DEFENSE INFORMATION SYSTEMS AGENCY
The IT Combat Support Agency

Update on Cloud Cyber Defense CONOPS

Rob Mawhinney
Chief, CyDef Effectiveness Branch
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Intent of Brief

The intent of this brief is to provide an overview of all levels as described in the Cloud Cyber Defense CONOPS, to include the C2 and C3 constructs for Cyber Defense.

Defines reporting and data-sharing relationships between the Cyber Defense and Cloud organizations.

It assigns procedures to be performed in response to incidents and events as categorized by DoD.

Introduces the supporting organizations and reference procedures for Cyber Defense of the DoDIN with regards to the cloud:

Expands on the SRG with the introduction of:

- Cloud Cyber Defense C2 Model
- Cloud Cyber Defense C3 Information Sharing Model

The Cloud Cyber Defense Concept of Operations is meant to "evolve as the procedures are put into practice and new best practices emerge."

Proposed Lexicon

Old Term (6510)	New Term (8530)
CND= Computer Network Defense	CyDef = Cyber Defense
CNDS = Computer Network Defense Services	CyDef Services = Cyber Defense Services
CNDSP = Computer Network Defense Service Provider	CDSP = Cyber Defense Service Provider

Old CONOPS Role Name	Proposed CONOPS Role Name
BCND = Boundary Computer Network Defense	BCD = Boundary Cyber Defense
DoDIN CND= DoDIN Computer Network Defense	DCD = DoDIN Cyber Defense
MCND = Mission Computer Network Defense	MCD = Mission Cyber Defense

Per Joint Pub 3-12, the move is to replace Computer Network Defense (CND) with "Cyber Defense" terminology.

Cloud Cyber Defense Organizational Construct

Cloud Cyber Defense Organizations

DoDIN Cyber Defense (DCD Functions)

- The primary objective is to monitor for DoDIN-wide attacks
- Builds a broad Cyber SA picture across Missions, MCDs, BCDs, CSOs, and CSPs
- Through their broad view, identify broader patterns of incidents or events

Boundary Cyber Defense (BCD)

- The primary objective is to protect the Defense Information Systems Network (DISN) from attacks
- They perform this protection for any of the below connections through approved Cloud Service Providers (CSPs) that can impact the DISN:
  - Public
  - Private
  - Hybrid
  - Community clouds

Cloud Cyber Defense Organizational Construct– cont.

Cloud Cyber Defense Organizations

Mission Cyber Defense (MCD)

- The primary objective is to defend systems, applications, and/or data hosted in the Cloud
- Defends all connections to the Cloud Service Offering (CSO), whether via:
  - Internal Cloud Access Point (ICAP);
  - Virtual Private Network (VPN);
  - Direct internet access to public servers; or
  - Other

Mission Owner (MO)

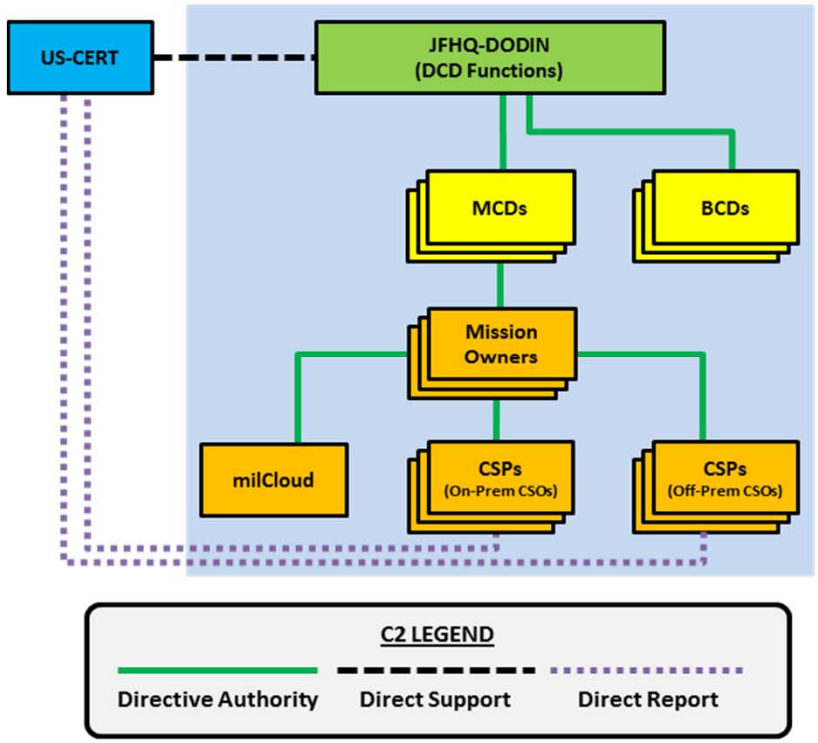
- Operates, and maintains the mission systems, applications, and/or data (depending on CSO service model, e.g. IaaS, PaaS, or SaaS)
- Is a DoD entity that acquires cloud services and dedicated connections in support of its mission

Cloud Service Provider (CSP)

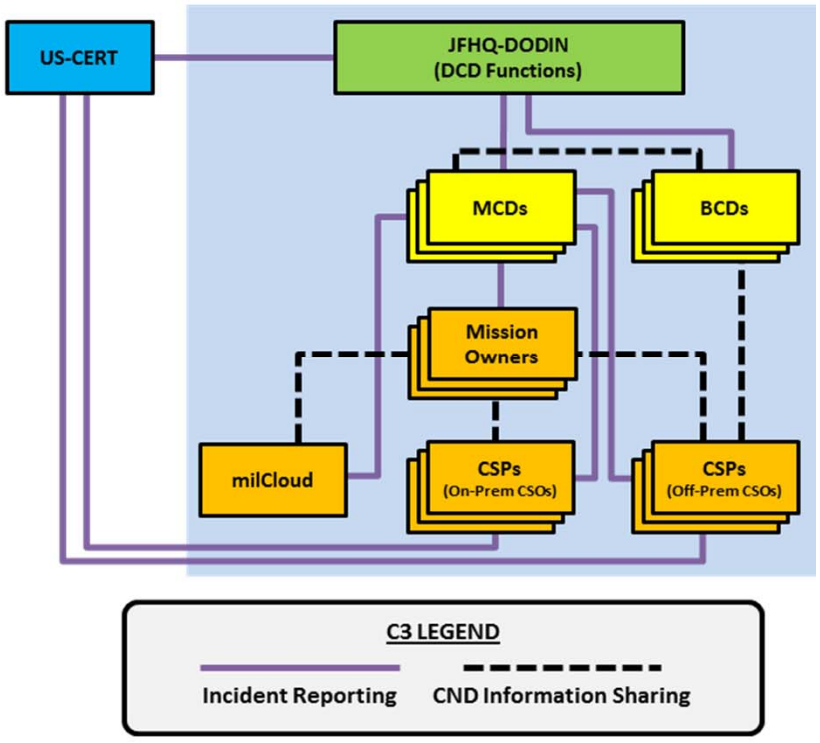
- Operates one or more CSOs in one or more deployment models (IaaS/PaaS/SaaS)
- Reports to the MCD and Mission Owner on incidents/events

Cloud Cyber Defense CONOPS C2/C3 Models

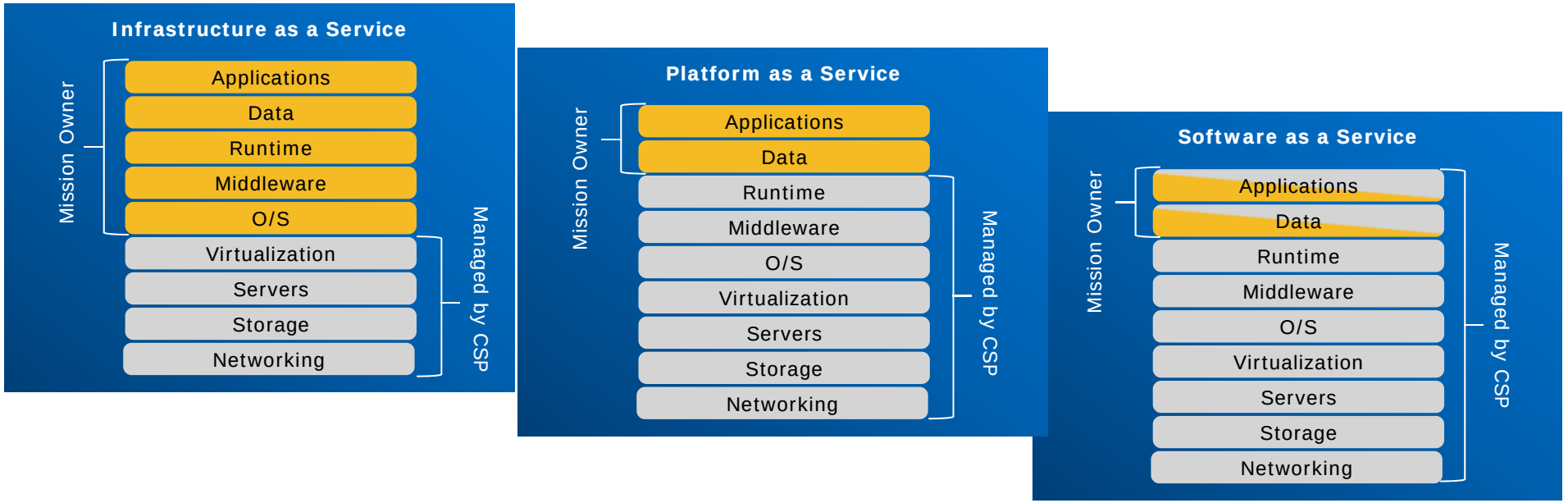
C2 Model



C3 Model



Deployment of Cloud Service Offerings

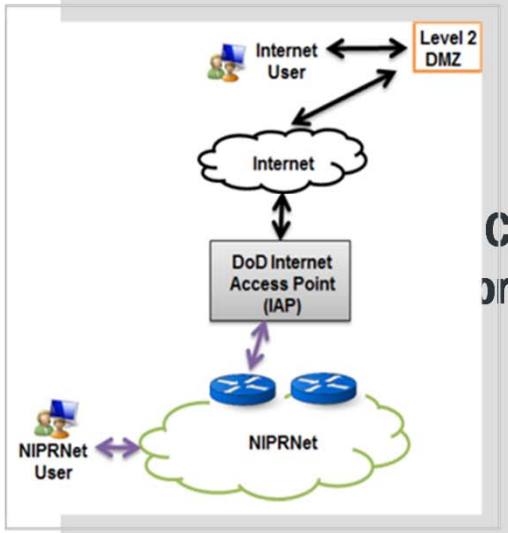


Cloud Cyber Defense CONOPS was written to support deployment on three different Cloud Service Offerings (IaaS, PaaS, SaaS) either Off-Prem or On-Prem.

Depiction of Various CAPs from the CAP FRD

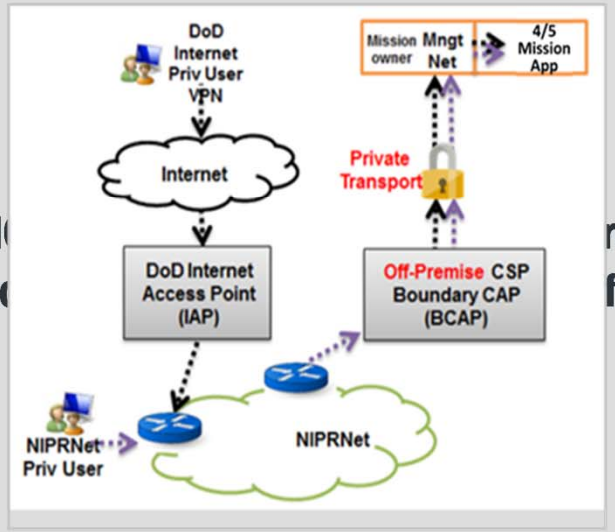
Off-Prem CSO Level 2

(Cyber Defense by MCD)



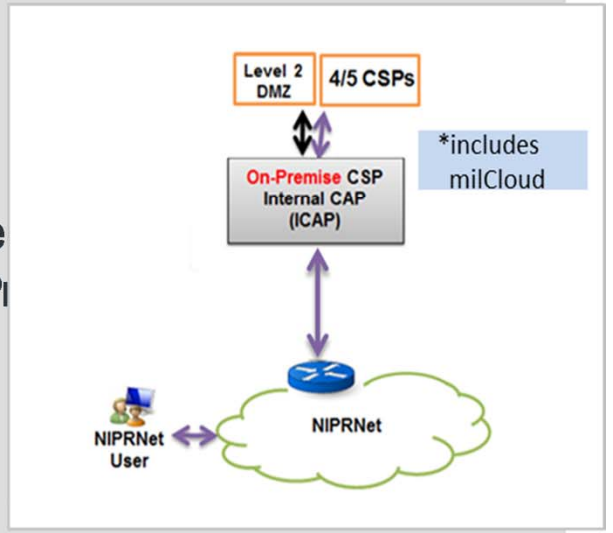
Off-Prem CSO Level 4/5

(Cyber Defense by MCD + BCD)

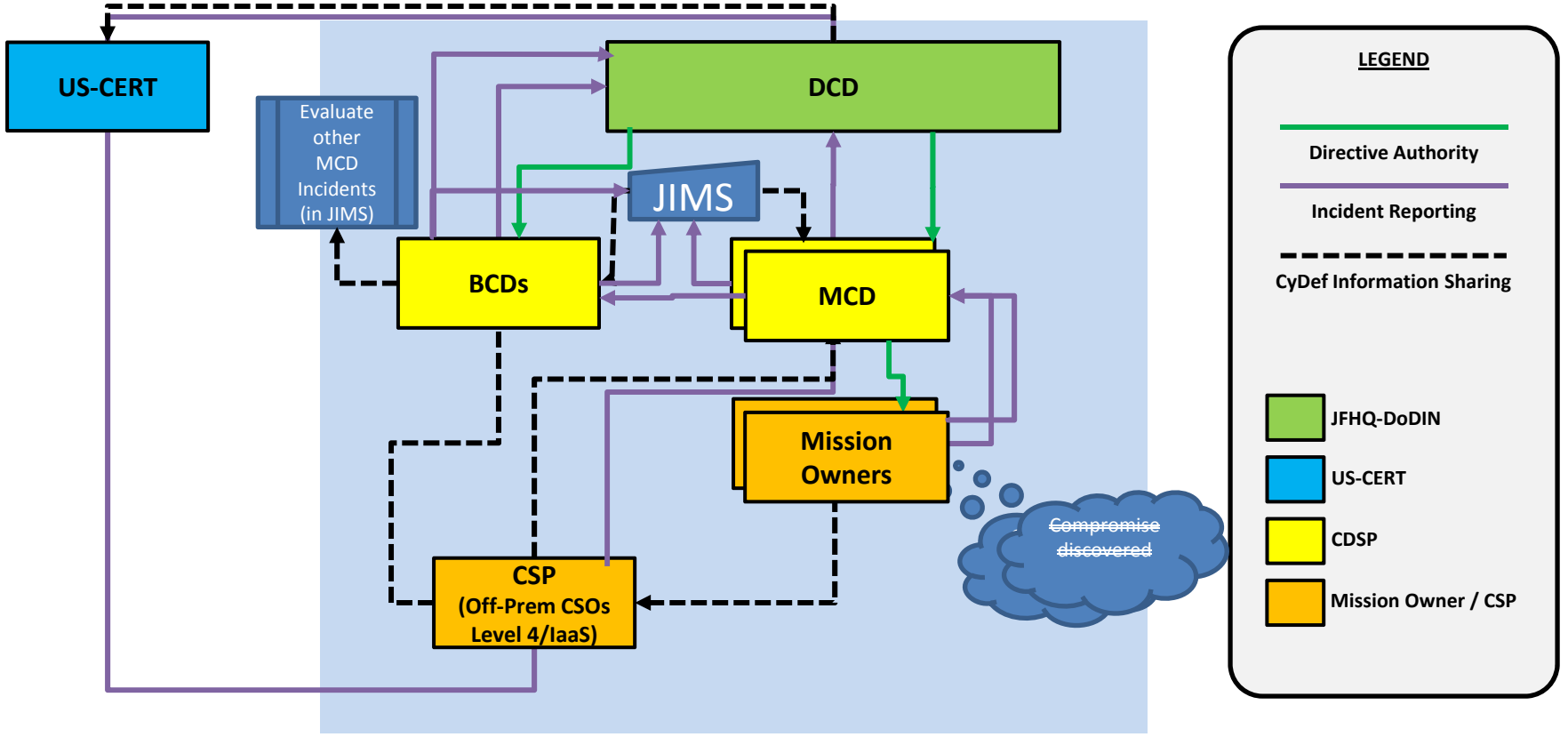


On-Prem CSO Level 2/4/5

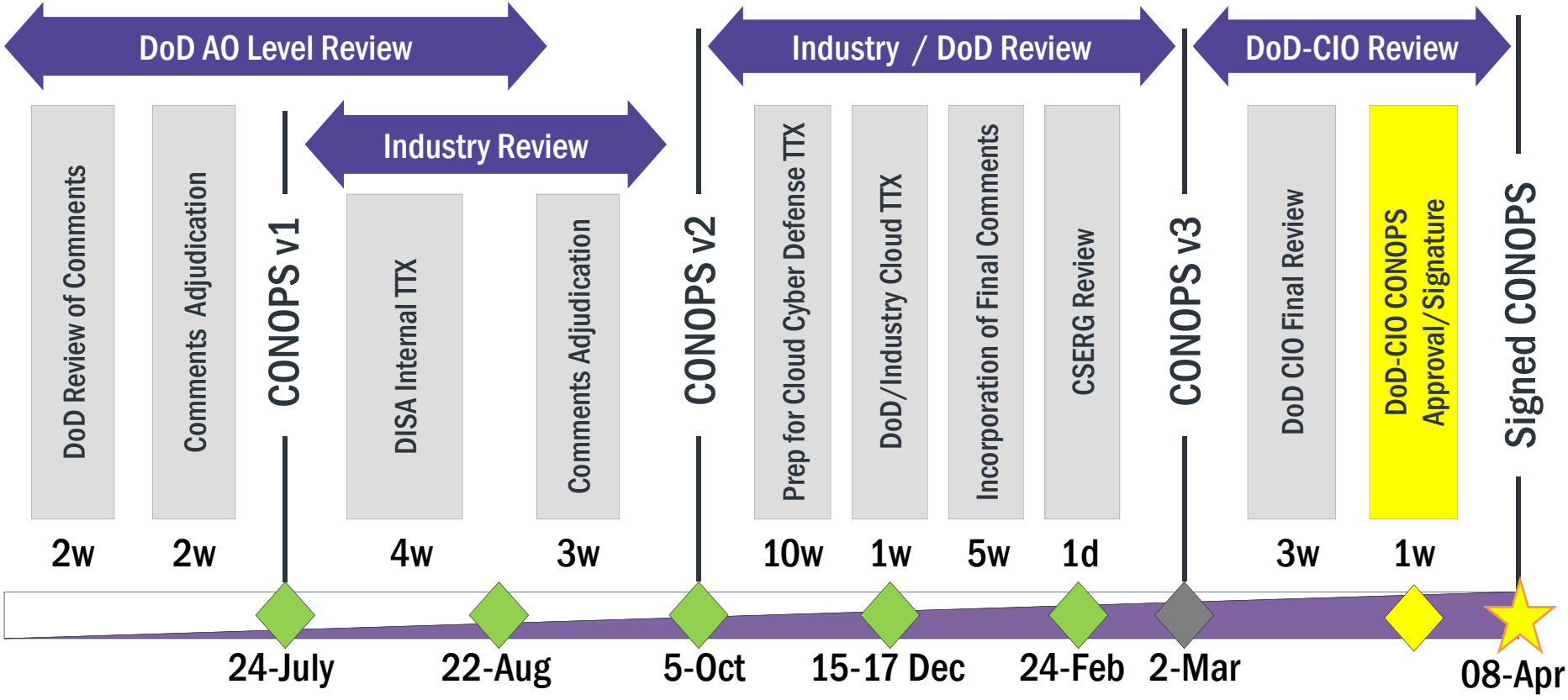
(Cyber Defense by MCD)



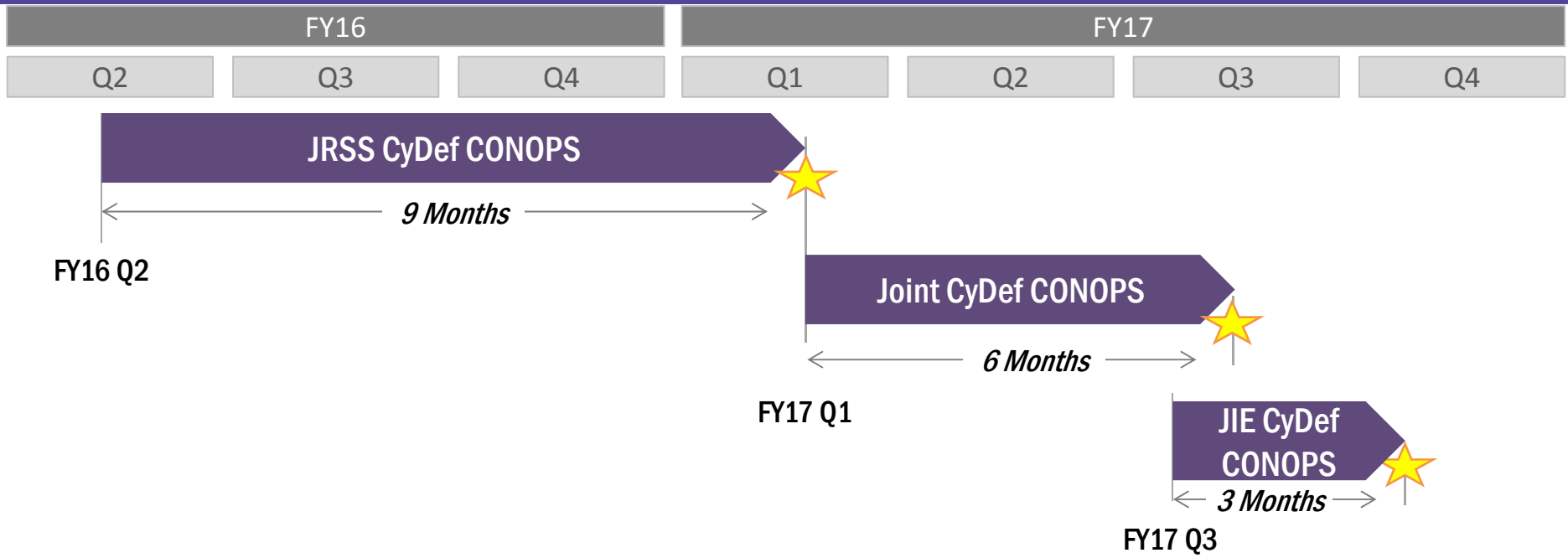
That's Great - How does it work?



Cloud CyDef CONOPS Approval Process



Next steps to Further Define the Intent, C2, and C3 for CyDef



The Cloud CyDef CONOPS approval process will be replicated for the development of the next three CyDef CONOPS documents.

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BACK UP Slides

Cloud Cyber Defense CONOPS

Authoritative and Supporting Documents

- DoD Cloud Computing Security Requirements Guide (CC SRG)
- DoDI 8530.1, “Cybersecurity Activities Support to DoD Information Network Operations”, of 07 March 2016
- DoD 6510.01B, “Cyber Incident Handling Program”
- Cloud Access Point Functional Requirements Document (CAP FRD)
- DISA Cloud Connection Process Guide (CCPG)

DoDIN CyDef (DCD)

The primary objective is to monitor for DoDIN-wide attacks

JFHQ-DoDIN, as the DoDIN CyDef (DCD), is accountable to:

- ***Help consolidate related incident tickets***
  - *Shall monitor Cyber Defense incident databases (JIMS and DIBNet) for reported incidents*
    - *Where an incident spans multiple MCDs or BCDs, associate JIMS tickets*
    - *Determine lead for the activity (e.g. MCD, BCD, or CCMD, etc.)*
- ***Coordinate with MCDs and BCDs on JFHQ-DODIN orders/tasks status***
- ***Pass Intelligence Data***
  - *Pass Indications & Warnings (I&W) to BCDs and MCDs*
  - *Disseminate Threat Intelligence Product Reports (TIPRs) from Intel sources*
- ***Perform delta of Vulnerability Assessments of CSO-hosted systems, networks, and data***
- ***Analyze potential impacts across the multiple Cloud Service Providers***
- ***Recommend mitigations***
- ***Assigning DoDIN Cyber Protection Teams (CPTs) to focus efforts on a specific threat or adversary.***

Boundary Cyber Defense (BCD)

The primary objective is to protect the Defense Information Systems Network (DISN) from attacks

Boundary Cyber Defense (BCD) is accountable to:

- ***Maintain a CDSP accreditation***
- ***Support the MCDs in their objectives of defending their systems, applications, and data hosted in the Cloud***
  - *Monitor data in transit through the BCAP based on BCAP sensing capabilities*
  - *Monitor for unauthorized connections (attempted and actual)*
- ***Coordinate with MCDs on JFHQ-DODIN orders/tasks status***
  - *Pass I&W to MCD, other BCDs, and DCD*
  - *Disseminate TIPRs from Intel sources*
  - *Provide aggregated data to DCD*
  - *Provide BCAP trending data to DCD*
  - *CCMD/JCC SA coordination*
- ***Maintain Cyber Situational Awareness (SA) picture across Missions, Cloud Service Offerings (CSOs), and CSPs and can identify broader patterns of incidents or events***

Mission Cyber Defense (MCD)

The primary objective is to defend systems, applications, and/or data hosted in the Cloud

Mission Cyber Defense (MCD) is accountable to:

- ***Maintain a CDSP accreditation***
- ***Supports BCD efforts to identify correlations between related incidents or events impacting multiple Missions, CSOs, or CSPs Perform CDSP for the Mission Owner***
- ***Assist Mission Owners with enabling Cyber Defense***
- ***Perform analysis for CSO incidents/events***
- ***Detect CSO events, analyze CSP incidents***
- ***Distribute SAR to DCD and BCDs for Attack Sensing & Warning (AS&W)/SAR***
- ***Distribute guidance/orders (patch management) to Mission Owners***
- ***Retain copy of SLA from Mission Owners; ensure they have proper DoD-approved cloud SLA***

Mission Owner

Operates, and maintains the mission systems, applications, and/or data

Mission Owners are accountable to:

- ***Aligns to an Accredited Provider via MOA/SLA for CyDef services***
- ***Prepare Mission Data for Cyber Defense***
  - *Ensure Cybersecurity standards are met and in SLA (HBSS, Scans, O&M, STIGs, etc.)*
  - *Comply with placement of sensors from MCD*
  - *Ensure feeds of Host Cyber Defense Tools to MCD*
  - *Add MCD (and BCD for Off-Premise CSOs) to Trusted Disclosure list in SLA*
- ***Reports to MCD on incidents/issues***
- ***Conducts initial Incident Response & Analysis***
- ***Provides lower level Intrusion Detection (IDS) and Monitoring to MCD***
- ***Implements and executes MCD guidance***

Cloud Service Provider (CSP)

Maintenance and operation of the CSO that are procured and used by Mission Owners

Cloud Service Providers are accountable to:

- ***Provides CDSP services for their infrastructure and service offerings***
- ***Support and comply with efforts to resolve issues under the direction of their Mission Owners***
- ***Provide open CSO vulnerability POA&M to Mission Owner***
- ***Maintain current lists of POCs at US-CERT, Mission Owners, and relevant MCDs/BCDs***
- ***Email Mission Owner, BCD, and MCD for alert notification as part of the incident reporting workflow (include DIB ID number, if applicable)***
- ***Meet Continuous Monitoring and Incident Reporting Requirements***
- ***Reports to MCD on incidents/issues***
- ***Conducts initial Incident Response & Analysis, where applicable***