NAVAIR
Systems Engineering

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Presented to:
Systems Engineering Community

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- **Tactical**
  - Near term SE transformation; Agile, Architectures, linked multi-site platform Modeling & Simulation Environments, User friendly tools
  - System Safety Integrity/Consistency in Implementation
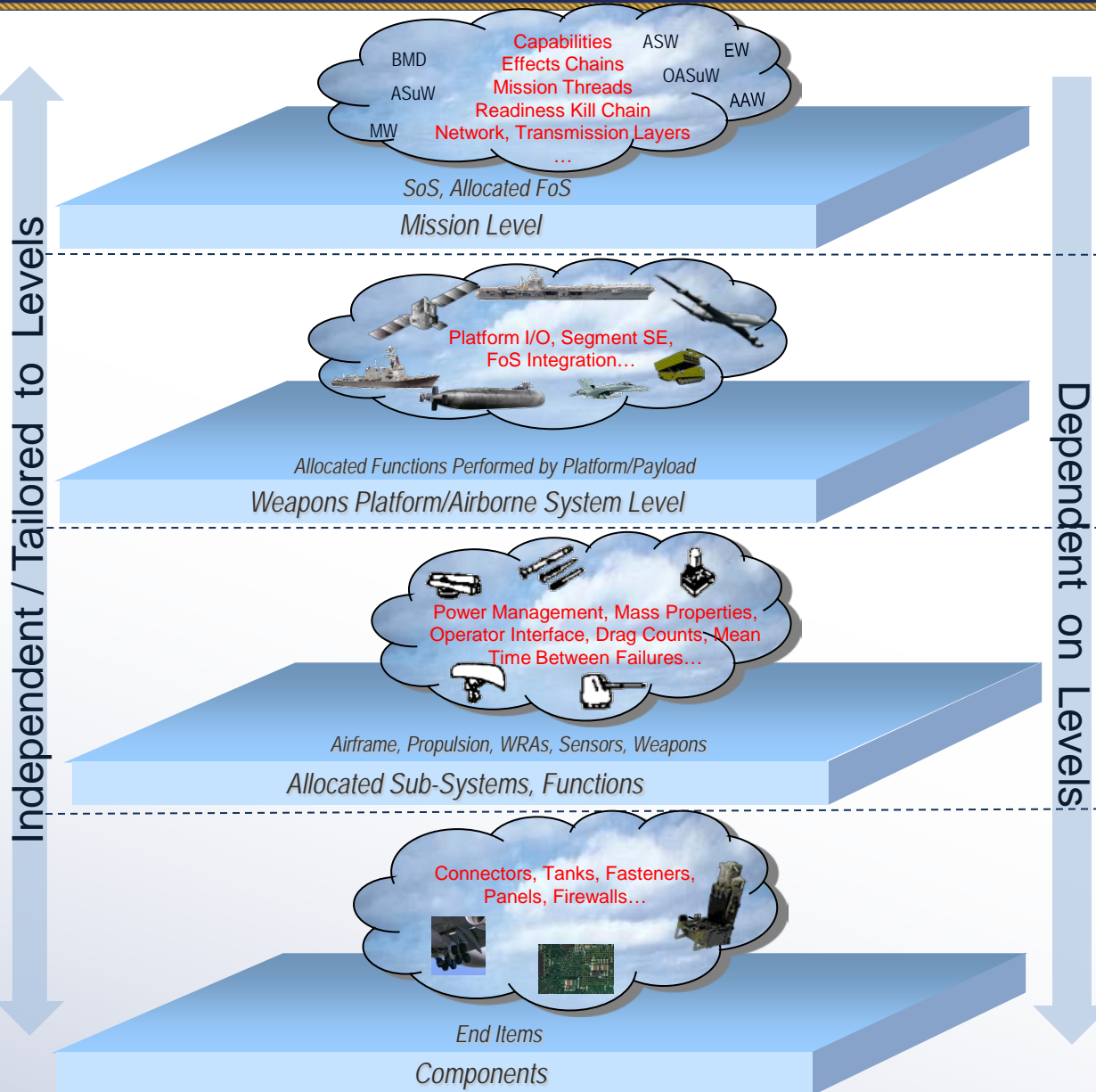 - IT/IA Tech Authority and implementation

- **Strategic**
  - Articulating and decomposing cyber/system security requirements; implementing risk management framework in SoS context
  - Enabling mission systems engineering with appropriate tools, views/architectures, insights, allocations, interfaces, SETR integrity
  - Long term SE transformation; SE modeling, mission architectures, leading indicators, completion of effects chains
  - Promulgation to SE practitioners across geographic and competency boundaries
  - Leading/influencing SE policy/process development with OSD(AT&L)/SE, Component Acquisition Executives, industry
  - Sustained, mission level M&S environments
  - Applying specialty engineering at mission levels; A_O, Reliability & Maintainability, Risk Management, Spectrum, Anti Tamper
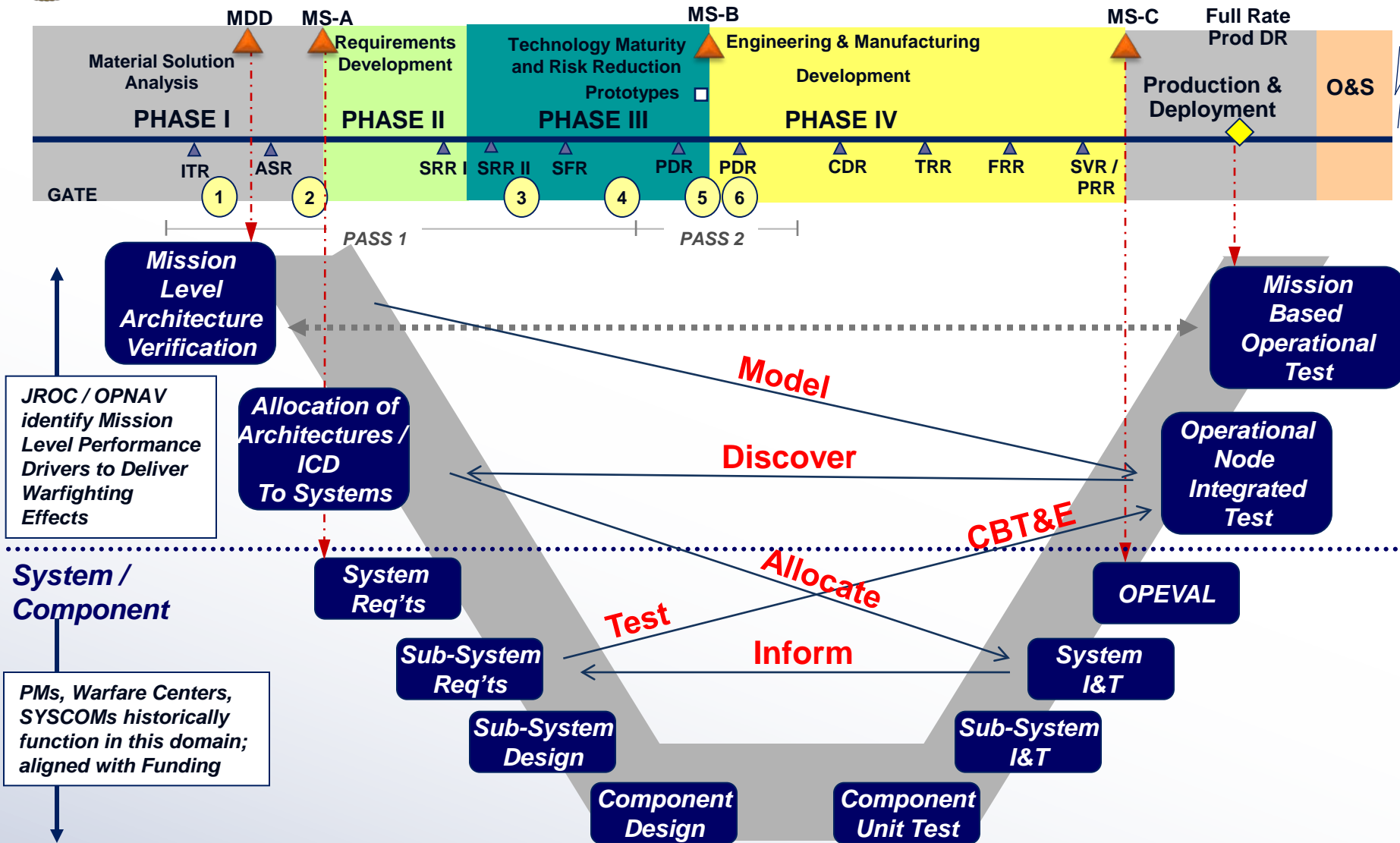
Tiers of Systems Engineering

Systems Engineering Functions

- Mission Architectures
- Mission Analysis/Decomposition
- Capability Assessments
- Functional Requirements
- ICTB Certification
- Alternative Concepts
- Functional Architectures
- Functional Allocations
- Functional Interfaces
- Configuration Items
- Trade Analysis
- Risk Management
- Reqts Management
- KPPs/KSAs/MoPs
- Inform Acq'n Strategy

Independent / Tailored to Levels

Dependent on Levels

Mission Level
SoS, Allocated FoS

Capabilities
Effects Chains
Mission Threads
Readiness Kill Chain
Network, Transmission Layers
…

BMD • ASW • EW • ASuW • OASuW • AAW • MW

Weapons Platform/Airborne System Level
Allocated Functions Performed by Platform/Payload

Platform I/O, Segment SE, FoS Integration…

Allocated Sub-Systems, Functions
Airframe, Propulsion, WRAs, Sensors, Weapons

Power Management, Mass Properties, Operator Interface, Drag Counts, Mean Time Between Failures…

Components
End Items

Connectors, Tanks, Fasteners, Panels, Firewalls…

Air Vehicle

Avionics

Software
Architecture
Conversion/All'n
C4I …

Platform Level Computing
Mission Planning
Distributed Processing
WSI, MSI, SMS
Fusion Algorithms
…...

Flight Controls
FADEC
Sensor Management
Fusion Sources
…..

Safety Items
ICAWS
Displays
PHM
…..

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Transforming how we operate across the Systems Engineering "V"

Questions?

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