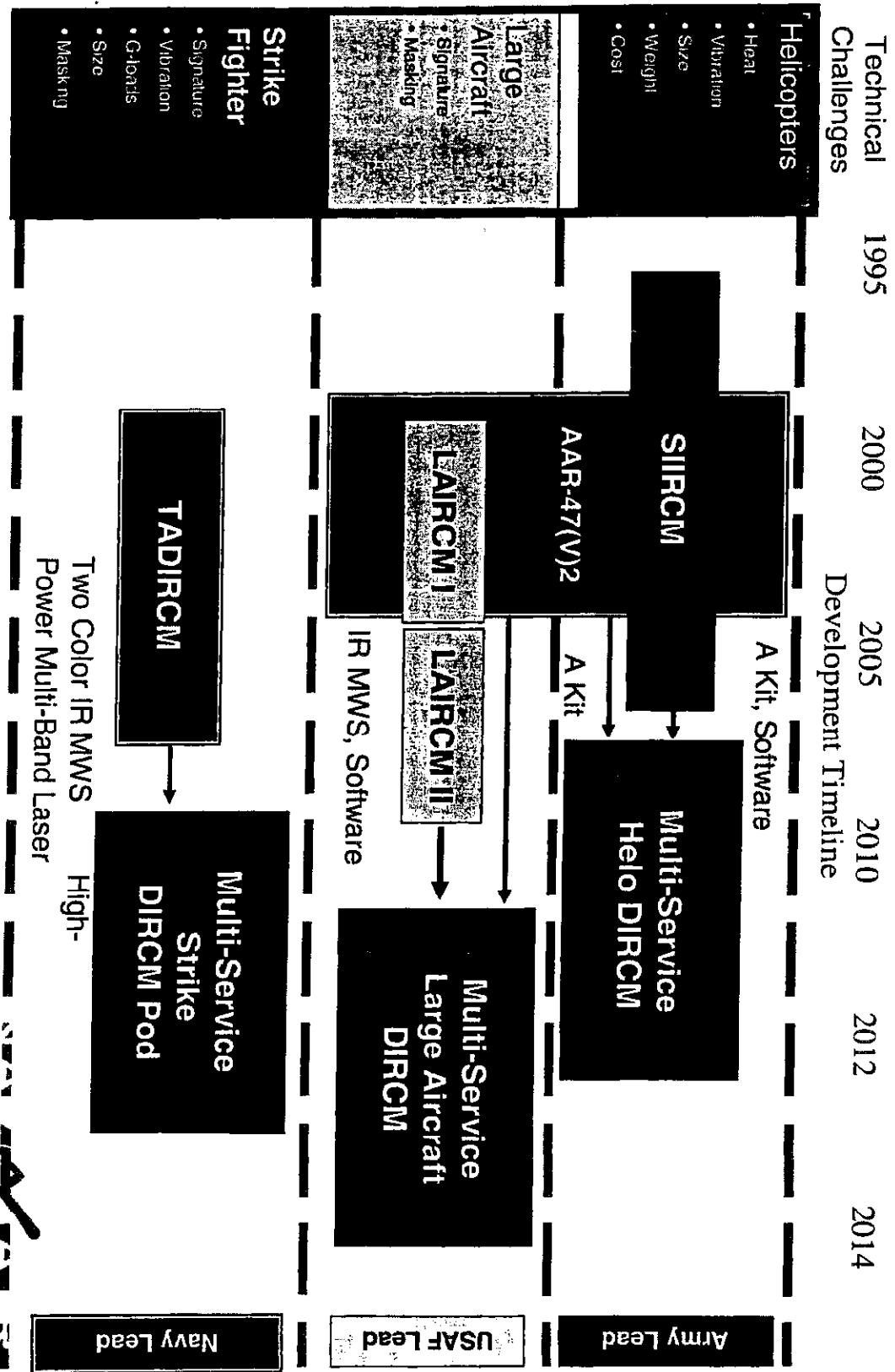
FAC (A) spends long On-Station Periods in and around MANPADS

Aircraft without TADIRCM spend short periods at low altitudes

Aircraft Stay Above MANPADS unless FAC(A) or delivering ordnance

4

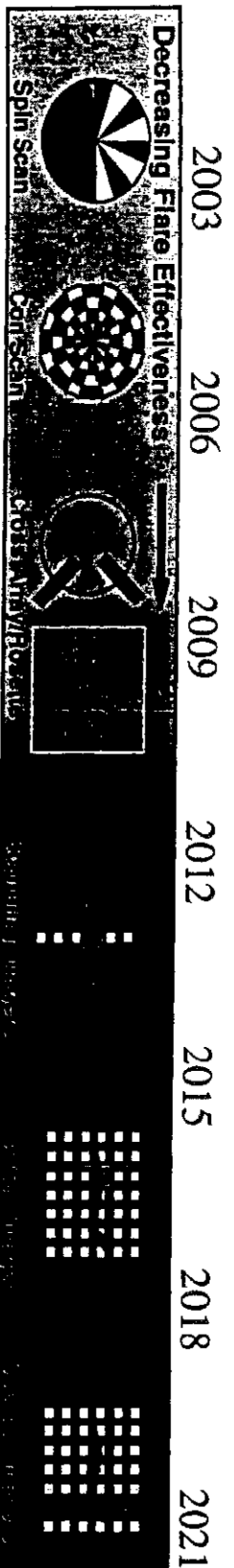
OSD and JROC Guidance



Navy/Marine IRCM Investment Strategy

- Short term – Complete procurement of the current suite and support it
 - AAR-47(V)2 procurement accelerated and expanded in FY04 due to OIF II requirements
 - ALE-47 procurement expanded in FY04 due to OIF II requirements
 - Flare production increased in FY04 due to OIF II expenditures
- Mid term – Initiate DIRCM development programs for all Naval Aircraft
 - Join programs with other services that capitalize on TADIRCM investments
 - Concentrate on the affordable approach
- Long term – Procure DIRCM systems for Naval Aircraft
 - Build system requirements that make for flexible fielding options
 - Procure sufficient systems to meet Navy/Marine requirements
 - Reduce flare production

Navy and Marine IRCM Strategy



- KC-130J
- MV-22
- UH-1Y
- AH-1Z
- MH-60R/S
- CH-53
- FA-18
- AV-8
- JSF

AAR-47(N)2 and ALE-47

- Currently in full rate production
- Average unit cost ~ \$100K
- Flares do not address imagers

TADIRCM

Next SIIRCM spiral

- Joint program, Army Lead
- Navy requirements dependent on TADIRCM technology

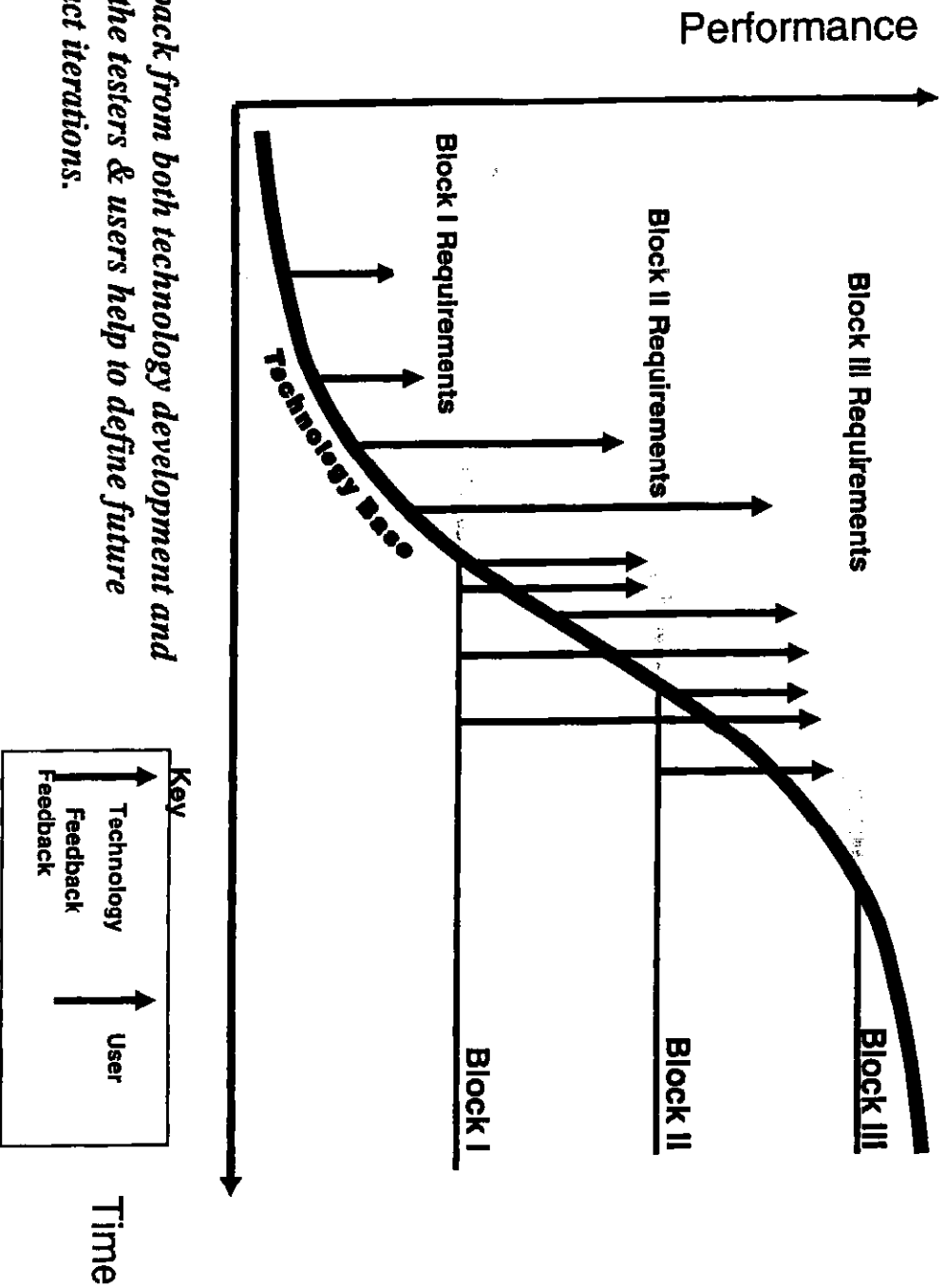
ALE-39 or ALE-47 only

Strike DIRCM Pod

- Joint Program, Navy Lead
- Builds on TADIRCM/SIIRCM

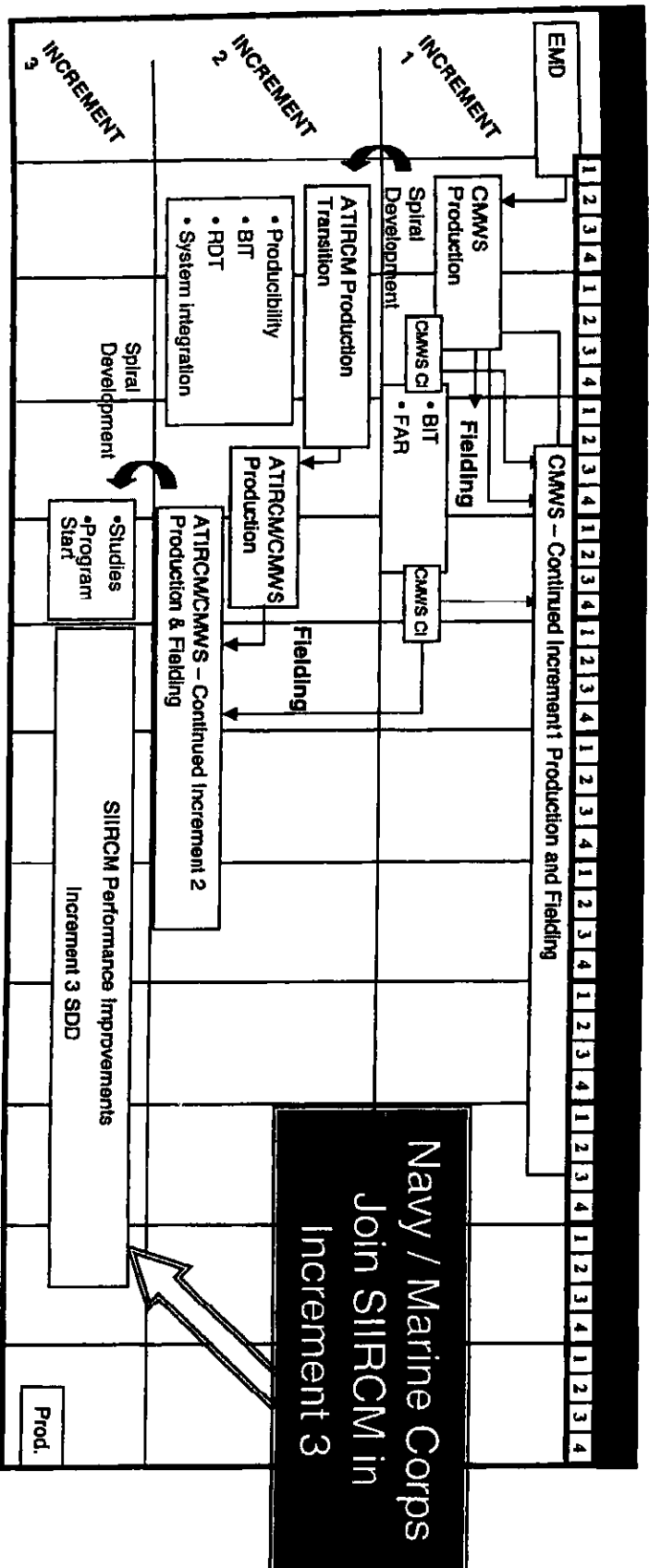
DAS and flare dispenser

Evolutionary Acquisition Model



Feedback from both technology development and from the testers & users help to define future product iterations.

Navy SIRCUM Evolutionary Acquisition Roadmap



- Increment 3 builds on Army SIRCUM and Navy TADIRCM investments
 - Long Range IR Threats, Advanced IR Seekers, Adds Two Color IR Missile Warning, Multi-Band Laser, and Navy / Marine Commonality

ATRRCM P3I/Assault DIRCM Schedule

EVENTS	FY04				05				06				07				08				09				10				11				12				13				14				15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Milestones																																																
Contract Award																																																
Deliveries																																																
Testing & Evaluation																																																
	<div style="display: flex; justify-content: space-between;"> <div style="width: 20%;"> <p>LAIRCM DHS Scorpion</p> </div> <div style="width: 20%;"> <p>2 Color MWS SDD Phase 2</p> </div> <div style="width: 20%;"> <p>Phase 1 Phase 2 (RTT)</p> </div> <div style="width: 20%;"> <p>EMD HW Deliveries</p> </div> <div style="width: 20%;"> <p>OA</p> </div> <div style="width: 20%;"> <p>IOT&E</p> </div> <div style="width: 20%;"> <p>FOT&E</p> </div> </div>																																															
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	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>MSB</p> <p>▲</p> </div> <div style="text-align: center;"> <p>Development Contract</p> <p>▲</p> </div> <div style="text-align: center;"> <p>MSC</p> <p>▲</p> </div> <div style="text-align: center;"> <p>LRIP Contract</p> <p>▲</p> </div> <div style="text-align: center;"> <p>FRPDR</p> <p>▲</p> </div> <div style="text-align: center;"> <p>IOC</p> <p>▲</p> </div> <div style="text-align: center;"> <p>FRP 1 Contract</p> <p>▲</p> </div> </div>																																															

Summary

- USN/USMC has an overall roadmap to address the IR Manpad Threat
- EOA starts working technology
- Co-operative with Army for USN/USMC Assault makes sense for FY06
- Strike DIRCM to leverage technology and start in FY08