Harnessing Advanced Technology for C4ISTAR

A Conceptual Model for Developing C4ISTAR Solutions

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# Harnessing Advanced Technology for C4ISTAR: A Conceptual Model for Developing C4ISTAR Solutions

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**Abstract**
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Information Superiority

“the ability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary’s ability to do the same”

“the right appreciation of information by decision makers, supporting effective dialogue and mutual comprehension, and enabling commanders at all levels to reach better decisions”
Information, Knowledge and Decision Superiority

Observe

Orientate

Decide

Action

Effects Information

Plan Knowledge

assessment & experience

Executive Order

Commanders
Information Superiority

- a fundamental military capability, not a technology
- it is both relative and transitory
- relies upon people, training, doctrine as well as equipment
- enabling people to make better decisions in complex and uncertain situations
The role of C4ISTAR

- Network Enabling Capability

- Must add value to the process of making *better decisions* about the required effects

- Effectiveness is measured by its contribution to Military Capability
Dimension of the Framework

- The 6 Lines of Development:
  - Doctrine and Concepts
  - Structures and Processes
  - Equipment Capability
  - Personnel
  - Collective Training
  - Sustainment
Decision Environment

Campaign Objectives

Crisis Management

OpFor perception of environment

Sensors & Intelligence

Intelligence

Situational Awareness

Own perception of environment

THE REAL WORLD

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Decision Environment

Campaign Objectives

Crisis Management

Information Operations

OpFor perception of environment

Intelligence

Sensors & Intelligence

Crisis Management

THE REAL WORLD

Own perception of environment

Situational Awareness

C2

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Decision Environment

- Campaign Objectives
- Crisis Management
- Mission Planning
- Information Operations
- OpFor perception of environment
- Own perception of environment
- Situational Awareness
- Sensors & Intelligence
- THE REAL WORLD

Intelligence

C2

C2
Decision Environment

Campaign Objectives

Crisis Management

OpFor perception of environment

Information Operations

Combat Action

Mission Planning

Intelligence

Targeting

Situational Awareness

Own perception of environment

Sensors & Intelligence

THE REAL WORLD

C2

C2

C2
Delivering Required Effects

Delivering Required Campaign Effects

Recon’ → Strike → Mano’re → Engage → Post Eng Analysis
Enabler: Decision Superiority

Find:
- Capability
- Centres of Gravity
- Intentions

Common
JOP

Right:
- Info
- Time
- Place
- Form

Increased Lethality
Increased Survivability
Increased Tempo

Delivering Required Campaign Effects

Recon’ Strike Mano’re Engage Post Eng Analysis

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The Information Value Chain

O O D A
Observe Orientate Decide Action

Value Added

Mission Command

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The Information Value Chain

Lines of Development

Doctrine and Concepts; Structures and Processes; Equipment Capability; Personnel; Training; Sustainment

Mission Command

Observe Orientate Decide Act

Value Added

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**The Information Value Chain**

**Lines of Development**

- Doctrine and Concepts;
- Structures and Processes;
- Equipment Capability;
- Personnel; Training; Sustainment

**Mission Command**

- Observe
- Orientate
- Decide
- Action

**Value Added**

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In Conclusion

- The framework for C4ISTAR solutions must:
  - span all Lines of Development
  - identify where information adds the *most* value in the process of delivering the required effect
  - aid Balance of Investment decisions based on the Value of Information
  - contribute to Decision Superiority through the coordinated development of Organisation, Doctrine and Equipment Capability
Decision Superiority

Doctrine and Concepts  Structures and Processes  Equipment Capability  Personnel  Collective Training  Sustainment

Reconnaissance  Strike  Engage  Manoeuvre  Post Engagement  Right Information

Right Time  Right Place  Right Form

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