Feb. 28, 2023

The Arizona Health Care Cost Containment System (AHCCCS), Arizona's Medicaid agency, and Med-QUEST Division (MQD), Hawaii's Medicaid agency, announce the release of a strategic roadmap that will guide the agencies' efforts to modernize their shared Medicaid Enterprise System (MES), meet federal compliance requirements, improve interoperability, and implement sustainable technology solutions.

AHCCCS and MQD commissioned NTT Data Services, a national leader in Medicaid technology development, to assess the need to replace legacy infrastructure. The current MES, developed on mainframe application technology more than 30 years ago, has limited self-service capabilities, inflexible core systems, and is aging beyond a workforce with the skills to support it.

In its MES Modernization Roadmap document, NTT weighs several critical factors and presents recommendations for the system upgrade project.

AHCCCS and MedQuest are reviewing the recommendations outlined in the roadmap to determine which are feasible given the project timeline and capacity, and will use this document to determine the next steps in the MES upgrade project. While the roadmap was commissioned jointly between the two agencies, recommendations may be considered independently.

We thank NTT Data Services for their diligence and collaborative efforts to produce this MES Roadmap.

NTT DATA

MES Modernization Roadmap

Deliverable 5.4.1

AHCCCS/MQD MES Modernization Roadmap Consultant

Contract Number: YH22-0009

Prepared for:

Arizona Health Care Cost Containment System (AHCCCS) and

Hawaii Med-QUEST Division (MQD)

Version 1.0

January 11, 2023

REVISION HISTORY

Version	Effective Date	Revision Owner	Description of Change
0.1	12/05/2022	Brad Perrin, Kimberly Smith	Initial Development and Peer Review
0.2	12/06/2022	Brad Perrin, Kimberly Smith	Initial review by AHCCCS/MQD Executive Team
0.3	12/07/2022	Brad Perrin, Kimberly Smith	QA Recovery
0.4	12/09/2022	Brad Perrin, Kimberly Smith	Initial DRAFT delivery
0.5	12/23/2022	Kimberly Smith	Modified language in the Exec Summary
1.0	1/11/2023	Brad Perrin, Kimberly Smith	Addressed feedback from AHCCCS
1.1	02/06/2023	NTT DATA, AHCCCS, MQD	Redacted

TABLE OF CONTENTS

LIST OF EXHIBITS

1 Introduction

The Arizona Health Care Cost Containment System (AHCCCS) and the Hawaii Med-QUEST Division (MQD) selected NTT DATA to develop a long-term strategic MES Modernization Roadmap to achieve compliance with Centers for Medicare & Medicaid Services (CMS) requirements to improve interoperability and sustainability of technology solutions that support Medicaid service delivery. NTT DATA will also update the Arizona and Hawaii Medicaid Information Technology Architecture (MITA) State Self-Assessments (SS-As) as part of this effort.

1.1 Purpose and Scope of This Document

The Medicaid Enterprise System (MES) Modernization Roadmap provides guidance to AHCCCS and MQD in their efforts to achieve compliance with CMS requirements to improve interoperability and sustainability of technology solutions that support Medicaid service delivery. The roadmap is an overarching plan to modernize and transform the agencies by identifying recommended actions, integrated high-level timelines, and estimated costs.

1.2 Intended Audience

This deliverable is intended to be used by the following project stakeholders:

- AHCCCS / MQD project team
- NTT DATA consulting team

1.3 Deliverable Owner, Approver and Reviewers

Exhibit 1 documents the Deliverable 5.4.1 MES Modernization Roadmap owner, approver, and reviewers.

Exhibit 1: Deliverable Owner, Approver, and Reviewers

Role	Responsibilities	Person(s) Assigned
Deliverable Owner (NTT DATA)	Ensures shared expectations are established, agreed upon and documented in advance via the DED; develops the deliverable according to the agreed-upon expectations; addresses feedback and works with the deliverable approver to achieve deliverable acceptance	Brad Perrin
Deliverable Approver (AHCCCS / MQD)	Ensures shared expectations are established, agreed upon and represented in the DED; identifies deliverable reviewers in advance; coordinates the deliverable review and provides consolidated feedback to be addressed by the deliverable owner	AHCCCS/MQD Business Subject Matter Lead AHCCCS/MQD Technical Subject Matter Lead AHCCCS/MQD Infrastructure Subject Matter Lead

Role	Responsibilities	Person(s) Assigned
Deliverable Reviewer (AHCCCS / MQD)	Reviews the deliverable and provides feedback to the Deliverable Approver(s)	AHCCCS/MQD Project Manager AHCCCS/MQD Business Subject Matter Expert AHCCCS/MQD Technical Subject Matter Expert AHCCCS/MQD Infrastructure Subject Matter Expert AHCCCS Budget Finance

2 Executive Summary

The Medicaid Enterprise System (MES) Modernization Roadmap guides AHCCCS and MQD in their efforts to achieve compliance with Centers for Medicare & Medicaid Services (CMS) requirements to improve interoperability and sustainability of technology solutions that support Medicaid service delivery. The roadmap is an overarching plan to modernize and transform the agencies by identifying recommended actions, integrated high-level timelines, and estimated costs.

AHCCCS and MQD have successfully maintained a unique strategic partnership spanning more than two decades, supported by joint technology ventures and shared systems that have controlled the costs for both agencies and met the unique needs of each Medicaid Program. Both AHCCCS and MQD credit strong institutional knowledge, due in part to the long tenures of their employees, as a key factor in the success of their distinctive programs. The factors that have contributed to the success of the AHCCCS and MQD programs and services now put both organizations at risk of not being able to: 1) maintain their core systems, 2) effectively make necessary system and process changes to support new legislation and federal mandates, and 3) onboard new staff to address retirement attrition and program growth.

This MES Modernization Roadmap considers several critical factors to arrive at the recommendations to modernize the MES in support of the Arizona and Hawaii Medicaid Programs. Factors include lessons learned from other state modernization journeys, maturity level of vendor offerings in the managed care space, budgetary constraints, and legislative cycles. Additionally, the overall volume of necessary projects and changes will create a tremendous challenge for both AHCCCS and MQD based on the present technology gaps and staffing concerns.

If the proposed recommendations are adopted, the resulting impact will be massive and require AHCCCS and MQD to make immediate organizational changes, which include changing the human resourcing model. This will achieve the desired outcomes of modernized technologies, operationalized governance, improved access to quality data, and enhanced business processes.

2.1 Roadmap Development Activities

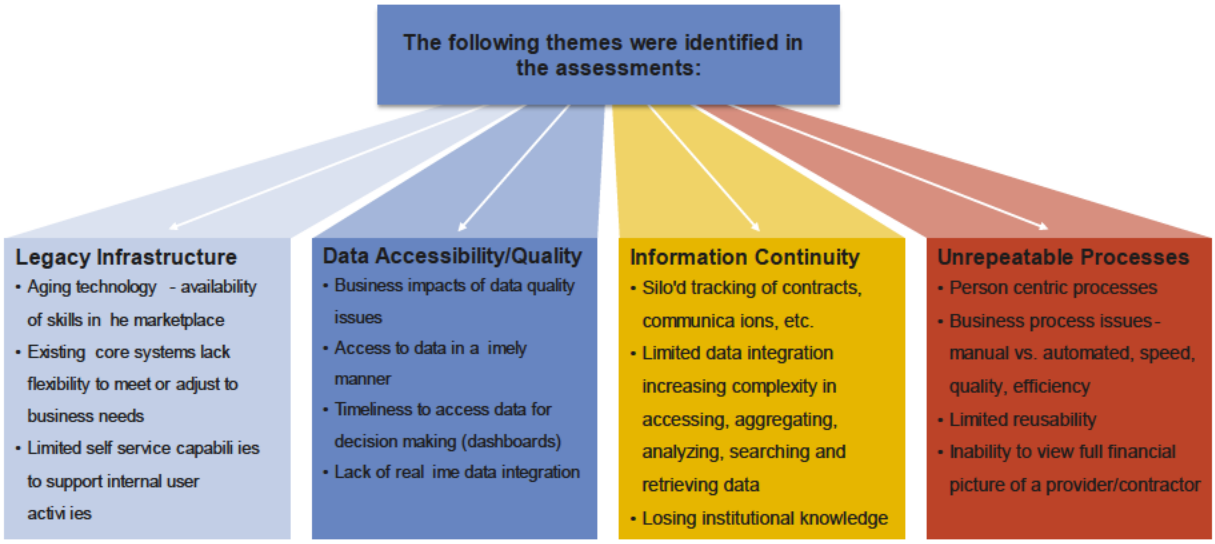
NTT DATA performed the following key activities to develop this MES Modernization Roadmap:

- **Visioning.** Confirmed with AHCCCS and MQD leaders the agencies' strategic vision, business goals, and information technology goals
- **Assessments.** Conducted business, information, technical architecture, and organization assessments to identify organizational challenges
- **Information Gathering.** Convened deep dive sessions with AHCCCS and MQD staff to gain a deeper understanding of capabilities
- **Market Research.** Evaluated solutions available on the market and vendor capabilities to meet the needs of AHCCCS and MQD
- **Roadmap Development.** Documented a recommended path forward with solutions to address the organizational challenges, including a high-level timeline and estimated costs associated with implementing the identified solutions

2.2 Organizational Challenges

Exhibit 2 shows AHCCCS and MQD organizational challenges (pain points) identified through the business, information, technical architecture, and organization assessments.

Exhibit 2: Identified Organizational Challenges



Documentation of the analysis of these challenges is provided in the following sections.

2.2.1 Legacy Infrastructure

Aging Technology. The single most important driving factor of the recommended solution is the end of the mainframe application support in 2027. Previous decisions to extend the life of the current PMMIS/HPMMIS systems and their legacy technologies of IDEAL and DATACOM have now placed AHCCCS and MQD into a non-negotiable five-year window of system retirement. Requests to mainframe service vendors, including IBM, have resulted in no availability of resources to augment or transfer the support of the PMMIS/HPMMIS code base to a vendor support model. This means that all potential MMIS conversion solutions must be evaluated against an end date of no later than June 30, 2027, due to the last state development staff retirement date. Current business and modernization activities are at risk as staff continue to retire on a progressive timeline, thereby reducing the available staff for day-to-day operations and project support.

Inflexibility of Core Systems. Due to the mainframe technologies supporting PMMIS/HPMMIS, based on IDEAL code and the DATACOM database, changes to the system are time consuming and complicated. Limited configuration capabilities exist within the system, and many of the business rules are hard coded. Web portals and commercial software packages have been layered on top of PMMIS/HPMMIS to overcome limitations within the mainframe framework, both for external and internal users.

Limited Self-Service Capabilities. AHCCCS and MQD have focused on providing members and providers the ability to find answers and resolve their issues via a website (self-serve web portal providing functionality such as claims status inquiry, eligibility verification, prior authorization submissions). However, the ability for the business users to self-service in support of their daily activities is limited. There is limited business rules documentation to support analysis of issues/concerns without involving the

system support teams. Due to a lack of an Enterprise Business Workflow Management Software platform, business is often performed through email, Excel, and Microsoft Access.

2.2.2 Data Accessibility/Quality

Data Quality. Due to the volume and timespan of data in retention, involving multiple decades of policy and program changes, AHCCCS and MQD must perform extensive data profiling and analysis to ensure accurate information exists regarding the actual content and structure of the source data prior to initiating any kind of system replacement or conversion. Additionally, due to the dated and incomplete system documentation, it is difficult and time consuming for the business to properly assess data quality issues with the Health Plans, relying heavily on the systems staff.

Timeliness of Data. Access to data in a quick and easy to digest format that spans multiple data sources is unobtainable without a lot of detailed research and staff resources, which makes it slow. There is a lack of dashboards that quickly identify out of compliance data sets that allow for drilldown and identification of issues. Identification of cause for issues requires involvement of multiple system teams to track the flow of data and review logs and activities.

2.2.3 Information Continuity

Limited Data Integration. The existing data warehouse contains a subset of data from the mainframe but does not contain the full scope of the data required for business analysis within the agencies. Within the MES additional data sources related to financial, electronic visit verification, provider enrollment, and member enrollment are not consolidated within the data warehouse. This increases the complexity of gaining a complete picture of the MES. Analysis is often performed in spreadsheets to consolidate the different data sources.

Losing Institutional Knowledge. The integrated high-level timeline shown in Section 2.5 demonstrates that AHCCCS and MQD are not in a position to begin immediately procuring a systems conversion vendor. A lack of current and complete documentation at all levels of the system and organization has put a premium on existing state staff institutional knowledge. Two other states have previously launched MMIS mainframe transformation projects in the last five years with similar documentation situations, and both were delayed or canceled until the documentation was completed. The retirement of staff, with much of the institutional knowledge contained within them, further exacerbates the lack of complete documentation.

2.2.4 Unrepeatable Processes

Person Centric Processes: AHCCCS and MQD maintain their operations through isolated activities that rely on individual employees having personal responsibility to track agency business in email and spreadsheets, which puts the agencies at risk. There is an absence of consistent communication methods within AHCCCS and MQD.

Lack of Enterprise Governance. The lack of both an enterprise program management office and established governance structures, policies, and tools across the combined organizations puts AHCCCS and MQD at further risk to delay or fail in their efforts to transform their legacy systems. Multiple vendor-managed modules have been added to the AHCCCS and MQD enterprises without sufficient integration or planning, resulting in disparate processes for managing change control, testing, and documentation.

Inability to View Full Financial Picture: AHCCCS and MQD rely heavily on the manual aggregation of disparate information from multiple sources using MS Excel/Google Sheets workbooks and MS Access

databases outside of the PMMIS/HPMMIS and the enterprise data warehouses to provide required state and federal financial reporting.

2.3 Recommendations for Path Forward

The AHCCCS and MQD MES Modernization Roadmap consists of eleven projects, organized into four domains, as the recommended solutions that will help modernize, organize, and efficiently integrate both enterprises that currently operate in disparate and aging modular architectures. The four domains are:

1. Operationalize Governance
2. Replace Legacy Infrastructure
3. Improve Data Accessibility and Quality
4. Develop and Leverage Operational Assets

Eight projects affect both agencies as they address AHCCCS-managed systems and services for both AHCCCS and MQD. At the completion of these eight projects, AHCCCS and MQD will continue to retain and maintain the existing vendor-managed modules and/or replacements that support key functions such as eligibility, provider enrollment, and electronic visit verification. These eight projects are:

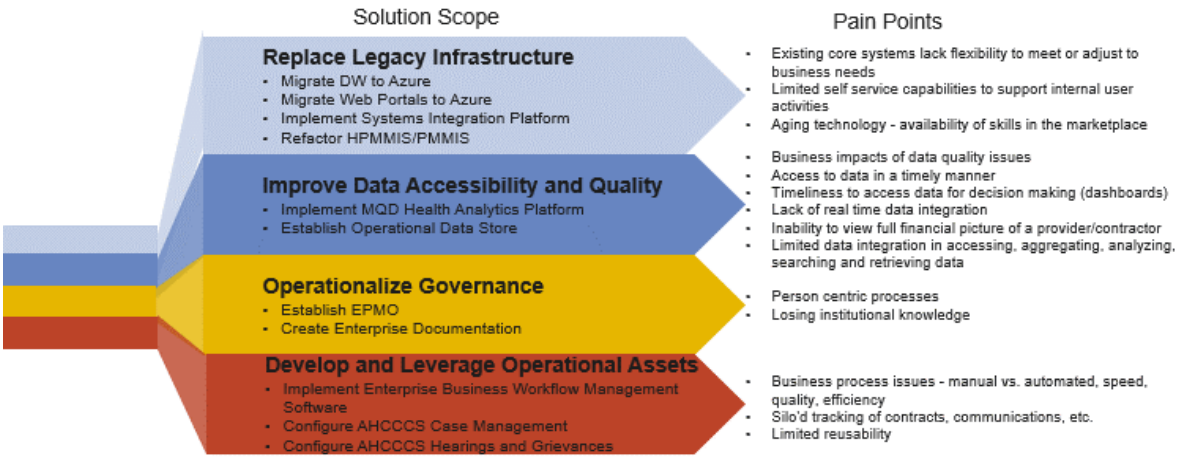
1. Create Enterprise Documentation
2. Establish Enterprise Program Management Office (EPMO)
3. Migrate Data Warehouse (DW) to Azure
4. Migrate Web Portals to Azure
5. Implement Systems Integration Platform
6. Refactor HPMMIS/PMMIS
7. Establish Operational Data Store (ODS)
8. Implement Enterprise Business Workflow Management Software

Three projects are specific to one agency or the other, with two of these specific to AHCCCS and one to MQD. The three agency-specific projects are:

1. Implement MQD Health Analytics Platform
2. Configure AHCCCS Case Management
3. Configure AHCCCS Hearings and Grievances

Exhibit 3 shows the recommended solutions strategically aligned to AHCCCS and MQD organizational challenges.

Exhibit 3: Recommended Solutions Strategically Aligned to Organizational Challenges



The following sections summarize the recommended solutions by domain. Additional details regarding these recommended solutions are documented in Section 4 Roadmap Details. Alternative solutions considered are documented in Section 7 Alternative Approaches.

2.3.1 Operationalize Governance

Establish EPMO. The primary plans and structures that must be established under program management are an enterprise program management office, integrated governance program, strategic change and release management, enterprise testing, enterprise training, organizational change management, strategic communication plan, and a vendor management plan. Several of these components, such as testing and training, require the setup of an organization along with the development of a comprehensive plan for execution. Establishing the EPMO starts with the selection of an MES Program Manager for each agency who will have complete authority and responsibility for execution of the MES Modernization Roadmap and success of the MES Modernization Program. The AHCCCS MES Program Manager and the MQD MES Program Manager must be in lock step with one another and will lead their respective organization on behalf of the Medicaid Director/Administrator through all aspects of the roadmap.

Create Enterprise Documentation. The required documentation includes at a minimum a technical reference architecture, technical standards catalog, PMMIS/HPMMIS business rules, business policies, system processes, user and application security roles, and a detailed enterprise architecture. The recommended list of documentation sets is necessary for the implementation of a systems integration platform, PMMIS/HPMMIS refactor, and the onboarding of new vendors into the enterprise.

2.3.2 Replace Legacy Infrastructure

Migrate Data Warehouse (DW) to Azure. AHCCCS maintains the data warehouses for both AHCCCS and MQD. This project has already been initiated within the AHCCCS Information Services Division (ISD) and is using a vendor to migrate both data warehouses from the Iron Mountain Data Center to Azure. This early initiated project aligns well with the MES Modernization Roadmap. Future projects may include an Azure data lake, performance improvements in reporting, and the implementation of new dashboards and tools.

Migrate Web Portals to Azure. This project migrates AHCCCS and MQD portals and web applications that are managed by AHCCCS to Azure. These include the internet and intranet portals and applications that provide a common look and feel and centralized access for providers, health plans, members, sister state agencies, and internal agency users. ISD has already initiated this program internally within AHCCCS; however, more than 90% of the applications remain in the Iron Mountain Data Center production environment with a copy/transfer of the code base to the Azure development and system test environments. [redacted]

Implement Systems Integration (SI) Platform. A core set of SI technologies, standards, and services that create a central platform and hub of the enterprise is a critical anchor of modernized MES architectures. The SI platform will provide the standardized integration of current and future modules and systems, remove costly point-to-point integrations between current systems, and establish repeatable technologies and processes to enable the interoperability of both AHCCCS and MQD enterprises with each other and external entities.

Refactor HPMMIS/PMMIS. This project will refactor the PMMIS and HPMMIS to current technologies that are sustainable into the future and significantly reduce the financial impacts of maintenance and operations on AHCCCS and MQD. The refactoring process will take the existing PMMIS and HPMMIS through successfully proven conversion technologies and processes to completely replace the hardware, software, programming languages, and databases with a Microsoft Azure cloud technology stack while retaining the business logic, rules, and functionality of the original systems.

This refactor of the PMMIS/HPMMIS will require the procurement of at least three vendor groups that fullfill distinct roles within the project:

- **Code and Data Conversion.** The code and data conversion from IDEAL and DATACOM to C# and Azure SQL will be performed by a specialized vendor using industry tested tools and processes. The deliverables from this group will be converted source code and data that has been migrated from the legacy platform to the new Azure Platform.

- **PMMIS/HPMMIS Support.** As the refactor vendor is completing its activities around source code and data conversion, a cloud services and Medicaid software development vendor will need to be put in place to set up and manage the new systems and databases, set up and manage the Azure DevOps tools and processes, and provide ongoing development and support of the new code base.

    - **Cloud Architecture and Engineering.** A vendor team will support AHCCCS to architect, build, and maintain a new set of Microsoft Azure operating environments that include compute, storage, database, networking, and application service resources that fully support the new PMMIS/HPMMIS.

    - **Azure DevOps.** A vendor team will be put in place to build, configure, and manage a complete configuration management environment and services for the new PMMIS/HPMMIS. The Azure DevOps solution will comply with AHCCCS's new enterprise release management strategy through the integration of ServiceNow.

    - **Software Development.** An AHCCCS team, supported by vendor development staff, will be put in place to receive the converted source code, make modifications during user acceptance and parallel testing, and prepare the final code base for implementation. This will provide the foundation for ongoing software development that is directed by an AHCCCS senior technical team in support of business changes.

- **Test Preparation and Execution.** The conversion of the source code from IDEAL to C# will provide a limited scope of unit testing to ensure the code base compiles and runs. A testing vendor will be needed to plan and execute the full set of additional testing that includes integration testing, end-to-end testing, user acceptance testing, and parallel testing. Mature testing vendors bring best practices, automation, standards, and toolsets to help ensure that effective and complete testing can be accomplished within the limited timeframe.

2.3.3 Improve Data Accessibility and Quality

Implement MQD Health Analytics Platform. MQD Health Analytics Program (HAP) is procuring a vendor-supported analytics platform that will source data from the MQD MES and other outside entities. MQD has already initiated this program and received CMS approval through an Advance Planning Document (APD). The timeline for this program initially runs ahead of the overall MES Modernization roadmap and requires further planning to appropriately integrate the systems with the modernized architecture. The new health analytics platform will receive the MES data through integration across the SI platform with MQD's enterprise data warehouse and included operational data store that will be implemented as part of the roadmap and continue to be maintained by AHCCCS.

Establish Operational Data Store (ODS). Each agency will establish an ODS to decouple functionality from the mainframe and improve access to data from multiple source systems. It will become the central collection point of business data from all modules and systems in the enterprise and be the new data source for operational dashboards, reporting, data extracts, and T-MSIS. The respective ODS will also become the feeder to the analytics platform and databases used for the more expansive program research and reporting. The currently utilized Information Services subsystem, along with the associated reporting and data extract functions within PMMIS and HPMMIS, will be transferred to the new ODS and reporting services.

2.3.4 Develop and Leverage Operational Assets

Implement Enterprise Business Workflow Management Software. Implementation of a modular Enterprise Business Workflow Management Software will provide an integrated suite of software tools and workflows that will support key functions such as governance, change management, knowledge management, contact and communications management, contract management, and IT service ticketing. The functions currently residing within the PMMIS State System Request (SSR) subsystem and the numerous manual processes handled through email, SharePoint, and Excel will be consolidated into this comprehensive system. This implementation is specific to the AHCCCS organization; however, the leveraged systems and IT staff within AHCCCS that support the MQD programs will be directly affected by the changes. In addition, a separate existing instance of an Enterprise Business Workflow Management Software within the MQD organization will be integrated with the AHCCCS instance to facilitate the coordination of the activities between the two enterprises.

Configure AHCCCS Case Management. AHCCCS will procure a new Case Management system to execute the necessary changes, enhancements, and efficiencies in support of their Arizona Long Term Care System (ALTCS), Tribal ALTCS, and behavioral health programs. The new system is expected to handle the workflows, processing, and administration of the stated programs across both the Fee-For-Service (FFS) and Managed Care domains. In the Managed Care areas, a combination of the system and data warehouse reporting will provide Quality Improvement and program oversight rather than direct case management, as those direct functions are managed by the health plans and their associated systems. The PMMIS system and various manual processes currently support the case management needs of AHCCCS. At the completion of the project, the new case management system will replace the PMMIS Client Assessment and Tracking System (CATS) subsystem functionality and allow the legacy functions to be retired with the PMMIS refactor project.

Configure AHCCCS Hearings and Grievances. AHCCCS will procure a new Hearings and Grievances system to help the Office of the General Counsel transform the numerous manual processes hindering their program and replace a standalone software product that no longer meets their needs. The new system will need to integrate with the broader enterprise of systems to pull and share data and may require the integration of various internet facing applications and portals maintained by AHCCCS.

2.4 Strategy Alignment

The success of the MES modernization for both AHCCCS and MQD depends on the alignment of the plan to the executive vision and strategy of both agencies. The AHCCCS 2027 strategic plan is organized around three primary goals: 1) provide equitable access to high quality whole-person care, 2) implement solutions that ensure optimal member and provider experience, and 3) maintain core organizational capacity, infrastructure, and workforce planning that effectively serves AHCCCS operations. The Hawaii DHS mission focusing on self-sufficiency and well-being directs the decision making for the MES Modernization Roadmap to consider systems that efficiently and effectively support community-based outreach, rural provider and member access, continuity of care through the sharing of data, and targeted population health management through analytics and reporting.

Based on the AHCCCS and MQD strategies, NTT DATA defined a set of objectives that supports the strategies. Exhibit 4 lists the strategic objectives and their alignment to the four domains of projects.

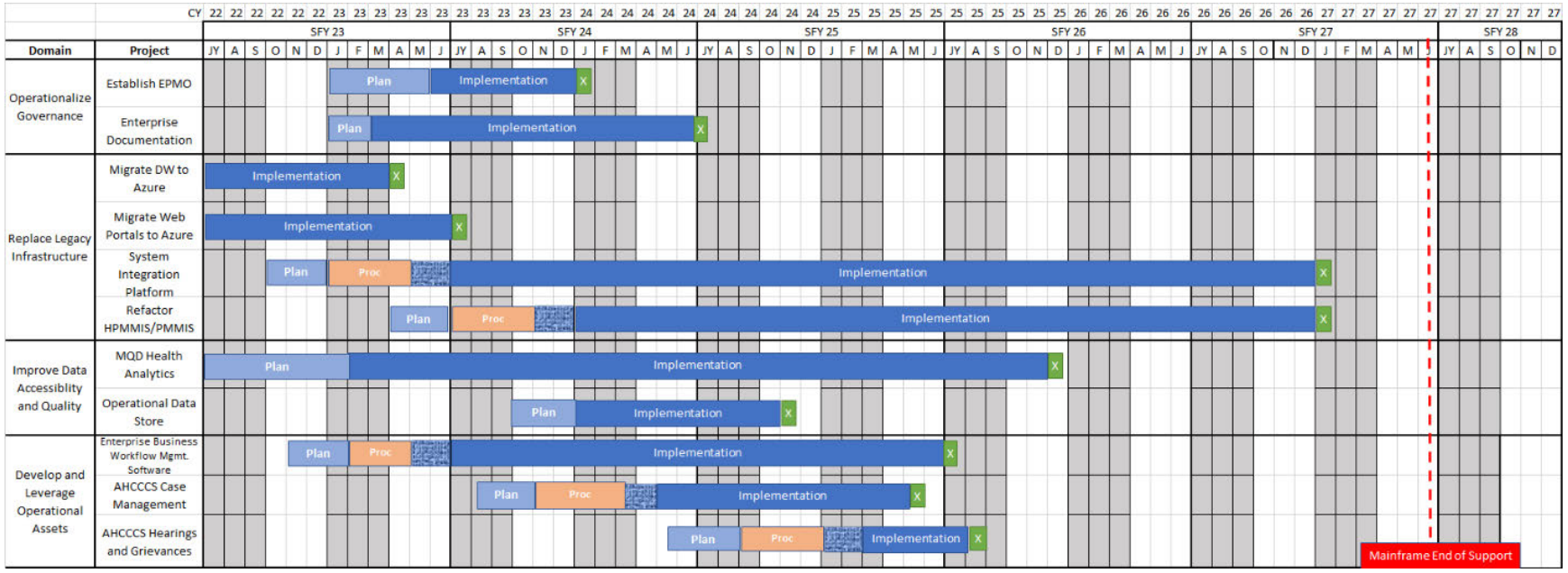
Exhibit 4: Objectives Mapped to Recommended Solution Domains

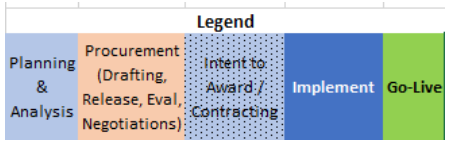
Strategic Business and IT Objectives	Operationalize Governance	Replace Legacy Infrastructure	Improve Data Accessibility and Quality	Develop and Leverage Operational Assets
Retaining AHCCCS's and MQD's Managed Care administration and processing maturity		✓	✓	
Measurable cost savings and business efficiencies realized in the first five years of the roadmap	✓	✓	✓	✓
Strategically targeted procurements that address today's staffing challenges and support future staffing capabilities of AHCCCS and MQD	✓	✓	✓	✓
Full retirement of unsupportable and cost prohibitive technologies		✓	✓	
All systems hosted in public cloud infrastructure in compliance with AZ ASET and HI DHS strategic directives	✓	✓	✓	✓
Transformation of manual and non-standard processes throughout the organizations to standardized digital workflows	✓			✓

2.5 High Level Timeline

Exhibit 5 shows the high-level timeline for execution of the recommended solutions.

Exhibit 5: Integrated High-Level Timeline





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2.7 Risks

Exhibit 7 shows the key risks to execution of the recommended solutions.

Exhibit 7: Key Risks

Risks	Proposed Mitigations
Roadmap Ownership: If executive leadership, senior staff, and domain and subject matter experts are not fully engaged and involved in the review, adoption, execution, and evolution of the roadmap, then the modernization program may fail due to a lack of ownership by AHCCCS and MQD.	Executive leadership and senior staff will be engaged in the review and refinement of the roadmap, focusing on timely decisions regarding the actions that will be taken to address the organizational challenges.
Operating Model Integration: If the recommended actions around Governance and IT development staffing are not integrated into AHCCCS's and MQD's operating model, then the modernization program may fail due to lack of organizational maturity and capabilities.	AHCCCS and MQD must provide strong executive level sponsorship and key leadership within their agencies to implement the necessary discipline and inspire staff to accept and embrace the new model—for example, oversight of outsourced development teams rather than doing everything in house.
Service Maturity and Governance: If AHCCCS and MQD are deficient in IT service maturity or critical internal controls and governance practices, processes, and SOPs to guide and enable modernization, then the modernization program will be impeded and unnecessarily protracted due to avoidable delays and rework that will increase costs.	As foundational disciplines within the MES Modernization Roadmap, AHCCCS and MQD must enhance existing IT service delivery, internal controls, and governance practices into repeatable, verifiable processes.
Funding: If there is an interruption in state or federal funding, then the modernization program may fail due to inability to achieve the 2027 milestone.	AHCCCS and MQD must have full funding authorization for the MES Modernization Roadmap and must receive the necessary dollars.
State Staffing Levels and Expertise: If AHCCCS and/or MQD is unable to staff with sufficient capacity and expertise to cover day-to-day operations and MES Roadmap execution, there could be issues with access to care for members, timely payments to health plans and providers, accurate and timely reporting to CMS, and/or failures with execution of the MES Modernization Roadmap.	AHCCCS and MQD must backfill day-to-day operations staff and allocate those experienced subject matter experts to the modernization program.

2.8 Next Steps

This MES Modernization Roadmap is the recommended set of solutions that NTT DATA believes will meet the critical 2027 milestone while ensuring that AHCCCS and MQD effectively utilize critical monetary and staffing resources. This MES Modernization Roadmap also avoids unnecessary risks from

the lure of technology solutions that do not adequately meet business needs. The next steps to facilitate the execution of the roadmap and the transformation of the organizations include development of an implementation plan, initiation of the scoped projects that must begin 1/2/2023, and initiation of a transition plan that supports necessary organizational changes.

AHCCCS and MQD must begin to shift their staffing models today to prepare the organizations and the individual employees who bring great value with their knowledge and experience in order to manage the roadmap work ahead, while still managing day-to-day business. AHCCCS and MQD must develop a transition plan to establish their information services teams as subject matter experts in the roles of senior business analysts, architects, technical leads, and vendor managers. This will allow AHCCCS and MQD to have more flexible staffing models for software development, database management, network management, and cloud services which can include experienced Medicaid vendors that can provide cost effective resource models and pipelines.

The ability of experienced vendors to meet capacity needs by leveraging cost effective models across their broader U.S. based staffing pools cannot be overlooked. AHCCCS and MQD must promote a culture within the system support services that helps employees recognize that tomorrow's focus will be on what needs to be done to help support the business, not necessarily how it will be implemented. The changes that are described in the roadmap will result in AHCCCS and MQD maintaining control of the vision of their respective agencies and execution of the vision, while outsourcing functions that are widely available on the market from experienced vendors that have proven track records across other Medicaid programs.

During the next five years of project execution, the major Medicaid system/solution module vendors will continue to improve and expand their offerings. AHCCCS and MQD will also begin to develop a clearer vision of the technology needs that fully support their businesses. At the conclusion of the eleven projects, AHCCCS and MQD will be strategically positioned to choose from multiple opportunities that best meet the goals to further grow and transform their Medicaid programs and supporting enterprise systems.

3 Roadmap Alignment to Vision and Strategy

The success of the MES Modernization Roadmap for both AHCCCS and MQD depends on the alignment of the roadmap to the executive vision of both agencies and to several overarching strategic plans. AHCCCS has published a five-year strategic plan that focuses on the goals and mission of the organization through 2027. AHCCCS must also align to the strategic planning of the Arizona Strategic Enterprise Technology (ASET) Office, which published a strategic IT plan for the state of Arizona, covering through 2022.

MQD, a division of the Hawaii Department of Human Services (DHS), works to support DHS strategy and vision along with their own goals and strategies. MQD must also align to the strategic planning of the Hawaii Office of Enterprise Technology Services (ETS), which published the Hawaii Information Technology Strategic Plan, covering through 2024.

The MES modernization outcomes are also directly attributable to the impact technology has on members, providers, payer organizations, policies, agency end users, other state agencies, CMS, and other business partners. Consideration must be given to dominant trends and priorities in the Medicaid world, such as access to care, cost containment, value-based care, social determinants of health, outcomes-based measurements, and interoperability of systems for data availability.

3.1 AHCCCS Strategic Plan

The AHCCCS 2027 strategic plan is organized around three goals that each summarize a set of agency priorities. Overall, the strategic goals and priorities that address information technology place a heavy emphasis on procuring and building systems that are configurable, interoperable, flexible, replaceable, secure, and based on standard technologies that are mature and have a broad presence in the marketplace.

Exhibit 8 demonstrates the alignment of the MES Modernization Roadmap with each strategic goal and its set of associated priorities.

Exhibit 8: Roadmap Alignment with AHCCCS Strategic Goals

AHCCCS Strategic Goals	
Strategic Goal	**Roadmap Alignment**
Provide equitable access to high quality whole-person care	The modernization of the MES through refactoring the PMMIS, implementing ServiceNow, and implementing a common systems integration platform and services helps ensure that access to care is prioritized by making data available and systems interoperable with one another in a standardized manner. These new systems will drive efficiency and accessibility for the business users who support AHCCCS providers, health plans, and members. These systems will also stabilize the supportability of the MES that could affect access to care.
• Priority 1: Reduce provider workforce shortages • Priority 2: Ensure all AHCCCS members are able to readily access services in the most appropriate setting to meet their needs • Priority 3: Address social drivers of health using available Medicaid levers • Priority 4: Improve health outcomes and member experience for individuals with special health care needs through targeted population health programming	

AHCCCS Strategic Goals	
Strategic Goal	**Roadmap Alignment**
Implement solutions that ensure optimal member and provider experience	The refactor of the PMMIS to modernized technology and the implementation of ServiceNow will help ensure that AHCCCS employees are delivering timely and optimal services to support providers and members. The creation of an operational data store (ODS) and the transition of the mainframe information services reporting and extracts to new systems will provide better planning, oversight, and accountability for AHCCCS and its business programs. The implementation of the MES Modernization Roadmap projects will meet not only today's needs, but allow the flexibility to adapt to the rapid pace of change associated with technology advancement, government mandates, and the needs of members and providers.
• Priority 1: Maintain and build technology platforms that ensure adherence to existing regulation and enhance performance • Priority 2: Routinely assess and communicate system performance using visualization tools accessible to community stakeholders • Priority 3: Eliminate fraud, waste, and abuse across all components of the program • Priority 4: Optimize federal block and discretionary grant funding to advance Medicaid programming and systems	
Strategic Goal	**Roadmap Alignment**
Maintain core organizational capacity, infrastructure, and workforce planning that effectively serves AHCCCS operations	All new systems in the MES Modernization Roadmap will be procured and implemented through cloud hosting to help drive sustainable infrastructure for AHCCCS. The refactor of the PMMIS will replace legacy technology with solutions that utilize marketable and employable skillsets for technology staffing. Implementing common systems platforms based on web technologies and ServiceNow will help consolidate the training needs that can be met with high quality solutions for AHCCCS.
• Priority 1: Improve employee engagement • Priority 2: Increase employee retention rates • Priority 3: Prevent disruption in program operations by investing in human resource tools and programming	

3.2 AHCCCS Health IT Strategy

In addition to the 2027 strategic plan, AHCCCS published its updated Health IT strategy for 2022-2026 that demonstrates the alignment of the health information technology (HIT) strategy with the health information exchange (HIE) strategy for the state. Within the Health IT strategy is an AHCCCS IT plan update that outlines five goals that AHCCCS is targeting through the development and execution of this MES Modernization Roadmap. Exhibit 9 lists the goals and their alignment to the four domains of projects.

Exhibit 9: AHCCCS SFY 2023 IT Plan Goals

AHCCCS SFY 2023 IT Plan Goals	Operationalize Governance	Replace Legacy Infrastructure	Improve Data Accessibility and Quality	Develop and Leverage Operational Assets
Modernize agency business functions		✓	✓	
Implement business applications enhancements		✓	✓	✓
Protect agency systems and data	✓	✓	✓	✓
Implement AHCCCS IT governance plan	✓			✓
Develop and maintain agency workforce	✓	✓	✓	✓

3.3 Arizona ASET Strategic Plan

Strategic Goals

The Arizona ASET strategic plan focuses on three goals. All three of the goals influence and direct the MES Modernization Roadmap to the considerations that are shown in Exhibit 10.

Exhibit 10: ASET Strategic Plan Alignment to the MES Roadmap

ASET Strategic Plan	MES Modernization Roadmap Alignment
• Develop organizational excellence that attracts the best workforce • Evolve the enterprise to stay in step with the business and provide optimal service delivery • Be in step with technology by adopting enterprise solutions across the state, protecting data, and performing digital transformation across the enterprise	• Cloud first approach to systems procurement and development • Standard tools and processes that can be leveraged for reusability across the enterprise • Strong governance and service management • Enterprise managed security that rapidly detects issues and centrally manages authentication and access of the user community

Guiding Principles

The Arizona ASET strategic plan is organized by five guiding principles that delineate the objectives to meet the strategic goals. Exhibit 11 defines each guiding principle and the alignment of the roadmap to the principle.

Exhibit 11: ASET Guiding Principles and Roadmap Alignment

ASET Guiding Principles	
Principle	**Description**
Enterprise Security	ASET has enterprise-wide security standards to ensure that all state agencies plan and execute coordinated and compliant initiatives.
Enterprise Security is a key IT principle mandated by CMS, ASET, Federal Risk and Authorization Management Program (FedRAMP®), and StateRAMP strategic plans and standards. AHCCCS plans to stay on course with implementing Azure Active Directory (AD) as its enterprise IAM/SSO solution. AHCCCS has also standardized its security information and event management (SIEM) and security operations center (SOC) tools and services through the procurement of a security vendor to monitor MES systems. o	
Principle	**Description**
Cloud First	ASET policy for state of Arizona agencies is that all new procurements will be cloud-based implementations.
The state of Arizona and all its government agencies are pursuing a Cloud First policy through new procurements and the transition/migration of existing systems. The vendor-managed modules procured by AHCCCS are hosted in either a public or private cloud platform, and the current legacy core PMMIS mainframe system is hosted in IBM's zCloud. AHCCCS is in the process of migrating all internally managed web applications and the data warehouse to Azure. All new procurements detailed in the roadmap will be implemented in the cloud, with a preference of Azure.	
Principle	**Description**
Shared Services / Optimization	ASET has established a policy of centralization and standardization for core IT services to avoid fragmentation, duplicative spending, and inefficient decision making.
The centralization and standardization of configurable software platforms and extensible services are critical to the success of state government offices that continue to experience reduced budgets and the turnover of staff due to retirement and attrition. ServiceNow will be procured in a cooperative manner with Arizona Department of Administration (ADOA) to capitalize on cost savings. ServiceNow will aggregate services and processes around service management, governance, change control, and knowledge management for all AHCCCS business units. In addition, the expandability and flexibility of the ServiceNow platform offers the potential to procure other business modules on the platform and thereby consolidate and optimize their portfolio of systems. Centralized enterprise document management and enterprise content managements systems and services will also be implemented as the standard repositories for documents and content across the AHCCCS enterprise. This will reduce timelines and costs associated with future module procurements by removing the need to convert and transfer documents from siloed solutions within individual modules and applications.	
Principle	**Description**
Enterprise Applications	ASET promotes leveraging configurable software platforms over custom-built applications to reduce costs and drive efficiencies.
The MES Modernization Roadmap enables AHCCCS to align with the ASET principle of implementing enterprise applications in lieu of custom-built software. As stated under the principle of standardized systems, AHCCCS will implement ServiceNow as the configurable software platform for ITSM; Government, Risk, and Compliance (GRC); and several other operational business processes. The platform may additionally be leveraged to host other future modules for specific business purposes. The Service Oriented Architecture (SOA) of the modernized AHCCCS enterprise will be built on the foundation of an enterprise systems integration (SI) platform and common services that will be used to	

ASET Guiding Principles	
integrate modules, systems, users, and external entities. The SI platform will be implemented as a set of configurable standard software tools and processes that are extensible and configurable to adjust to the needs of the enterprise.	
Principle	**Description**
Data Sharing	ASET urges state agencies to standardize electronic storage and access, analytical reporting, and interoperable sharing of data to help the business efficiently and effectively make decisions.
Over time the ASET principle of data sharing has become more difficult for AHCCCS to meet due to the point-to-point system integrations, lack of full data sets available in the data warehouse, and divided operational reporting between the PMMIS, data warehouse, and modular systems. Additionally, numerous overlapping file extracts come from multiple disparate extraction systems with siloed data stores. Duplicitous technology solutions and manual workarounds have been implemented by the individual business units due to a lack of enterprise governance. AHCCCS will centralize the aggregation of the enterprise data sets for each agency through the development of an Operational Data Store (ODS) as part of the MES Modernization Roadmap. The ODS will connect to the enterprises through the systems integration platform and become the central collection point for all data. In addition, the operational reporting, CMS reporting, common data extracts, dashboards, and T-MSIS will all be standardized on the ODS, data warehouse, and analytics platform.	

3.4 Hawaii DHS, MQD, and ETS Vision and Strategy

Hawaii DHS Mission

The Hawaii DHS mission focusing on self-sufficiency and well-being directs the decision making for the MES Modernization Roadmap to consider systems that efficiently and effectively support community-based outreach, rural provider and member access, continuity of care through the sharing of data, and targeted population health management through analytics and reporting.

MQD Executive Vision

MQD has defined an executive vision containing a comprehensive goal and set of strategies to effectively deliver MQD-supported services to the people of Hawaii.

Exhibit 12: MQD Goal and Strategies

Goal	Strategies
Healthy families and healthy communities achieving the triple aim of Better Health, Better Care, Sustainable Costs	• Invest in primary care, prevention, and health promotion • Improve outcomes for High-Need, High-Cost (HNHC) individuals • Payment Reform and Financial Alignment • Support Community-driven initiatives

MQD has defined three foundational building blocks in support of meeting the goal and supporting the strategies defined in the executive vision. Exhibit 13 maps the building blocks to the project domains defined in this MES Roadmap.

Exhibit 13: MQD Foundational Building Blocks

MQD Foundational Building Blocks	Operationalize Governance	Replace Legacy Infrastructure	Improve Data Accessibility and Quality	Develop and Leverage Operational Assets
Use data and analytics to drive transformation and improve care	✓	✓	✓	✓
Increase workforce capacity	✓	✓	✓	✓
Accountability, performance measurement, and evaluation	✓	✓	✓	✓

Hawaii (ETS) Technology Strategic Plan

The mission statement and key focus areas of the Hawaii Technology Strategic Plan for 2019 – 2024, published by the Hawaii Office of Enterprise Technology Services (ETS), have significant alignment to the priorities and focus of the MES Modernization Roadmap, as outlined in Exhibit 14.

Exhibit 14: Hawaii Technology Strategic Plan Alignment to Roadmap

Mission	Focus	Roadmap Alignment
The mission is to seamlessly blend innovative IT with well-engineered business process to deliver and support dynamic and sustainable systems that empower our workforce to accelerate excellent outcomes in support of the state's policies, decisions, operations, and services.	The focus of the mission guides decisions about user experience and accessibility, common interfaces and methods, integrated systems and data, and easily replaceable solutions.	The objectives within the strategic plan that align with the priorities of this roadmap include establishing strong governance, developing best practices and standards, implementing enterprise change management efforts and procedures, and building a plan that is flexible to adjust to organizational needs and stay relevant with current technology and business practices.

ETS Strategic Priorities

The ETS plan prioritizes seven goals in support of their strategic mission that define the standards and outcomes required by the state. Exhibit 15 describes the seven priorities and how each one is supported by the MES Modernization Roadmap projects and strategy.

Exhibit 15: ETS Priorities and Alignment to Roadmap

Alignment of ETS Priorities to the Roadmap	
Priority	**Description**
Partner for Successful Outcomes	Standard governance, business process re-engineering, program management, organizational change management, and procurement systems followed.
The volume of change and the complexity of building the modernized MES for AHCCCS and MQD require the establishment of formal governance; standardization of technology, processes, and data; digital transformation of manual processes; and implementation of expansive organizational change management. MQD has already procured a vendor that is working with the division on standards and digital transformation. These efforts and the additional work that will be implemented across both agencies through the MES Modernization Roadmap projects will align MQD with the ETS principle of partnering for successful outcomes.	
Priority	**Description**
Expand Statewide Cyber Security Strategy	Adoption of cyber security industry best practices across the state's IT (Information Technology) systems.
MQD implemented a common system integration platform and services in conjunction with the eligibility system, KOLEA. The shared services include a single sign-on (SSO) platform that has been applied to KOLEA security and is available for future systems. The MES Modernization Roadmap will develop a strategy that will enable single sign-on across both enterprises through the integration of the IAM and SSO solutions of MQD and AHCCCS using industry standard protocols and methods that will coordinate the access. This will align the security services with the ETS strategy.	
Priority	**Description**
Enhance the Value of State Data	Data stewardship that prioritizes transparency, public and state agency use and sharing, accuracy, and accessibility.
The implementation of an ODS for MQD will support the aggregation of enterprise data and standardize reporting and file extracts. In addition, MQD is implementing a CMS-approved health analytics platform that will provide analytics around program and population health and will be the preferred platform for operational and program reporting in the future. This strategy will move MQD into alignment with the ETS strategy of enhancing the value of state data.	
Priority	**Description**
Optimize Enterprise Systems	Optimize ETS enterprise systems to leverage the state's investment in centralized IT services.
The MQD implementation of their shared services includes enterprise systems such as document management, ServiceNow ITSM, and Adobe Enterprise Manager (AEM). These are all available for current and future systems and modules connected to the MQD enterprise. The MES Modernization roadmap will integrate the AHCCCS-managed MQD systems with either the MQD shared services or a comparative set of shared services that will be implemented in the AHCCCS systems integration platform. This will align MQD with the Hawaii ETS strategy of enterprise systems reusability.	
Priority	**Description**
Extend IT Portfolio Governance	IT governance will be extended across the state and all its agencies to ensure there is maximized reusability, common standards, and efficient planning.

Alignment of ETS Priorities to the Roadmap	
The extension of IT portfolio governance is a strategic principle of ETS that will be met through a hybrid integration between AHCCCS and MQD. Both agencies need to significantly improve standards and processes, along with supporting tools, to apply strict governance to their decision making and spending around technology. MQD has begun to implement IT governance within the organization, and AHCCCS has procured a vendor to help them plan IT governance and will begin the process of implementation. In addition, projects within the roadmap will implement an integrated governance model to help the two programs work together in prioritization, budgeting, risk analysis, and change control. Both agencies will have ServiceNow in place and will integrate their instances to allow for seamless change control, ticketing, and prioritization. As the two organizations expand in their programs and policies and seek new technologies to support their distinct businesses, the shared governance will ensure that prioritized goals can be met for both.	
Priority	**Description**
Implement Dynamic and Sustainable IT Operations	Building, procuring, and implementing IT processes and systems that allow dynamic, flexible, efficient, and configurable changes to stay current and adapt to business needs.
Several of the roadmap projects align MQD to the ETS strategy of implementing dynamic and sustainable IT operations. The forethought to build a common set of shared services and a systems integration platform prior to the implementation of KOLEA helped to establish common solutions that can be re-used and adapted throughout the transformations and changes in the enterprise. The implementation of ServiceNow also provides a configurable platform that can be leveraged for numerous business functions. These sustainable solutions will also help MQD integrate with the transformed MES solutions that AHCCCS hosts and manages on their behalf through the seamless integration of the service platforms instead of re-engineered system connections.	
Priority	**Description**
Digital Workforce Development	Creating a culture of high-quality technology staffing and recruiting to enable a flexible and remote workforce, attract top IT talent, and deliver exceptional IT services to the business.
The strategic principle of digital workforce development is important from the standpoint of providing support to MQD as they work with AHCCCS to execute the MES Modernization Roadmap. The core systems that have managed the AHCCCS and MQD Medicaid programs for over twenty years are running on unsupportable technologies and will be replaced by current technology tools, platforms, languages, and skillsets. This transition is necessary to continue doing business and at the same time facilitates the ability to hire future staff who can meet resource needs. The strategic development of a digital workforce will provide tech savvy business users who will more easily adapt to new systems and skilled developers and engineers who can help MQD continue to transform and adapt their enterprise once the foundation has been built.	

3.5 MES Roadmap Strategy Summary

The current systems and IT operations of both AHCCCS and MQD are the result of over thirty years of individually focused projects that created an abundance of manual processes, unsupportable core technologies, and vendor modules reliant on insufficient point-to-point integrations. The resulting enterprise is currently out of alignment with many of the goals, priorities, and standards outlined in this section of the MES Modernization Roadmap. The primary catalyst for many of these issues is a lack of centralized governance and planning to effectively manage the organizations to meet the business objectives. Both agencies recognize the challenges that have been introduced, due in part to a lack of

funding. The implemented technology and solutions met the agencies' needs at the time but have continued to age and require compensating workarounds and solutions.

Due to a combination of recent planning by both organizations, completion of a current state assessment, and the development of this roadmap, each agency will be positioned to bring themselves into alignment with much of the IT strategic priorities of their respective states. AHCCCS and MQD operate comprehensive managed care programs that require systems that support the unique business logic and transactional demands of the agencies. The MES vendor market lacks functionality within the current modular products to appropriately support the agencies. This does not preclude either agency from moving forward with procurement and establishment of technology innovations and modernizations, business transformations, and governance and standards. Much of the alignment to industry standards and the state IT principles for both states lies in the systems, processes, and programs that can be transformed outside of the core MMIS functions. It is for these reasons that this MES Modernization Roadmap recommends the specific projects and supporting enterprise transformations that are detailed in Section 4.

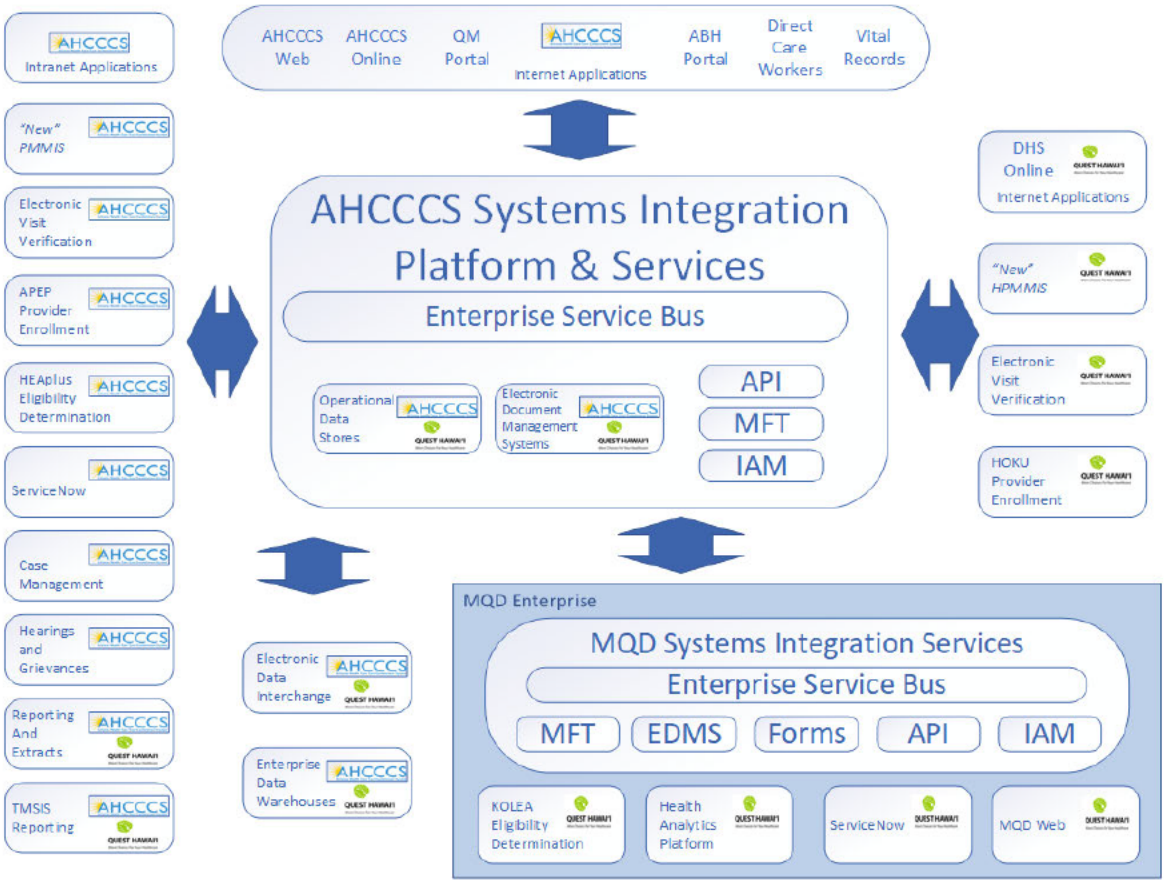
4 Roadmap Details

The AHCCCS and MQD MES Roadmap consists of eleven projects, organized into four domains, as the recommended solutions that will help modernize, organize, and efficiently integrate both enterprises that currently operate in disparate and aging modular architectures. The four domains are:

- Operationalize Governance
- Replace Legacy Infrastructure
- Improve Data Accessibility and Quality
- Develop and Leverage Operational Assets

Other foundational activities and organizational changes must also take place to align AHCCCS and MQD to the future state of the roadmap. Completing these activities and changes will mitigate potential risks that could cause failure in the projects due to organizational gaps and misalignment. Section 4.1 provides a timeline with the order and sequence of the projects and activities that are described throughout Section 4. Exhibit 16 demonstrates the architecture model of the MES that will support the AHCCCS and MQD agencies at the completion of the roadmap projects.

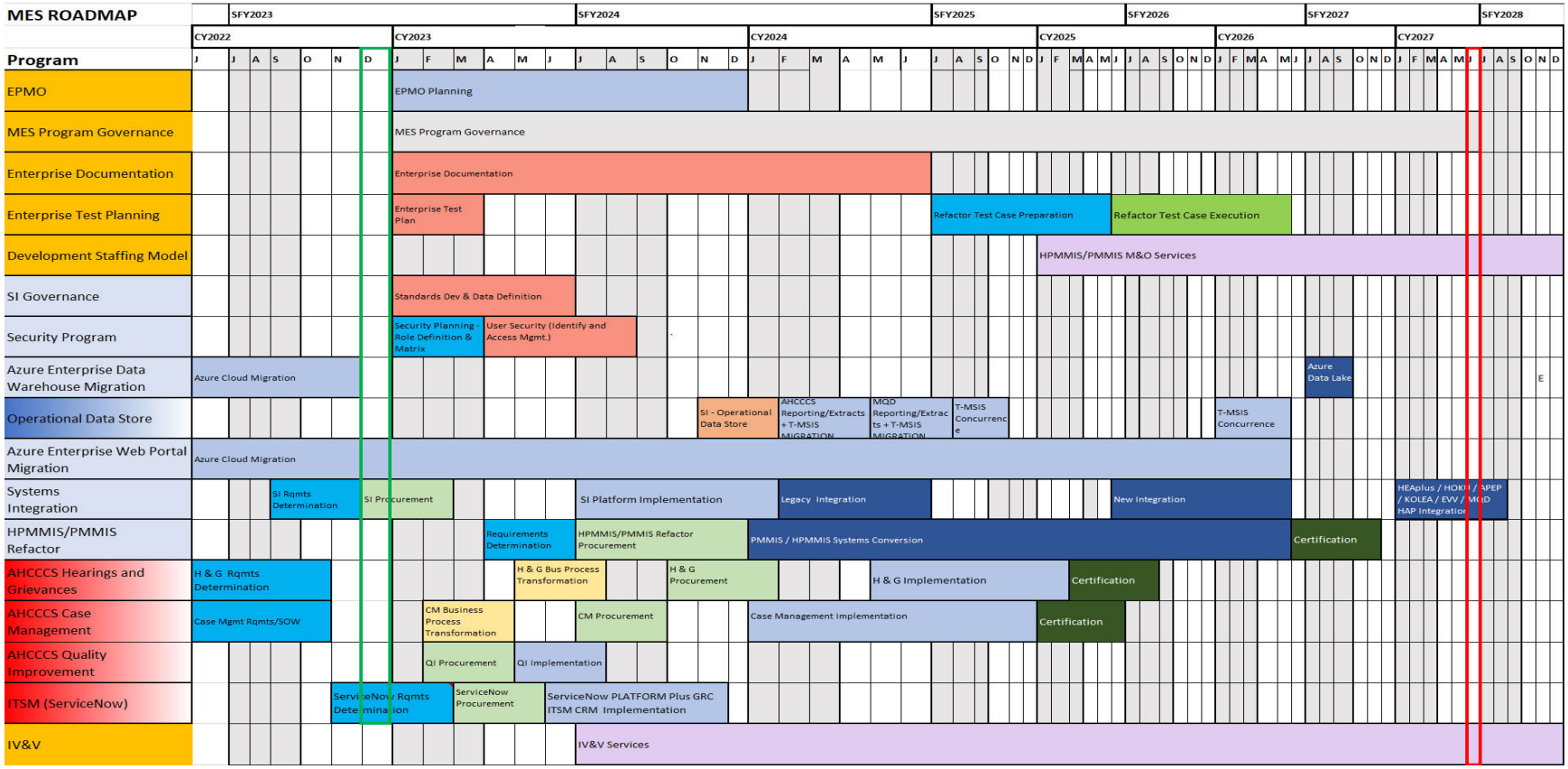
Exhibit 16: AHCCCS and MQD MES Architecture Model



4.1 Timeline

Exhibit 17 outlines the recommended order and sequence of the system components, modules, and foundational technology into a timeline that provides insight into when the major components begin and end. The key considerations and stages—for example, RFP stages; procurement; staff hiring; training or contracting; technology adoption; design, development, and implementation (DDI); transition to operations; certification; and contract length—will be included in the integrated timeline as part of Deliverable 5.4.2 MES Implementation Plan.

Exhibit 17: Timeline



4.2 Enterprise Foundations

The MES modernization systems being implemented by state Medicaid programs in this current generation of technology solutions require an approach that prioritizes key enterprise foundations as prerequisites to the overall MES strategy. In previous generations, the implementation of a monolithic MMIS by a single vendor in a state or vendor data center allowed many of the analysis and planning activities to occur in the first phase of the implementation. The current and future MES programs must first develop a public cloud hosting strategy. An enterprise security plan and documentation must also be developed, along with the implementation of supporting policies, tools, and staffing, prior to the procurement of vendor systems and modules. Section 4.4 of the roadmap addresses these foundations along with the details of the four systems projects included in the Replace Legacy Infrastructure domain.

The new MES landscape has multiple systems that are often managed by different vendors. Therefore, state Medicaid agencies also need to consider implementing an enterprise systems integration solution (including a platform, services, and standards), developing an enterprise testing strategy, and operationalizing comprehensive agency-led governance. Many state governments are developing statewide enterprise strategies to address these foundations along with the cloud and security strategies, thus providing a roadmap for individual state agencies to follow. AHCCCS and MQD are defining their own strategies based upon the framework and guidance of their respective overarching states' strategies. Systems integration, testing, and governance are addressed in the appropriate project domains within Section 4.

4.3 Operationalize Governance Domain

Operationalizing governance that supports both agencies individually as well as their unique partnership requires a shift in how the day-to-day business is supported. The need to look at things holistically, from the top down, is critical as AHCCCS and MQD begin to execute on the MES Modernization Roadmap. This also begins the shift of certain jobs within the agencies to more oversight as vendors who have specific expertise and scalability not available within state operating models are brought onboard.

The Operationalize Governance Domain consists of the following projects and foundational activities:

- Establish Enterprise Program Management Office
- Create Enterprise Documentation
- Organizational Change Management and Business Readiness
- Development Staffing Model

4.3.1 Establish Enterprise Program Management Office

This section presents a recommendation for a program governance model for the modernized MES, based on industry best practices and experience from other states' programs, considering the agencies' existing governance models gathered under Task 5.3 Current State Assessment.

Maintaining a MES that supports the business needs of the state is difficult, but Arizona and Hawaii have a partnership that requires both states to be in lock step with each other to ensure that not only do common systems work for both states but that they are also flexible to support the unique needs of each

state. This might mean individualism in the common systems through business rule flexibility to ensuring separate systems can integrate seamlessly.

The visions for AHCCCS and MQD are set by executive leadership. AHCCCS and MQD executive leaders meet at both the individual state level and jointly. To provide guidance on the execution of the visions, separate and combined, the agencies should establish enterprise steering committees. AHCCCS has a Data Governance Steering Committee, with some established data governance policies; however, the AHCCCS Data Governance Board has moved into 'doing' instead of governing. There is no architectural or technical enterprise steering committee. The lack of architectural or technical governance has led to a lack of standards and policies to guide decisions, and as a result, decisions are being made at both the business and technical team level with no consistency.

Neither AHCCCS nor MQD has an Enterprise Program/Project Management Office (EPMO) in place, and as such, projects occur in silos with minimal communication between the business units within and across agencies. The multiple tools and processes currently in place to support change management and project execution fit the individual system or business unit need but are inadequate to manage the size and complexity of an integrated multi-agency MES modernization.

Exhibit 18 shows a sample EPMO organizational structure composed of four levels that establish effective enterprise governance: Vision, Guidance, Delivery, and Process and Tools.

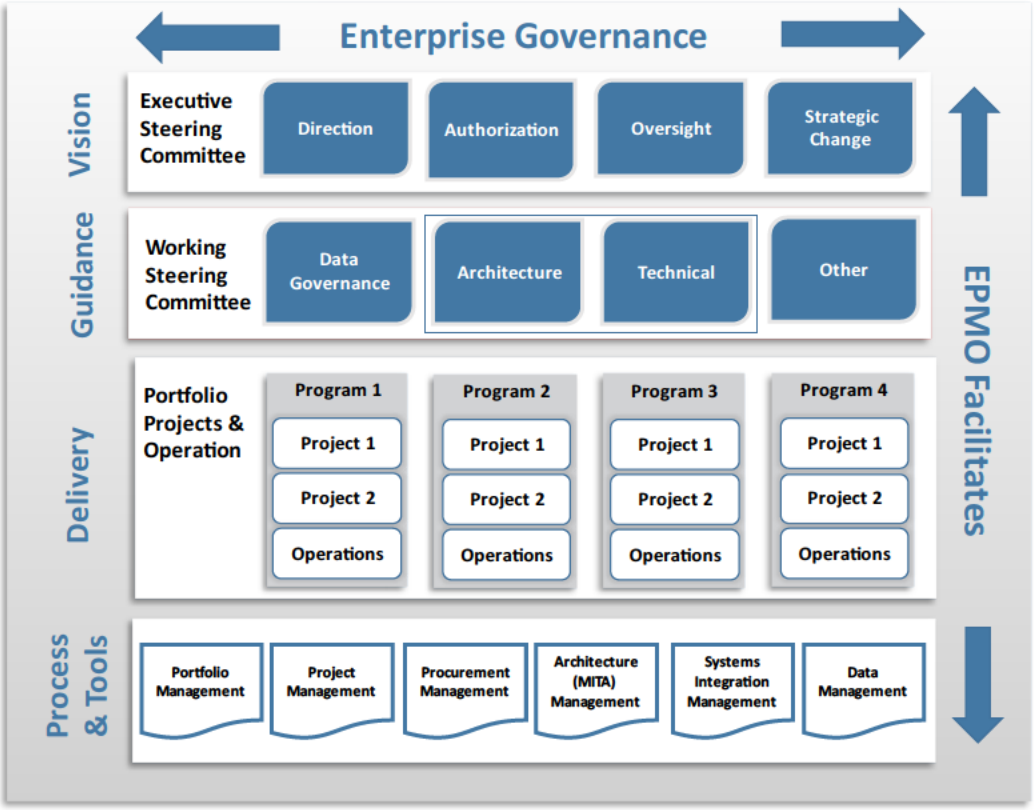
- **Vision**. At top level, the executive steering committee develops the vision for enterprise governance that provides the direction, authorization, and oversight that drives the programs.

- **Guidance**. Working steering committees, which can include data governance and IT governance, guide the projects. The individual working steering committees must partner with each other, coordinating each teams' goals and jointly providing cross functional guidance.

- **Delivery**. Individual projects are managed by a Programs' project teams, from planning through DDI and into operations. The EPMO ensures that programs and their individual projects support the overall vision of the executive steering committee.

- **Process and Tools**. Effective governance includes the organizational tools to support the programs are in place, ensuring a consistent, repeatable, and transparent methodology is applied and projects align with overall enterprise business objectives.

Exhibit 18: Sample EPMO Organizational Structure

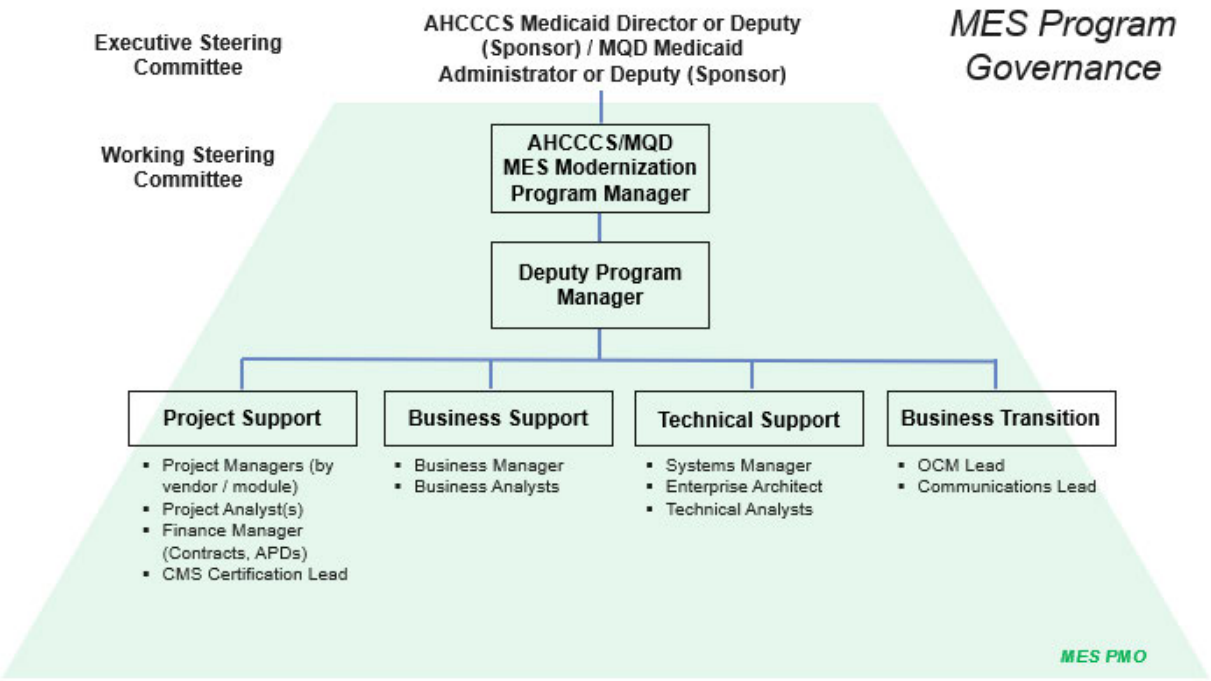


4.3.1.1 MES Program Management Office

Establishing a well-functioning EPMO with supporting staff, documented policies and procedures, proper oversight, and organizational buy-in can take time. The agencies have an urgent need to establish a MES Program Management Office (PMO) to execute on the MES Modernization Roadmap due to the large volume of change in a short timeframe, with limited resources. Based on NTT DATA's experience, states that have established a MES PMO, with the supporting MES Program Governance, have had greater success in large modernization efforts. The MES PMO then becomes the steppingstone to the necessary organizational change of a full EPMO. Although the scale of a MES Program is still very large, it is focused enough that it will allow the agencies to make small shifts as needed and learn what works well for each agency, as well as improving how the partnership is managed.

Exhibit 19 shows the suggested MES program governance with the MES PMO at the center of that overall governance. What is not shown is the business units, Health Plans, and system vendors in place. They play a large role in the success of the MES Modernization Roadmap execution, and the MES PMO ensures that the business units are informed, involved, and part of the decision-making process. The MES PMO should be dedicated staff, solely focused on the execution of the MES Modernization Roadmap, and starts with a MES Modernization Program Manager dedicated to each state. The Program Managers work in lock step with each other keep the program on track and ensure that each agencies' needs are accounted for. Each Program Manager should be experienced in MES Modernization efforts and should have been a program manager or deputy as either representing the state or vendor on a state replacement project.

Exhibit 19: MES Program Governance



4.3.1.2 Enterprise Test Planning

One of the key factors in the success of any MES modernization program is the early planning and design of a comprehensive testing strategy and approach. This section provides an overview of testing approach, key considerations, and enterprise requirements around building test plans, goals for testing, and suggested measurements to meet targeted outcomes.

An analysis of AHCCCS processes in place for current maintenance and operations code changes and updates identified challenges and opportunities to address the common program concern of the appropriate availability of testing resource capacity:

- Coordination of code releases – Development of a more integrated release planning process(es), change management and control, and coordinated release schedule should result in better visibility to all stakeholders.

- Visibility of testing progress – Identification and publication of discrete testing metrics around progress, velocity, and status will allow for better risk management of scheduled releases, as well as better thresholds for estimation.

- Clarity of expectations throughout testing lifecycle – Clear identification of roles, responsibilities, and expectations of all testing participants will allow for better resource allocation towards testing efforts, as well as allowing for more effective coverage for all required testing tasks and activities.

Successful large, complex, multi-vendor, multi-environment technology projects depend on a robust methodology focused on quality processes, traceability to project requirements, alignment with industry and practice standards, and ultimately planning for and executing thorough testing efforts. Additionally, a

well-designed testing framework, aligned to a consistent methodology and documented in an enterprise level test management plan, can help an organization attain common strategy and objectives for more consistent system experiences in production, lowering user frustration, increasing accuracy and timeliness, standardizing test metrics collection and performance measuring, as well as generally improving overall project quality and enabling process improvement and maturation across all programs and systems. It is important to develop such items at the enterprise level so that they can be promulgated to vendors as necessary, as well as confirm that the vendors have equivalent material to demonstrate maturity in their own testing efforts. Lastly, this level of testing will conform to the CMS requirements for modules that will be undergoing CMS certification.

The new Streamlined Modular Certification (SMC) process takes a closer look at testing than in prior certification methods. CMS provided the Testing Guidance Framework document that offers specific MES testing expectations and recommendations to help inform states on testing expectations in relation to certification and operational monitoring. Of note is the requirement that testing not only validate the iterative delivery of system functionality, but also confirm that the system will produce metrics associated with outcomes. Automated testing is also an area that CMS is asking states and vendors to begin to utilize more.

Setting Expectations

The following elements, when defined and communicated early, have been found through multiple implementation projects to assist in setting expectations for all participants across project teams in contributing to successful testing efforts.

- **Transparency** – It is expected that testing summary tasks and milestones are included in an integrated project schedule and progress be reported against those tasks. Additionally, it is expected that regular status including progress and burndown for testing efforts be provided so that progress toward project goals can be monitored.

- **Business Function Oriented** – When appropriate, testing should be structured in such a fashion as to be comprehensible to end users. Although technical testing techniques and strategies are necessary and expected to obtain quality results, it is critical for testing to provide a business function-oriented view to communicate to all stakeholders, including non-technical end users.

- **Action Driven** – Communication is a key factor in any testing effort and is expected to be transparent, consistent, and valuable. While communication of status is of value, critical to project success is the identification of issues, concerns, and roadblocks and the subsequent action that has been identified for resolution. Processes around escalation and resolution should be well established, openly available, and monitored for compliance as part of overall project management.

- **Operationally Focused** – Although higher level testing is always a balance of available functionality and technical constraints, testing is expected to be completed as close to production-like as possible. Processes being simulated for testing purposes need to be as close to operational standard as possible. Workarounds should have operational impacts documented, and technical solutions to testing roadblocks that are unfeasible in production should be identified and evaluated before deciding to move testing forward for the sake of test phase completion.

- **Realistic and Practical** – Significant theory is available to apply to testing efforts, including approaches, technology, techniques, and tools. However, ultimately testing must account for practical constraints such as size, scope, and time. These factors and others must be applied to estimates and targets and should be clearly identified along with mitigating and remediating recommendations to manage the resulting risk.

Testing Framework

A key aspect of a structurally sound and robust framework is to build processes and procedures to initiate and support activities in all six testing components of planning, test training, preparation, management, execution, and defect management. There are three (3) primary objectives to building an enterprise level testing framework:

- Standardize collateral to develop consistency
- Mitigate common problems with modernization/modularization projects
- Appropriately evaluate projects of different scale and complexity

The testing framework, practically, is the approach to development of and collection of artifacts and collateral that will expedite and formalize the state's approach, standards, and expectations toward their own test initiatives, as well as provide practical examples for engaged vendors. The framework library should establish four categories of artifacts:

- Test Management and Governance – Key items to control project scope, scale and risk
- Resources – Information to enable scalability and consistency over time
- Test Administration – Assets to provide clarity and transparency to all participants
- Procedures and Work Instructions – Establish and maintain outcomes over the life of the project

Enterprise Test Plan

Key aspects of the fundamental testing elements of planning, process, procedure and execution are captured and summarized in the Enterprise Master Test Plan. The Enterprise Test Plan represents a plan for the project to share with appropriate participants, stakeholders, and selected vendors who will be working on the program, the new system, and the system's subsequent interfaces and components. The purpose of the Test Plan is to provide a baseline for the execution of all testing activities, as well as serve as a foundation for transformation and maturation of the program testing practice. Additionally, the plan provides focus, content, and structure for the testing process expected to be included in all vendor-submitted Testing Plans and describes the relationships, roles, approach, techniques, work patterns, and processes to be used. Alignment of the subsequent Test Plans to the Enterprise Test Plan is intended to ensure that all projects' testing phases support the following objectives:

- Validate and verify that requirements in scope are met when delivered
- Validate the system functions as designed
- Validate the configuration data is complete and accurate
- Validate the required reports generate appropriately and correctly
- Validate security rights and role access are functioning as expected
- Validate external and internal interfaces are functioning with the new system
- Identify new and sometimes urgent requirements needed for system functionality

Each Vendor team will complete and submit for approval a specific Project Level Test Plan documenting the Vendor's approach to meeting all testing requirements. A User Acceptance Test (UAT) Test Plan will

be jointly developed by a team who will be using each system. That testing is conducted to enable users to validate that the software meets the agreed upon acceptance criteria.

Conclusion

The states will establish a stable but flexible foundation for testing by developing a consistent approach at the enterprise level that is supported with a well-documented and robust process framework. This foundation will allow for continual maturation and innovation, which will allow for better visibility and more effective and efficient utilization of resources through the lifetime of the state Medicaid programs.

Exhibit 20 identifies the testing aspect of the framework suggested for the projects identified within the MES Modernization Roadmap.

Exhibit 20: Testing Alignment to Roadmap Project

Project	Testing Aspect
Create Enterprise Documentation	Input to test case creation
Establish EPMO	Alignment of testing deliverables
Migrate Data Warehouse	Regression of functional tests and existing reports
Migrate Web Portals	Regression of functional tests
Implement Systems Integration Platform	Technical integration testing, performance testing, regression functional testing
Refactor MMIS	Regression of functional tests, data conversion testing/validation governance, performance testing, end-to-end testing, parallel testing of managed care cycle
Establish Operational Data Store	Regression of user interface tests; progressive testing of any new features; reporting validation testing
Implement Enterprise Business Workflow Management Software	Progressive functional UAT

4.3.1.3 Outcomes, Metrics, Monitoring

Outcomes

All enhanced funding requests must now include state-specific outcome statements and, when applicable, CMS Required Outcomes. A close evaluation of the information collected from the visioning sessions, Medicaid Information Technology Architecture (MITA) State Self-Assessment (SS-A) discussions, and CMS publications around certification will help form suggested outcomes that are outlined and documented in this section.

The systems included in this roadmap do not have any CMS-required outcomes, although there could be outcomes taken from the CMS-required outcomes list if AHCCCS or MQD determines a fit for a project. The expectation is that the outcomes will focus on the state-specific functionality or program needs requested for a module. These state-specific outcomes will be created to address the proposed enhancements.

State-specific outcomes will answer the questions of what the benefits are to Medicaid and what the project's specific desired results and benefits will be once implemented. Some questions that can be used to drive outcome creation are:

- How does this support the Medicaid State Plan?
- How does it improve the efficiency of the Medicaid State Plan?
- How does it improve the effectiveness of the Medicaid State Plan?
- How does it improve the economics of the Medicaid State Plan?
- What will be better after this project is completed?
- How will the project demonstrate added value to operations?
- How will it leverage the ongoing investment to support operations?

Exhibit 21 provides example outcomes related to the system component being implemented.

Exhibit 21: State-Specific Outcome Examples

Systems	State–Specific Outcome Examples
Refactor	• Appropriate safeguards of electronic protected health information and personally identifiable information are implemented and maintained. • The SMA meets its enterprise program goals and objectives with the use of accurate, timely data exchanges and reporting. • AHCCCS and MQD's technology-enabled business processes are efficient and effective and meet all applicable business outcomes. • The technical solution can demonstrate adherence to AHCCCS-required standards and is well-positioned to support future business needs by being flexible, interoperable, accessible, available, extensible, and scalable.
System Integration	• The System Integration Platform enables the agency's vision for data quality (DQ) and master data management. • The System Integrator establishes centralized MES operational capabilities and performance analysis. • This solution will support the overall AHCCCS Medicaid plan by providing enhanced capabilities to view trends and allow for more detailed performance analysis of systems.
Operational Data Store	• The system supports various business processes' reporting requirements, including the CMS 64 and T-MSIS. • The solution includes analytical and reporting capabilities to support key policy decision making.
ServiceNow	• The solution can produce AHCCCS transaction data, reports, and performance information that would contribute to program evaluation, continuous improvement in business operations, and transparency and accountability. • The SMA's technology-enabled business processes are efficient and effective and meet all applicable business outcomes.
Case Management	• The system allows AHCCCS state-specific criteria and rules to ensure appropriate and cost-effective case management of medical and medically related health services are identified, planned, and tracked to allow conformation of delivery of services and compliance with the plan. • The system can update case history to include items such as needs

Systems	State–Specific Outcome Examples
	assessment, treatment plan, or case file information (e.g., contact dates and times) allowing for better communications between members and providers.
Hearing and Grievances	• Improved quality data is available in support of Recipients, Providers, and Grievance and Appeals claims. • The system receives, ingests, and retains all AHCCCS or federally required supporting documentation submitted both electronically and by paper in standard formats.

Metrics

The upfront identification of the data must be made available, gathered, and manipulated for reporting in support of the outcomes used in the origination APD. Once the outcomes have been approved by CMS via the APD approval process, metric definitions are created. Metrics demonstrate the achievement of outcomes when the system is in operation. In addition, metrics enhance transparency/accountability of IT, as well as provide insight into program evaluation and opportunities for continuous improvement. Metrics are gathered monthly and aggregated and reported monthly and/or annually depending on the need and the agreement of CMS for the life of the system. CMS continues to expand on the process to help state Medicaid programs build better metrics to measure the effectiveness of the outcomes and provide meaningful operational reporting.

Monitoring

Operational monitoring tracks the system's “health” on an ongoing basis after a system or major update has gone into production. Continuing to perform testing and overall monitoring of the production environment allows confidence that the system is sound. Effective monitoring includes tasks such as ensuring the system is responsive, flexible, and can tolerate peak loads; is intuitive; and handles component failure gracefully. Monitoring also includes the planning of tools, processes, reporting, escalation, and incident response for the different parts of the system and the overall enterprise. An outcome of monitoring will be that users are satisfied with the system response and will enjoy the benefits of a healthy robust system.

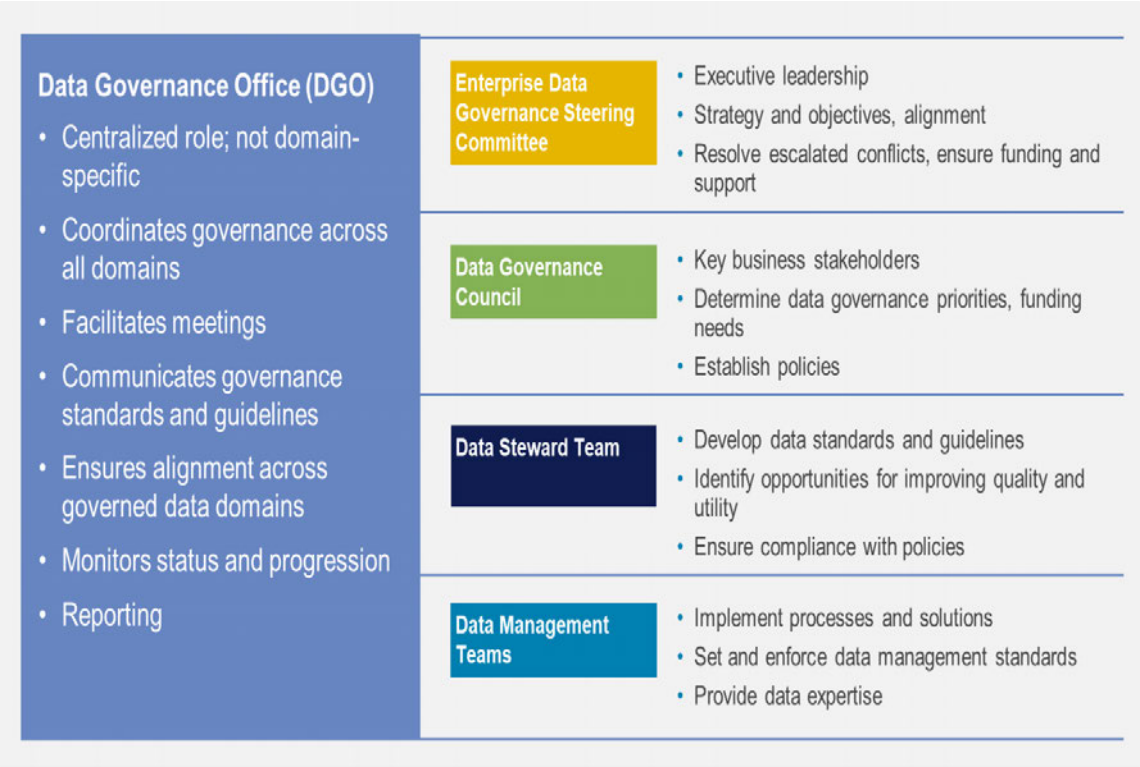
4.3.1.4 Data Governance

It would be beneficial for AHCCCS and MQD to think of data governance as a data governance program that is critical to the success of the MES and the MES Modernization Roadmap execution. The data governance program provides leadership in the creation, implementation, and oversight of the agency’s data management policies, standards, practices, and processes. Both agencies have some level of data governance, and like most data governance programs, there have been challenges in maintaining progress in operationalizing the program. As part of the overall EPMO structure, NTT DATA recommends the establishment of a Data Governance Office (DGO). The DGO would be responsible to coordinate, facilitate, support, and track the efforts of the program. By removing this “herding the cats” function from the data council and data stewards, it will become easier to generate momentum in stabilizing the data governance program.

The formalization of a Data Governance Office provides structure and is critical in ensuring activities are moving forward, committees are meeting, decisions are being made and documented, action items are tracked, communications are being distributed, and measures are being tracked to demonstrate progress.

This takes the administrative burden off the data stewards, who are not only data stewards, but also key business and technical staff involved in the day-to-day management of their program. States often underestimate the level of effort necessary to maintain a functional data governance program. Exhibit 22 depicts the structure of the Data Governance Program, identifying key stakeholders and the division of responsibilities. Two full-time equivalents (FTEs) at 50%, working alongside the Data Governance Program Director, would help drive the program. The FTEs could be fulfilled through the EPMO but should have strong knowledge in data governance and data management.

Exhibit 22: Data Governance Program Organization Structure



4.3.2 Create Enterprise Documentation

AHCCCS and MQD acknowledge that there is a significant gap in up-to-date and complete enterprise documentation, including but not limited to business policy, business rules to support the policy, architectural diagrams, and metadata to support the mapping of business policies to technical components. The documentation must be generated, starting from the top down, to support not only the day-to-day business decisions of the current system, but also to ensure that the new operating model, which relies more on vendors, continues to support the needs of the business. It will no longer be possible to rely on ISD to retain the knowledge of how business policy is implemented for both agencies and have that team be the go-to when research or changes are required. The documentation is also critical in supporting the Mainframe Refactor to Azure project, as it will become the input to the testing plan for that project and the generation, execution, and evaluation of test cases.

Based on scope and depth of the documentation required, the staff to perform this work must be dedicated staff with in-depth knowledge of Medicaid policy and MMIS implementations. Code divers are also required to support the research needed, and those code divers will likely need to be provided by AHCCCS due to no other MMIS having been coded in IDEAL and DATACOM. To support the large body of work, a methodology needs to be put in place at the beginning of the process. NTT DATA suggests

that AHCCCS and MQD look to recently retired staff who may be willing to come back for a pre-defined period to support this activity.

As this documentation is generated, validated, and approved by the agencies, it must then be made available in an easily accessible method, with processes and procedures for maintenance of the documentation. AHCCCS and MQD should look to the Knowledge Management component of ServiceNow to support the process of maintaining and managing access to the documentation. This supports the reuse and leveragability of new investments and supports continuity between the two agencies through automated workflows in the maintenance of the documentation as support crosses boundaries.

4.3.3 Organizational Change Management and Business Readiness

As AHCCCS and MQD continue to transform their business, organizational readiness for change must continually be assessed and align with the roadmap. As described within this deliverable, organizational change is a constant across all aspects of all efforts. Addressing the realities of the required changes to achieve desired business value will build on current competencies and achieve adoption of the system.

When system implementations fall short of expectations, it is often due to:

- Lack of sponsorship from leaders and resulting engagement by staff
- Underdefined plans to manage employee awareness and understanding of the change, then reinforcement of their new processes and behaviors after the change
- Systems-focused, instead of process-focused, communications and training

The challenge of avoiding failure with the modernization efforts that AHCCCS and MQD are about to undertake can in part be mitigated through organizational change management to ensure staff receive:

- Continuous communication about the goals of the project
- Regular updates of the status of the effort
- Clearly defined written roles and responsibilities
- Encouragement to become change champions and the opportunity to provide feedback throughout the process

Through these efforts, resources will be prepared with the requisite knowledge, skills, and desire to support the transition; staff will progress through the stages of change and build:

- Awareness of what’s changing and why
- Understanding of full scope and benefits and how they will be impacted as individuals
- Alignment and buy-in to the strategy and plan
- Knowledge of how to operate before, during, and after the transition takes place
- Ownership and accountability for adopting new ways of working

Through OCM, AHCCCS and MQD can maximize the positive impact of coming changes. The approach will also minimize any productivity losses. Early staff involvement will quickly identify any challenges to the successful implementation of the roadmap.

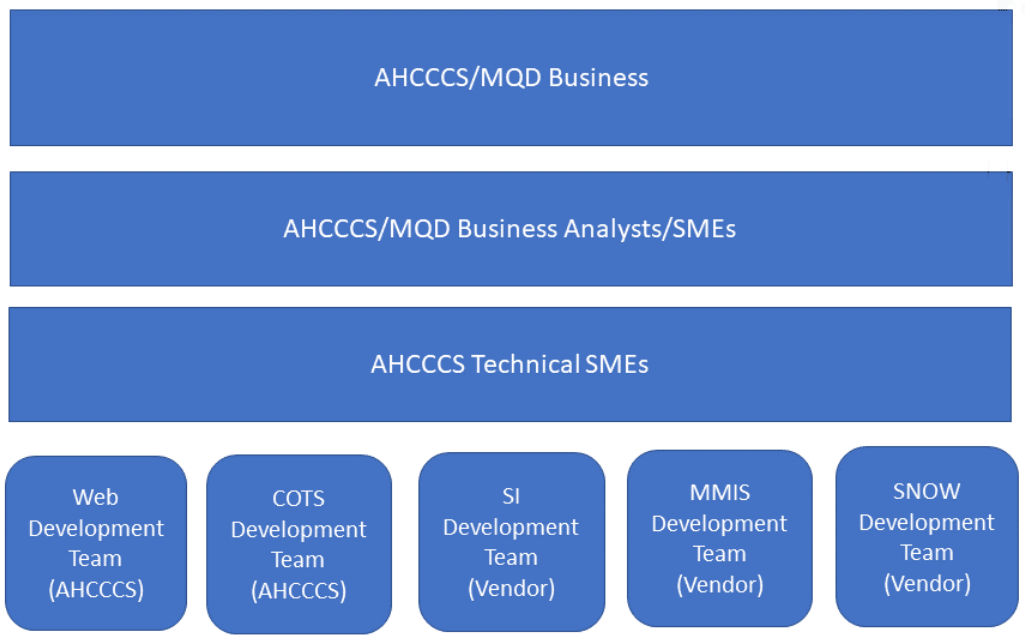
Business readiness for enterprise applications ensures that staff will have the requisite knowledge, skills, and abilities to succeed prior to, during, and after implementation. OCM ensures that the staff are able to manage the human side of change and participate in successful business transformation.

4.3.4 Development Staffing Model

AHCCCS has managed the maintenance and operations (M&O) of the PMMIS/HPMMIS for AHCCCS and MQD with very little vendor support for more than 30 years. The technology has now reached the point of being obsolete, and the remaining support staff are prepared to retire by 2027. The MES Modernization Roadmap will replace all legacy technology with current solutions and thereby require new support staff with different skill sets. The Arizona and Hawaii job markets in the technology and healthcare sectors are among the most expensive in the country and, within Arizona, the technology job market is one of the most competitive environments as more technology firms move to the state. The ability to hire and train staff to maintain the necessary level of new maintenance and operations support will become harder to accomplish year over year. AHCCCS must transform its employee job focus by adapting to an increased vendor outsource utilization. The increased complexity in managing change, along with the pressures of maintaining daily business operations, creates an unmanageable amount of pressure and risk on both organizations due to the significant amount of system change that will occur from the modernization efforts.

Exhibit 23 provides a visual representation of the staffing hierarchy that is recommended to support the ongoing maintenance of new systems once the modernization roadmap reaches the targeted implementation milestones.

Exhibit 23: Recommended Systems Development Staffing Model



AHCCCS and MQD must change how they do business together to ensure mutual benefits from the partnership. The ability to adjust to changes in scope, defects and issues, schedule adjustments, and overall workload will be an important component with vendor-led projects and internal agency projects. The EPMO will be the key to overseeing the management of vendors and overall scope of work, and the AHCCCS and MQD staff as a component of that management/oversight is critical.

4.4 Replace Legacy Infrastructure Domain

Rationale of the Mainframe Refactor Solution

The model on which AHCCCS and MQD manage their Medicaid programs is fairly unique in that the programs, and therefore supporting systems, were initially established as Medicaid Managed Care with later added fee-for-service programming. Most states started as fee-for-service and retrofitted their systems to support managed care. This has resulted in AHCCCS's PMMIS being a more robust Managed Care solution than the offerings available in the marketplace—more robust in how the managed care program is managed, starting with eligibility and enrollment all the way through capitation payments to the health plans.

The main PMMIS/HPMMIS processing currently resides on a mainframe, utilizing a system that was developed 32 years ago. The underlying system is made up of IDEAL code using a DATACOM database. These specific code and database constraints have made transforming this system to newer technology and language more problematic than a mainframe-based system using COBOL and DB2.

During the Y2K crisis, software and consulting firms began creating artificial intelligence programs, code scanning software, and automated code conversion tools and methodologies to address the millions of lines of code left vulnerable by years of neglect. All those solutions and technologies matured over the past two decades and have been proven successful in industries such as the financial sector, insurance, and manufacturing. Until recently, while mature and successful, the code and system transformation solutions were still cost prohibitive and required project timelines that would be detrimental and potentially catastrophic to the Medicaid business. Both issues were even more prevalent for niche technologies like IDEAL and DATACOM.

The opportunity is now feasible for AHCCCS and MQD to pursue a conversion strategy of the PMMIS and HPMMIS systems through a system refactor project. The major tool vendor has confirmed the support necessary to move AHCCCS and MQD off IDEAL and DATACOM. The cost model is now achievable, the source to target systems conversion technology and knowledge is now available, and the project timelines are acceptable.

Decoupling Key Mainframe Functions

Prior to the mainframe transformation, there are components that can be decoupled to help establish foundational components necessary to ensure there are enterprise systems to support vendor management, governance, and enterprise reporting. One recommended solution will transition the functionality found in the SSR component of the mainframe, which handles change control, code management, and time tracking, to ServiceNow. Another solution will include the implementation of an operational data store for each agency, with an associated transition of the information services mainframe component to new systems to support operational reporting, data extracts, and T-MSIS. Exhibit 24 and Exhibit 25 provide high-level visuals of the transitions that will take place.

Exhibit 24: PMMIS Transition Model

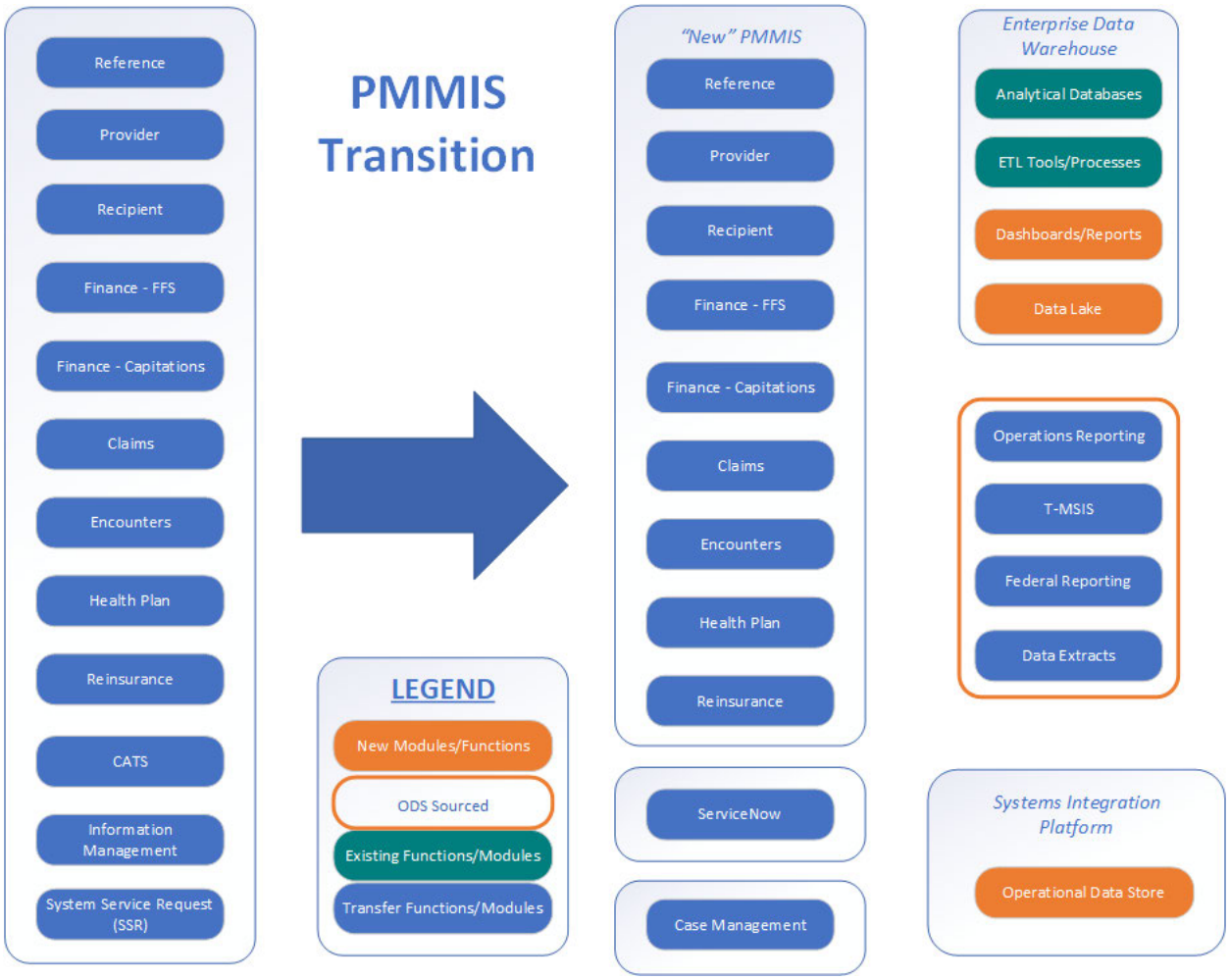
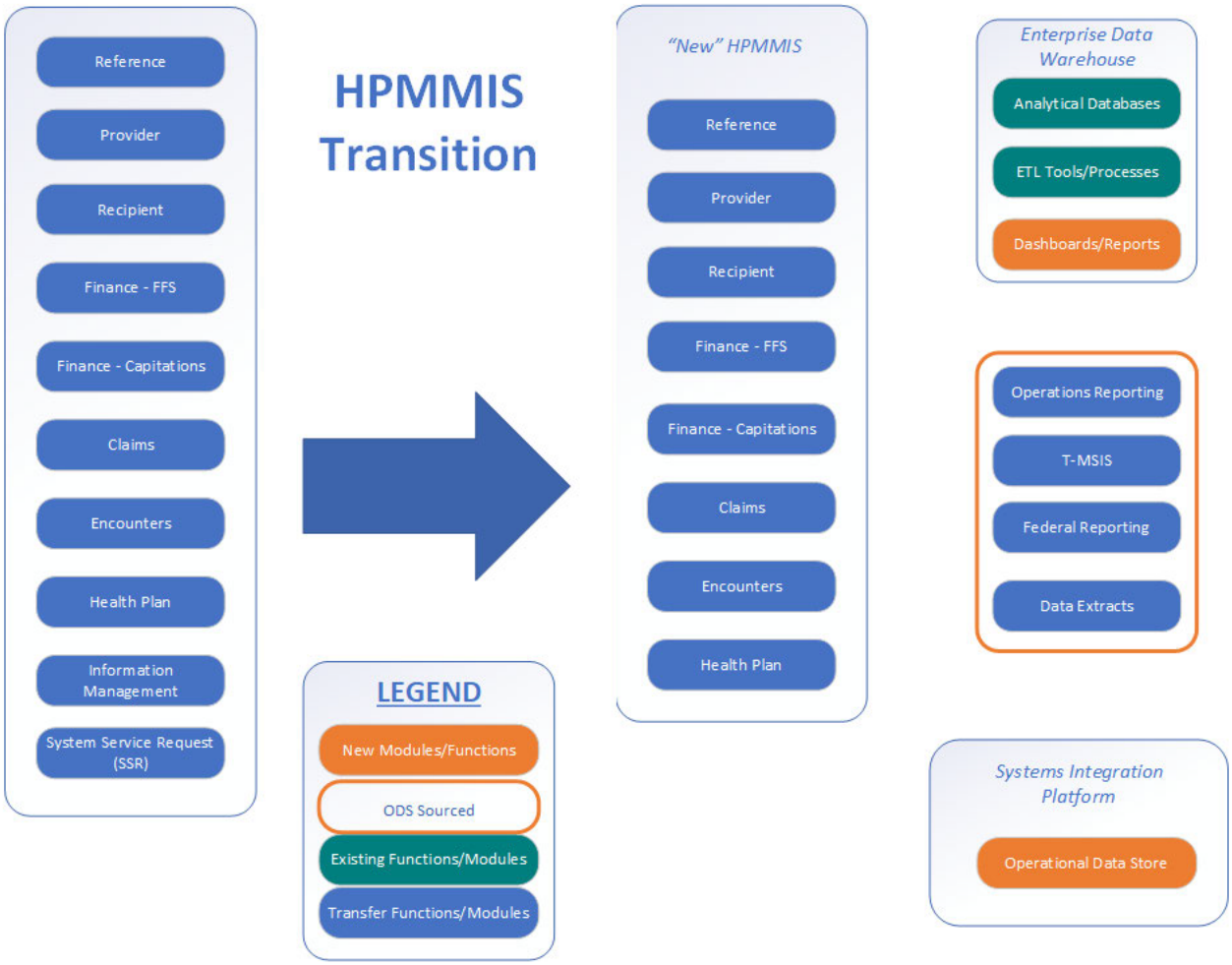


Exhibit 25: HPMMIS Transition Model



The Replace Legacy Infrastructure Domain consists of the following projects and foundational activities:

- Cloud Strategy
- Security
- Azure Enterprise Data Warehouse Migration Project
- Azure Web Portal Migration Project
- Systems Integration
- PMMIS/HPMMIS Refactor to Azure Project

4.4.1 Cloud Strategy

The decisions around systems hosting and cloud platforms are influenced by several key factors and authorities for a Medicaid agency. State level strategy and the supporting funding are a key influence on the initial determination. This influence can be around both the decision to implement in a public cloud and the recommendation of a preferred cloud vendor. Additionally, the current MES module offerings from several of the key vendors within the National Association of State Procurement Officials (NASPO) and the broader marketplace utilize a Software as a Service (SaaS) pricing and licensing model. This SaaS model is primarily supported through a deployment strategy in a public cloud.

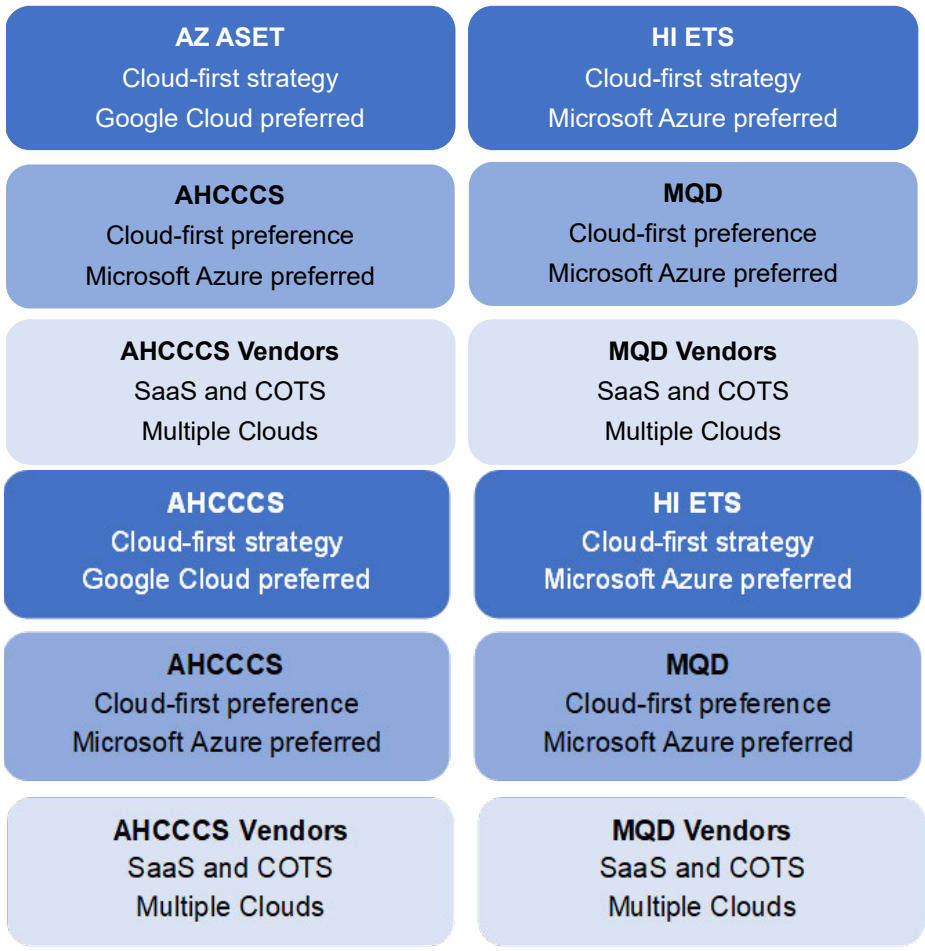
Factors Driving States to the Cloud

One of the driving factors for Medicaid agencies choosing to implement systems in the public cloud is the personnel required with the expertise to manage the increased cadence and volume of hardware, operating system (OS), and software updates for self-hosted systems. State governments and corporations are realizing ever increasing costs in both time and money to stay current with the pace of technology change. The risk of not staying current ultimately could result in negative impacts with access to care or provider payments due to security incidents or system failures from hardware outages, performance degradation, or software issues.

MES Roadmap Cloud Strategy

Both Arizona and Hawaii have state level cloud-first strategies that provide guidance to AHCCCS and MQD. Both agencies will pursue public cloud hosting going forward for MES systems and modules. The decision on which public cloud vendor to utilize will be made based on the specific circumstances of a procurement along with the overarching strategy hierarchy depicted in Exhibit 26.

Exhibit 26: MES Roadmap Cloud Strategy Hierarchy



Contract and Licensing Risks

The unknowns that await this current generation of MES cloud implementations are contract and licensing options that will actualize around SaaS solutions and cloud tenancy/subscriptions that must change due to re-procurement. The viability of intellectual property (IP) licensing and tenancy/subscription transfer for maintenance and operations (M&O) of one vendor's solution to another vendor have been affirmed by vendors. However, the market is still maturing and onboarding new solutions that have not crossed this legal boundary. This leaves AHCCCS and MQD with an unknown level of risk on key cloud-based SaaS procurements like the systems integration platform that would have a broad impact on the enterprise. The use of the NASPO contract vehicle to procure solutions and then re-evaluate and extend maintenance and operations (M&O) is recommended at this early maturity level of contract renewals.

Financial Impacts

The cost savings of public cloud hosted systems can quickly disappear for state governments and corporations when key details are not evaluated and planned up front. The easy path of "lift and shift," whereby a current set of systems are moved "as is" from a local data center to a public cloud, can end up

costing significantly more than the previous solution. Exhibit 27 provides a set of considerations that will be evaluated during the roadmap execution to assist the decision-making process for procurement.

Exhibit 27: Financial Impacts in the Public Cloud

Impact	Roadmap Consideration/Mitigation
Data Transfer Costs: Public cloud vendors do not charge clients for inbound data; however, all outbound data leaving the vendor's cloud is subject to data transfer charges.	A detailed Interface Control Document that includes frequency and volume will be created as part of the system documentation project. This will provide accurate estimates for data transfer costs and help drive decisions about co-locating modules and systems within the same cloud.
System Latency: The new MES architecture will be based upon systems and modules integrating with one another through connections to the enterprise systems integration (SI) platform. Any real-time or near real-time requirements between modules and systems in the MES will require specific solutions for the SI platform.	Detailed architecture plans for the MES will be required that outline the data sharing and networking requirements between all the systems. The cloud host for the SI platform should align with the majority of other systems. Networking solutions must be evaluated prior to procurement to address other cloud hosted modules.

4.4.2 Security

Requirements Summary

Enterprise security must be planned and implemented ahead of the roadmap projects that add new modules and systems to the enterprise. The security systems/functions of Identity and Access Management (IAM), Single Sign On (SSO), Security Information and Event Management (SIEM), and Security Operations Center (SOC) are the key elements that form the structure of the enterprise security framework. AHCCCS and MQD must also ensure that security procedure manuals, security documentation, audit records, and business continuity plans are up-to-date and modified to address the changing enterprise. The specific requirements must be met around the industry standardized security control sets that CMS, ASET, and ETS mandate for AHCCCS and MQD. In addition, independent security audits will be required for CMS certification and security oversight that AHCCCS and MQD must enforce with vendors. The implementation of multiple vendor systems and a centralized systems integration platform across multiple public clouds demands the early and complete attention of both AHCCCS and MQD to avoid unnecessary security incidents and prevent failures in certification.

AHCCCS SOC and SIEM Solutions

AHCCCS has established the technical direction and much of the baseline infrastructure in support of the SIEM and SOC solutions through a contract with [redacted]. All vendor modules and systems will be required to connect with the [redacted] solutions to provide audit logs and other forensic information. All vendor solutions will be required to onboard their systems through the AHCCCS standard operating procedures at the direction of the AHCCCS Chief Information Security Officer (CISO) as part of the DDI projects.

AHCCCS IAM and SSO Solutions

The IAM and SSO solutions will be implemented through Azure Active Directory. AHCCCS has already begun the process of implementing Azure Active Directory for the Active Directory needs of the current applications. The specific skill sets and staffing levels that will be needed in the development and integration phases for the IAM and SSO solutions require an increase to current AHCCCS staffing models. Therefore, AHCCCS will outsource the implementation and ongoing maintenance of IAM and SSO in the systems integration vendor contract. Additionally, cooperative work will be performed across the SI vendor and the ServiceNow integrator to allow ServiceNow to administrate the workflows for user onboarding that will result in software integrations to fulfill the user provisioning.

Security Operations Planning and Documentation

The knowledge management activities that will be completed under the Enterprise Documentation Project will provide the critical data to support implementing IAM and SSO for the enterprise. The research and planning within the knowledge management program to document all the user roles, access, and use of current and future systems, along with the transfer of the resulting requirements into IAM and SSO solutions, has proven to be a multi-year activity in previous MMIS conversion projects. Due to the methods used to implement security on the mainframe and the “first generation” jump from a mainframe to an Azure cloud-based solution, risk mitigation is required around schedule management and appropriate resource allocation to these activities to avoid detrimental impact to the overall roadmap.

MQD IAM and SSO Integration

MQD has already implemented a systems integration platform and services that include IAM and SSO functions. These services are currently limited in scope to MQD-hosted modules and systems such as KOLEA. The recommendation for this roadmap is to work with the two systems integration vendors during the design phase to integrate the security solutions through industry standardized protocols, avoiding vendor-specific or customized solutions. This will provide MQD with the maximum flexibility to address current and future systems and reduce the entry point for its users to a single SSO front door. MQD will be in control of onboarding and admitting users with their IAM and SSO solutions to manage the identity assurance and authentication phases of system access. The users can then be added and assigned roles within the AHCCCS managed enterprise to allow systems access.

4.4.3 Azure Enterprise Data Warehouse Migration Project

Project Summary

AHCCCS maintains the enterprise data warehouses (EDW) for both AHCCCS and MQD. At the beginning of the year, a contractor was hired to migrate the data warehouses from the Iron Mountain Data Center solution based on Oracle to the Microsoft Azure cloud and Azure SQL. AHCCCS utilizes Informatica as the primary Extract, Transform, Load (ETL) tool and Cognos as the primary report generation tool. Both tools are being retained in the new solution and moved to the Azure cloud as part of the migration. At the conclusion of this project, all enterprise data warehouse functions will reside in the Azure cloud. Future projects may include an Azure data lake, performance improvements in reporting, and the implementation of new dashboards and tools.

The Azure DW migration does not have a direct impact on the MES Modernization Roadmap. However, the new AHCCCS and MQD Azure data warehouses will become new MES modules. As part of the roadmap, the EDW will get integrated to the SI platform during the integration phases of the SI platform

implementation plan. Exhibit 28 outlines other dependencies and considerations for the role that the AHCCCS and MQD EDW will play in the MES Modernization Roadmap.

Exhibit 28: Considerations for EDW Integration to the MES Roadmap

Consideration	Details
Integration with the ODS: The EDW currently receives data directly from the PMMIS and HPMMIS. The EDW will switch to receiving data from the ODS in the future MES.	The ODS will be the aggregation point for all operational data. The data will then be pushed to the EDW. Any non-operational data that is needed by the EDW will be pushed directly to the EDW through the SI platform.
Reporting Tools and Dashboards: The move to Azure provides AHCCCS and MQD the ability to introduce new tools and services from the Azure service offerings.	AHCCCS and MQD will be able to introduce new analytical tools, such as dashboards and a variety of new report generating methods, due to the extensive set of offerings by Microsoft in the Azure cloud.
Historical Reporting: The ODS will be limited to 36 months, as that is the required retention period for a majority of the reporting needs of AHCCCS and MQD.	AHCCCS and MQD will need to begin developing historical lookback reporting and auditing that exceeds 36 months in the EDW. The ODS will hold a rolling 36-month data set.

4.4.4 Azure Web Portal Migration Project

Project Summary

As part of the AHCCCS plan to exit the Iron Mountain Data Center, the web portal team began a set of development team projects to migrate the AHCCCS web applications to Azure. These include the AHCCCS website and the internet and intranet portals and applications that provide a common look and feel and centralized access for providers, health plans, members, sister state agencies, and internal agency users. In total, approximately 150 applications are currently operating in production from the Iron Mountain Data Center. The critical business applications include the AHCCCS website and the internet web portals utilized by providers and health plans.

Expanded Project Definition for the MES Roadmap

It is recommended that the Azure web application migration project be re-positioned under the MES program as a key legacy refactor project having integrated dependencies with both systems integration and the PMMIS/HPMMIS refactor. Exhibit 29 outlines the key concerns and focuses that must be addressed to ensure continued functionality once the new MES architecture and systems are in place.

Exhibit 29: Azure Web Application Project Focuses

Focus/Concern	Details
PMMIS/HPMMIS Integrations: Direct calls to PMMIS/HPMMIS through Hostbridge will need to be re-written to work through the SI Platform and utilize new PMMIS/HPMMIS Application Programming Interfaces (APIs).	• Data retrieval calls from the portals to the PMMIS/HPMMIS will need to be re-written and integrated with the SI Platform. • Data submissions for Prior Authorizations from the AHCCCS portal to the PMMIS will need to be re-written and integrated with the SI Platform. • Document retrievals will need to be integrated with the SI Platform and the new EDMS.
File Uploads: File uploads that utilize sftp, Kofax, or ITX integrations will need to be addressed	• Claims submissions will need to be integrated with the systems integration platform. • Attachments and Documentation uploads through the portals will need to be integrated with the systems integration platform. • The integration of file uploads to the SI platform will also result in the new SI hosted EDMS solution being used.
Security*:* Implement Azure Active Directory based security	• Transition all internet and intranet applications to the use of Azure Active Directory to consolidate all user access methodologies and ensure common security protocols and auditing.
Website Content Management*:* Enterprise Content Management (ECM) solutions must be considered	• The migration of the AHCCCS website to Azure will offer the opportunity to take advantage of serverless technology, automated scaling, microservices, and automated load balancing. All of these solutions require a decoupling of the code base from localized file storage solutions. • Azure storage solutions can be explored to provide a repository that can be utilized with new retrieval methods for the website. • An ECM solution may be more preferrable to assist with the creation, editing, and approval workflows for published content.

4.4.5 Systems Integration

Definition

Systems integrator is a discreet role in the MES Modernization Roadmap that was first introduced to state Medicaid programs by CMS in State Medicaid Director Letter # 16-010. The specific focus of the role is to ensure the integrity and interoperability of the Medicaid IT architecture and cohesiveness of the various modules incorporated into the Medicaid enterprise. The overall goal is to implement a common backbone that results in a seamless framework with standardized methods and protocols for communication. This allows Medicaid programs to replace discreet system modules and functionality over time without causing disruptions or significant changes in the rest of the enterprise. The resulting architecture implemented in a majority of the states that have embarked upon MES modernization has included a systems integration platform and services procured from a vendor. While it is not a CMS requirement to maintain discreet contract separation between the SI vendor and module vendors, many of the states have chosen this path.

SI Strategy Summary

AHCCCS will establish a systems integration platform that provides a centralized set of technologies and services that will integrate the systems and modules of the AHCCCS and MQD enterprises. There will be an initial implementation of the core platform and common data handling and integration technologies such as an enterprise service bus (ESB), API management, and managed file transfer. This initial SI implementation will also begin the process of establishing more robust enterprise components, such as centralized document management that allows viewing documentation within connected systems. The consolidation of document management from disparate systems and repositories into a capable document management tool that can service application requests through common integrations will enhance the security of the enterprise, protect sensitive documentation, and reduce duplicative spending.

Procurement Recommendations

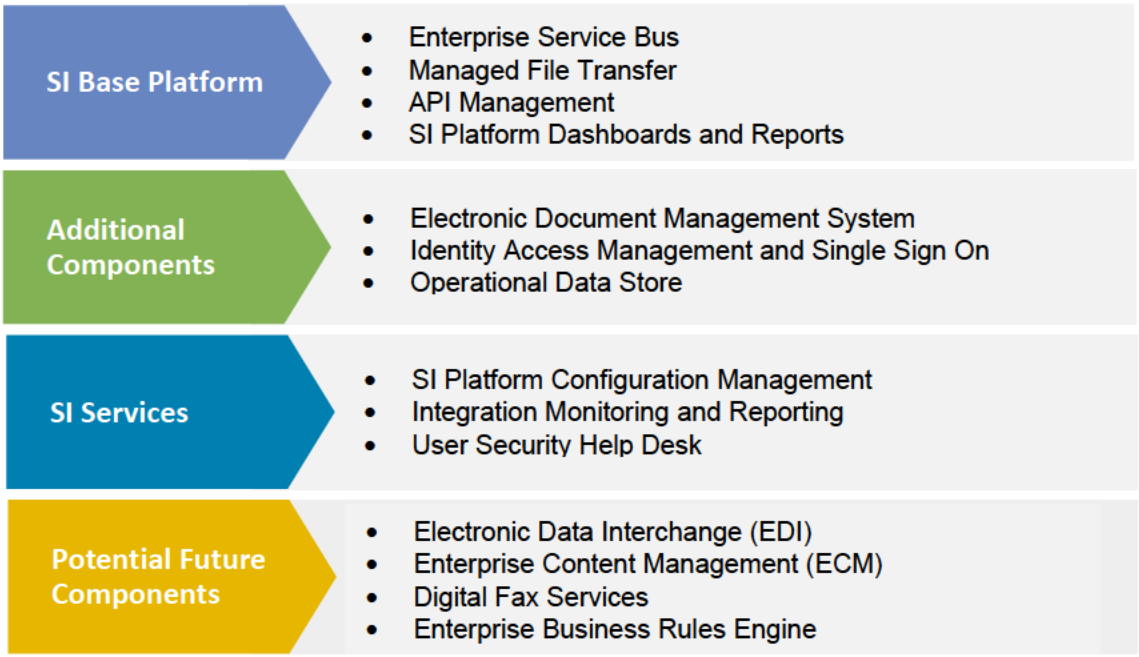
Based on the aggressive timeline of the overall roadmap to meet the 2027 milestone, AHCCCS must focus its procurement strategy on Medicaid experienced SI vendors with a configurable product offering and associated services. AHCCCS must also consider utilizing a NASPO contract to avoid prolonged procurement timelines that could delay the foundational SI project, targeted early in the timeline, and ultimately put the roadmap milestone at risk. Several qualifying vendors with product and service offerings on NASPO have recent experience in fulfilling this procurement. Some of the vendors provide their solution through NASPO with SaaS offerings in a public cloud. There will likely be a higher overall initial cost to a NASPO SaaS product targeted procurement compared to a customized solution by a NASPO systems integration vendor due to the comprehensive product offering strategies of the vendors and the associated software licensing that underlies those vendors' cost models. While the NASPO offered SI SaaS products are intellectually protected property of the vendors, they are all built upon standard commercial-of-the-shelf (COTS) software that is transferrable.

Implementation Approach

AHCCCS is taking a phased approach to certain technology and service decisions being added to the SI vendor contract. This will distribute cost and risk across the roadmap timeline and allow the core platform and services to be implemented and necessary integrations of partners and modules to first be completed. This approach is supported by the NASPO procurement model that offers a catalog of common components that can be added to the SI platform contract. Ongoing decisions and adjustments can then be made as the roadmap begins execution. The specific decisions are regarding which

enterprise functions and services get bundled under the SI platform and managed by the contracted vendor and which services are aligned as modules through integration. Exhibit 30 outlines the key components and services included in the initial procurement and the future component considerations.

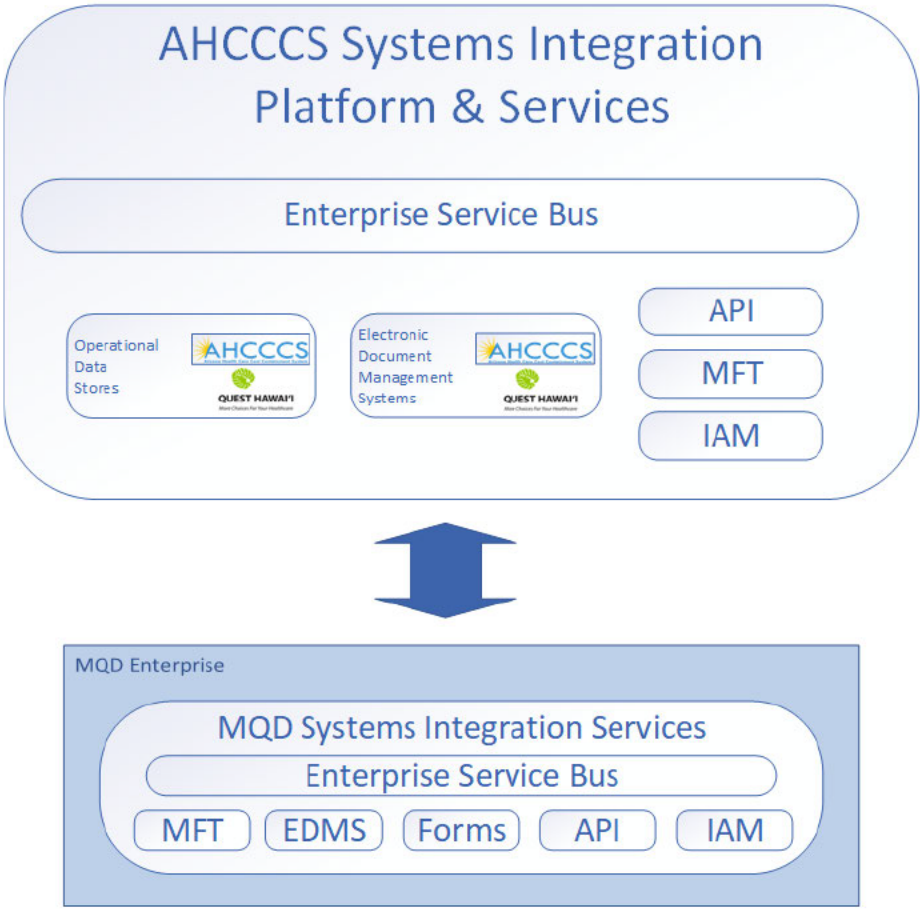
Exhibit 30: Systems Integration Platform Components and Services



MQD Shared Services Integration

A key strategy to the implementation of the planned systems integration platform is the integration with the shared services platform implemented by MQD in support of KOLEA and future MQD-hosted systems. Most of the systems supporting MQD are maintained and operated within the AHCCCS enterprise and will be transformed in the roadmap or be integrated into the new systems integration platform. The MQD member eligibility platform, KOLEA, and the MQD ServiceNow instance, along with the new MQD Health Analytics Platform (HAP), will need to integrate with the AHCCCS-hosted shared enterprise and will do so through an integration strategy across the two enterprise platforms. Additionally, an integration strategy will be developed during roadmap execution to integrate certain shared services, such as document management and interactive voice response (IVR), from the MQD SI platform to the AHCCCS-hosted modules supporting MQD. Exhibit 31 provides a high-level architecture of the two SI platforms and their integration.

Exhibit 31: AHCCCS and MQD Systems Integration Architecture



Integration Strategy

The transformation of the AHCCCS and MQD enterprises through the introduction of the AHCCCS systems integration platform will affect every system, partner, and user. This will introduce a tremendous amount of organizational and contractual changes that must be managed in a timely and efficient manner. There will be a need to increase staffing focus to address the additional communication, contract, and facilitation work supporting the integration activities on top of the daily Medicaid business. There will also be a need to re-evaluate the processes, solutions, and contracts that have been in place and working with little or no additional focus or concern for an extended time. Exhibit 32 defines the different categories of integration and onboarding that will take place. The Del 5.4.2 MES Modernization Implementation Plan will provide further details on the order and dependencies that will be planned for the integration work.

Exhibit 32: Systems Integration Categories and Entities

Category	Entity
Users (System Access)	• Health Plans • Providers • Trading Partners • State Agencies

Category	Entity
	• Federal Agencies • HIE (Contexture) • File Exchange Partners
Partners (File Transfer and Systems Integration)	• Health Plans • Providers • Trading Partners • State Agencies • Federal Agencies • HIE (Contexture) • File Exchange Partners
MQD SI Platform Integration	• IAM and SSO Integration • MQD AVRS • KOLEA Integration • HAP Integration • HHIE (HEALTH eNet) • ServiceNow Integration • Managed File Transfer
Systems Integration	• Provider Enrollment Systems • Electronic Visit Verification Systems • Electronic Data Interchange • Websites and Web Portals • Imaging and Fax Services • Call Center Platform and Automated Voice Response Systems (AVRS) • Legacy PMMIS/HPMMIS • New PMMIS/HPMMIS • Data Warehouses • ServiceNow • HEAplus Eligibility System

The user integrations for system access will be completed throughout the roadmap execution in a phased approach based upon the IAM/SSO implementation plan. The partner integrations supporting file exchange and external systems integration will be phased across the roadmap timeline based on a future defined schedule grouped by partner type. A key part of the managed file transfer integrations is the decoupling of the current SFTP solution from the EDI ecosphere in the legacy systems. The MQD SI platform integration work will depend on the joint solutioning that must be completed between AHCCCS, the SI vendor, MQD, and the MQD systems integrator during the SI platform implementation. The systems integration schedule will be planned as key project phases of the overall modernization implementation plan.

4.4.6 PMMIS/HPMMIS Refactor to Azure Project

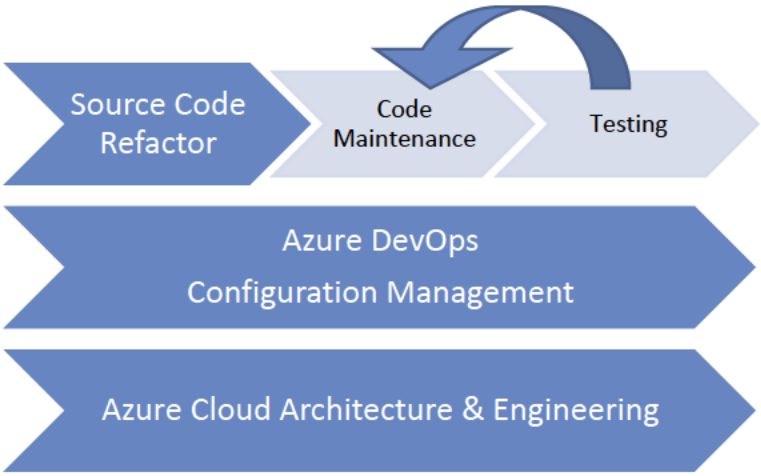
Project Summary

The uniqueness of managed care functionality within the PMMIS/HPMMIS drives the recommendation to refactor the PMMIS/HPMMIS to Azure Cloud hosting with C# and Azure SQL replacing IDEAL and DATACOM. This refactor of the legacy systems to current technologies does not automatically make the system easier to modify; however, it sets the foundation to allow AHCCCS and MQD to decouple the functionality in the system over time without the increasing risk of unsupportable legacy technologies. It moves the PMMIS/HPMMIS to a more modern platform and language that offers broader availability of support in the marketplace. The projected timeline for AHCCCS and MQD to pursue this strategy is approximately 30 months.

Project Scope

The project to perform the initial PMMIS/HPMMIS refactor, implement the solution, and then establish ongoing support for system maintenance and operations will require the coordination of multiple procured vendors. In addition, AHCCCS and MQD must determine whether they will retain ownership of the testing functions for the new systems or outsource this effort to a qualified vendor. Exhibit 33 provides a visualization of the refactor work efforts, while Exhibit 34 outlines the major functions that fall within the scope of this project.

Exhibit 33: PMMIS/HPMMIS Refactor Work Visualization



The vendor providing the refactor services will complete an initial conversion, compile and unit test the code base, along with a conversion and transfer of the system data. Once the code refactor is completed, the full cycle of code remediation and implementation activities must take place through defect resolution, testing, regression, and implementation. The cloud engineering activities to configure and deploy new application environments and resources must also be completed. A completely new configuration management process will be developed based upon Azure DevOps to support release management.

Exhibit 34: PMMIS/HPMMIS Refactor Project Functions

Function	Details and Assumptions
Source Code Refactor: A specialized vendor will be procured to run the PMMIS and HPMMIS source code through its tools and methodology to convert from IDEAL to C#. The scope of work for this vendor includes the following: • Receive source code from AHCCCS • Convert source code from IDEAL to C# • Compile and Unit test C# code • Deliver new C# Code to AHCCCS *Scope Considerations* • The code for operational reporting, T-MSIS, and file extracts from the information services PMMIS/HPMMIS functions will be refactored and then transferred to a new system for use with the ODS.	• AHCCCS mainframe support staff will be required to extract all source code to provide to the vendor. • AHCCCS mainframe support staff will be needed to address issues during the refactor process. • The programming logic, business rules, and core functionality will remain as it works today in the new C# code. • The new C# code will not be organized and structured the same way as the original code due to language differences and the conversion process utilized. • The new C# code will be readable, but not necessarily optimized for developer use because of the conversion process used. Experienced C# developers will need to initially handle the new code.
Database Conversion: The specialized vendor procured for the source code refactor will also provide the data conversion and transfer function to convert the data from DATACOM storage and transfer the data to Azure SQL. The scope of work for this vendor includes the following: • Source to Target mapping of the database tables • Data conversion to address character formatting and binary data issues • Loading of the data into Azure SQL storage	• Data cleansing and auditing must be completed prior to the conversion and transfer by the refactor vendor. The recommended solution is to use the new ODS to perform these activities early. • Data purge activities must be completed prior to the transfer of the data to the ODS to avoid unnecessary transfer and storage costs. • AHCCCS will need to establish a network path from the IBM Boulder facility directly to Azure prior to the beginning of this project work. • AHCCCS and MQD must develop a purge/archive/retention plan that defines the data to be moved from the mainframe to the Azure databases. • AHCCCS mainframe support staff will be required to assist in the unload of the data from the DATACOM databases. • Unless negotiated in the vendor contract, the conversion and transfer of data is for a single set that must then be handled by another vendor for the creation of databases for test environments
Azure Cloud Architecture and Engineering: A vendor team will be procured to build, configure,	• Vendor can be procured from a NASPO cloud

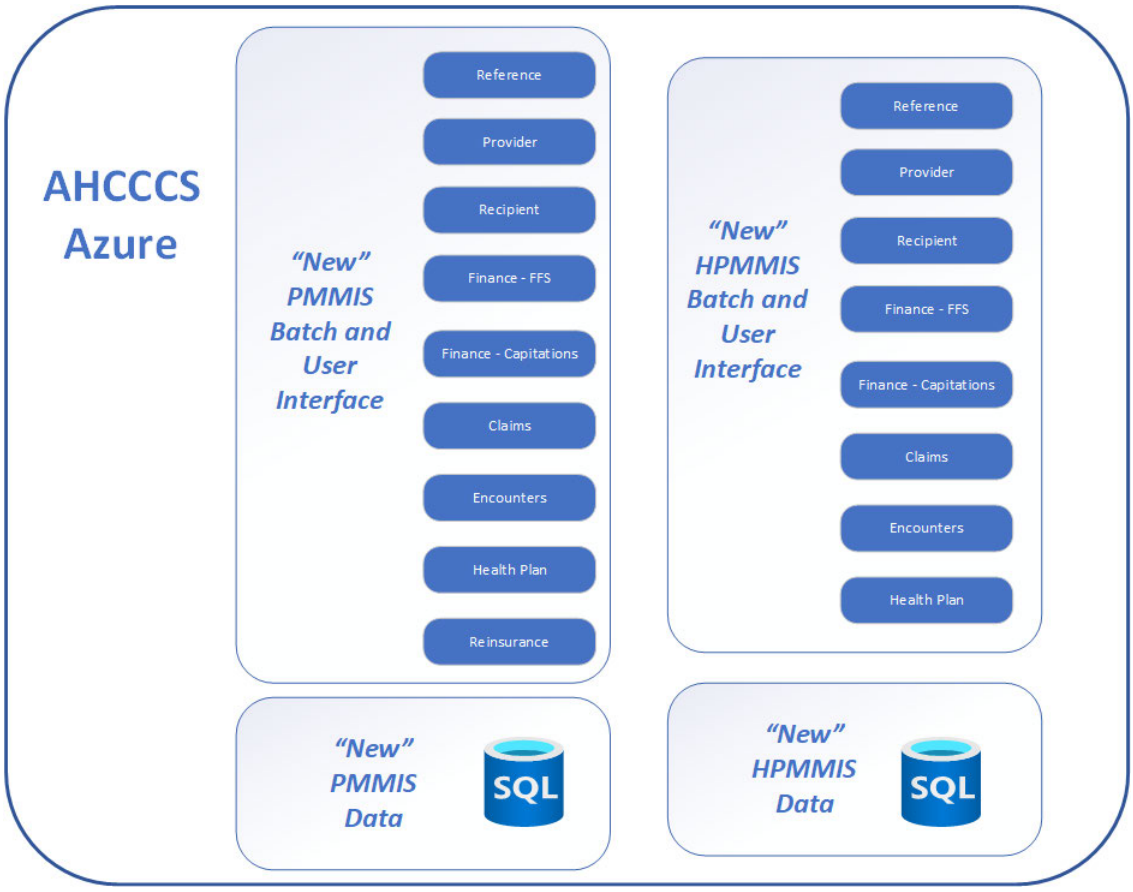
Function	Details and Assumptions
and manage a complete configuration management environment and services for the new PMMIS/HPMMIS. The Azure DevOps solution will comply with AHCCCS's new enterprise release management strategy through the integration of ServiceNow. The scope of work for this vendor includes the following: • Take over technical delivery responsibility for all current AHCCCS Azure environments • Work with AHCCCS ISD technical leads to design architecture for the new PMMIS and HPMMIS systems under AHCCCS • Implement environments for the new PMMIS and HPMMIS systems • Provide steady state maintenance and operations of all AHCCCS owned Azure environments	services contract. • AHCCCS will transition associated state employees into technical leadership roles that serve in governance, architect, and vendor management roles. • The consolidation of all AHCCCS-managed Azure projects and environments under a single vendor will drive efficiency, accountability, and cost effectiveness. • The systems integration platform and vendor will be a separate contract that interfaces with this vendor for integrations. • This vendor will be responsible for all work above the Microsoft line of responsibility for Azure and below the line of responsibility for the vendor(s) that manage DevOps and code maintenance.
Azure DevOps: A vendor team will be procured to build, configure, and manage a complete configuration management environment and services for the new PMMIS/HPMMIS. The Azure DevOps solution will comply with AHCCCS's new enterprise release management strategy through the integration of ServiceNow. The scope of work for this vendor includes the following: • Takeover responsibility for the current Azure DevOps tools and processes for the AHCCCS Internet/Intranet applications • Plan and configure the AHCCCS Azure DevOps solution to manage the source code repository, build pipelines, release configurations, reporting, automation, and tool integrations for AHCCCS Internet, Intranet, new PMMIS, and new HPMMIS applications	• Vendor may be procured from a NASPO cloud services contract. • AHCCCS may consider contracting this role to either the SI vendor, cloud services vendor, or the software development vendor in order to reduce the number of vendor contracts and align dependent responsibilities. • The contracted vendor will work with the ServiceNow vendor to integrate the release configuration processes with ServiceNow configuration management.
Software Development and Maintenance: A team will be put in place to receive the refactored PMMIS/HPMMIS source code, make modifications during user acceptance and parallel testing, and prepare the final code base for implementation. In addition, this team will provide the ongoing software development as directed by AHCCCS senior technical leadership in support of business changes. The scope of work for the software development team includes the following: • Software Development Life Cycle responsibilities that include detailed design	• This solution may function as a hybrid outsource model. If faced with an inability to staff this development internally, AHCCCS should minimally staff the roles of business analyst, technical lead, and architect internally that are responsible for requirements determination, high-level solutioning, and architectural design. The procured vendor would then act as the development team for AHCCCS. • The recommended team structure for this organization should include a dedicated production support/defect team with a base

Function	Details and Assumptions
changes, code development, documentation, peer review, unit testing, and systems integration testing • Project and team management that interfaces to AHCCCS leadership, reports to the EPMO, and provides day-to-day direction to the development teams	cost structure and a dedicated enhancement/development team based on the concept of modification pool hours and planned projects that receive amended contract approval.
Test Preparation and Execution: The conversion of the source code from IDEAL to C# will provide a limited scope of unit testing to ensure the code base compiles and runs. A testing organization will be needed to plan and execute the full set of additional testing that includes integration testing, end-to-end testing, user acceptance testing, and parallel testing.	• Mature testing vendors bring best practices, automation, standards, and toolsets to help ensure that effective and complete testing can be accomplished within the limited timeframe.

New Systems Model and Future Opportunity

At the completion of the refactor project, AHCCCS and MQD will have new versions of the PMMIS and HPMMIS that are running in the Microsoft Azure cloud with no remaining legacy technologies. The new systems will be paired down to focus on the transactional processing of the Medicaid programs, as the reporting and program management functionality have been transferred to other solutions. The new systems will retain the business rules and processing logic of the original systems running on a modern source code language and database system. This solution positions AHCCCS and MQD to begin strategically re-architecting their core MES functions around best solutions that help drive the goals and strategies of the agencies. Exhibit 35 illustrates the functions that remain in the new PMMIS and HPMMIS at the conclusion of the refactor project.

Exhibit 35: New PMMIS/HPMMIS Systems Model



Claims and Encounters. The NASPO vendor offerings around claim and encounter processing are showing major promise in the next several years. The major Medicaid system vendors are currently implementing their new SaaS offerings in several states; however, there is still an opportunity for these solutions to mature. The technology threshold has now been reached for the dominant Medicaid system vendors to cost-effectively modernize further through next generation technologies that include micro-services, machine learning, serverless systems, and mature rules-based workflows and processing. The point of technical feasibility has been reached for Medicaid programs to realize the desired outcome of truly configurable claims processing systems that have been promised for the last decade.

Managed Care. The lack of a clearly defined managed care module strategy by Medicaid system vendors is a key detractor for alternative roadmap solutions. The module strategy that has played out to date through NASPO has been to focus on one specific module as an industry and bring that to maturity. The market started with provider enrollment, continued with electronic visit verification, and now is focusing on claims and encounters. The hope would be that a truly independent managed care module, focused on enrollment, health plan management, and capitation payments, would be next on the horizon. If that offering is not broadly available from multiple vendors come 2027, AHCCCS and MQD will be positioned to continue their legacy as leaders in Medicaid managed care by sponsoring a new NASPO offering.

4.5 Improve Data Accessibility and Quality Domain

The Improve Data Accessibility and Quality Domain consists of two major projects:

- Operational Data Store Project
- Hawaii Health Analytics Platform Project

4.5.1 Operational Data Store Project

Project Summary

The operational data store (ODS) project will start with the establishment of an ODS for each state as components of the systems integration platform. The main goal of implementing an ODS as a component of the MES Modernization Roadmap is to integrate data from the multiple data sources within the MES. This will support AHCCCS and MQD decoupling the information services subsystem from the PMMIS and HPMMIS prior to the mainframe refactor program. Several strategic changes are accomplished through this shift that promote the needs of both agencies, align with other Medicaid MES roadmaps being implemented, and support the overall goals and objectives of this roadmap. Exhibit 36 depicts the resulting ODS and reporting system architecture for AHCCCS, while MQD is represented in Exhibit 37.

Exhibit 36: AHCCCS ODS and Reporting Architecture

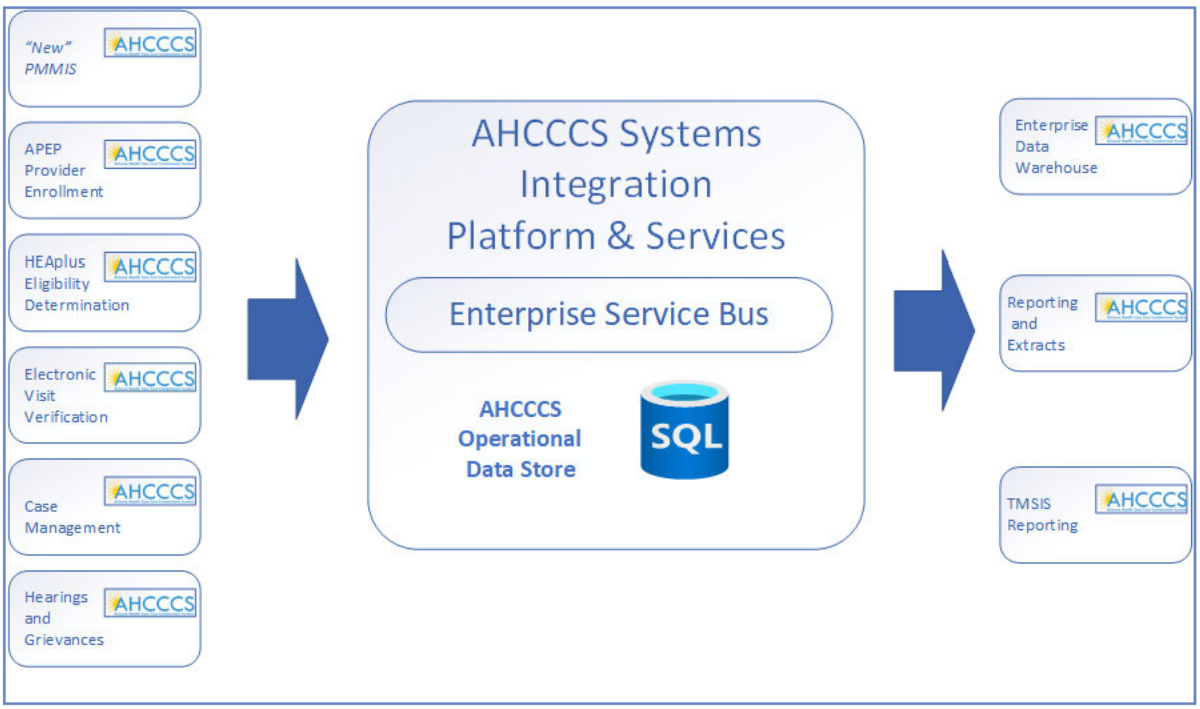
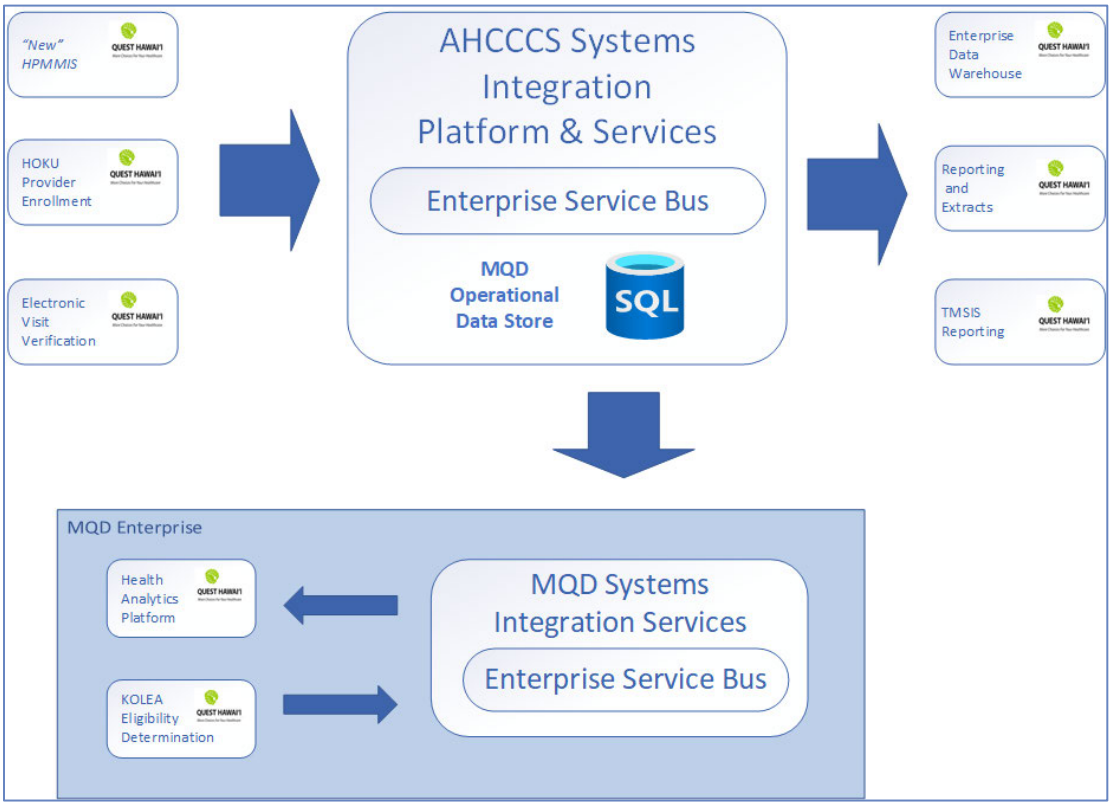


Exhibit 37: MQD ODS and Reporting Architecture



Mainframe Refactor Data Analysis and Cleansing Activity

Initially there will be a full transfer of data, after completion of the necessary historical purge, from the PMMIS/HPMMIS to the ODS instances to allow AHCCCS and MQD to perform critical analysis of the data prior to the mainframe refactor completing the code conversion and initiating testing. This is a significant risk mitigation due to the amount of data in retention and the age of the data spanning multiple decades of policy and program changes. The capacity limitations of the mainframe support staff, coupled with the difficulty of performing data analysis in DATACOM and on the mainframe, make this activity an important step to the success of the refactor project. Placing the data into an Azure SQL repository and allowing Azure-based tools and processes to be used in analyzing the data will help mitigate risks to the refactor schedule.

Consideration. AHCCCS may want to consider procuring a vendor to assist with the data quality analysis if the refactor vendor does not have the necessary healthcare background or does not have the service offering or skillset in the refactoring solution.

Aggregation of Transactional Data Across the Enterprise

The creation of ODS instances as part of the SI platform will facilitate the aggregation of all module transaction data that has been siloed away within the individual vendor solutions in the current architecture. This aggregation of data will allow AHCCCS and MQD to meet new goals and opportunities in operational reporting and help accurately deliver the metrics supporting the CMS-mandated outcomes being developed for the programs. The creation of ODS instances will also facilitate a central collection

point that can support the time sensitive delivery of data to analytics platforms, external entities, broader focused reporting data warehouses, and the respective HIEs.

Refactor and Decouple the Information Services Subsystem

One of the critical outcomes that is achieved with the ODS is the decoupling of state operational and federal reporting, T-MSIS, and data extracts from the MES transactional systems. This long-term solution provides the ability for AHCCCS or MQD to procure or re-architect systems focused on claims, encounters, managed care, and finance in the future without negatively impacting the critical reporting and data sharing functions. More importantly, this transitions the T-MSIS processing early in the project to facilitate the necessary testing functions that CMS will require to demonstrate concurrence for the mainframe refactor and introduction of new systems into the MES.

T-MSIS Refactor Proof of Concept. The T-MSIS file generation process is a compartmentalized function that can be refactored off the mainframe as a standalone project activity. The discreet functionality provides an ideal opportunity for AHCCCS to initiate a proof of concept as early validation with the refactor vendor. T-MSIS will then be followed by refactoring the report generation code and the data extract code. At the completion of these three blocks of work, the information services subsystem will be extracted from the PMMIS/HPMMIS to allow the main refactor project to proceed.

Information Services Re-architecture. The recommendation for the refactored information services components is that they remain as refactored code running in Azure until the completion of the other roadmap projects, including CMS certification and approvals. The amount of change occurring within the MES requires a methodology to baseline regression and concurrence testing. Leaving the T-MSIS extracts, operational reporting, and file extracts as refactored source code will provide the necessary continuity to provide confidence in the resulting system outputs for AHCCCS, MQD, and CMS. At the conclusion of the MES Modernization Roadmap projects, the recommendation would be to pursue new solutions for the information services components through vendor module procurement, leveraging technologies from the EDW, or re-architecting the existing solutions through Azure technologies and services.

4.5.2 Hawaii Health Analytics Platform Project

The Hawaii Health Analytics Platform Project is an active project managed by the Health Analytics Office within MQD and is independent of the MES Modernization Roadmap. It must be called out within the roadmap, however, due to the large dependency on receiving data from HPMMIS as the primary data source for the Health Analytics Platform. During the initial development phases, data is being extracted from the data warehouse that supports the HPMMIS, but to ensure that the Health Analytics Platform receives full data sets from all data sources maintaining data on behalf of MQD in a timely manner, changes need to occur. The roadmap provides the changes required to improve the access to data, including the Systems Integration Project, the Operational Data Store Project, and the HPMMIS Refactor

4.6 Develop and Leverage Operational Assets Domain

The Develop and Leverage Operational Assets Domain consists of three major projects:

- ServiceNow Project
- AHCCCS Case Management Project and Quality Improvement
- AHCCCS Hearings and Grievances Project

4.6.1 ServiceNow Project

Project Summary

The implementation of ServiceNow as the standardized platform for Enterprise Business Workflow Management Software will allow the functions currently performed in the PMMIS SSR component to be migrated prior to the PMMIS refactor. The introduction of ServiceNow into AHCCCS will provide a modern configurable platform that supports the following program activities:

- Governance, Risk, Compliance (GRC)
- Change and Release Management
- Knowledge Management
- Contact and Communication Management
- Contract Management
- IT Service Ticketing

ServiceNow introduces a single software platform for AHCCCS to standardize workflows, business processes, and integrations across its business units. This will allow AHCCCS to consolidate the manual processes that exist across the agency that currently utilize email, spreadsheets, and other desktop tools to track and manage agency business. Other Arizona state agencies are also implementing ServiceNow, thereby allowing the State of Arizona to maximize purchasing capabilities and provide consistency throughout the state. As MQD also has a ServiceNow installation, this will allow for a more seamless interaction with MQD and satisfy a contractual requirement that is in the AHCCCS and MQD contract (interagency agreement).

Project Scope

AHCCCS is targeting an initial NASPO procurement of the ServiceNow platform through an integration vendor, along with a three-module subset of the full future scope to get the application installed and functioning in the enterprise. The recommendation is to complete the initial project scope and then continue to implement modules and workflows that can support the standardization of the disparate manual processes in the agency. AHCCCS will also need to complete a process mapping from the PMMIS SSR to ServiceNow to fulfill the requirements of the new system prior to the retirement of SSR.

4.6.2 AHCCCS Case Management Project and Quality Improvement

The AHCCCS case management subsystem, Client Assessment and Tracking System (CATS), within the PMMIS supports the Arizona Long Term Care System (ALTCS) and Tribal ALTCS programs. ALTCS contractors have primary access to CATS for purposes of recording and storing case management related data about ALTCS members. ALTCS contractors may alternatively submit cases through electronic transmission and request entry to CATS by AHCCCS staff. Tribal Contractors are required to do direct data input to CATS after obtaining prior approval for cases and authorizations through fax submissions. All ALTCS contractors use this system to record the Cost Effectiveness Study and

Placement History for all enrolled members. Tribal contractors must also enter service plan authorization data for ALTCS Fee-For-Service members.

The current capabilities of case management within the AHCCCS ALTCS and Tribal ALTCS programs are built around a paper and person-centric set of processes that are supported by a decentralized combination of fax, document management, mailed letters, mainframe screens, and data stores, as well as a web portal. Both ALTCS programs lack an integrated whole person care management approach in their workflows and supporting systems. Several points of risk for communication and service delivery delays exist within the current operations and systems. In addition, there is a lack of real-time comprehensive reporting and analytics abilities that provide a clear picture of a member's entire case plan and the details around quality of care and access to care. The current systems lack the comprehensive case management and quality improvement functionality needed to support the programs due to the following:

Case Management

- System operates at a billed services level
- Business operates around treatment plans, assessments, and prior authorizations
- Assessments and prior authorizations are handled externally, leading to dispersed artifacts/information

Quality Improvement

- Inability to perform risk assessment
- Lack of insight for compliance oversight
- Unable to determine community gaps
- Lack of integrated functionality to assess financial performance
- Inability to identify access to care and quality of care issues in real time

AHCCCS will procure a Case Management system that provides workflow and reporting capabilities to support managing cases at an individual and agency level. Integration to source systems to pull necessary member, provider, claims, and other sources of data will allow for a single interface for case workers. This will decouple Case Management from PMMIS and allow for the removal of this functionality prior to the PMMIS/HPMMIS Refactor to Azure Project. To leverage enterprise level systems and provide a common platform and workflow capability, AHCCCS will determine if the ServiceNow platform, being procured for Enterprise Business Workflow Management, can support all requirements identified for the replacement Case Management system prior to investigating standalone systems.

Quality Improvement will be supported from the data warehouse through complete data sets from the supporting systems and the data warehouse, as well as tools such as groupers and products that support risk assessments and measure quality of care.

4.6.3 AHCCCS Hearings and Grievances Project

The AHCCCS Office of the General Counsel administers grievances, appeals, and hearings through a set of systems and manual processes outside of the PMMIS. ProLaw, the primary software module currently

utilized by the division, does not meet the needs of the organization in functionality, workflows, and data capture and display. In addition, the business documentation to support the business cases is stored in the enterprise document management system, Docuware, and must be accessed outside of the ProLaw system. There is no integration of ProLaw with PMMIS, Docuware, or other referenceable systems.

AHCCCS OGC staff have primary access to ProLaw for the purposes of recording and storing grievance, appeal, and hearing-related data about members, providers, and health plans, as well as tracking items through the predefined hearing work patterns. Approved personnel have an assortment of avenues to identify cases that ultimately result in AHCCCS OGC staff manually entering information into ProLaw. All supporting documentation must then be associated in ProLaw and then manually uploaded to Docuware.

AHCCCS Behavioral Health grievance and appeals processes are currently managed and tracked using manual procedures outside of the ProLaw system. AHCCCS has identified the desire to leverage the grievance and hearing solution to incorporate behavioral health investigative appeals, complaints, reviews, grievances, and hearing processes and procedures.

The current capabilities for case management of grievances and hearings within AHCCCS are built around multiple sets of paper-driven processes that are supported by a decentralized combination of fax, document management, mailed letters, standalone application screens, and data stores, as well as a web portal. The business functions required by personnel are limited to the current system without integration to the larger enterprise and lack integrated workflows for critical business processes, documents, and data. Several points of risk for communication and service delivery delays exist within the current operations and systems. In addition, there is a lack of real-time comprehensive reporting and analytics abilities that provide a clear picture of individual or program case statuses, case load, or other case managing metrics. The current systems lack the comprehensive management and improvement functionality needed to support the programs due to the following core deficiencies:

- System operates primarily as a repository of data, requiring manual outside tracking and manual case intake input
- System is not integrated into other data inputs to provide for automated data entry or perform automated data validation
- System does not have defined or easily configurable workflows to manage multiple case types (grievances, hearings, appeals) nor the ability to support multiple resolution paths for different categories of case types

AHCCCS will procure a Hearings and Grievances system that provides workflow and reporting capabilities to support Office of the General Counsel administration of grievances, appeals, and hearings. Integration to source systems to pull necessary member, provider, claims, and other sources of data will allow for a single interface for employees. To leverage enterprise level systems and provide a common platform and workflow capability, AHCCCS will determine if the ServiceNow platform being procured for Enterprise Business Workflow Management can support all requirements identified for the replacement Hearings and Grievances system prior to investigating stand-alone systems.

5 Risk Evaluation

This section provides a list of known risks and issues inherent in the proposed roadmap, state, vendor market, and CMS environments. These risks and issues must be carefully tracked throughout the MES project lifecycle as soon as AHCCCS and MQD begin to execute this strategy. Risks and issues are provided in a format to facilitate entry into the Project Management Office (PMO) risk and issue management process.

- **Risk Definition**: A risk is an event that, if it does occur, could affect the achievement of objectives and have a negative impact on schedule, cost, performance or quality.
- **Issue Definition**: An event that has occurred and as a result will have a negative impact on the achievement of objectives—for example, a known problem(s) that must be overcome to achieve success or a risk that has been realized/triggered.

Risks are assigned a severity ranking based on the probability/likelihood of a risk occurring and the impact of potential loss, delay, and/or failure associated with the realization of the identified risk. The risk severity ranking is then categorized under the following classifications:

- **High** – This is not an acceptable risk. The project cannot start or continue before risk reducing treatment or planned/agreed upon strategy has been implemented.
- **Moderate** – The risk can be acceptable for the project, but for each threat, the development of the risk must be monitored on a regular basis, with a following consideration whether necessary measures have to be implemented.
- **Low** – The project can continue regardless of the identified threats, but the threats must be observed to discover changes that could increase the risk level.

Each risk in this section is identified with a response strategy classification, as indicated in Exhibit 38.

Exhibit 38: Risk Response Strategies

Strategy	Strategy Definition
Mitigate	Execute planned action(s) to reduce the probability or impact of the threat.
Avoid	Execute planned action(s) to eliminate the risk or protect the project from its impact.
Accept	Acknowledge that no response strategy is taken. Generally utilized for low-risk items.
Transfer	Shift ownership and liability to a third party outside of the project.

This section identifies risks, issues, mitigation strategies for risks in the following areas, based on previous implementations:

5.1 General Risks and Issues

General Risks

Description	Mitigation	Trigger	Strategy	Severity
If procurements laid out in the roadmap are not awarded in the expected order and according to the high-level timeline, the modernized MES may not achieve its intended goals.	Develop procurements with a tolerance for disruption to the intended order of modules where possible. Include optional flexibility in MES contracts to avoid module implementations being deadlocked waiting for another vendor.	First MES procurement	Mitigate	High
If procurements or implementations are delayed, the support of HPMMIS/PMMIS may need to be extended beyond the date of last retirement.	Work with the procurement team to ensure the procurement process is managed to avoid delays.	January 2, 2023	Avoid	High
If SI or module implementation timelines stretch, supporting contracts (IV&V, EPMO, QA) must be adjusted to provide coverage.	Build flexibility into supporting contracts to ensure they can be easily extended if needed.	First MES procurement	Accept	Moderate
Attrition of experienced state staff with decades of business knowledge is a common problem for Medicaid system replacement initiatives. If attrition occurs, impacts may include non-compliance with business requirements, incomplete testing, provider and MCO impacts, and CMS certification problems, potentially leading to loss of federal match.	• Develop retention plans for critical staff. • Employ OCM to communicate and manage impacts to state staff. • Develop succession plans for all critical staff members. Implement cross training for business teams. • Include detailed business policy gathering and documentation in MES scope.	First MES procurement	Mitigate	High
If the recommended actions around Governance and	AHCCCS and MQD must provide strong executive level	First MES procurement	Mitigate	High

Description	Mitigation	Trigger	Strategy	Severity
Information Technology development staffing are not integrated into AHCCCS's and MQD's operating model, then the modernization program may fail due to lack of organizational maturity and capabilities.	sponsorship and key leadership within their agencies to implement the necessary discipline and inspire staff to accept and embrace the new model (for example, oversight of outsourced development teams rather than doing everything in house).			
If AHCCCS and MQD are deficient in IT service maturity or critical internal controls and governance practices, processes, and SOPs to guide and enable modernization, then the modernization program will be impeded and unnecessarily protracted due to avoidable delays and rework that will increase costs.	As foundational disciplines within the MES Modernization Roadmap, AHCCCS and MQD must enhance existing IT service delivery, internal controls, and governance practices into repeatable, verifiable processes.	First MES procurement	Avoid	Moderate
If there is an interruption in State or Federal funding, then the modernization program may fail due to inability to achieve the 2027 milestone.	AHCCCS and MQD must have full funding authorization for the MES Modernization Roadmap and must receive the necessary dollars.	First MES procurement	Accept	High
If AHCCCS and/or MQD is unable to staff with sufficient capacity and expertise to cover day-to-day operations and MES Modernization Roadmap execution, there could be issues with access to care for members, timely payments to health plans and providers, accurate and timely reporting to CMS, and/or failures with execution of the MES Modernization Roadmap.	AHCCCS and MQD must backfill day-to-day operations staff and allocate those experienced subject matter experts to the modernization program.	First MES procurement	Avoid	High
If executive leadership, senior staff, and domain and subject matter experts are not fully engaged and involved in the review, adoption, execution, and	Executive leadership and senior staff will be engaged in the review and refinement of the roadmap, focusing on timely decisions regarding the actions that will be taken to	Delivery of MES Modernization Roadmap	Mitigate	High

Description	Mitigation	Trigger	Strategy	Severity
evolution of the roadmap, then the modernization program may fail due to a lack of ownership by AHCCCS and MQD.	address the organizational challenges.			

General Issues

Description	Resolution
The lack of updated system and business process documentation for the current MMIS and fiscal agent services will impact AHCCCS's and MQD's ability to produce comprehensive requirements for MES modules and core replacement.	• Address updating system and business process documentation with the fiscal agent vendor according to modular roadmap priorities. • Launch a business process and policy gathering initiative for FFS and MCO claims to document the process flows and business rules for inclusion in MES procurements.
Operations and technical staff are already stretched thin; adding the MES modularization will exacerbate demands on staff time.	• Determine the minimum number of staff needed for continuation of operations and implementation efforts. • Consider the best practice of separating day-to-day operations from implementation roles.

5.2 Systems Integration Platform Risks

Description	Mitigation	Trigger	Strategy	Severity
The SI platform introduces a new 'single point of failure' that could impact MES business processes if the SI component suffers outages.	Ensure the Azure platform strategy is clearly defined prior to SI platform vendor procurement. Include robust stability and performance requirements in SI RFP.	SI platform DDI	Mitigate	High
If the ISD team cannot provide sufficient strategic direction and oversight for the SI procurement and resulting build out in Azure, then the integration platform may not fulfill the long-term vision laid out in the roadmap.	Allocate ISD staff to developing a detailed Azure SI strategy and requirements to support SI procurement	SI platform DDI	Avoid	Medium
Potential SI bidders may not be willing to build integrations in AHCCCS's Azure cloud environment, which could reduce the number of responses	Socialize the proposed SI strategy leveraging AHCCCS's Azure platform prior to releasing procurement.	SI platform procurement	Avoid	Medium
A multi-cloud MES could	• Require MES module	First MES	Mitigate	Low

Description	Mitigation	Trigger	Strategy	Severity
result in significant ingress/egress fees from cloud vendors, increasing AHCCCS and MQD's cloud hosting costs. A multi-cloud environment may also create connectivity complexities.	vendors to be responsible for any ingress/egress charges. • Ensure cloud-to cloud data flows are considered during integration design phase. • Consider a cloud-to-cloud connectivity provider to simply a multi-cloud architecture and mitigate cloud egress/ingress fees.	module procurement		

5.3 ServiceNow Module Risks

Description	Mitigation	Trigger	Strategy	Severity
If flows are poorly designed or implemented, the ServiceNow implementation could negatively impact the business functions they were intended to improve.	Perform comprehensive analysis of business processes and diligent implementation of ServiceNow by experienced resources. Involve business users in analysis, design, and testing for functionality implemented in the ServiceNow platform.	ServiceNow platform available	Mitigate	High
Some platforms are attempting to create 'walled gardens' for business applications through enhanced functionality and acquisitions combined with attractive licensing for government entities. If ServiceNow moves in this direction, it may create an extreme type of vendor lock-in in the long term, limiting AHCCCS's flexibility.	Develop a clear architectural strategy for the data and business layers of the ServiceNow platform to utilize open APIs and interfaces to interact with the rest of the MES.	ServiceNow platform procurement	Avoid	Medium
If the overall AHCCCS organization does not understand the vision for use of the ServiceNow platform and its limitations, then business functions that are a poor match for ServiceNow implementation may be selected.	ISD team develops clear strategies and governance in relation to the MES platform	ServiceNow platform available	Mitigate	Low

5.4 Data Risks

Description	Mitigation	Trigger	Strategy	Severity
If the data quality of a program data is poor, then there is a possibility that the reporting for all programs will be of poor quality, putting Medicaid operational funding at risk.	Utilize data marts to ensure that individual data sources can remain isolated and not impact different programs while also producing a data mart with a consolidated 360 view of a member. Provide transparency to the data quality of the data elements contained within the ODS and DW.	T-MSIS TPI not being achieved	Mitigate	Medium
If the MES ODS is built on an existing platform without all of the necessary components, then certification may not be achieved.	Ensure that the platform for the ODS follows the MITA Standards and Conditions criteria necessary for certification, such as NIST and MARS-E security requirements and technical documentation.	Issues identified in security assessments that violate a CMS certification requirement.	Mitigate	Medium
If there is insufficient coordination and communication among divisions, then an ODS will be unsuccessful in meeting the needs of the enterprise.	Establish a data governance program that has representation across the agencies.	Data governance committee and workgroup meetings are not occurring, and metrics are not monitored and reported on.	Mitigate	Medium

5.5 NASPO Procurement Risks

Description	Mitigation	Trigger	Strategy	Severity
If the NASPO module under consideration is poorly aligned with AHCCCS and MQD needs and customizations, the procurement or implementation may risk cancellation for non-compliance.	Perform detailed business process analysis for existing processing and future changes. Perform a gap analysis against NASPO module requirements prior to leveraging the NASPO vehicle.	SI DDI	Avoid	Medium/ High

Description	Mitigation	Trigger	Strategy	Severity
Several NASPO provider module procurements/ contracts have been cancelled. The risk is that leveraging the NASPO vehicle may result in a similar outcome in Arizona and Hawaii.	• Analyze root cause of failures of NASPO provider modules in order states. • Perform detailed analysis of AHCCCS and MQD specific requirements and the awarded NASPO solutions before leveraging a NASPO module.	SI module DDI	Mitigate	High

5.6 Case Management Module Risks

Description	Mitigation	Trigger	Strategy	Severity
Complex medical and social data require analysis by people knowledgeable in both clinical and statistical realms to derive meaningful, accurate, and actionable information. If AHCCCS does not have access to these skills and experience, then the goal of running care management 'in-house' may not be successfully achieved.	In concert with procurement of a case management module, develop detailed staffing strategies to ensure business teams can support new case management tools.	Case management module testing/go-live	Mitigate	Medium
If exceptional outliers that comprise the Medicaid FFS population are not adequately risk-stratified by commercial and Medicare-focused algorithms, this risk may prevent AHCCCS from fully implementing care management policies for the FFS population.	Analyze and include the current and potential future needs for FFS care management in the case management module procurement.	Case management module procurement	Avoid	Medium
If AHCCCS is not aware of the entire scope and underlying complexity the current case management system is providing, then the case management module procurement may degrade the business capabilities for FFS care management compared to the current model.	Analyze the functional requirements included in the current care management vendor's contract scope and map to care management module requirements.	Case management module procurement	Avoid	Medium

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7 Alternative Approaches

NTT DATA identified and evaluated four approaches to modernizing the MMIS and determined that the PMMIS/HPMMIS Refactor to Azure Project, described in Section 4, is the only viable solution due to timeline and market availability. The four approaches evaluated include:

- PMMIS/HPMMIS Refactor to Azure Project
- Takeover and transform
- Single vendor module modernization
- Multi-vendor module modernization

NTT DATA employed the Decision Analysis and Resolution (DAR) concept in evaluating solution alternatives for the modernized MES. DAR is a Capability Maturity Model Integration (CMMI) for Development Level 3 Maturity process to analyze decisions using a formal evaluation process that evaluates alternatives against established criteria.

Exhibit 41 provides a high-level overview of the approach for each alternative under evaluation, which is comprised of two components:

- AHCCCS/MQD Input – Established business and technical strategies provided by the agencies, along with the ability to address types of 'pain points' gathered through visioning and MITA business assessment sessions
- NTT DATA Research and Expertise – Scores based on NTT DATA's extensive research covering MES modular market offerings, MES innovations, state approaches to modularity, and our consultants' real-world experience overseeing MES modernizations

Exhibit 41: NTT DATA's Empirical Approach to Alternatives Analysis

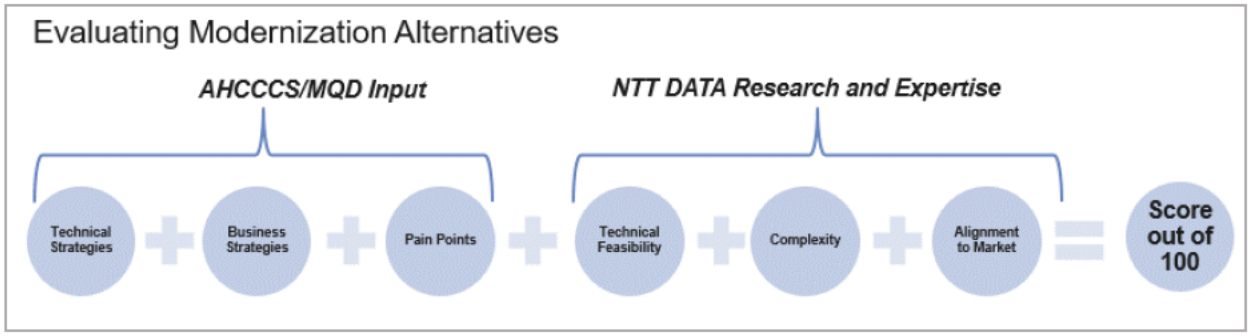
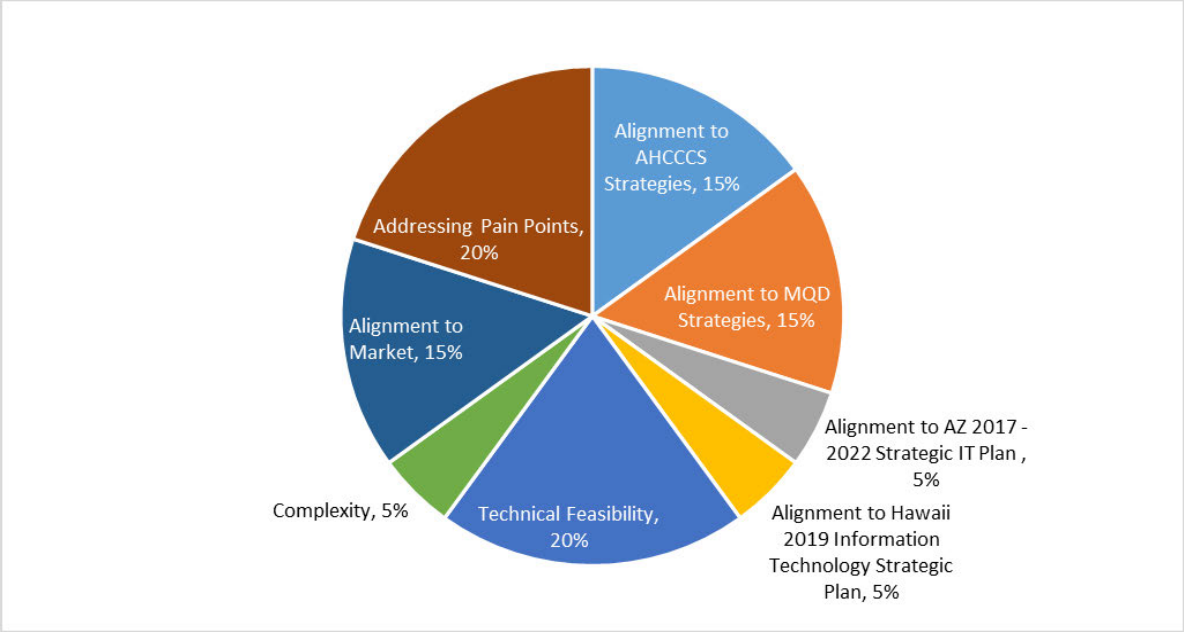


Exhibit 42 provides the categories and weight applied to each area as a grouping. All alternatives were then measured against the reality of end of support in 2027 for the current MMIS system. Unlike a COTS product that can continue to run past end of support and just remain static, the MMIS must continue to change over time, and therefore, this date is the main driving factor.

Exhibit 42: Weight of Measurement Parameters



This approach is a more sophisticated version of the Alternative Considerations and Feasibility Analysis section that CMS requires in APD funding requests and will therefore be helpful in submitting funding documents for the roadmap initiatives.

Key Factors

AHCCCS and MQD maintain a unique set of organizational and system characteristics that dictate the recommended approach to transformation over the alternatives that are outlined in this section. AHCCCS and MQD are among just a few remaining states running their MMIS on a mainframe and among an ever-smaller population that have mainframes that are state-developed and maintained. Due to this historical systems path, AHCCCS and MQD have never undertaken comprehensive requirements and design sessions with a vendor for the key business and systems areas of claims processing and managed care management. The lack of experience in this “first generation” transformation has historically demonstrated key risks and issues that include out-of-date and missing documentation to support accurate requirements and longer than normal data conversion and DDI programs.

Each state originated as a 1115 waiver managed care state and has focused on enrollment and capitated payment processing as the primary business areas, while still maintaining a small, yet critical, population of fee-for-service members that require the payment of direct billed claims by the PMMIS and HPMMIS systems. Impacting both states is the tightly coupled financial management and processing by outside systems and entities for both agencies. AHCCCS defers to ADOA and the Arizona Financial Information System (AFIS) system for accounts and payments, while MQD contracts through Conduent as its fiscal intermediary (FI) to manage accounts and payments. PMMIS and HPMMIS serve to calculate and generate payment and recoupment requests that are sent to the listed external entities.

Another distinction in the uniqueness is the long running partnership between AHCCCS and MQD, with AHCCCS running and maintaining the MMIS systems for both states. Together, these distinctions set AHCCCS and MQD outside of the more common path experienced by many Medicaid programs that have converted their MMIS systems one or more times to a mid-range vendor platform and, for a number of them, transitioned operations to the MMIS vendor as fiscal agent or fiscal intermediary. This common

path is the baseline that supports current market offerings in MMIS modules and system transformation experience.

7.1 Takeover and Transform

The **first alternative** to the recommended approach described in the PMMIS/HPMMIS Refactor to Azure Project is the takeover and transform approach. The initial step of this approach is the procurement of a vendor to take over the maintenance and operations of the PMMIS and HPMMIS systems. Due to the resource limitations surrounding IDEAL and DATACOM, there is a strong possibility that the vendor would request the transition of the AHCCCS technical staff to continue the support. Once the transition is complete and the vendor is in a steady state of operations, the planning would begin for modular transformation and/or re-architecture as a single vendor solution that would be executed over an extended time, resulting in a period of a hybrid systems architecture. Additionally, AHCCCS would implement a standalone systems integration platform that would integrate the current modules and systems to the mainframe PMMIS and HPMMIS systems and future transformations. The current modules and systems outside of PMMIS/HPMMIS would be re-procured on their normal contract renewal cycles.

Takeover and Transform Components

- Procure a vendor to take over managing and operating the PMMIS/HPMMIS and transition ISD supporting staff.
- Retain current modules and re-procure at contract renewal.
- Re-architecture or modular replacement of PMMIS/HPMMIS by the takeover vendor.
- Implement a standalone systems integration platform.

This approach has some viability based upon historical proposals and contracts executed by the experienced vendors in the MMIS marketplace. The single vendor transformation contract may be attractive enough to vendors to offset the risk related to the inability to transition and maintain state staff knowledgeable in the legacy technologies for the duration of the transformation. The terms and conditions required in AHCCCS contracts, along with the high risk in obtaining knowledgeable and skilled resources, make the contract cost prohibitive. This approach will require the eighteen months of systems documentation ahead of the takeover to align the contract requirements and service level agreements. It will also require the state implementation of governance and enterprise project management to support and manage not only the takeover vendor, but the systems integration and module vendors as well. The procurement window is likely to take at least six months with a minimum of six months after award for the takeover to be completed. The full implementation of replacement modules or re-architected system logic can take thirty-six months or more depending on the data quality prior to conversion and the volume of business changes in the overlapping period. In addition, each new module or system will be required to receive CMS certification to receive federal funds.

A slight alternative in strategy for this same takeover approach would be for AHCCCS to procure the replacement modules through competitive procurement and allow the takeover vendor to bid. The plausible risk of this strategy is no vendor response to the takeover RFP due to the lack of incentives stated above that accompany a single vendor takeover.

The high-level analysis of this alternative recognizes an overall timeline of six years or longer to fully retire the legacy technologies currently at risk to the enterprise. This puts the timeline at odds with the targeted retirement of the final support staff of the systems by more than a year if all activities begin execution

starting January 2023. The risk levels are significant due to the introduction of both re-work and temporary solutions that will be necessary to facilitate the hybrid conversion strategy over the life of the vendor contract. The current lack of governance and organizational discipline by both agencies to support this volume of temporary system changes and progressive workarounds presents a high probability of negative impacts to business operations and provider/health plan relationships with the potential to impact access to care. For these reasons, this alternative is not suggested for AHCCCS and MQD to complete their MES modernization.

Exhibit 43 provides a high-level set of activities for the first alternative and the estimated duration, based on former projects of similar size and scope.

Exhibit 43: First alternative forecast duration

Activity	Forecast Duration
Systems Documentation	18 months
Procurement	6 months
Takeover and Transition	6 months
Transformation/Replacement	36+ months
Certification	6-12 months

7.2 Single Vendor Module Modernization

The **second alternative** to the recommended approach described in the PMMIS/HPMMIS Refactor to Azure Project is identified as the single vendor module modernization approach. The primary strategy of this approach is similar in outcome to the plan in Kansas that recently implemented a modular system entirely with Gainwell. The second alternative approach differs from Kansas' approach in the fact that Kansas originally requested bids from multiple vendors for the modules, and Gainwell won all the procurements. A second difference is that Gainwell was the incumbent fiscal agent and system operator of the original system prior to the modular transformation.

Single Vendor Module Modernization Components

- Procure a single vendor to modernize through modular replacement.
- Retain current modules and re-procure at contract renewal.
- Push some PMMIS/HPMMIS functionality to existing modules.
- Implement a standalone systems integration platform.

With the single vendor module modernization approach, AHCCCS and MQD would seek CMS approval to implement modules solely from one vendor on the justifications of reduced complexity with an existing modular environment and the lack of overall maturity in the module offerings around managed care. In addition, there is a reduced risk of program disruption due to elongated multi-vendor schedules overshooting shortened legacy system viability and staff retirements. The targeted modules would consist of core (includes claims, encounters, finance, and member enrollment), managed care, and prior

authorization. Remaining functions in the mainframe would then get pushed to other existing modules, incorporated into the procurements as customizations, or replaced through business transformation. Additionally, AHCCCS would implement a stand-alone systems integration platform that would integrate the current modules and systems to the mainframe PMMIS and HPMMIS systems and future transformations. The current modules and systems outside of PMMIS/HPMMIS would be re-procured on their normal contract renewal cycles. Each new module would require CMS certification, except the systems integration platform as currently outlined by CMS.

This alternative strategy has the highest viability of success outside of the recommended roadmap strategy, due primarily to the risk mitigations noted in the previous paragraph. AHCCCS and MQD could go one step further in reducing the number of vendors and potential complexity by awarding the systems integration platform and the new modules procurement contracts to the same vendor and then aligning the remainder of the modular enterprise to the new solutions. The implementation approach that would be chosen (phased or all at once) for the new modules would depend on the resource capacity and contractual agreements between AHCCCS, MQD, and the selected vendor.

The main detractor of this approach that relegates it to a best alternative is the lack of maturity and availability of a managed care module by multiple prime Medicaid vendors in the marketplace. The module offerings to date have followed a strategic pattern driven by NASPO contracts and the overlapping vendor development cycles. Several years ago, the provider module was the entry point of least risk for both vendors and states due to the greatest opportunity to decouple the functionality from a core MMIS and the existing internet enrollment portals that had already been implemented and integrated with existing MMIS systems. States' and vendors' current focus in both planning and procurement is the core module that includes claims and encounter processing, financial management, and member benefit plan management (identified as enrollment to align with AHCCCS and MQD business process terminology). There have been several recent core module implementations, with several more in DDI and procurement, and an active NASPO contract with a competitive number of vendors. The only managed care module implemented to date is the previously mentioned Gainwell offering that was recently implemented in Kansas. Additionally, there is no NASPO contract covering a managed care module to work from. Outside of the Gainwell module, there is a strong possibility that other vendor proposals would include some combination of untested solutions and legacy transfer code and processes. This narrows the scope of best options that match the priority of the business for both AHCCCS and MQD to potentially one vendor in the current and near-term marketplace.

Additional factors to consider for this alternative are similar to those identified for the takeover and transform approach. The plan will require the state implementation of governance and enterprise project management to support and manage the new MMIS module vendor, systems integration vendor if separate, and the module vendors as well. This alternative also carries significant risk inherent in "first generation" MMIS conversion projects. The outcomes and final products of historical mainframe MMIS conversions have repeatedly resulted in new systems that retained much of the original system functionality and processes at the cost of extra time spent in requirements and design and significant customization to the new platform. After 18-24 months of steady state operations, states realize the opportunities that were missed due to demands of legacy functionality and a lack of organizational change management, business transformation, and process improvement. This risk cannot be overstated, as it has been realized by several states in the last twenty years of MMIS conversions.

The high-level analysis of this alternative recognizes an overall timeline of five years or longer to fully retire the legacy technologies currently at risk to the enterprise. This puts the timeline very close to the targeted retirement of the final support staff of the current systems with little buffer if all activities begin execution starting January 2023. The risks are different from the takeover yet still significant due to the unknown issues that may present themselves in data conversion and the continued reliance on existing state staff through the retirement of the legacy system. The current lack of governance and organizational discipline by both agencies to support this conversion approach present the risks of unplanned scope growth and schedule delays that could lead to implementation delays or failure that would negatively

impact business operations and provider/health plan relationships with the potential to impact access to care. For these reasons, this alternative is not suggested for AHCCCS and MQD to complete their MES modernization.

Exhibit 44 provides a high-level set of activities for the second alternative and the estimated duration, based on former projects of similar size and scope.

Exhibit 44: Second alternative forecast duration

Activity	Forecast Duration
Systems Documentation	18 months
Procurement	6 months
Module(s) Implementation	36+ months
Certification (per module)	6-12 months

7.3 Multi-Vendor Module Modernization

The **third alternative** to the recommended approach described in the PMMIS/HPMMIS Refactor to Azure Project is the multi-vendor module modernization approach. The strategy of this approach follows the vaguely defined initial guidance of CMS to procure modular functionality through competitive bid that may or may not award multiple modules to the same vendor. Based upon the current architecture of the PMMIS/HPMMIS systems and vendor offerings, the architecture strategy would be similar to the single vendor approach with the need to procure two or three modules. The targeted modules would consist of core (includes claims, encounters, finance, and member enrollment), managed care, and prior authorization. The remaining functionality of the current PMMIS/HPMMIS would then need to be pushed into current modules, customized into the procured modules, or removed through business transformation and process improvement. Additionally, AHCCCS would implement a standalone systems integration platform that would integrate the current modules and systems to the mainframe PMMIS and HPMMIS systems and the newly procured modules. The current modules and systems outside of PMMIS/HPMMIS would be re-procured on their normal contract renewal cycles. Each new module would require CMS certification, except the systems integration platform as currently outlined by CMS.

Multi-Vendor Module Modernization Components

- Procure individual modules to replace PMMIS/HPMMIS.
- Push some PMMIS/HPMMIS functionality to existing modules.
- Continue to operate PMMIS/HPMMIS during the implementation of the new modules.
- Implement a standalone systems integration platform.
- Retain current modules and re-procure at contract renewal.
- Retrofit new modules with PMMIS/HPMMIS until all functionality is replaced to allow retirement.

This alternative strategy has the lowest viability of success and conflicts with both the risk tolerance factors and the aggressive schedule constraints that have been identified as key dependencies for the roadmap. The implementation of separate modules that need to integrate back with the PMMIS and HPMMIS systems in a hybrid architecture during the transition has inherent risk of schedule slippage and procurement failure due to the overlapping dependencies involving a multitude of vendors. The recommended order of implementation after the systems integration platform would be to first push functionality to existing modules that will not go into the new modules (provider, eligibility, TPL) and then procure and implement prior authorization (if procured as a standalone module), core, and finally managed care. The rationalization for this order is primarily driven by the dependencies of each succeeding module on its predecessor(s). All the detractors and risks discussed in the previous alternatives also present themselves with this solution. In addition, the lack of mature governance and organizational discipline coupled with staff capacity concerns draws a recommendation for the serial implementation of modules with no overlapping phases. This implementation approach would elongate the schedule of legacy system maintenance well beyond the sunset horizon targeted by AHCCCS. The one advantage of this strategy is that the implementation of the managed care module last allows the market to mature and potentially bring a NASPO contract with several vendors into play.

The high-level analysis of this alternative recognizes an overall timeline of seven to ten years to fully retire the legacy technologies currently at risk to the enterprise. This puts the timeline well beyond the targeted retirement of the final support staff of the current systems with all activities needing to begin execution starting January 2023. In addition, this alternative carries the recommendation of fully implementing the systems integration platform prior to the implementation of any new systems logic in new or existing modules to avoid rework and potential problems. The risks around data conversion, staff retirement, schedule slippage, “first generation” conversion, and multiple vendor integration all present themselves through the life of this approach. The risks of implementation delays or failure that would negatively impact business operations and provider/health plan relationships with the potential to impact access to care present themselves as red from the start of a roadmap with this strategy. For these reasons, this alternative is not suggested for AHCCCS and MQD to complete their MES modernization.

Exhibit 45 Exhibit 45provides a high-level set of activities for the third alternative and the estimated duration, based on former projects of similar size and scope.

Exhibit 45: Third alternative forecast duration

Activity	Forecast Duration
Systems Documentation and Systems Integration Implementation	18 months
Functionality Push to Existing Modules	12 months
Module 1 Procurement	6 months
Module 1 Implementation	12-24 months
Module 1 Certification	6-12 months
Module 2 Procurement	6 months
Module 2 Implementation	12-24 months
Module 2 Certification	6-12 months
Module 3 Procurement	6 months
Module 3 Implementation	12-24 months
Module 3 Certification	6-12 months

8 Compliance with CMS Certification Requirements

This section verifies compliance of the roadmap with the applicable CMS certification requirements. Section 9 of this document included a list of all applicable state and federal regulations.

Exhibit 46 details the lifecycle steps necessary for all Medicaid IT projects, including the streamlined modular certification (SMC) process tasks. These tasks have been incorporated within this roadmap deliverable.

Exhibit 46: Medicaid IT Investment Lifecycle Engagement and Certification Process

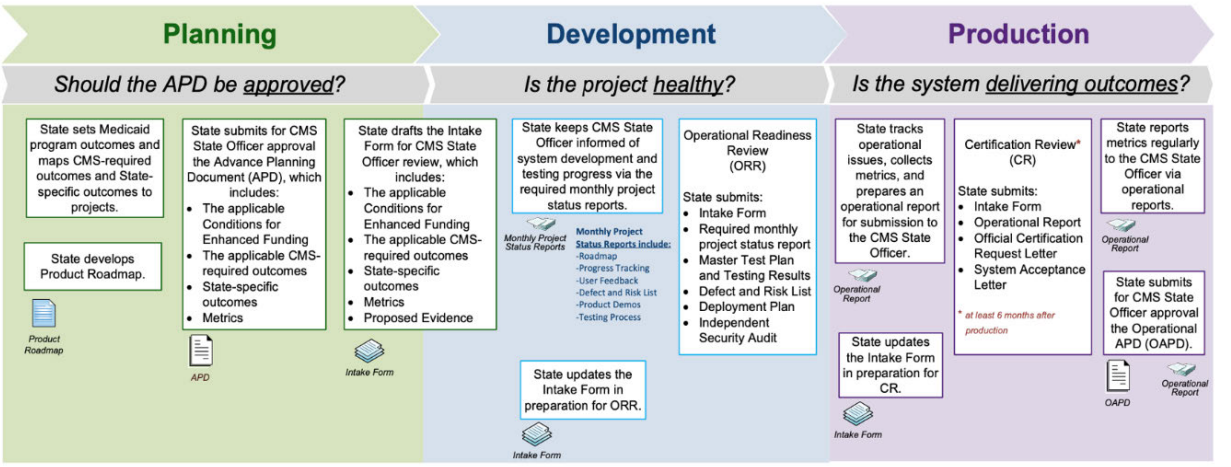


Exhibit 47 lists the current CMS requirements that must be met to ensure certification compliance. Outcomes statements and metrics are part of the Advance Planning Document (APD) process and the Streamlined Modular Certification (SMC) process and are required for projects that request FFP match. Principally, certification is required for systems that replace an existing MES component, new MES components, major modifications/enhancements, system rebuilds, COTS solutions, and related services.

Exhibit 47: CMS Certification Requirements

CMS Appendix / Requirement	Description
Outcomes	State-Specific Outcomes are developed by states and should be measurable, achievable, and reflect the short-term goals of the MES project. NOTE: There are no CMS-Required Outcomes for projects in this roadmap.
Metrics	Metrics provide measurable evidence that the outcomes are achieved on an ongoing basis. States are required to report on the system's performance to CMS as a condition for receiving enhanced funding.
Appendix E - Intake Form	The Intake Form Template is used throughout the Streamlined Modular Certification process to track information about a state MES project for certification. The current intake form includes a tab to gather the Evidence for the Conditions for Enhanced Funding from the APD document, as well as the Outcomes being used for the specific project.
Operational Report Workbook	An example template states may use for submitting metrics data
Reporting Requirements	• A monthly project status report is required during the development/DDI phase. • Operational reports should include metric data corresponding to the agreed-upon outcomes listed in the APD for each applicable MES module.
Appendix A	Conditions for Enhanced Funding
Appendix B	CMS-Required Outcomes for Specific MES Modules
Appendix C	Required Artifacts List that includes: • Monthly Project Status Reports • Master Test Plan and Testing Results • Deployment Plan • Defect and Risk List • Independent Security Audit • Official Certification Request Letter
Appendix D	Framework for the Independent Third-Party Security and Privacy Assessment

9 Applicable Federal and State Regulations

The contracts and their vendors of any systems resulting from the modernization initiative will be subject to all federal, state, and local laws, regulations, executive orders, and ordinances applicable to the vendor and contract. These items include, but are not limited to, the list shown in Exhibit 48.

Exhibit 48: Applicable Federal and State Regulations

Arizona State Regulation

AZ Policy	Description	Link
P1050	General Security	https://aset.az.gov/sites/default/files/2022-04/P1050%20Policy%20Standard%20and%20Procedure%20Policy.pdf
ADOA| S4400	Information Security	https://aset.az.gov/sites/default/files/2022-04/S4400%20-%20Data%20Governance%20Organization%20Exception%20Standard.pdf
ADOA|P8240	Information Security Incident Response	https://aset.az.gov/sites/default/files/AZ_Policy_P8240_Incident_Response_Planning_v3.0_May2021_signed.pdf
ADOA| P8320	Access Control Policy	https://aset.az.gov/sites/default/files/AZ_Policy_P8320_Access_Controls_v3.0_May2021_signed.pdf
ADOA| P8240	Information Security Incident Response Policy	https://aset.az.gov/sites/default/files/AZ_Policy_P8240_Incident_Response_Planning_v3.0_May2021_signed.pdf
ADOA|P8120	Information Security Risk Assessment Policy	https://aset.az.gov/sites/default/files/AZ_Policy_P8120_Information_Security_Program_v3.0_May2021_signed.pdf
ADOA| P8260	Physical security protection	https://aset.az.gov/sites/default/files/AZ_Policy_P8260_Physical_Security_Protections_v3.0_May2021_signed.pdf
ADOA| P8250	Media Protection	https://aset.az.gov/sites/default/files/AZ_Policy_P8250_Media_Protection_v3.0_May2021_signed.pdf
ADOA|SHDC|P6200	State Shared Hosted Data Center Physical Security (SHDC)	https://aset.az.gov/sites/default/files/Policy%206200%20State%20Data%20Center%20Physical%20Security%20ver%201.2.pdf
ADOA|P1800	Vendor Management	https://aset.az.gov/node/201

AZ Policy	Description	Link
	Policy	
N/A	Business Associate Agreement	https://des.az.gov/sites/default/files/media/rfqva71000_a8_section_9j_business_associate_agreement_041522.pdf
ADOA|P8240	Incident Response Planning	https://aset.az.gov/sites/default/files/AZ_Policy_P8240_Incident_Response_Planning_v3.0_May2021_signed.pdf
41-4282	Statewide information security and privacy office	https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/41/04282.htm
ADOA|S1100	Cloud and Hosted Systems	https://aset.az.gov/sites/default/files/S1100%20-%20Cloud%20First%20Exception%20Standard%20v.1.3_0.pdf
N/A	Statewide Information Security Standards	https://aset.az.gov/policies-standards-and-procedures
N/A	Statewide Information Security Plan	https://aset.az.gov/sites/default/files/NIST.SP_.800-53r4.pdf
45 CFR Parts 160, 162, and 164	HIPAA Privacy and Security Rule Implementation	https://www.hhs.gov/sites/default/files/hipaa-simplification-201303.pdf
AZ A.R.S. §§ 41-2501 | 41-2577	Public Contracting and Procurement	https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/41/02501.htm https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/41/02577.htm
AZ Article 36-664	Confidentiality	https://www.azleg.gov/ars/36/00664.htm
A.R.S. 41-2501| A.A.C. R2-7-101	General Provisions for Public Contracting	https://www.azag.gov/sites/default/files/docs/agency-handbook/2018/agency_handbook_chapter_5.pdf https://spo.az.gov/sites/default/files/documents/files/BOOK%202%20Arizona%20Procurement%20Code-Combined%20July%202014_1.pdf
N/A	Conditions concerning payment, contributions, liens, withholding	https://azdor.gov/businesses-arizona/withholding-tax/employer-withholding-filing-obligations

AZ Policy	Description	Link
Article9| 23-1021	Condition concerning payment for medical care and providing workers' compensation	https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/23/01021.htm
Title 23	Condition concerning hours of labor	https://www.azleg.gov/arsDetail/?title=23
DBE	Certification as disadvantaged business enterprise, minority-owned business, woman-owned business, business that service-disabled veteran owns or emerging small business	https://azdot.gov/business/business-engagement-and-compliance/business-registration-and-certification/dbe
AZ16-901.	Definitions	https://www.azleg.gov/viewDocument/?docName=http://www.azleg.gov/ars/16/00901.htm
N/A	Prohibited Acts	https://www.azag.gov/sites/default/files/docs/agency-handbook/2018/agency_handbook_chapter_8.pdf
Title 42-6001	Collection and distribution of local taxes on income and sales	https://www.azleg.gov/viewdocument/?docName=https://www.azleg.gov/ars/42/06001.htm
AZ S.B. 1828/H.B. 2900	Income Tax	https://www.azleg.gov/legtext/55leg/1R/summary/S.1828APPROP_AS ENACTED.DOCX.htm
AZ Title 43	Corporate Excise Tax	https://www.azleg.gov/arsDetail/?title=43
AZ	Corporate Income Tax	https://azdor.gov/businesses-arizona/corporate-income-tax
N/A	Agencies to supply licensee and contractor lists	https://azdor.gov/business

Hawaii State Regulation

HI Policy	Description	Link
103001/DO/ISO	General Security Policy	https://dhrd.hawaii.gov/wp-content/uploads/2012/11/0101001.pdf
N/A	Information Security	https://ets.hawaii.gov/policies/
ADM.09X.30	Access Control Policy	https://dps.hawaii.gov/wp-content/uploads/2012/09/ADM.09X.30.pdf
ITD 0131A	Information Security Incident Management Policy	https://www.hhsc.org/procurement/general-conditions/
SB1100 SD1	Administrative, Technical and Physical Safeguards Policy	https://www.capitol.hawaii.gov/sessions/session2021/bills/SB1100_HD2_.HTM
IPSC2009-01	Controlling Portable and Removeable Storage Devices	https://ags.hawaii.gov/wp-content/uploads/2012/09/DISPOSAL-OF-GOVERNMENT-RECORDS-8-23-06-revision.pdf https://ipsc.hawaii.gov/wp-content/uploads/2013/10/IPSC-Laptop-Guidelines.pdf
N/A	Transporting Information Assets	https://ags.hawaii.gov/wp-content/uploads/2016/03/Guidelines-for-Packing-Records-for-Storage-at-the-Hawaii-State-Records-Center.pdf
N/A	Public Contracting Authority and Overview for Supplies and Service Contracts	https://humanservices.hawaii.gov/admin-rules-2/policies-and-procedures/
HEN-012	Report and Response to Privacy and Security Incidents	https://www.hawaiihie.org/wp-content/uploads/2017/06/HEN-012-POLICY-Incident-Response-and-Mitigation-BOD-APPROVED-11-2016.pdf
IPSC	State Information Security	https://ipsc.hawaii.gov/guidelines-best-practices/
N/A	Statewide Information Security Standards	https://www.capitol.hawaii.gov/hrscurrent/Vol01_Ch0001-0042F/HRS0027/HRS_0027-0043.htm
N/A	Statewide Information Security Plan	https://dod.hawaii.gov/ohs/files/2022-03-02-FINAL-Cyber-Disruption-Response-Plan_SIGNED-w-atchs-1.pdf
EP 2.217	HIPAA Privacy and Security Rule Implementation	https://www.hawaii.edu/policy/docs/temp/ep2.217.pdf
103D	Public Contracting and Procurement	https://law.justia.com/codes/hawaii/2015/title-9/chapter-103d

HI Policy	Description	Link
103D	General Provisions for Public Contracting	file:///C:/Users/249723/Downloads/General%20Conditions-AG%20General%20Conditions%20(1).pdf
DOTAX	Conditions concerning payment, contributions, liens, withholding	https://tax.hawaii.gov/geninfo/a2_b2_4empl_whhold/
DCD-WC	Condition concerning payment for medical care and providing workers' compensation	https://www.capitol.hawaii.gov/hrscurrent/Vol07_Ch0346-0398/HRS0387/HRS_0387-0003.htm
Section 387-3	Condition concerning hours of labor	https://www.capitol.hawaii.gov/hrscurrent/Vol07_Ch0346-0398/HRS0387/HRS_0387-0003.htm
DBE	Certification as disadvantaged business enterprise, minority-owned business, woman-owned business, business that service-disabled veteran owns or emerging small business	https://hidot.hawaii.gov/administration/ocr/dbe/
N/A	Income Tax	https://tax.hawaii.gov/forms/a1_b1_1income/
N/A	Corporate Excise Tax	https://files.hawaii.gov/tax/legal/taxfacts/tf2015-37-1.pdf
N/A	Corporate Income Tax	https://tax.hawaii.gov/forms/a1_b1_3corp/
No. J19018	Agencies to supply licensee and contractor lists	https://www.courts.state.hi.us/wp-content/uploads/2018/05/IFB-J19018.pdf

CMS Regulation

CMS	Description	Link
CMS	State Medicaid Manual	https://www.cms.gov/regulations-and-guidance/guidance/manuals/paper-based-manuals-items/cms021927
CMS	Health Insurance Portability and Accountability Act	https://aspe.hhs.gov/report/health-insurance-portability-and-accountability-act-1996

CMS	Description	Link
CMS	Health Insurance Portability and Accountability Act Privacy and Security Rules	https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/HIPAA-ACA/PrivacyandSecurityInformation
CMS	Patient Protection and Affordable Care Act	https://www.govinfo.gov/content/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf
CMS	Administration Simplification Compliance Act	https://www.congress.gov/bill/107th-congress/house-bill/3323/text?q=%7B%22search%22%3A%5B%22Public+Law+107-105%22%5D%7D&resultIndex=1
CMS	CMS Guidance on modularity	https://www.medicaid.gov/federal-policy-guidance/downloads/smd16010.pdf
CMS	CMS Guidance on Re-use	https://www.medicaid.gov/federal-policy-guidance/downloads/smd18005.pdf

Other Federal Regulation

Federal	Description	Link
FIPS Pub 200	Minimum Security Requirements for Federal Information and Information Systems	https://csrc.nist.gov/csrc/media/publications/fips/200/final/documents/fips-200-final-march.pdf
NIST 800-53	Security and Privacy Controls	https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-53r4.pdf
46 CFR 164	Security and Privacy	https://www.ecfr.gov/cgi-bin/text-idx?SID=5291f81b28fb0cc91fae1dee826c22e1&node=pt45.1.164&rgn=div5%20-%20se45.1.164_1308
FIPS PUB 199	Standards for Security Categorization	https://csrc.nist.gov/csrc/media/publications/fips/199/final/documents/fips-pub-199-final.pdf

Federal	Description	Link
45 CFR 160	General Administrative Requirements	https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=1&SID=195e3242453bbb0b0dab1d7c2ca35562&ty=HTML&h=L&n=45y1.0.1.3.75&r=PART
42 CFR Part 433	Federal Financial Participation	https://www.ecfr.gov/cgi-bin/text-idx?SID=2b9eee9ad8bd2045b5dddda01465c7a7&mc=true&node=pt42.4.433&rgn=div5#se42.4.433_1122
45 CFR part 170 subpart B	Standards and Implementation Specifications for Health Information Technology	eCFR :: 45 CFR Part 170 Subpart B -- Standards and Implementation Specifications for Health Information Technology

10 Standards and Conditions

CMS is a principal stakeholder in the development of state Medicaid IT systems and has established a core set of binding requirements for states regarding processes, standards, and architecture. 42 CFR Part 433.122(b)(10-22) establishes specific requirements for Medicaid funding. States should incorporate these requirements into their baseline set of project requirements.

Recent CMS guidance on modularity and re-use provided via State Medicaid Director Letters is covered by compliance with the 22 Standards and Conditions. Exhibit 49 shows how the proposed MES Modernization Roadmap meets these standards and conditions.

Exhibit 49: MES Modernization Roadmap—How It Meets CMS Standards and Conditions

CMS Condition	How the Proposed Roadmap Meets the Condition
CMS determines the system is likely to provide more efficient, economical, and effective administration of the State plan.	The roadmap proposed by NTT DATA calls for a re-platform of the current monolithic MMIS that is difficult, expensive, and time consuming to a modern cloud-based technology with a significant reduction in runtime infrastructure costs.
The system meets the system requirements, standards and conditions, and performance standards in Part 11 of the State Medicaid Manual, as periodically amended.	The proposed roadmap calls for multiple procurement cycles to implement various systems. Each of those systems will require an RFP or NASPO contract that includes requirements that must be met. Section 9 include the list of federally required regulations that should be included in each RFP.
The system is compatible with the claims processing and information retrieval systems used in the administration of Medicare for prompt eligibility verification and for processing claims for persons eligible for both programs.	The proposed roadmap ensures that the current claims process and information retrieval systems continue to successfully operate through the re-platform operation.
The system supports the data requirements of quality improvement organizations established under Part B of title XI of the Act.	The proposed roadmap calls for a MES datamart with the ability to perform analytics directly in the environment. The RFP should include requirements that allow for the necessary consolidation and analysis of the data without performing extract and transfer of large data sets.
The State owns any software that is designed, developed, installed or improved with 90 percent FFP.	The proposed roadmap consists of multiple module procurement cycles. This standard requirement should be included in the RFP for each module. Ownership of all software, modifications to software, and documentation that is designed, developed, or enhanced utilizing enhanced 90/10 Federal Funding for claims processing and information retrieval systems as defined by 42 CFR 433 Subpart C will be requested in the RFP. These modifications include enhancements, configurations, and customizations to COTS or Proprietary Software designed for and

CMS Condition	How the Proposed Roadmap Meets the Condition
	paid for by the State utilizing enhanced federal funding for design and development.
The Department has a royalty free, non-exclusive, and irrevocable license to reproduce, publish, or otherwise use and authorize others to use, for Federal Government purposes, software, modifications to software, and documentation that is designed, developed, installed or enhanced with 90 percent FFP.	The proposed roadmap consists of multiple module procurement cycles. This standard requirement should be included in the RFP for each module.
The costs of the system are determined in accordance with 45 CFR 74.27(a).	The cost of the system was determined using the cost principles in 45 CFR 75, subpart E.
The Medicaid agency agrees in writing to use the system for the period of time specified in the Advance Planning Document approved by CMS or for any shorter period of time that CMS determines justifies the Federal funds invested.	The proposed roadmap consists of multiple module procurement cycles. This standard requirement should be included in the RFP for each module.
The agency agrees in writing that the information in the system will be safeguarded in accordance with subpart F, part 431 of this subchapter.	This regulation will be included in the RFP for each module.
Use a modular, flexible approach to systems development, including the use of open interfaces and exposed application programming interfaces; the separation of business rules from core programming, available in both human and machine-readable formats.	The proposed roadmap calls for multiple modules to be procured. RFP requirements for each module should include this.
Align to, and advance increasingly, in MITA maturity for business, architecture, and data.	This requirement is included in the industry standards that should be followed for each module procured.
The agency ensures alignment with, and incorporation of, industry standards adopted by the Office of the National Coordinator for Health IT in accordance with 45 CFR part 170 subpart B: the HIPAA privacy, security and transaction standards; accessibility standards established under section 508 of the Rehabilitation Act, or standards that provide greater accessibility for individuals with disabilities, and compliance with Federal civil rights laws; standards adopted by the Secretary under section 1104 of the Affordable Care Act; and standards and protocols adopted by the Secretary under section 1561 of the Affordable Care Act.	Section 8 and 9 lists all applicable state and federal regulations that vendors must adhere to with their solutions. These lists of items should be included in each of the module RFPs.
Promote sharing, leverage, and reuse of	The proposed roadmap includes multiple modules to

CMS Condition	How the Proposed Roadmap Meets the Condition
Medicaid technologies and systems within and among States.	replace the current MMIS. During our analysis of module recommendations, NTT DATA scored modules based on leveraging and reuse availability within the industry.
Support accurate and timely processing and adjudications/eligibility determinations and effective communications with providers, beneficiaries, and the public.	The proposed roadmap calls for a gradual replacement of the current monolithic MMIS that is difficult, expensive, and time consuming to modify with a series of modules to replace the functionality with modern solutions.
Produce transaction data, reports, and performance information that would contribute to program evaluation, continuous improvement in business operations, and transparency and accountability.	The proposed roadmap calls for a gradual replacement of the current monolithic MMIS that is difficult, expensive, and time consuming to modify with a series of modules to replace the functionality with modern solutions.
The system supports seamless coordination and integration with the Marketplace, the Federal Data Services Hub, and allows interoperability with health information exchanges, public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services as applicable.	The proposed MES integration platform will provide multi-agency, multi-program connectivity and data integration capabilities and also provide the ability to integrate clinical data with HIEs, Integration with the Marketplace and Federal Data Services Hub specifically applies to Eligibility and Enrollment systems.
For eligibility and enrollment systems, the State must have delivered acceptable MAGI-based system functionality, demonstrated by performance testing and results based on critical success factors, with limited mitigations and workarounds.	Not applicable – eligibility and enrollment specific
The State must submit plans that contain strategies for reducing the operational consequences of failure to meet applicable requirements for all major milestones and functionality.	APDs for each module should include how AHCCCS/MQD plans to reduce operational impact of failure to meet applicable requirements.
The agency, in writing through the APD, must identify key state personnel by name, type and time commitment assigned to each project.	APDs for each module should include key state personnel and planned allocations to MES projects.
Systems and modules developed, installed or improved with 90 percent match must include documentation of components and procedures such that the systems could be operated by a variety of contractors or other users.	RFPs for each module should include deliverables and contract transition requirements to enable operation by other contractors or the state if required. Note – This would not apply to vendor provided SaaS solutions from an IT operations standpoint, but business operations utilizing the SaaS solution would still need to be transferrable.
For software systems and modules developed,	Procurement strategies for each MES module

CMS Condition	How the Proposed Roadmap Meets the Condition
installed or improved with 90 percent match, the State must consider strategies to minimize the costs and difficulty of operating the software on alternate hardware or operating systems.	should consider requiring application portability for Non-SaaS components. Note – Cloud native vendor solutions may not be portable between cloud vendors due to reliance on a cloud vendor's specific components and tools. Strictly requiring this level of portability may reduce the vendor pool in some scenarios.
Other conditions for compliance with existing statutory and regulatory requirements, issued through formal guidance procedures, determined by the Secretary to be necessary to update and ensure proper implementation of those existing requirements."	The roadmap has been crafted based on the formalized statutory and regulatory requirements at the time of writing. As new requirements are published, the roadmap and enterprise and individual MES module strategies and requirements must be carefully evaluated for impacts.

11 MES Comparative Analysis

NTT DATA maintains a 'State of the Nation' in different areas of the MES. This includes understanding the landscape of all states, what is in process, and what successes or issues resulted from major project initiatives. Additionally, we evaluate what the vendor community is doing, including evaluating performance on implementations and during operations and what they are working on to bring to the table for the future of the MES.

11.1 Review of Other States' MES Activities

This section evaluates potential improvements or enhanced functionality currently in use or proposed by other states that would increase efficiency, functionality, and capability of the Arizona and Hawaii MES.

In selecting an approach to modularity, it is important to note the different models that are possible. Exhibit 50 provides an overview of currently identified approaches and their associated risks and opportunities.

Exhibit 50: Approaches to Modularization

Name	Approach	Considerations
Incremental	Take strategic approach to modularity. For example, Florida's approach is to manage modular projects as a portfolio, starting by integrating existing modular services and allowing time for the modular marketplace to mature.	• Slowest approach to modularity, but waits for market and other states to evolve • Will take advantage of lessons learned from other states
Full Simultaneous Replacement	Total modularization via separate, simultaneous procurements (Kansas).	• Extremely high risk of failed procurements or implementations • Extreme effort to produce RFPs and procure • Lack of agility as the market evolves
MCO/Administrative Services Only (ASO) as Primary	Use one of the state's MCOs to process the FFS claims (as in Nebraska) or separate ASO (as in South Carolina); modularize the remainder of the MMIS.	• Modernizes the MMIS by pulling out claims processing functionality and modularizing the rest over time • State must ensure the commercial claims engine meets all state and CMS Medicaid requirements • Processing claims is only a portion of Core MMIS processing; this approach also requires reassigning remaining MMIS functional requirements to other MES components • Note – Nebraska abandoned their initiative

Name	Approach	Considerations
Platform Focused	Develop enterprise integration platform first (as in Florida and Wyoming).	• Enables the wider state enterprise to benefit from MMIS modernization, such as state-only claims processing and non-Medicaid analytics
Gradual/Conservative	MMIS takeover and gradual modularization to meet state's business needs (as in Wisconsin).	• Enables state to modularize, without a complete tear down of existing MMIS

The approach selected depends on the level of risk that the agencies are willing to accept, along with desired/required timelines for completing modularization. Exhibit 51 provides an overview of modular components other states have procured.

Exhibit 51: Other State's Modernized Modular Components

Module Name	State	Awarded Vendor
Claims Management	Kansas	Gainwell
	Ohio	Gainwell
	South Carolina	Optum (ASO) (Canceled)
	Wyoming	CNSI
	Virginia	Accenture
Data Warehouse	Florida	Deloitte
	Kansas	Cerner/Gainwell
	Montana	Cerner
	New Mexico	IBM
	South Carolina	SAS
	Tennessee	IBM
	Virginia	Optum
	Wyoming	Deloitte
Encounter Management	Kansas	Gainwell
	North Carolina	State
	Ohio	Gainwell
	Virginia	State
Financial Management	Kansas	Gainwell (interChange)
	Virginia	State (Conduent custom)
Provider Management	Arizona/Hawaii	CNSI
	Kansas	Gainwell
	Montana	Optum
	Nebraska	Maximus (NASPO)
	Ohio	Maximus

Module Name	State	Awarded Vendor
	Tennessee	Maximus
	Texas	CNSI (Cancelled)
	Vermont	Gainwell
	Virginia	Gainwell
	Wyoming	HHS Technology
Program Integrity	Kansas	Gainwell/SAS
	Wyoming	Deloitte
Systems Integrator	Colorado	Cambria
	Connecticut	KPMG
	Florida	Accenture
	Georgia	GTRI (State-run)
	Kansas	Gainwell
	Kentucky	HTS (non-technical SI, SI platform provided by Deloitte)
	Louisiana	Deloitte
	Montana	Deloitte
	New Mexico	KPMG Consortium (formerly Turning Point, contract cancelled)
	North Carolina	KPMG
	Ohio	Deloitte
	Pennsylvania	Turning Point (Canceled, KPMG now acting as SI)
	Tennessee	Deloitte
	South Carolina	SC Department of Health and Human Services (State-run)
	Virginia	Deloitte
	Wyoming	Deloitte
Third Party Liability	Georgia	TBD (NASPO)
	Louisiana	TBD (NASPO)
	Missouri	TBD (NASPO)
	Montana	TBD (NASPO)
	Rhode Island	TBD (NASPO)
	Wyoming	CNSI (part of Benefits Management module)

11.2 Market's Ability to Support COTS and SaaS vs. Custom Modular Solutions

This section provides an overview of the maturity of market offerings for modules in the form of COTS, Software as a Service (SaaS) and custom solutions.

Exhibit 52: Maturity of Market Offerings

Module Name	COTS	SaaS	Custom
Claims Management*	Y	Y	Y
Data Warehouse	Y	Y	Y
Encounter Management**	Y	Y	Y
Financial Management*	Y	Y	Y
Member Management*	Y	Y	Y
Provider Management	Y	Y	Y
Program Integrity	Y	Y	Y
Systems Integration	Y	Y	Y
Third Party Liability (TPL)	Y	N	Y

*Only available as part of a larger a larger MMIS module, not standalone

** Some vendors offer a standalone encounter processing system, but in most cases, it is a "reconfigured" claims engine with full MMIS support

When determining the path forward to a modular solution, the state must first consider multiple items, including:

- Software type implications
- Infrastructure implications
- Release implications
- Testing implications

12 Maintaining the Roadmap

This section provides the recommended organization and process models to address ongoing roadmap maintenance.

12.1 Triggers for Document Updates

This document should be updated any time that the plans outlined/recommended in the document change. Examples of these triggers include:

- Changes to the procurement timeline or strategy
- New offerings or vendors enter the market
- Modifications to the AHCCCS/MQD goals or technology strategy
- Change in direction/decision on modules to be procured
- When groups or roles outlined in the Exhibit 53 **Error! Reference source not found.**RACI table are consolidated or eliminated
- Changes to CMS requirements or additional CMS guidance

12.2 Updating and Approving Document Changes

Exhibit 53 outlines the groups and individuals that will update and approve modifications to this document as they are made.

Some of the individuals/groups specified in the RACI table and defined in the table legend may not exist at this time. They are NTT DATA recommendations of individuals or groups that are needed to complete the modularization project.

Exhibit 53: Document Update/Approval Responsibilities

N/A = Not Applicable	N/A
R = Responsible	R
A = Accountable	A
R/A = Both Responsible and Accountable	R/A
C = Consulted	C
I = Informed	I

Legend

Task or Business Process/Role	MES Roadmap Strategy Responsibility
AHCCCS MES Steering Committee	I
MQD MES Steering Committee	I
Joint AHCCCS/MQD MES Steering Committee	
Medicaid Director/Administrator	C
AHCCCS/MQD CIO	C
MES Program Director	A
MES Change Control Board	I
AHCCCS/MQD CISO	I
Lead Architect	R/A
AHCCCS/MQD Enterprise Architect	C
Architectural Review Board	C
Data Governance Board	I
Data Stewards	I
AHCCCS/MQD PMO	C
Business Owner(s)	C
EMPO Manager	I
IV&V	I
MES Operations	I
System Vendor	I
ASET	I
System Vendor	I
CMS	I
Organizational Change Management	I
AHCCCS/MQD Contract Monitor	I
AHCCCS/MQD Procurement	I

12.3 Notifications to Stakeholders

Each time this document is updated, the key stakeholders outlined in the RACI table should be notified via email that a new version of the document has been created. The updated document should be stored in the project repository and a link to the document included in the email.

12.4 Other Documents that May Need Updates

Subsets or copies of the information in the document may have been included in other modularization project documents. Examples of these documents include:

- Advance Planning Documents
- Module procurement documentation
- Module vendor contracts

Appendix A. Acronyms

This appendix defines the acronyms used in this deliverable.

Acronym	Description
AHCCCS	Arizona Health Care Cost Containment System
ADOA	Arizona Department of Administration
AFIS	Arizona Financial Information System
API	Application Programming Interface
AFIS	Arizona Financial System
ASO	Administrative Services Only
CHiR	Center for Health Information and Research
CMS	Centers for Medicare & Medicaid Services
CMMI	Capability Maturity Model Integration
COBOL	Common Business Oriented Language
COTS	Commercial-of-the-shelf
DAR	Decision Analysis and Resolution
DED	Deliverable Expectation Document
DDI	Design Development and Implementation
DGO	Data Governance Office
DHS	Department of Health Services
DW	Data Warehouse
EPMO	Enterprise Program/Project Management Office
ETS	Enterprise Technology Services
FTE	Full-Time Equivalent
GRC	Governance, Risk, and Compliance
HAP	Health Analytics Program
HIE	Health Information Exchange
HIT	Health Information Technology
ISD	Information Services Division
ITSM	IT Service Management
IT	Information Technology
MES	Medicaid Enterprise Systems
MITA	Medicaid Information Technology Architecture
MMIS	Medicaid Management Information System
MQD	Hawaii Med-QUEST Division
NASPO	National Association of State Procurement Officials
OCM	Organizational Change Management

Acronym	Description
ROI	Return On Investment
RFP	Request for Proposal
SaaS	Software as a Service
SFTP	Secure File Transfer Protocol
SIEM	Security Information and Event Management
SMC	Streamlined Modular Certification
SOC	Security Operations Center
SOW	Statement of Work /Scope of Work
SS-A	State Self-Assessment
SSR	State System Request (AHCCCS)
SQL	Structured Query Language
TC	Test Cases
UAT	User Acceptance Test

Appendix B. Deliverable Acceptance Crosswalk

Exhibit 54 documents the deliverable acceptance criteria (with a reference to the source where the criteria is found) and provides a deliverable reference or other description of how the acceptance criteria is met.

Exhibit 54: Deliverable Acceptance Criteria

#	Acceptance Criteria	Source (RFP or SOW)	Deliverable Reference or Other Description of How Criteria Is Met
1	The Contractor shall work with both Agencies to develop the future state vision for each, including combined and separate processes. The Contractor shall contribute experience and knowledge in Medicaid Enterprise System modernization and will be expected to conduct national research and provide expert advice on the future state of both enterprises.	RFP p. 14 of 52	Refer to Del 5.4.1, MES Comparative Analysis
2	The Contractor shall document the Agencies' goals and objectives, module architecture, options considered, and keep detailed minutes of all discussions.	RFP p. 14 of 52	Refer to Del 5.4.1, Roadmap Vision
3	The Contractor shall deliver a report detailing the goals of the Agencies, the module architecture of the future system, and how these decisions were reached which includes discussions, rationale, expert analysis and national research.	RFP p. 14 of 52	Refer to Del 5.4.1, Roadmap Detailed Plan
4	The Contractor shall develop the Modernization Roadmap which shall comprise an actionable plan for the modernization of the respective Agencies' processes.	RFP p. 14 of 52	Refer to Del 5.4.1, Roadmap Detailed Plan
5	The Roadmap shall include the order of actions to be executed, justifications for those actions, and the procurement schedule.	RFP p. 14 of 52	Refer to Del 5.4.1,Roadmap Detailed Plan
6	The Roadmap shall include analysis of existing skills requirements versus the availability of those skills and utilize this in the analysis of the order of actions and the justifications for technology changes.	RFP p. 14 of 52	Refer to Del 5.4.1, Enterprise Transformation
7	The Roadmap shall include recommendations to the Agencies for staff management and augmentation both during the	RFP p. 14 of 52	Refer to Del 5.4.1, Development Staffing Model

#	Acceptance Criteria	Source (RFP or SOW)	Deliverable Reference or Other Description of How Criteria Is Met
	change period and for long-term support.		
8	The Roadmap shall include a detailed discussion of each module including: • A thorough discussion of each new module, its functionality and the functionality it will replace or enhance • A scope of work for prospective vendors including all requirements and schedule • A plan to implement the new functionality and the associated cost, including the steps needed and resources consumed to discontinue the existing functionality • A justification for the new functionality, its cost, and its place in the overall modernization schedule including a formal Return on Investment (ROI). Topics to be considered include but are not limited to available resources, maintenance and operations costs, and impacts to users, partners and stakeholders	RFP p. 14 of 52	Refer to Del 5.4.1, Replace Legacy Infrastructure Domain Refer to Del 5.4.1, Roadmap Details Refer to future Del 5.4.2 Refer to Del 5.4.1,Cost Structure
9	The modernization Roadmap shall include a detailed explanation of the rationale behind the order of actions recommended to include considerations of cost, available budget, benefit, risk mitigation, CMS requirements, and other items of interest as they arise.	RFP p. 15 of 52	Refer to Del 5.4.1,Cost Structure Refer to future Del 5.4.2 Refer to Del 5.4.1,Risk Evaluation
10	The modernization Roadmap shall include a cost-benefit analysis for each module.	RFP p. 15 of 52	Refer to Del 5.4.1, Cost Benefit Analysis
11	The modernization Roadmap shall be consistent with the CMS Technical Reference Architecture (TRA).	RFP p. 15 of 52	Refer to Del 5.4.1, Compliance with CMS Requirements
12	The modernization Roadmap shall be consistent with the current Medicaid Information Technology Architecture (MITA).	RFP p. 15 of 52	Refer to Del 5.4.1, Compliance with CMS Requirements
13	The modernization Roadmap shall be consistent with the current and future guidance regarding the Office of National Coordinators' Trusted Exchange Framework and Common Agreement (TEFCA).	RFP p. 15 of 52	Refer to Del 5.4.1, Compliance with CMS Requirements

#	Acceptance Criteria	Source (RFP or SOW)	Deliverable Reference or Other Description of How Criteria Is Met
14	It is expected that the new MES architecture will make use of business rules engines to separate rules management from core programming. The Contractor shall be expected to define a rules management and implementation architecture that provides central control with central or distributed execution as necessary for efficient operations.	RFP p. 15 of 52	Refer to Del 5.4.1, Roadmap Details
15	The recommended architecture should provide support for failover redundancies and swapping of critical system components and critical data of all the system components.	RFP p. 15 of 52	Refer to Del 5.4.1, Roadmap Details
16	The recommended architecture should provide central control and monitoring of the environment including access and security events, errors, and edits. The editing capabilities shall enhance and improve the ability of the Agencies to measure and improve quality over time.	RFP p. 15 of 52	Refer to Del 5.4.1, Roadmap Details
17	The recommended architecture shall require components to be ready for deployment in various cloud computing environments, whether public, private, or hybrid.	RFP p. 15 of 52	Refer to Del 5.4.1, Implementation and Procurement Approach
18	The recommended architecture shall provide capacity estimates for storage requirements for all proposed environments.	RFP p. 15 of 52	Refer to Del 5.4.1, Cloud Strategy
19	The recommended architecture shall support a Service Oriented Architecture (SOA) and Enterprise Service Bus (ESB)-based system.	RFP p. 15 of 52	Refer to Del 5.4.1, Systems Integration
20	The recommended architecture shall leverage web services and adhere to key standards such as REST, SOAP, XML, UDDI, WSDL, BPEL, SAML, and other standards as detailed by the State.	RFP p. 15 of 52	Refer to Del 5.4.1, Systems Integration
21	The recommended architecture shall support processing of data in multiple formats such as XML, X12, HL7, NIEM and other industry standard formats.	RFP p. 15 of 52	Refer to Del 5.4.1, Systems Integration
22	The recommended architecture shall support rapid failover or	RFP p. 15 of 52	Refer to Del 5.4.1, Roadmap Details

#	Acceptance Criteria	Source (RFP or SOW)	Deliverable Reference or Other Description of How Criteria Is Met
	redeployment in the event of planned or unplanned interruptions.		
23	The recommended architecture shall support cloud-based technology where advantageous to maximize the efficient and effective utilization of technology.	RFP p. 15 of 52	Refer to Del 5.4.1, Cloud Platforms and other Hosting Decisions
24	The recommended architecture shall be web-based and require no installation on AHCCCS/MQD workstations.	RFP p. 15 of 52	Refer to Del 5.4.1, Cloud Strategy
25	Contractor shall recommend toolsets and/or outsourced solutions to manage communications, documents, and project workflows for the execution of the Roadmap and ongoing support, re-procurement, and continuing modernization of the systems and business practices.	RFP p. 15 of 52	Refer to Del 5.4.1,Maintaining the Roadmap

Appendix C. Deliverable Acceptance Form

The form, to be provided by AHCCCS, will follow the AHCCCS standard Deliverable Acceptance Process.