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Defense Health Agency

2015 Defense Health Information Technology Symposium

Preparing Infrastructure for the Deployment of the EHR in the Pacific Northwest

"Medically Ready Force…Ready Medical Force"

DHA Vision

"A joint, integrated, premier system of health, supporting those who serve in the defense of our country."

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Learning Objectives

- Define the products and services included in planned infrastructure improvements to the Pacific Northwest Region (PNW) in preparation for the upcoming initial operating capability (IOC) test of the new electronic health record (EHR)
- Describe the implementation approach that will be used in the PNW region
- Identify the steps being taken to ensure the infrastructure and changes to the infrastructure will not adversely impact the IOC test of the new EHR functionality
- Explain the approach to maintain and sustain the PNW infrastructure during and subsequent to the IOC test
- Describe how lessons learned from the IOC will impact subsequent Defense Health Agency (DHA) infrastructure upgrades in other regions

Agenda

- Information Technology (IT) Infrastructure Overview
- PNW IT Services
  - Network Security Management Service (NSMS)
  - Directory Services / Enterprise Management (DS/EM)
  - Desktop as a Service (DaaS)
  - Global Service Center (GSC)
- Infrastructure Consolidation Benefits
- Summary

IT Infrastructure Overview

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IT SERVICE	CAPABILITY	BUSINESS IMPACT
NSMS	Seamless integrated Wide, Local, and Wireless Network	Provides ease of access and integrated security for providers, beneficiaries, and business partners
DS/EM	Centralized and secure access and authentication capability to network resources	Provides for a single identity management and authentication platform.
DaaS	Desktop design standardization service across the application, desktop and server environments	Provides consistent user interface across the enterprise
GSC	Consolidated Military Health System (MHS) enterprise information technology (IT) service desk	Provides a single point of contact for all MHS IT users to obtain support, request services and report issues

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Network Security Management Service (NSMS) – Operational View

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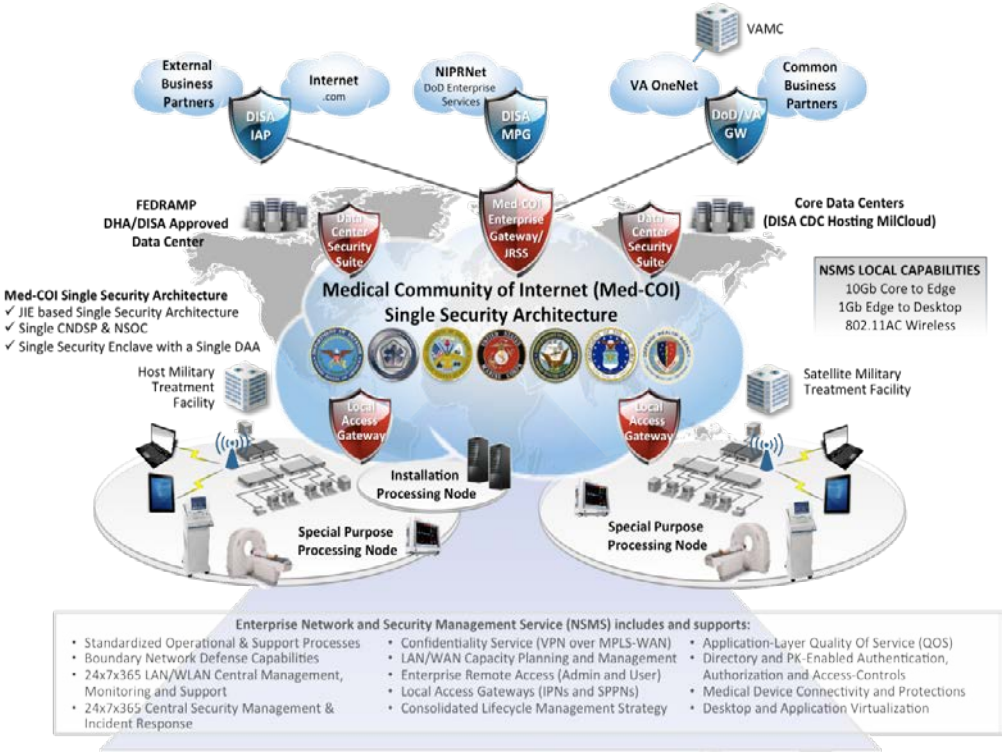
Problem Statement

Service Medical and MHS currently field separate networks each with unique security architectures, capabilities and support functions.

Future Vision

- A single, enterprise-wide Medical Community of Interest (Med-COI) network that leverages Defense Information System Network (DISN) transport and conforms with DoD Joint Information Environment (JIE) objectives
- A centralized management of a consolidated, high-availability, low latency network that includes the Local Area Networks (LAN) and Wide Area Networks (WAN) for the DHA military health community



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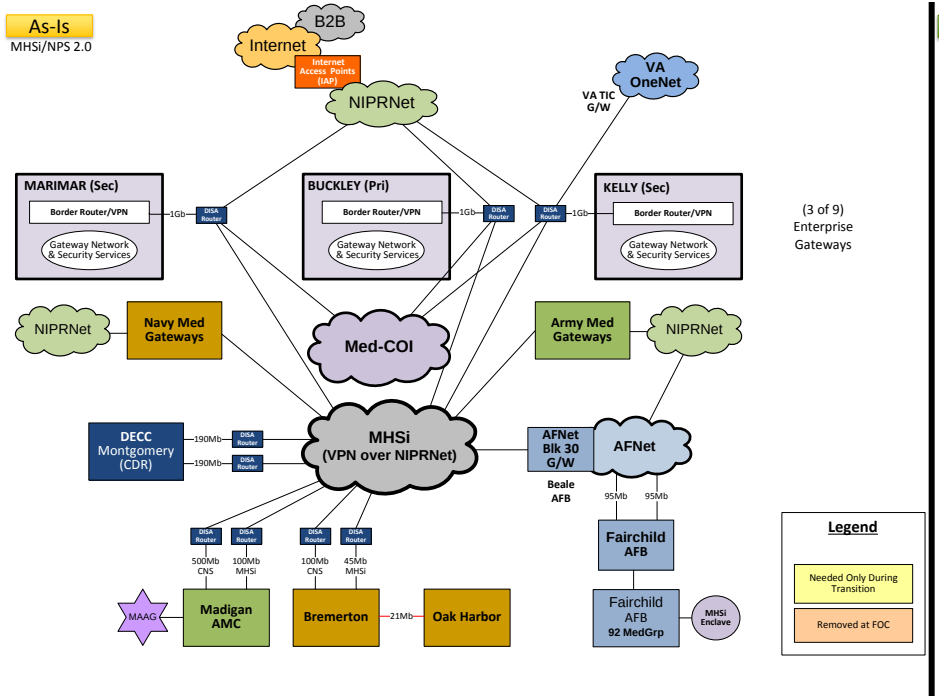
NSMS – Med-COI Scope

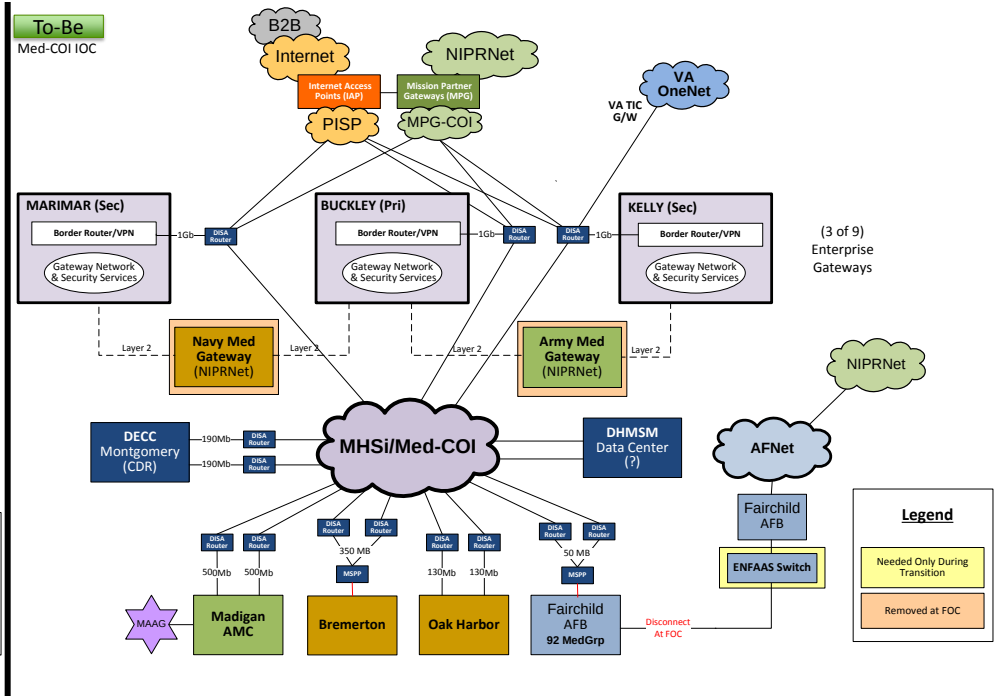
NSMS integrates the capabilities and manages service delivery associated with the following:

- WAN transport via DISA provisioned Multiprotocol Label Switching (MPLS) under Med-COI protections
- Security management and monitoring aligned with MHS / Med-COI Computer Network Defense Service Provider (CNDSP)
- Local Access Gateway and last mile solutions connecting MTFs
- Protects all functions the MTF including core IT services, hosting/processing, end user and medical device networks
- Includes existing MHS intranet (MHSi) enclave which evolves into DHA managed enclave
- There is no impact to existing systems in enclave. Allows transition of central and service systems to Med-COI enclave from service enclaves

Current State	▪ Medical traffic is protected by NPS 2.0 and routed via NIPRNet or MHSi; workstations and most servers are located on Service controlled IP space, monitored by Service CNSDP ▪ Department of Veterans Affairs and Defense Medical Information Exchange started using Med-COI circuits
Future State	▪ Medical traffic is protected by a SSA and routed via Med-COI circuits, separated from all other traffic, including NIPRNet ▪ Workstations & most servers are located on DHA controlled IP space, CDNSP monitored

NSMS – PNW Network Topology,
Primary Sites 'As-Is' and 'To-Be'





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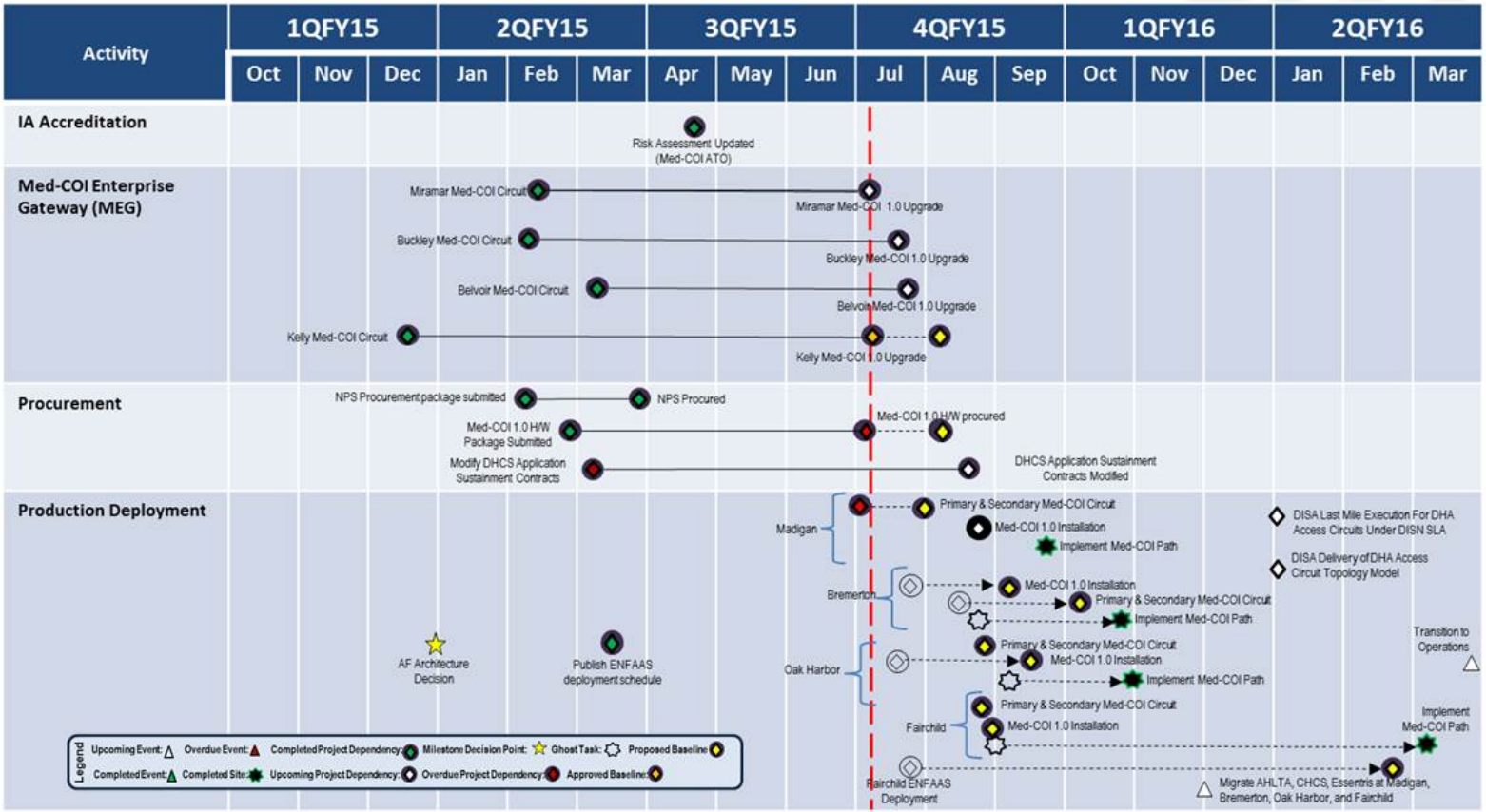
NSMS – Med-COI PNW Schedule Summary



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NSMS – LAN/WLAN Scope

- Modernization of LAN infrastructure and Wireless LAN (WLAN) infrastructure used to interconnect users, systems, and services hosted in Installation Processing Nodes, Special Purpose Processing Nodes, and Core Data Centers as defined in the Med-COI Network & Cyber Security Architecture
- The Upgrade Program performs network infrastructure upgrades at DoD MTFs worldwide required to operate MHS standard systems. The current program supports deployment of LAN and WLAN infrastructure at an average 45 MTFs / year based on a 3-Year refresh cycle

Current State	▪ Redundant core architecture, locally managed with different levels of service, availability, and security ▪ Redundant wireless controller architecture, largely locally managed with different levels of service, availability, and security
Future State	▪ Centrally managed, high speed, highly available, and redundant LAN infrastructure ▪ Centrally managed, high speed, highly available, and redundant WLAN infrastructure

NSMS – LAN/WLAN System View ‘As-Is’ & ‘To-Be’

Madigan, Bremerton, Oak Harbor & Fairchild LAN/WLAN Capabilities

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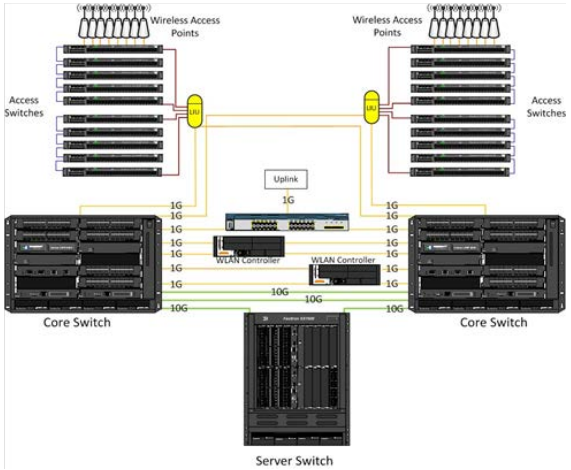
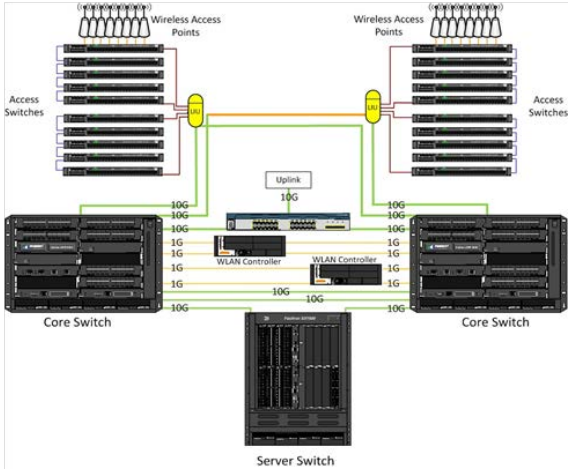
	As-Is	To-Be
Wireless Access Points	**54 or 600mbps** 802.11abg	**1.3gbps** 802.11ac
To the Desktop	1gbps	1gbps
Interconnects – Main Computer Room	10gbps	10gbps
The Backbone – LAN Core to Access Layer	**1gbps**	**10gbps**

As-Is



To-Be



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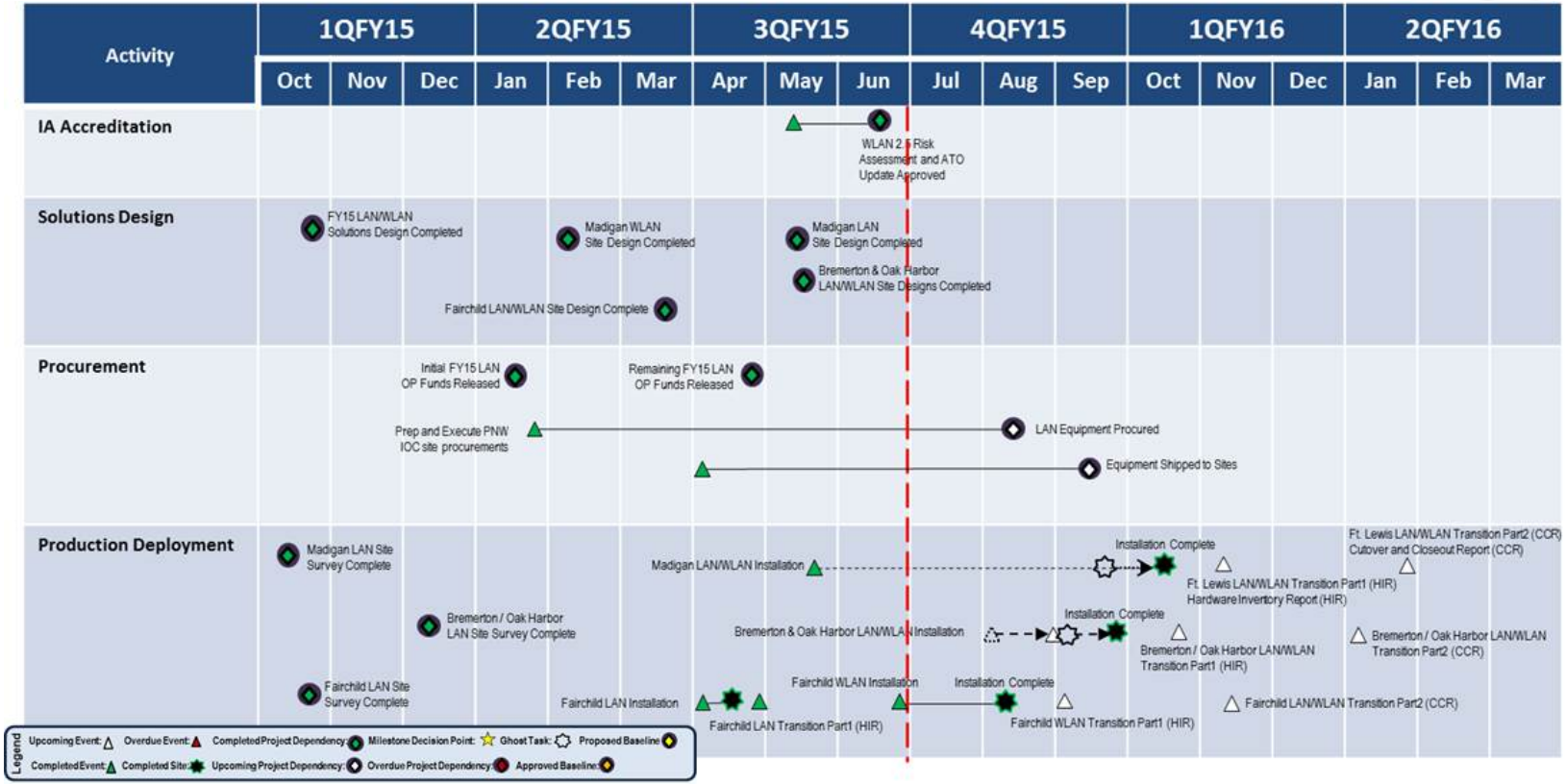
NSMS – LAN/WLAN

PNW Schedule Summary



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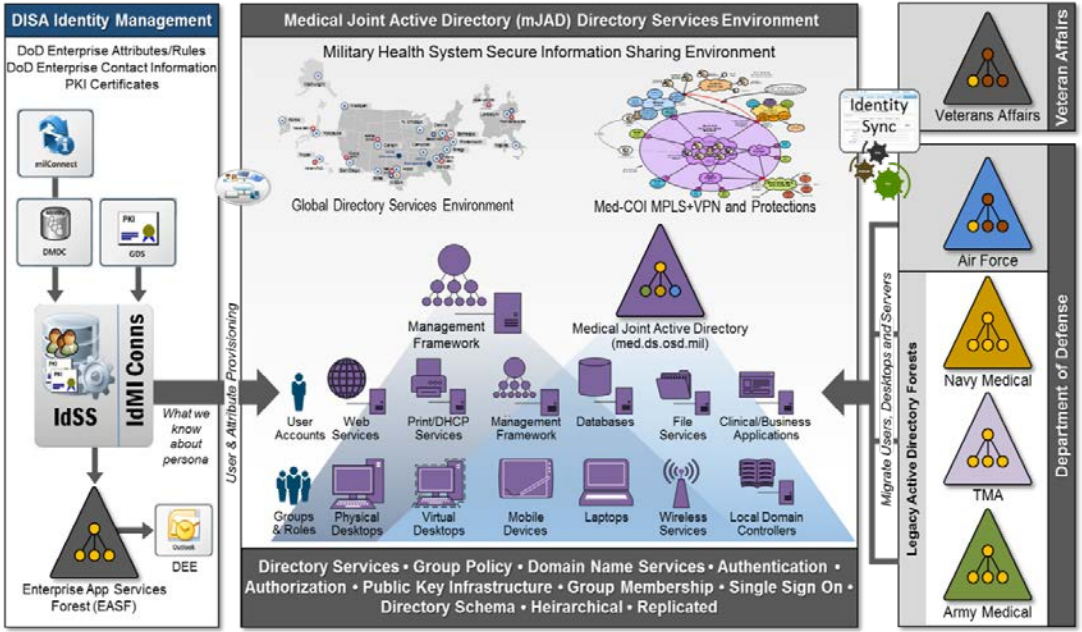
Directory Services / Enterprise Management (DS/EM) – Operational View

Problem Statement

Disparate DS and inconsistent approaches to EM are at the core of DoD medical's inability to effectively share information, manage, and deliver standard business and clinical capabilities to providers throughout the MHS

Future Vision

- **DS:** A unified and secure platform for network authentication and management of identity and access privileges for MHS providers and staff
- **EM:** IT capabilities that enables DHA to govern, manage, measure, and secure the IT services supporting the medical mission



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DS – Medical Joint Active Directory (mJAD) Migration Scope

mJAD migration will deliver a unified and secure platform for network authentication and management of identity and access privileges for Army, Navy, AF and DHA providers and staff

- Single Forest/Single Domain
- Approximately 200k users and EUDs
- Over 10k servers

Current State	Separate domains exist that manage service-specific user, group, workstation and server objects. This prevents providers and staff from exchanging medical information across facilities and services due to logical boundaries within Enterprise Healthcare IT solutions
Future State	A single enterprise authentication framework providing a centralized systems management capability to all medical facilities currently supported by the various medical services; one giant Active Directory forest

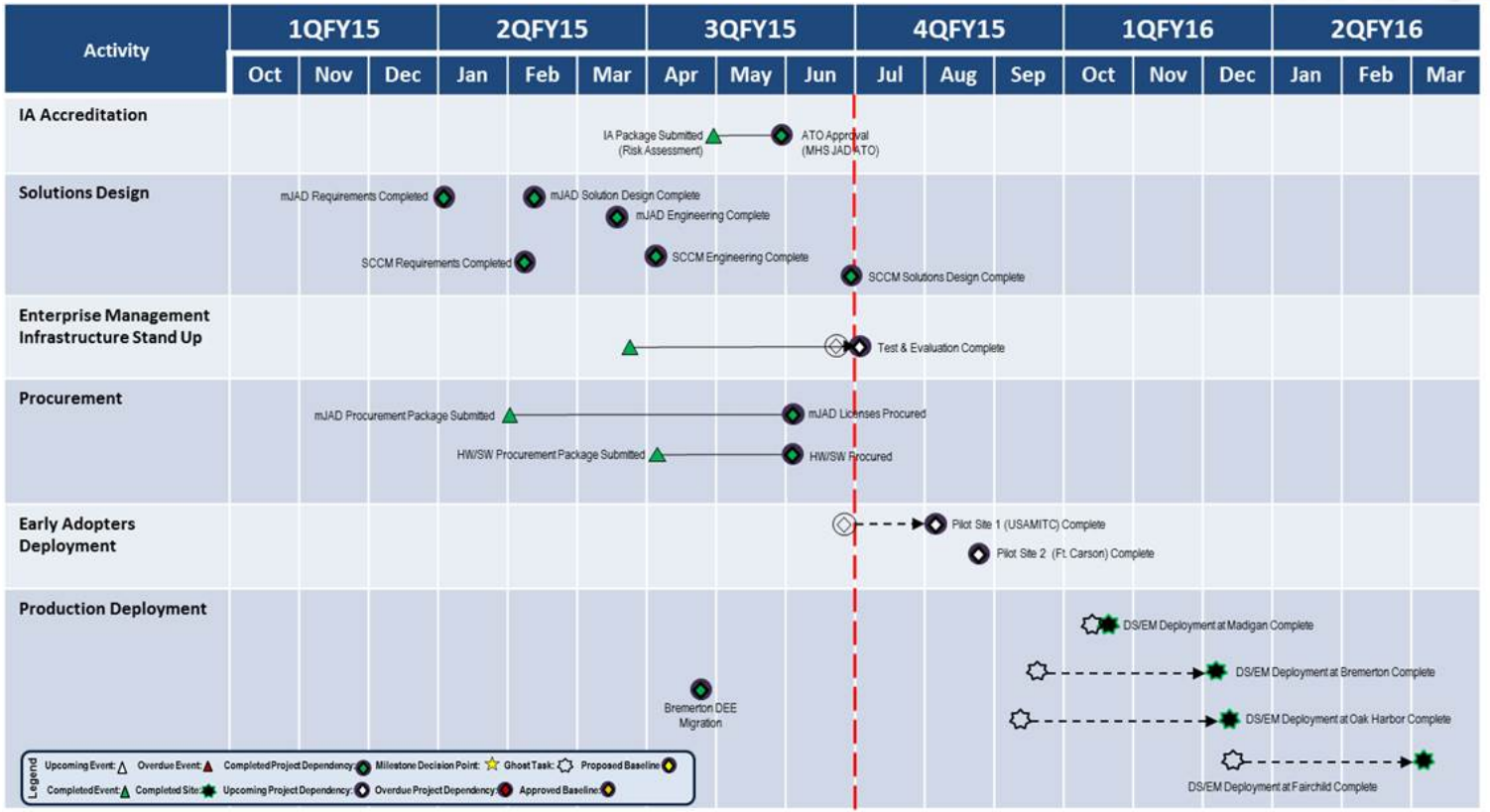
EM – System Center Configuration Manager (SCCM) 2012 Scope

SCCM 2012 provides a foundational capability for centralized patching, application deployment, and monitoring of assets and resources

- Efficient large scale deployments of preconfigured DHA Master Operating Systems (OSs), including both servers and EUDs
- Provides for rapid distribution of application configurations using automation instead of manual one-off intervention
- Ensures that computing devices maintain the highest degree of security by remaining current with IAVA compliance and applicable security mandates

Current State	Technology platforms are isolated, incompatible and duplicative, resulting in non-standardized enterprise management (e.g., application deployment, patching, monitoring)
Future State	A single enterprise management framework for seamless delivery of existing and future IT OS and application solutions (EHR)

DS/EM – PNW Schedule Summary



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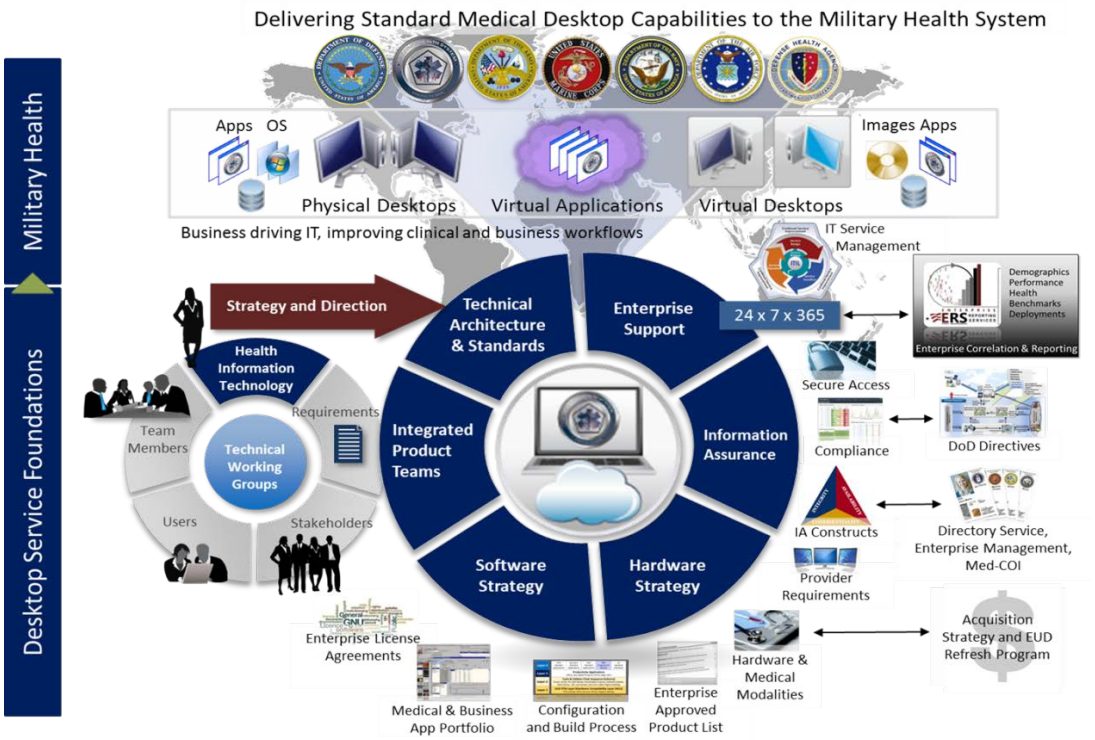
Desktop as a Service (DaaS) – Operational View

Problem Statement

Medical providers and staff experience inconsistent computing configurations and performance as they move between patient rooms and MTFs. The non-standard, decentralized desktop environment is difficult to manage, costly, less secure, unpredictable and inflexible.

Future Vision

A “managed to the desktop” strategy will define, deliver, sustain and measure standard desktop baseline(s) across the MHS for both physical and virtual desktops.



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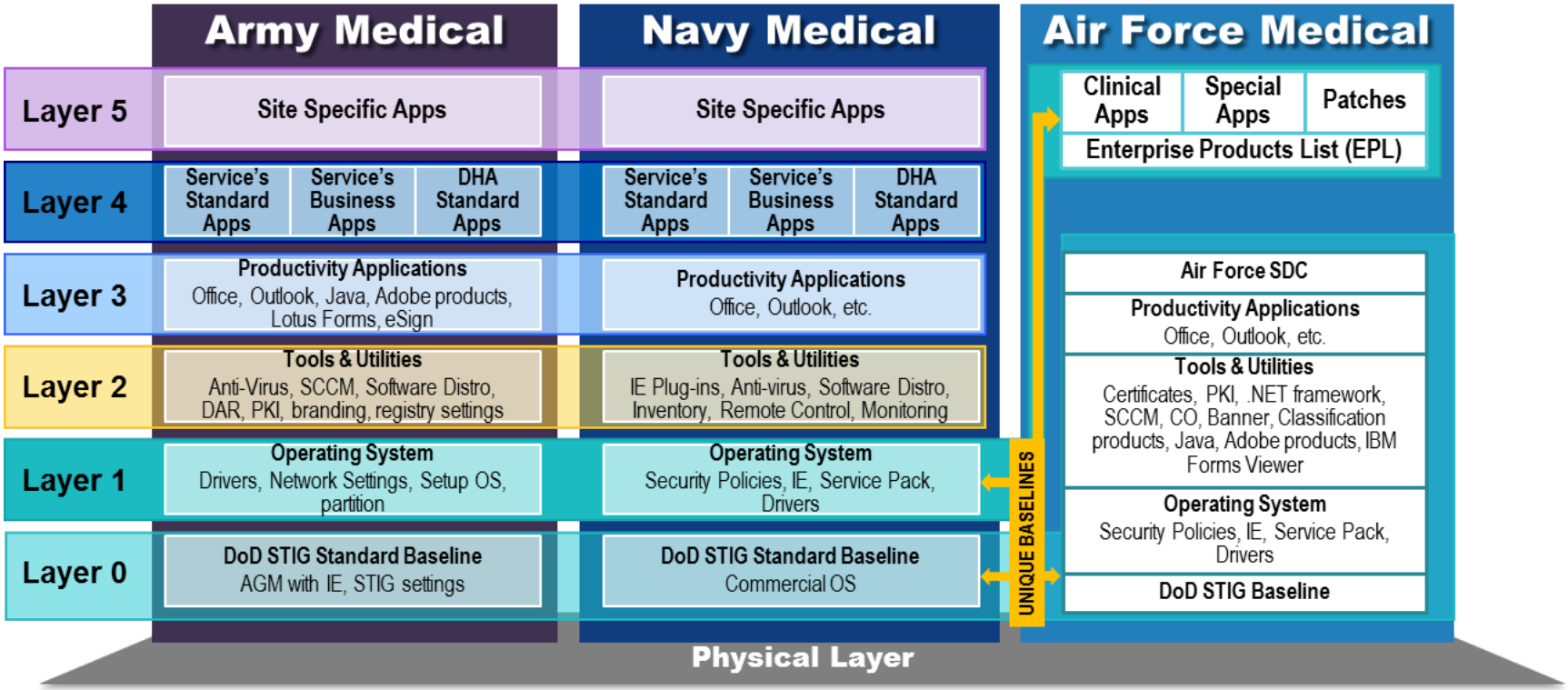
DaaS – Scope

DaaS provides an enterprise “managed to the desktop” capability that will define, deliver, sustain and measure standard desktop baseline(s) across the DHA. These capabilities are enabled through the creation of internal management frameworks designed to assess and standardize EUDs the baseline system image, policy enforcement, application delivery, and asset management providing a holistic end-user experience with ubiquitous access.

The DHA DaaS EUD Lifecycle Program performs EUD upgrades at DoD MTFs worldwide required to operate MHS standard systems. The current program supports deployment clinical EUDs at an average replacement of 25% per year based on a 4-Year refresh cycle for all Army, Air Force, and Navy MTFs.

Current State	▪ Unique desktop configurations deployed across each Military Medical Service domain ▫ Multiple EUD manufactures and models require support across the MHS ▫ No central deployment and management of the desktop security patching or applications ▪ Decentralized licensing, EUD delivery and desktop support, which creates a costly and highly inefficient desktop environment to sustain
Future State	An EHR-focused rapid desktop deployment enabling providers to focus on patients

Desktop Standardization – ‘As-Is’ Layer Definitions by Services



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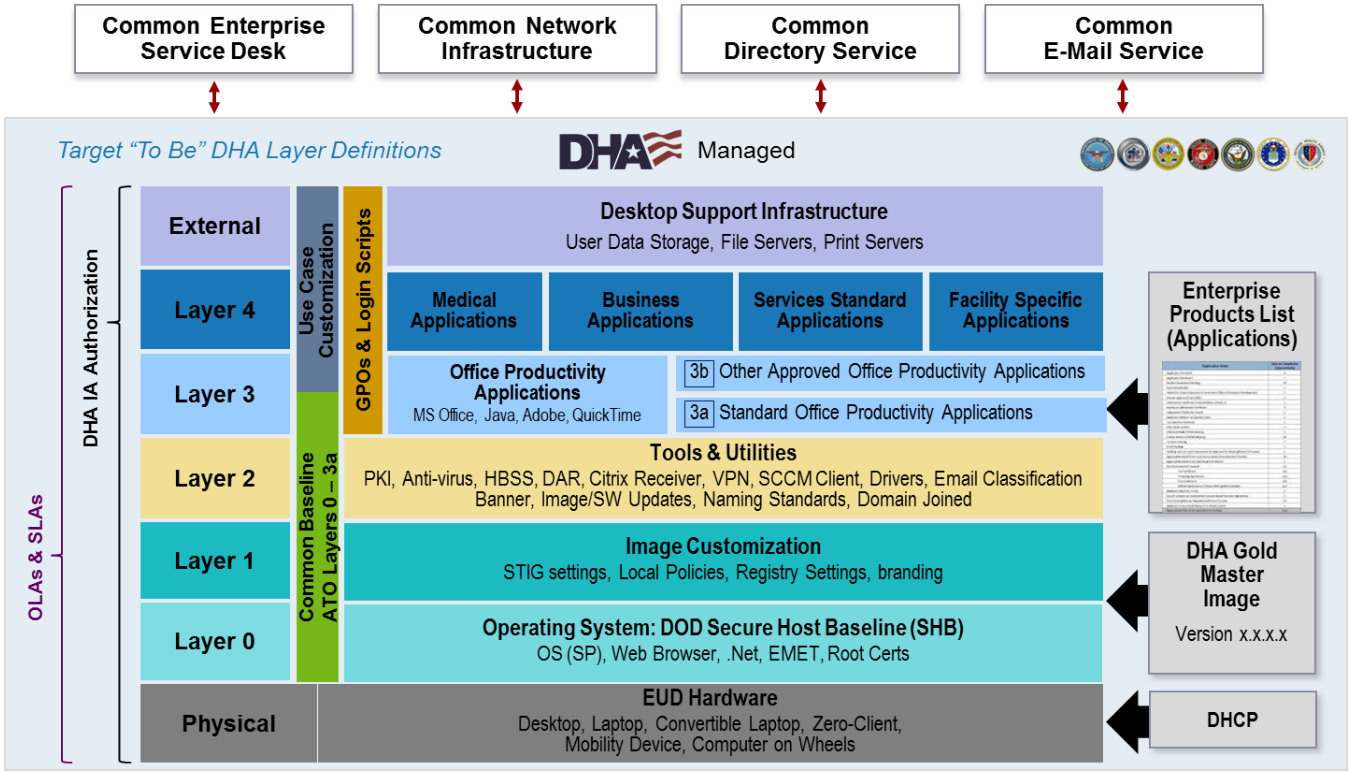
Desktop Standardization – 'To-Be' Layer Definitions by Services



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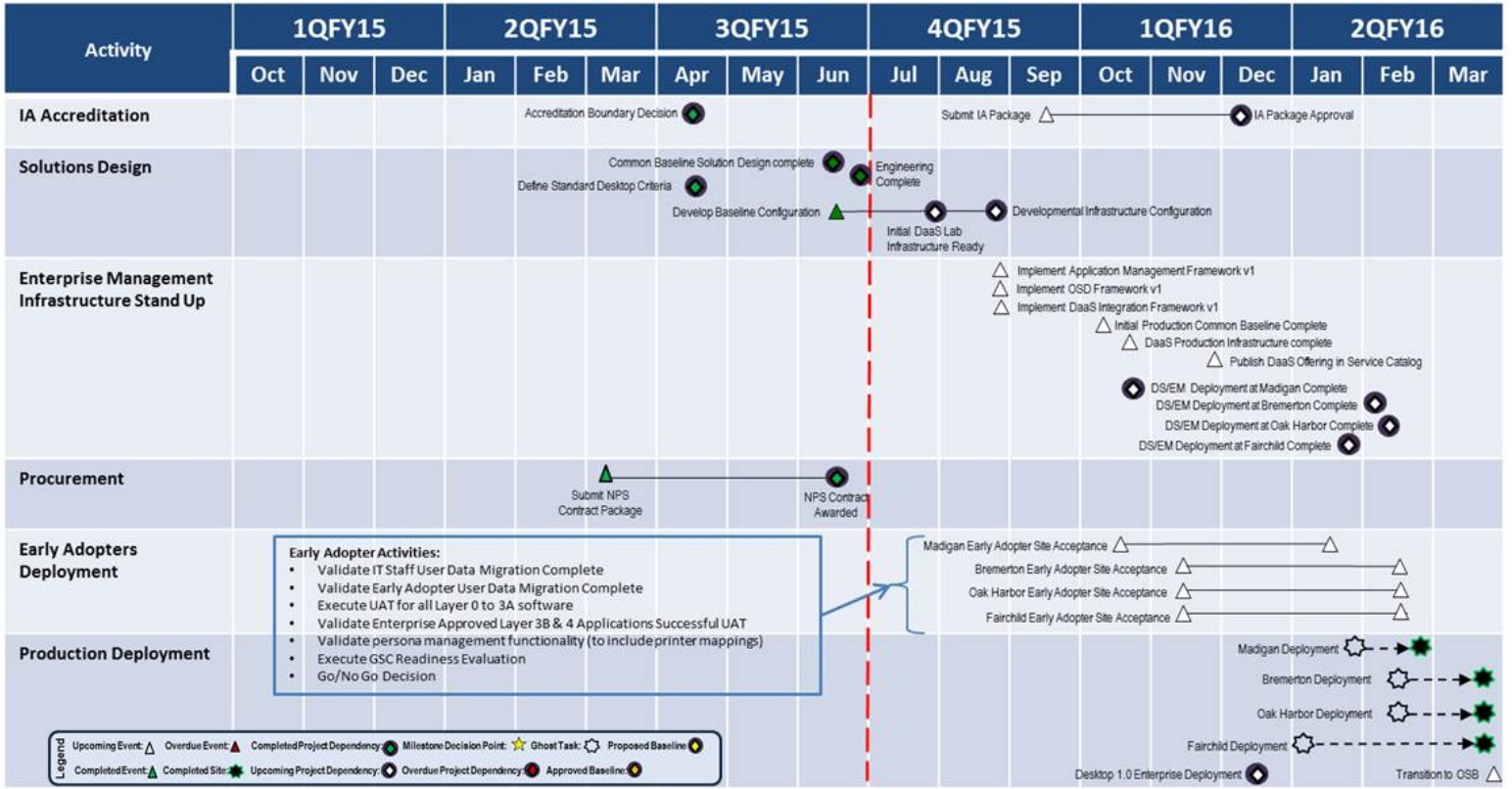
DaaS – PNW Schedule Summary



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Global Service Center (GSC) – Operational View

Problem Statement

Providers and staff deal with a mix of centralized and decentralized service desks with inconsistent IT processes and capabilities often requiring multiple calls or help tickets

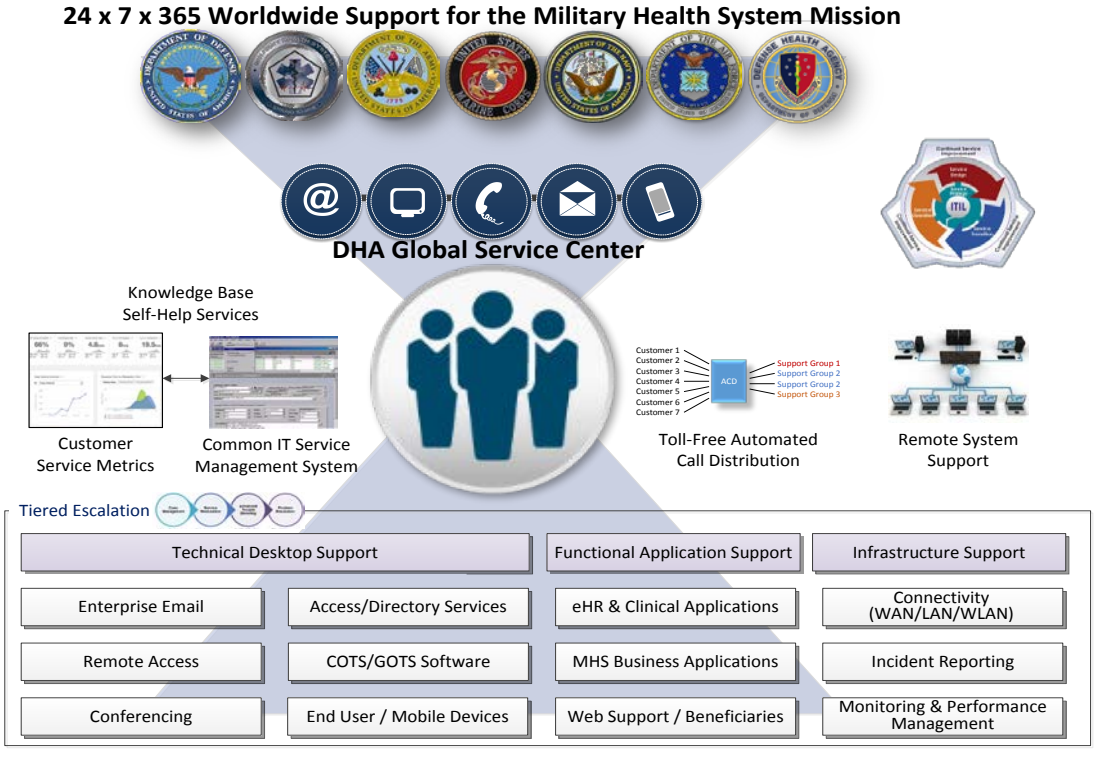
Future Vision

A single point of contact for all MHS users to obtain support, request DHA IT services and report technical issues.

Customers

DHAGSC

Support



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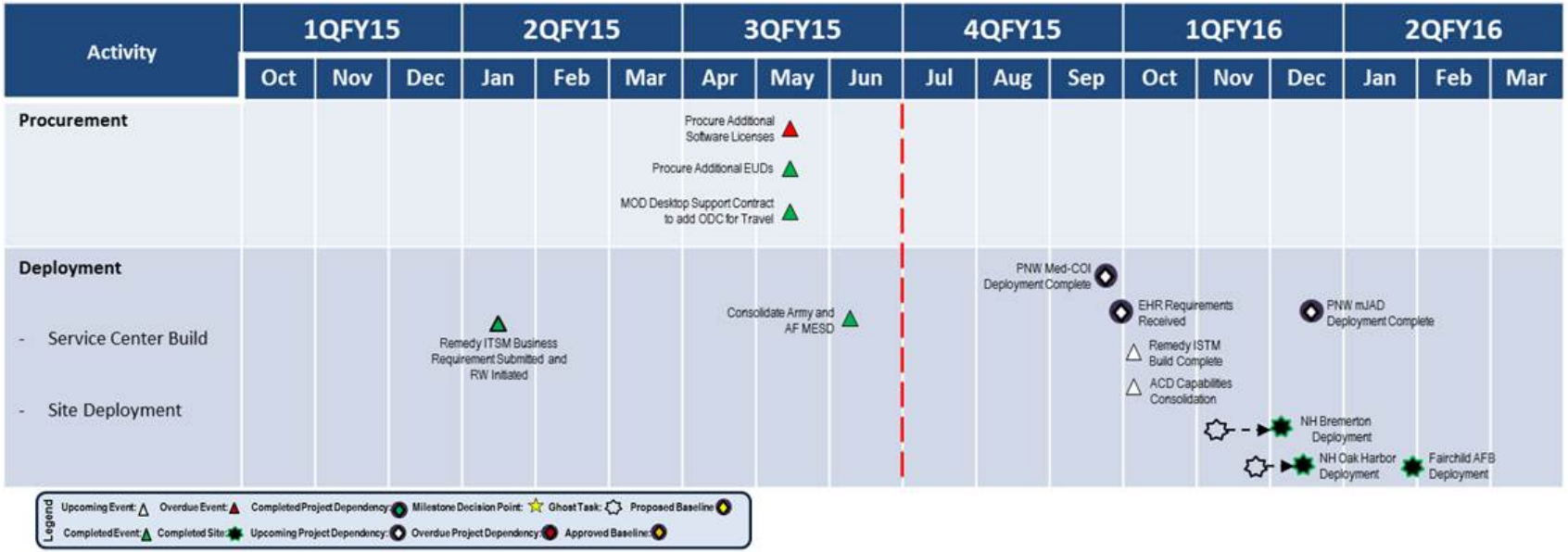
GSC – Scope

A single point of contact for all MHS users to obtain support, request DHA IT services and report technical issues. Program will consolidate disparate GSC functions across the MHS.

DHA GSC	Expand current DHA GSC service capabilities by absorbing the former Army and AF medical enterprise service desks (ESDs) and deploying remote desktop support services to the rest of the DoD medical community
Technical Desktop Support	Provide Remote Desktop Support Services to the Army, AF, Navy, and Joint Medical community in support of the standard desktop.
Functional Application Support	Continue to provide support for the current MHS applications and customers as well as adding the functional support cell for the new EHR

GSC – PNW Schedule Summary



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Infrastructure Consolidation Benefits

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Stakeholders

- **Provider and Staff User Experience** – *Seamless and ubiquitous user experience where providers and staff move from between facilities and from device to device with persistent desktop access*
- **Provider Mobility and Access** – *An integrated medical enclave that allows providers and staff to access systems and move seamlessly within and between MTFs*
- **Consolidation Savings** – *Reducing future costs of hardware, software and staffing by standardizing and consolidating infrastructure resulting in $134M in annual cost savings by FY19**
- **Responsive to Customer Needs** – *Provides a single GSC for all MHS IT users to obtain support, request services and report issues that provides visibility of IT performance metrics that is agile in aligning IT to the needs of the medical business*
- **Increased Security** – *Reduces risk for both Global Information Grid and DHA through the transition to a single security architecture aligned with JIE end state architecture*
- **Standardized Services** – *Uniform, secure and stable access to current and future clinical and business applications*

Infrastructure Consolidation Benefits con't

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Beneficiaries

- **Providers**
  - Improved Provider mobility and access
  - Ease of access with increased security
  - Consistent User experience across all sites
- **Beneficiaries**
  - Electronic medical information is consistent and available across the continuum of care
  - Patient information is exchanged between MTFs and Health Partners
- **Business**
  - Best business practices of private industry and government agencies
  - Standardized services (and information environment) across the application, desktop and server environments
  - Standardize costs across healthcare sites with predictable life cycle programs

Summary

HIT will provision service design and technical artifacts such as the items below for our deployments:

- **Integrated Master Schedule**
  - Executive Dashboards – Delivered once a month
  - PNW Detailed Work Breakdown Structure – delivered
- **Technical Architecture**
  - Network (WAN, LAN, WLAN) – delivered
  - DS/EM – delivered
  - Desktop as a Service (Physical and Application Management) – delivered
- **IT Service Design**
  - DS/EM – Support Service Specification in development
  - Network (WAN, LAN, and WLAN) – Core Service Specification in development
  - DaaS – Core Service Specification in development

Evaluations

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Please complete your evaluations

Contact Information

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