

2006 CCRTS

“The State of the Art and the State of the Practice”

**Nuclear C3 and Migration to a
New “Strategic” C3
Architecture**

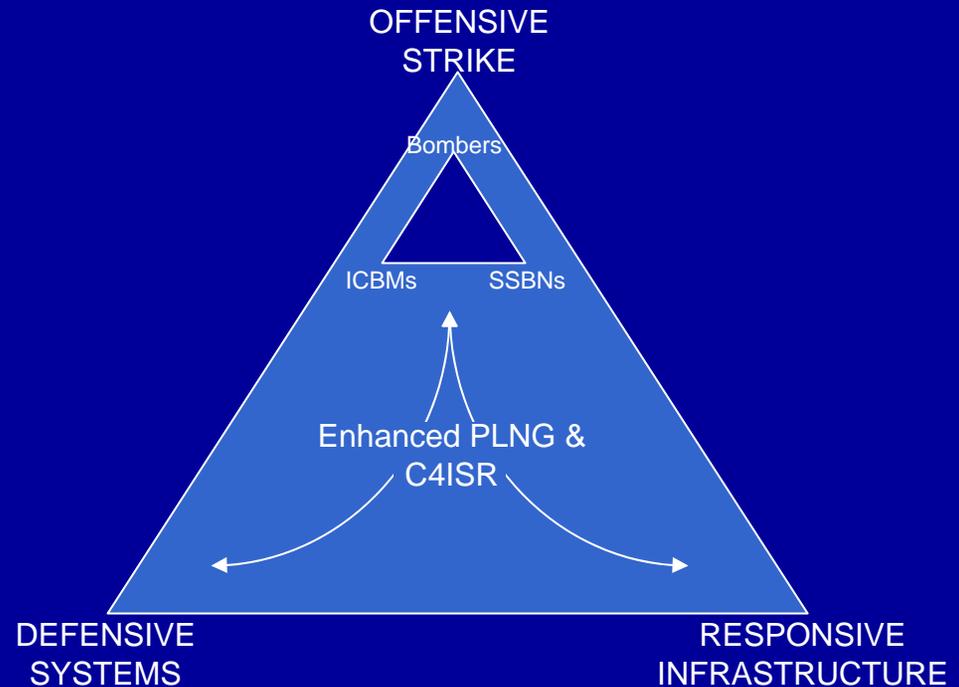
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Overview

- DoD is transforming its traditional nuclear Triad to a “New Triad”

- Offensive strike systems (both nuclear and non-nuclear and kinetic and non-kinetic)
- Defenses (both passive and active)
- Responsive Defense Infrastructure
- Tied together by “enhanced planning and C4ISR”



- Currently, nuclear C2 uses a myriad of systems
 - Platform-centric and hardware-based
- A strategy to support the New Triad
 - Migrate our C2 systems into the IP environment
 - Support a broader range of C2 requirements
 - Still provide the high-assurance, robust, and enduring C2 capability required by U.S. national policy

Assumptions and Factors in Forming an Approach to Transformation

- U.S. national policy regarding strict assurances for nuclear command and control is unlikely to change
- National leadership is unlikely to accept the lack of a “hedge” against all ranges of nuclear attack against the U.S., to include a large scale or surprise nuclear attack
- Current U.S. policies require an ability to respond quickly to a major strike on the U.S.

Our current nuclear C3 capability is a direct result of these strict policies and requirements

Today's Nuclear C3 Architecture

- The “thick-line” layer of the nuclear C3 architecture
 - Day-to-day architecture
- The “thin-line” layer of the nuclear C3 architecture
 - Survivable, enduring
- The “thin-line” layer of the nuclear C3 architecture (in a post-attack nuclear environment)

DoD needs to ensure that the survivable “thin-line” C3 architecture is sustained and supported

Migration to a Future “Strategic” C3 Architecture

- Decision superiority – “the right information at the right time”
- Merging of nuclear strike options and non-nuclear (“Global Strike”) options
- Shifts and realignments in major areas of responsibility
- Network-centric solutions to stay in step with evolution of the larger C2 community.

Clear performance standards for the new strategic environment
described by the Nuclear Posture Review

Migration to a Future “Strategic” C3 Architecture

- Command
 - Geographically distributed Command Operations
- Warning and Assessment
 - Integrated Tactical Warning and Attack Assessment (ITW/AA)
- Assured Message Delivery
 - EAM Delivery
- Route data simultaneously to both the developing net-centric environment and Into the current point-to-point “legacy” networks

NC2 Migration CONOPs

NC2 -> NTC2 -> NCC

- Overarching Goal: Provide Sr Leaders the capability to make any and all decisions appropriate to the situation.
- Must provide SA/Warning, Command [Planning and Decision Making] and Execution
- Fundamentally network based and distributed
 - Standards based, built around core C2 and Enterprise services
 - Common data standards and vocabulary
 - Applications and data discoverable, accessible and useable through the net
- Essential Attributes: Survivable, Endurable, Robust, Reliable, Available
- Additional key attributes: Scalable, Flexible, ...
- Parallel and hybrid solutions
 - Combination of open and closed networks and network / circuit based solutions to able meet certain conditions / environments / missions
 - Gracefully degradable but not to a single mission focus, i.e., can degrade but must still support all required C2 activities under the condition at hand
 - IA: support multiple security domains and multiple domain security
 - Leverage existing and evolving C2 programs and platforms

The Path Forward

- Policy directing migration of tactical, strategic, and nuclear C3 to a New Triad construct by 2012-2015
 - Review existing policy / Implement new policy as needed
- Tie ongoing efforts into a coherent strategy and concept definition for future strategic C3 capabilities
 - DoD Global Information Grid (GIG)
 - Joint C4ISR Decision Support Center (DSC) long-range Strategic C2 Capabilities Analysis (technical performance criteria for the New Triad)
 - PDM directed NC2 Migration analysis
- Pilot “Minimum Essential Command Network” for select threads of the nuclear C3 processes