




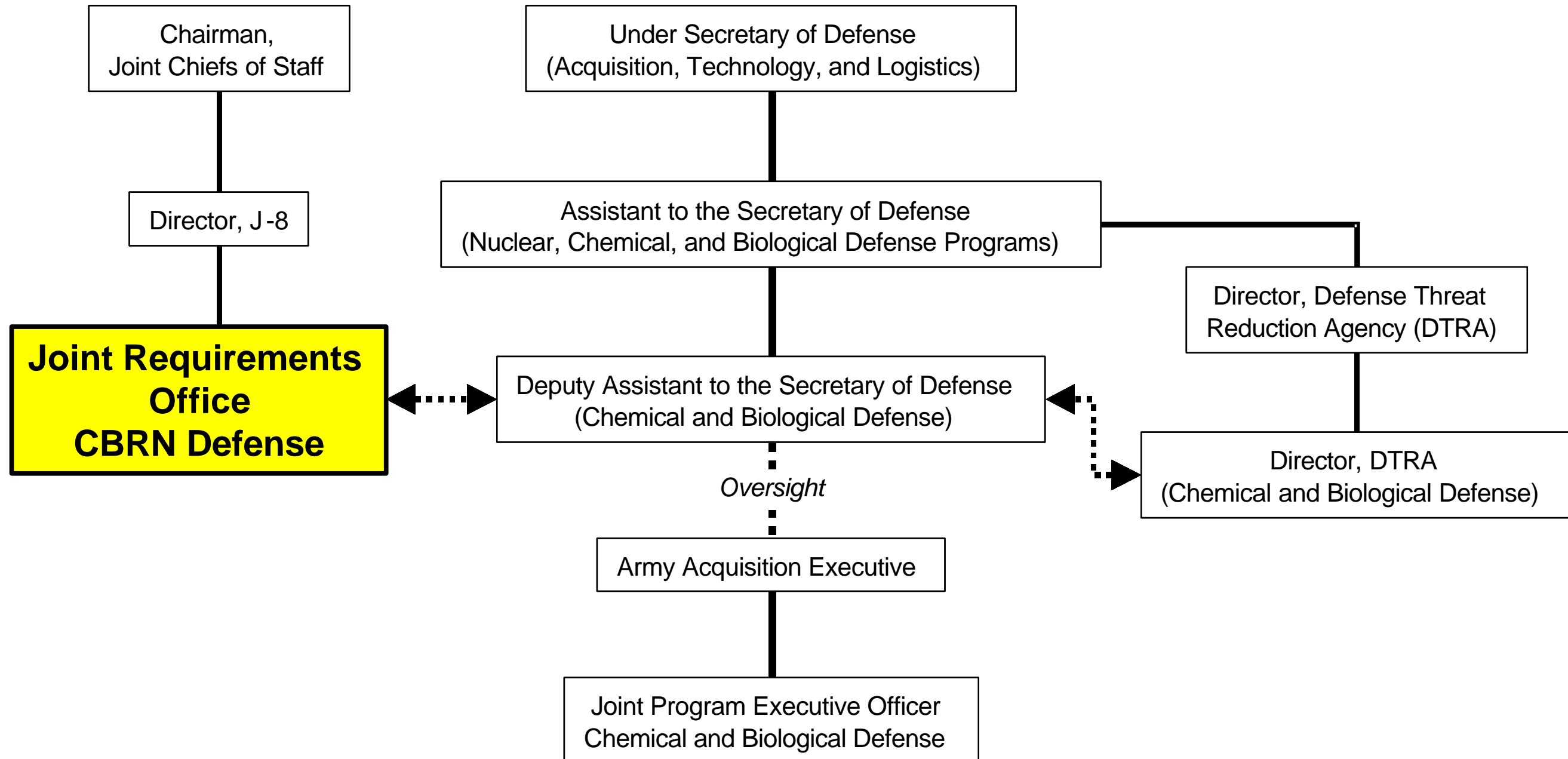
# Joint Requirements Office for Chemical, Biological, Radiological, and Nuclear Defense



**APBI Brief**  
**6 April 2004**

- 
- **CBDP Management and Oversight**
  - **JRO - CBRN Defense Charter**
  - **JRO - CBRN Defense Organization**
  - **An Integrated Overarching Architecture**
  - **Joint CBRN Functional Concept**
  - **Capabilities Assessment**
  - **Insights and Recommendations**
  - **Summary**

# CBRNDP Management & Oversight Structure

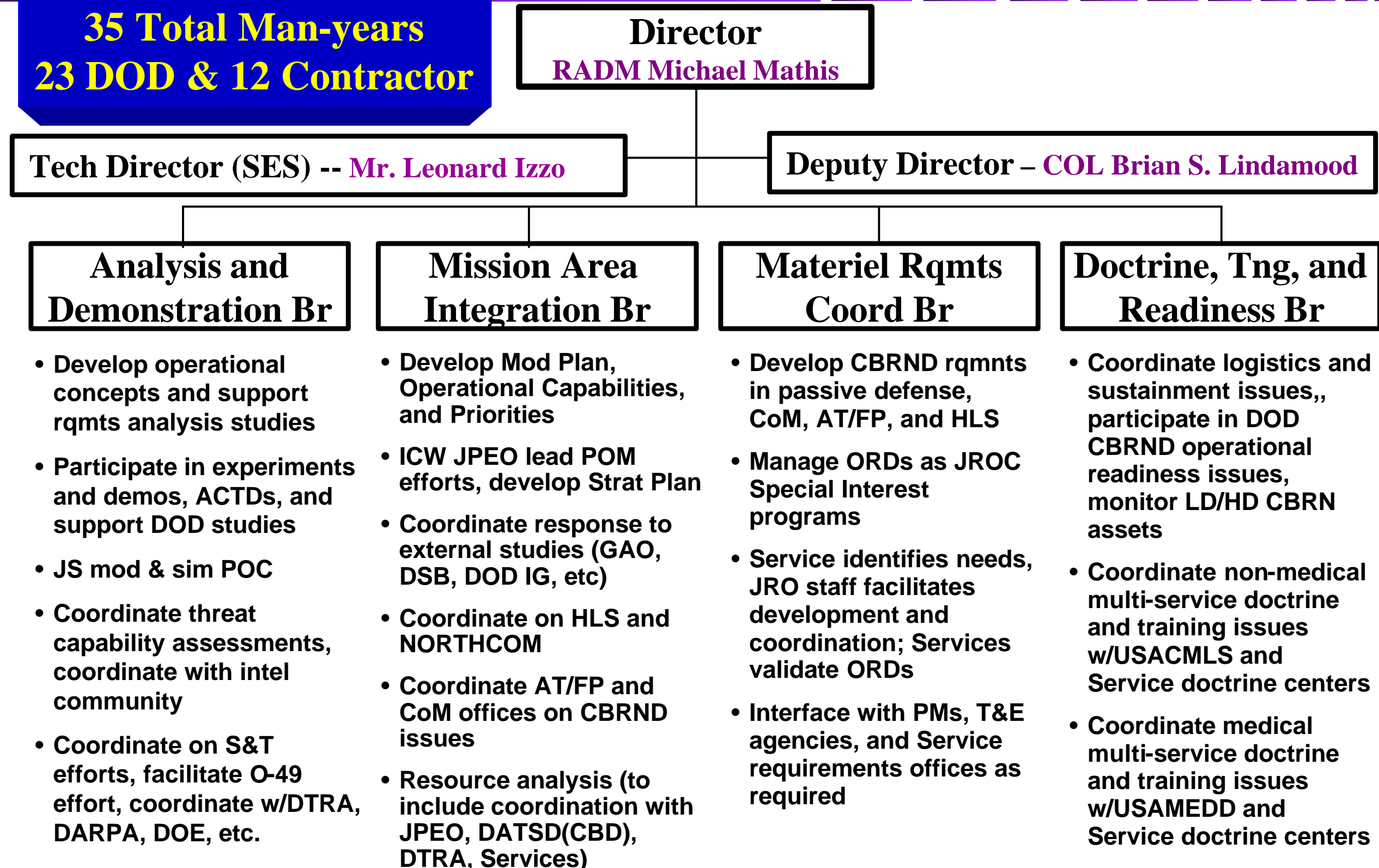


## *JRO – CBRN Defense Charter*

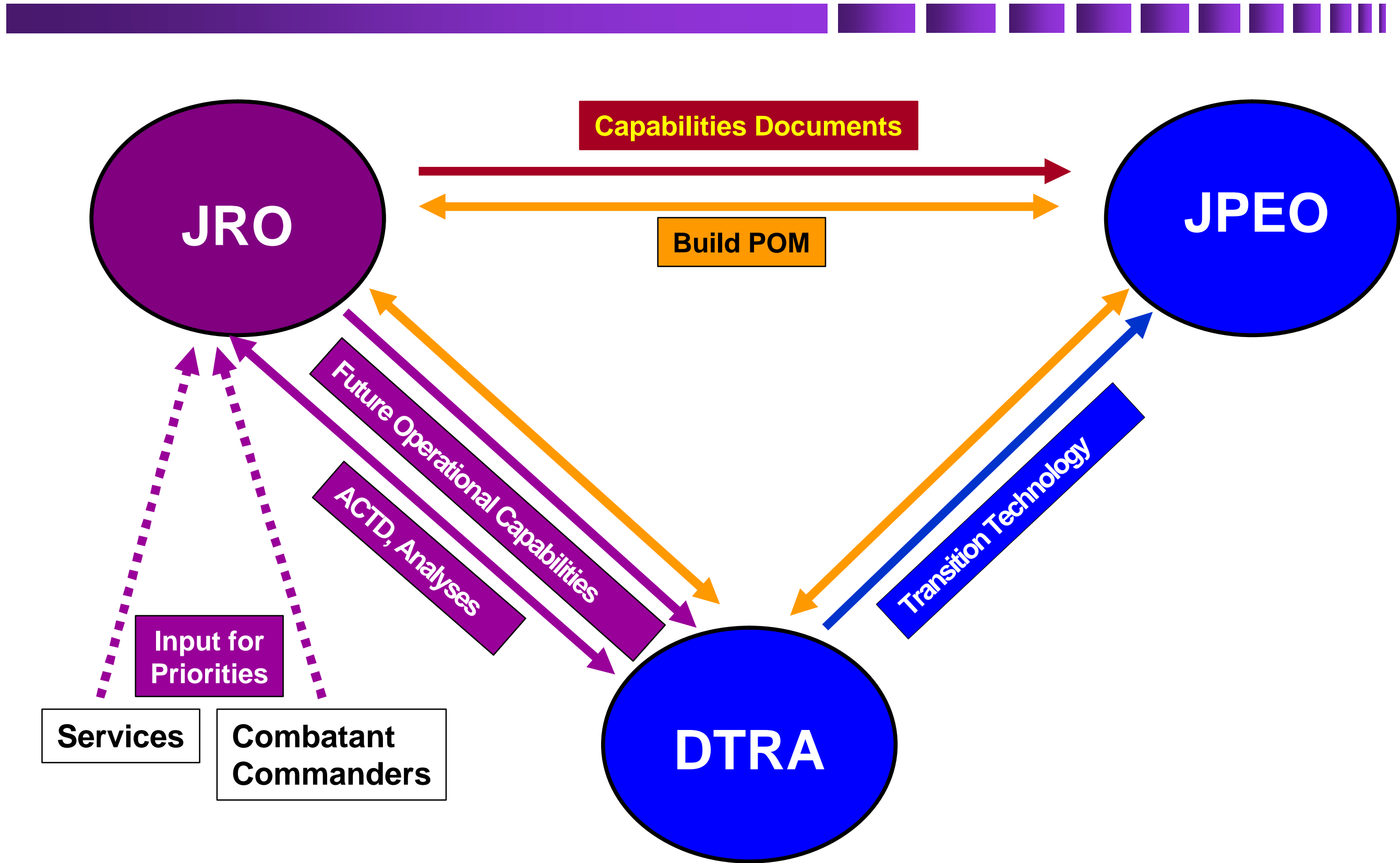
- **Single office within DOD responsible for the planning, coordination, and oversight of joint CBRN defense operational requirements**
  - **Develop and maintain the CBRN defense Overarching Operational Concept and the CBRND Modernization Plan**
  - **Represent the Services and Combatant Commanders in the requirements generation process and act as their proponent for coordinating and integrating CBRND operational capabilities**
  - **Develop DOD CBD POM with acquisition community support**
  - **Facilitate the development of joint doctrine and training and sponsor the development of multi-service doctrine**
- **Serve as the CJCS' single source of expertise to address all issues involving CBRN defense within passive defense, consequence management, force protection, and homeland security**

# JRO-CBRN Defense Current Organization

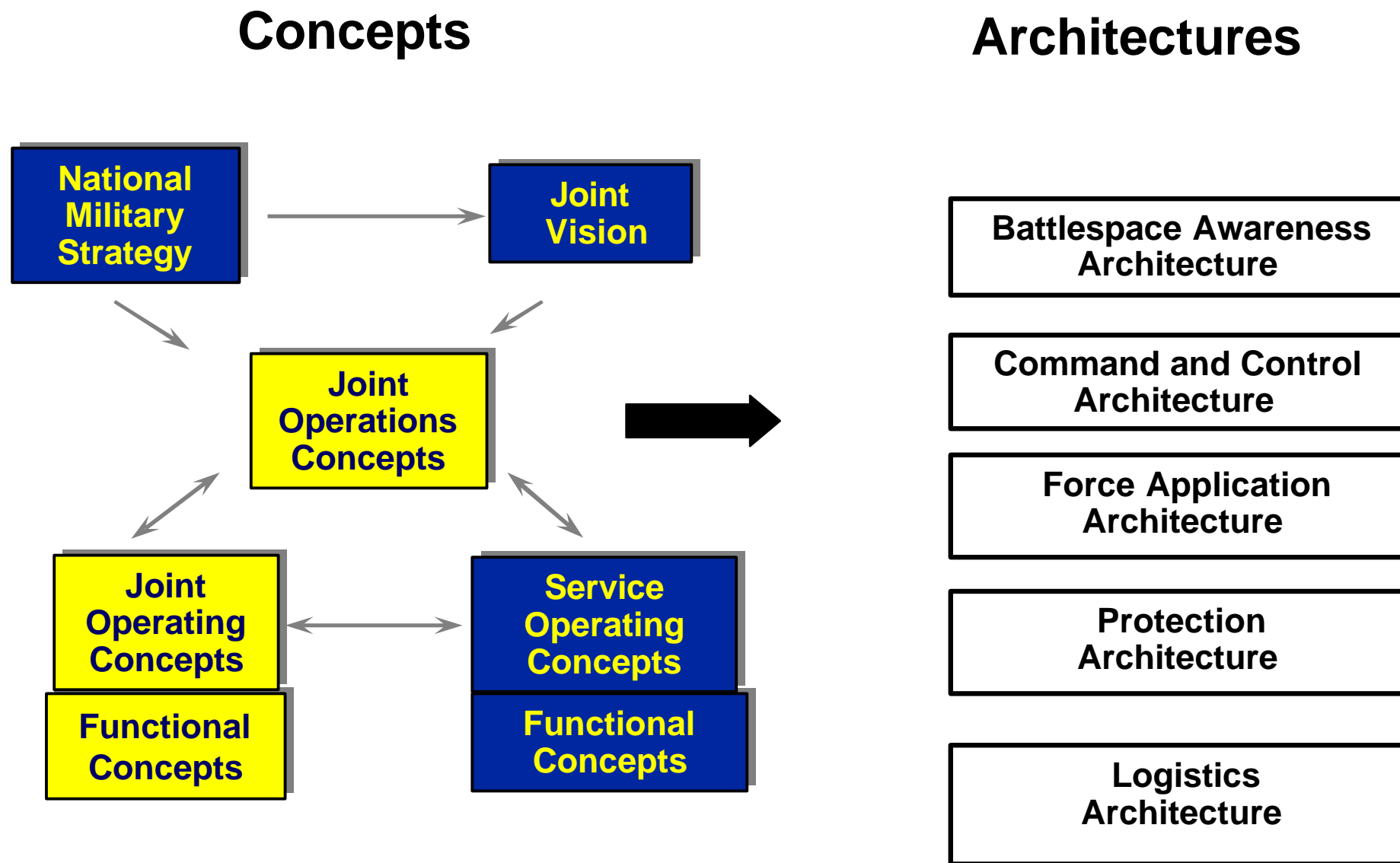
**35 Total Man-years  
23 DOD & 12 Contractor**



# Required Capabilities, S&T, and Acquisition



# Joint Capabilities Integration and Development

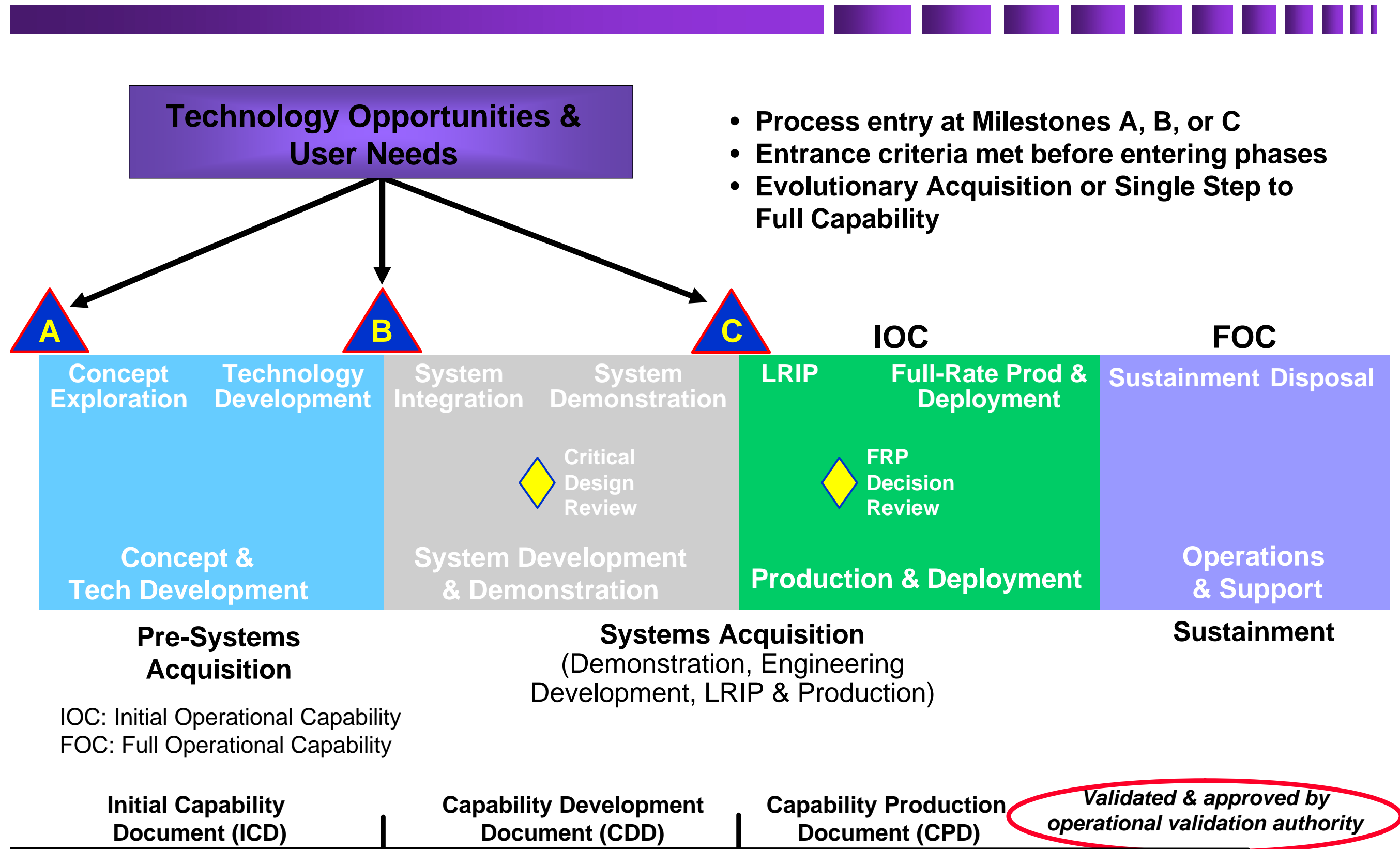


## *Matériel Requirements*

- **New Joint Capabilities Integration and Development System**
  - **CJCSM 3170.01 and CJCSI 3170.01C, 24 Jun 03**
  - **Drive “jointness” from the top-down, strengthening joint warfighting capabilities**
  - **Links strategic direction to strategic investment decision making and acquisition policy**
  - **Enables a more responsive acquisition system**
  - **Provides an engine for force transformation**
  - **Integrates material and non-material solutions to capability gaps and shortfalls**
  - **Frames discussions of alternatives using common language of metrics**



# Capability Development The "New" Model



## *Joint CBRN Defense Functional Concept – Operational Attributes*

- **SHAPE** – Provides the ability to characterize the CBRN hazard to the force commander - develop a clear understanding of the current and predicted CBRN situation; collect, query, and assimilate info from sensors, intelligence, medical, etc., in near real time to inform personnel, provide actual and potential impacts of CBRN hazards; envision critical SENSE, SHIELD and SUSTAIN end states (preparation for operations); visualize the sequence of events that moves the force from its current state to those end states.

- **SHIELD** – The capability to shield the force from harm caused by CBRN hazards by preventing or reducing individual and collective exposures, applying prophylaxis to prevent or mitigate negative physiological effects, and protecting critical equipment

- **SUSTAIN** – The ability to conduct decontamination and medical actions that enable the quick restoration of combat power, maintain/recover essential functions that are free from the effects of CBRN hazards, and facilitate the return to pre-incident operational capability as soon as possible.

**SENSE**

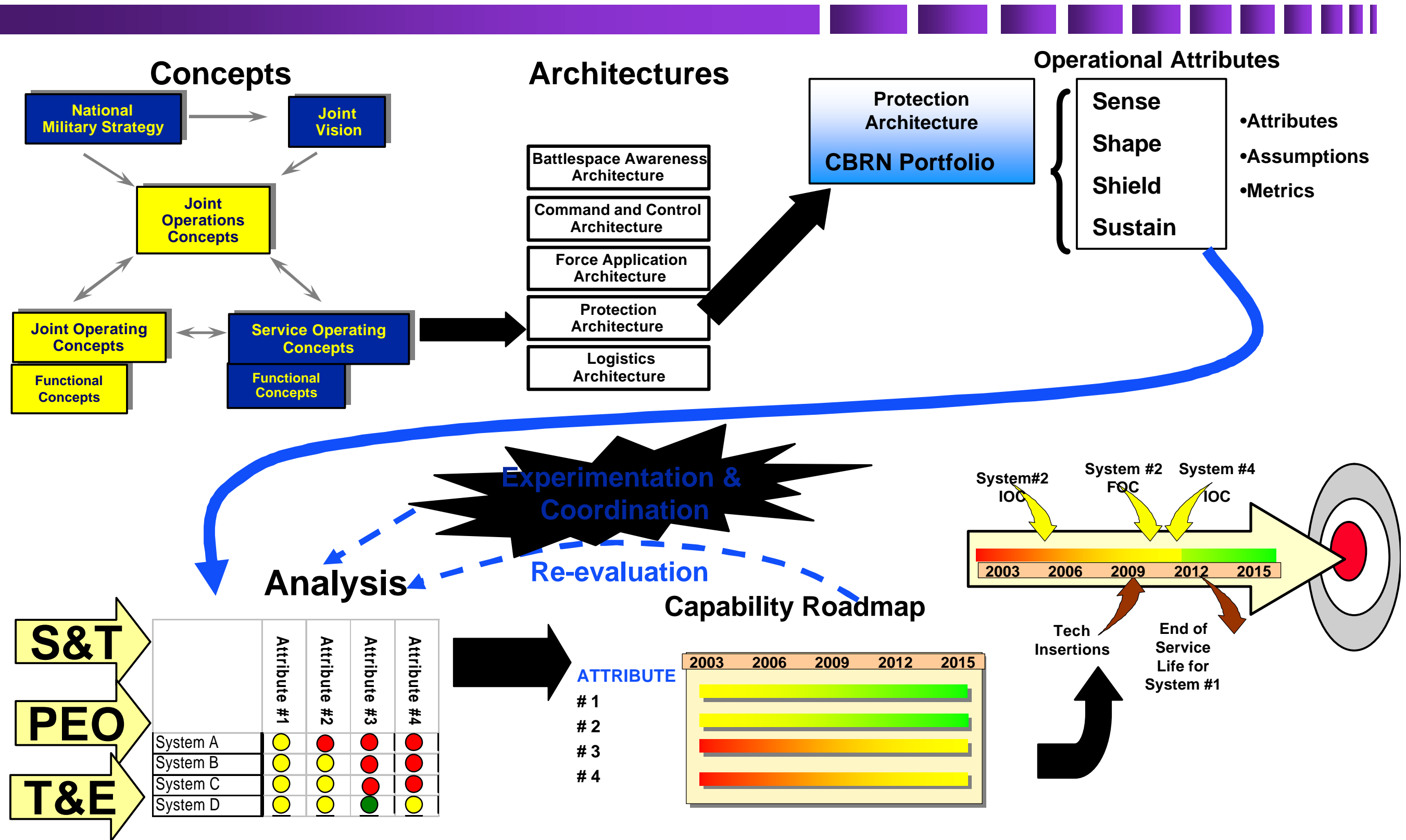
- **SENSE** – The capability to continually provide the information about the CBRN situation at a time and place by detecting, identifying, and quantifying CBRN hazards in air, water, on land, on personnel, equipment or facilities. This capability includes detecting, identifying, and quantifying those CBRN hazards in all physical states (solid, liquid, gas).

## *Core Capabilities Assessment Summary*

- **Core Capabilities Assessed included:**

- **SENSE**            **Point Detection (Chemical, Biological, and Radiological)**
- **SENSE**            **Stand-off Detection (Chemical, Biological, and Radiological)**
- **SENSE**            **NBC Reconnaissance (Chemical, Biological, and Radiological)**
- **SHAPE**            **Integrated Early Warning**
- **SHAPE**            **Battle-space Management**
- **SHAPE**            **Battle-space Analysis**
- **SHIELD**           **Respiratory and Ocular Protection**
- **SHIELD**           **Percutaneous Protection**
- **SHIELD**           **Expeditionary Collective Protection**
- **SHIELD**           **Medical Prophylaxes**
- **SUSTAIN**          **Individual Decontamination**
- **SUSTAIN**          **Equipment Decontamination**
- **SUSTAIN**          **Fixed Site Decontamination**
- **SUSTAIN**          **Medical Diagnostics**
- **SUSTAIN**          **Medical Therapeutics**

# Baseline Assessment Methodology



## *CBRN Defense Specific Assumptions*

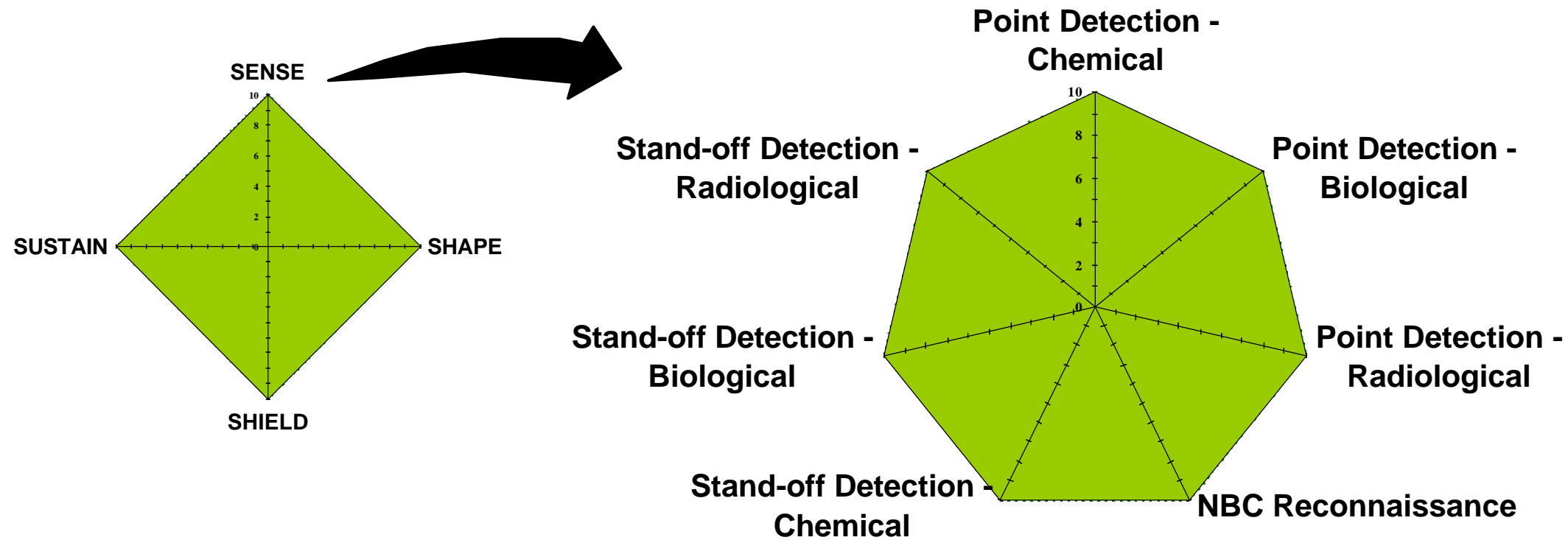
- **DoD Must be able to defend against Weapons of Mass Destruction**
- **The Chemical Biological Defense Program (CBDP) will remain an integrated Joint Program**
- **The current CBDP Joint Acquisition Objective accounts for the requirements in support of the JSCP (1-4-2-1); Services currently validating requirements**
- **Assessment of developmental systems assume**
  - **All KPPs of developmental systems will be met**
  - **All Threshold requirements of developmental systems will be met**
  - **Programs deliver as planned for cost, schedule, and performance**
- **Assessment of Quantity and Regulatory Compliance are as of FY 03**
- **POM FY 04-09 executed as approved, with supplemental**

## *Terms of Reference for Assessments*

- **Scale for the Assessment**
  - The assessments have been normalized to a scale of 10
    - 0 = no capability
    - 1 = capability equals minimum performance of a system
    - 10 = capability equal to or greater than the objective performance parameters defined for projected systems (this equals our desired future operational capability)
  - **Red** (0-3) – minimum capability
  - **Yellow** (4-7) – partial capability
  - **Green** (8-10) – full capability
- Each system is assessed against the defined attributes to determine system capability
- Assessment of overall capability in each attribute is weighted for quantity for FY 03 and FY 09
- Assessment of overall capability in FY 15 is “How good we can be” based on current program efforts

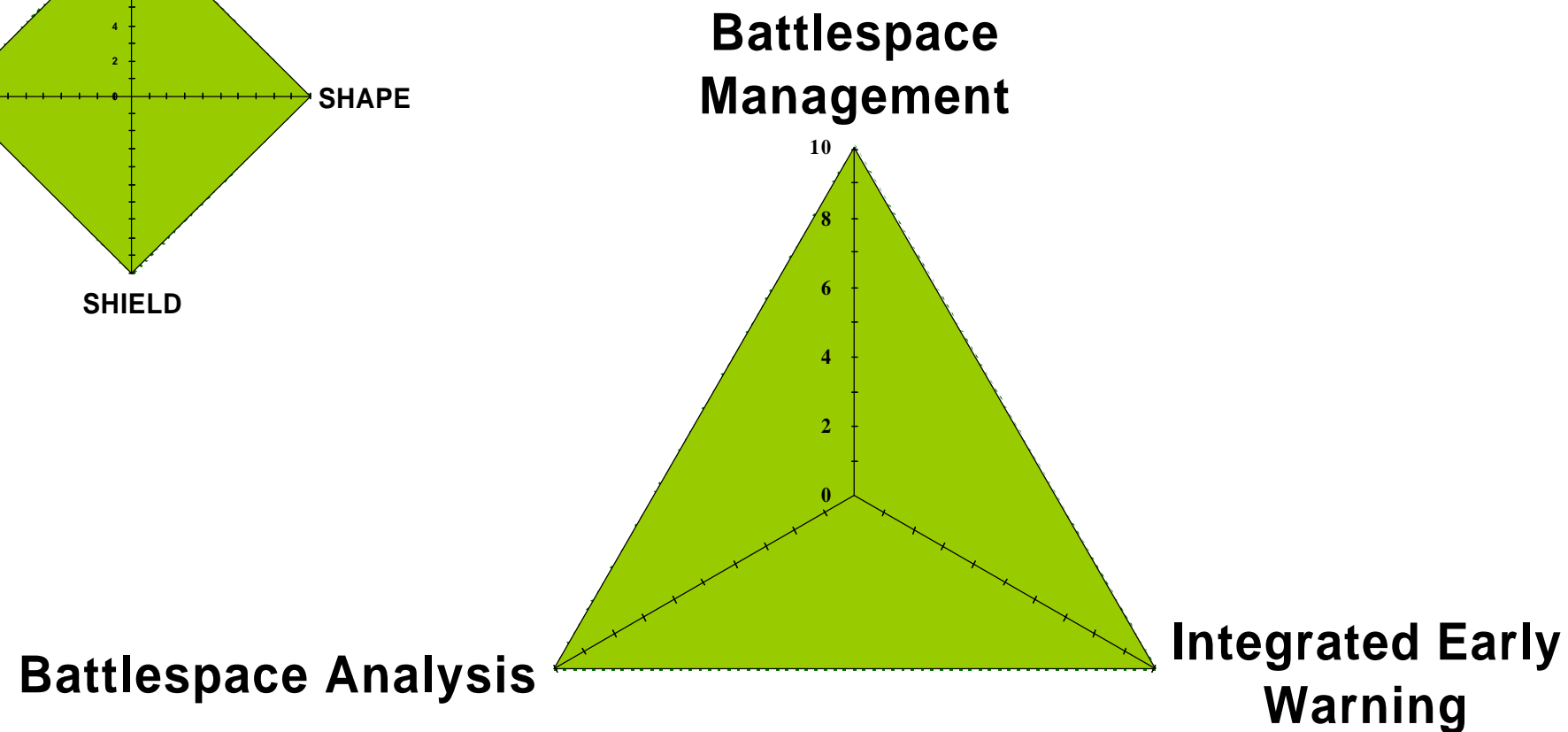
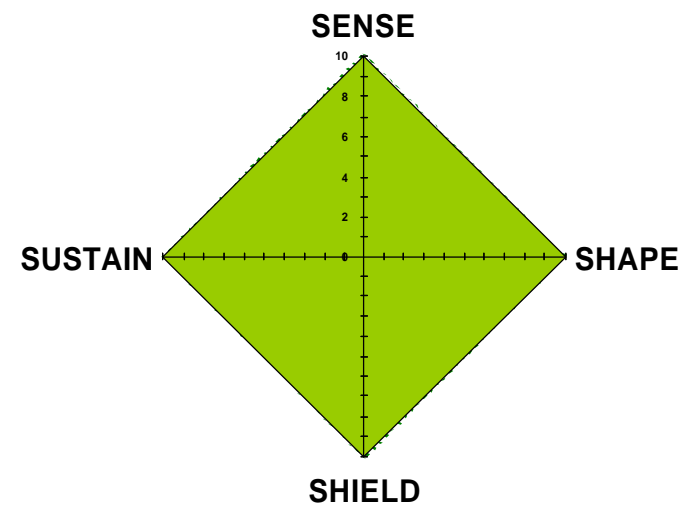


*The capability to continually provide the information about the CBRN situation at a time and place by detecting, identifying, and quantifying CBRN hazards in air, water, on land, on personnel, equipment or facilities. This capability includes detecting, identifying, and quantifying those CBRN hazards in all physical states (solid, liquid, gas).*





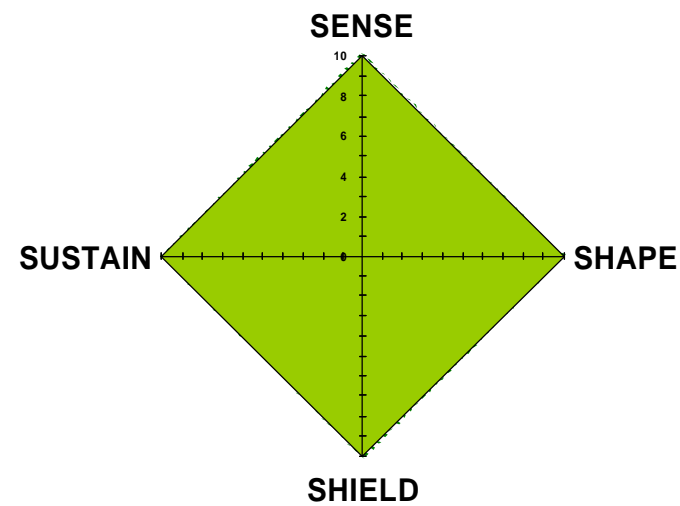
**Provides the ability to characterize the CBRN hazard to the force commander - develop a clear understanding of the current and predicted CBRN situation; collect and assimilate info from sensors, intel, medical, etc., in near real time to inform personnel, provide actual and potential impacts of CBRN hazards; envision critical SENSE, SHIELD and SUSTAIN end states (preparation for operations); visualize the sequence of events that moves the force from its current state to those end states.**





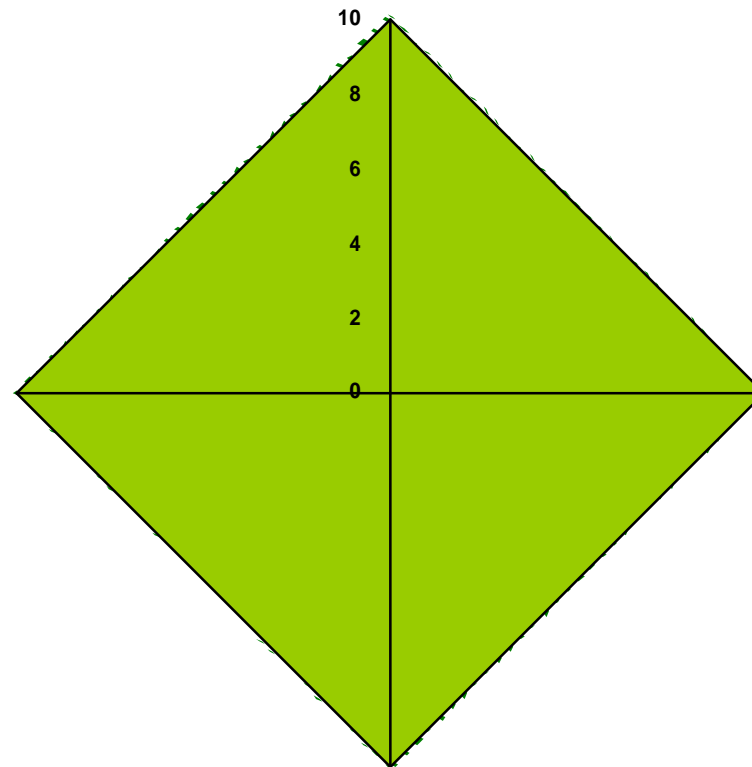
# SHIELD

***The capability to shield the force from harm caused by CBRN hazards by preventing or reducing individual and collective exposures, applying prophylaxis to prevent or mitigate negative physiological effects, and protecting critical equipment .***



**Percutaneous Protection**

**Respiratory & Ocular Protection**

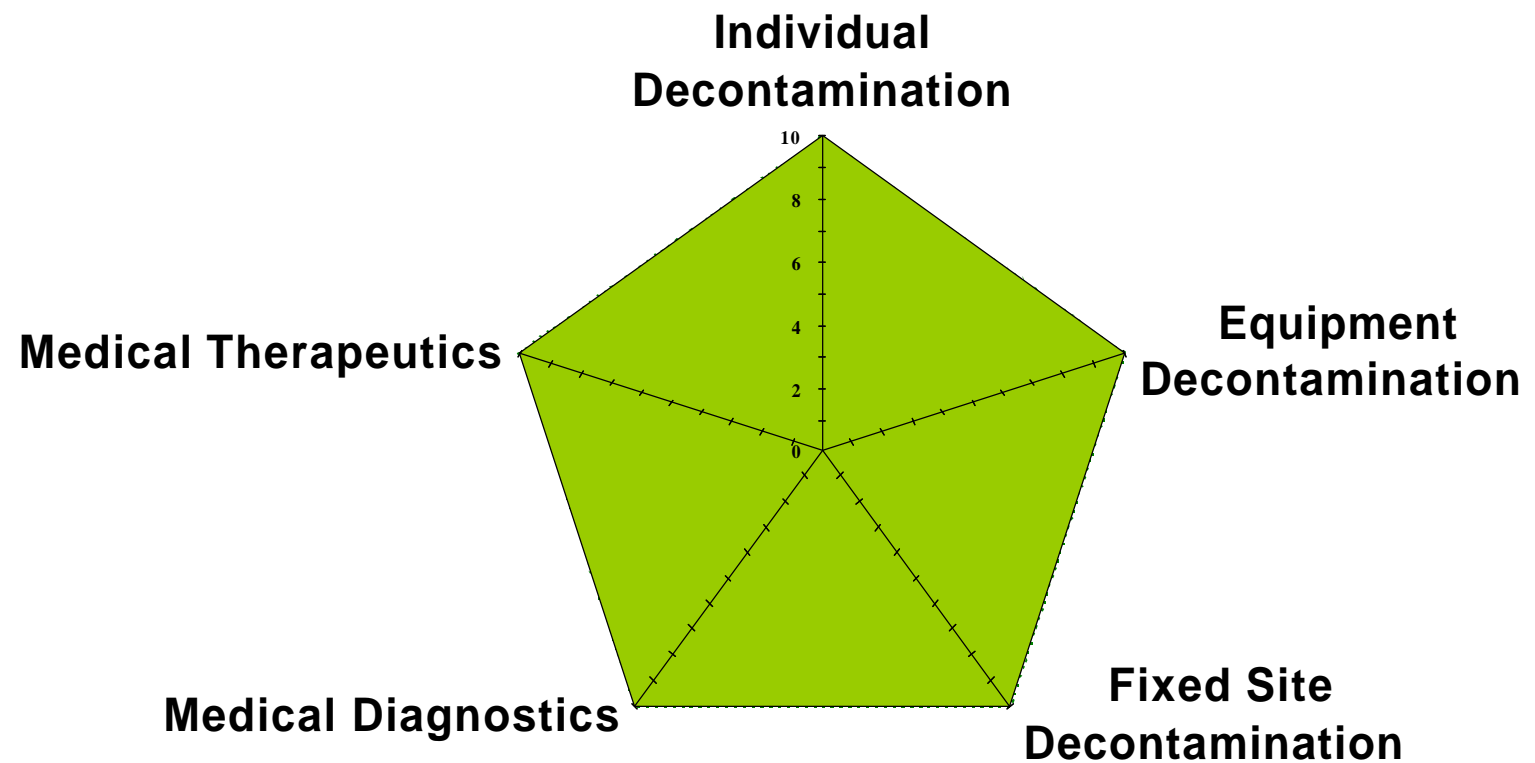
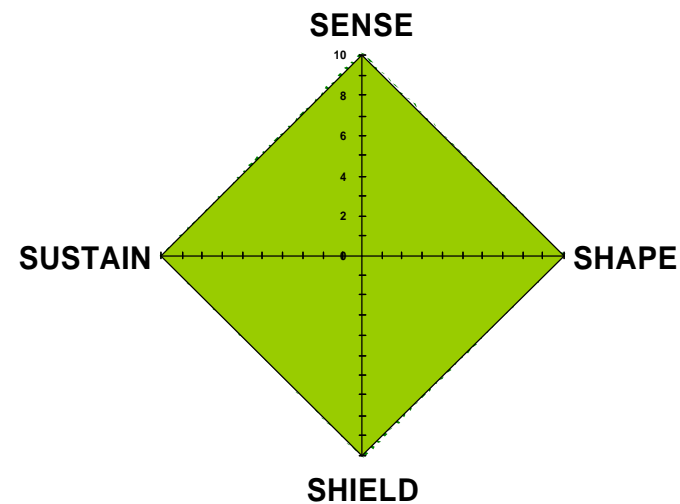


**Expeditionary Collective Protection**

**Medical Prophylaxis**

# SUSTAIN

*The ability to conduct decontamination and medical actions that enable the quick restoration of combat power, maintain/recover essential functions that are free from the effects of CBRN hazards, and facilitate the return to pre-incident operational capability as soon as possible.*



# Insights and Recommendations

## Fund the Cost of Doing Business:

- Test and Evaluation Infrastructure
- Modeling and Simulation

## Recommended Studies & Analysis :

- Chemical & Bio Challenge Levels
- Chemical Detection – Sensor Mix (type & number)
- Biological Detection – Sensor Mix (type & number)
- Radiological Stand-off Detection – Capability needs
- Hazard Prediction

## Recommended S&T Efforts:

- Biological Stand-off Detection
- Chemical Stand-off Detection
- Battlespace Analysis
- Bio Point Detection
- Chemical Point Detection

## Recommended Advanced Development Actions:

- Integrated Early Warning
- Battlespace Analysis
- NBC Recon
- Chemical Point Detection

## Recommended Procurement Actions:

- Chemical Point Detection
- Radiation Point Detection

# Capabilities Documents in Staffing



- **SENSE**

- Joint Biological Standoff Detection System
- Artemis
- Joint Chemical Biological Radiological Agent Water Monitor

- **SHAPE**

- Joint CBRN Warning and Reporting Network
- Joint Effects Model
- Joint Operational Effect Federation

- **SHIELD**

- Joint Expeditionary Collective Protection
- Joint Medical Biological Warfare Agent Prophylaxis
- Joint Service Mask Leakage Tester

- **SUSTAIN**

- Joint Service Sensitive Equipment Decontamination
- Joint Service Man-Portable Decontamination System
- Joint Service Personnel/Skin Decontamination System
- Joint Service Stationary Decontamination System

## Near Term Capability New Starts



### SENSE

- Chemical Unmanned Ground Reconnaissance

### SHAPE

- Joint CBRN Medical Decision Support Tool
- Medical Surveillance for CBRN Defense
- Virtual Prototype System
- Virtual Emergency Training System

### SHIELD

- Joint Service Container Refill System
- Medical Prophylaxes for Chemical & Radiological Agents
- Advanced Anticonvulsant System

### SUSTAIN

- Joint Platform Interior Decontamination
- Chemical & Biological Medical Therapeutics
- CBRN Medical Diagnostics

## *JRO-CBRN Defense Summary*

- ✓ **Joint Operational Concept for CBRN Defense**
- ✓ **CBRN Defense Program Baseline Capabilities Assessment**
- ✓ **Validation of COCOM Urgent Operational Needs Statements**
- **Installation Protection**
  - **Joint Service Installation Pilot Program (FY03-04)**
  - **CB Installation Force Protection Program (FY04-09)**
  - **Integrated CBRNE Standards and Concepts of Employment**
- **CBD Expendable Equipment Combat Consumption (E2C2) Study**
- **Transition to Joint Capabilities Integration & Development System**
- **Joint CBRND combat development and experimentation**
- **Joint CBRN Defense Modernization Plan and Investment Strategy**