

# Army Enterprise XXI -- A World Class Network for World Class Soldiers



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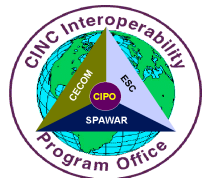


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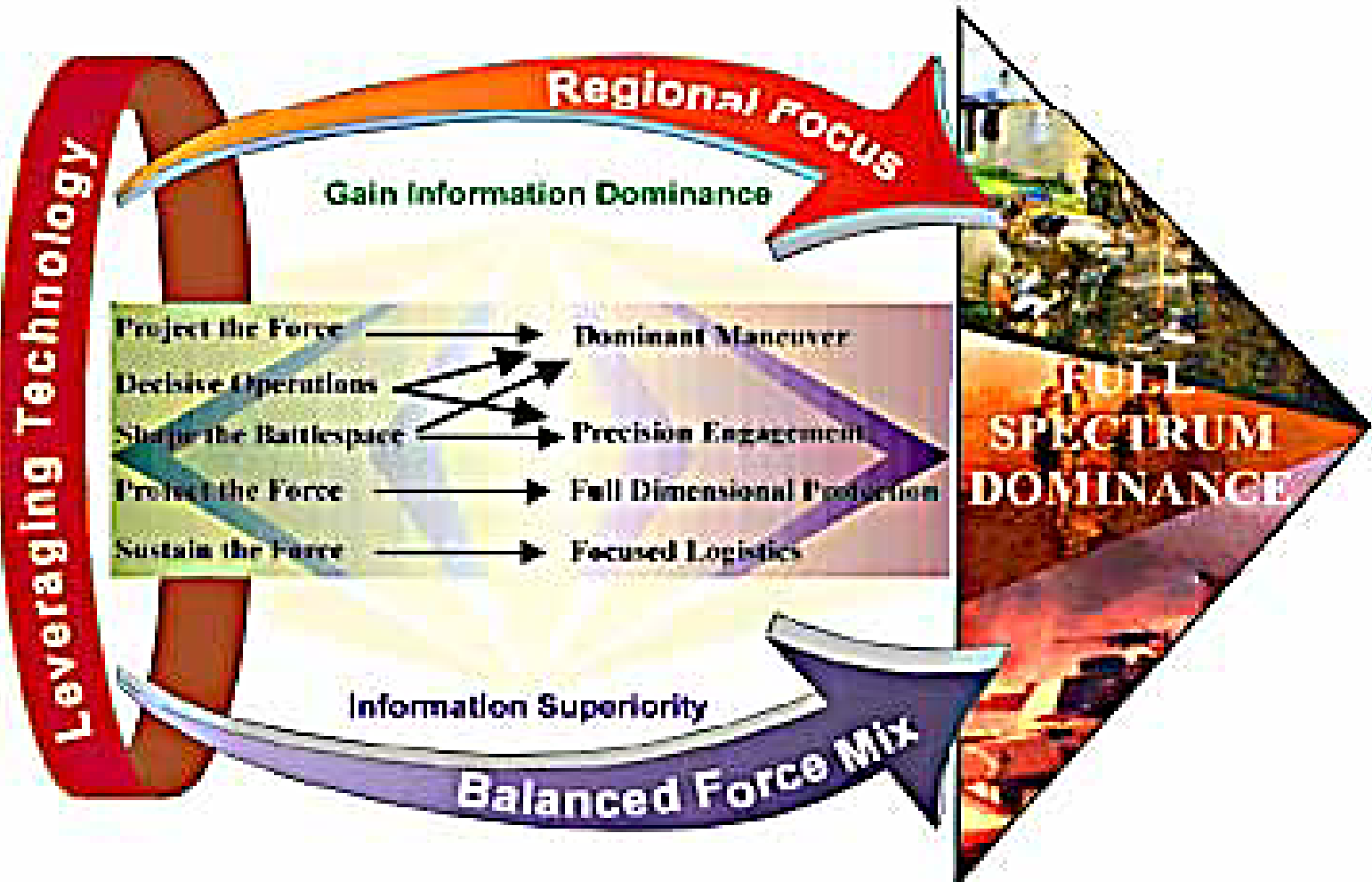


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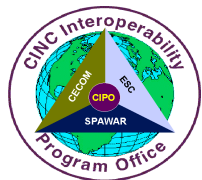


# AV 2010 & JV 2010 Crosslink

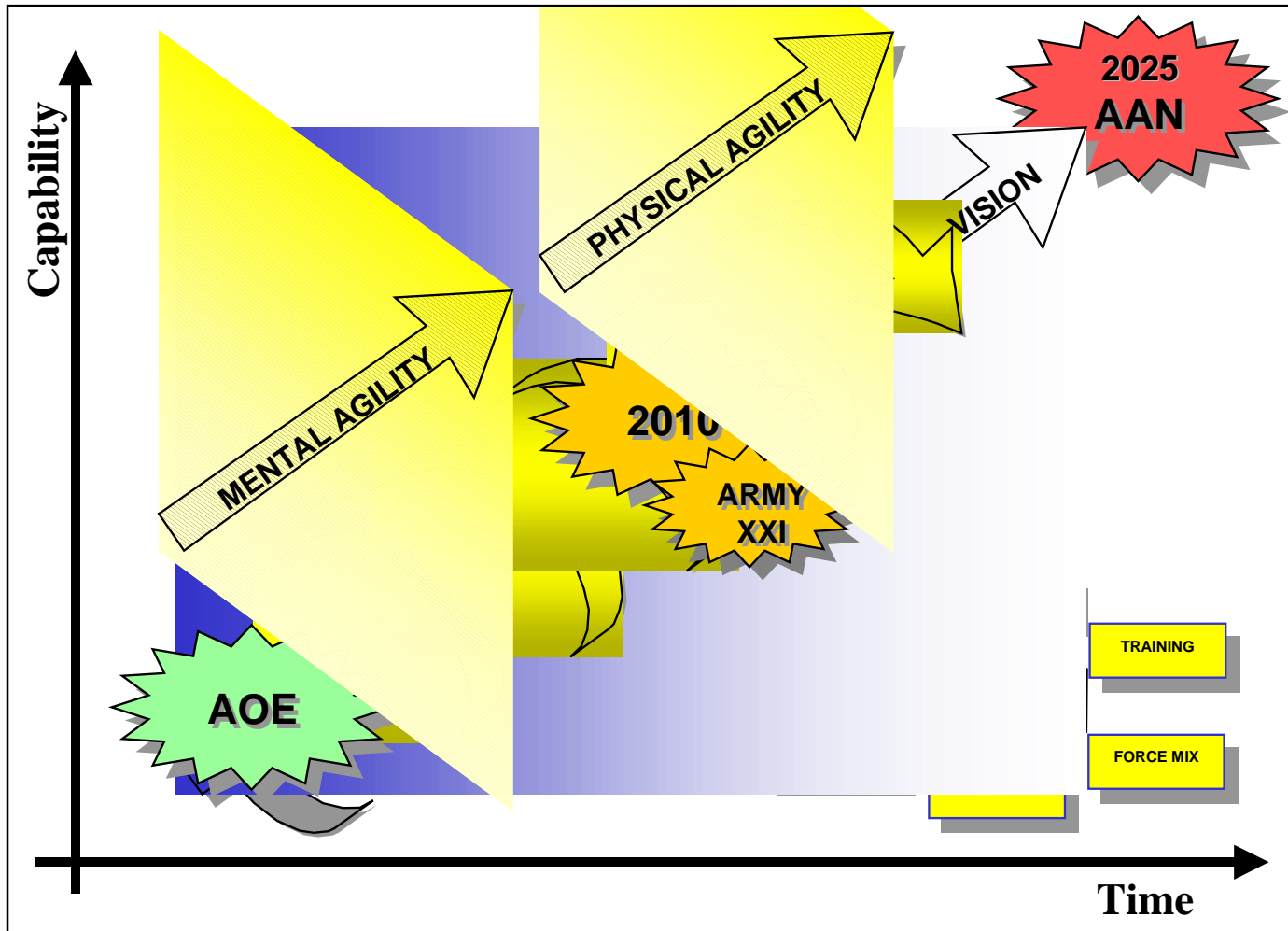


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# From AOE to Army XXI to AAN



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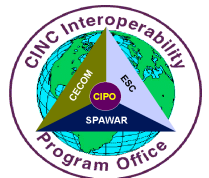
# Rationale for Army Enterprise XXI

- ***Information Superiority*** is the key to successful operations on the 21st Century battlefield.
- Army Enterprise XXI provides a focused C4/IT approach to enable the Army to evolve from today's *platform-centric force (Army of Excellence)* into a *network-centric force* in 2010 (Army XXI) and, finally, into the *knowledge-centric force* of 2025 (Army After Next).
- This evolution will provide soldiers with the ability to capitalize on knowledge capital obtained from unlimited access to a global, seamless, secure enterprise network to achieve information superiority.

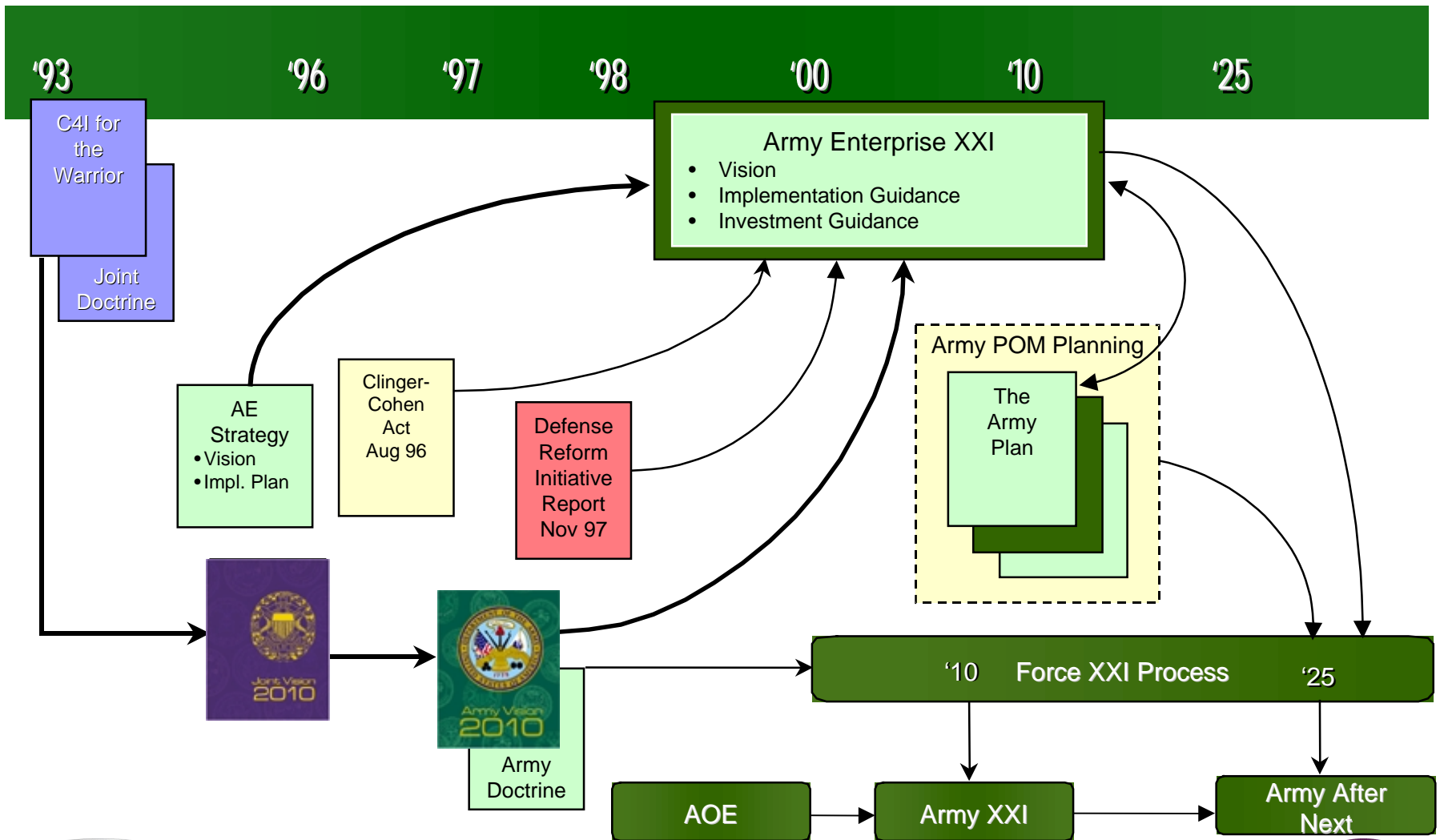


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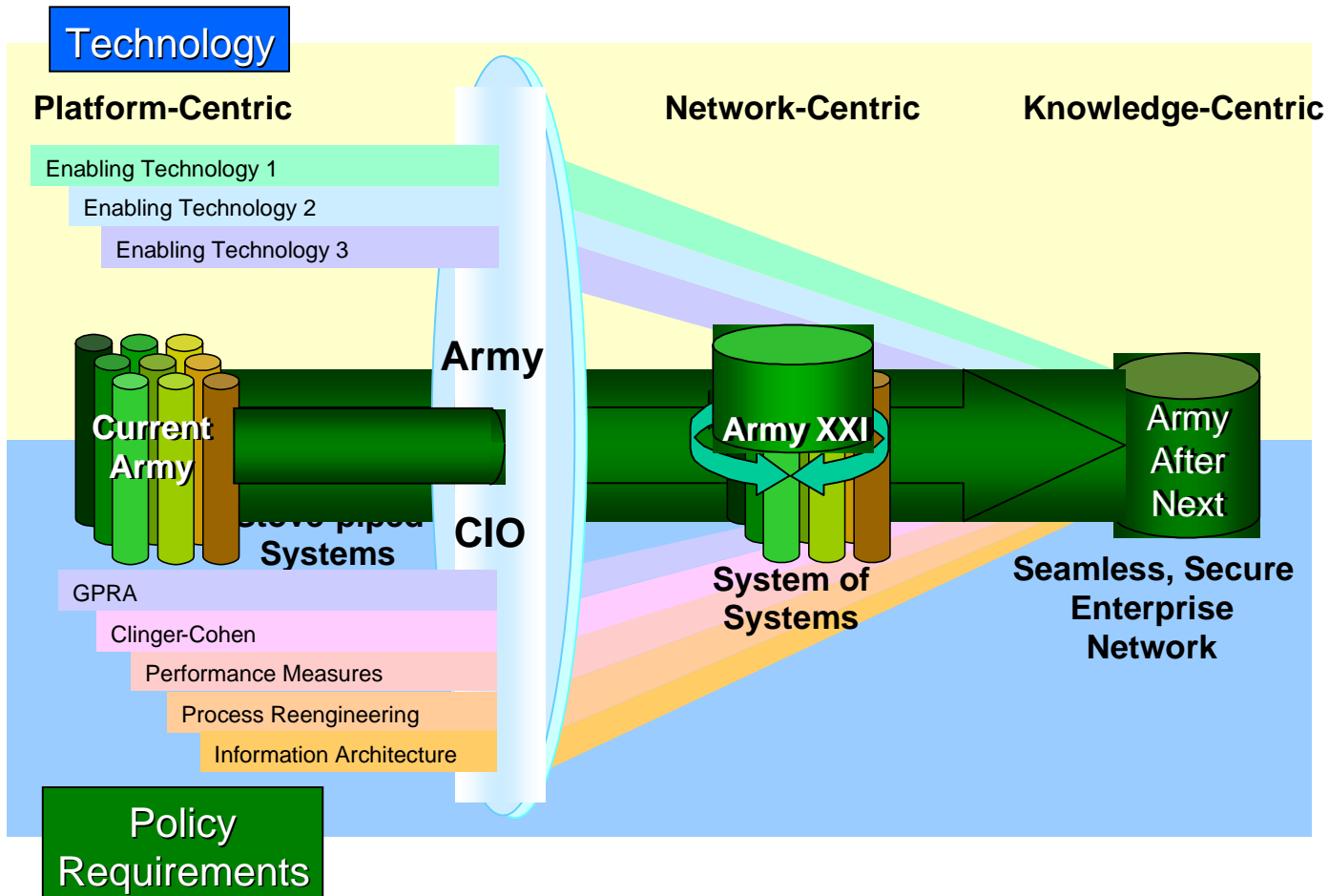
# Army Enterprise XXI Timeline



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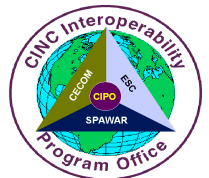


# Policy and Technology

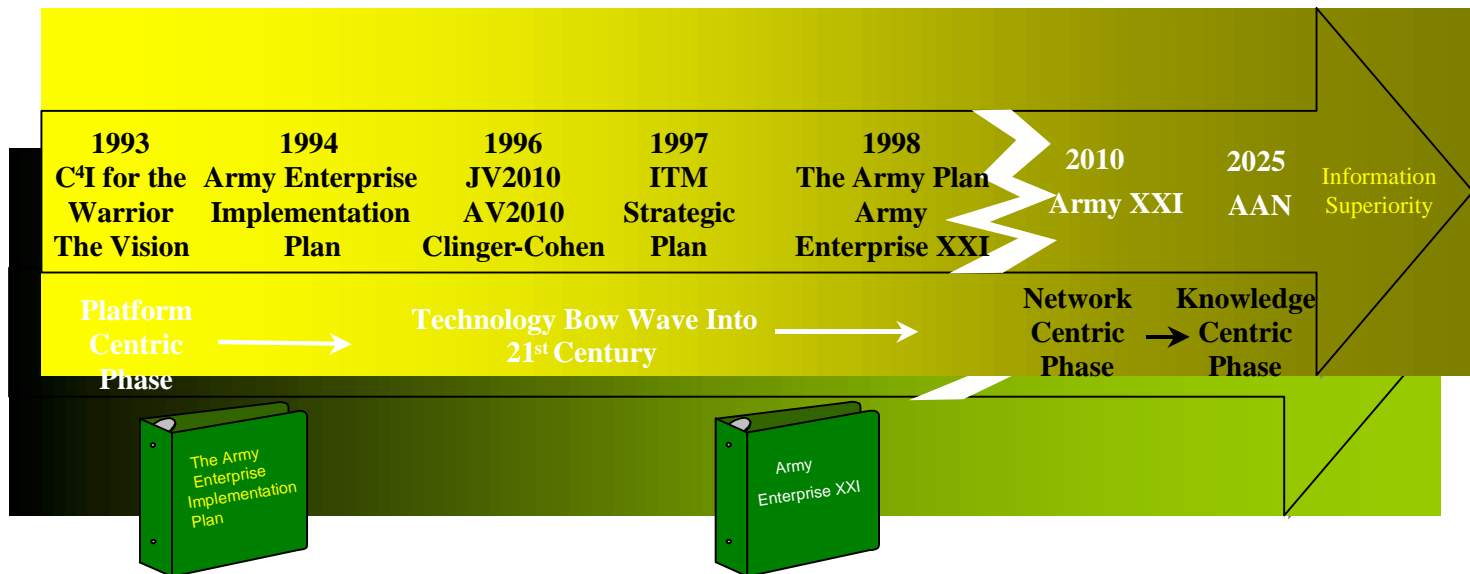


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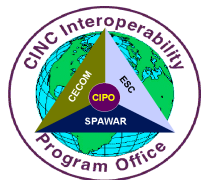
# Migration from Army Enterprise Strategy to Army Enterprise XXI



- Prepared in 1994 Prior to JV2010 and AV2010
- Provided Assessment of Existing Army systems
- Included 10 Guiding Principles from Army Vision document
- Contained Implementation Approach consisting of 9 Tasks to Implement the Vision
- Assigned Task & Oversight Responsibilities

- Prepared in 1998, Different Focus
- Covers Force XXI, Army XXI & The AAN
- Reaffirms 10 Guiding principles from 1994 plan
- Contains Vision & implementation plan to support the 21st Century Warfighter
- Implementation strategy covers 3 phases:
  - Near-term – Platform Centric
  - Mid-term – Network Centric
  - Far-term – Knowledge Centric

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# Evolving to Knowledge-Centric Warfare

**Current**

**PLATFORM-CENTRIC**

- Hierarchical
- Coordinated
- Linear
- Fixed Boundaries
- Sequential
- Additive

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**2010**

**NETWORK-CENTRIC**

- Flattened
- Synchronized
- Non-Linear
- Fluid Boundaries
- Compressed
- Multiplicative

**2025**

**KNOWLEDGE-CENTRIC**

- Heterarchical
- Self-Organizing/Adaptive
- Cognitive
- Virtual Boundaries
- Parallel/Simultaneous
- Exponential

**AOE**

- Subscriber-Focused
- Stove-Piped
- Info Access
- Data Accumulation
- Mechanical Model

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**ARMY XXI**

- Network-Focused
- System of Systems
- Smart Push/Warrior Pull
- Focused Data
- Interactive Model

**AAN**

- Content/Context-Focused
- Transparency
- Knowledge Triggers
- Fused Data
- Biological Mod.



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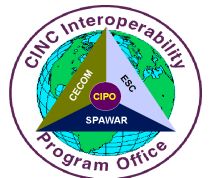
# Twelve AE XXI C4IT Principles

1. ***Focus on the Warfighter*** – Provide systems that meet validated warfighter needs.
2. ***Ensure Joint Interoperability*** – Provide fully interoperable Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems for joint and combined operations.
3. ***Capitalize on Space-Based Assets*** – Provide military and commercial space-based systems to support force projection across the entire operational continuum.
4. ***Digitize the Battlefield*** – Provide an integrated digital network to ensure C2 decision-cycle superiority.
5. ***Modernize Power Projection Platforms*** – Provide modern power projection platforms to support operations, training and mods.
6. ***Optimize the Information Technology Environment*** – Provide more efficient information systems for peacetime and combat.



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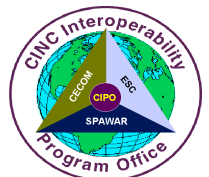
# Twelve AE XXI C4IT Principles

7. ***Implement Multi-Level Security*** – Provide the capability to access information at necessary classification levels through a single C4/IT system.
8. ***Ensure Spectrum Supremacy*** – Provide electromagnetic spectrum supremacy to maximize benefits of maneuver, tempo, and firepower.
9. ***Acquire Integrated Systems Using Commercial Technology*** – Provide synchronized C4/IT capabilities that leverage commercial technologies.
10. ***Exploit Modeling and Simulation*** – Provide cost-effective training, testing, and rapid prototyping through state-of-the art modeling and simulation.
11. ***Integrate Information Protection from Concept to Fielding*** – Provide information protection as an integral part of C4/IT.
12. ***Perform Process Assessment and Reengineering*** – Provide reengineered mission processes and institutional practices as part of C4/IT improvements.



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# Information Dominance:

On the Battlefield

In the Institutional Army

## What a Warfighter On the Battlefield

Must Know:

Where am I?

Where are my Friends?

Where is the Enemy?



## What Action Officers Must Know:

What is the Requirement? Who Are the Proponents & Stakeholders? What Processes Affect It?

What's the Plan? What is the Priority? What is Its Status? What Are the Vital Statistics?

What are the Legal, Regulatory Policy, & Resource Constraints?

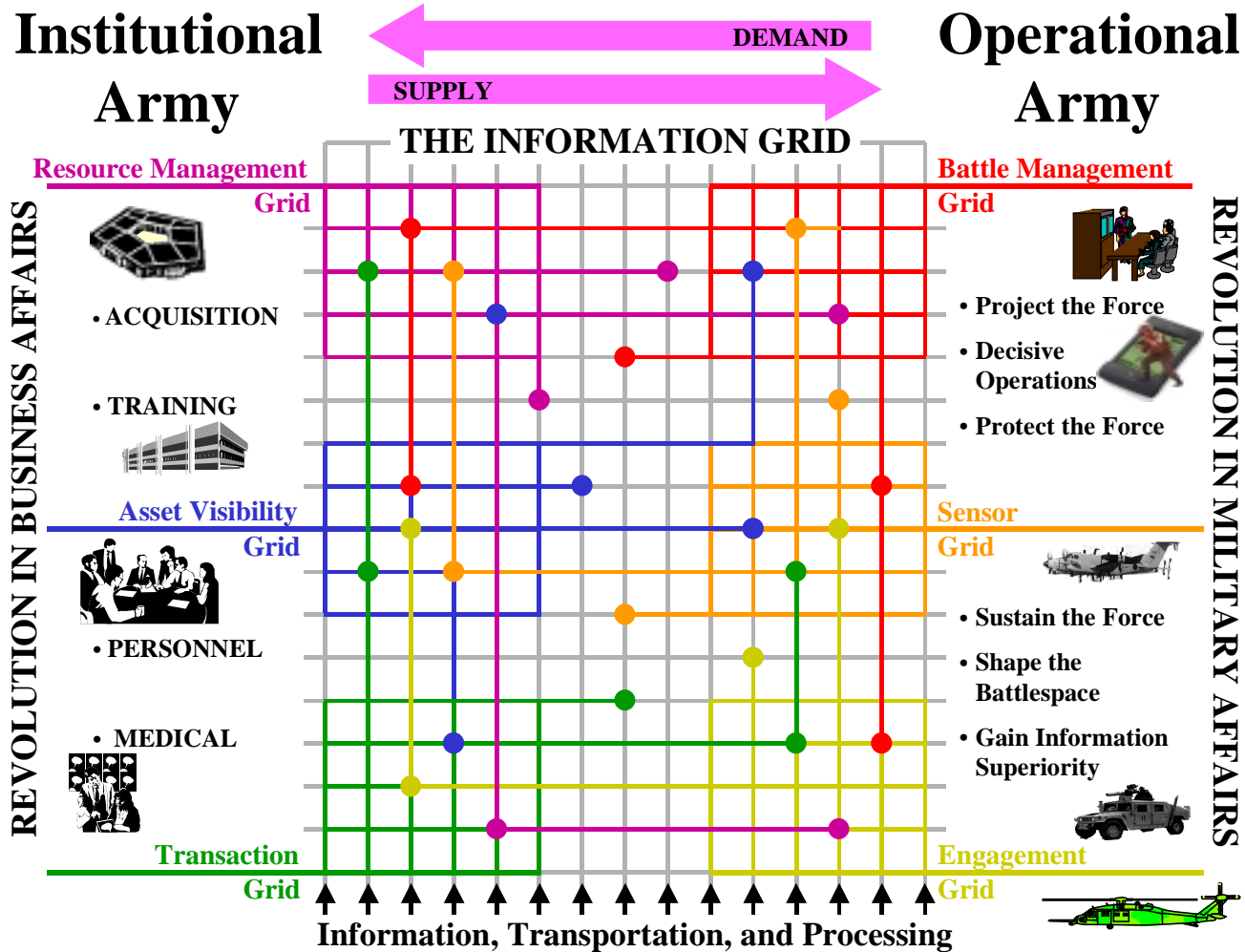


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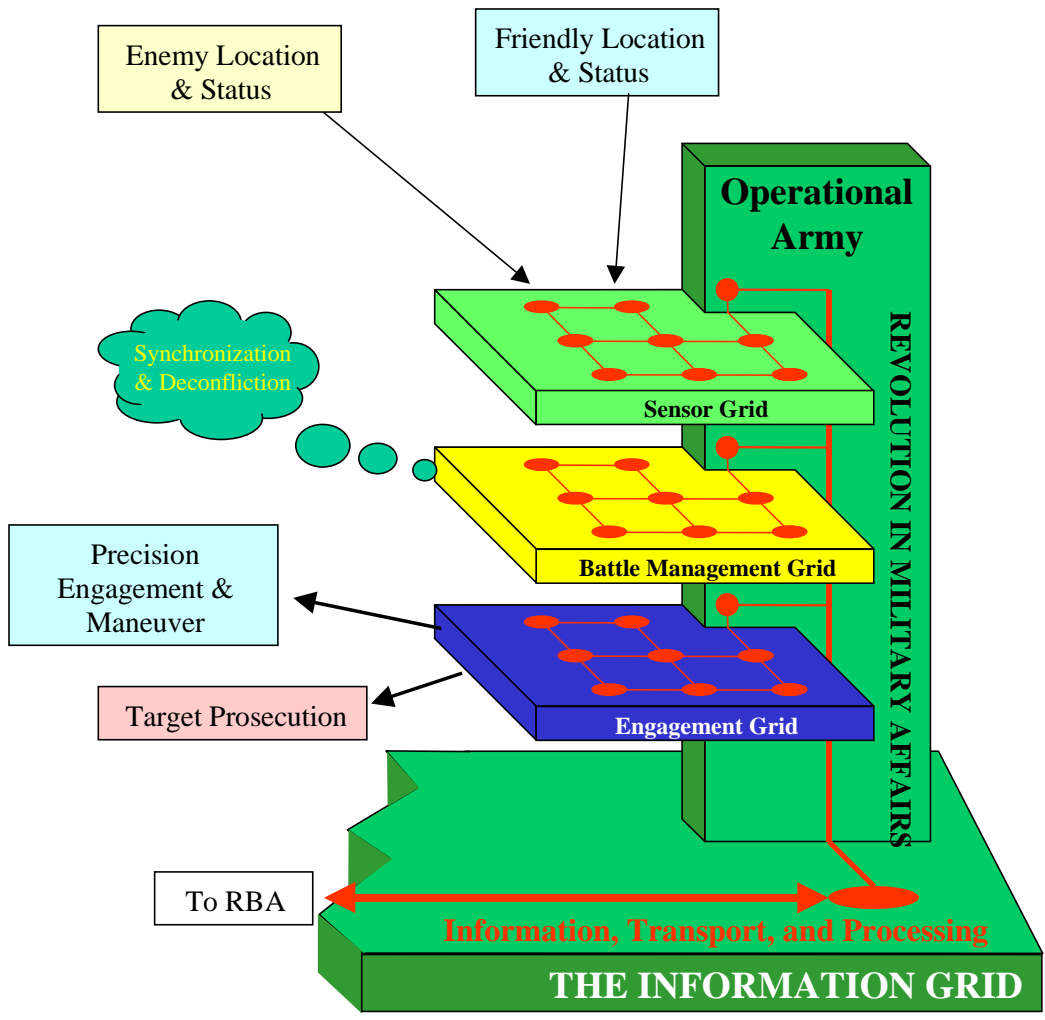
# Operational Army - Institutional Army Information Grid



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# Revolution in Military Affairs Grid

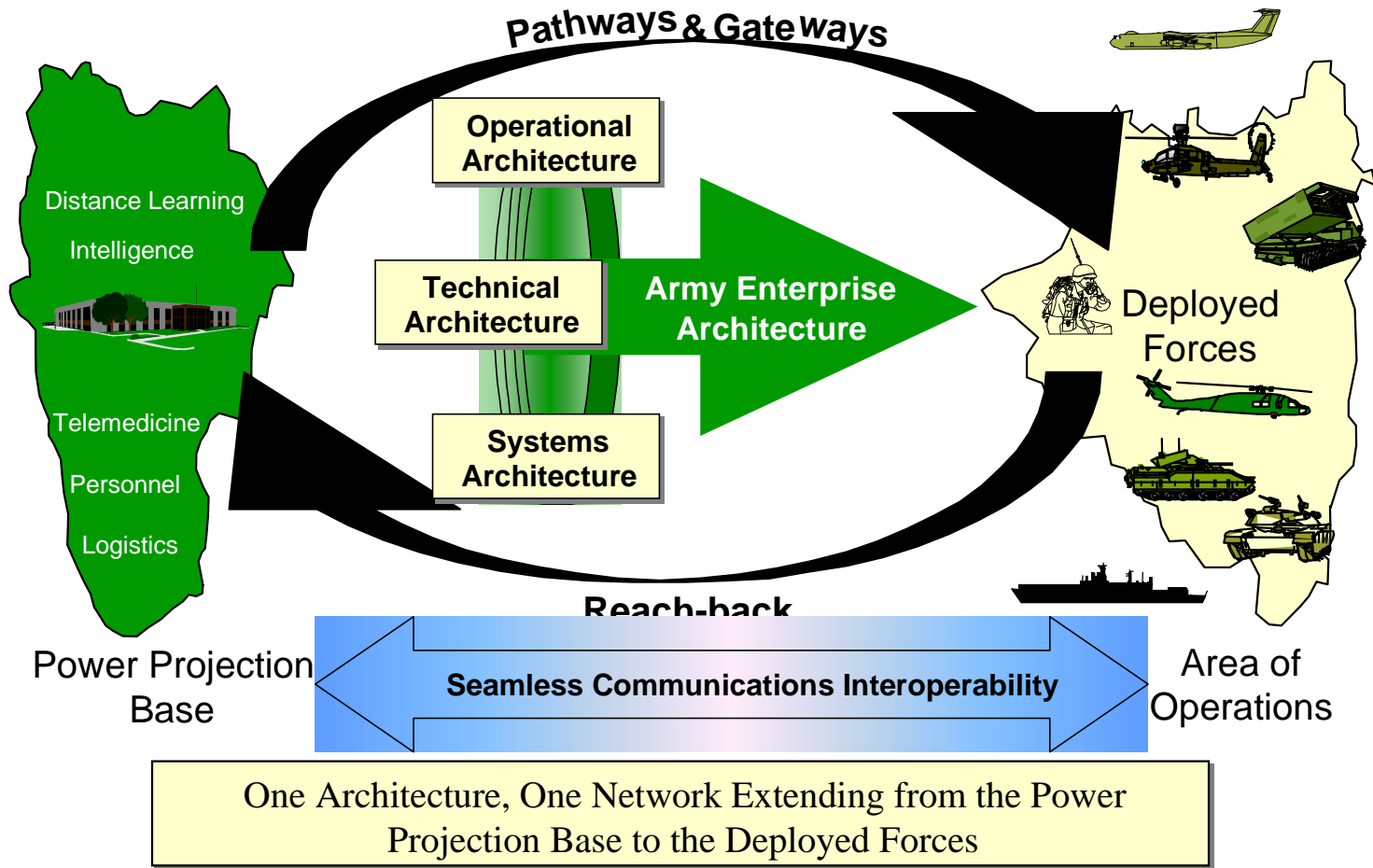


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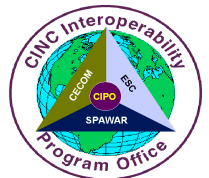
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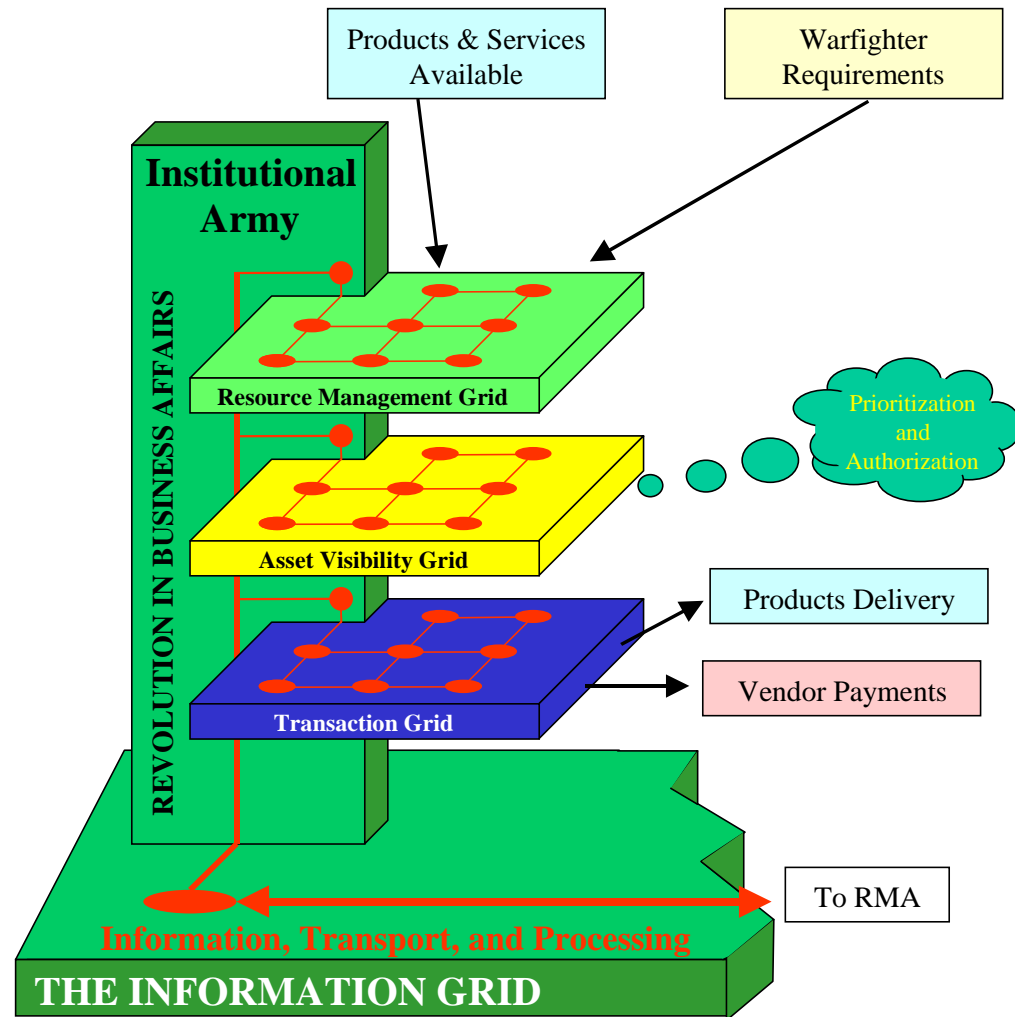
# Army Enterprise Architecture



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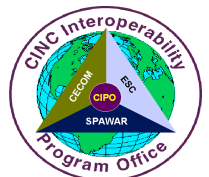


# Revolution in Business Affairs Grid

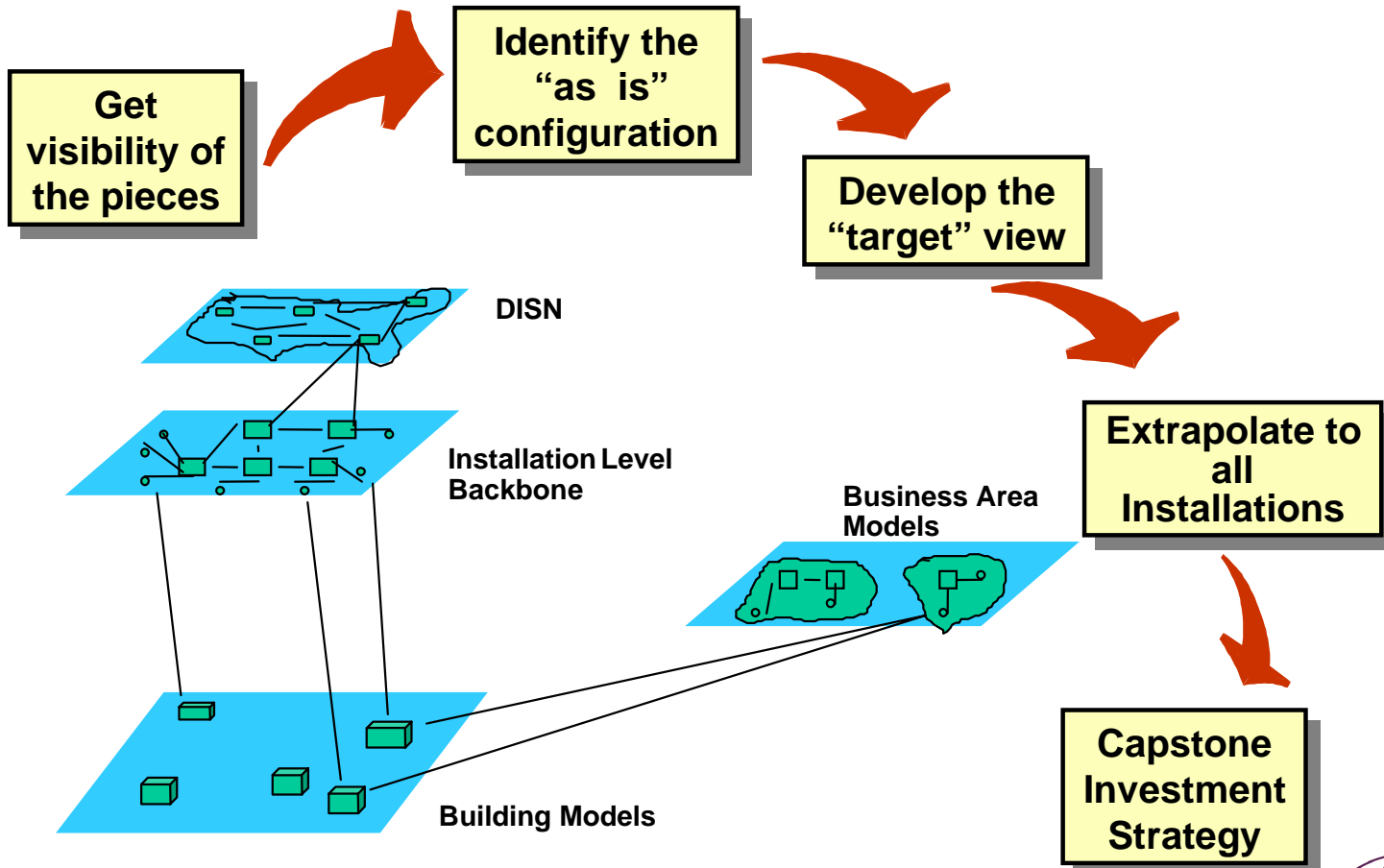


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# Installation Information Infrastructure Architecture (I3A)



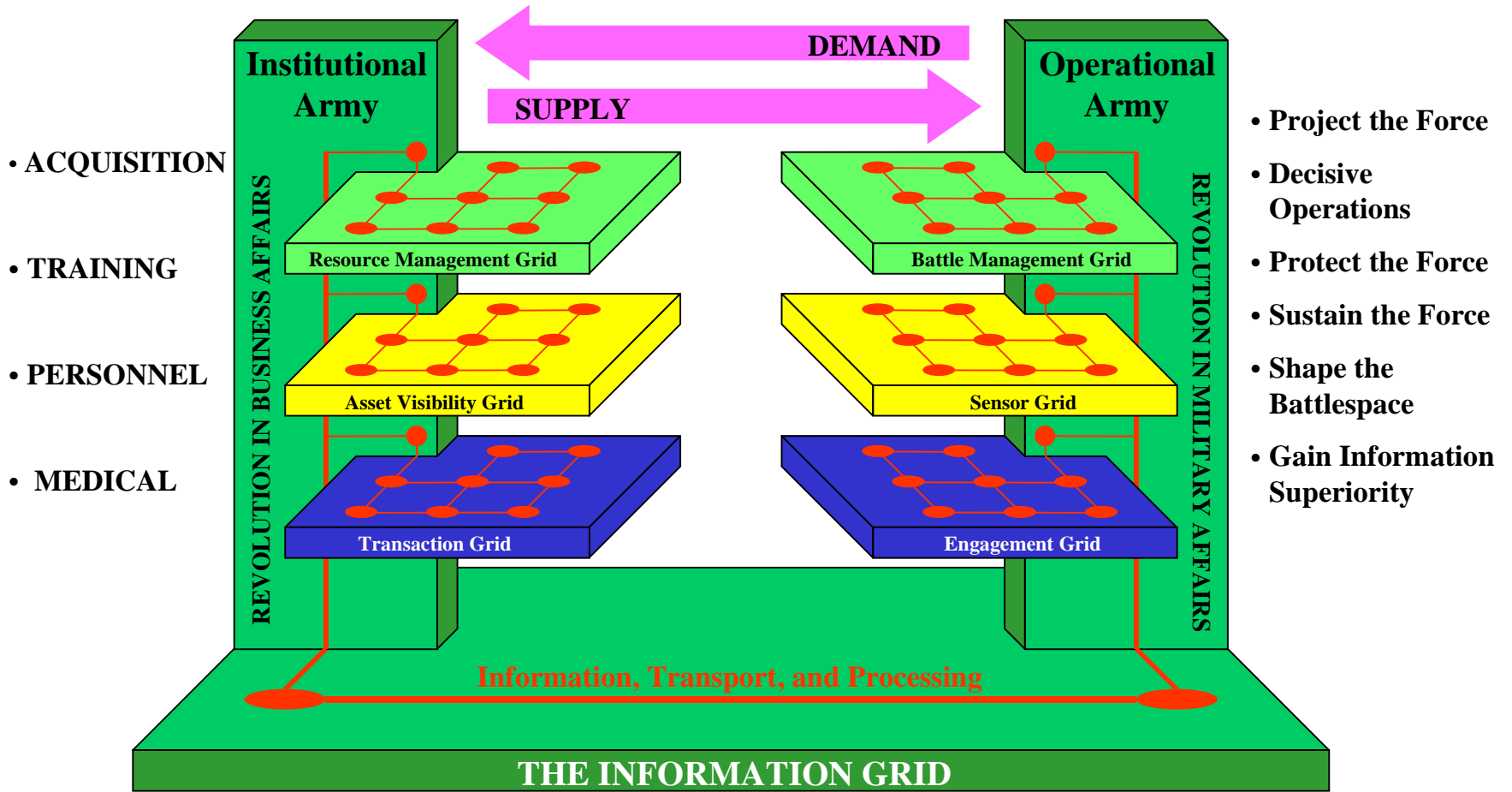
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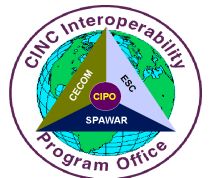




# RMA and RBA Grid Structure



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# Meeting the Bandwidth Challenge

The bandwidth challenge can be answered in four ways:

1. increasing throughput by increasing network capacity;
2. pushing more bits through the system by improving compression techniques;
3. managing bandwidth more efficiently;
4. or making content-context exchanges.



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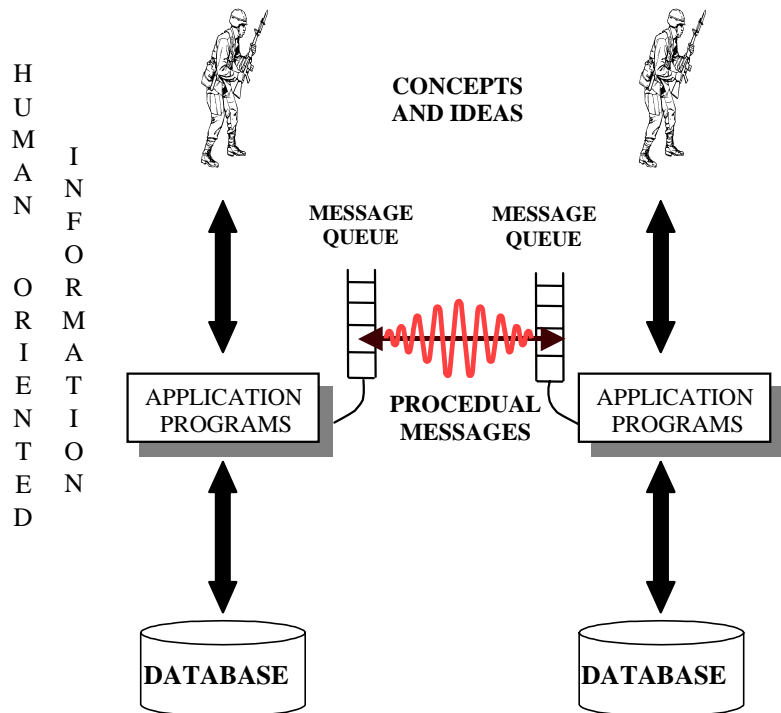
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# Model vs. Message-Based Battle Command (BC)

## MESSAGE-BASED BC

INFORMATION FLOW BASED ON AUTOMATING  
MANUAL TECHNIQUES

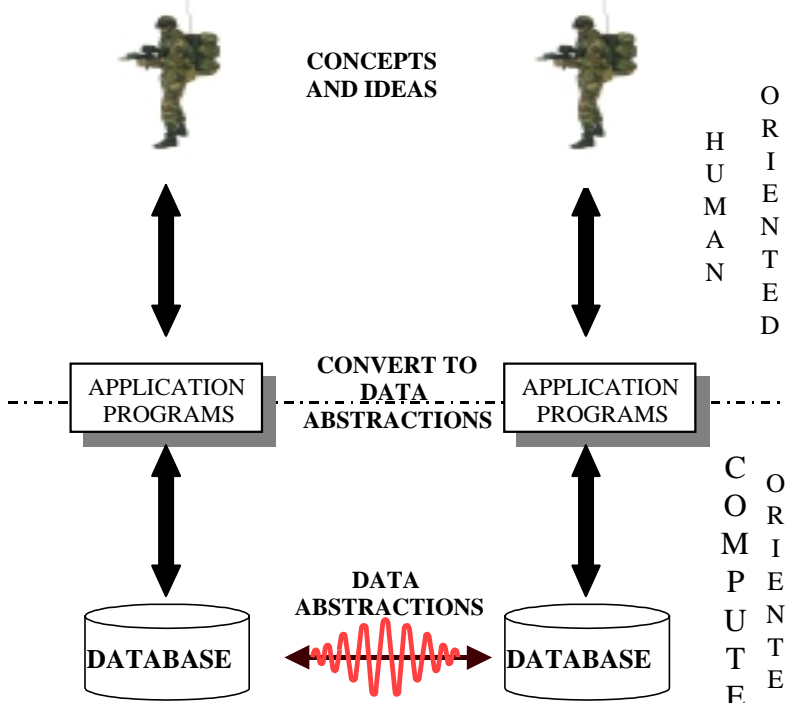


**SLOWER**

**BANDWIDTH INTENSIVE**

## MODEL-BASED BC

INFORMATION FLOW BASED ON CHANGES TO  
FORMAL MODEL



**FASTER**

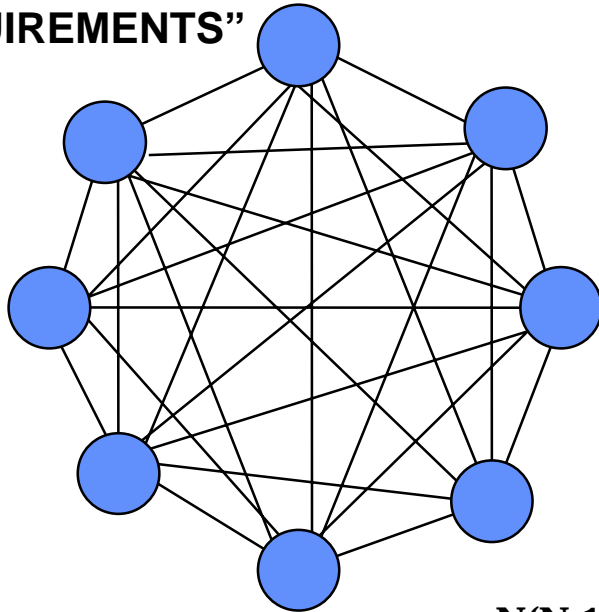
**LESS BANDWIDTH**

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# Comparing Requirements and Standards-Based Products

BY "REQUIREMENTS"



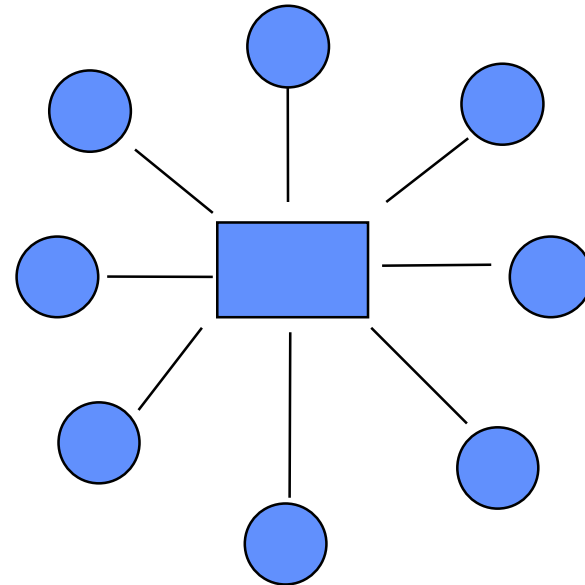
Number of interfaces needed =  $\frac{N(N-1)}{2} = O(N^2)$

Evolutionary Path Prohibitive

Never Gets Cheaper

- Next System Needs  $N + 1$  Interfaces
- Next Generation Needs  $N^2$  Interfaces

BY "INTERFACE STANDARDS"



Number of Interfaces Needed =  $N + 1$

Evolutionary Path Coverages

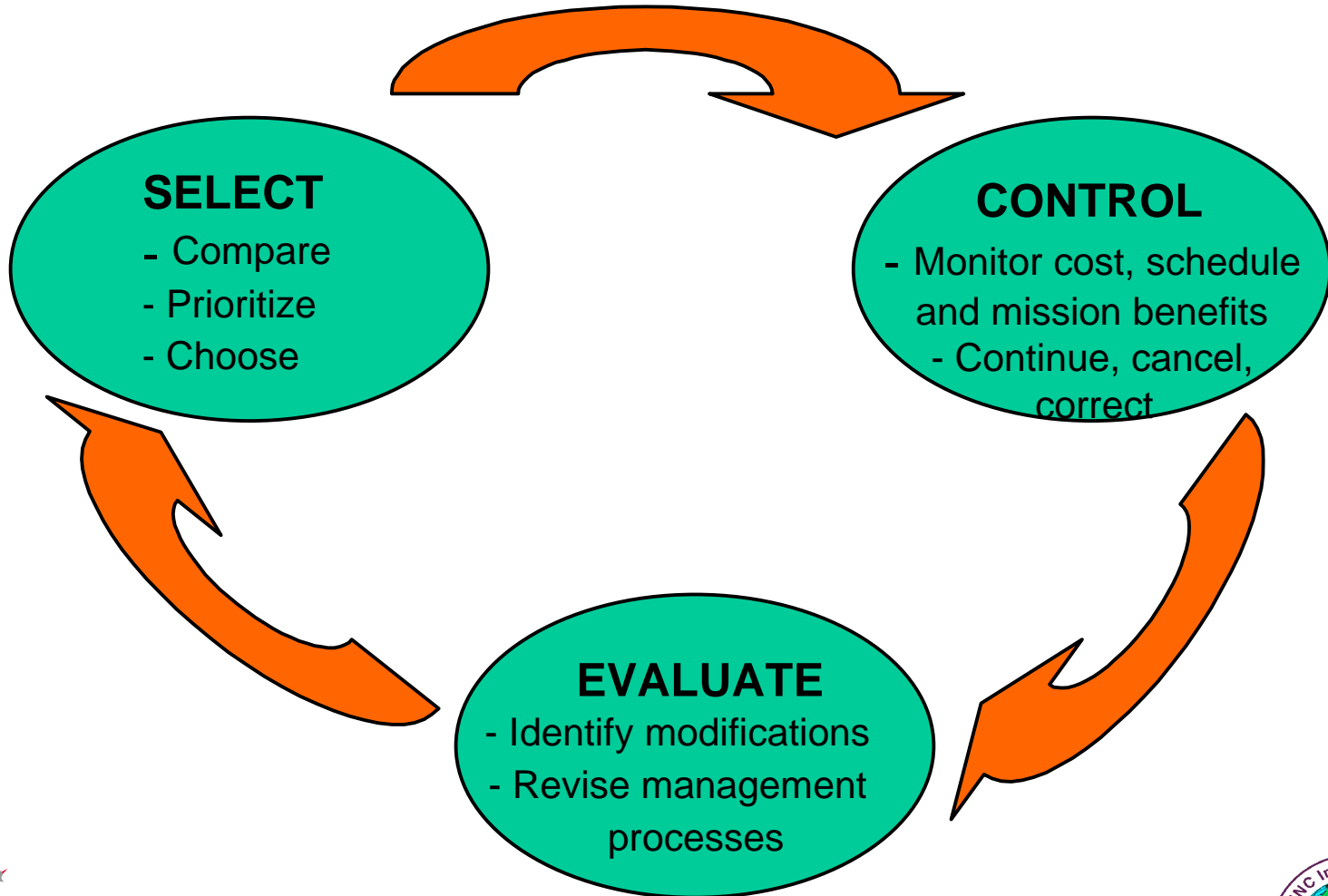
- Next System Needs 1 Interface Std
- Next Generation Needs 1 Interface Std



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# IT Capital Planning Process



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# Summary

- This **IT Capital Planning Process cycle** strategically positions the Army to achieve far-term knowledge-centric IT goals and objectives by capitalizing on promising “leap-ahead” technologies that are still in the conceptional phase of development.
- By making tough decisions to implement the most valuable and promising technologies, the Army will posture its information infrastructure to take full advantage of new technologies as they emerge.
- **Army Enterprise XXI** will strengthen current and future Army military capabilities and help maintain the readiness of the Army as it evolves to the mentally and physically agile 21st Century Army in the 2025 timeframe.
- This process will enable Army XXI and the AAN to achieve information superiority and maintain information dominance.



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