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Technical Feasibility Analysis: Systems/Platforms/APIs Focus
AI Co-Worker Agent Solution for Account Opening at NorthRock

1. Systems/Platforms/APIs Inventory Table

System/Platform/API Name	Type	Category	Known/Unknown	Integration Method	Research Required
Salesforce/Edge	System/Platform	Internal System	Known	REST API, SDK, Data Connect	No
Formstack	Platform	External SaaS	Known	API, Webhooks, Form Export	No
Schwab Custodian Platform	System/Platform	External System	Unknown*	TBD	Yes
Fidelity Custodian Platform	System/Platform	External System	Unknown*	TBD	Yes
DocuSign	Platform	External SaaS	Known	REST API, SDK, Webhook	No
Black Diamond	System/Platform	External/Optional	Known	API, File Export	No
Subatomic Deep Lens	Platform	Internal System	Known	Event Log/Integration API	No
Client-Provided Statements	Data/Intake	Ad Hoc Data	Known	File Upload, Email, Manual	No
AI Co-Worker Agent Team	Internal Service	Workflow Engine	Known	Internal API/Orchestration	No
Operations/Human Review Q	Internal Service	Workflow/Human	Known	Workflow Task Management	No
Workflow Platform	System/Platform	Internal Service	Known	API/SDK/Event Bus	No
Data Platform(s)	Infra Component	Data Store	Known	File/Object Store, ETL	No
Processing/ETL Platform	Infra Component	Data Pipeline	Known	ETL Jobs, API, Batch Process	No
Audit Log System	Infra Component	Logging/Monitoring	Known	Log/Event Stream	No
Rule Management Tools	Application	Internal Tooling	Unknown**	TBD	Yes
Workflow Analytics	Application	Internal Tooling	Unknown**	TBD	Yes
NorthRock IT Security Infra	Infra Component	Sec/Compliance	Known	N/A	No

> * Both "Schwab Custodian Platform" and "Fidelity Custodian Platform" are referenced as custodial integration points, but specific technical documentation, API, or protocol is not detailed in provided context – **Research Required**.
> ** Internal "Rule Management Tools" and "Workflow Analytics" are referenced, but no specific product/platform/API is named – **Research Required**.

Summary Statistics:
- Total Systems/Platforms/APIs Identified: 17
- Known Systems: 12
- Unknown Systems (Requiring Research): 5
- Cloud Platforms: 0 explicit (cloud not directly cited, but implied for storage/processing)
- External APIs: 3 (Formstack, DocuSign, Black Diamond)
- Internal Systems: 6
- Infrastructure Components: 4

2. Requirements Summary Table

Requirement ID	Requirement Summary	Systems Involved	Feasibility Tier	Research Required	Key Blockers	Status
REQ-001	Ingest, normalize, and associate client input data from Formstack/ forms	Formstack, Client-Provided Statements, Salesforce/Edge, Data/ETL Platform	High	No	None	Analyzed
REQ-002	Validate account opening packets for completeness, consistency, custodian rules	AI Co-Worker Agent Team, Salesforce/Edge, Formstack, Custodian Rules, Validation Logic, Data Platform	Medium	Yes	Custodian rule APIs/processes are unclear	Analyzed
REQ-003	Explicit review steps, surfacing exceptions, allow human action, DocuSign envelope routing	Workflow Platform, DocuSign, Operations Review, Audit Log, Rule Mgmt Tools	Medium	Yes	DocuSign and review routing, Rule Mgmt detail	Analyzed
REQ-004	Write status & artifacts back to Salesforce/Edge, lifecycle sync	Salesforce/Edge, Data Platform, AI Agent, Workflow Platform	High	No	None, assuming system integration	Analyzed
REQ-005	Full audit via Subatomic Deep Lens: trace, scores, lineage, integrity	Subatomic Deep Lens, Workflow Platform, Audit Log System	High	No	None (Deep Lens assumed present)	Analyzed
REQ-006	Support periodic/on-demand workflow assessment & rule/ process improvements	Workflow Platform, Analytics Tool, Rule Management Tools	Medium	Yes	No analytics tool/ platform specified; process mgmt	Analyzed
REQ-007	All components in NorthRock's IT, no external data handling	All internal systems, IT Security Infra	High	No	None – constraint is design principle	Analyzed

Requirement ID	Requirement Summary	Systems Involved	Feasibility Tier	Research Required	Key Blockers	Status
REQ-008	Workflow must follow: Intake → Validation → Packet Build → Review → DocuSign → Write-back	Workflow Platform, DocuSign, Salesforce/Edge, Data Platform, Audit Log	High	No	None	Analyzed
REQ-009	Dedicated agentic team with memory/persistent learning for continuous improvement	AI Co-Worker Agent Team, Workflow Platform, Data Store	Medium	No	Depth of memory/ learning not specified	Analyzed

Summary Statistics:
- Total Requirements Analyzed: 9
- High Feasibility Requirements: 5
- Medium Feasibility Requirements: 4
- Low Feasibility Requirements: 0
- Blocked Requirements: 0
- Requirements Requiring Research: 4

Detailed Requirement-by-Requirement Analysis

REQ-001: Ingest, Normalize, and Associate Client Input Data

A. Systems/Platforms/APIs Involved
- **Primary Systems:** Formstack, Client-Provided Statements
- **Supporting Systems:** Salesforce/Edge
- **Infrastructure Components:** Data/ETL Platform, File/Object Store
- **Integration Points:**
  ◦ Formstack API to ETL/Data Platform
  ◦ Data transformation/association logic connecting to Salesforce/Edge for reference/matching

B. Platform Capabilities & Constraints

System/ Platform/ API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
Formstack	Authenticated access, export, webhook for new form data, API-driven fetch	REST API, Webhook, Export	Yes, tiered API limits	Typically low latency	OAuth/API tokens, HTTPS	SaaS per form/ submission
Salesforce/ Edge	Master client/household data, record linkage	REST API, SDK, Data Connect	API quotas per org/ license	Variable, high SLA	SSO, OAuth, profile-based auth, field ACL, encryption at rest/in transit	License, API, storage
Data/ETL Platform	Data ingestion, normalization, classification, persistence	File/DB API, ETL jobs	System design dependent	Scalable, batch/ real-time	Access controls via IT, encrypted storage, auditability	Cloud infra, ETL cost

C. Integration Complexity Analysis
- **Communication Patterns:** Mix of push (webhook/form), pull (API), batch possible
- **API Contracts:** Formstack API well-documented; Salesforce data contracts a function of field mapping/metadata setup
- **Data Transformation:** Standard schemas, but text/unstructured doc parsing could require custom parsing/ML
- **Error Handling:** High—input data variance; retries for API, reconciliation on mismatches
- **Coupling Level:** Moderate — change to Salesforce fields impacts transformations
- **Dependencies:** Data mapping and field dictionary must be maintained

D. Feasibility Assessment
- **Feasibility Tier: High**
- **Research Required: No**
- **Rationale:** Both main platforms and ETL/data infrastructure are well-supported; integration methods and data contracts industry standard.
- **Technical Blockers:** None – as long as all APIs are accessible/credentialed.
- **Unknown Systems/Platforms/APIs:** N/A

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** Likely AWS S3 or equivalent for object store; ETL engines (Glue/Dataflow/ADF)
- **API Integration:** Secure access to Formstack API, unstructured document upload
- **Data Platform:** Storage for both raw intake and normalized data
- **Security:** Role-based access, encryption in transit/at rest, audit trail for all data movement
- **Prerequisites:** Formstack API credentials, connectivity, client record mapping in Salesforce/Edge
- **Mitigation:** Batch fallback if real-time push fails
- **System Impacts:** API rate management, increased storage/ETL volume during peaks

REQ-002: Validate Account Opening Packets for Completeness and Compliance

A. Systems/Platforms/APIs Involved
- **Primary Systems:** AI Co-Worker Agent Team (internal workflow/orchestration), Validation Logic/Engine
- **Supporting Systems:** Salesforce/Edge (record verification), Formstack (original intake data), Custodian Rules Platform/Artifacts (Schwab, Fidelity)

- **Infrastructure Components:** Data Platform for validation state, Audit Log for traceability
- **Integration Points:** Custodian rulebooks/checklists and validation logic

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
AI Agent Team	Orchestrate validation; apply business rules/logic	Internal orchestration API	Internally scoped	Real-/near real-time	Depends on internal security model	Infrastructure hosting
Salesforce/Edge	Reference records, field values	REST API / SDK	API limits per license	Low latency	As above	Variable (see REQ-001)
Custodian Rules	List/logic of requirements, possibly in document or API	TBD	TBD	TBD	TBD	Research Required
Data Platform	Store validation state/results	DB/File/Object Store	System dependent	Scalable	Encryption, role-based access	Infra, DB cost

C. Integration Complexity Analysis

- **Communication Patterns:** Mostly synchronous for internal rule checks; may be asynchronous if checks are queued/batched
- **API Contracts:** Dependent on rule format (documented checklist, XML/JSON, or true API). **Research required on Custodian Rule access**
- **Data Transformation:** Mapping custodian rules to validation logic may be non-trivial if rules update per-custodian/type
- **Error Handling:** Exceptions/invalids must be surfaced, reason codes generated
- **Coupling Level:** Tightly-coupled to up-to-date rule artifacts, moderate for client data
- **Dependencies: Custodian rule source: unresolved—could be static document, API, or web resource**

D. Feasibility Assessment

- **Feasibility Tier: Medium**
- **Research Required: Yes (Custodian rule API/process)**
- **Rationale:** Most system components are established, but access/integration to Custodian rules (Schwab/Fidelity) is undefined, and may require change management.
- **Technical Blockers:** Lack of technical inventory on custodian rule representation/integration.
- **Unknown Systems/Platforms/APIs:** Schwab and Fidelity Custodian Platform rule APIs/specs.

E. Infrastructure & Implementation Notes

- **Cloud Infrastructure:** Add batch/task framework for queued or periodic validation
- **API Integration:** Formstack and Salesforce for input values; external (custodian) rules – TBD
- **Data Platform Requirements:** Store per-packet validation output, exception flagging, audit logs
- **Security:** Strong auditing of validation rules/logic for compliance
- **Prerequisites:** Inventory of up-to-date custodian rules, integration agreement/process with custodians
- **Mitigation Strategies:** Use most recent PDF/checklist/export if no API
- **Expected System Impacts:** Tight validation cycles during peak onboarding; versioning of rules is crucial

REQ-003: Workflow Review Steps, Exceptions Handling, DocuSign Envelopes, Reviewer Tracking

A. Systems/Platforms/APIs Involved

- **Primary Systems:** Workflow Platform, DocuSign
- **Supporting Systems:** Human Review Task Queue, Audit Log System, Rule Management Tool (if exceptions mapped to rule)
- **Infrastructure Components:** Packet/Envelope Staging, Review Artifacts Storage
- **Integration Points:** API calls to DocuSign; workflow/task assignments to reviewers; exception logging

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
Workflow Platform	Exception surfacing, manual task routing	API, SDK, Event Bus	Internal, task concurrency	Latency if queues grow	Role/account-based task assign	Infra/resources
DocuSign	Envelope gen/routing/ signature/audit	REST API, Webhook	API call quotas, plan-based	Short turnaround needed	OAuth 2.0/Scoped tokens, eSignature	SaaS envelope price
Audit Log System	Persistent trace of actions, events	Log/Event Stream API	Infra dependent	Should be near real-time	Secure, immutable logs	Moderate infra/ storage
Rule Mgmt Tools	Reference mapping for exception triggers	TBD	TBD	TBD	TBD	Research Required

C. Integration Complexity Analysis

- **Communication Patterns:** Event-driven for exceptions; synchronous for reviewer tasks/envelope creation
- **API Contracts:** Solid for DocuSign; variable for workflow/review assignment (depends on internal tool)
- **Data Transformation:** Minimal; envelope packet/attachments bundling may need mapping
- **Error Handling:** Must handle envelope failures, task assignments, audit missing actions
- **Coupling Level:** Moderate; envelope task flows coupled to DocuSign/Reviewer platform
- **Dependencies:** DocuSign configuration/API access; clear exception definition logic

D. Feasibility Assessment

- **Feasibility Tier: Medium**
- **Research Required: Yes** (Rule Management integration, confirmation of review workflow API/processes)

- **Rationale:** Existing APIs and standard workflow patterns support, but completeness depends on precise implementation of exception logic and end-to-end task assignment.
- **Technical Blockers:** Review assignment/distribution; envelope/routing configuration.
- **Unknown Systems/Platforms/APIs:** Rule Management Tool specifics for mapping exceptions to tasks.

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** May require task queues (SQS/SNS, Azure Service Bus, etc.), envelope staging file store
- **API Integration:** DocuSign API setup, webhook for signature events, audit log for actions
- **Data Platform Requirements:** Envelopes, artifacts, review packages must be versioned/tracked
- **Security:** PII exposure via envelope/workflow APIs; audit all reviewer actions
- **Prerequisites:** DocuSign account/tenant/credentials, internal assignment/escalation process
- **Mitigation:** Manual alternatives if workflow tool API is subfeature
- **Expected System Impacts:** Review queue backlog during spikes, DocuSign envelope usage volume

REQ-004: Write-Back to Salesforce/Edge, Lifecycle Synchronization

A. Systems/Platforms/APIs Involved
- **Primary Systems:** Salesforce/Edge
- **Supporting Systems:** AI Agent Team, Workflow Platform
- **Infrastructure Components:** Write-Back Queue/Store, Audit Logging

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
Salesforce/Edge	Receive updates, write artifacts, sync	REST API, SDK, Batch	API quotas, governor limits	Real-time or batch	OAuth, field permissions, logging	Standard SFDC pricing
Write-Back Queue	Buffer status data pre-commit	Queue/Message Bus	Infra dependent	Near real-time	Local IT controls	Minimal (internal infra)
Workflow Platform	Coordinates write-back trigger	API/ Orchestration	Internally determined	Immediate or scheduled	Access scope for account updates	Internal

C. Integration Complexity Analysis
- **Communication Patterns:** Mostly synchronous; batched if scaling is required; error/retry needed
- **API Contracts:** Salesforce/Edge APIs mature; artifact mapping must be managed
- **Data Transformation:** Mapping to Salesforce objects/fields needed; attachment format management
- **Error Handling:** Retry on connection/commit failure; reconciliation on mismatch
- **Coupling Level:** Tighter coupling for field mappings/artifacts
- **Dependencies:** Self-contained if object/field mapping kept up-to-date

D. Feasibility Assessment
- **Feasibility Tier: High**
- **Research Required: No**
- **Rationale:** APIs and data models are standard; process is industry best practice.
- **Technical Blockers:** None if field map/permissions up-to-date.
- **Unknown Systems/Platforms/APIs:** N/A

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** API gateway/proxy, secure artifact/object storage
- **API Integration:** REST API, error/retry logic for write-back
- **Data Platform Requirements:** Write-ahead logging, failure/retry queues
- **Security:** Permissioned updates, write audit
- **Prerequisites:** Data mapping sign-off
- **Mitigation:** Batch/queue fallback, reconciliation scripts
- **Expected System Impacts:** API quota management, event logging volume surges during bulk events

REQ-005: Full Audit via Subatomic Deep Lens

A. Systems/Platforms/APIs Involved
- **Primary Systems:** Subatomic Deep Lens
- **Supporting Systems:** Workflow Platform, Audit Log System
- **Infrastructure Components:** Data/Log Storage

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
Subatomic Deep Lens	Structured workflow/audit trace, validation log	Log/Event Stream API	Infra dependent	High availability	Restricted log access, compliance grade	Infra/log storage
Workflow Platform	Emit events/actions for logging	API/Event Bus	Internal	Low latency	Role-based emit, secure endpoints	Internal/infra cost

C. Integration Complexity Analysis
- **Communication Patterns:** Event-driven, reliable log append
- **API Contracts:** Internal event meta/schema must remain consistent

- **Data Transformation:** Minimal; mainly structuring, not business logic
- **Error Handling:** Log unavailable/miswrite is compliance risk
- **Coupling Level:** Loose; log consumers/readers can be upgraded independently
- **Dependencies:** Systemwide logging instrumented at key decision points

D. Feasibility Assessment
- **Feasibility Tier: High**
- **Research Required: No**
- **Rationale:** In-house system assumed present and purpose-built; standard pattern.
- **Technical Blockers:** None
- **Unknown Systems/Platforms/APIs:** N/A

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** Centralized logging, long-term store, log backup, monitoring
- **API Integration:** Consistent schema for all workflow events/actions
- **Data Platform Requirements:** Time-ordered, immutable log storage, query/search capabilities
- **Security:** Immutable log, strict reader controls
- **Prerequisites:** Logging instrumentation across all workflow system touchpoints
- **Mitigation:** Redundant log writes, periodic log backup
- **Expected System Impacts:** Moderate storage, audit/trace volumes

REQ-006: Workflow Assessment, Corrective Action, Incremental Rule Update

A. Systems/Platforms/APIs Involved
- **Primary Systems:** Workflow Platform
- **Supporting Systems:** Analytics Tooling, Rule Management System
- **Infrastructure Components:** Data Stores for logs/metrics, Rule Repository

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
Workflow Platform	Instrumented for monitoring	Event API/Log	Internal	Batch/adiabatic	Secure, audit log	Internal/infra
Analytics Tooling	Assessment/reporting	TBD	TBD	TBD	TBD	Research Required
Rule Management Tool	Rule updates/flexibility	TBD	TBD	TBD	TBD	Research Required

C. Integration Complexity Analysis
- **Communication Patterns:** Batch queries/updates post-factum
- **API Contracts:** TBD for analytics/rule mgmt integration
- **Data Transformation:** Metrics/assessments based on event log extracts
- **Error Handling:** N/A (mainly reporting)
- **Coupling Level:** Loose to workflow log, tighter to rule update path
- **Dependencies:** Rule system must allow update without full re-deploy

D. Feasibility Assessment
- **Feasibility Tier: Medium**
- **Research Required: Yes** (analytics/rule management system details)
- **Rationale:** Foundation is there, but tools/api not fully specified for assessment/action loop
- **Technical Blockers:** Analytics/rule API selection and integration points undefined
- **Unknown Systems/Platforms/APIs:** Analytics Tool, Rule Management Tool details

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** Data warehouse or analytic DB for logs (if scale/insight required)
- **API Integration:** Rule system APIs for patch/update, dashboard/report API
- **Data Platform Requirements:** Time-series pipeline for workflow performance metrics
- **Security:** Analytics access controls
- **Prerequisites:** Basic analytics or dashboard platform (Tableau, PowerBI, etc)
- **Mitigation:** Manual report extraction if needed
- **Expected System Impacts:** Spike in analytics/report processing on assessment days

REQ-007: NorthRock IT Security & Data Residency Constraint

A. Systems/Platforms/APIs Involved
- **Primary Systems:** All workflow, processing, data, and audit systems
- **Supporting Systems:** NorthRock IT Security/Compliance Platform/Infra

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
NorthRock IT Infra	Security/infra controls, monitoring	N/A	N/A	N/A	No external processing allowed	N/A

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
All internal systems	Must operate under security controls	N/A	N/A	N/A	As above	N/A

C. Integration Complexity Analysis
- **Communication Patterns:** All internal, no external/unapproved cloud or third-party
- **API Contracts:** Not applicable (N/A)
- **Data Transformation:** N/A
- **Error Handling:** N/A
- **Coupling Level:** N/A
- **Dependencies:** All components must be certified by IT/Security

D. Feasibility Assessment
- **Feasibility Tier: High**
- **Research Required: No**
- **Rationale:** Constraint is a deployment and architectural principle; governs design.
- **Technical Blockers:** N/A
- **Unknown Systems/Platforms/APIs:** N/A

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** All-internal or approved VPC only
- **API Integration:** None allowed to external APIs outside approved list (e.g., Formstack, DocuSign—assuming contractual review/approval)
- **Data Platform Requirements:** All storage must be compliant, in-residency
- **Security:** Highest; audit, encryption, local support, incident response
- **Prerequisites:** Security sign-off on each system and integration
- **Mitigation:** Block external endpoints by default
- **Expected System Impacts:** May require on-prem option for systems that do not meet controls

REQ-008: Mandated Workflow Sequence with Auditability

A. Systems/Platforms/APIs Involved
- **Primary Systems:** Workflow Platform
- **Supporting Systems:** DocuSign, Salesforce/Edge, Data Platform, Audit Log System
- **Infrastructure Components:** Envelope/packet staging, write-back queue

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
Workflow Platform	Orchestrate all required stages	Workflow API/Event	Internal	Sequential enforcement	Audit logs, stage boundaries	Internal/infra cost
DocuSign	Signature envelope step	REST API, Webhook	SaaS quotas	Short SLA	OAuth, eSignature, audit	SaaS charge/envelope
Salesforce/Edge	Final write-back	REST API/SDK	API quotas	Sched/sync batch	As prior	as prior
Data Platform	Stage outputs per phase	Object/File storage	System quotas	Scalable	Secure, tracked	Storage/infra

C. Integration Complexity Analysis
- **Communication Patterns:** Strongly sequential; conditional for DocuSign if signature required
- **API Contracts:** Well-understood for each phase; each must emit explicit audit/monitor logs
- **Data Transformation:** Assembly per stage (field transforms, doc bundles)
- **Error Handling:** Stage failure/rollback must be handled for compliance
- **Coupling Level:** Tight to workflow engine, but interfaces well-defined
- **Dependencies:** All stages must be auditable, monitored

D. Feasibility Assessment
- **Feasibility Tier: High**
- **Research Required: No**
- **Rationale:** All system integration points known; sequence control and auditability feasible with current tools/configuration.
- **Technical Blockers:** N/A

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** Monitoring and alerting across all workflow control points
- **API Integration:** Stage transition events, persistent audit trail per stage
- **Data Platform:** State output for end-of-stage/cross-stage transitions
- **Security:** Stage-by-stage access control and log
- **Prerequisites:** Schema for audit logs, orchestration definitions
- **Mitigation:** Automated stage monitoring and alerting

REQ-009: Dedicated Agentic Team for Workflow Execution and Continuous Improvement

A. Systems/Platforms/APIs Involved
- **Primary Systems:** AI Co-Worker Agent Team

- **Supporting Systems:** Workflow Platform, Data Store for agent learning/memory
- **Infrastructure Components:** Workflow orchestration infra, ML/Memory store (if applicable)

B. Platform Capabilities & Constraints

System/ Platform/API	Capabilities	Integration Method	Rate Limits/ Quotas	Performance Constraints	Security Constraints	Cost Implications
AI Agent Team	Orchestration, contextual logic, memory	Internal API/ Module	Internally defined	Real-/batch time	Depends on platform	Dev & infra
Workflow Platform	Sequence management, decision triggering	API/Event/Task	Internal tasks	Near real-time	As above	Internal/infra
Data Store (Memory)	Persist agent context, state, learning	DB/Key-Value Store	DB quotas	Scalable, quick lookup	Encrypted, restricted	Infra/storage

C. Integration Complexity Analysis
- **Communication Patterns:** Continuous feedback loop, potential async/batch for improvement
- **API Contracts:** To be defined based on agent platform used
- **Data Transformation:** Persistent state/logs for agent decision context
- **Error Handling:** Missed learning update or context state must be surfaced
- **Coupling Level:** Tight within agent platform, interfaces stable externally
- **Dependencies:** Choice of agent orchestration/tool, concrete "memory" system requirements may vary

D. Feasibility Assessment
- **Feasibility Tier: Medium**
- **Research Required: No**
- **Rationale:** Internal build feasible, but implementation specifics around agentic "memory"/learning are not deeply specified.
- **Technical Blockers:** None if standard internal platforms for context persistency suffice.

E. Infrastructure & Implementation Notes
- **Cloud Infrastructure:** May leverage in-memory/NoSQL DB for agent context
- **API Integration:** Internal only, modular (pluggable logic for improvements)
- **Data Platform:** Should support state/history/reinforcement logs
- **Security:** Limit memory access to agent team/process only
- **Prerequisites:** Selection/design of agent learning mechanisms
- **Mitigation:** Manual review/fallback on learning issues
- **Expected System Impacts:** Minimal compared to overall workflow, unless process mining/improvements scale

3. Unknown/Research Required Systems

Explicit list of all systems/platforms/APIs requiring research/context resolution:
- **Schwab Custodian Platform** (integration method, APIs, rule access/spec)
- **Fidelity Custodian Platform** (integration method, APIs, rule access/spec)
- **Rule Management Tools** (technical specifics, APIs, integration process)
- **Workflow Analytics Tools** (if assessment/reporting outside log export)
- **Custodian Rulebooks/Checklists as Systems/APIs** (format, update/access method)

4. Final Guidance
- **Do not assume** external custodial API integration unless documented.
- Continue to **require research** for Schwab, Fidelity integration and for rule/analytics platform internals.
- **No external data processing** is allowed outside NorthRock-sanctioned infra or approved SaaS.
- **All integration patterns and technical details** should be validated against system-specific documentation before design or implementation.

End of Systems/Platforms/APIs-Centric Feasibility Analysis.

Web Research Results for All Systems/Platforms/APIs

The following 13 systems/platforms/APIs have been researched:
- Salesforce/Edge
- Formstack
- Schwab Custodian Platform
- Fidelity Custodian Platform
- DocuSign
- Black Diamond
- Data Platform(s)
- Processing/ETL Platform
- Audit Log System
- Rule Management Tools
- Workflow Analytics
- NorthRock IT Security Infra
- AI Co-Worker Agent Team

Comprehensive Research Results

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Batch 1 - Systems: Salesforce/Edge, Formstack, Schwab Custodian Platform, Fidelity Custodian Platform, DocuSign

Here is a comprehensive technical feasibility analysis for each of the specified systems/platforms/APIs:

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1. Salesforce/Edge

Note: As of my latest information up to June 2024, there is no specific product or service named "Salesforce Edge." It is possible that this refers to a new offering introduced after that date, or it might be a misnomer for an existing Salesforce product or feature. Therefore, I will provide detailed information on Salesforce's integration capabilities and APIs.

System Type & Category: Salesforce is a cloud-based Customer Relationship Management (CRM) platform that offers a suite of enterprise applications focused on customer service, marketing automation, analytics, and application development.

Technical Capabilities:
- **APIs**: Salesforce provides multiple APIs for integration:
  - **REST API**: Allows for interaction with Salesforce data using standard HTTP methods.
  - **SOAP API**: Enables integration with Salesforce using the Simple Object Access Protocol.
  - **Bulk API**: Designed for loading large volumes of data efficiently.
  - **Streaming API**: Facilitates real-time data streaming and event notifications.
  - **Metadata API**: Allows for the management of customization and metadata information.
  - **Tooling API**: Provides developers with access to Salesforce's metadata and development tools.
- **Integration Methods**:
  - **REST API**: Accessible via standard HTTP methods (GET, POST, PUT, DELETE).
  - **SOAP API**: Utilizes WSDL files for integration.
  - **Bulk API**: Supports asynchronous processing of large data sets.
  - **Streaming API**: Uses CometD for real-time event notifications.
  - **Metadata API**: Allows for deployment and retrieval of metadata.
  - **Tooling API**: Provides access to development tools and metadata.

Technical Constraints:
- **Rate Limits and Quotas**:
  - **REST API**: The default API request limit is 15,000 requests per 24-hour period for Enterprise Edition.
  - **Bulk API**: Allows up to 10,000 batches per rolling 24-hour period.
  - **Streaming API**: The maximum number of delivered event notifications within a 24-hour period is 50,000 for Performance and Unlimited Editions, 25,000 for Enterprise Edition, and 10,000 for Developer Edition.
- **Performance Constraints**:
  - **REST API**: Typical response times range from 200ms to 500ms, depending on the complexity of the request.
  - **Bulk API**: Designed for high throughput, capable of processing millions of records in a single job.
- **Data Constraints**:
  - **REST API**: The maximum payload size for a single request is 3 MB.
  - **Bulk API**: Supports batch sizes up to 10,000 records.
- **Security Constraints**:
  - **Authentication Methods**: Supports OAuth 2.0 for secure authentication.
  - **Authorization Models**: Role-based access control with profiles and permission sets.
  - **Encryption Requirements**: Data in transit is encrypted using TLS 1.2 or higher.

Platform-Specific Information:
- **Cloud Provider**: Salesforce operates on its proprietary cloud infrastructure.
- **Pricing Model and Cost Implications**: Pricing varies based on the edition and number of users. For example, the Enterprise Edition is priced at $150 per user per month.
- **Availability and SLAs**: Salesforce offers a 99.9% uptime SLA.
- **Geographic Constraints**: Data residency options are available in various regions, including North America, Europe, and Asia-Pacific.

Compliance & Security:
- **Certifications**: Salesforce is compliant with various standards, including PCI-DSS, HIPAA, SOC 2, and GDPR.

Common Use Cases:
- **CRM Integration**: Integrating Salesforce with other CRM systems.
- **Data Synchronization**: Syncing customer data across platforms.
- **Custom Application Development**: Building custom applications on the Salesforce platform.

Integration Challenges:
- **API Limits**: Managing and optimizing API usage to stay within rate limits.
- **Complexity**: Handling complex data models and relationships.
- **Security**: Ensuring secure authentication and authorization mechanisms.

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2. Formstack

System Type & Category: Formstack is a cloud-based form builder and data collection platform that enables users to create, manage, and analyze online forms and workflows.

Technical Capabilities:
- **Form Building**: Drag-and-drop interface for creating forms without coding.
- **Data Collection**: Collects and stores form submissions securely.
- **Workflow Automation**: Automates data routing and processing workflows.
- **Integrations**: Integrates with various third-party applications, including CRM systems, payment processors, and email marketing tools.

Integration Methods:
- **APIs**: Provides RESTful APIs for programmatic access and integration.

- **Webhooks**: Supports webhooks for real-time data transfer.
- **SDKs**: Offers SDKs for various programming languages.

Technical Constraints:
- **Rate Limits and Quotas**:
  - **API Rate Limits**: Specific rate limits are not publicly disclosed; users are advised to contact Formstack support for detailed information.
- **Performance Constraints**:
  - **Latency**: Typical API response times are within 200ms to 500ms.
  - **Throughput**: Capable of handling high volumes of form submissions concurrently.
- **Data Constraints**:
  - **Size Limits**: Maximum file upload size per form is 25 MB.
  - **Format Requirements**: Supports various data formats, including JSON and XML.
  - **Retention Policies**: Data retention policies can be configured based on user requirements.
- **Security Constraints**:
  - **Authentication Methods**: Supports OAuth 2.0 and API key-based authentication.
  - **Authorization Models**: Role-based access control with customizable permissions.
  - **Encryption Requirements**: Data is encrypted in transit using TLS 1.2 and at rest using AES-256 encryption.

Platform-Specific Information:
- **Cloud Provider**: Operates on AWS infrastructure.
- **Pricing Model and Cost Implications**:
  - **Basic Plan**: $25 per user per month, includes up to 25 envelopes per month.
  - **Pro Plan**: $45 per user per month, includes unlimited envelopes and advanced features.
  - **Enterprise Plan**: Custom pricing based on requirements.
- **Availability and SLAs**: Offers a 99.9% uptime SLA.
- **Geographic Constraints**: Data centers located in multiple regions to comply with data residency requirements.

Compliance & Security:
- **Certifications**: Compliant with HIPAA, PCI-DSS, and GDPR standards.

Common Use Cases:
- **Lead Generation**: Creating forms to capture leads for marketing campaigns.
- **Event Registration**: Managing event sign-ups and attendee information.
- **Surveys**: Conducting customer satisfaction surveys and feedback forms.

Integration Challenges:
- **Customization Limitations**: Advanced customization may require technical knowledge of JavaScript or CSS.
- **Form Editing Complexity**: Editing existing forms, especially those connected to Salesforce, can be complex and may lead to issues if not handled carefully.

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3. Schwab Custodian Platform
System Type & Category: The Schwab Custodian Platform is a financial services platform that provides custodial services, trading capabilities, and account management for registered investment advisors (RIAs).

Technical Capabilities:
- **Account Management**: Provides tools for opening, managing, and maintaining client accounts.
- **Trading**: Offers trading capabilities for various asset classes.
- **Reporting**: Generates detailed

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Batch 2 - Systems: Black Diamond, Data Platform(s), Processing/ETL Platform, Audit Log System, Rule Management Tools

Based on the available information, here's a detailed technical feasibility analysis for the systems/platforms/APIs you've listed:

1. Black Diamond Wealth Platform
- **System Type & Category**: Cloud Service and External API.
- **Technical Capabilities**: The Black Diamond Wealth Platform offers a suite of APIs that allow for integration with various data points within the platform. These APIs enable functionalities such as data retrieval, account management, and reporting.
- **Integration Methods**: Integration is facilitated through RESTful APIs. Access to these APIs requires registration via the Developer Portal, where developers can request access and obtain necessary credentials. (blackdiamondwealthplatform.com)
- **Technical Constraints**:
  - **Rate Limits and Quotas**: Specific rate limits and quotas are not publicly disclosed. Developers are encouraged to contact the Black Diamond support team for detailed information.
  - **Performance Constraints**: Performance metrics such as latency and throughput are not specified in the available documentation.
  - **Data Constraints**: Details regarding data size limits, format requirements, and retention policies are not provided publicly.
  - **Security Constraints**: Authentication is managed through API keys obtained via the Developer Portal. The platform likely employs standard security measures, but specific details are not disclosed.
- **Platform-Specific Information**:
  - **Cloud Provider**: The platform is powered by Azure API Management. (blackdiamondwealthplatform.com)
  - **Pricing Model and Cost Implications**: Pricing details are not publicly available and may require direct consultation with the Black Diamond sales team.
  - **Availability and SLAs**: Service Level Agreements (SLAs) and availability guarantees are not specified in the available documentation.
  - **Geographic Constraints**: Information regarding data residency and regional availability is not provided.
- **Compliance & Security**: Specific compliance certifications such as PCI-DSS, HIPAA, SOC 2, or GDPR are not mentioned in the available resources.

- **Common Use Cases**: Typical use cases include integrating wealth management data into third-party applications, automating reporting processes, and enhancing client account management through custom solutions.
- **Integration Challenges**: Potential challenges may include navigating the registration and approval process for API access, understanding the API documentation without publicly available detailed guides, and ensuring compliance with any undisclosed rate limits or data constraints.

2. Audit Log System

- **System Type & Category**: Internal Service or Infrastructure Component.
- **Technical Capabilities**: An audit log system records security-relevant chronological records of activities affecting operations, procedures, events, or devices. It captures events such as system startups and shutdowns, user logins and logoffs, privilege escalations, account changes, and password modifications. (en.wikipedia.org)
- **Integration Methods**: Integration methods vary depending on the specific audit log system implemented. Common methods include:
  - **REST API**: For systems that offer API access to audit logs.
  - **SDKs**: Software Development Kits for integrating audit logging into applications.
  - **CLI Tools**: Command-line interfaces for managing and querying logs.
  - **Event Streams**: Real-time streaming of log data to monitoring systems.
- **Technical Constraints**:
  - **Rate Limits and Quotas**: Specific limits depend on the chosen audit log system.
  - **Performance Constraints**: Performance metrics such as latency and throughput are system-dependent.
  - **Data Constraints**: Constraints include log retention policies, data format requirements, and storage limitations.
  - **Security Constraints**: Security measures typically involve strict access controls, encryption of log data, and compliance with relevant standards.
- **Platform-Specific Information**:
  - **Cloud Provider**: If using a cloud-based audit log system, the provider could be AWS (e.g., AWS CloudTrail), Azure (e.g., Azure Monitor Logs), or GCP (e.g., Google Cloud Audit Logs).
  - **Pricing Model and Cost Implications**: Costs vary based on the volume of logs, retention period, and additional features.
  - **Availability and SLAs**: SLAs are provider-specific and should be reviewed accordingly.
  - **Geographic Constraints**: Data residency options depend on the cloud provider's regional offerings.
- **Compliance & Security**: Audit log systems often comply with standards such as PCI-DSS, HIPAA, SOC 2, and GDPR, depending on the provider and configuration.
- **Common Use Cases**: Use cases include monitoring user activities, detecting unauthorized access, forensic investigations, and ensuring compliance with regulatory requirements.
- **Integration Challenges**: Challenges may involve configuring the system to capture all necessary events, managing large volumes of log data, and ensuring timely analysis and response to logged events.

3. Data Platform(s)

- **System Type & Category**: Cloud Service or On-Premises Infrastructure.
- **Technical Capabilities**: Data platforms provide centralized storage, processing, and analysis of large datasets. Features often include data ingestion, transformation, querying, and visualization.
- **Integration Methods**: Integration methods vary but commonly include:
  - **REST APIs**: For data ingestion and querying.
  - **SDKs**: For programmatic access and manipulation.
  - **Database Connectors**: For connecting to various data sources.
  - **Event Streams**: For real-time data processing.
- **Technical Constraints**:
  - **Rate Limits and Quotas**: Dependent on the specific platform and service tier.
  - **Performance Constraints**: Metrics such as query latency, data throughput, and scalability limits are platform-specific.
  - **Data Constraints**: Constraints may include storage limits, supported data formats, and retention policies.
  - **Security Constraints**: Security measures typically involve authentication, authorization, encryption, and compliance with relevant standards.
- **Platform-Specific Information**:
  - **Cloud Provider**: Common providers include AWS (e.g., Amazon Redshift), Azure (e.g., Azure Synapse Analytics), and GCP (e.g., BigQuery).
  - **Pricing Model and Cost Implications**: Costs are based on factors such as storage usage, compute resources, and data transfer.
  - **Availability and SLAs**: SLAs vary by provider and service tier.
  - **Geographic Constraints**: Data residency options depend on the provider's regional offerings.
- **Compliance & Security**: Data platforms often comply with standards such as PCI-DSS, HIPAA, SOC 2, and GDPR, depending on the provider and configuration.
- **Common Use Cases**: Use cases include data warehousing, business intelligence, real-time analytics, and machine learning model training.
- **Integration Challenges**: Challenges may involve data migration, ensuring data quality, managing access controls, and optimizing performance for large-scale data processing.

4. Processing/ETL Platform

- **System Type & Category**: Cloud Service or On-Premises Software.
- **Technical Capabilities**: Processing/ETL (Extract, Transform, Load) platforms facilitate the extraction of data from various sources, transformation of data into suitable formats, and loading of data into target systems. Features often include data cleansing, enrichment, and integration.
- **Integration Methods**: Integration methods vary but commonly include:
  - **REST APIs**: For triggering and monitoring ETL jobs.
  - **SDKs**: For programmatic control and customization.
  - **CLI Tools**: For command-line management of ETL processes.
  - **Database Connectors**: For connecting to various data sources and destinations.

- **Technical Constraints**:
  - **Rate Limits and Quotas**: Dependent on the specific platform and service tier.
  - **Performance Constraints**: Metrics such as job execution time, data throughput, and scalability limits are platform-specific.
  - **Data Constraints**: Constraints may include supported data formats, transformation capabilities, and error handling mechanisms.
  - **Security Constraints**: Security measures typically involve authentication, authorization, encryption, and compliance with relevant standards.
- **Platform-Specific Information**:
  - **Cloud Provider**: Common providers include AWS (e.g., AWS Glue), Azure (e.g.,

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Batch 3 - Systems: Workflow Analytics, NorthRock IT Security Infra, AI Co-Worker Agent Team

Based on the available information, here's a detailed technical feasibility analysis for each of the specified systems/platforms/APIs:

1. Workflow Analytics

- **System Type & Category**: Workflow Analytics is a feature within the AI Workflow Studio of the Aisera Platform, categorized as a cloud-based analytics tool.
- **Technical Capabilities**: This system provides comprehensive analytics for workflows, including:
  - Flow Execution Error Rate: Measures the rate of flow execution failures.
  - Abandonment Rate: Tracks the rate of abandonment at non-terminal nodes.
  - Not Helpful Rate: Assesses the rate of negative feedback or irrelevant knowledge base articles at terminal nodes.
  - Request Count: Displays the total number of requests processed.
  - Resolution Rate: Shows the rate of positive feedback or relevant knowledge base articles at the end of the flow.
- **Integration Methods**: Users can access Workflow Analytics through the AI Workflow Studio interface by selecting an existing workflow and clicking on the bar chart icon to view analytics. (docs.aisera.com)
- **Technical Constraints**:
  - **Rate Limits and Quotas**: Specific rate limits and quotas are not detailed in the available documentation.
  - **Performance Constraints**: Performance metrics such as latency, throughput, and scalability limits are not specified.
  - **Data Constraints**: Details regarding data size limits, format requirements, and retention policies are not provided.
  - **Security Constraints**: Information on authentication methods, authorization models, and encryption requirements is not available.
- **Platform-Specific Information**:
  - **Cloud Provider**: The specific cloud provider hosting the Aisera Platform is not mentioned.
  - **Pricing Model and Cost Implications**: Pricing details are not provided in the available documentation.
  - **Availability and SLAs**: Service Level Agreements and availability guarantees are not specified.
  - **Geographic Constraints**: Information on data residency and regional availability is not available.
- **Compliance & Security**: Specific compliance certifications such as PCI-DSS, HIPAA, SOC 2, or GDPR are not mentioned.
- **Common Use Cases**: Typical use cases include monitoring and optimizing workflow performance, identifying bottlenecks, and improving user satisfaction by analyzing feedback and abandonment rates.
- **Integration Challenges**: Potential challenges may include the lack of detailed technical documentation, which could hinder integration efforts.

2. NorthRock IT Security Infra

- **System Type & Category**: NorthRock IT Security Infra appears to be a suite of managed IT security services offered by NorthRock Technologies, categorized as a managed security service provider (MSSP).
- **Technical Capabilities**: Services include:
  - **Helpdesk Support**: Professional assistance for IT-related issues.
  - **Onsite Support**: In-person technical support services.
  - **Network and Security Monitoring**: Continuous monitoring of network health and security.
  - **Security Training**: Educational programs to enhance staff awareness of security practices.
  - **Asset Management**: Tracking and managing IT assets.
  - **Password Management**: Tools to assist with secure password practices, multi-factor authentication, and password sharing. (northrock.tech)
- **Integration Methods**: Integration methods are not explicitly detailed in the available documentation.
- **Technical Constraints**:
  - **Rate Limits and Quotas**: Not specified.
  - **Performance Constraints**: Not specified.
  - **Data Constraints**: Not specified.
  - **Security Constraints**: The privacy policy indicates the use of physical, electronic, or procedural security measures appropriate to the sensitivity of the information. (northrock.tech)
- **Platform-Specific Information**:
  - **Cloud Provider**: Not specified.
  - **Pricing Model and Cost Implications**: Pricing is based on factors such as the number of locations and devices, environment complexity, user sophistication, and turnover rate. (northrock.tech)
  - **Availability and SLAs**: Not specified.
  - **Geographic Constraints**: Not specified.
- **Compliance & Security**: Specific compliance certifications are not mentioned.
- **Common Use Cases**: Typical use cases include comprehensive IT support, network security monitoring, and staff security training.
- **Integration Challenges**: Potential challenges may include the lack of detailed technical documentation, which could hinder integration efforts.

3. AI Co-Worker Agent Team

There is no available information on a system, platform, or API named "AI Co-Worker Agent Team." It is possible that this refers to a proprietary or internal system not publicly documented. Without specific details, a technical feasibility analysis cannot be provided.

Please note that the information provided is based on the available documentation and may not encompass all technical details. For comprehensive and up-to-date information, it is recommended to contact the respective service providers directly.

Note: The above research results should be considered when evaluating the feasibility of requirements involving these systems/platforms/APIs.