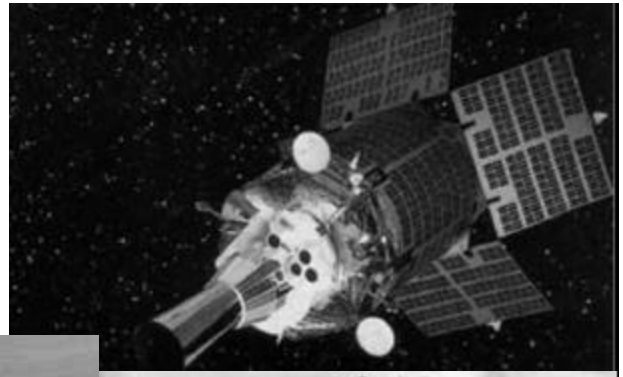
ASN RDA CHENG



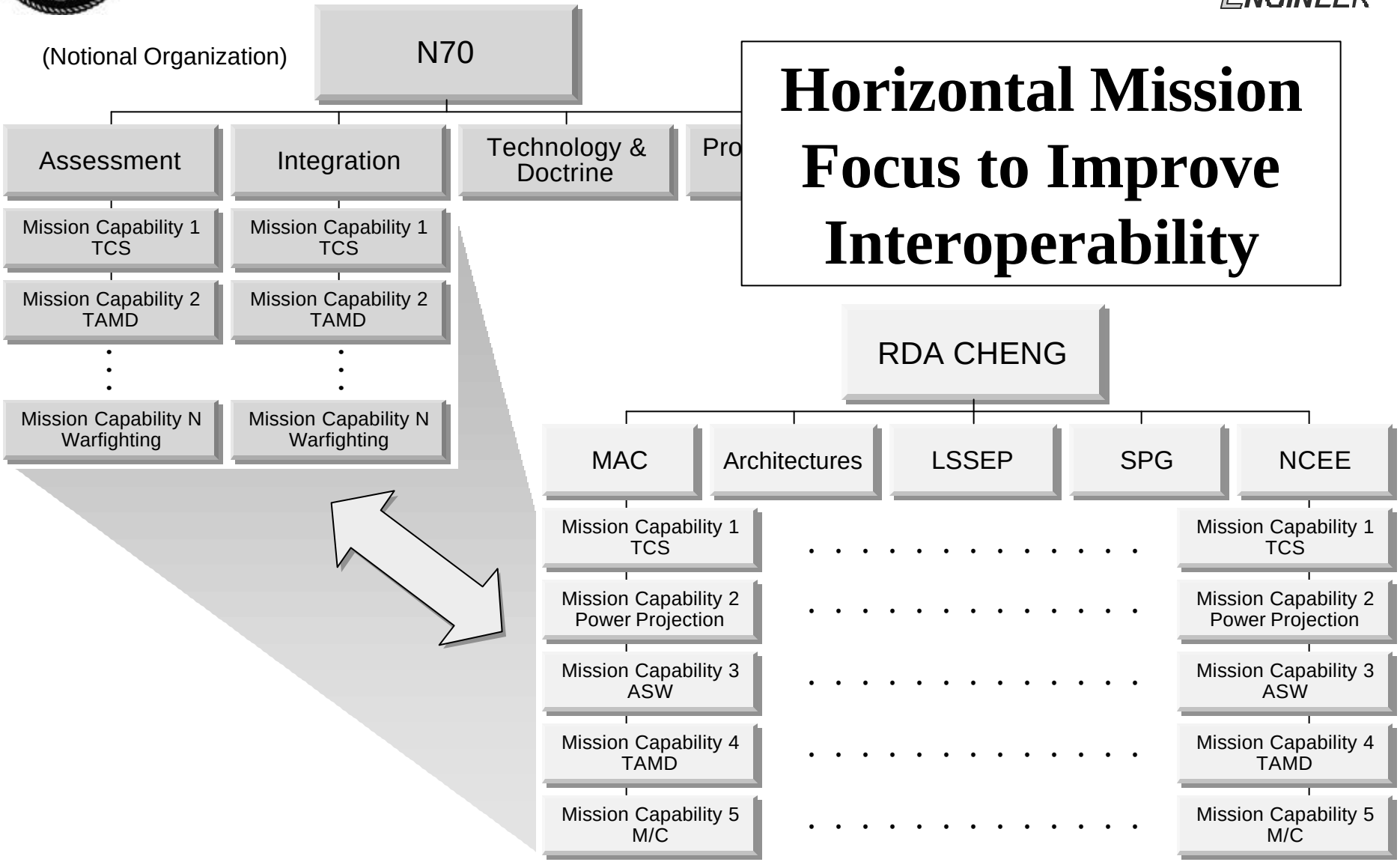
SYSTEMS AND TECHNICAL ARCHITECTURES 30 MAY 2001

CAPT Mike Weisskopf
ASN RDA CHENG

N70/RDA CHENG FOCUS

RDA CHIEF ENGINEER

(Notional Organization)



Horizontal Mission Focus to Improve Interoperability

The Basic Approach

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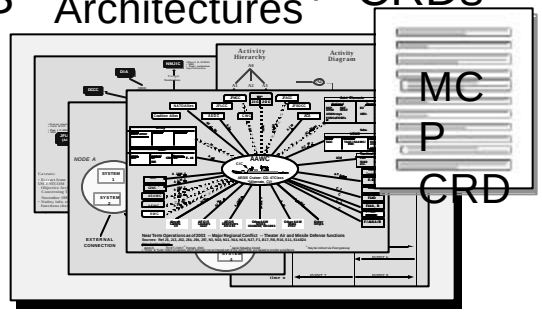
Given this is where we want to go...

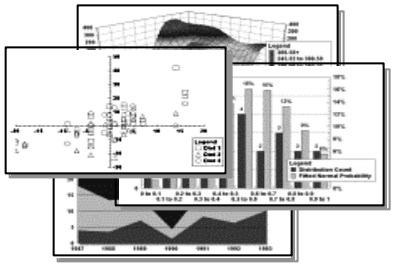
MCP Requirements Integration

Concepts & CONOPS

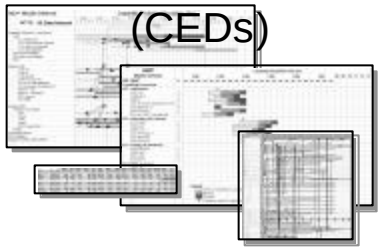
Operational Architectures + CRDs



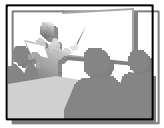
System-of Systems AOAs

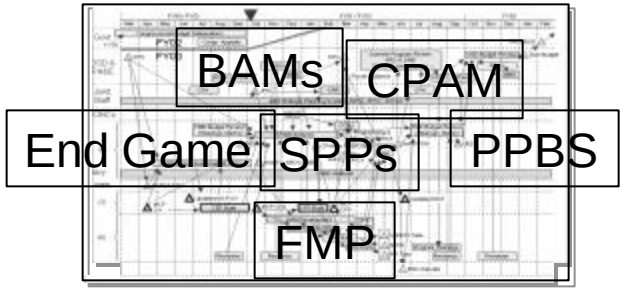


Capability Evolution Descriptions (CEDs)



NROC / CEB





How do we make things happen in the near term?

Vision

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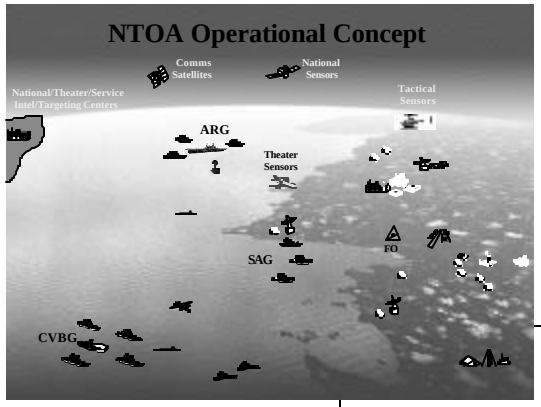
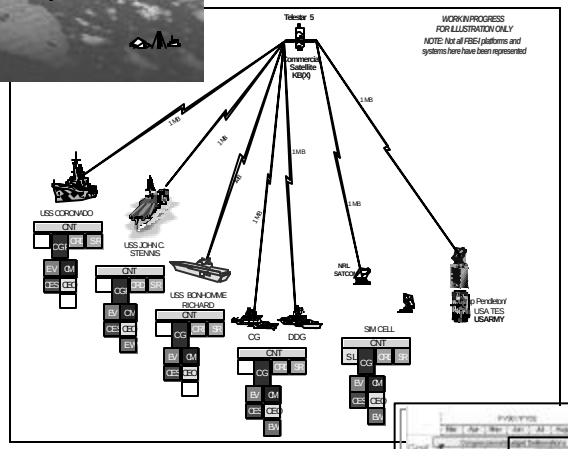


WARFARE MISSION OPERATIONAL ARCHITECTURE

Fleet defines how they want to fight across a warfare mission area

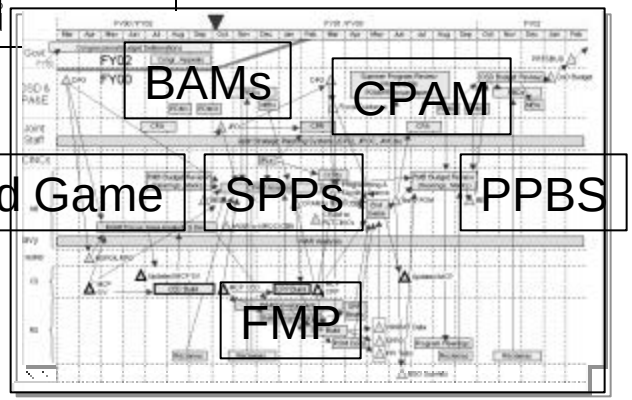


WARFARE MISSION SYSTEM ARCHITECTURE

Developed to align with operational architecture

used to...

Have a master Warfare Plan to drive the process



Drive Requirements

Drive Budget

Goal is an Integrated Architecture

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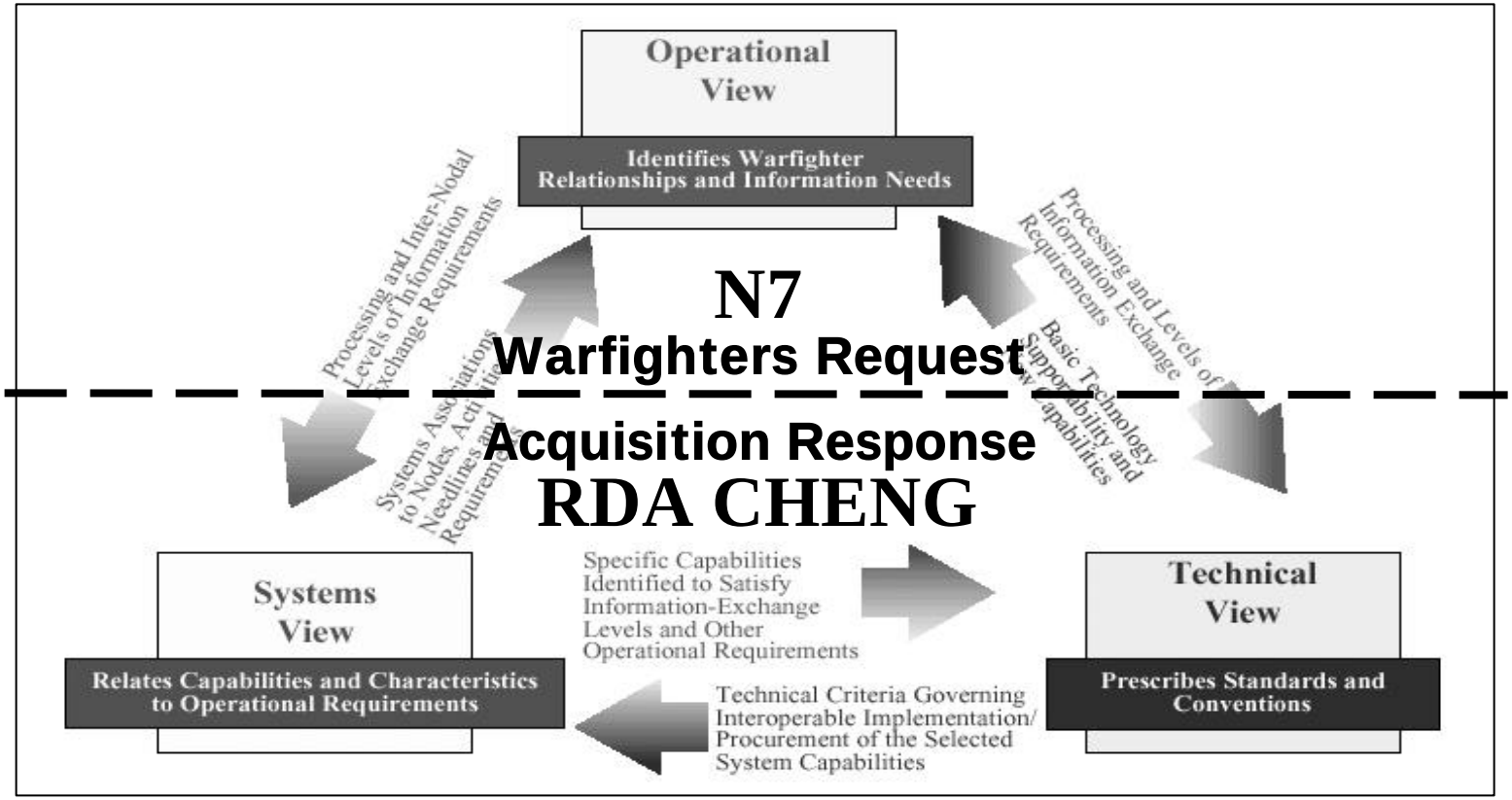

Operational Architectures Drive the Management and System Engineering of Interrelated Acquisition Programs

One of the POM04 Priorities is...

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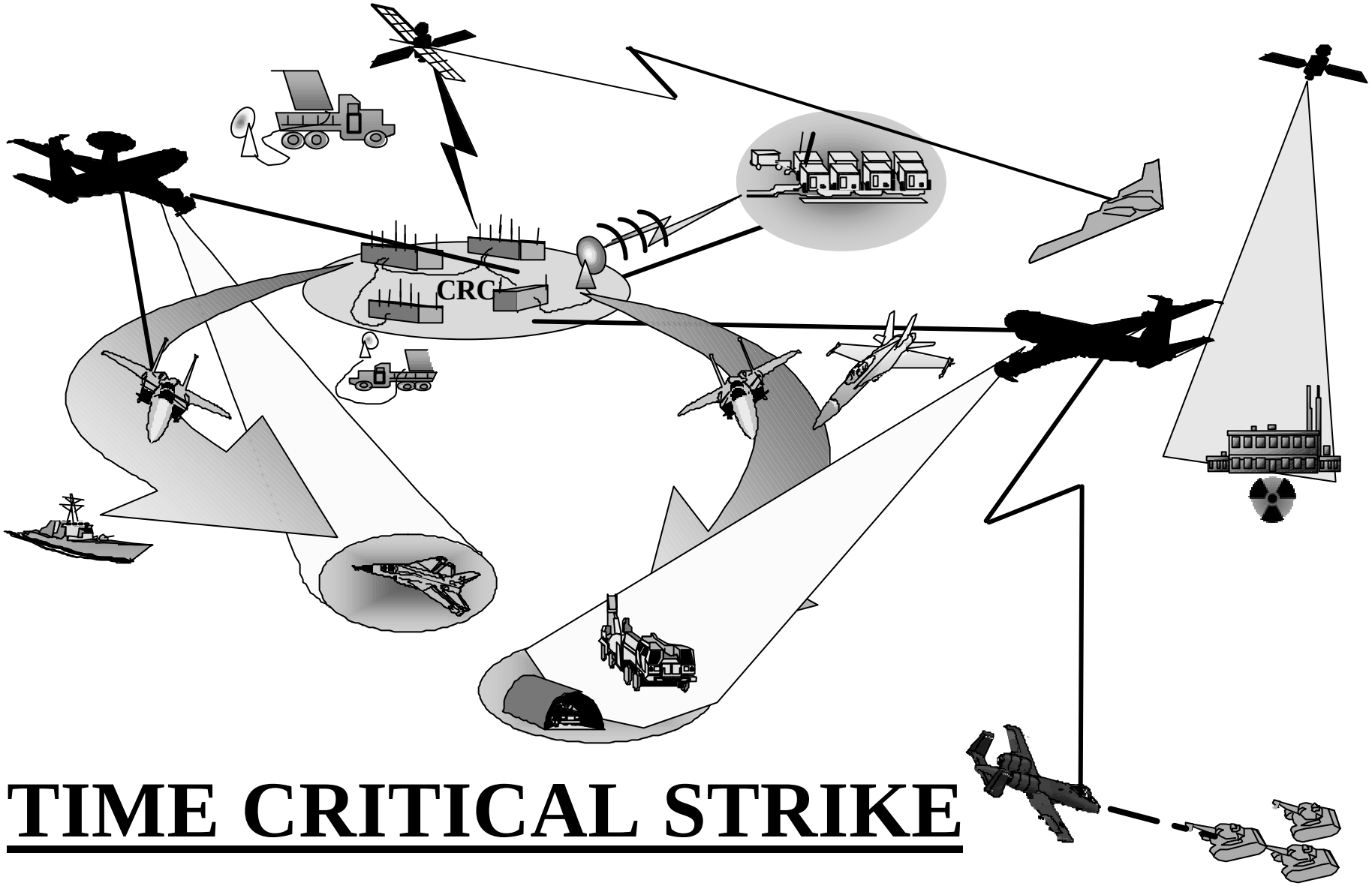

TIME CRITICAL STRIKE

Naval Targeting Operational Architecture Seminar

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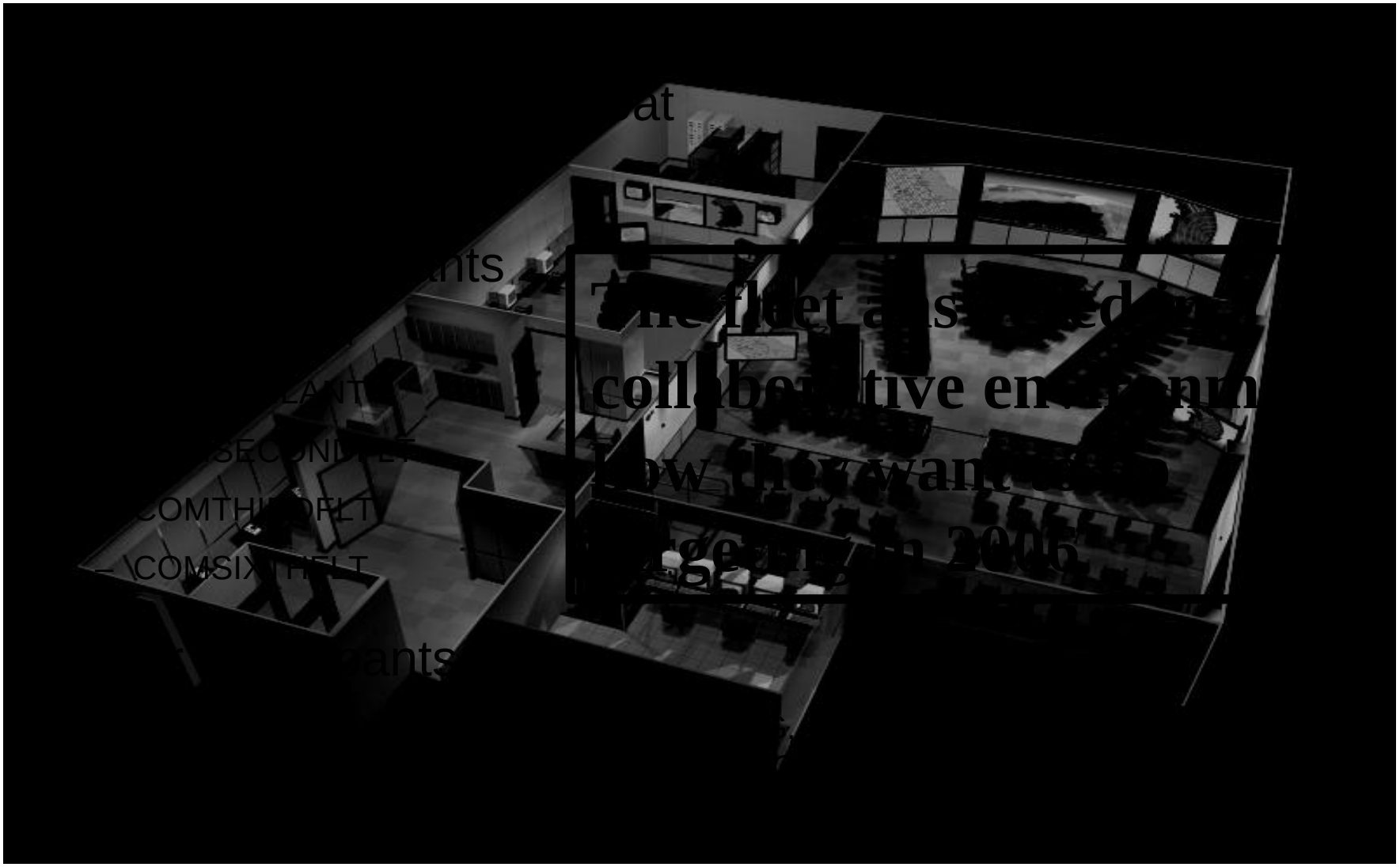

The fleet a[illegible]
collaborative en[illegible]
how they want [illegible]
[illegible] in 2006

Major Fleet Articulated Themes

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Common Operating Picture

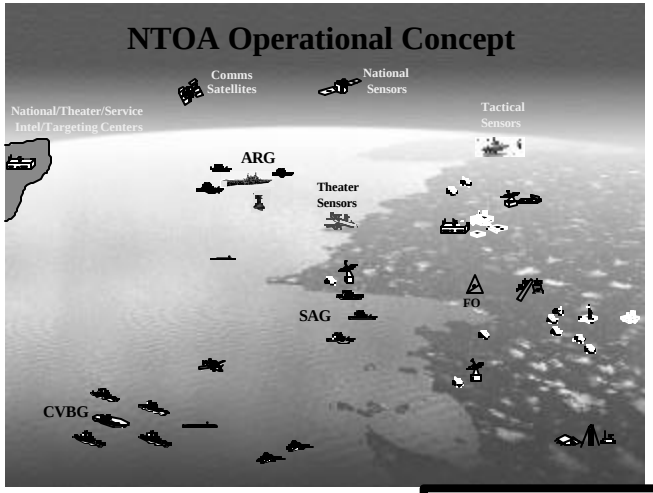
One common picture, ***accessible to all***, ***CJTF responsible*** for COP production

Processing-Exploitation-Production

Distributed based on unit capabilities, shared with all

Information Distribution

Smart Push
User Pull
Accessible Databases



Deconfliction

Responsibility of major component controlling the battlespace

Flexibility

Architecture must support a range of options.

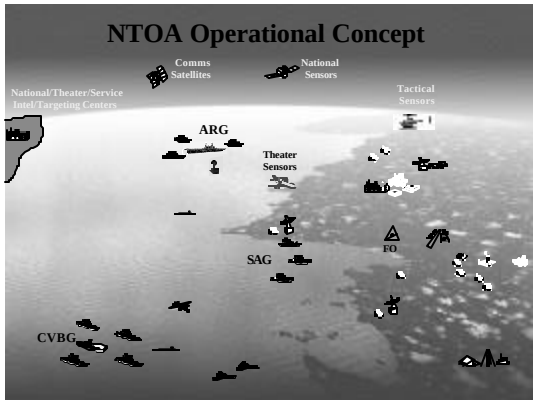
Aimpoint Generation

All levels capable of generating aimpoints based on their organic weapons capability.

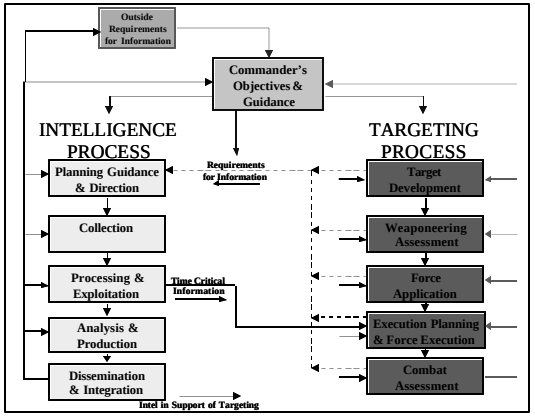
Manpower and Training

Take into account when creating the Naval Targeting Architecture

Resulting Operational Views



Operational Concept

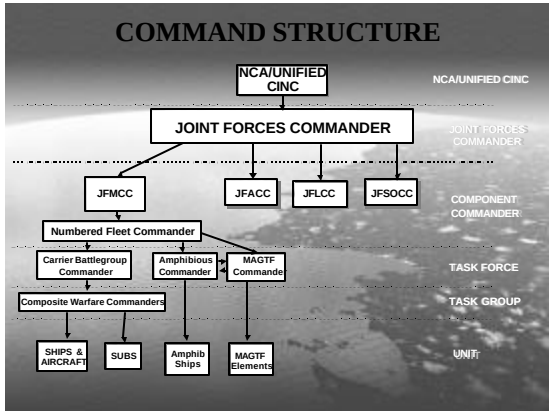


Operational Nodes

NTOA OV-3

IER #	IER Name	Information Producing Node (PRODN)			Information Consuming Node (CTO)			Attributes						
		Mission	Task	Node	Mission	Task	Node	Frequency	Volume	Timeliness	Criticality	Security Classification	Information Type(s)	Availability
40	ATO	Targeting	A.6	JFC	Targeting	A.6.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
41	ATO	Targeting	A.6	AFC	Targeting	A.6.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
42	Commander's Guidance	Targeting	A.1	JFC	Targeting	A.6.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
43	IPB/Assessment	Targeting	A.6.2	IC	Targeting	A.4.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
44	IPB/Assessment	Targeting	A.6.2	IC	Targeting	A.4.1	NFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
45	IPB/Assessment	Targeting	A.6.2	IC	Targeting	A.4.1	GFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
46	IPB/Assessment	Targeting	A.6.2	IC	Targeting	A.4.1	AFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
48	Target Systems/Components	Targeting	A.6.1	IC	Targeting	A.4.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
49	Target Systems/Components	Targeting	A.6.1	IC	Targeting	A.4.1	NFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
50	Target Systems/Components	Targeting	A.6.1	IC	Targeting	A.4.1	GFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
51	Target Systems/Components	Targeting	A.6.1	IC	Targeting	A.4.1	AFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
52	Mission/Attack/Plans	Targeting	A.6	SOFC	Targeting	A.4.2	FFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
53	Mission/Attack/Plans	Targeting	A.6	MFC	Targeting	A.4.2	FFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
53	Mission/Attack/Plans	Targeting	A.6	AFC	Targeting	A.4.2	FFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
55	Mission/Attack/Plans	Targeting	A.6	GFC	Targeting	A.4.2	FFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
56	Mission/Attack/Plans	Targeting	A.6	JFACC	Targeting	A.4.3	FFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
57	Mission/Attack/Plans	Targeting	A.6	SOFC	Targeting	A.6.1	IC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
58	Mission/Attack/Plans	Targeting	A.6	MFC	Targeting	A.6.1	IC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
59	Mission/Attack/Plans	Targeting	A.6	AFC	Targeting	A.6.1	IC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
60	Mission/Attack/Plans	Targeting	A.6	GFC	Targeting	A.6.1	IC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
61	Mission/Attack/Plans	Targeting	A.6	SOFC	Targeting	A.6.1	IC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
62	JIPTL	Targeting	A.6	External	Targeting	A.4.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
63	Weapon/Target Pairing	Targeting	A.3	External	Targeting	A.4.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
64	ISR/Data	Targeting	A.7	External	Targeting	A.4.1	JFACC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
65	ISR/Data	Targeting	A.7	External	Targeting	A.4.1	NFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
66	ISR/Data	Targeting	A.7	External	Targeting	A.4.1	GFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
67	ISR/Data	Targeting	A.7	External	Targeting	A.4.1	AFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD
68	ISR/Data	Targeting	A.7	External	Targeting	A.4.1	SOFC	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Information Exchange Requirements



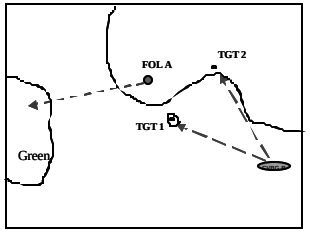
Organizational Nodes

Operational Activities

D-Day TCS TACSIT 1

Notional Timeline (varies per architecture)

- Pre D-Day IPB analysis identifies SRBM Forward Operating Locations (FOL)
- JFC Cdrs Guidance: TEL is priority target
- T_{-2} DDG fires TacTom vs ATO Target 1
- T_{-1} 4x F-18 launch enr ATO Target 2
- T_0 National IR Sensor: Scud launch S. Red – Prob impact Green
- T_1 Natl Sensor & Aegis analysis: Launch site FOL-A
- T_2 Command node declares TCT
- T_3 ISR node tasks Theater ISR sensors to locate & track TEL
- T_4 (Sensor 1 - GMTI) locates 3 candidate moving targets
- T_5 (Sensor 2 – EO/IR) identifies TEL
- T_6 Multi-sensor tracking of TEL
- T_7 Hide site identified & geolocated by sensors & tactical analysis node
- T_8 Command node attack decision (Divert F-18 or TacTom or new strike



• Range to TEL Hide Site approx 200nm

Operational Sequences

How Will We Influence POM Decisions?

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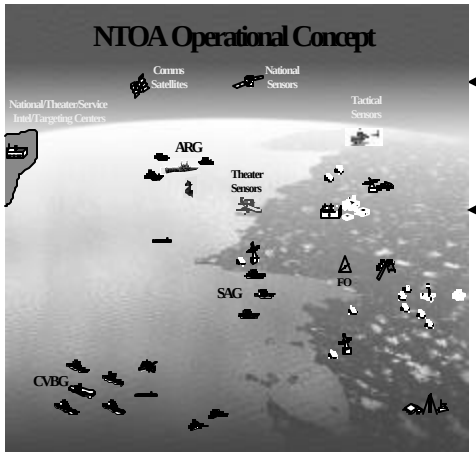
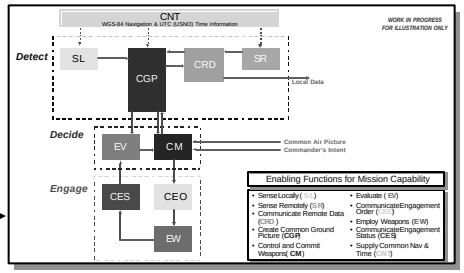
Start with the way the Fleet wants to fight

Operational Architecture Views



Mapping

System Functional View

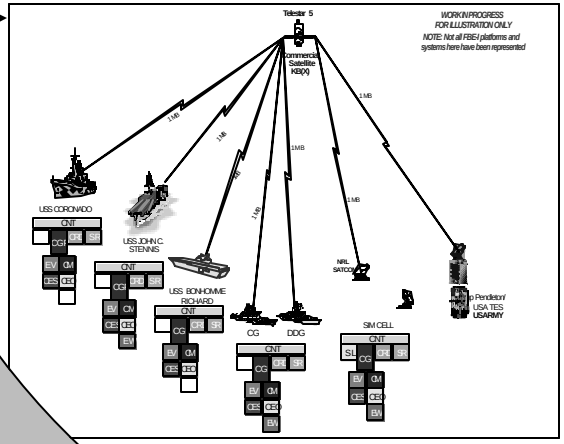


Mapping

Technical Architecture Profile

Mapping

Functions of Current Naval Family of Systems



POM 04 Recommendations

- **Recommendation: KEEP**
- **Recommendation: CUT**
- **Recommendations (New Systems, Upgrades & Non-Material Solns)**

- **Sole Capability (Critical)**
- **Necessary Duplications**
- **Unnecessary Duplications**
- **Non-Critical Capability**
- **Gaps**

Duplications

Assessments

Proposed Timeline and Pressure Points
(TCS for POM-04)

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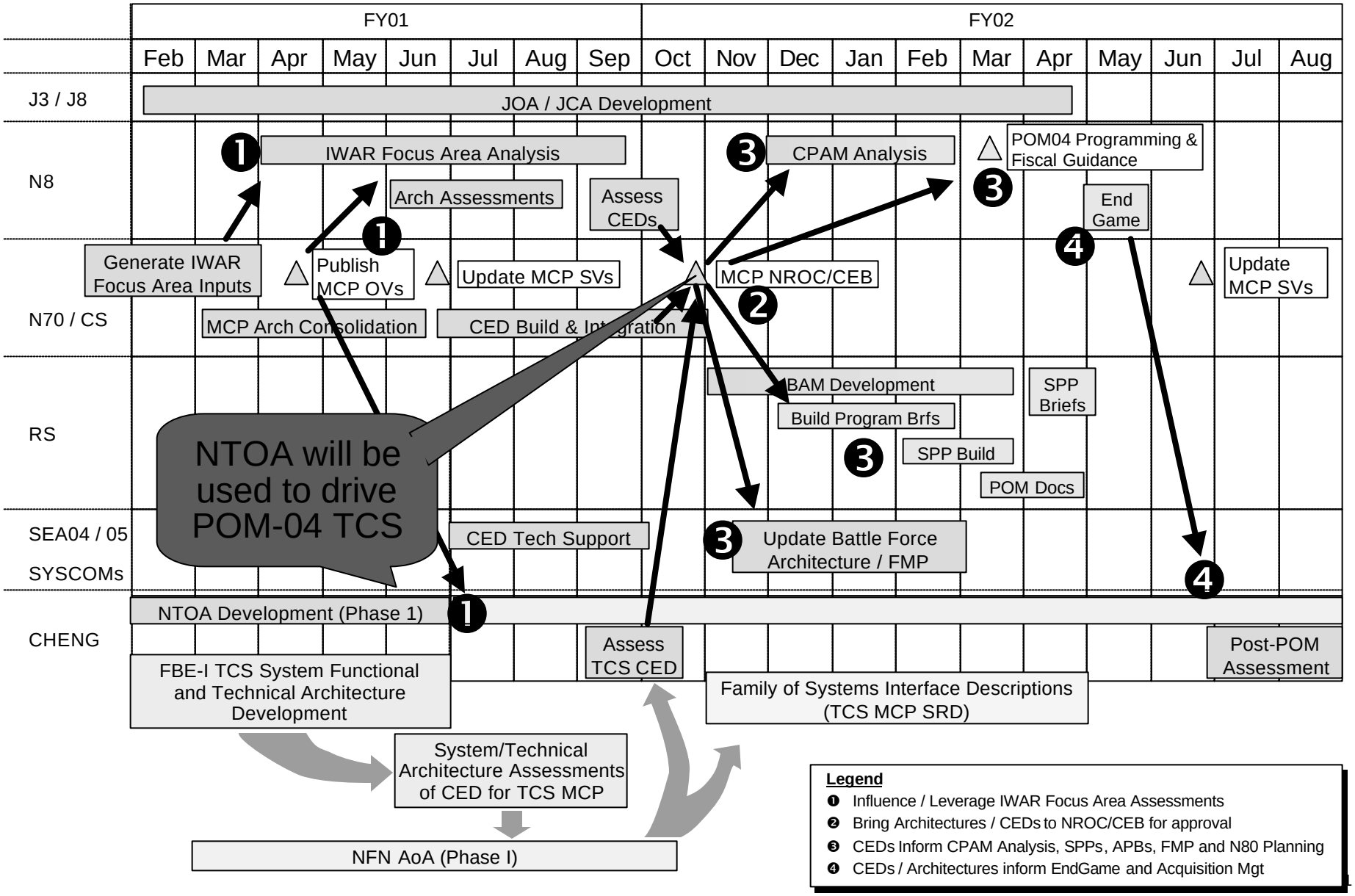

Legend

- ❶ Influence / Leverage IWAR Focus Area Assessments
- ❷ Bring Architectures / CEDs to NROC/CEB for approval
- ❸ CEDs Inform CPAM Analysis, SPPs, APBs, FMP and N80 Planning
- ❹ CEDs / Architectures inform EndGame and Acquisition Mgt

Goal is to get TCS Programs to Align

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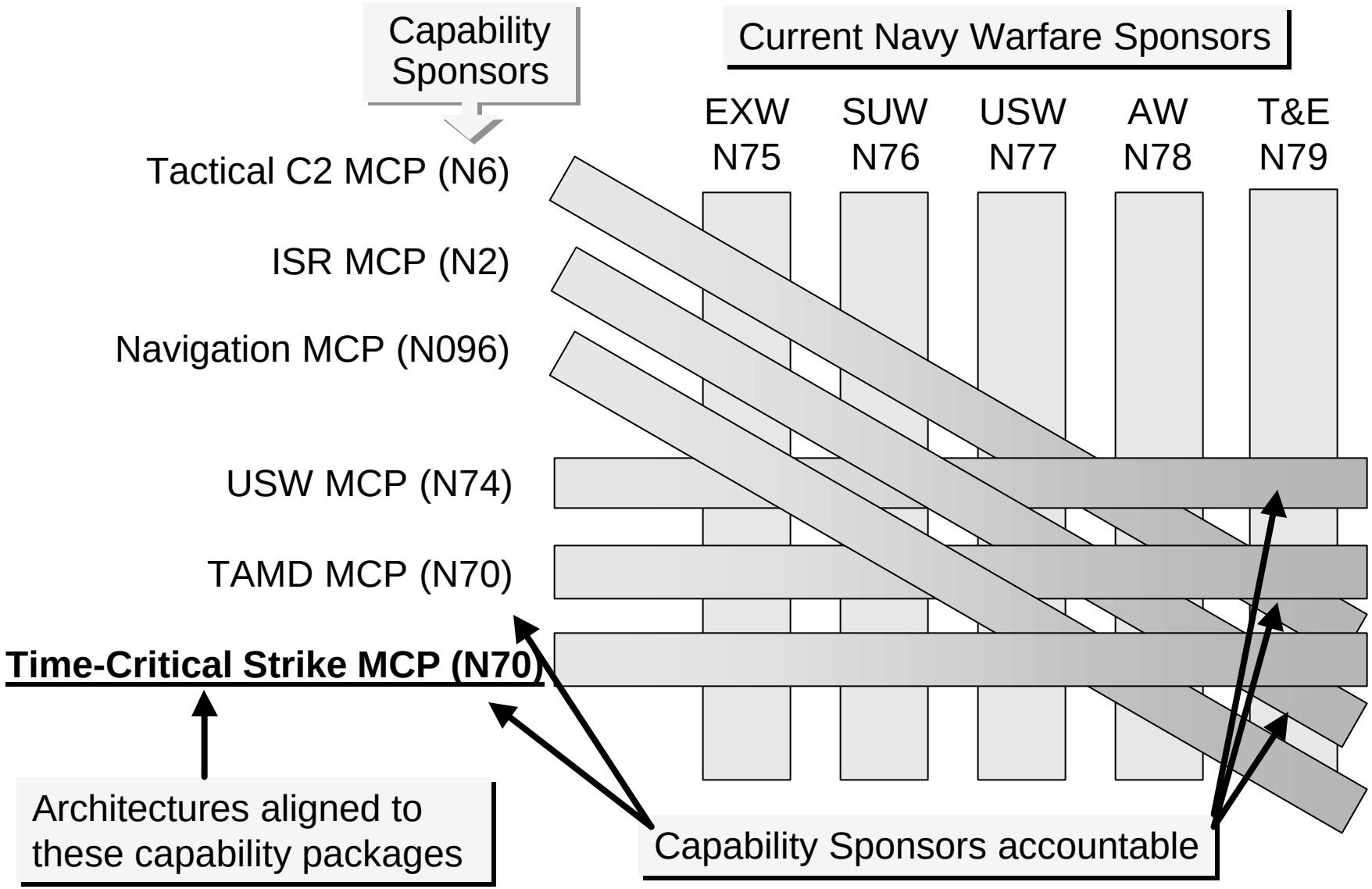

Summary

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- Requirements and Acquisition communities are committed to work with the fleet (Afloat Targeting IPT) to influence POM 04
  - Specific commitment is to work with IPT to guide Navy investment for a significant improvement in Time Critical Strike
- This is a pilot effort with the following goals:
  - Improve Interoperability
  - Focus horizontally on Naval Mission Areas
  - Strengthen fleet input to mission needs to compete with platform/system centric priorities
  - Will expand to other mission areas if successful