Pharmacy-Caremark Aetna Integration - Integration Framework

Document Version:	7.0 (Draft)
Effective Date:	July 25, 2025
Last Updated:	July 25, 2025
Origination:	Aetna Digital

Section 1: Introduction & Core Concepts

Description: *This initial section serves as the foundation for the entire framework. It defines the key entities, services, and terms that will be used throughout the document.*

Goal: To establish a common vocabulary and eliminate ambiguity, ensuring both the CVS Caremark provider teams and the Aetna consumer teams understand their roles and the components being discussed in precisely the same way.

1.1. Preamble

This document constitutes a framework agreement between the CVS Caremark service provider organization and the Aetna service consumer organization. It governs the technical integration, operational support, and lifecycle management of the pharmacy services provided herein for the I90 Integration initiative. As both organizations are part of the larger CVS Health enterprise, adherence to this protocol is a shared commitment required for maintaining a healthy, predictable, and reliable partnership that ultimately serves our members.

1.2. Core Definitions

- **Service Provider:** The CVS Caremark entity that owns, develops, and maintains the pharmacy services.
- **Service Consumer:** The Aetna application or system that integrates with and utilizes the pharmacy services.
- **Service Contract:** The complete set of agreements between the parties, including this document and any related charters.
- **REST API Service:** A data-centric service providing access to core pharmacy business entities and operations via standard HTTP methods. For example, an API for fetching a member's prescription history, checking formulary status for a given drug, or locating in-network pharmacies.
- **UX/Data Block Service:** A specialized service that provides a structured, pre-configured block of data intended for direct rendering within an Aetna member's user experience. For example, a data block containing all necessary information to display a member's current mail-order prescriptions and their refill status.

Section 2: Governance, Personnel, & Service Level Commitments

Description: *This section defines the human layer of the partnership and the quality commitments for the service. It outlines key personnel roles, their responsibilities, the measurable standards for service availability and performance, and the specific communication protocols for different functional teams.*

Goal: To create clear lines of responsibility, establish predictable communication pathways, provide the Aetna team with a formal commitment to service quality and support, and ensure that the right people are collaborating in the right way at the right time.

2.1 Stakeholder Responsibility & Communication Matrix

Stakeholder Role (Provider / Consumer)	Key Responsibilities	RACI Key	Channels
Executive Sponsor	• Champions the partnership internally.	**A:** Joint Project Charter Approval	Scheduled Executive Meetings, Email Escalations
	• Secures strategic resources and budget.	**I:** Contractual Agreement, SLA Performance, Deprecation Notices, QBR	
	• Final point of escalation for high-level disputes.		
Account Manager / Primary Business Contact	• Manages the overall business relationship.	**A:** Contractual Agreement, SLA Performance & Remedies, QBR	Email, Scheduled Meetings (QBR, Monthly Sync)
	• Handles all commercial and contractual matters.	**R:** Deprecation Notices	
	• Organizes and leads Quarterly Business Reviews (QBRs).	**C:** Joint Project Charter Approval	
Program Lead	• Owns the product/business vision for joint projects.	**A:** Integrated Master Schedule (IMS)	Email, Project Steering Committee Meetings
	• Defines project goals and success criteria.	**R:** Joint Project Charter Approval	
	• Serves as a key decision-maker for project scope.	**C:** SLA Performance, Technical Integration	
		I: S1 Incidents, Deprecation Notices	

Project Manager (PM)	• Manages internal project plans, resources, and timelines.	**R:** IMS Management, Technical Onboarding	Shared Project Management Tools (Jira, Asana), Weekly Tactical Syncs, Email
	• Synchronizes with counterpart on the Integrated Master Schedule (IMS).	**C:** Joint Project Charter Approval	
	• Manages the joint risk register and change control process.	**I:** S1 Incidents	
Technical Integration Lead / Primary Technical Contact	• Main technical point of contact for the integration.	**A:** Technical Integration & Onboarding	Shared Slack/Teams Channel, Ad-hoc Video Calls, Developer Forums, Email
	• Provides architectural guidance and resolves deep technical issues.	**R:** S1 Incident Response	
	• Receives and disseminates all lifecycle communicatio ns.	**C:** IMS Management, QBR	
		I: SLA Performance, Deprecation Notices	
Support Engineering Team / On-Call Engineering Team	• Manages and resolves end-user support tickets.	**A:** S1 Incident Response	Support Portal/Ticket System, Phone (Hotline), On-Call Alerts, Email
	• First line of defense for incident detection and triage.	**C:** SLA Performance Reports, Technical Onboarding	

	• Manages the technical response to all incidents.	**I:** Deprecation Notices	

RACI Key:

- **R = Responsible:** The person/team who does the work.
- **A = Accountable:** The person ultimately answerable for the work (the owner).
- **C = Consulted:** Provides input and expertise (two-way communication).
- **I = Informed:** Kept up-to-date on progress (one-way communication).

2.2. Service & Personnel Availability

2.2.1. Service Level Commitments (SLC)

The CVS Caremark team shall commit to the following service levels for all Production environments. These levels pertain to the automated pharmacy services and the formal support response channels. Failure to meet these commitments will be documented as a project risk, may impact shared project timelines, and will be a mandatory review item in governance meetings to drive root cause analysis and continuous improvement.

- **API Availability & Uptime:**
  - **Target:** 99.9% monthly uptime for all service endpoints.
  - **Exclusions:** Scheduled Maintenance, outages caused by the Aetna consumer systems, or failures of third parties beyond the Provider's reasonable control.
- **API Performance & Latency:**
  - **Target:** 95% of all internal API processing times (e.g., for a formulary check) will be completed in under 500ms.
  - Latency is measured at the CVS Caremark network edge.
- **Support Response Times:**

Severity	Description (Pharmacy Service Examples)	Target Response Time	Channels
Severity 1: Critical	Complete outage of the eligibility check API, preventing real-time prescription processing.	1 Hour (24/7/365)	Phone call to On-Call Contact, Email
Severity 2: High	The mail-order pharmacy refill API is functional but responding with >5 second latency, significantly degrading the Aetna member portal experience.	4 Business Hours	Support Portal, Email
Severity 3: Medium	The pharmacy locator API fails	1 Business Day	Support Portal, Email

	to return a small subset of newly added retail pharmacies.		
Severity 4: Low	General questions about the data format for a field in the prescription history response.	2 Business Days	Support Portal, Email

2.2.2. Human Resource Availability

This section outlines the expectations for the availability of key personnel from both CVS Caremark and Aetna for collaborative activities. Both parties agree to make key personnel available on an as-needed basis to support joint projects and resolve complex escalations. Availability is defined as being accessible during standard business hours (9:00 AM to 5:00 PM) in their respective time zones, Monday through Friday.

- **Management (Account Managers, Program Leads, Project Managers):** Available for scheduled governance meetings and ad-hoc escalations.
- **Architects & Technical Leads:** Available for consultation during project design and for escalated troubleshooting.
- **Engineers & Technologists:** Available for collaborative work sessions as defined within a joint project plan.

Disclaimer on Impact of Unavailability: Both parties acknowledge that project execution depends on the mutual availability of the personnel listed. A lack of availability is a project risk and may result in delays to agreed-upon schedules. Project Managers shall document such delays and their impact.

2.3. General Communications Protocols

- **Incident Management:** The Provider shall maintain a public Status Page. For Severity 1/2 incidents, the Provider will proactively notify the Aetna On-Call Engineering Contact.
- **Scheduled Maintenance:** The Provider will announce maintenance via the Status Page and email the Primary Technical Contact at least 72 hours in advance.
- **Lifecycle Announcements:** Versioning and retirement notices will be sent via email to the Primary Technical Contact.

Section 3: Integrated Program Management & Execution Framework

Description: *This section establishes the formal framework for how the two organizations collaborate on large-scale projects. It details the process for aligning on schedules and dependencies while allowing each PMO to maintain internal control.*

Goal: To ensure that major joint initiatives are executed in a coordinated and transparent manner, mitigating risks and delivering on shared objectives.

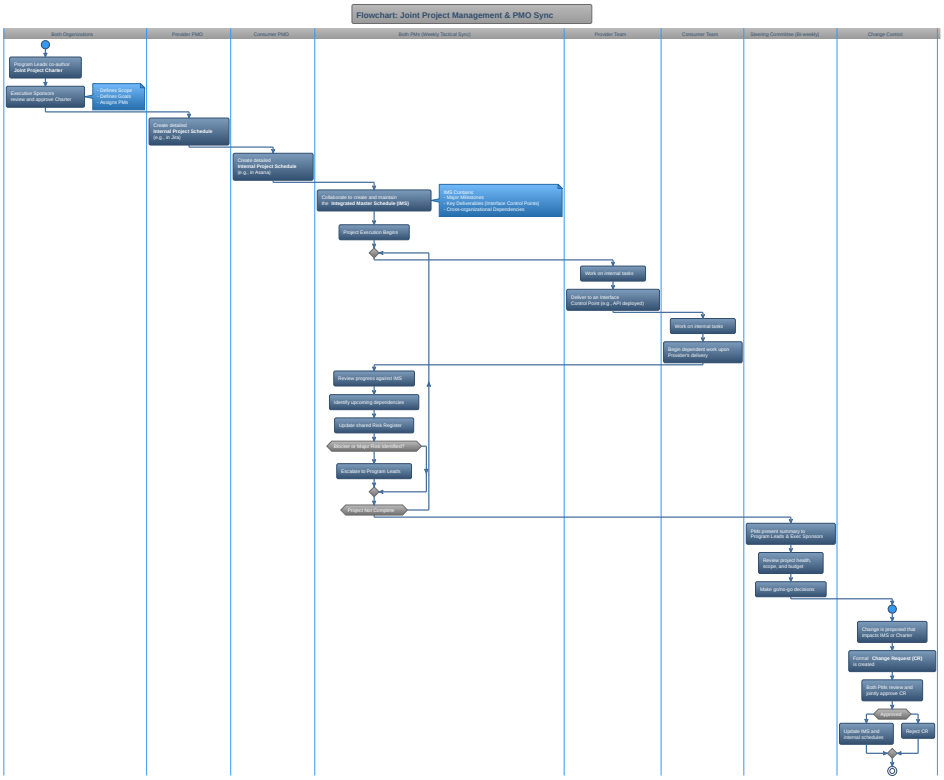
3.1. Scope of Applicability

This framework shall be invoked for any "Joint Project," such as the initial integration of Aetna's member portal with the Caremark mail-order pharmacy API, a major migration to a new National Drug Code (NDC) lookup service, or the co-development of a new specialty drug onboarding feature.

3.2. Program Roles and Responsibilities

- **Executive Sponsor:** Senior leader who champions the project.
- **Program Lead:** Primary business/product owner responsible for project goals.
- **Project Manager (PM):** Designated PMO contact responsible for internal planning and synchronizing with their counterpart.

3.3. The PMO Synchronization Process



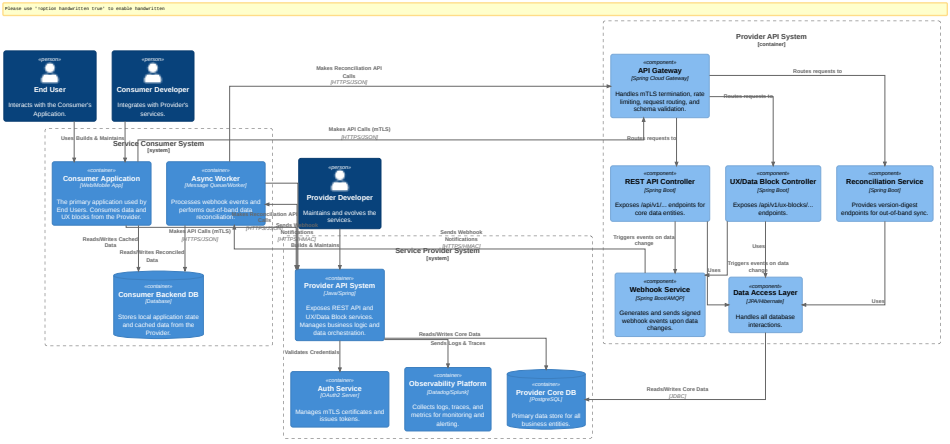
PMO Sync Process

- **Step 1: Project Initiation & Chartering:** A Joint Project Charter is co-authored and approved, defining scope, goals, and key roles.
- **Step 2: Master Schedule Creation & Integration:** Each PM maintains their internal schedule and collaborates on a high-level Integrated Master Schedule (IMS) that tracks major milestones and cross-organizational dependencies.
- **Step 3: Tasking & Dependency Management:** Tasking is managed via Interface Control Points in the IMS. Direct cross-organizational task assignment is prohibited.
- **Step 4: Synchronization Cadence & Reporting:** A Weekly Tactical Sync for PMs manages the IMS and risks. A Bi-weekly/Monthly Steering Committee allows leadership to review progress.
- **Step 5: Joint Change Control:** A formal Change Request (CR) is required for any change affecting scope, schedule, or cost, ensuring mutual agreement.

Section 4: Runtime Technical Protocol

Description: *This section details the technical contract for all real-time, machine-to-machine interactions.*

Goal: To ensure all data exchanges are secure, resilient, auditable, and performant by mandating specific technical standards.



Technical Protocol - Component Interaction

4.1. General Protocol: Foundation & Security

- **Transport & Authentication Security:**
  - **Requirement:** All server-to-server communication must use Mutual TLS (mTLS) 1.2 or higher.
  - **Certificate Management:** Both parties will use certificates from a trusted CA. A joint process for annual rotation will be managed 30 days prior to expiration.
- **Observability & Distributed Tracing:**
  - **Requirement:** All API requests must carry a distributed trace context header conforming to the W3C Trace Context specification. This enables end-to-end tracing of a single logical operation (e.g., a member price check) across both Aetna and CVS Caremark systems.
  - **Structured Logging:** Events must be captured in a structured JSON log format. Logs must contain the

`trace_id`, `span_id`, and other relevant metadata, such as a `claim_id` or `member_id_present` flag.

- **Rate Limiting:**
  - **Requirement:** The Provider will enforce rate limits. The API will provide real-time feedback via

`X-RateLimit-Limit`, `X-RateLimit-Remaining`, and `X-RateLimit-Reset` HTTP headers.

- **Policy:** Exceeding the limit will result in an HTTP `429 Too Many Requests` status code. The Aetna client must implement a backoff strategy.
- **Error Handling:**
  - **Requirement:** All `4xx` and `5xx` error responses must contain a standardized, machine-readable JSON body.
  - **Error Body Schema Example:**

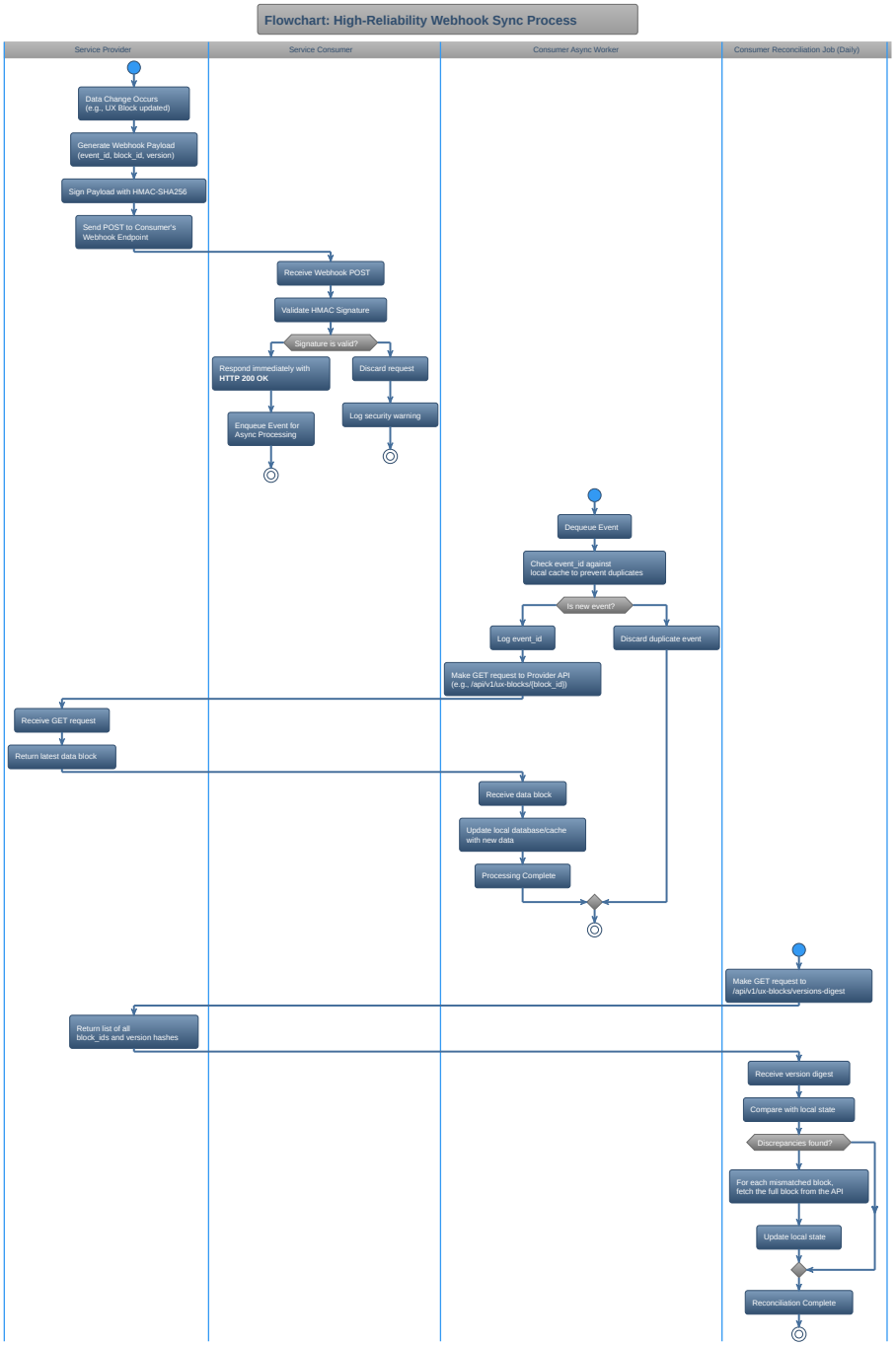
```
{
  "type": "https://developer.caremark.com/errors/member-not-found",
  "title": "Member Not Found",
  "status": 404,
  "detail": "The member ID '123456789' does not correspond to an active, eligible member.",
  "instance": "/api/v1/members/123456789/eligibility",
  "trace_id": "4bf92f3577b34da6a3ce929d0e0e4736",
  "invalid_params": [
    {
      "name": "memberId",
      "reason": "must be a valid 9-digit member identifier"
    }
  ]
}
```

`type` field is a permanent URI that identifies the class of error, allowing programmatic handling.

4.2. REST API Syncing: Data Integrity & Performance

- **Pagination:** All API endpoints returning a collection (e.g., a member's prescription history) must use cursor-based pagination. The consumer will use the `next_cursor` value from a response to request the next page of results.
- **Idempotency for Write Operations:** To prevent accidental duplicate operations like submitting the same prescription refill request twice, all state-changing requests (POST, PUT, DELETE) must include an `Idempotency-Key` header with a client-generated UUID.

4.3. UX/Data Block Syncing: High-Reliability Webhooks



Sync and Webhooks Process

- **Security & Verification:**
  - **HMAC Signature:** All webhooks (e.g., a notification that a prescription has shipped) will be signed using HMAC-SHA256 and delivered in an `X-Provider-Signature` header.
  - **Timestamp Validation:** The consumer must reject webhooks received more than 5 minutes after their generation time to prevent replay attacks.
- **Reliability & Delivery Guarantees:**
  - **Provider Responsibility (At-Least-Once Delivery):** The Provider will retry sending a webhook with exponential backoff for up to 24 hours if a `2xx` response is not received.
  - **Consumer Responsibility (Idempotent Processing):** The Aetna endpoint must respond with a `200 OK` immediately upon validating the signature, then process the event asynchronously. The `event_id` must be logged to prevent processing duplicate events.

- **Out-of-Band Reconciliation:** The Aetna system must perform a daily reconciliation to ensure state consistency. This will be done by calling a dedicated REST endpoint (`GET /api/v1/ux-blocks/versions-digest`) which returns a list of all data blocks and their version hashes, allowing Aetna to compare this to its local state and fetch any data that is missing or stale.

Section 5: Service Evolution & Versioning

Description: *This section provides a collaborative framework for managing the service lifecycle, including both breaking and non-breaking changes.*

Goal: To enable continuous improvement in the CVS Caremark services while affording the Aetna consumer maximum predictability and lead time to adapt, protecting shared business objectives from unplanned disruption.

5.1. Versioning Philosophy & Scheme

All services must strictly adhere to Semantic Versioning (MAJOR.MINOR.PATCH). The versioning contract applies to the API surface, data schemas, and documented functional behavior.

5.2. Process for Introducing a Breaking (MAJOR) Change

This process is managed as a joint program under the Integrated PMO Framework. An example would be changing the primary member identifier used across all APIs.

- **T-minus 7 Months (Joint Design Review):** Provider architects present the proposed design and draft specification for v2 to Aetna architects for feedback.
- **T-minus 6 Months (Formal Announcement):** Provider makes the formal deprecation announcement for v1 and publishes the detailed v2 specification and migration guide.
- **T-minus 3 Months (Sandbox Deployment):** v2 is deployed to the Sandbox environment for joint integration testing.
- **T-minus 1 Month (Production Parallel Deployment):** v2 is deployed to Production, running in parallel with v1. A shared metrics dashboard will be provided to track migration progress.
- **Launch Date (Default Switch):** v2 becomes the default version.
- **Launch Date + 6 Months (Sunset):** The v1 endpoints are retired.

5.3. Process for Non-Breaking (MINOR/PATCH) Changes

An example would be adding a new, optional "90-day-supply-eligible" field to a drug information response.

- **Communication:** Changes will be documented in forward-looking release notes. MINOR changes will be announced to the Primary Technical Contact at least 2 weeks prior to deployment.
- **Pre-release Testing:** All MINOR/PATCH changes will be deployed to the Sandbox environment at least 1 week before production deployment.

Section 6: Service Retirement & Sunsetting

Description: *This section provides a transparent framework for the final stage of a service's lifecycle, such as retiring an entire service or a deprecated MAJOR version.*

Goal: To ensure the retirement process is executed as a planned, joint program of work, providing Aetna with maximum predictability and lead time to migrate, thereby eliminating abrupt disruptions.

6.1. Principle & Scope of Applicability

- **Guiding Principle:** Service retirement is a planned evolution, not an operational failure. The process is founded on proactive communication and a shared commitment to a non-disruptive transition.
- **Scope of Applicability:** These procedures apply to both the complete retirement of a service or the sunsetting of a deprecated MAJOR version.

6.2. The Deprecation Period

- **Minimum Duration:**
  - For

Complete Service Retirement: A minimum of 12 months.

- For

MAJOR Version Sunsetting: A minimum of 6 months.

- **Service Level Guarantees during Deprecation:**
  - **SLA Adherence:** All service level commitments for availability and performance shall remain in full effect.
  - **Feature Freeze:** The deprecated service is feature-frozen, receiving only critical security and bug fixes.
  - **Prohibition of New Usage:** The Aetna organization is prohibited from initiating new integrations against the deprecated service.

6.3. Communication Protocol during Deprecation

- **Formal Announcements:** A schedule of written notices will be sent to the Primary Technical Contact and Account Manager at the start of the period, and then 3 months, 1 month, 1 week, and 24 hours prior to shutdown.
- **Governance Reporting:** "Deprecation Status" will be a mandatory agenda item in all QBRs, including metrics on remaining traffic to the deprecated endpoints.

6.4. Technical Measures during Deprecation

- **API Response Headers:** Every response from a deprecated endpoint must include the `Deprecation` and `Link` HTTP headers.
  - `Deprecation: Sat, 25 Jan 2026 15:00:00 GMT`
  - Link: <https://developer.caremark.com/api/v2>; rel="successor-version"
- **Planned "Brownouts":** In the final month, the Provider may institute scheduled, brief, and intentional outages (5-15 minutes). The purpose is to help Aetna identify any remaining dependencies. During a brownout, the service will return an `HTTP 503 Service Unavailable`.

6.5. Final Shutdown & Post-Retirement State

- **The Shutdown Event:** At the specified time, traffic to the retired endpoints will be terminated.
- **Post-Retirement Response:** For at least 12 months post-retirement, any request to a retired endpoint must immediately return an HTTP `410 Gone` status code with a response body linking to the successor service.

Section 7: Agreement & Signatures

Description: *This final section serves as the formal execution of this framework.*

Goal: To create a binding commitment from both parties to adhere to all protocols laid out in this document.

By signing below, the authorized representatives of the Service Provider and Service Consumer acknowledge that they have read, understood, and agree to be bound by the terms of this framework.

For CVS Caremark (Service Provider):

Signature: _____

Name: _____

Title: _____

Date: _____

For Aetna (Service Consumer):

Signature: _____

Name: _____

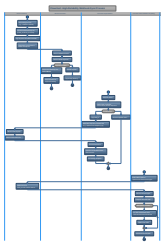
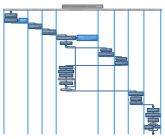
Title: _____

Date: _____

The word document undergirding this page sans images (sequences & flows)

Pharmacy-Caremark Aetna Integration - Integration Framework - v7 - Draft.docx

Description/Usage	File
Original SLA doc (6.0)	Pharmacy-Caremark Aetna Integration - Integration Framework.docx
PUML for obsoleted Sunsetting flow or component diagram	
PUML for included CVS/Aetna PMO Flow Sync sequence diagram	
PUML for included	

Description	Status	Associated PUML	Diagram
Integration Framework component diagram	• in initial draft • in 6.0 framework • in 7.0 framewor	C4_Pharmacy-Caremark Aetna Integration - Integration Framework.puml	
Webhook/Sync sequence diagram	• in initial draft • in 6.0 framework • in 7.0 framework	Pharmacy-Caremark Aetna Integration - Webhook and Sync Flow.puml	
CVS/Aetna PMO Flow Sync sequence diagram	• in 6.0 framework • in 7.0 framework	Pharmacy-Caremark Aetna Integration - PMO Sync Flow.puml	
Sunsetting Process flow or component diagram	• in initial draft • in 6.0 framework • dropped from 7.0	C4_Pharmacy-Caremark Aetna Integration - Major Version Change and Sunsetting.puml	