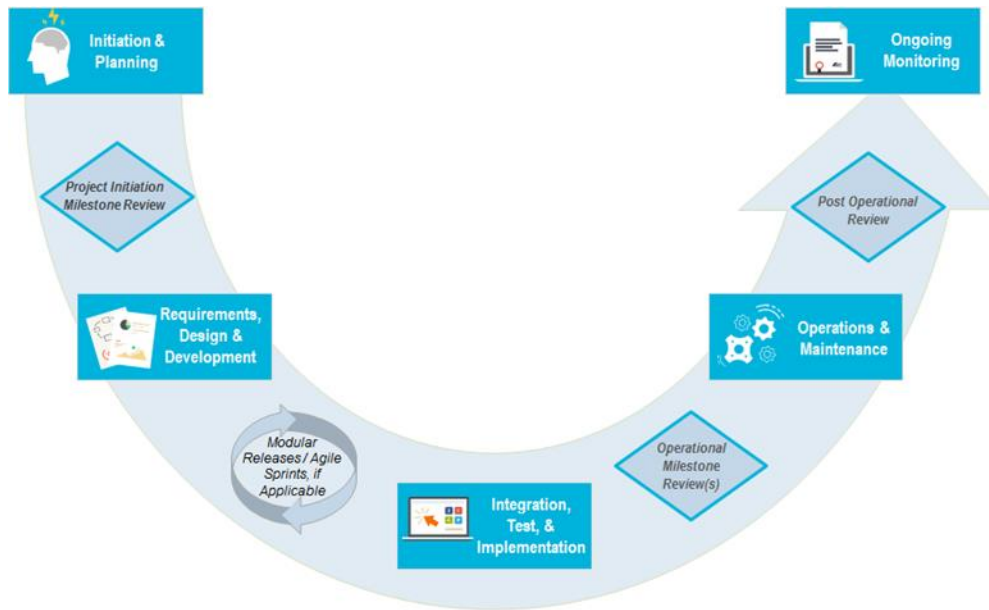


# MEDICAID ELIGIBILITY & ENROLLMENT LIFE CYCLE

August 2018



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# 1 E&E Toolkit Overview

## 1.1 Introduction

The Medicaid Eligibility and Enrollment (E&E) Toolkit (“toolkit”) was developed by the Centers for Medicare & Medicaid Services (CMS) Center for Medicaid & Children’s Health Insurance Program Services (CMCS) to provide technical assistance to states at every stage of developing and upgrading their Eligibility and Enrollment (E&E) systems. CMS continues to focus on the goal of helping states to be successful in their implementations and to reduce project delays and costs.

The purpose of the toolkit is to provide a consistent, detailed process to review the Medicaid E&E business functions and to help ensure that the new/updated system meets all federal requirements for E&E and satisfies the objectives described in the state’s Advance Planning Document (APD). The new Medicaid Eligibility and Enrollment Life Cycle (MEELC) works with the various approaches states may use in E&E system development (e.g. agile, waterfall, etc.).

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## 1.2 Toolkit Organization

The Medicaid E&E Toolkit (MEET) contains the following:

- A welcome document with toolkit release notes
- This Medicaid Eligibility and Enrollment Life Cycle guidance document
- A separate life cycle workflow diagram with At-a-Glance sheets
- Medicaid E&E Checklists
- Independent verification and validation (IV&V) standard Request for Proposal (RFP)/contract language
- An E&E IV&V Progress Report Template
- A Project Partnership Understanding (PPU) template
- A list of prototypical artifacts that define the information for each type of review
- A MITA self-assessment scorecard
- An E&E Concept of Operations (ConOps) template

Section 1 of this guidance document, E&E Toolkit Overview, introduces the E&E toolkit and how it addresses the diversity of development approaches taken by states, such as waterfall and agile methodologies, outsourcing of Medicaid services, and reuse of other states’ E&E components.

Section 2, Medicaid E&E Life Cycle Roles, explains the entities involved in the life cycle and their responsibilities. Section 3, Medicaid E&E Life Cycle, describes the process and milestone reviews by which CMS reviews a state’s E&E system for compliance with all federal regulations and standards. Section 4, describes when milestone reviews are conducted virtually or on-site. Section 5, Medicaid E&E Checklists, explains the CMS checklists used during milestone reviews. Section 6, Milestone Reviews,

explains the milestone review process and how to prepare. Section 7 of this document provides reference materials.

### 1.3 A Flexible Medicaid Eligibility and Enrollment Life Cycle

The MEELC contains four life cycle phases and three types of milestone reviews. Figure 1 depicts these at a high level. Section 3 provides a detailed life cycle process workflow and an in-depth description of each process activity.

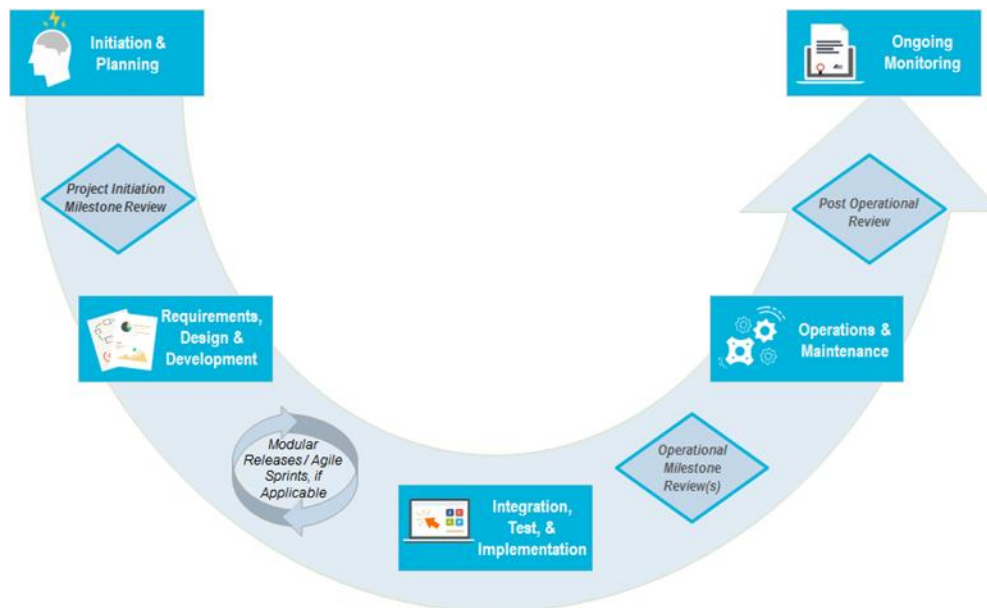


Figure 1. Medicaid E&E Life Cycle Phases and Milestone Reviews

The MEELC accommodates various approaches that states employ to update or upgrade their E&E systems. The flexibility is manifest in four characteristics:

- MEELC fits with a state’s own system development life cycle (SDLC), whether that SDLC is agile-based, waterfall-based, or a hybrid of the two (see Figure 2 for two state examples).
- MEELC accounts for states that choose to outsource some or all of their Medicaid functions.
- MEELC allows CMS and the state to schedule each review to fit within the state SDLC schedule (see Section 1.4).
- The MEELC is flexible to accommodate a state that contracts with a third party to perform Medicaid functions.

### 1.4 States’ System Development Life Cycles

The term SDLC refers to the phased approach the state and its contractors use in planning, creating, testing, deploying, and maintaining the E&E system. CMS designed its review process to fit with waterfall, agile, and hybrid system development methodologies.

CMS expects that the state will manage its own SDLC, including conducting internal SDLC gate reviews where “go / no go” decisions are made to move the E&E system through the state’s SDLC phases. CMS reviews serve a different purpose than SDLC gate reviews. SDLC gate reviews focus on development progress, while the CMS reviews monitor compliance with CMS E&E system requirements.

**To avoid confusion between the two types of reviews—state SDLC gate reviews and CMS reviews—this toolkit refers to CMS reviews as “milestone reviews.”**

The toolkit and the MEELC do not show state-level SDLC steps or gate reviews performed by the state and its IV&V contractor. Rather, the MEELC sits atop the state’s SDLC. The state’s project management plan needs to explain how the state’s SDLC and the E&E Life Cycle will fit together. Figure 2 shows two examples of how actual states’ SDLCs—one using a waterfall SDLC and one using agile—are compatible with the MEELC.

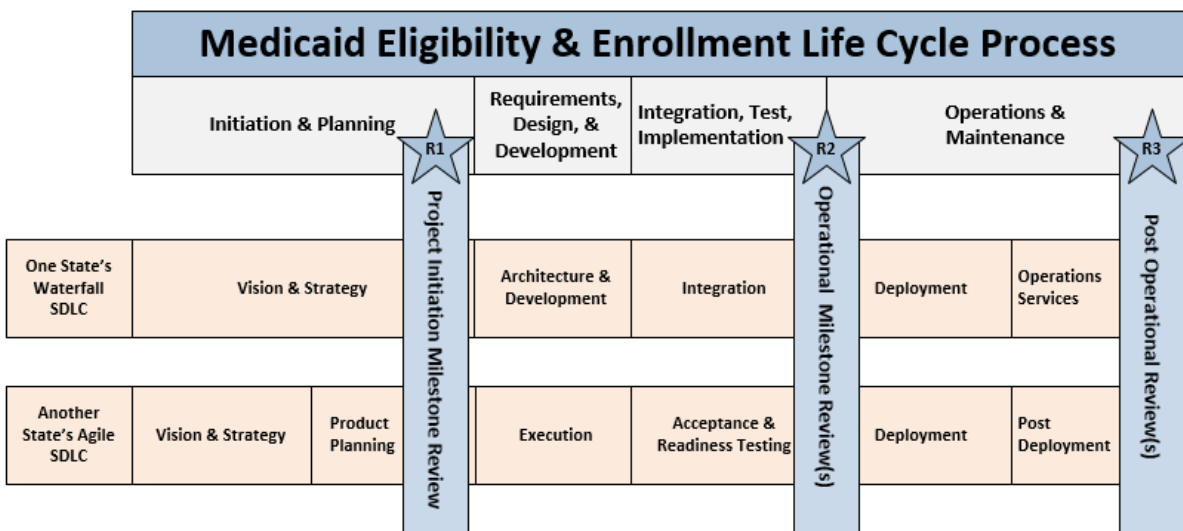


Figure 2. Examples of How MEELC Fits Atop States’ SDLCs

### 1.5 Recommendations for Establishing a State Project Management Office

CMS has found that states with well-established project management offices (PMOs) are more likely to produce successful Medicaid systems. CMS expects a state to demonstrate project management planning activities during the Planning and Initiation phase of the MEELC. The state manages the project plan, the budget, risk register, and risk plan; coordinates the work of various E&E contractors; and ensures that the state’s SDLC gate reviews are being conducted throughout the E&E project. A PMO can be helpful in serving as a central point for managing these activities. A PMO can also plan the logistics for E&E milestone reviews, such as setting up teleconference lines, developing agendas for review sessions, reserving conference rooms, and facilitating reviews.

### 1.6 How the Review Process Fits with the Advance Planning Document Process

The detailed APD process description is not within the scope of this E&E toolkit. This section, however, briefly describes the intersection of APDs and the MEELC.

An APD is a plan of action the state uses to request FFP for the costs of planning and implementing an E&E. Specific types of APDs are used during the MEELC:

- A planning advance planning document (PAPD), which is optional
- A planning advance planning document update (PAPDU)
- An implementation advance planning document (IAPD)
- An implementation advance planning document update (IAPDU)

The operational advance planning document (OAPD), used outside of the MEELC, is for systems that have successfully completed the review process and are in operation.

APD preparation falls within the Planning and Initiation phase of the life cycle. The state sends its completed IAPD to the CMS E&E analyst to begin the APD approval process. If needed, CMS has 60 days to send a letter with questions to the state. Once the state responds, the CMS E&E analyst has another 60 days to approve or disapprove the APD.

The MEELC does not disrupt the APD process, but has been designed to mesh with it (see Section 3, Figure 4 for the E&E life cycle workflow). Before the state submits its IAPD to the E&E analyst, the IV&V contractor reviews the state planning documents, evaluating them against the MEELC checklist criteria and critical success factors. The results are compiled into a progress report. The IV&V contractor sends a copy of this E&E IV&V Progress Report to the state, to its CMS E&E analyst, and to the CMS email address (MES@cms.hhs.gov), being sure to include “E&E” in the subject line. This gives the state time to remedy gaps or issues before submitting the IAPD. The CMS analyst may also find the report helpful when preparing questions for the state.

The Project Initiation Milestone Review is held within 30 days of the IAPD submission. The milestone review does not alter the usual APD approval process; the APD approval process is still followed, with CMS and the state exchanging official letters within regulatory timeframes. The Project Initiation Milestone Review provides a forum for the state and CMS to discuss the state’s plans, including the IAPD.

Table 1 describes each APD and where it fits within the MEELC.



Table 1. Types of APDs

APD Type	Name	Description	Overlap with Medicaid Eligibility & Enrollment Life Cycle
PAPD	Planning Advance Planning Document	Used to request federal funds for planning the E&E development.	At the beginning of the Planning and Initiation phase, before the state begins most planning. The PAPD is optional.
PAPDU	Planning Advance Planning Document Update	Used to update a previously approved PAPD.	If an update to a PAPD is necessary; needed PAPD updates usually occur during the Planning and Initiation phase. The CMS E&E analyst reviews and approves, as usual.
IAPD	Implementation Advance Planning Document	Used to request federal funds for developing and implementing the E&E system. It should contain the overall development plan, including any staggered development and a breakout of costs associated with each module or release by federal fiscal year.	In the Planning and Initiation phase, the IAPD is submitted to the CMS E&E analyst after the IV&V contractor has delivered its E&E IV&V Progress Report and before the Project Initiation Milestone Review. The IAPD is required.  Because funds are typically released on an annual basis, the CMS E&E analyst reviews the IAPD each year to ensure that the budget is still accurate before the next round of funds is released.
IAPDU	Implementation Advance Planning Document Update	Used to update a previously approved IAPD.	Updates to the IAPDU are most likely to occur during Design and Development or during the Integration, Test, and Implementation phase of the review process. IAPDUs are used during a long E&E development project in which requirements and system designs have evolved. The CMS E&E analyst must review and approve any IAPDU. If plans have changed significantly since the Project Initiation Milestone review (R1), the state may need to undergo another R1 review.
OAPD	Operations Advance Planning Document	Used to request funds for operating an approved E&E system.	The state submits OAPDs annually for systems that are already in operation. Therefore, OAPDs do not apply to the MEELC; they are used after the system has been approved.

## 1.7 Aligning to the MEELC

A state that has an active E&E project that began prior to the publication of MEET 1.0 (August 2017) should align the MEELC described in this toolkit with the state's project schedule. States should meet the legislative and regulatory requirements embodied in the Medicaid E&E system review checklists, regardless of when the E&E project began. This transition should be straightforward as the MEELC is an enhancement of the previous type of E&E reviews and the majority of checklist criteria are sourced from existing regulations.

To support the review process, states need to ensure that proper contracts, e.g. IV&V, are in place so that sufficient time and resources are available to conduct the review process. If a state is in the middle of an existing project, it will work with its E&E analyst to determine the best point at which to begin aligning with the MEELC. CMS works with states that are "in flight" with their E&E update/replacement efforts to ensure minimal disruption in project schedules and system development. The agreement between the state and CMS on transition to the MEELC is documented in the Project Partnership Understanding (PPU).

For systems that have been in operation, the state should work with the CMS E&E analyst to schedule a post operational review at an appropriate time, but not sooner than six months after implementation. For systems that are transitioning to the MEELC post implementation, the checklist set may be abbreviated. As with other E&E projects, the agreement between the state and CMS on the appropriate review procedures, checklists, criteria and evidence requirements will be documented in the PPU. Several factors influence the complexity and amount of adjustment necessary to comply with changes in the E&E review requirements. In the planning phase of the E&E Life Cycle, documents and artifacts are prepared to define the development approach and are used to estimate cost, schedule, and acquisition intentions. Most of this initial information is included in the PAPD and is updated and included in the IAPD. The system developers, state PMO, and IV&V contractors should review the MEELC process and artifacts to provide appropriate information for each milestone review.

Legislation and CMS policies are expected to evolve over time. When legislation or policies change, CMS updates the Medicaid E&E system review checklists and makes them available to states. A state PMO can meet with its CMS E&E analyst at any time to discuss concerns about the E&E system review process.

## 1.8 Critical Success Factors

The MEELC incorporates critical success factors (CSFs) into the process. There are two types of CSFs—programmatic and functional. Programmatic CSFs identify activities the state PMO will need to perform in managing its E&E project. They are found in the Programmatic Tab of the IV&V Progress Report Template, which the IV&V contractor fills out as part of the regular progress reports.

Functional CSFs identify system capabilities required to support Medicaid agency functions and are included in the E&E checklist. Compliance with functional CSFs is tracked by the IV&V contractor using the E&E checklist, which contains built-in mapping between the functional CSFs and checklist criteria. CMS uses this mapping to determine a state's compliance with functional CSFs.

## 2 Medicaid Eligibility and Enrollment Life Cycle Roles

### 2.1 CMS E&E Analyst

The E&E analyst serves as a resource for the state throughout the E&E life cycle and is the point of contact for the state regarding all matters concerning E&E system development projects.

At the beginning of the life cycle, the E&E analyst reviews and approves draft IV&V RFPs and PAPDs and consults with the state once the E&E ConOps is complete. As part of the CMS review team, the E&E analyst reviews the IV&V contractor's E&E IV&V Progress Report, completes the CMS tab of the E&E IV&V Progress Report, and participates in the milestone reviews. The CMS E&E analyst approves IAPDs and development contracts and stays abreast of the state's progress throughout the E&E project. A state may consult with its analyst at any time.

### 2.2 State

The state plans and manages the E&E project. The state ensures that the IV&V contractor has access to evidence needed to prepare its E&E IV&V Progress Report, tracks issues identified by the IV&V contractor, and manages them through resolution. The state plans E&E milestone reviews in coordination with the CMS E&E analyst.

### 2.3 IV&V Contractor

The IV&V contractor represents the interests of CMS, and as such, provides an independent and unbiased perspective on the progress of E&E development and the integrity and functionality of the system. CMS expects that the IV&V contractor will participate in state SDLC gate reviews and will inform CMS of significant risks or issues as the system is planned, developed, and deployed. **To ensure independence, the IV&V contractor must not report to the same agency or department that oversees the Medicaid program.** (For example, the IV&V contract may be owned by the state's auditor's office or the state's department of treasury.) The IV&V contractor must not be the contractor performing software testing.

According to 45 CFR § 95.626 (b) and (c),

- (b) Independent verification and validation efforts must be conducted by an entity that is independent from the state (unless the state receives an exception from the Department), and the entity selected must:
  - (1) Develop a project work plan. The plan must be provided directly to the Department at the same time it is given to the state.
  - (2) Review and make recommendations on both the management of the project, both state and vendor, and the technical aspects of the project. The IV&V provider must give the results of its analysis directly to the federal agencies that required the IV&V at the same time it reports to the state.
  - (3) Consult with all stakeholders and assess the user involvement and buy-in regarding system functionality and the system's ability to support program business needs.

- (4) Conduct an analysis of past project performance sufficient to identify and make recommendations for improvement.
  - (5) Provide risk management assessment and capacity planning services.
  - (6) Develop performance metrics which allow tracking project completion against milestones set by the State.
- (c) The acquisition document and contract for selecting the IV&V provider (or similar documents if IV&V services are provided by other state agencies) must include requirements regarding the experience and skills of the key personnel proposed for the IV&V analysis. The contract (or similar document if the IV&V services are provided by other state agencies) must specify by name the key personnel who actually will work on the project. The acquisition documents and contract for required IV&V services must be submitted to the Department for prior written approval.

CMS has developed standard IV&V language to be included in the state's IV&V RFP and contract (or contract modification, if a contract already exists) to ensure that the IV&V contract includes duties that CMS expects of the contractor. The standard language can be found in the toolkit appendices.

Throughout the life cycle, the IV&V contractor prepares the IV&V and programmatic tabs of the IV&V Progress Reports. For the report immediately preceding a milestone review, the contractor also completes the reviewer columns of the checklists. The IV&V contractor reviews project and technical progress against the state's baseline plans and against requirements in the Medicaid E&E system review checklists. The IV&V contractor delivers the E&E IV&V Progress Reports, including draft reports, to CMS and to the state simultaneously.

The IV&V contractor should help the state ensure it is meeting requirements as part of normal business operations by offering advice and participating in state-level gate reviews. However, when it is time to start preparing for a milestone review (about six to eight weeks before the milestone review), independence must be maintained. Therefore, the IV&V contractor does not assist the state in generating checklist answers and evidence, nor does it store its draft adjudications where the state can access them. The guiding principle is that the state and CMS receive IV&V comments at the same time.

IV&V contracts entered after February 17, 2018 must comply with all IV&V requirements, per State Medicaid Director Letter #16-010 and regulation. E&E analysts will verify with the states that the IV&V contracts are being modified where needed to meet the new requirements.

### 3 Medicaid Eligibility and Enrollment Life Cycle

The MEELC is composed of the following four phases:

- Initiation and Planning
- Requirements, Design, and Development
- Integration, Test, and Implementation
- Operations and Maintenance

Each phase has distinct activities that a state is expected to perform during the MEELC. This chapter provides detailed explanations of each activity shown in the workflow diagram (Figure 4). An interactive version of the MEELC is included in the toolkit as a separate document. That version also contains quick-reference At-a-Glance sheets for each activity.

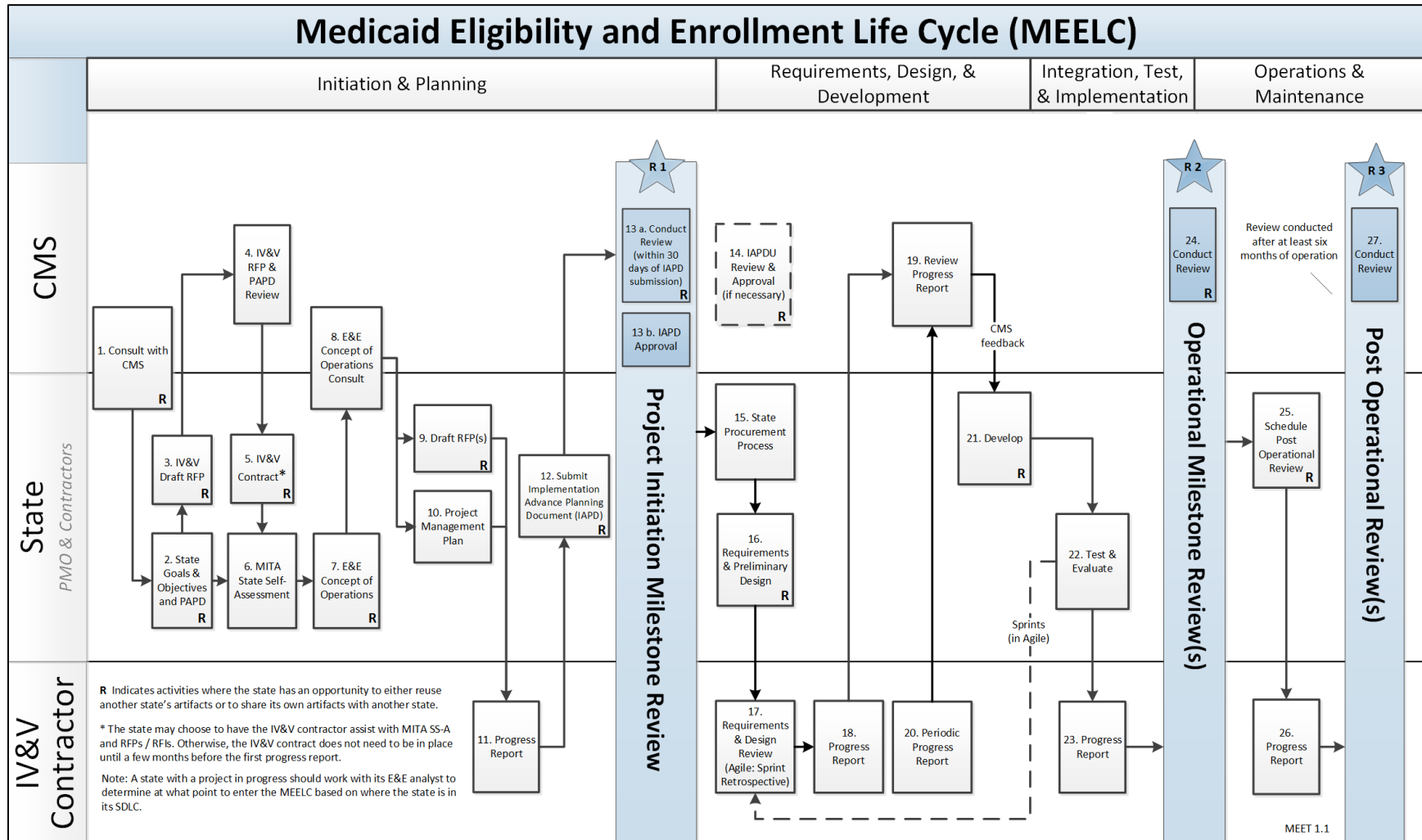


Figure 3. Medicaid Eligibility and Enrollment Life Cycle

### 3.1 Initiation and Planning

Figure 5 shows the activities in the Initiation and Planning phase.

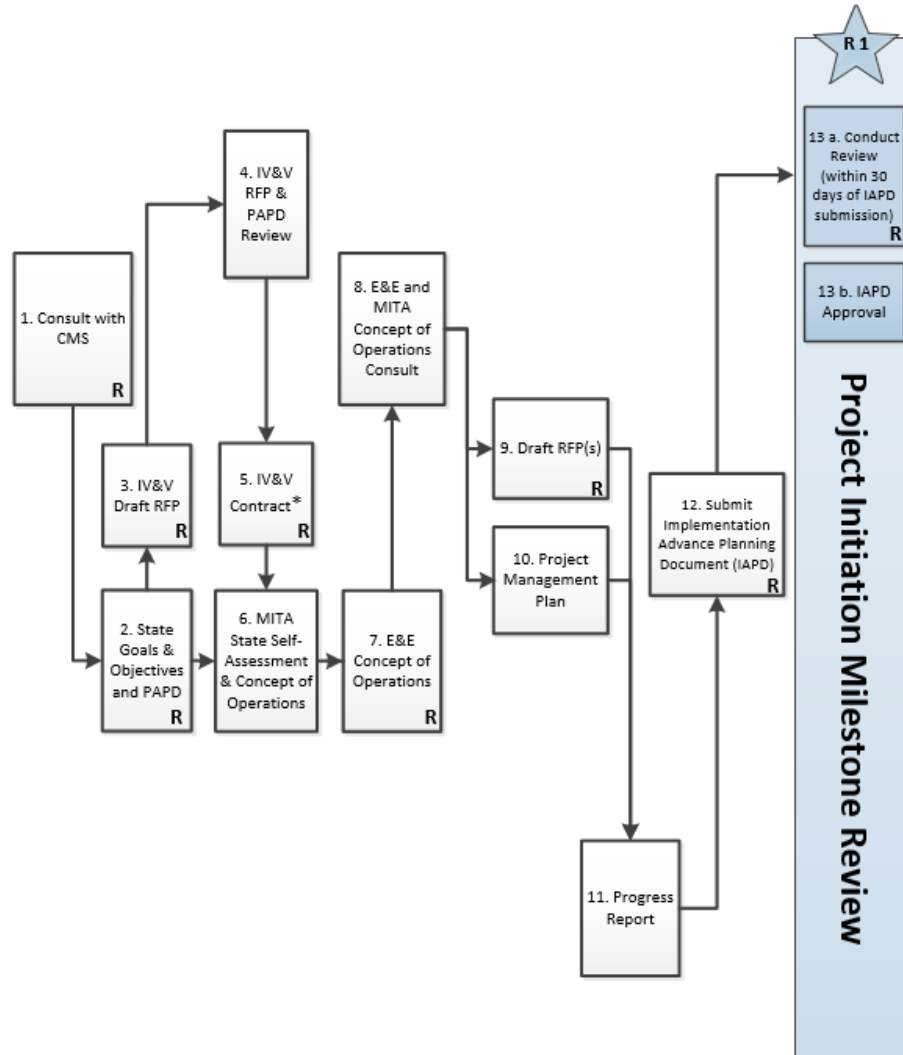


Figure 4. Initiation and Planning Phase

During the Initiation and Planning phase, the state performs the following actions:

- Consults with the CMS E&E analyst to explain its approach and asks questions about the life cycle
- Documents its goals and objectives for the new, upgraded, or replacement E&E system
- Submits a PAPD, if requesting planning funds from CMS
- Assesses itself against the Medicaid Information Technology Architecture (MITA) maturity model
- Contracts with an IV&V provider

- Prepares the E&E ConOps (a courtesy template is provided in toolkit appendices)
- Prepares an IAPD and draft RFP(s)
- Creates its project management plan, schedule, and risk register
- Cooperates with the IV&V contractor as the contractor prepares Part 1 of the E&E IV&V Progress Report and the checklists review prior to the first milestone review
- Cooperates with the CMS E&E analyst in its review and completion of the E&E IV&V Progress Report
- Undergoes the first milestone review
- Is notified of whether CMS has approved the IAPD and RFP(s)

3.1.1 Activity 1: Consult with CMS

Figure 6 shows the steps within the consult with CMS activity. This activity includes:

- Opportunities for CMS to understand the state’s approach to E&E enhancement / replacement.
- Opportunities for the state to ask questions about the MEELC at the onset of the project.
- Mutual agreement between the state and CMS on a preliminary “critical path” for the state’s progress through MEELC. This includes a high-level timeline for milestone reviews and frequency of E&E IV&V Progress Reports that will fit with the state’s project schedule.

In this activity, CMS and the state agree to a frequency for the E&E IV&V Progress Reports that the IV&V contractor will prepare throughout the project. E&E IV&V Progress Reports must be submitted at least quarterly, but the state and CMS may deem it necessary to have more frequent reports. E&E IV&V Progress Reports created in preparation for a milestone review may be considered one of the quarterly reports.

The decisions made between the state and CMS are documented in the PPU (see toolkit appendices for a template). It can be updated whenever the CMS and the state find it necessary to alter plans. The state should send new or updated PPUs and related correspondence to the CMS E&E analyst and the CMS email box (MES@cms.hhs.gov), being sure to include “E&E” in the subject line.

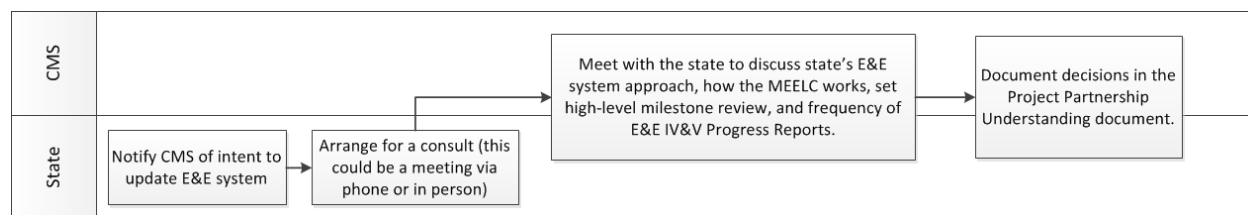


Figure 5. Activity 1: Consult with CMS

3.1.2 Activity 2: State Goals and Objectives and PAPD

Figure 7 shows the steps in Activity 2. The state agency considers its vision of the future and sets goals and objectives for the new or updated E&E system. The state should use MITA business areas to guide its planning. The state submits a PAPD to CMS if requesting FFP for E&E planning. States are not



required to submit a PAPD. The output of this activity is a documented set of state goals and objectives and a PAPD, if the state is using one. The state and CMS follow the established APD processes during this activity. The details of the APD process are beyond the scope of the MEELC.

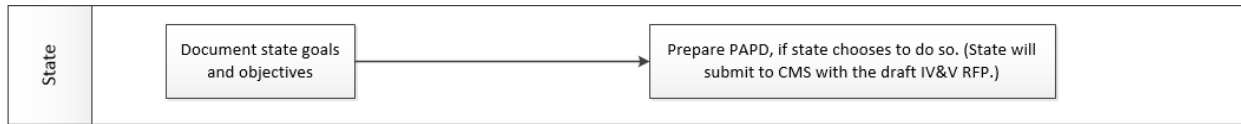


Figure 6. Activity 2: State Goals and Objectives & PAPD

### 3.1.3 Activity 3: IV&V Draft RFP

The state drafts an RFP for an IV&V contractor or drafts a modification to an existing contract, if necessary (Figure 8). The inputs to this activity are the state goals and objectives and the Medicaid E&E system review checklists; the output is a draft IV&V RFP.

CMS expects the state to include certain standard language in the RFP to ensure that the contractor:

- Is independent of the state agency that manages the E&E project
- Does not perform software testing
- Reviews project management and technical designs (including security, performance management, claims editing, etc.)
- Submits periodic E&E IV&V Progress Reports (including drafts) to CMS and the state simultaneously

Standard language for the state to copy into its IV&V draft RFP/contract can be found in Appendix C of the toolkit. The wording is to be used as written. The standard wording is not intended to provide exhaustive coverage of IV&V contract scope, but stipulates the minimum activities CMS requires during planning, design, development, and implementation through post-operational review. The state may add other duties. If the state is using an agile approach, the state is encouraged to add language requiring the IV&V contractor to participate in sprint burn-downs. To maintain true independence, the IV&V contractor must not perform software testing of the system, but should verify that those activities have been performed properly and with adequate test coverage.

The state and CMS may need to discuss the frequency of E&E IV&V Progress Reports prepared by the IV&V contractor. Reports should be frequent enough to give the CMS a solid understanding of E&E risks and progress, yet not so frequent as to add undue expense and burden on the state and on CMS. Reports must be submitted at least quarterly.

The standard RFP/contract language required by CMS does not cover activities that the state may require of the IV&V contractor during ongoing operations and maintenance (O&M). The IV&V role during O&M is outside the scope of this toolkit.

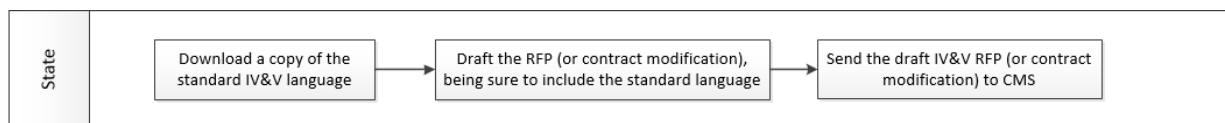


Figure 7. Activity 3: IV&V Draft RFP

3.1.4 Activity 4: IV&V RFP and PAPD Review

During Activity 4 (Figure 9), CMS will review the IV&V RFP to ensure that CMS’s interests are represented by the contractor and that the scope of IV&V review is comprehensive. If the state is submitting a PAPD, it will send the draft IV&V RFP with the PAPD to the CMS E&E analyst. The analyst will review both and provide feedback, if warranted.

CMS should check the frequency of E&E IV&V Progress Reports required in the RFP. E&E IV&V Progress Reports are needed before each milestone review and throughout the project, with a minimum of quarterly report submission. (A report prepared for a milestone review counts toward the quarterly report minimum.) E&E IV&V Progress Reports should be frequent enough to give CMS a solid understanding of the risks and progress as the E&E project proceeds, yet not so frequent as to add undue expense and burden on the state and on CMS. After the state makes any necessary corrections to the PAPD and the IV&V RFP, CMS will decide if the IV&V RFP and the PAPD have been approved.

The standard IV&V RFP language and checklists are inputs to this activity. The outputs are CMS decisions of approval or disapproval for the IV&V RFP and the PAPD.

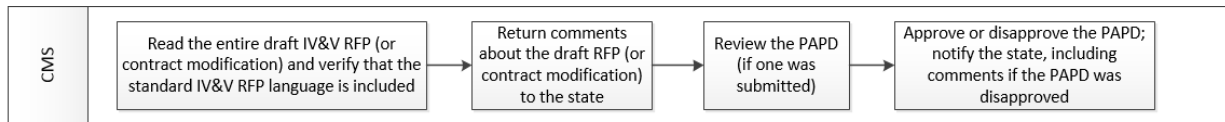


Figure 8. Activity 4: IV&V RFP and PAPD Review

3.1.5 Activity 5: IV&V Contract

The inputs for Activity 5 (Figure 10) are the state’s acquisition policies and procedures, the checklists, and the IV&V RFP/contract standard language in toolkit Appendix C. The output of Activity 5 is a contract submitted to the E&E analyst for approval.

The state follows its procurement processes for issuing an IV&V contract, ensuring that the contract includes the standard language. The state also must ensure that the contractor is qualified to perform reviews of business processes and IT service management processes and technical reviews of design, databases, applications, and security. The state sends the contract to the CMS E&E analyst for approval.

Any changes to the IV&V contract that alter the scope of the contract must be reviewed and approved by the CMS E&E analyst. Once the state has contracted with an IV&V contractor, the state should conduct a kickoff meeting with the IV&V contractor to explain the state’s goals, SDLC, release plans, and the checklist set it selected.

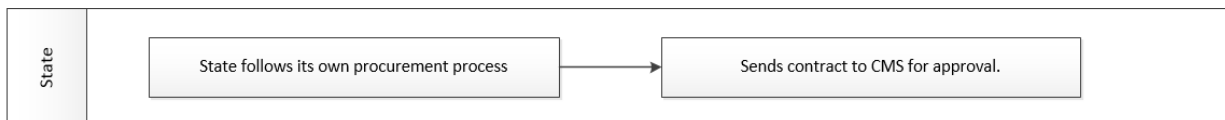


Figure 9. Activity 5: IV&V Contract

### 3.1.6 Activity 6: MITA State Self-Assessment

Per MITA 3.0, the state performs a MITA state self-assessment (MITA SS-A). This is Activity 6 (Figure 11) in the MEELC. The input for this activity is the latest MITA guidance, and the output is a set of MITA documents. States may have their IV&V contractor perform the SS-A. CMS encourages states to use the SS-A scorecard (see toolkit appendices) for submitting the SS-A to CMS. The state is encouraged to consider reusing examples from other states and to share its artifacts with other states. The state may find it easier and more cost-effective to tailor elements of another state's SS-A than to start from scratch in preparing its own SS-A. States that use documents from other states can show that use as evidence of compliance with the leverage condition.

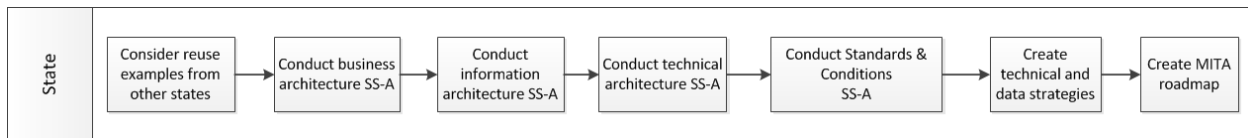


Figure 10. Activity 6: MITA State Self-Assessment

### 3.1.7 Activity 7: E&E Concept of Operations

The state writes a technical E&E ConOps in Activity 7 (Figure 12). The input for this activity is the state's technical concept for the E&E solution. The output is an E&E ConOps. The ConOps describes, at a high level, the technical solutions the state has selected and how those technical components will integrate internally and with external state and federal IT systems. The concept should explain how the state intends to apply the conditions of reuse and modularity. The state should be able to reuse much of the ConOps language for its IAPD. The state may choose to use the E&E ConOps template provided in Appendix E of the toolkit.

The state is encouraged to consider reusing examples from other states and to share its artifacts with other states. The state may find it easier and more cost-effective to tailor elements of another state's E&E ConOps than to start from scratch in preparing its ConOps. States that use documents from other states can show that use as evidence of compliance with the leverage condition.

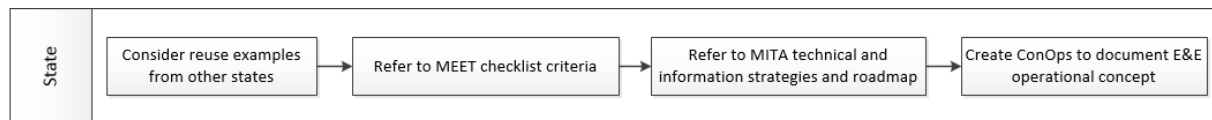


Figure 11. Activity 7: E&E Concept of Operations

### 3.1.8 Activity 8: E&E and MITA Concept of Operations Consult

After the E&E ConOps is developed, the state sends the document to the CMS E&E analyst for review and consult. The CMS E&E analyst discusses the high-level design with the state to understand the scope of the work (and later, the funding request for it). CMS also identifies issues with the high-level operational design that may pose system review/approval problems. Figure 13 shows the steps in this activity. The inputs to this activity are the state's E&E ConOps.

The E&E ConOps consult is informal and usually uncomplicated. The state and CMS E&E analyst decide how to conduct the consult—over the phone, through emails, in-person meeting, etc. The E&E analyst is welcome to use other CMS subject matter experts (SMEs) during the activity. The output is a revised E&E ConOps based on comments, if any, received by the E&E analyst.

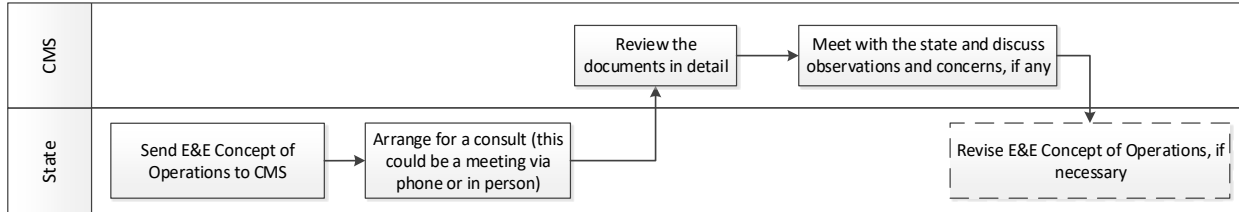


Figure 12. Activity 8: E&E Concept of Operations Consult

### 3.1.9 Activity 9: Draft Request for Proposal

The state often contracts with one or more vendors to design, develop, test, and install its E&E system. The state must ensure that E&E requirements in the RFP map to its APD and its MITA roadmap, and to the Medicaid E&E checklists. Figure 14 shows the steps in this activity. The inputs are the E&E checklists, the MITA documents, and the E&E ConOps; the output is one or more draft RFPs for system development.

CMS has learned through experience that states that include certain provisions in their RFPs and contracts are more successful in system deployments. Wherever enforceable under state law, a state should include the following provisions:

- Defined goals and objectives
- Environment requirements (business, architecture, data), including reuse, interoperability, and modularity requirements
- Conditions tying compensation to meeting or exceeding defined goals (e.g., service level agreements)
- Reservation of right for the state to approve and/or remove subcontractors
- Requirement that contractors cooperate with other contractors (including the IV&V contractor) and facilitate progress

The state should also include language in the RFP and contract that requires contractors to abide by all of the state’s security and privacy policies.

According to 45 CFR Part 92, procurement that exceeds a certain threshold dollar amount needs to be approved by CMS. For E&E, the draft RFP(s) are reviewed by the CMS E&E analyst.

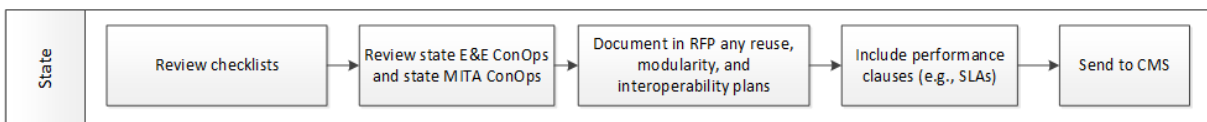


Figure 13. Activity 9: Draft Request for Proposal

### 3.1.10 Activity 10: Project Management Plan

Figure 15 shows the steps in Activity 10. The inputs to the project management plan are the MITA and E&E documentation developed to this point, and the outputs are a high-level milestone schedule, project management plan including budget, risk management plan, risk register, and SDLC.

If the state has not already established a PMO, it could do so during this activity. The state performs the following actions:

- Writes or updates the project management plan
- Develops or updates the budget
- Develops the project schedule
- Documents the SDLC it will use to develop the E&E and how the MEELC fits atop that SDLC (see Figure 2)
- Creates a risk register (waterfall)/exception plan (agile)
- Ensures that all necessary artifacts are ready for the Project Initiation Milestone Review (see toolkit appendices for the list of artifacts)

The first version of the project schedule may show only high-level milestones broken out by quarter because, often, a project schedule is detailed only after a system's specific requirements are determined. The schedule can contain more detail after the system requirements/user stories are defined.

The state is encouraged (not required) to consider examples of other states' documents. The state may find it easier and more cost-effective to tailor elements of another state's documents than to start from scratch. States that reuse documents from other states can show that use as evidence of compliance with the leverage condition.



*Figure 14. Activity 10: Project Management Plan*

### 3.1.11 Activity 11: Progress Report

In preparation for the Project Initiation Milestone Review, the IV&V contractor prepares an E&E IV&V Progress Report (Figure 16). The state fills out its portion of the six checklists: E&E checklist, the Technical Architecture (3), Information Architecture, and Standards and Conditions checklists. When the state completes the sections of its Medicaid E&E system review checklists, it stores the checklists and supporting evidence in its own repository.

The IV&V contractor then completes the reviewer sections of the checklists and completes the IV&V tabs of the E&E IV&V Progress Report Template.<sup>1</sup> The completed checklists are appended to the report.

The IV&V contractor then submits the reports and checklists simultaneously to the state, to the CMS E&E analyst, and to the CMS email address (MES@cms.hhs.gov), being sure to include “E&E” in the subject line, no later than two weeks prior to the milestone review. When the state receives the checklists from the IV&V contractor, it should save the IV&V-completed checklists in the state repository as new versions of the checklists. (The checklists should continue to be updated as new versions with subsequent progress reports.)

The IV&V contractor should not send drafts of the report to the state unless it is also sending the same draft simultaneously to CMS. CMS uploads the completed checklists to its tracking database. The state may respond to issues identified in the E&E IV&V Progress Report. CMS can insert comments in the CMS section of the report. CMS will pay particular attention to how the state is including security and privacy into the system.

When preparing the E&E IV&V Progress Report required before the Project Initiation Milestone Review, the IV&V contractor evaluates the following state documents for thoroughness, accuracy, and consistency:

- State goals and objectives
- MITA self-assessment / MITA roadmap
- E&E ConOps
- Draft RFP(s)
- Privacy impact analysis
- State security policies and security plan
- Project management plan artifacts (budget, schedule, risk register/exception plan)

The Progress Report details what, if any, issues the state should address before the CMS conducts the Project Initiation Milestone Review. The inputs to this activity are the checklists; supporting evidence and documents, including project management artifacts; and the E&E IV&V Progress Report Template. The outputs are an E&E IV&V Progress Report and completed checklists, which are appended to the report. CMS reviews the E&E IV&V Progress Report and the checklists, and completes the CMS section of the E&E IV&V Progress Report after the milestone review.

If the contractor and state have identified particularly good examples of final versions of project documents, the state should consider sharing them with other states. Such documents need to be owned by the state and not contain sensitive or proprietary information. States that contribute documents to other states for reuse can show that contribution as evidence of compliance with the leverage condition.

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<sup>1</sup> It is recommended that the contractor use the E&E IV&V Progress Report Template provided in Appendix D, as it contains all of the information needed for this report. If the state or IV&V contractor desires to use a different format, it should discuss with CMS E&E analyst to ensure proper content and structure of the report.

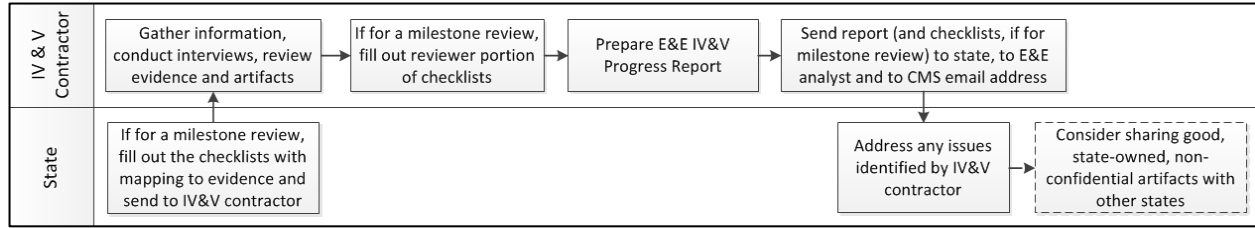


Figure 15. Activity 11: Progress Report

3.1.12 Activity 12: Submit Implementation Advance Planning Document

Activity 12 (Figure 17) represents IAPD submission. The inputs for IAPD submission are all of the state’s planning documents prepared to this point. The state follows the APD process specified in 45 CFR, Part 95.

The IAPD includes the following:

- Statement of need and objectives
- Requirements and alternatives analysis, including reuse consideration
- Project management plan
- Proposed project budget and cost distribution
- Statement of security/interface and disaster recovery requirements
- Assurances
- Compliance with standards and conditions for Medicaid IT
- MITA SS-A, as an attachment

The state sends the IAPD to the CMS E&E analyst; the IAPD is the output of this activity. Submission of the IAPD starts the APD approval process, which can last as long as 120 days, but is usually concluded in much less time. The E&E analyst evaluates the business case presented in the IAPD, formally submits questions to the state, considers the answers received from the state, and issues a decision on approval.

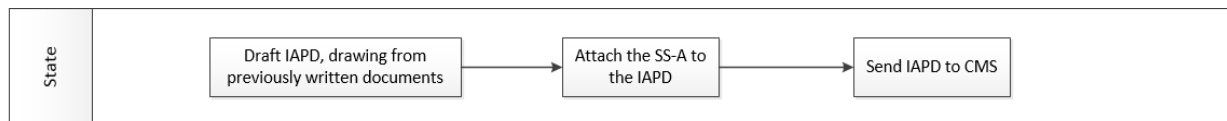


Figure 16. Activity 12: Submit IAPD

3.1.13 Activities 13 a and b: Project Initiation Milestone Review and IAPD Approval

The activity after the state addresses any issues identified in the E&E IV&V Progress Report is the Project Initiation Milestone Review (Figure 18). The Project Initiation Milestone Review ensures that the state has documented goals and objectives, a solid MITA SS-A and roadmap, and a technical ConOps. In this review, CMS evaluates the state’s business case, project management plan, and RFPs.

This first milestone review must be conducted within 30 days of the IAPD submission. If a state is planning a release, it will send that release through a Project Initiation Milestone Review. If enough time has passed that the original plans are out of date or plans have altered considerably (e.g., there is a contract protest, scope is changed, additional releases are planned), CMS may determine that another review is warranted.

The entry criteria for the Project Initiation Milestone Review are that the state has made artifacts and evidence available to CMS and that the IV&V contractor has sent the progress report and completed checklists to the state, to the CMS E&E analyst, and to the CMS email box (MES@cms.hhs.gov) with “E&E” in the subject line, no later than two weeks prior to the milestone review. See Appendix H\_Milestone Review Preparation Guide for details about the timeline and logistics of milestone reviews.

The inputs to the Project Initiation Milestone Review are the E&E IV&V Progress Report, the IAPD, the draft RFP, and all other planning documents. (See the toolkit appendices for a list of artifacts for each milestone review.) CMS may choose to send test cases or scenarios to the state to be included as part of the milestone review. In such instances, the state would be expected to show how the module or SMA will process the test cases or scenarios. If CMS makes test cases part of the review, the E&E analyst will provide further guidance to the state.

The outputs are an IAPD decision from CMS, an RFP decision from CMS, and the CMS portion of the E&E IV&V Progress Report, including comments, if any, about the state’s status.

Granting CMS direct access to the state’s evidence repository is the preferred method of supplying evidence. If that is not possible, the state may make other secure arrangements with CMS, such as using encrypted File Transfer Protocol (FTP). It is critical to follow all Health Insurance Portability and Accountability Act (HIPAA) regulations are followed when submitting evidence that contains personal health information (PHI) and personally identifiable information (PII). Using an unencrypted thumb drive or other forms of physical storage through shipping services, for example, would not be acceptable. If a state has questions, it should contact its E&E analyst.

The Project Initiation Milestone Review consists of CMS reviewing the progress report and checklists. CMS will respond with comments in the CMS section of the report and send copies of the progress report to the state and to the IV&V contractor. The CMS review team may or may not include comments in the checklists. This concludes the milestone review; no site visit is usually required.

However, there may be cases where CMS considers a more formal review to be appropriate and may schedule a virtual or an on-site visit for the Project Initiation Milestone Review (R1). In such cases, the E&E analyst will notify the state if this is necessary and will work with the state to schedule the review and arrange logistics.

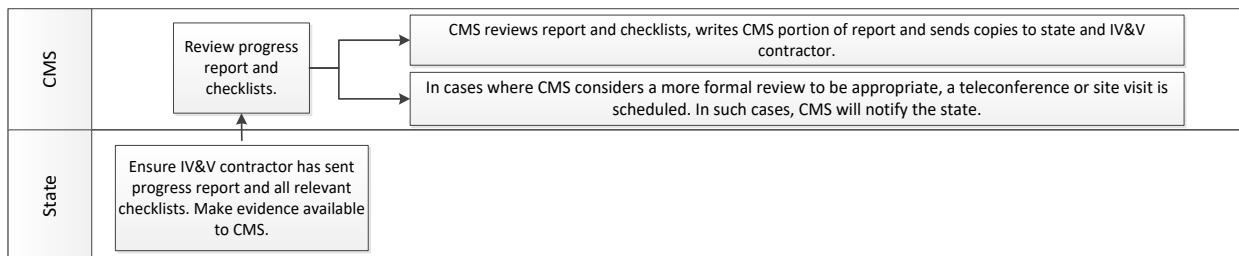




Figure 17. Activity 13a: Project Initiation Milestone Review

From the time the state submits its IAPD (Activity 12) through IAPD approval (Activity 13b), the state and CMS E&E analyst follow the APD process (Figure 19). (A full description of the APD process is outside the scope of this toolkit.) IAPD approval is shown in the MEELC to illustrate how the APD process is conducted concurrently with the MEELC milestone review process. The state may proceed with the other MEELC workflow activities so long as the IAPD is approved. It does not need to wait until CMS updates the E&E IV&V Progress Report.

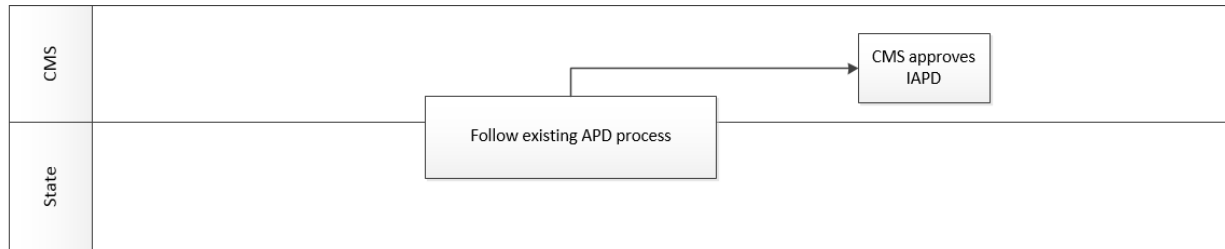
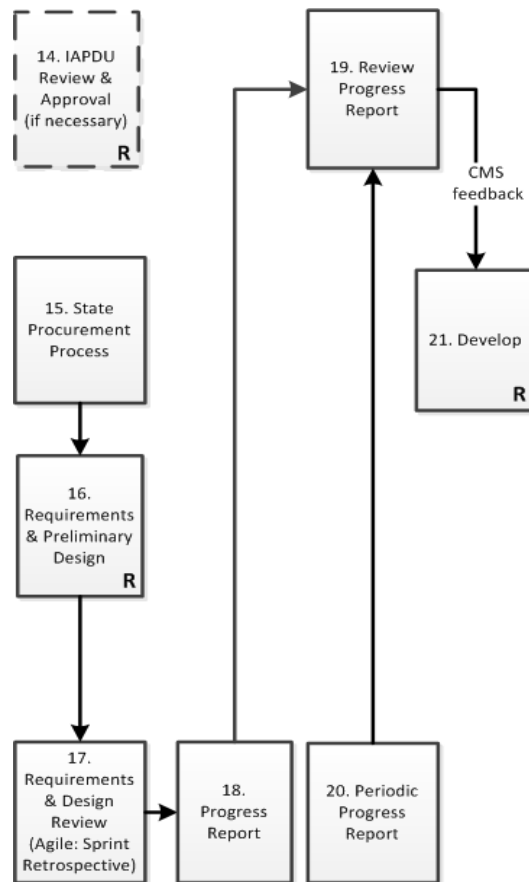


Figure 19. Activity 13b: IAPD Approval

### 3.2 Requirements, Design, and Development

Figure 20 shows the activities in the Requirements, Design, and Development phase.



*Figure 20. Requirements, Design, and Development Phase*

During the Requirements, Design, and Development phase, the state performs the following actions:

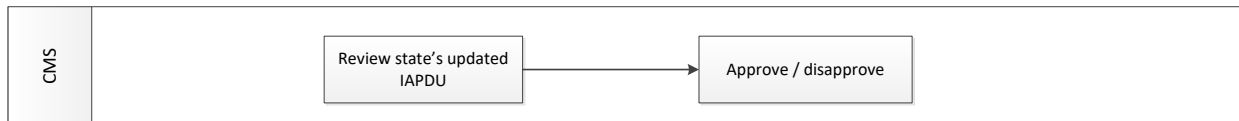
- Documents system requirements
- Designs the system
- Undergoes an IV&V requirements and design review
- Documents test/validation plans
- Cooperates with the IV&V contractor as the periodic E&E IV&V Progress Report is prepared
- Develops/updates/integrates the E&E system

States may employ a waterfall, agile, or hybrid development methodology. The IV&V contractor reviews the requirements and the designs and sends periodic reports to the state, to the CMS E&E analyst, the CMS email box (MES@cms.hhs.gov), being sure to include “E&E” in the subject line.

3.2.1 Activity 14: IAPDU Review and Approval (if Necessary)

A state that has already cleared the Project Initiation Milestone Review and needs to update a previously approved IAPD does not need to go through another Project Initiation Milestone Review. The state would update its IAPD along with any related RFPs, and send them to the CMS E&E analyst to review and approve (Figure 21).

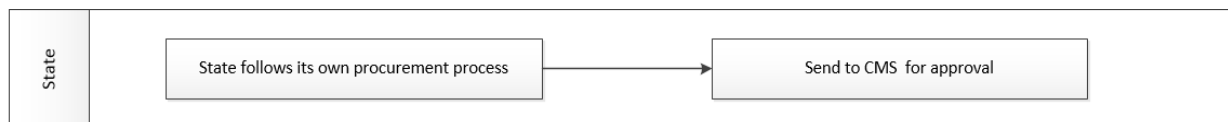
This activity also covers the case where the CMS E&E analyst plans to release funds annually and needs to review a previously approved IAPD. In such a routine, annual IAPD review by the CMS E&E analyst, the state will not undergo another Project Initiation Milestone Review. The input to this activity is the IAPDU (or a previously approved IAPD). The output is a decision from CMS regarding approval and a release of funds.



*Figure 21. Activity 14: IAPDU Review and Approval (if Necessary)*

3.2.2 Activity 15: State Procurement Process

The state follows its own procurement processes to enter into contracts with developers, testers, system integrator, etc. The state sends the contracts to the CMS E&E analyst for approval (Figure 22). The inputs are the state’s procurement policies and procedures and the RFP. The output is a contract(s) submitted to the CMS E&E analyst for approval.



*Figure 22. Activity 15: State Procurement Process*

### 3.2.3 Activity 16: Requirements and Preliminary Design

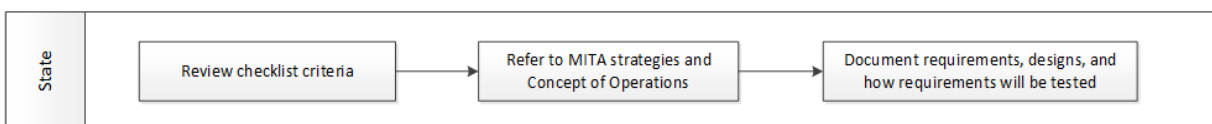
If the state is developing a system (as opposed to purchasing a COTS product or outsourcing services), the state documents the system requirements, system design, and test plans (Figure 23). If the state is purchasing a COTS product, the state must produce an interface design document, including a description of Application Programming Interfaces. The state also must develop a test plan to verify that the system meets all CMS requirements and will operate seamlessly within the E&E (e.g., host identity management, data updates). The toolkit Appendix B contains a list of artifacts for each milestone review.

In an agile development, requirements may take the form of epics and user stories on note cards or in a software suite. Each user story is mapped to a test case for validating the code produced during sprints. Use case testing is developed in parallel with product development. Integration testing is crucial for E&E success and must be included in test plans.

In traditional waterfall development, mapping between requirements and test cases is called a requirements traceability matrix (RTM). Agile approaches may not have a formal RTM, but regardless of the methodology used, mapping must contain requirements traceability and must detail requirements for the following categories:

- Business
- Data
- Capacity/performance
- Security/privacy/HIPAA compliance
- Usability
- Maintainability
- Interface
- 508 compliance

The inputs for this activity are the MITA technical strategies, MITA documents, E&E ConOps, and the checklists, including CSFs. The output is a set of technical designs and requirements/use cases or user stories.



*Figure 23. Activity 16: Requirements and Preliminary Design*

All applicable criteria in the E&E checklists must be covered in the requirements. States are encouraged to include users in the requirements gathering and preliminary design activities to ensure state specific

requirements are also covered. The requirements and design typically change over the course of a large development and must be kept current.

*CMS has seen the importance of states carefully managing requirements. In one large system implementation, the state lacked a unified, approved version of requirements. Different requirement versions were used for development of software, test cases, stakeholder expectations, and test data creation, and the system failed as a result.*

#### 3.2.4 Activity 17: Requirements and Design Review(s)/Sprint Retrospective

#### 3.2.5 Activity 18: Progress Report

#### 3.2.6 Activity 19: Review Progress Report

#### 3.2.7 Activity 20: Periodic Progress Report

Activities 17, 18, 19, and 20 are covered together because they are closely related. Regarding Activity 17, the success of the E&E project depends on the inclusion of all applicable federal and state Medicaid systems requirements in the technical designs. CMS does not perform a formal milestone review of the detailed requirements and designs because states develop detailed designs at different times and in different ways, depending on their SDLC. CMS does require that the IV&V contractor use the E&E checklists to review the requirements and design as they are developed. The IV&V contractor also needs to report to CMS any risks and gaps, using the periodic E&E IV&V Progress Reports. The inputs for Activity 17 (Figure 24) are the ConOps documents and preliminary designs, requirements, and test plans. The output of Activities 17 and 18, together, is an E&E IV&V Progress Report.

The IV&V contractor prepares Progress Reports at least quarterly as indicated in Activities 18 and 20 (Figure 25) throughout the MEELC on a schedule agreed on by the state and CMS during Activity 1 Consult with CMS (Figure 6). The IV&V contractor appends the adjudicated checklists in the report that immediately precedes a milestone review.

Special occurrences of the E&E IV&V Progress Reports can count toward the minimum of quarterly reports. Even if a state is using multiple development vendors, the IV&V contractor only prepares a single report that covers all modules undergoing planning, development, test, or implementation.

The E&E IV&V Progress Reports are prepared immediately before a milestone review (Activities 11, 23, and 26) and after the preliminary requirements and designs have been created (Activity 18). The report generated after preliminary design development gives CMS a chance to review the designs and notify the state of any issues early in development, when it is least costly and less time-consuming for the state to correct them.

The state should schedule the E&E IV&V Progress Report after the preliminary requirements and design to fit its SDLC phase gates. For example, a state following a waterfall development may have a single

design phase gate. That would be the most appropriate time for the IV&V contractor to perform its requirements and design review.

A state employing an agile approach will not likely have a design gate review. It may, instead, perform a series of sprint retrospectives, where the backlog is prioritized and designs are modified at the conclusion of each sprint. In such a case, the IV&V contractor may perform a requirements and design review at each sprint retrospective, during every other sprint retrospective, or at some other pre-agreed schedule. The IV&V contractor must thoroughly review the requirements and design at least once.

For the periodic E&E IV&V Progress Reports, the IV&V contractor will review the following:

- System design document or, if the state is purchasing a COTS system, an interface design document
- Information system security assessment
- Test plan
- Test report/validated product reports
- Interface control document
- Database design
- Data conversion/data management plan
- Implementation plan
- Contingency/recovery plan
- Data use/exchange interconnection security agreement
- Project progress against plans
- MITA progress

For progress reports prepared in advance of a milestone review, the state fills out its portion of the checklists for the milestone review. All six checklists: E&E, Technical Architecture (3), Interface Architecture, and Standards and Conditions, should be used. When the state completes its sections of its E&E checklists, it stores the checklists and supporting evidence in its own repository.

The IV&V contractor then completes the reviewer sections of the checklists and completes the IV&V and Programmatic tabs of the E&E IV&V Progress Report Template.<sup>2</sup> The IV&V contractor submits the reports and checklists simultaneously to the state, to the CMS E&E analyst, and to the CMS email address (MES@cms.hhs.gov), being sure to include “E&E” in the subject line. When the state receives the checklists from the IV&V contractor, it should save the IV&V-completed checklists in the state repository as a new version of the checklists. (The checklists should continue to be updated as new versions with subsequent progress reports.)

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<sup>2</sup> It is recommended that the contractor use the E&E IV&V Progress Report Template provided in Appendix D, as it contains all of the information needed for this report. If the state or IV&V contractor desires to use a different format, the state should discuss with its E&E analyst to ensure proper content and structure of the report.

The IV&V contractor is not to send drafts of the report to the state unless it is also sending the same draft simultaneously to CMS. The state may respond to issues identified in the E&E IV&V Progress Report. CMS will pay particular attention to how the state is including security and privacy in the system.

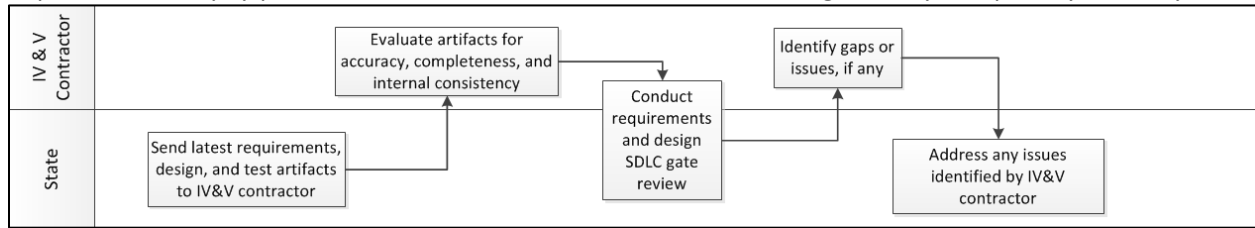


Figure 24. Activity 17: Requirements and Design Review

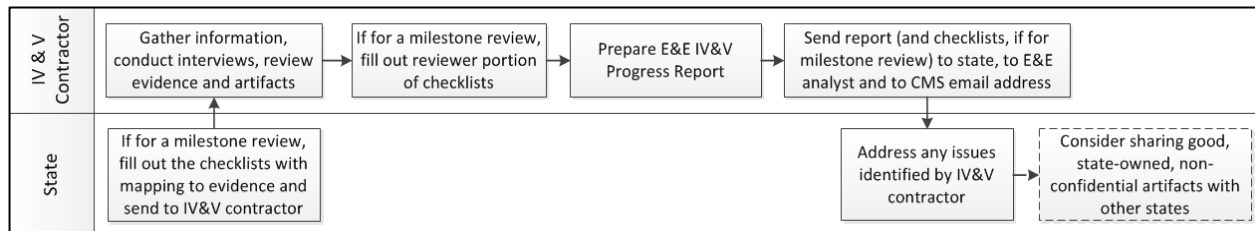


Figure 25. Activities 18 and 20: Progress Report

Once CMS reviews the E&E IV&V Progress Report, CMS may make suggestions in the CMS section of the report. The state should incorporate CMS suggestions into project plans, as appropriate. If CMS has made comments, it sends the final version of the E&E IV&V Progress Report to the state and the IV&V contractor and the state stores it in the state’s repository. Figure 26 shows the steps of Activity 19. The input is the E&E IV&V Progress Report; the output is comments in the CMS section of the report, if CMS has comments.

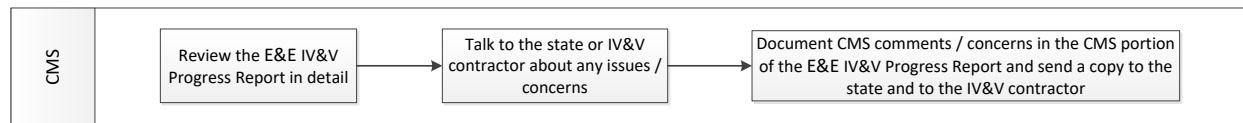


Figure 26. Activity 19: Review Progress Report

### 3.2.8 Activity 21: Develop

The state and its contractors develop the E&E system according to their own SDLC processes.

## 3.3 Integration, Test, and Implementation

Figure 27 shows the activities in the Integration, Test, and Implementation phase.

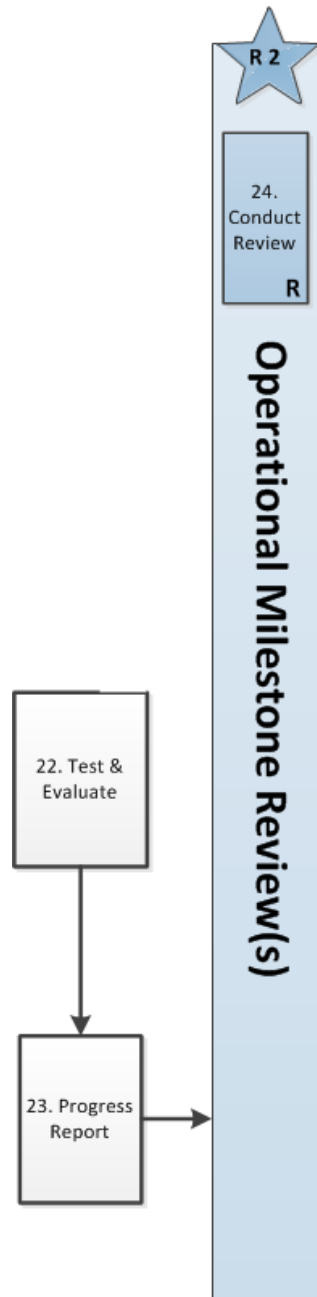


Figure 27. Integration, Test, and Implementation Phase

During the Integration, Test, and Implementation phase, the state performs the following actions:

- Integrates E&E system with MMIS
- Tests the integrated system
- Cooperates with IV&V contractor as periodic E&E IV&V Progress Reports are prepared
- Undergoes Operational Milestone Review(s)
- Deploys the system into production

3.3.1 Activity 22: Test and Evaluate

The state and its contractors employ their own testing procedures to evaluate the functionality of the E&E system against documented requirements or user stories (Figure 28). Testing includes generating reports of how documented requirements or user stories were tested, along with the test results or evidence of product acceptance by users. For agile approaches, use case testing is developed in parallel with product development. If the state is using an automated test suite, the entire set of test cases could be run on the production environment before the Operational Milestone Review(s). CMS encourages the use of automated testing and continuous integration, when possible.

The inputs for Activity 22 are working code and test plans/test cases. The output is documented test results or, in the case of agile development, product acceptance by the customer.



Figure 28. Activity 22: Test and Evaluate

3.3.2 Activity 23: Progress Report

During this activity, the IV&V contractor reviews the working system and artifacts for the Operational Milestone Review (see the list of artifacts in the toolkit appendices) and evaluates whether or not the system is ready for the Operational Milestone Review. The state completes the state section of the checklists and stores the checklists and supporting evidence in its own repository. The IV&V contractor then submits the reports and checklists simultaneously to the state, to the CMS E&E analyst, and to the CMS email address (MES@cms.hhs.gov), being sure to include “E&E” in the subject line, no later than two weeks prior to the milestone review. The state should save the IV&V-completed checklists in its repository as a new version of the checklists. (The checklists should continue to be updated as new versions with subsequent progress reports.)

If the IV&V contractor sends drafts of the report to the state, it must also send the same drafts simultaneously to the CMS E&E analyst. The Progress Report details what, if any, issues the state should address before Operational Milestone Review. As with all IV&V Progress Reports, the state may respond, and those responses will be appended to the report.

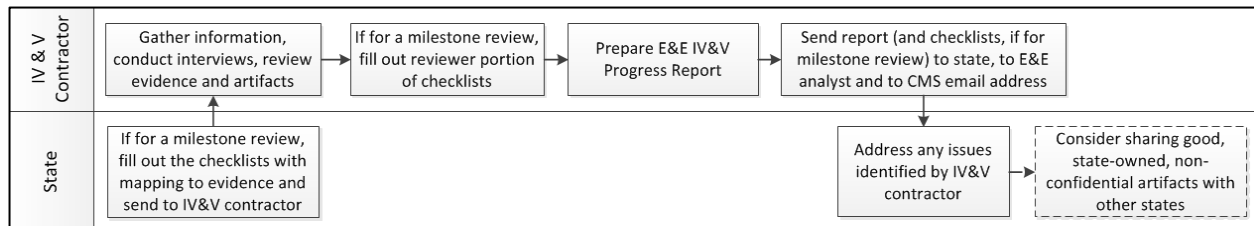


Figure 29. Activity 23: Progress Report

3.3.3 Activity 24: Operational Milestone Review

The entry criteria to this activity are 1) the state has an E&E system ready for deployment, 2) no later than two weeks prior to the milestone review the IV&V contractor has submitted the E&E IV&V Progress



Report and checklists to the CMS E&E analyst and to the CMS email box (MES@cms.hhs.gov), having included “E&E” in the subject line, and 3) the state has made evidence available to CMS.

Granting access to the state’s repository is the preferred method of supplying evidence to CMS. If that is not possible, the state may make other secure arrangements with CMS, such as using encrypted FTP. It is critical to follow all HIPAA regulations when submitting evidence that contains PHI and PII. Using an unencrypted thumb drive or other forms of physical storage through shipping services, for example, would not be acceptable. If a state has questions, it should contact the CMS E&E analyst for further instructions.

During this review, CMS validates the functionality and security of the E&E system before deployment. See Appendix H\_Milestone Review Preparation Guide for details about the timeline and logistics of milestone reviews. CMS will review the progress report and checklists, respond with comments in the CMS section of the report, and send copies of the progress report to the state and to the IV&V contractor. The CMS review team may or may not include comments in the checklists.

CMS may choose to send test cases or scenarios to the state to be included as part of the milestone review. In such instances, the state would be expected to show how the module or SMA processed the test cases or scenarios. If CMS makes test cases part of the review, the E&E analyst will provide further guidance to the state.

CMS decides on a case-by-case basis whether the E&E analyst review of the progress report will constitute the Operational Milestone Review or whether there is a need to have a virtual or an on-site review. The CMS E&E analyst will notify the state as to how the milestone review will be conducted and will work with the state to schedule the review and arrange logistics.

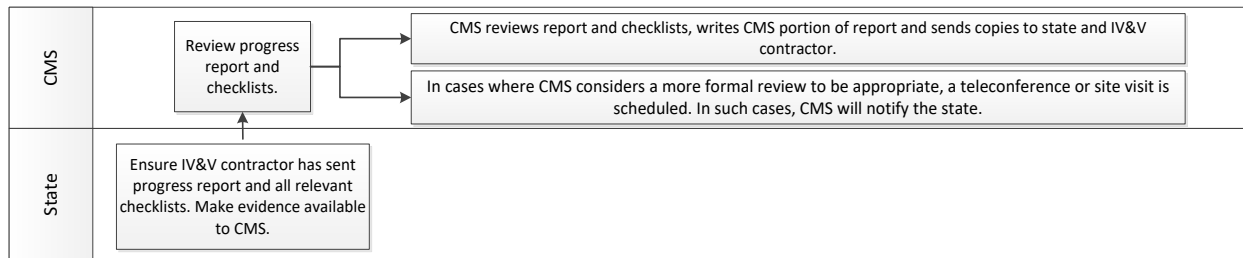
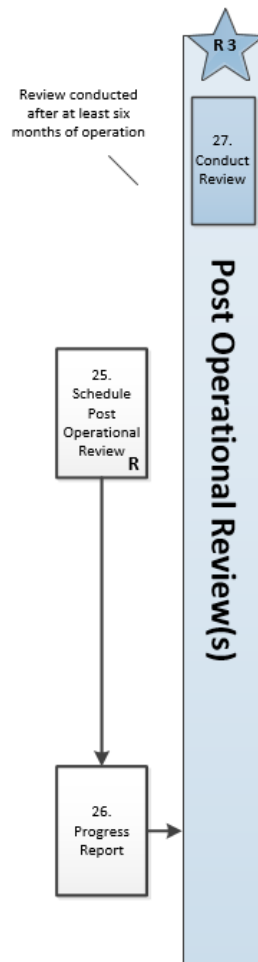


Figure 30. Activity 24: Operational Milestone Review(s)

### 3.4 Operations and Maintenance

Figure 31 shows the activities in the O&M phase.



*Figure 31. Operations and Maintenance Phase*

During the O&M phase, the state performs the following actions:

- Operates the E&E according to the state's processes and procedures
- Schedules Post Operational Review(s)
- Undergoes the Post Operational Review

#### 3.4.1 Activity 25: Schedule Post Operational Review

Once the E&E system has been placed into operation, the state should contact its CMS E&E analyst to schedule the Post Operational Review (Figure 32). The purpose of the review is to ensure that all Standards and Conditions for Medicaid IT and the conditions for operation as specified in 42 CFR Part 433.116 have been met by the implemented system. The Post Operational Review should be scheduled

after the system has been in operation for at least six months, or as agreed upon by the state and CMS. Generally, six months of system operation allows the system to stabilize.

At least six weeks prior to a desired Post Operational Milestone Review date and often even earlier, the state discusses with CMS its desire to have the milestone review. This allows CMS and the state four to six weeks of planning (e.g., scheduling, assembling teams, etc.). CMS and the state will discuss the format and timing of the review, the state's evidence storage plans, and any legal agreements that need to be in place for sharing data with CMS. (See toolkit Appendix H\_Milestone Review Preparation Guide for more details about milestone review timing and logistics.)

No fewer than two weeks before the milestone review, the IV&V contractor must send the E&E IV&V Progress Report with completed checklists to the state, to the CMS E&E analyst, to the CMS email box (MES@cms.hhs.gov), being sure to include "E&E" in the subject line. Also, no fewer than two weeks before the milestone review, the state must grant CMS access to the checklist evidence. This evidence should include artifacts for the Post Operational Review (see the Artifacts List in the toolkit appendices).

Granting CMS direct access to the state's evidence repository is the preferred method of supplying evidence. If that is not possible, the state may make other secure arrangements with CMS, such as using encrypted FTP. Using an unencrypted thumb drive or other forms of physical storage through shipping services, for example, would not be acceptable. If a state has questions, it should contact its E&E analyst.

Together, CMS and the state will set dates for the E&E Post Operational Review.



Figure 32. Activity 25: Schedule Post Operational Review

### 3.4.2 Activity 26: Progress Report

During this activity, the IV&V contractor reviews the working E&E system and all of the artifacts for the E&E Post Operational Review (see Artifacts List in the toolkit appendices) and evaluates whether the E&E system is ready for the E&E Post Operational Review (Figure 33).

The state fills out its portion of the E&E checklist and the Technical Architecture (3), Information Architecture (1) and Standards and Conditions for Medicaid IT (1) checklists. Once the state completes its sections of the checklists, it stores the checklists and supporting evidence in its own repository. The IV&V contractor then completes the reviewer sections of the checklists and completes the IV&V tabs of the E&E IV&V Progress Report Template.<sup>3</sup> The completed checklists are appended to the report. No later than two weeks prior to the milestone review, the IV&V contractor submits the report and

<sup>3</sup> It is recommended that the contractor use the E&E IV&V Progress Report Template provided in Appendix D, as it contains all of the information needed for this report. If the state or IV&V contractor desires to use a different format, the state should discuss with its CMS E&E analyst to ensure proper content and structure of the report.

checklists simultaneously to the state, to the CMS E&E Analyst, and to the CMS email address (MES@cms.hhs.gov), being sure to include “E&E” in the subject line. When the state receives the checklists from the IV&V contractor, it should save the IV&V-completed checklists in the state repository as a new version of the checklists.

The IV&V contractor is not to send drafts of the report to the state unless it is also sending the same draft simultaneously to CMS. CMS uploads the completed checklists to its tracking database. The state may respond to issues identified in the E&E IV&V Progress Report. CMS will insert comments in the CMS section of the report after the milestone review is complete.

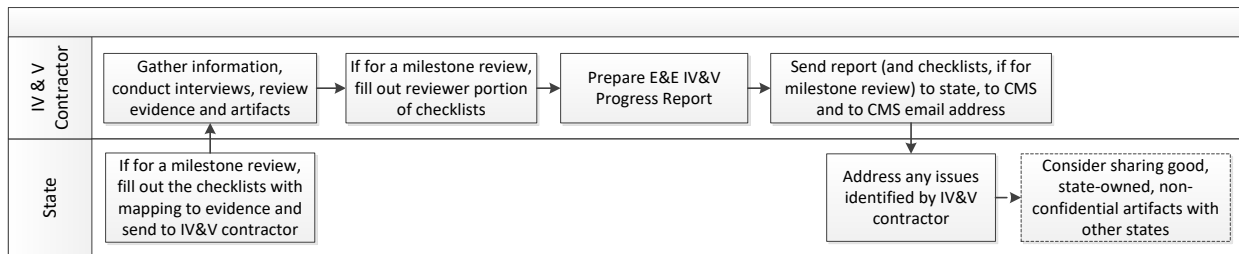


Figure 33. Activity 26: Progress Report

### 3.4.3 Activity 27: Post Operational Review

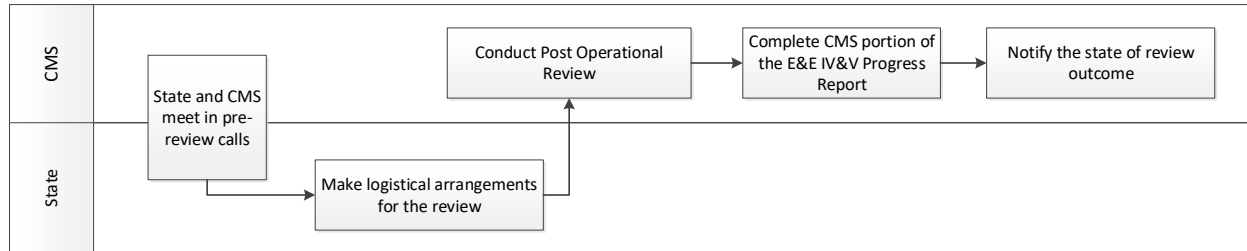
During Activity 27 (Figure 34), CMS evaluates the E&E system against CMS guidelines and federal regulations after the system has been in operation. The Post Operational Review should occur after the system has been in operation for at least six months, or as agreed upon by the state and CMS. Generally, six months of system operation allows the system to stabilize.

This section gives a high-level summary of the Post Operational Review. For detailed information about how milestone reviews are conducted and how the state can prepare for them, see Appendix H\_Milestone Review Preparation Guide.

The entry criteria to this activity are that the state has a working E&E system that it has accepted from the vendors, the IV&V contractor has submitted the E&E IV&V Progress Report and checklists, and the state has made evidence and artifacts available to CMS.

Granting CMS direct access to the state’s evidence repository is the preferred method of supplying evidence. If that is not possible, the state may make other secure arrangements with CMS, such as using encrypted FTP. It is critical to follow all HIPAA regulations when submitting evidence that contains PHI and PII. Using an unencrypted thumb drive or other forms of physical storage through shipping services, for example, would not be acceptable. If a state has questions, it should contact its E&E analyst.

During the review, CMS will verify that the criteria based on federal and state requirements are satisfied by reviewing the functionality of the system in production. CMS will perform the verification by actual system interaction, review of documents, and interviews with state and, potentially, contractor staff. CMS may choose to send test cases or scenarios to the state to be included as part of the milestone review. In such instances, the state would be expected to show how the module or SMA processed the test cases or scenarios. If CMS makes test cases part of the review, the E&E analyst will provide further guidance to the state.



*Figure 34. Activity 27: Post Operational Review(s)*

For the Post-Operational Milestone Review, CMS will conduct a virtual or on-site review. The CMS E&E analyst will notify the state as to how the milestone review will be conducted and will work with the state to schedule the review and arrange logistics. If there is a visit, the visit will conclude with a closeout or exit conference in which CMS summarizes the activities and observations made during the review. For detailed information about how milestone reviews are conducted and how the state can prepare for them, see Appendix H\_Milestone Review Preparation Guide.

The decision to validate the state’s system is deferred until CMS can analyze all information gathered during the review or submitted subsequently by the state. CMS will respond with comments in the CMS section of the progress report, and send copies of the progress report to the state and to the IV&V contractor.

## 4 When Milestone Reviews are Conducted Virtually or On-Site

This section gives a high-level summary of virtual/on-site milestone review. For detailed information about how milestone reviews are conducted and how the state can prepare for them, see Appendix H\_Milestone Review Preparation Guide.

On-site or virtual milestone reviews follow a pattern. No fewer than two weeks before the milestone review, the IV&V contractor must send the E&E IV&V Progress Report with completed checklists to the state, to the CMS E&E analyst, and to the CMS email box (MES@cms.hhs.gov), being sure to include “E&E” in the subject line. Also, no fewer than two weeks before the milestone review, the state must grant CMS access to the checklist evidence. This evidence should include artifacts for the milestone review (see Artifacts List in the toolkit appendices) along with a list of existing system defects by severity and priority.

After submission of the E&E IV&V Progress Report, and at least two weeks before the milestone review, the state and CMS will have one or more pre-review calls to plan the logistics and agenda of the review meetings. The state will give CMS access to the evidence and documentation. A milestone review kickoff meeting will be held for the state and CMS to introduce their respective team members.

The review meetings generally last from two to five days and are broken into sessions based on system functionality and/or checklist areas. The state arranges logistics for the E&E Post Operational Review, such as scheduling rooms, granting CMS access to evidence, and setting up teleconference lines. CMS team members will be assigned to sessions based on their subject matter expertise. CMS may conduct the reviews entirely by web conferencing or may send a few members of the team to the state site while the remaining members join via phone.

Questions may come up during the milestone review for which the state may not have immediate answers. Generally, there are a few weeks following the review in which the state supplies any additional evidence requested by CMS. After all the evidence has been reviewed, CMS fills out the CMS portion of the E&E IV&V Progress Report and sends copies to the state and to the IV&V contractor.

Once the E&E system has been approved, the capabilities of the approved system will be used as the baseline for future E&E updates.

## 5 Medicaid Eligibility and Enrollment Checklists

The Medicaid E&E Checklists have been updated to reflect current regulations, MITA architectures (Business, Information, and Technical Architectures), and the Standards and Conditions for Medicaid IT. Checklists are used throughout the life cycle and support a variety of state development approaches—modular, phased, agile, waterfall, etc.

Before each milestone review, the state downloads the E&E Checklist set zip file. The state fills out the checklists, and the IV&V contractor fills out the reviewer columns and uses the checklists to complete its E&E IV&V Progress Report. The IV&V contractor sends copies of the report and completed checklists simultaneously to the state, to the CMS E&E analyst, to the CMS email address (MES@cms.hhs.gov), being sure to include “E&E” in the subject line. The checklists are then uploaded to a tracking database maintained by CMS. This allows CMS to keep a running record of the E&E system development progress throughout the E&E life cycle. CMS runs a report from the database that shows which CSFs have not been met.

This process is repeated every time the IV&V contractor prepares an E&E IV&V Progress Report. Figure 36 shows the checklists through the MEELC.

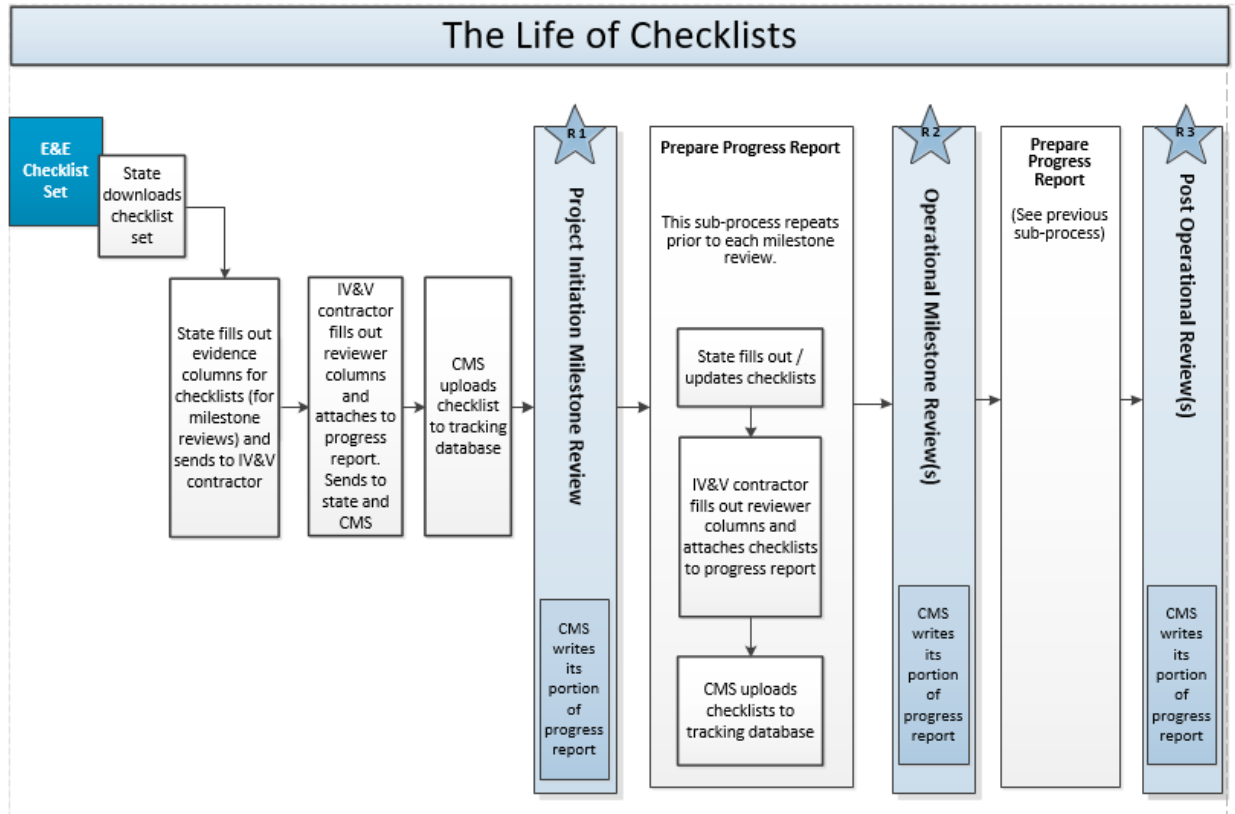


Figure 35. The Life of Checklists

### 5.1 Anatomy of a Checklist

Each checklist is an Excel workbook with separate tabs. One tab is a set of instructions (Figure 36), another tab is the checklist (Figure 37), and yet another is a guidance tab (Figure 38).

**Checklist: Information Architecture Checklist**

Note: Some of these instructions are MMIS specific.

**Checklist Instructions**

A. General Information – What users need to know about the Checklists  
 B. State and IV&V Specific Instructions – The process of completing the Checklist by the state  
 C. Sample Criteria and Evidence – Sample evidence in each of the Milestone Review phases

**General Information:**

- (MMIS specific) Depending on approved MMIS development option, state selects the appropriate checklist set.
  - MITA Checklist Set: Ten (10) MITA + Core Checklists (IA Component, TA Access And Delivery, TA Intermediary and Interface, TA Integration and Utility, and Standards and Conditions)
  - MMIS Functional Checklist Set: Ten (10) MMIS Checklists + Core Checklists
  - Custom Set: One workbook to develop custom set of modular checklist(s) + Core checklists. The Custom Set option must be developed in coordination with and receive approval by CMS.
- (E&E specific) State should use 6 Checklists [E&E Checklist + 5 Core Checklists (IA Component, TA Access and Delivery, TA Intermediary and Interface, TA Integration and Utility, and Standards and Co
- The checklists are used for documenting state evidence and IV&V reviewer comments. When completed, checklist data will be imported into a CMS tracking database.
- The first 27 columns are grouped into three sections identified by headers to identify data. The headers are read-only and should not be edited. These are identified as follows:
  - Columns (col) A to C are criteria information labeled as: Ref #, System Review Criteria, and Source respectively.
    - Criteria Ref # pattern: MITA Business Area.CSF Code.Unique Number (e.g. CA.CL7.1)
    - MITA State Specific Criteria Ref#: MITA Business Architecture.Business Area.Business Process.State Abbr.Unique Number (e.g. BA.CM.FFS.SS.NY.1)
    - MITA Architecture (TA, IA, S&C) : MITA Architecture.MITA component.Unique Number (e.g. S&C.BRC.1, TASP.33, IA.CDM.1)
  - Entries in col A are color-coded to indicate status of the criteria (*red italics: state-specific*)
  - Col pairs D and E, J and K, and P and Q are for entering state Evidence data. Each pair is labeled Yes/No/Not Applicable and X Evidence Comments where X is the Milestone Review
  - Col sets F to I, L to O, and R to U are for entry of IV&V reviewer comments for each of the Milestone Review phases.
  - Each set includes Review Date, Reviewer Name, Reviewer Assessment, and Reviewer Comments
- The column structure (i.e. label names, merged columns, etc.) is used by the database during import of the checklist data and should not be changed
- Criteria in each checklist are grouped into a series of rows. Each group begins with a merged row colored in green to mark the beginning of a group mapping
  - Depending on the package used, each green merged row identifies either a business process, technical service, component, module, or CSF
- Depending on the type of review, CMS may or may not fill out the CMS columns.
- By default, the CMS Assessment columns for R1 and R2 mirror the IV&V contractor assessment column. This is normal. If CMS assesses a criterion differently than the IV&V contractor, it will alter t

**State and IV&V Specific Instructions:**

- Complete criteria evidence columns prior to each milestone review
- IV&V will work with state to review evidence and annotate review findings and resolutions in the review columns of the checklist
- "Not assessed" is chosen if the IV&V contractor does not assess a criterion. The contractor should indicate in the comments column why it was not assessed.
- "Not Applicable" is chosen if the state does not deem a criterion to apply to its module(s). **The state must indicate in the evidence column why it does not apply.** The IV&V contractor must evaluate whether it does or does not apply and indicate whether it concurs or disagrees with the state in the review comments column.
- "Partially meets" is chosen if the module(s) meets some but not all aspects of the criterion. The IV&V contractor should indicate in detail in the comments column why it partially meets.
- "Doesn't meet" is chosen if the module(s) completely fails to meet the criterion. The IV&V contractor should indicate in detail in the comments why it does not meet.
- Evidence columns (D-E for Project Initiation, J-K for Operational, and P-Q for Final) and Review columns (F-I for Project Initiation, L-O for Operational, and R-U for Final):
  - The evidence pair columns have "Yes/No/Not Applicable" to indicate criteria has been met or out-of-scope and "Comments" for entry of supporting evidence text
  - Criteria evidence will be entered in the same row as the criteria under each Milestone Review phase
  - Criteria evidence references to artifacts should be as specific as possible, including section or page numbers, so that the cited evidence can be readily confirmed

Navigation: Checklist Instructions | InformationArchitecture | MITA Business Processes | Guidance ...

Figure 36. Instructions Tab

Information Architecture Checklist										
Select Milestone Review(s) →		Check Spelling		Project Initiation Milestone Review						
Ref #	System Review Criteria	Source	Yes/No/Not Applicable	Project Initiation Milestone Evidence	Review Date	Reviewer Name	Reviewer Assessment	Reviewer Comments	CMS Assessment	CMS Comment
<i>(MITA State-specific)</i>										
IA.CDM.2	The system of interest identifies relationships between key entities in the Medicaid enterprise.	MMIS BP								
<b>IA Component Name: Data Management Strategy (DMS)</b>										
IA.DMS.2	The SMA demonstrates adoption of an intrastate metadata repository where the agency defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.	MITA 3.0 IA ML 3								
IA.DMS.4	The SMA demonstrates adoption of statewide standard data definitions, data semantics, and harmonization strategies.	MITA 3.0 IA ML 3								
IA.DMS.5	The system of interest updates all historical claim data, recipient enrollment, provider enrollment, and other primary reference data on a scheduled basis.	MMIS BP								
<b>IA Component Name: Data Standards (DS)</b>										
IA.DS.1	The system of interest supports system transmission and receipt of all	HIPAA 5010								

Navigation: Checklist Instructions | InformationArchitecture | MITA Business Processes | Guidance ...

Figure 37. Checklist Tab



The header across the top of the checklist tab shows the name of the checklist. Below that are the milestone review checkboxes. When a box is checked in the review selection section, the sheet will automatically display the columns that apply to that period of the MEELC and will hide information that does not apply. The state checks the box of the next pending milestone review. Individual criteria are listed in rows, with a mapping of their sources and criteria number.

The evidence columns are of three types: columns for the state to complete, columns for the IV&V contractor to complete, and CMS columns. The state fills out the Yes/No/Not Applicable column and the evidence column. It is important that states provide answers for each criterion in the checklists, even for those mapped to a higher maturity level (ML) than the state's target ML. Since MITA 3.0 was released, many of the requirements for ML3 have become standard industry practice. The Standards and Conditions for Medicaid IT stipulates that states employ industry best practices. A few examples of ML3 criteria that are now basic IT practices include limiting system access to authorized stakeholders (TA.BI.9), use of single sign-on (TA.SP.63), and use of business rules engine to avoid costly hardcoding changes (TA.DM.1). Failure to address all relevant criteria will result in the state needing to re-submit the checklists, likely causing delays in the review timeline. The IV&V contractor fills in the Review Date, Reviewer Name, Reviewer Assessment, and Reviewer Comments columns. Depending on the type of review, CMS may or may not fill out the CMS comment columns. By default for R1 and R2, the CMS Assessment column mirrors the IV&V contractor assessment column. This is normal. If CMS assesses a criterion differently than the IV&V contractor, it will alter the CMS assessment column entry.

The spreadsheets are imported into the CMS tracking database, so the structure of the checklists must not change (e.g., label names, merged columns), and many cells are locked. Checklist names for the canned checklist sets, tab names, and reference numbers should not be changed; however, column widths and row heights can be adjusted to suit user needs. Numbers are color-coded to indicate the nature of the criteria. The checklist can be filtered by column and by the pre-set filter dropdowns in each column header. The filter function in the data menu bar will not work with the pre-set filters set.

Checklists also contain the factors considered critical to the success of an E&E system. These are called "functional critical success factors" or CSFs. CSFs are shown as green rows in the checklist tab. The checklists each have a guidance tab that explains the type of evidence that could be provided for each criterion.


 <b>Information Architecture Checklist</b>			
Ref # <i>(MITA State-specific)</i>	System Review Criteria	Source	Guidance
IA Component Name: Data Management Strategy (DMS)			
IA.DMS.2	The SMA demonstrates adoption of an intrastate metadata repository where the agency defines the data entities, attributes, data models, and relationships sufficiently to convey the overall meaning and use of Medicaid data and information.	MITA 3.0 IA ML 3	Enterprise: For R1, evidence should include a data management strategy. For R2 and R3, evidence should demonstrate that an interagency data model is being developed and used by multiple state agencies. For R2 (if not a desk review) and R3, states should be prepared to demonstrate and discuss its metadata repository. Modules: If commercial-off-the-shelf, it should include proposed metadata for the module (the state can choose to adopt them or not). If a module is developed by the state, demonstrate that module uses state's metadata standards.
IA.DMS.4	The SMA demonstrates adoption of statewide standard data definitions, data semantics, and harmonization strategies.	MITA 3.0 IA ML 3	For R1, evidence should include a data management strategy. For R2 and R3, evidence could include screenshots or definition documents showing the data definitions, semantics, and harmonization norms. For R2 (if not a desk review) and R3, the state should be prepared to discuss their statewide data management practices as they pertain to Medicaid-related systems' interoperability. Enterprise: Provide evidence that it has created standard data definitions and data semantics and that the strategies are being reviewed/updated as modules are added, if necessary, as rules change, etc. Modules: Demonstrate that the module is using the state's data definitions and semantics.
IA.DMS.5	The system of interest updates all historical claim data, recipient enrollment, provider enrollment, and	MMIS BP	This criterion does not apply to E&E. For R1, evidence could include acquisition documents, requirements, a ConOps that explains how this will be implemented, service level agreements

Figure 38. Guidance Tab

## 6 Milestone Reviews

### 6.1 Preparing for a Milestone Review

A summary of milestone reviews and an example case is included here. Appendix H\_Milestone Review Preparation Guide contains detailed information about the timeline and logistics of milestone reviews.

Before the IV&V contractor prepares an E&E IV&V Progress Report (prior to a milestone review), the state completes the state section of the checklists (including the Information Architecture, Technical Architecture, and Standards and Conditions for Medicaid IT checklists) and stores the checklists and supporting evidence in its repository. The state fills out the Yes/No and Evidence column for each criterion and includes a hyperlink that points to evidence in the state's repository.

Only one hyperlink can be added to any one cell. If a state needs to point to more than one artifact for a criterion, the state can point the reviewer to a document that lists all relevant hyperlinks. The state provides a narrative of evidence for the criterion in the checklist and provides a link to the supporting evidence. The relationship between the criterion and the evidence provided should be clearly stated. If the state is marking a criterion as not applicable, then the state needs to provide appropriate justification. If a criterion is being evaluated that covers functionality being performed by a different system, then the state must demonstrate how data interaction and data flow occur between the two systems.

In all cases, concrete evidence needs to be provided, as appropriate to the milestone review. For example, for a Post Operational Milestone Review (R3), the evidence for business criteria could include examples of correctly executed use cases and associated operational transactions from the production system(s) as well as database queries or reports showing correct results for each case. If evidence contains PII or PHI, the evidence needs to be protected using appropriate measures.

***Clear, simple linkage between the criterion and the evidence is very important.*** In one early case, a state mapped criteria to a complicated mapping matrix outside the original checklist. The complexity of the mappings within mappings, and the repeated logins that were required every time a document was opened in the evidence repository, resulted in a reviewer having to perform 109,056 operations to complete review of a single checklist. Such complexity is unnecessary and costly. The state needs to maintain a simple mapping from criteria in the checklist to the supporting evidence.

The state should organize evidence by using folders that correspond to each of the checklist criteria. The state must also indicate which evidence contains PHI or PII. For example, the state labels the evidence as "Confidential." The state will also need to ensure that the IV&V contractor and all members of the CMS review team have access to the evidence repositories. The state will also need to ensure that the IV&V contractor and all members of the CMS review team have access to the evidence repositories.

The IV&V contractor then submits the reports and checklists simultaneously to the state, to the CMS E&E analyst, and to the CMS email address (MES@cms.hhs.gov), being sure to include "E&E" in the subject line. The state should save the IV&V-completed checklists in its repository as a new version of the checklists. The checklists should continue to be updated for subsequent reports and milestone reviews as new versions.

*In the checklists, the state must clearly map each checklist criterion directly to the evidence that supports it.*

*Only one hyperlink can be added to any one checklist cell. So if the state needs to link to more than one artifact for a criterion, it may provide a link to a separate document that lists all the relevant hyperlinks.*

### 6.1.1 An Example

State X is implementing an E&E systems project and is using the Eligibility & Enrollment checklist set. The IV&V contractor needs to write an E&E IV&V Progress Report, so the state downloads the zip file for the checklist set from Medicaid.gov, which includes the Technical Architecture, Information Architecture, and the Standards and Conditions for Medicaid IT checklists.

State X first checks the phase box in the upper left-hand corner of the checklist tab. The state then reads through each criterion in the checklists and indicates in the Yes/No /Not Applicable columns whether each criterion applies to its E&E system. If a criterion does not apply, State X explains why it does not in the Evidence column.

State X then fills out the evidence column for each criterion by putting a short explanation in the evidence cell and inserting a hyperlink to that criterion's repository folder. It puts all relevant evidence into that folder. The state indicates which evidence contains personal health information (PHI) / personally identifiable information (PII) by labeling such evidence "Confidential."

For one of the criteria, State X has three artifacts as evidence—two screenshots and a report. The state places the report in that criterion's folder and also uploads a Microsoft Word document in which it pastes the two screenshots and gives a short explanation for the various pieces of evidence. By placing as much evidence as possible directly into the Word document, the state has reduced the time it will take the CMS reviewers to find evidence. This makes for a quicker review.

The state ensures that the IV&V contractor staff has access to the state's artifact repository and sends the checklists to the IV&V contractor. The IV&V contractor reviews the state entries in the checklists, along with the evidence. The contractor may request interviews or additional information. The IV&V contractor fills out the Reviewer Comment columns, uses the progress report template to complete its report, and appends the completed checklists to the E&E IV&V Progress Report before sending copies to the state and to CMS simultaneously. The state stores these IV&V-generated versions in its state repository.

Before the next milestone review, State X updates the last version of the checklists from the previous milestone review and sends the updated checklists to the IV&V contractor. Then the process repeats.

## 6.2 Artifacts for Each Milestone Review

Toolkit Appendix B has a list of the artifacts for each of the milestone reviews. Minimum suggested content is given for each document. This is not an exhaustive list of what typically is included in each artifact, and states are encouraged to add elements as appropriate.

Document names used in agile methodologies often differ from those used in traditional waterfall methods; so, wherever possible, the corresponding agile term is used alongside the traditional name. Because of agile methods' lighter approach to documentation, some artifacts will for agile implementations will not be available until the final milestone review. In general, CMS expects designs created during the Initiation and Planning phase to be at a high level. As part of its periodic E&E IV&V Progress Reports, the IV&V contractor will review detailed designs as they are developed during the Requirements, Design, and Development phase of the E&E life cycle. CMS does not expect detailed designs until the Operational Milestone Review.

At the time of milestone reviews, states will supply reviewers the location and grant access to reviewers for milestone review artifacts (e.g., MITA documents). CMS must be able to access all milestone review artifacts in preparation for, during, and after the milestone review.

## 7 Reference Material

### 7.1 Standards and Conditions for Medicaid IT

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.

The key components of the Standards and Conditions for Medicaid IT are the following (note: numbers 10 – 22 are what are particularly relevant for development tracking purposes):

1. CMS determines the system is likely to provide more efficient, economical, and effective administration of the State plan.
2. The system meets the system requirements, standards and conditions, and performance standards in Part 11 of the State Medicaid Manual, as periodically amended.
3. 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.
4. The system supports the data requirements of quality improvement organizations established under Part B of title XI of the Act.
5. The State owns any software that is designed, developed, installed or improved with 90 percent FFP.
6. 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.
7. The costs of the system are determined in accordance with 45 CFR 74.27(a).
8. 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.
9. The agency agrees in writing that the information in the system will be safeguarded in accordance with subpart F, part 431 of this subchapter.
10. 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.
11. Align to, and advance increasingly, in MITA maturity for business, architecture, and data.
12. 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.
13. Promote sharing, leverage, and reuse of Medicaid technologies and systems within and among States.

14. Support accurate and timely processing and adjudications/eligibility determinations and effective communications with providers, beneficiaries, and the public.
15. Produce transaction data, reports, and performance information that would contribute to program evaluation, continuous improvement in business operations, and transparency and accountability.
16. 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.
17. 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.
18. 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.
19. The agency, in writing through the APD, must identify key state personnel by name, type and time commitment assigned to each project.
20. 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.
21. For software systems and modules developed, 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.
22. 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 Secretary of the Department of Health and Human Services may also establish additional conditions in the future, subject to certain limitations. This flexibility will allow CMS to evaluate states' progress as well as evolving business processes on an ongoing basis and add more conditions as necessary. Importantly, any new conditions established under this provision will be limited to ensuring that states properly develop their systems in accordance with the existing statutory and regulatory framework.

During the Requirements, Design, and Development phase, CMS will evaluate each state for compliance with these requirements, including ensuring the mapping between these requirements and where they are addressed in artifact documentation. These components have been incorporated into the Medicaid E&E Life Cycle and criteria.

## 7.2 Critical Success Factors and Mitigations

The condition described at 42 CFR § 433.112(b)(17) requires that Medicaid E&E systems be able to adequately process modified adjusted gross income (MAGI)-based Medicaid applications with limited mitigations and work-arounds. This condition requires that states demonstrate MAGI-based functionality by meeting Medicaid E&E System Critical Success Factors (CSFs) outlined in the final rule at 80 FR 75819. CMS requires states to use CSFs to document system development progress on an ongoing basis where items remain incomplete and work-arounds are still in place (e.g., an online, fillable PDF instead of a dynamic online application).

These Medicaid E&E System CSFs and an evaluation of contingencies have been incorporated into the E&E Checklist criteria and are listed in the table below:

*Table 2. Medicaid E&E System Critical Success Factors*

Reference No	CSF	Short Description	Long Description
01	Streamlined Application	Ability to accept a single, streamlined application	Ability to accept a single, streamlined application (or an approved alternative), including online, phone, mail and in-person.
02	MAGI Rules	Ability to process applications based on modified adjusted gross income (MAGI) rules	Ability to assess/determine Insurance Affordability Program (IAP) eligibility based upon MAGI rules and MAGI rules are applied in an automated manner



Reference No	CSF	Short Description	Long Description
03	Automated Verification (Federal Data Services HUB and state sources)	Ability to verify eligibility based upon electronic data sources	<p>Ability to achieve successful technical and legal interface with the Federal Data Services Hub or approved alternative(s) to conduct Verifications (e.g. with federal agencies).</p> <ul style="list-style-type: none"> <li>- IRS federal tax information</li> <li>- SSA</li> <li>- TALX/Equifax</li> <li>- Renewal and Redetermination Verification (RRV)</li> <li>- Verify Lawful Presence (VLP)</li> <li>- MEC check for Medicare</li> <li>- State-hosed MEC check</li> <li>- Remote Identity Proofing (RIDP)</li> </ul> <p>Alternatively, or in addition, what state data sources are used for eligibility verification.</p> <ul style="list-style-type: none"> <li>- Quarterly wage data</li> <li>- Unemployment data</li> <li>- State connection to TALX/Equifax</li> <li>- State tax return information</li> <li>- Immigration status through SAVE</li> <li>- Other program data (Title II, SNAP, other public assistance)</li> <li>- Other state data (e.g., vital statistics, state incarceration data, child support, PARIS)?</li> </ul>
04	MAGI Conversion	Ability to convert existing state income standards to modified adjusted gross income (MAGI)	Ability to convert pre-ACA income standards to new MAGI income standards within state systems
05	Account Transfer	Ability to accept and send application files (accounts) to and from the Marketplace	Ability to perform Bi-directional account transfer with the FFM or the SBM as applicable
06	MEC Check	Ability to respond to inquiries from the Marketplace on current Medicaid or CHIP coverage	Ability for the state to provide the "Verify Medicaid/CHIP Non-ESI MEC" service to the FFM for FFM applicant processing; or to provide equivalent functionality as part of SBM processing.
07	FFM State Integration Rules	Ability to convey state-specific eligibility rules to the Federally-Facilitated Marketplace (FFM), as applicable	(This criterion applies only to states using the FFM. A process has been put in place for these states to submit on a periodic basis.)

Reference No	CSF	Short Description	Long Description
08	Human Services Integration	The state is leveraging the Medicaid E&E capabilities to support other human services programs	Ability to leverage capabilities to support other human services programs such as SNAP, TANF, LIHEAP, etc.
09	Renewals	The state has the ability to support renewals for existing beneficiaries.	Ability to renew Medicaid beneficiaries on an ex parte basis, and online, phone mail or in-person for exceptions.
10	Appeals	The ability of the state to support E&E appeals applications and processes	Ability to provide data in support of appeals.
11	Notices	The ability of the state to produce required notices	Ability to produce notices for approval, denial, termination, requests for additional information and other events.
12	Authority to Connect	The state meets the requirements to allow connections with the FDSH and other required interfaces	State has authority to connect (or appropriate equivalent) to all required data sources.
13	Presumptive Eligibility	The ability of the state to receive notices of presumptive eligibility determination from hospitals	Ability to process hospital presumptive eligibility through all modalities (electronic, phone, mail, fax, other).
14	Retroactive Eligibility	The state system is able to support determinations of retroactive eligibility for MAGI-based individuals who submit an application to the state agency	Ability to support determinations of retroactive eligibility.
15	Emergency Medicaid	The state's system supports eligibility for Medicaid coverage of emergency medical services (including labor and delivery)	Ability to support eligibility for Medicaid coverage of emergency medical services (including labor and delivery).
16	Changes in Circumstances	The state is able to receive and process changes in circumstances reported by MAGI-based beneficiaries	Ability to process changes in circumstance through all modalities.
17	Non-MAGI determinations	The state can receive application for and make determinations of eligibility under non-MAGI eligibility groups.	Ability to accept an application for non-MAGI basis.

Reference No	CSF	Short Description	Long Description
18	Transfer on Change in Eligibility	For beneficiaries determined no longer eligible, the state is able to evaluate potential eligibility for other insurance affordability programs and transfer the individual's electronic account to the appropriate program	Ability to transfer an individual's electronic account upon a change ineligibility to the appropriate program.
19	Interface with MMIS	Integration of the E&E component with the MMIS, especially with respect to enrollment, maintenance of member records, and other related actions.	Ability to transfer new determinations to the MMIS for enrollment.
20	Data Conversion	The state has converted and migrated historical data	Conversion of any legacy data to the new system, or archival of data as appropriate. Includes provisions for protection or conversion of data under HIPAA, etc.
21	Inmate Eligibility	The state implements eligibility restrictions and/or limitations on inmates	The state implements inmate-related requirements such as the restriction on FFP for services provided to inmates of a public institution who are enrolled in Medicaid at the time of their incarceration or commitment to another public institution, and ensuring that inmates who are eligible for Medicaid are enrolled for coverage upon release.

## 7.3 Acronyms

Table 3. Acronyms

<b>APD</b>	Advance Planning Document	<b>MITA</b>	Medicaid Information Technology Architecture
<b>CHIP</b>	Children’s Health Insurance Program	<b>MMIS</b>	Medicaid Management Information Systems
<b>CMCS</b>	Center for Medicaid and CHIP Services	<b>M&amp;O</b>	Maintenance and Operations
<b>CO</b>	Central Office	<b>PHI</b>	Protected Health Information
<b>ConOps</b>	Concept of Operations	<b>PII</b>	Personally Identifiable Information
<b>CSF</b>	Critical Success Factor	<b>PM</b>	Project Manager
<b>DDI</b>	Design, Development, and Implementation	<b>PMP</b>	Project Management Plan
<b>DR</b>	Disaster Recovery	<b>PPU</b>	Project Partnership Understanding
<b>DRA</b>	Deficit Reduction Act	<b>Q&amp;A</b>	Question and Answer
<b>DSG</b>	Data and Systems Group	<b>R1</b>	Project Initiation Milestone Review
<b>DSS</b>	Decision Support System	<b>R2</b>	Operational Milestone Review
<b>DW</b>	Data Warehouse	<b>R3</b>	Final Certification Milestone Review
<b>FAQ</b>	Frequently Asked Questions	<b>RFI</b>	Request for Information
<b>FFP</b>	Federal Financial Participation	<b>RFP</b>	Request for Proposal
<b>HCBS</b>	Home and Community-Based Services	<b>RO</b>	Regional Office
<b>HIPAA</b>	Health Insurance Portability and Accountability Act of 1996	<b>RTM</b>	Requirements Traceability Matrix
<b>IAPD</b>	Implementation Advance Planning Document	<b>SDD</b>	System Design Document
<b>IBP</b>	Industry Best Practice	<b>SDLC</b>	System Development Life Cycle
<b>ICD</b>	International Classification of Diseases	<b>SI</b>	System Integrator
<b>IT</b>	Information Technology	<b>SMDL</b>	State Medicaid Directors Letter
<b>IV&amp;V</b>	Independent Verification and Validation	<b>SME</b>	Subject Matter Expert
<b>MEELC</b>	Medicaid E&E Life Cycle	<b>SPoTT</b>	State Portfolio Tracking Tool
<b>MEET</b>	Medicaid E&E Toolkit	<b>SS-A</b>	State Self-Assessment
<b>MES</b>	Medicaid Enterprise System		