

## 2015 Defense Health Information Technology Symposium

# Capitalizing on Emerging Technology: Enhancing the Health Artifact and Image Management Solution



*“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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# Solution Delivery Division



- **Mission**

Deliver information technology solutions to the Military Health System through expert acquisition program management, process reengineering, training and integration activities in order to support and advance the delivery of health care to our patients.

- **Vision**

To become the world class leader in health information technology solutions and integration.



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# Learning Objectives



Current State of  
HAIMS

Introduce HAIMS and the new technologies to be used

Planned  
Capabilities

Describe the planned capabilities

User Experience

Describe how to improve user experience utilizing capabilities

Document Search

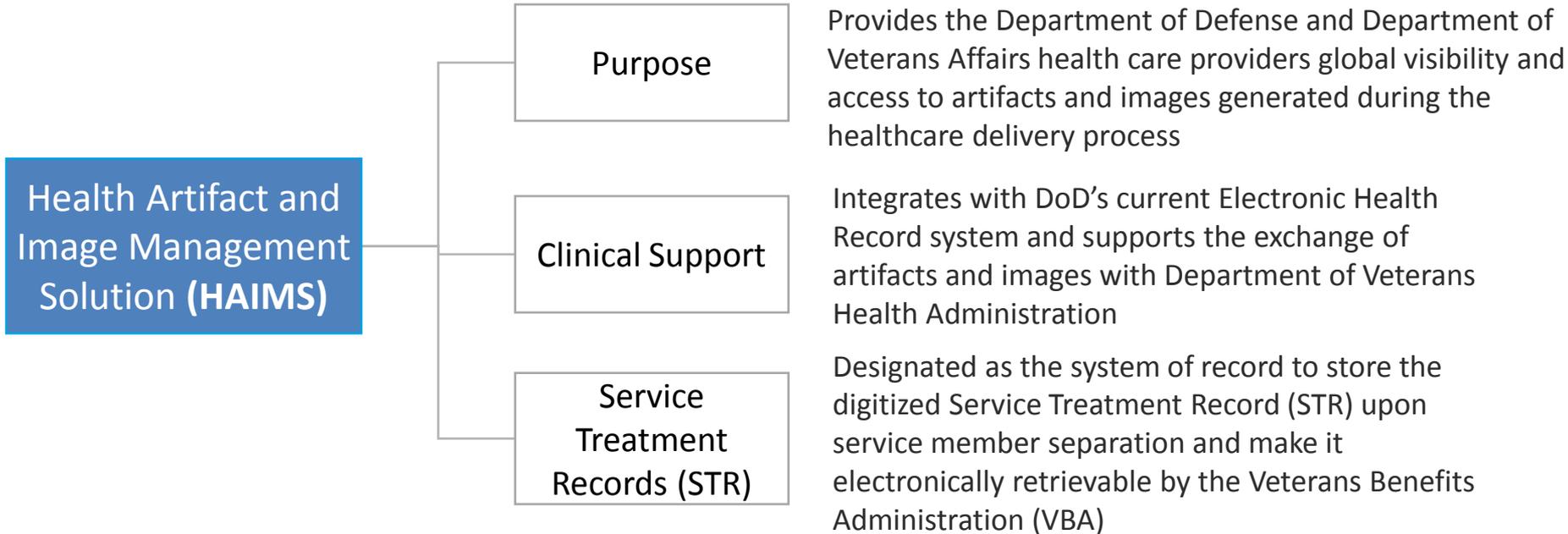
Describe how to implement advanced document search capabilities

Monitoring  
Technologies

Discuss the utilization of emerging and modern monitoring system technologies

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# Introduction to HAIMS



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# HAIMS Performance Statistics as of July 2015



**240,441**

Artifacts  
and Images

Shared between  
HAIMS and VHA

**400,000+**

Service Treatment  
Records

Stored in HAIMS

**108,838**

Service Treatment  
Records

Shared using the HAIMS/  
Data Access Service (DAS)  
Interface

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# Service Treatment Record Support



- HAIMS is the DoD system to support the Service Treatment Records (STRs)
  - Supports Benefits Adjudication
- Accelerated implementation to 12 months from planned 24 months
- Enables access to Service member's complete medical record
- Streamlines workflow and increases visibility of information across Services



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# HAIMS Capabilities

## ■ Digital Imaging

- ❑ Enterprise access to DoD and VA radiographic images
- ❑ Global database for registered picture archiving and communication system (PACS) image metadata
- ❑ Access to DoD Theater Image Repository (TIR)

## ■ Artifact (Document) Sharing Solution

- ❑ Global repository to store artifacts
- ❑ Provides bulk scanning capability
- ❑ Scalable storage solution
- ❑ Standardized platform for data sharing with various partners



# Upcoming Functional and User Improvements

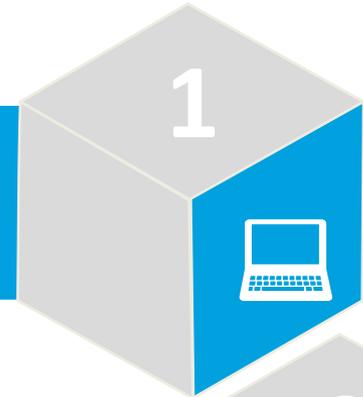
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# Upcoming Functional Capabilities (3QFY16)



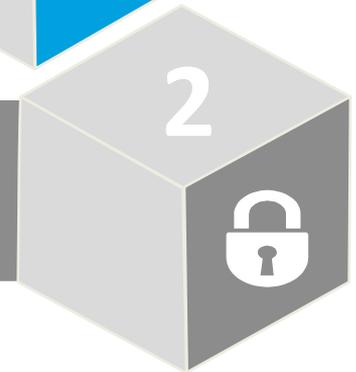
## Mass Ingest

Reduces time to publish artifacts to HAIMS  
Reduces costs by leveraging Integrating the Healthcare Enterprise standards that eliminate custom development



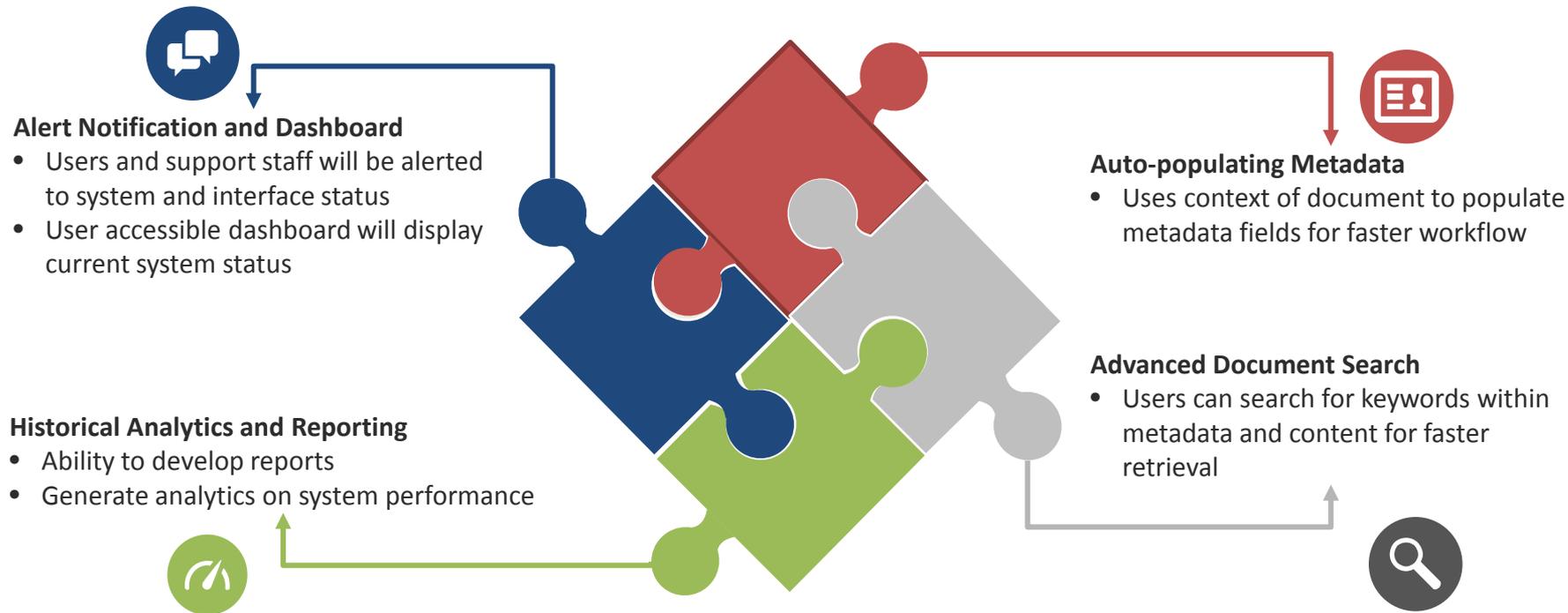
## Improve authentication capability

Reduces dependency on AHLTA by allowing users to create and update credentials  
Allow users to reset their own passwords thereby reducing the workload on site System Administrators



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# Improving User Experience (3QFY16)



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# New Technologies

# Microservice Architecture



- Updates HAIMS architecture to leverage micro services architecture (Phased development to begin end of FY16)
  
- Share standard services across the enterprise
  - Reducing redundant code
  
- Develops smaller loosely coupled service based components
  - Improves time-to-market by streamlining testing
  - Support faster deployment of features and problem resolution

# Microservices Architecture



1 >

## Resilience

Resilient during extreme load due to failovers sequences, resource management, and load balancing.



2 >

## Adaptability

Made for development in response to changing requirements.



3 >

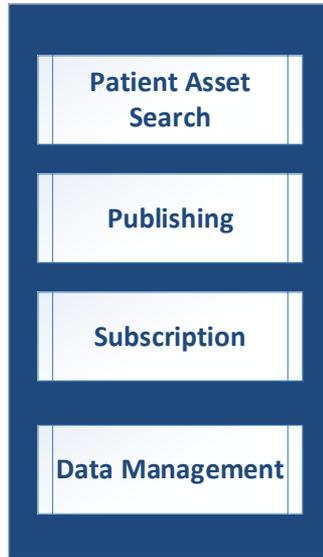
## Automation

Testing, resource management, and failovers are all automated.

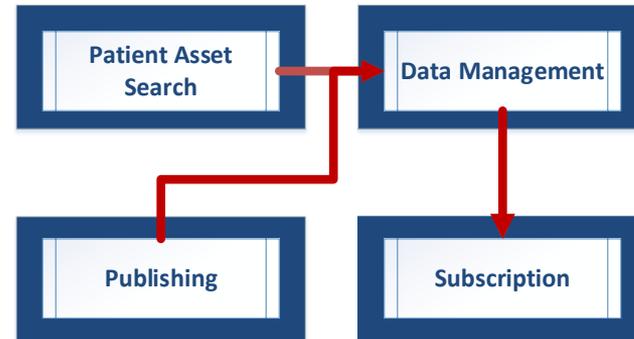
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# Microservice Architecture

**Monolithic Architecture:** all services are built into one application.



**Microservices Architecture:** all services are created independently. Services work together as an application through loosely coupled, messaging systems.



An approach to Service Oriented Architecture focusing on small parts not large integration

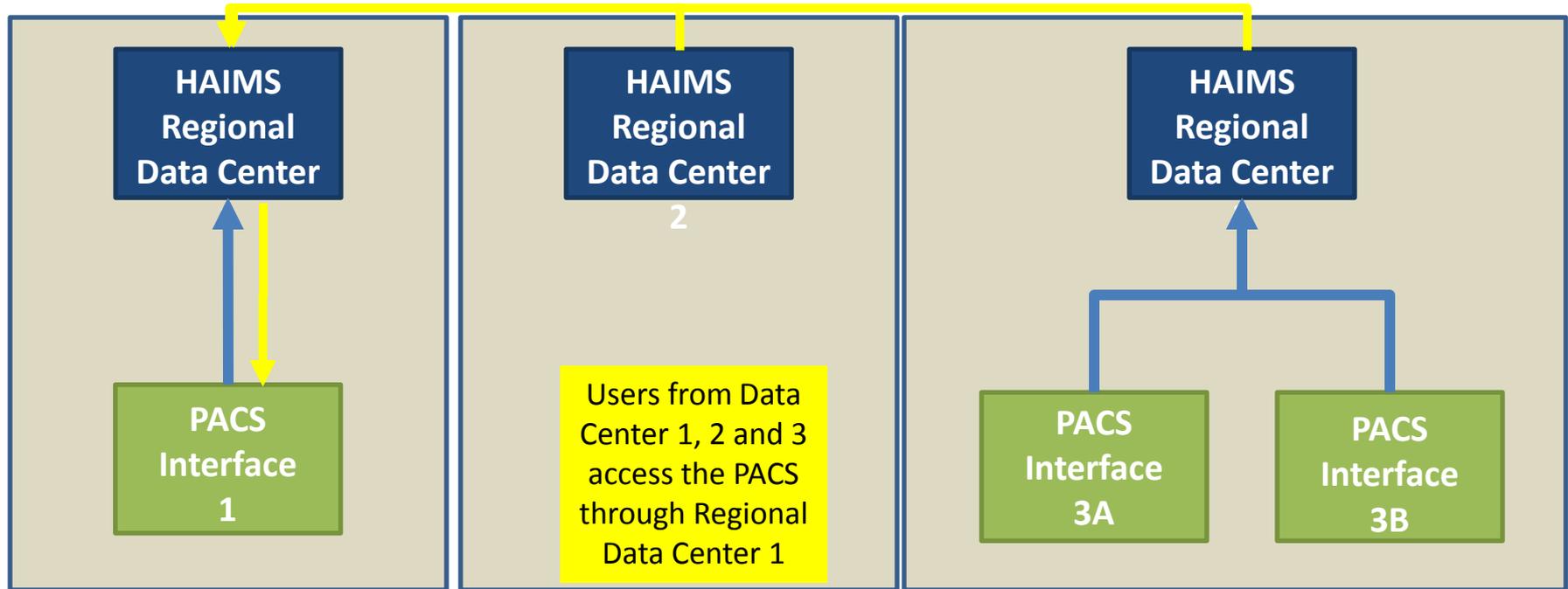
# Global Service Load Balancer (3QFY16)



- Support smarter load balancing solution
  - Able to support business rules to choose optimal load balancing solution
  
- Supports automated failover of traffic
  - AHLTA Embedded Mode
  - HAIMS Standalone Mode
  - Radiological Images
  - External Interfaces
  
- Improves overall availability of system and access to the data

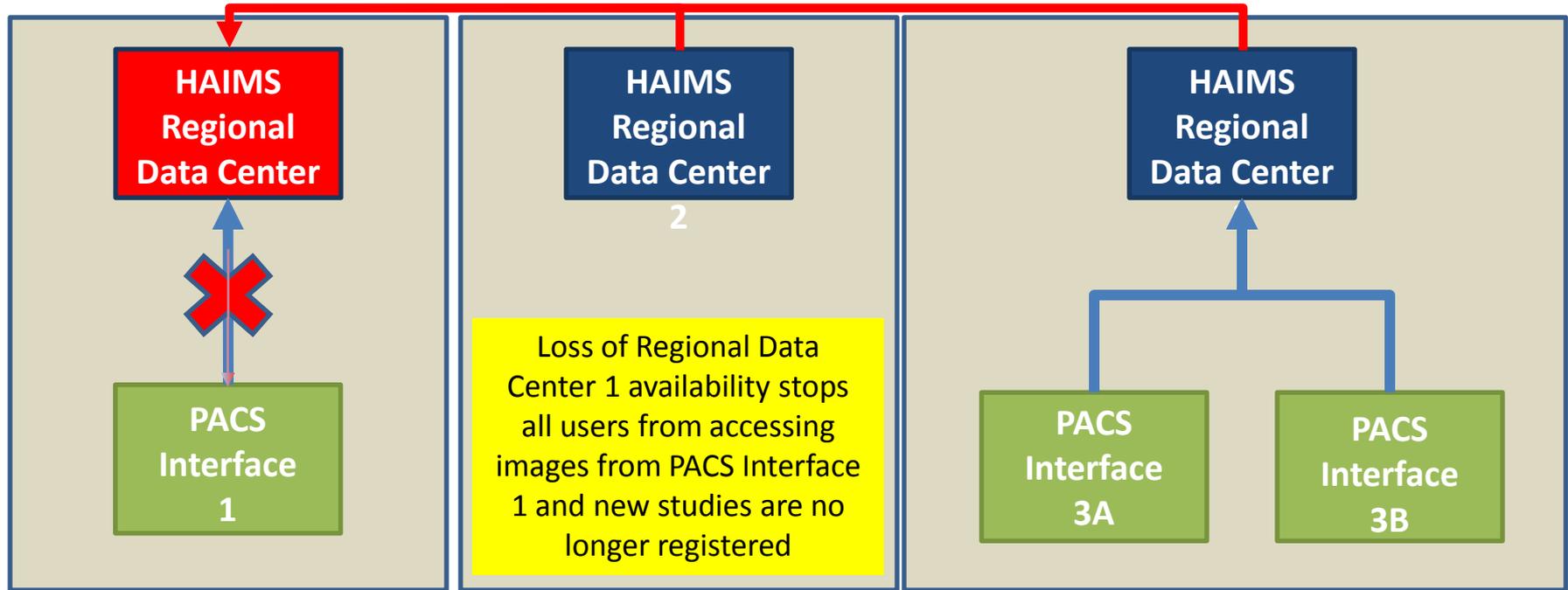
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# Example: Current Radiological Interface Without Failover



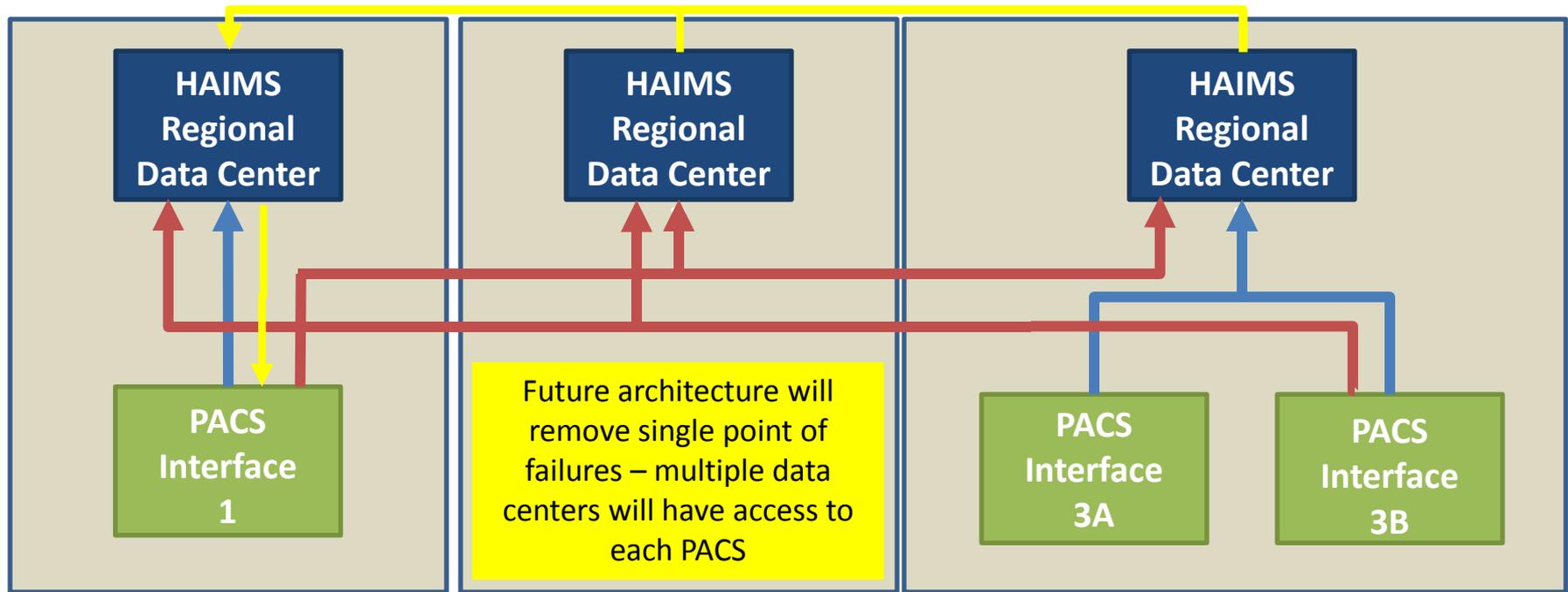
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# Example: Current Radiological Interface Without Failover



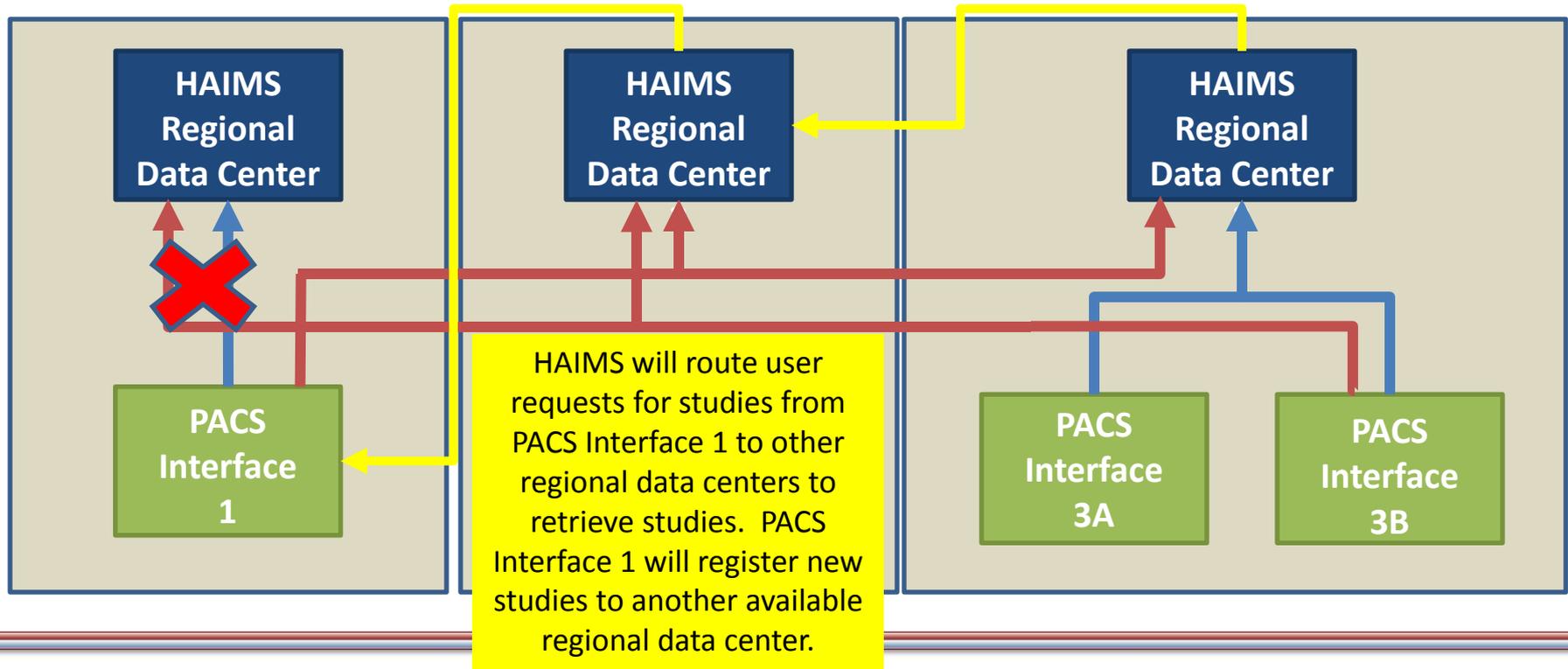
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# Example: Future Radiological Interface With Failover Capability



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# Example: Future Radiological Interface With Failover Capability



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# Enterprise HAIMS Monitoring Platform (3QFY16)

## Topaz

Collects user response time of synthetic transactions from local and remote sites of HAIMS Regional HAIRs. Provides a 24x7x365 application monitoring



## System Center Operations Manager

Collects data on all HAIMS production servers such as Memory and CPU Utilization



## Enterprise HAIMS Monitoring Platform

## Splunk

Web tool to collect, filter, summarize, report and query HAIMS



## Remote User Monitoring

Provides user performance based on real transactions



## ■ Tiered storage and archiving

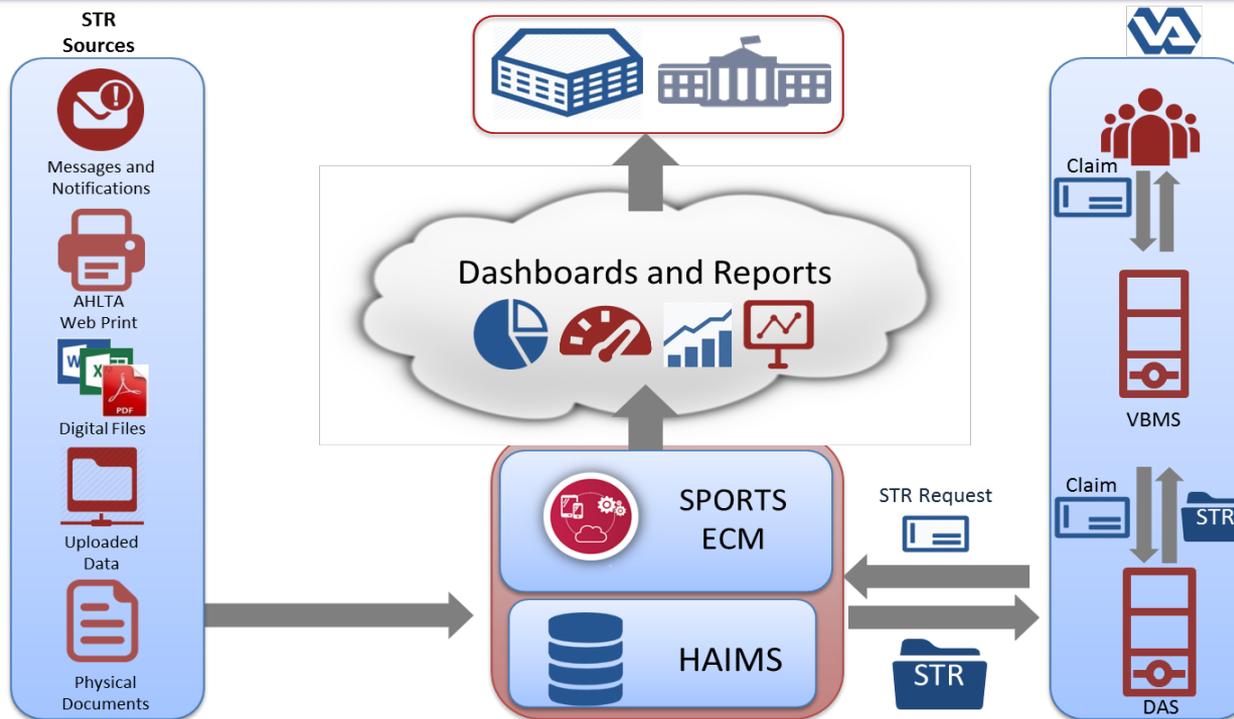
- ❑ Improves performance
- ❑ Increase scalability
- ❑ Reduces costs
- ❑ National Archives and Records Administration (NARA) compliant Deep archive solution

# Future Planned STR Support



- Increased storage capacity and performance
- Provide centralized, NARA compliant deep archive
- Provide subscription / notification capability
- Provide higher throughput through load balancing / more efficient transmissions
- Provide manifest of the contents of the STRs
- Interface with external systems to collect STRs (e.g. Health Readiness Record, AHLTA Web Print)

# Planned HAIMS STR Architecture



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Please complete your evaluations

# Contact Information



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# Questions?



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