March 1, 2024

RE: RFP #2096 | Modernized FDR Proof of Concept

Last year, the National Association of Insurance Commissioners (NAIC) received an in-depth technology and business functionality assessment for the Financial Data Repository (FDR) system – the platform used for Statutory Financial Reporting.

Based on the assessment's results, the NAIC plans to replace the current FDR system with a modernized platform, developed in a phased approach. The goal of the FDR Modernization initiative is to create a modular, "evergreen" system, with improved functionality for both internal and external users that is easier to use and interact with, is more automated and efficient to operate, and is easier to support, maintain, and regularly update.

The full modernization project is intended to be completed in multiple phases.

Work has already been undertaken to document the current-state FDR system and processes, and to capture high-level technical and business requirements for the modernized FDR, the summarized results of which are contained in the following Request for Proposals (RFP) document.

At this time, the NAIC is soliciting proposals from qualified third-party firms for the development of a "Proof-of-Concept" (POC) of the modernized FDR system, and for the creation of detailed plans for the full development and implementation of the modernized FDR system ("Mobilization Planning"), leveraging the insights gained from the POC.

A project clarification and question and answer session will be held at **1pm Central Time, Thursday March 21, 2024.** Firms interested in submitting a proposal are encouraged to attend this WebEx session. Please click here to register.

Firms intending to respond to this RFP are asked to submit an email indicating their intent to bid and Point of Contact details by **5pm Central Time, Wednesday March 27, 2024**, via email to Jim Woody at Proposals@naic.org.

To receive consideration, final proposals must be sent electronically to Proposals@naic.org no later than **5pm Central Time, Wednesday May 15, 2024**.

Proposals must address each item described within Sections 4 and 5 (Proof-of-Concept and Mobilization Planning Phase project profiles) and Section 6 (RFP Response Requirements) contained within the following Request for Proposals (RFP) document.

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RFP | Schedule

Mar. 1, 2024	RFP released
Mar. 21, 2024	Project Clarification & Q&A Session register here
Mar. 27, 2024	Vendor intent to Bid due to Proposals@naic.org
Apr. 10, 2024	Vendor RFP questions due to Proposals@naic.org
Apr. 17, 2024	NAIC responses to vendor questions
May 15, 2024	Vendor submissions due by 5pm CT to Proposals@naic.org
May 22-June 7, 2024	Vendor Interviews, if needed
Aug. 2024	Projected Vendor Selection and RFP Award*
Q3, 2024	Projected Project Start

* NAIC's Executive Committee has the final authority to direct contract execution for the selected vendor.

Selection Criteria

The RFP Selection Committee will base the vendor selection on criteria including:
- Completeness and quality of the proposal
- Experience with similar projects
- Professional reputation of the firm
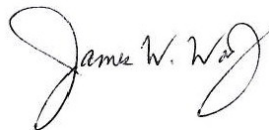- Proposed project timeline and cost

The NAIC reserves the right to reject any or all proposals, request new proposals or request additional information. The NAIC reserves the right to further negotiate with any or all bidders.

Questions

Proposal-related questions should be submitted to Proposals@naic.org by **5pm Central Time, Wednesday April 10, 2024**. Answers to each question submitted will be posted on the NAIC RFP website by **Wednesday April 17, 2024**.

Questions related to any other matter should be directed to NAIC Chief Financial Officer Jim Woody at JWoody@naic.org, who is the NAIC point-of-contact for this RFP.

Respectfully,

James W. Woody, Chief Financial Officer, National Association of Insurance Commissioners

Request for Proposal- #2096

Financial Data Repository (FDR) Modernization

Proof-of-Concept & Mobilization Planning

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Section 1 | Background Information

About the NAIC

The National Association of Insurance Commissioners (NAIC) is a 501(c) (3) not-for-profit organization.

The NAIC is the U.S. standard-setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia, and five U.S. territories.

Through the NAIC, state insurance regulators establish standards and best practices, conduct peer review, and coordinate their regulatory oversight. NAIC staff supports these efforts and represents the collective views of state regulators domestically and internationally. NAIC members, together with the central resources of the NAIC, form the national system of state-based insurance regulation in the U.S.

NAIC | Mission Statement

The mission of the NAIC is to assist the state insurance regulators, individually and collectively, in serving the public interest and achieving the following fundamental insurance regulatory goals in a responsive, efficient, and cost-effective manner, consistent with the wishes of its members:

- *Protect the public interest;*

- *Promote competitive markets;*

- *Facilitate the fair and equitable treatment of insurance consumers;*

- *Promote the reliability, solvency, and financial solidity of insurance institutions; and*

- *Support and improve state regulation of insurance.*

Section 2 | FDR Current State

FDR | Background

The NAIC Financial Data Repository (FDR) is a centralized warehouse of insurance company financial data used primarily by state regulators as well as other policymakers and academics.

The FDR system, and related processes, are responsible for ingesting this data, validating it, storing it, generating regulatory data from it, and making the data available for consumption by various users. The FDR system also provides multiple tools and reports to meet specific regulatory and data consumption needs.

The FDR system contains over ten years of annual and quarterly financial annual statements compiled and filed by all multi-state insurance companies regulated by state department so of insurance. In addition, the system also includes various supplemental filings such as risk-based capital (RBC) reports along with amendments and support information to previously submitted filing over a period of multiple years. The overall information represents more than 98 percent of the premiums written in the USA and over 4,500 individual insurers.

The statutory financial statements are filed according to templates referred to as "Blanks" and the accompanying instruction manuals, both of which are set by the NAIC Blanks Working Group (WG). These Blanks, and the accompanying instructions, are specific to a data year and statement type (e.g., balance sheet data as of December 31, 2022). The Blanks WG meets throughout the year to consider additions, edits, and deletions to the Blanks for upcoming future data years.

Insurers use a Filing Support Product (FSP), third-party vendor's products to compile the statutory financial statements in accordance with the Blanks and instructions (along with the NAIC Accounting Practices and Procedures and other manuals) and submit them to the NAIC via Internet Filing.

The statutory financial statement data stored in the NAIC FDR system serves as the core and single most important system to state insurance regulators' financial surveillance process. The various financial analysis and examination procedures used to help ensure insurer solvency, and to minimize asset deficiencies for the infrequent occasion when an insurer nears or reaches insolvency, fully depends on the FDR data.

FDR data is also used for monitoring a state's insurance market, another key responsibility of state chief insurance regulators. There are a wide variety of other regulatory uses for FDR data as well, including by other federal and state regulators.

Because of the vital importance of FDR data (and the disclosures it includes), significant data validation work is included in the FDR system. This includes validating submission versus expected filings, checking completeness, and evaluating the form and format of submitted filings versus specifications, as well as various checks to validate the numerical amounts included (e.g., verifying totals equal the sum of the detail lines, consistency of the same data totals reported in multiple places, etc.).

Once the data is filed, NAIC staff attempt to resolve validation failures via ongoing efforts throughout the year.

The FDR system provides essential data for the Insurance Regulatory Information System (IRIS) Financial Ratio Reports, financial analysis (including risk-based capital analysis), and other solvency-related reviews of insurance companies, their reporting compliance, and actuarial opinions and CPA audit reports.

The FDR system also provides automated tools that allow regulators to provide their solvency oversight in a more efficient and effective manner, helping to assist in preventing insolvencies for which liability is imposed on other operating insurers under state guaranty fund laws.

The FDR system also serves several other mandated regulatory information needs, including experience analysis for specific lines or sublines of business for individual companies and groups, general market structure and performance analysis, and statistics by company, groups or the industry as a whole.

In addition to the FDR database allowing regulators to monitor the performance of the insurance industry and identify concerns for further investigation, NAIC's own Financial Regulatory Services (FRS) Division utilizes the FDR system to perform quarterly analyses which generates reports that summarize the operating performance of each of the major insurance sectors.

The FDR data is also important for non-regulatory purposes as well. For example, it assists consumers when shopping for a new insurance carrier and academics when performing research work. It is used by other state and federal agencies with various non-regulatory monitoring functions.

In addition, the FDR data generates material revenues for the NAIC (via filing fees and database sales). In short, FDR data is critically important to the NAIC's mission to support state insurance regulators and by extension to those regulators' work to protect consumers.

Because FDR data and disclosure is vital to the insurance regulatory system, NAIC and its members spend considerable time and effort validating the appropriate financial reporting (e.g., audits, compliance evaluation, actuarial opinions, etc.) submitted by insurance companies, with the goal of enabling extensive analysis without significant extra attention from the insurance companies who file their data, thereby keeping the companies' potential regulatory disruptions to a minimum.
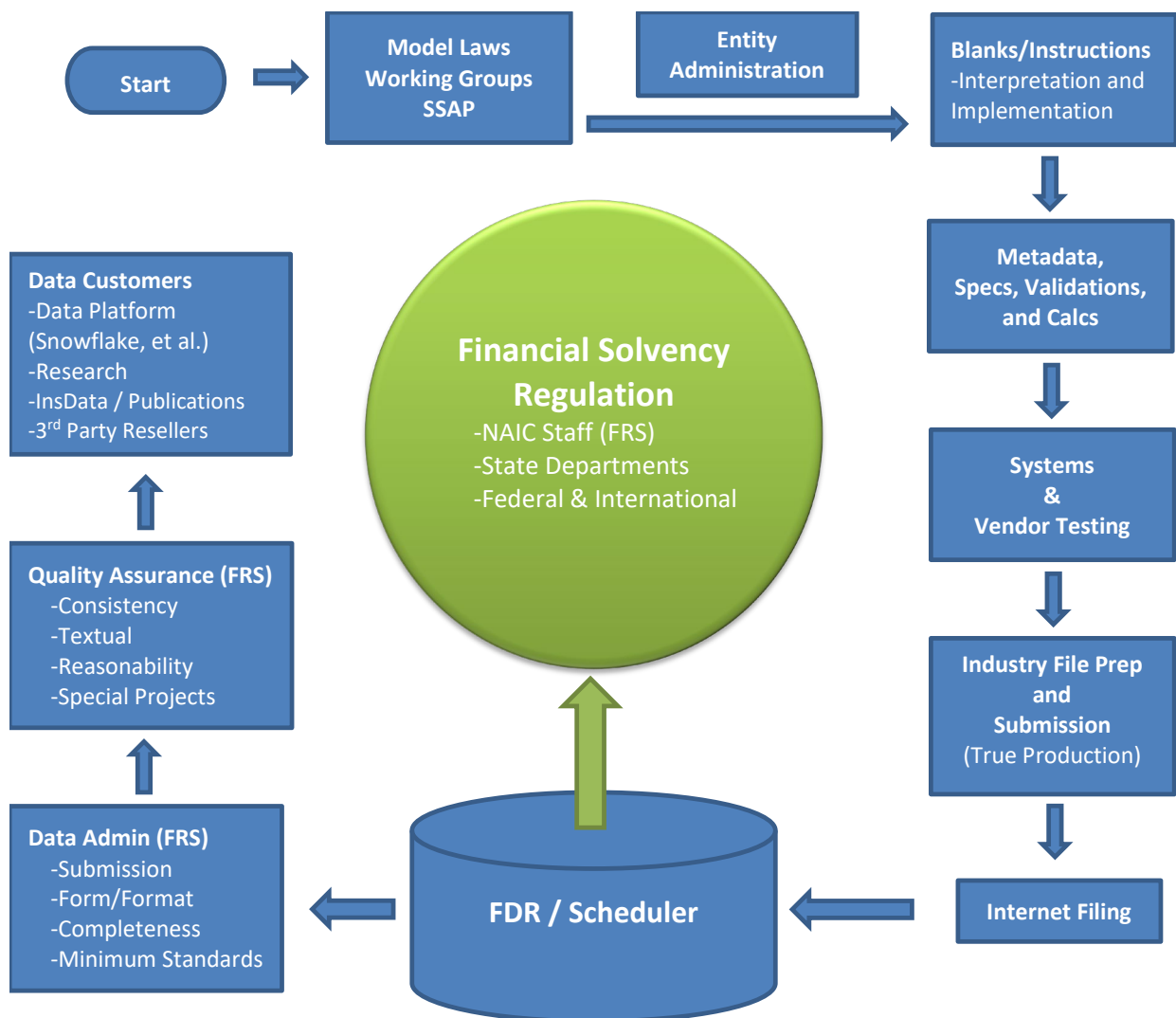
Current State FDR | Systems Functionality, Components, and Capability

Overview

The FDR system has evolved over time to provide functionality designed to accommodate a standardized approach to support filings (initial or a continuum for a company), process filing data and create actionable reporting outputs for consumption. Work intake into the FDR system is supported by gathering detailed information about updates/changes from a set of key stakeholders, typically the Model Laws / Working Groups / SSAP (Statement of Statutory Accounting Principles) teams.

Functionality

Below is a high-level visual representation of FDR functionality.

```
┌──────────┐      ┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│  Start   │ ───▶ │ Model Laws   │   │   Entity     │   │ Blanks/Instructions │
└──────────┘      │Working Groups│   │Administration│   │-Interpretation and │
                  │   SSAP       │ ─▶│              │ ─▶│ Implementation     │
                  └──────────────┘   └──────────────┘   └──────────────────┘
```

- **Data Customers**
  - Data Platform (Snowflake, et al.)
  - Research
  - InsData / Publications
  - 3rd Party Resellers

- **Financial Solvency Regulation**
  - NAIC Staff (FRS)
  - State Departments
  - Federal & International

- **Metadata, Specs, Validations, and Calcs**

- **Quality Assurance (FRS)**
  - Consistency
  - Textual
  - Reasonability
  - Special Projects

- **Systems & Vendor Testing**

- **Data Admin (FRS)**
  - Submission
  - Form/Format
  - Completeness
  - Minimum Standards

- **FDR / Scheduler**

- **Industry File Prep and Submission** (True Production)

- **Internet Filing**

The key components that support the development and maintenance of the FDR system are listed below:

- **Entity Administration**: This system component is primarily used to access and manage FDR related entity structure including but not limited to Company Demographics, Financials, Contacts, Roles, and Access related information. A variety of web-based and desktop client tools are used to both view and update entity information with access restricted by users and roles within and external to NAIC.

- **Blanks**: This system and process component is a set of artifacts and tools that targets standardization of the electronic submission of FDR data to support the filing process and enhance regulatory coordination. At a high level, Blanks are templated artifacts that are grouped by types of statements (Life, Property, Health etc.) and periods (Annual, Quarterly) to standardize uniformity in reporting. Blanks are supported with instructions that provide guidance around interpretation and implementation needs. Blanks are designed to guide vendors, insurance entity submitters and internal NAIC users around data and metadata rules, specifications, validation rules and calculations.

- **Internet Filing**: This system component is the entry point for NAIC to accept filings from insurers (and vendor test filings). The primary module of this component is a web portal that is secured and configured to allow file uploads for electronic filing. Additional features include viewing limited results, getting assistance information, an online guide, and means to contact NAIC / provide feedback.

- **Scheduler**: This system component is responsible for the monitoring, consumption, and push of filings into the FDR process and acts as middleware connecting the inputs from the filing process to outputs for validation and finalization. At its core, the FDR scheduler is a backend scheduling system with a queue module, process nodes and purpose-built applications to ingest the filing data into storage, call applications and hand off jobs for data validation and processing. The scheduler uses a fire and forget method to support asynchronous handling of multiple submissions at scale. The calling applications are responsible for reliable execution and storage of results/output data into a single database housing FDR data.

- **Data Administration (Minimum Standard Validations):** This system and process component is responsible for the initial validation (the Minimum Standards Test step) and follow up on filing status. These Minimum Standard validations cover submission results, form and format checks, completeness checks, and other consistency checks for key components of the Blank.

  Submissions that fail Minimum Standards stop processing, and NAIC staff work with those insurers to obtain resubmitted filings. A combination of tools and documentation

is used to support this work. Data submissions that pass Minimum Standards are stored and the non-Minimum Standards validations are run on these stored results.

- **Quality Assurance**: The second to last step in the FDR process is an ongoing process to address the validation failures of screened / validated data from the administration component above.

  The primary focus in this step is to get consistency, textual, reasonability and other special considerations addressed.

  There are varying levels of significance and importance in the various validation failures. Those most important are addressed earlier, while those of the least importance are sometimes used to notify filers of things to consider correcting in the future.

  A combination of tools and documentation is used to support this process.

- **Data Consumption**: This system component is a set of reporting modules that showcase the outputs from the FDR data processing components listed above. Reporting features support actionable reporting by allowing users to get data extracts in multiple formats for operational reporting needs and supporting analytical reporting for reviews, what if analyses, and decision support needs with newer toolsets on the cloud.

  Key audiences for consumption include internal and external users and key stakeholders (Regulators, State Agencies etc.).

Supporting components for FDR are listed below:

- **Systems and Vendor Testing**: This system and process component targets interactions with vendors providing third party software solutions to be able to design and update their software for integration with and support for FDR.

- **Industry File Prep**: This system and process component is used for vendor test submissions and conformance for validation. This is typically a standard process with vendor interactions driven by a combination of communications and data/specification exchange.

FDR Capabilities

FDR capabilities center around data collection, management, storage, and delivery process steps. These key capabilities[1] support submission through delivery and are broken out by data vs system/process domains outlined below:
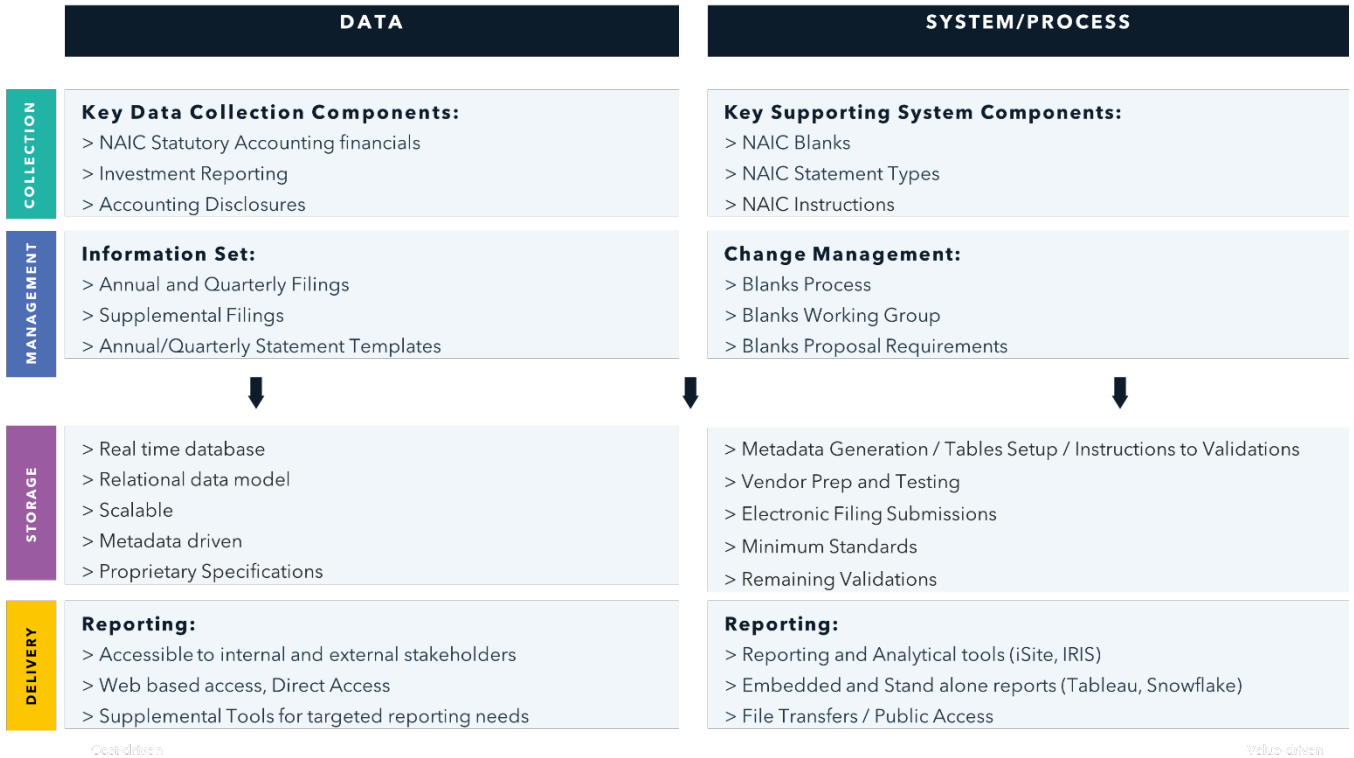
- **Data**: FDR data represents company and financial data for NAIC Statutory Accounting financials, Investment Reporting and Accounting Disclosures needs. The information collected and managed is in the form of Annual, Quarterly and Supplemental filings. Statement Types (Life / Fraternal, Property / Casualty, Health, Title, Separate Accounts) and Instructions support the standardization of filing information. All collected data is stored for access and consumption in a database for reporting needs.

- **System/Process**: Intake and processing of FDR data is supported by a Blanks Process with Change Management built into the process flow. The Blanks Process uses NAIC defined Blanks, Statement Types, and Instruction templates to support Change Management and Implementation needs. Changes to templates are managed by Blanks Working Group in conjunction with NAIC staff for implementation. A set of NAIC tools is used to support Metadata Generation/Tables setup, Validation Support followed by testing for Minimum Standards and remaining validations before data is finalized for delivery. Quality Assurance work is performed throughout the year to address failed validations in the finalized data. Finalized FDR data is used for operational and analytical reporting using purpose built and commercial tools.

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[1] These are the core capabilities that are targeted for both the FDR Proof of Concept and full-scale Modernization efforts. Additional, supporting features around company demographics, contact management, user management and other reporting related features are expected to play a leading role for modernization but may be integrated into other source systems and fed into FDR.

A high-level visual representation of the capabilities map is shown below.

HIGH LEVEL FDR CAPABILITIES MAP
Data, System, Process

	DATA	SYSTEM/PROCESS
COLLECTION	**Key Data Collection Components:** > NAIC Statutory Accounting financials > Investment Reporting > Accounting Disclosures	**Key Supporting System Components:** > NAIC Blanks > NAIC Statement Types > NAIC Instructions
MANAGEMENT	**Information Set:** > Annual and Quarterly Filings > Supplemental Filings > Annual/Quarterly Statement Templates	**Change Management:** > Blanks Process > Blanks Working Group > Blanks Proposal Requirements
STORAGE	> Real time database > Relational data model > Scalable > Metadata driven > Proprietary Specifications	> Metadata Generation / Tables Setup / Instructions to Validations > Vendor Prep and Testing > Electronic Filing Submissions > Minimum Standards > Remaining Validations
DELIVERY	**Reporting:** > Accessible to internal and external stakeholders > Web based access, Direct Access > Supplemental Tools for targeted reporting needs	**Reporting:** > Reporting and Analytical tools (iSite, IRIS) > Embedded and Stand alone reports (Tableau, Snowflake) > File Transfers / Public Access

Cost-driven   Value-driven

Current State | Technical Environment

The technological components for FDR in its current state comprise of applications and tools that incorporate both older and newer technologies. The transition from legacy to modern tech platforms is very much a work in progress and is not a consistent transition. Key components like the front-end portal, console-based scheduling applications and testing/validations tools are built in legacy Visual Basic / .Net, Java and C++ platforms working with an Oracle database backend while some of the delivery and consumption tools leverage newer cloud-based platforms like AWS S3, Snowflake, Tableau on the data spectrum.

A core set of system components (some later defined) by domain and function are listed in the matrix below:

SYSTEM COMPONENT	DOMAIN	TECHNOLOGY SET	FUNCTIONAL AREA COVERED
Infrastructure	Servers Hardware Software	- AWS – Private Cloud - On premise - Hybrid Configuration	Technology
	Identity Management	- Azure AD iDP	

SYSTEM COMPONENT	DOMAIN	TECHNOLOGY SET	FUNCTIONAL AREA COVERED
System Environment	Data	- Cloud based Enterprise Data Platform (EDP in AWS) - Data Migration Services - ETL/ELT - S3/Storage Layers - Snowflake	Submission Ingestion
	Databases	- Oracle Tables - PostGreSQL - MongoDB	Blanks Ingestion
	Data Layer Data Warehouse	Snowflake DW: - Raw Data Layer (RDL) - Exploration Data Layer (EDL) - Business Data Layer (BDL)	Storage
Applications	Front End	- Submission Portal - Internet Filing	Blanks Submission
	Scheduler	- Scheduler - Backend applications	Blanks Submission Ingestion Storage
Delivery	Reporting	- Tableau - ThoughtSpot - Snowflake - etc.	Consumption
		- Common Application Access Tool (CAAT) - iSite - IRIS	Submission Ingestion Consumption
Testing and Validation	Specs and Validation	- Spen Gen - Formula Maintenance - Business Analyst Support - Support Table Maintenance	Blanks Submission Ingestion
	Data Quality / QA	- Company Demographics - Reports - Financial Data Update and Inquiry - JURAT - Company Inquiry - Correspondence - Workflow	Blanks Submission Ingestion Storage

Current State | Infrastructure

Overview

The infrastructure components for FDR in its current state is a hybrid model with supporting server, desktop and hardware systems housed in a connected AWS cloud/On Premise data environment.

This hybrid configuration allows for server functionality to be centralized on a Linux based environment in an Oracle data cloud in AWS while user environments are on premise and set up in Windows desktop virtual machines configured specially with FDR tools.

Key Elements

- There are supporting tools for secure file transfer and data exchange (SFTP/MoveIt) along with an integrated Identity Provider system for user and directory management (Azure AD/NetIQ).

- User authorization and role-based access for key FDR features is still managed at the application level using customized role-based access control features in FDR (LDAP groups in NetIQ with RBAC in FDR). Authorization needs for access is managed through a Password Service module responsible for managing authentication/authorization needs for FDR system.

- Email support at the application level is available for FDR correspondence needs and supported by current NAIC email infrastructure.

- NAIC has implemented a differentiated set of environments to support the FDR system using industry practices for development, testing, deployment, and support.

- These environments are split between PROD and NON-PROD needs, with targeted separation between each environment.

- The PROD environment is a controlled environment with restricted access and limited by role and function across the NAIC IT and Business teams.

- The NON-PROD environment has multiple realms that define separation between development, testing and stage needs.

FDR Owned Data Components and Domain

- FDR data comprises of a transactional environment housed in a single Oracle data backend as the storage component primarily.

- The database environment is broken out by an instance and schema design with each instance tied to a specific environment / realm as noted above in the infrastructure section.

- The schema design is consistent across instances with differences in the type and volume of data being stored within each instance.

FDR Shared Data Components and Domain

- Beyond the transactional side of the FDR data components, there is an ongoing effort to ingest FDR data from its raw form into the NAIC Enterprise Data Platform (EDP) that maintains data catalogs and data stores for all of NAIC data assets.

- The EDP consists of platform layers for data onboarding, transformation, and delivery in a standardized model with security and governance built into the process.

The high-level platform setup and data flow process is as follows:

Ingestion	- Data Migration Service - ETL/ELT - Message Queues
Data Processing	- Raw Data Layer (RDL) – As received from source. - Exploration Data Layer (EDL) – Lightly curated, data cleansed, derived data, ML workloads. - Business Data Layer (BDL) – Modeled data sets for business requirement and delivery.
Delivery	Sources data from BDL and uses modern delivery tools to support analysis and reporting: - Snowflake - Tableau - ThoughtSpot - iSite

Current State | Systems Environment

Overview

The FDR system consists of multiple front-end, backend, data, and reporting components that together orchestrate the flow of information from Submission through to Consumption.

Due to the intricate nature of data being managed within the FDR system, the NAIC has developed various applications that provide FDR users "windows" into the setup, definition, and targeted management of FDR data tables. Essentially, these tools act as "wrappers" around backend tables in an Oracle based database, with custom-built data management functionality.

Over the twenty-five-year lifecycle of the current iteration of FDR, functionality around these tools has evolved and undergone multiple updates. As part of these "transformations", underlying technologies for some of these applications have shifted to newer technologies, while still retaining legacy components for specific backend needs (such as scheduling, job processing, work tracking and data quality validations / checks). [2]

However, the overall system is still tightly coupled to and between front end applications and backend tools tied to a single data layer. This presents multiple challenges that will need to be addressed in the FDR Modernization effort, such as:

- FDR has a variety of singular tools with embedded business logic which limits its ability to scale and introduce changes quickly, resulting in longer turnaround time for enhancements and defect correction.

- FDR data is stored in a single Oracle database with a separated schema model that allows for some flexibility around data separation and management rules, but there are limits around data aggregation, analysis, and queries, which, from a performance and latency perspective, impact overall user experience.

- Changes to data and business needs require development for all applications and deployment into a VM (Virtual Machine) model for desktop access that is tightly controlled for security purposes. Performance and support challenges exist within this hybrid infrastructure model, related to the database on an AWS cloud connecting to the VM environment for application access.

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[2] All the tools described are built in legacy Visual Basic / .Net, Java and C++ platforms working within an Oracle database backend.

- FDR currently has limited integration capability with a single service in place for security needs (Password Service). Any integration to FDR is currently routed directly through the data backend due to a lack of a service model. [3]

Current State | Applications

<u>Key Frontend Tools</u>

- **CAAT** (Common App Access Tool) is a central landing tool for internal users to access financial desktop applications in FDR.

- **COD** (Company Demographics) is used to manage company information such as Captive Company Demographics, Alien Demographics, Group Code information, and other company related needs.

- **COI** (Company Inquiry) allows for the addition, update, or deletion of waivers and extensions, provides an audit trail, and allows an analyst to enter notes related to changes or concerns with the companies that are not recorded in the 'normal' audit trail. Additionally, it provides the ability to view and update data validation failures for companies.

- **CORR** (Correspondence) is an email driven tool used for customer communications with a templated approach to generate updates and notifications.

- **FDUI** (Financial Data Update and Inquiry) allows a user to directly create/ update financial tables. Once updated, the application will kick off validations on the table and verifies that they pass successfully. FDUI also has basic reporting features for side-by-side comparison, up / down changes etc.

- **FM** (Formula Maintenance) is used to create, update, and delete validation rules for financial filings including features around recalculations, insurance risk information (IRIS), MCAS support etc.

- **Spec Gen** (Specification Generator) supports the need to define required metadata that aids in constructing financial tables to support financial statements for insurance companies.

  Both FM and Spec Gen generate the specification files the vendors use to create software sold to insurers which allows them to generate FDR filings per NAIC requirements

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[3] The NAIC's current strategy for the initial AWS migration of large legacy applications such as FDR is to deploy the application on JBoss in AWS with the database moved to Oracle Cloud. Back-end jobs will remain on premises and run in Automic. Kubernetes has been selected as the target platform for new development at the NAIC

- **STM** (Support Table Maintenance) manages support tables not directly associated with a form (metadata) or a validation rule (formulas) necessary for the FDR system to operate. This application allows the maintenance of tables related to Master File Conversion and Migrations (metadata, formulas, support tables)

- **WF** (Work Flow) is an admin application that provides users with the ability to define rules for routing work to an analyst. These rules are primarily used for routing filings with errors to an analyst's in-basket.

Supporting Frontend Tools

In addition to the key toolset for front end access listed above, there are multiple additional tools (such as *Deletes, FDR Flow, FDR Header, Reports, Test Data Generator, Vendor Testing Tool*) that support FDR functions.

Key Backend Tools

Scheduler

The FDR Scheduler is the pivotal point of all processing on FDR.

Scheduler runs backend (Unix) processes that are node driven and tied to a specific application need. These applications determine how and when to start a particular process and respond to result codes.

Scheduler starts a sequence of processes based on two types of requests. The sequence of processes must be executed concurrently for each request, though a single request will only be at one step in the sequence at any given instant.

Submission

Submission is the nomenclature used for a set of backend tools including but not limited to *Check Filing ID*, *Check Filing Year*, and *Filing Loader*. These tools are used to check for incoming submissions into the FDR system.

After initial checks are done using tools like *SetFilingID* and *formformat*, FDR filing data is then loaded into the database using *DSL* (*Data Staging and Loading*).

Additionally, tools like *VRP* (*Validation Rules Processor*) and *Completeness* are used to confirm that initial validations/minimum standards are met prior to getting ready for ingestion.

If minimum standards are not met, *dsl_clean* is used to delete loaded data from the database.

After minimum standards test requirements are met, any supporting PDF files are moved using *ipe*, status updates are sent to the insurance company along with JURAT notifications using *status_mail* and *jcd* tools.

Reaching these process points also starts the final data processing and validation steps using tools like FSCmp, CSYUpdate, scMain and NatSig.

If there are exceptions and/or additional checks required, specific tools *Run Fred* and *scMain, vrp* are leveraged again to complete the process for ingestion and getting the data ready for final storage and consumption.

Key Reporting Tool

iSite, a web-based application, is the primary reporting tool for FDR, with the ability to:

- View analyst notes.

- View an audit trail for company filings and all other changes.

- Report on company demographics and licensing information.

- Review filing status and supporting information.

- Report on IRIS information.

- Manage PICS (a subscription service for subscriber notifications).

- Review validations exception detail and summary.

- Report on filing waivers and extensions.

In the current state FDR, iSite is deemed a critical component, and has seen significant development resourcing and investment over time to support FDR reporting based on evolving business needs. Therefore, it is expected that parts of / all of the iSite reporting application will be moved over to the Enterprise Cloud platform as part of an Enterprise Data Platform initiative to support self-service reporting across all of NAIC systems and tools.

Web Applications

- **IF** (Internet Filing) is a secure, internet-based portal for companies to upload filings.

  This web application is insurance company focused and was built to support their filing needs by filing year, period, and type.

The portal also supports basic features around user profile and information, with an online assistance (with a proxy) feature for NAIC internal users to simulate external user logins for support needs.

- **IF Admin** (Internet Filing Administration) is a complementing application that allows internal staff to manage company admin information based on unique *cocodes (Company Codes)*, add primary and secondary admins for companies along with other personalized settings for company management.

- **Public Access** is a standalone application which allows users to go through the state to review company financial data.

Security

Overview

The NAIC continually makes security management an integral part of the enterprise fabric particularly around setup and access to data and application assets.

It is expected that current and future security initiatives will continue expanding into the universe of FDR and related systems as applicable from an infrastructure, systems, and people/process perspective.

Strategy / Approach

The NAIC follows industry standards from the NIST-800-53 framework in conjunction with recommendations from the CIS framework to establish policies and procedures for security risk management.

There are established security pipelines that define and orchestrate security management within the NAIC enterprise. In addition, the FDR PROD environment is subject to SOC2 cybersecurity and regulatory compliance needs with periodic testing and assessment activities in place internally.

Compliance with SOC2 and the NAIC security framework will be a requirement for the modernization effort. The PoC design is expected to provide guidance around compliance support for SOC2 and integration with NAIC security pipelines.

Tooling / Infrastructure

NAIC is using Okta as the Identity and Access Management (IAM) platform of choice with integration hooks into other systems (Azure AD, NetIQ, Workday etc.) for user access.

The current FDR system is not fully integrated with Okta and there is a desire to use Okta as the supporting engine for Single Sign On (SSO) and external access needs moving forward.

For application and backend needs, security data around log information, audit trails, compliance reporting and access logs must be provided as required for compliance purposes.

Additional Supporting Information

To assist in a general understanding of the current technical environment, the following are provided in Appendix 1:

- Current Technology Stack | Diagram

- Enterprise Data Platform | Diagram

- Environments (Realms and Tools) | Diagram

- Data (Components and Domain) | Table

Current State | Development Practices

- The development team that currently works on the FDR system includes four software engineers, one scrum master, one business analyst, and a manual tester. These team members work on all FDR development, including annual maintenance, new enhancements, and bug fixes. The team also assists with production support.

- The scrum team is supported by a product manager, product owner, the NAIC technical architects, an experienced designer, and NAIC DBA's and System Engineers. These are shared resources that also work on other projects not related to FDR.

- The team operates under the Kanban agile methodology.

- The development team produces unit tests, design, and technical documentation, build scripts, and change logs.

- CI / CD pipelines in Gitlab are used deploy code. In the near-term future, it is planned that they will also be leveraged to verify coding and security standards.

- Releases are planned to deliver specific feature sets and occur as needed.

- NAIC uses ITIL for Change and Incident Management. Production releases go to a Change Advisory Board (CAB) before moving to the production environment.

- JIRA is used for backlog management and organization of work; business requirements are housed on an internal wiki.

Current State | Operations, Support, and Maintenance Organizations

Across the enterprise, a total of 160+ users currently use the FDR system in multiple teams and business areas. A high-level breakdown of FDR usage is as follows:

Primary Users   26   Power users with normal to heavy usage (daily)

Secondary Users   4   Supporting users with normal usage (daily)

Tertiary Users   132   Casual users with light to normal usage on a periodic basis (provide operational support as needed)

Current State FDR | Key Metrics

FDR has undergone significant growth in terms of both filings and user base over multiple versions of the system. While user growth has stabilized, there is a steady increase annually in customer filings and demographics data.

FDR supports 4,500+ unique company filings across each filing due date. For an annual filing period, hundreds of thousands of data elements are captured for an insurer. These elements are stored across hundreds of tables in one database with retention needs spanning a decade.

Some key FDR metrics are noted below:

Filing Metrics	Unit of Measure	Frequency	Total
Number of Annual Filings	Tracking #	Annual (Total)	4,500
Submission Errors	Error Count	Annual (Total)	273
Form and Format Errors	Error Count	Annual (Total)	368
Completeness Errors	Error Count	Annual (Total)	14,001
Number of Annual Supplemental Filings	Tracking #	Annual (Total)	4,291

Data Metric	Unit of Measure	Frequency	Count
Data Records	Single row of data	NA	400+ million
Data Tables	Table	NA	1,400+
Data Size	Database	NA	1,300 GB
Data Retention	Database	Annual	10 years

Additional FDR metrics are provided in Appendix 2.

FDR | High-level Conceptual Model

Introduction

The following conceptual model is provided to give a basic understanding and representation of the current state FDR system and processes, covering the key terminology, concepts, variables, relationships, and assumptions involved.

Blanks

The first step in the FDR process / component of FDR is "Blanks".

"Blanks" are fixed format financial statement templates that have been developed by the NAIC Blanks Working Group (WG) and are finalized by established deadlines ahead of the applicable annual and quarterly statement filing cycles.

The Blank is comprised of many different schedules, exhibits, and pages, and for most of these it provides a view of what a printed version would look like without any company-specific results entered (thus, the name "Blank").

For some more complex pages (such as Notes to Financial Statements) the Blank has a single page as a placeholder and the detailed requirements for the data to be captured are instead included in the Annual / Quarterly Statement Instructions.

The Blanks WG approves of electronic only disclosures which do not appear in the Blank but are specified in the Instructions.

These Annual / Quarterly Statement Instructions for the Blanks specify the information required and the formats in which the information should be supplied and input, and document approved consistency data validations.

NAIC staff generate documentation (e.g., Filing Directives) and specification files (Blanks specification files and Validation Formula specification files) that dictate how statutory financial statement filings must be prepared and submitted to the NAIC.

NAIC staff create appropriate FDR data tables to store filed data as well as results tables to store the results of the validations that run on the submitted/stored data.

<u>Vendor Prep</u>

The second step in the FDR process / component of FDR is "Vendor Prep".

FSP Vendors use the NAIC generated documentation and specification files to create tools and solutions for their Insurance Companies (who are their clients) which at a minimum allow the insurers to prepare their FDR filings to meet NAIC requirements.

Every time changes are made to the Blanks and supporting instructions, FSP vendors are required to test their tools and solutions to ensure their clients can generate correctly formatted and accurate FDR filings.

Insurance entities use the FSP Vendor product of choice to prepare the appropriate filings and submit them via the NAIC established process.

<u>Submission</u>

The third step in the FDR process / component of FDR is "Submission".

Submitted filings are validated versus a basic set of "Business Rules" developed by NAIC to ensure they pass minimum standards.

Filings that successfully pass this initial validation are considered "Accepted" and are "Ingested" into the FDR System.

<u>Ingestion</u>

The fourth step in the FDR process / component of FDR is "Ingestion".

NAIC staff use system generated validation results and custom-built tools to correspond with insurers failing minimum standards to inform them of the need for a refiling.

"Accepted" filings move forward to more detailed validation processes applied via detailed "Business Rules" (aka validations) embedded in the FDR "Validation Engine" and validation results are stored in various tables.

NAIC staff use system generated validation results and custom-built tools to correspond with insurers to address validation failures and data needing clarification.

As a result of these validations and / or via manual human review, additional errors in the insurer's filing may become apparent, or data in the filing may require additional clarification. The NAIC works with Insurance Companies to correct and / or clarify items in their filings, as necessary.

There are various hierarchies of importance in the errors, and these are used to prioritize which corrections / clarifications are pursued first and how aggressively they are pursued (e.g., significant concerns will be referred to the state of domicile to use regulatory authority to require responses).

Corrections require amended filings from insurers which cycle through the validation process (and eliminate the old "failed" results).

Clarifications are entered by NAIC staff and the existing "failed" validation result is then changed to "non-failed" status.

<u>Storage</u>

Accepted (submitted) filings, "Work in Progress" filings (filings going through the Ingestion validation process), and finalized filings are stored in the NAIC data repository.

Accepted filings and work in progress filings are used for FDR Operational Reporting, while those and finalized filings are used by the Consumption layer of FDR.

Other NAIC systems also utilize FDR data (in its various forms of completeness and "accuracy", post submission acceptance) and the FDR data layer.

<u>Operational Reporting</u>

Operational Reporting assists the NAIC tracking the progress and status of the review process discussed in "ingestion". It also assists in the processes of general workflow management, tracking filing status, and answering ad hoc questions regarding filings and results.

<u>Consumption</u>

Data from accepted, work-in-progress, and finalized FDR filings is used by the Consumption layer to create reports for use by multiple stakeholders.

Section 3 | FDR Modernization Objectives

Current Business Environment

The current iteration of NAIC's FDR system is nearly twenty-five years old.

As such, there is significant "technology debt" within the current state FDR system. Additionally, the system has become hard to support and costly to maintain and suffers from outdated user interfaces (UI), user experiences (UX), and functionality, as would be expected from such a mature technology.

Equally, in the intervening years since the last full redevelopment of the FDR system, there have been numerous technological advances in document management, workflow management, and data processing. Incorporation of such elements would likely be of tremendous benefit to the FDR filing and review process.

Finally, all FDR stakeholders are increasingly resource constrained. Therefore, there is a general openness and desire to identify solutions that can deliver operational efficiencies and improve organizational effectiveness by taking advantage of technology and innovation opportunities available today.

FDR Modernization | Vision and Objectives

Vision

Due to the current business environment (described above), the NAIC has initiated a project to modernize the FDR system ("FDR Modernization"), with the broad vision of creating a modular, "evergreen" system, with improved functionality (for both internal and external users). The modernized system should be easier to use and interact with, as well as increasing the use of automation. Finally, it should be easier to support, maintain, and regularly update than the current state FDR system.

At its core, the vision for a Modernized FDR is that:

- It accomplishes the same key tasks as the current FDR.[4]

- The Internet Filing and Consumption reporting user experiences are enhanced.

- It facilitates an interactive UI / UX for internal users.

- Regular updates and changes should be automated.

- Data processing and storage are re-engineered.

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[4] Collecting statutory financial statement data from insurers, ensuring completeness and good data quality, and making the data available for additional processing and consumption.

- Data quality and throughput are improved.

- Future extensibility is enabled (e.g., FDR could be leveraged by states for other filing tasks, and elements of the FDR system could be leveraged by other NAIC systems).

- Implementation is conducted in an "Agile" way, supporting NAIC's SAFe® (Scaled Agile Framework®) approach.

In doing so:

- Process improvements, bolstered by advanced technology solutions, will improve FDR filing efficacy, which in turn will meaningfully improve stakeholder satisfaction.

- The new system will be easier and more intuitive to use, implement quality control checks as part of the submission process to prevent incomplete filings, enhance communications between filers and reviewers, and provide improved access to FDR data.

- The FDR filings process will be improved, benefiting all stakeholders, ultimately enhancing the NAIC's ability to support the vital functions and role of the FDR system in the safe and effective running of the US insurance industry.

Objectives

In addition to the project vision, the NAIC has several other stated business objectives for FDR Modernization, including:

- FDR Modernization should improve efficiency and effectiveness (within the FDR processes and resource utilization) through increased automation (e.g., reduced "manual" validation, etc.).

- FDR Modernization should take advantage of appropriate existing NAIC infrastructure (people, processes, technology, and institutional knowledge) as much as possible, and also set new standards that can be used at an enterprise level across NAIC platforms going forward.

- FDR Modernization should be achieved with minimum disruption to insurance companies, regulators, and current NAIC revenue streams.

- FDR Modernization should allow for future growth of NAIC product offerings.

- FDR Modernization should be sensitive to the increasing difficulty of hiring and retaining sufficiently skilled and experienced resources to operate, support, and maintain the FDR system.

- FDR Modernization should reflect NAIC's desire to buy technology "off the shelf" (and configure, customize, or customize and configure) and limit the amount of unique source code and 100% custom applications in a modernized FDR, aligned to achieving an "evergreen" system that is easier to support and maintain (i.e., a preference to "buy" vs. "build").

- FDR Modernization should facilitate an "evergreen" system that promotes continuous improvements and updates while being able to respond to changing business needs. This would include, but is not limited to, leveraging automation, modular architecture, data management, and enhanced security.

- FDR Modernization should be consistent with the broader NAIC Enterprise Technology strategy and seek to provide, where possible and appropriate, common modular systems that can in future address similar needs across multiple NAIC platforms, thereby maximizing utility, reducing IT complexity, and reducing "total cost of ownership" in the long-term.

Current Best Thinking | Key Improvements

Overview

The functionality in the current state FDR is valuable to all involved stakeholders as well as the users and end-users of the system. Therefore, a modernized FDR must deliver all current capabilities (with similar results), but with improvements where merited.

Overall, the modernized FDR platform must bring improvements in features (e.g., User Interface) and functionality (e.g., User Experience), as well as general performance improvements (e.g., speed, load times, availability, etc.) and benefits to stakeholders and system users, both administratively within NAIC, and for Insurance Industry filers, FSP Vendors, and State Regulators.

The following sections discuss in more detail specific improvements desired within a modernized FDR versus specific areas of the current state FDR system.

Blanks

For assorted reasons, FDR "Blanks" files need to be updated on a regular basis.

While these changes are often not large (e.g., changing the year in question), and the data being captured may not be changing, the current Blanks updating process is laborious and labor intensive for NAIC resources, and the associated vendor testing (of updated Blanks) is similarly demanding (see also, Vendor Prep).

Specifically, changes in the "Blanks" require meticulous re-coding, re-tagging, and other updates across the entire FDR codebase, otherwise validation processes within Submission and Ingestion fail.

Therefore, a modernized FDR must re-engineer the manner in which FDR Blanks are changed and updated. This re-engineering includes the way Blanks are updated and / or changed, the propagation of these changes throughout the system, and FSP Vendor testing processes.

The intent of this re-engineering is to make this a far easier and less time and resource intensive process, with FDR codebase and systems changes (necessitated by the regular changes to FDR Blanks) being "automatically perpetuated" or "perpetuated with minimal manual intervention and testing" throughout the FDR system whenever Blanks go through "standard" updating.

To enable and achieve these "up-stream" benefits, the NAIC believes that the data structure and design of FDR Blanks must be re-evaluated, with fundamental changes (versus current state) likely needed to necessitate the desired improvements.

Finally, in the current state, updates to the "Blanks" also impact the complex custom coded software of the FDR FSP Vendors. Therefore, frequent, exhaustive, and resource intensive testing of updated Blanks with the FSP vendors is required. In a modernized FDR system, FSP vendor testing of updated Blanks, and the resources required to complete it, should be drastically reduced.

Vendor Preparation + Submission

The modernized FDR system must support the ability of both single state filers and large national insurance carriers, assisted by the FSP vendors, to submit compliant filings.

To this end, one area of desired improvement revolves around the FDR Internet Filing "Portal".

The current state Internet Filing Portal lacks basic functionality that one might expect from a modern system.

Examples of this include:

- Confirmation that a submitted file has been "accepted" to FDR (or has "failed" or been "rejected" at submission).

- An opportunity to know what the filing fees will be, and to pay them at the time of submission.

- "Pre-submission" checks of draft filings (see below)

In addition, the current state Internet Filing Portal lacks sufficient functionality to give FSP Vendors a sense of whether draft filings pass basic criteria (i.e., that they will pass the initial validation stage at "Submission"), and if they do not, why not.

Furthermore, the current state Internet Filing Portal lacks sufficient functionality to give FSP Vendors (and thereby, Industry filers) any sense of issues and anomalies that will likely be flagged during the "full validation" phase (i.e., Ingestion).

FDR filings are composed of multiple complex data elements and require detailed supporting documentation. Equally, filings have both "generic" as well as state-specific data requirements, making FDR filing preparation complicated.

A modernized Internet Filing Portal must provide, in a timely manner, substantial upfront validation that basic requirements have been met (e.g., all relevant fields completed, all relevant attachments provided, etc.) to minimize the need for revisions and corrections for common and easily identified errors during "Ingestion".

In summary, key improvements that must be delivered within Vendor Preparation and Submission of the modernized FDR are improved data validation and completeness checks (both pre submission, and at the time of submission) and improved communication of filing status (e.g., dashboard and / or messaging, including filing submission status, filing status, assigned reviewer and Ingestion next steps / actions, etc.). Such improvements are additional foundational elements that will help deliver the efficiency and effectiveness benefits desired from FDR modernization.

Ingestion + Operating Reports

The current process of "detailed validation" within the Ingestion stage of current state FDR is resource and time intensive, involving significant manual operations, and "human-based", non-automated interactions with the data, and with the filers (to address identified issues with the filings and "correct" them).

Therefore, FDR modernization will likely involve a three-pronged approach:

Firstly, improvements to the FDR "Validation Engine" (and the underlying "Business Rules Engine") must be made that enable the system to not just "flag errors", but make suggestions (where possible) on what the next steps should be on an issue, or what the accurate value is (that should replace the incorrect one, when identified), analogous to "auto-correct", "grammar", and writing suggestions in a word-processing program.

Such improvements will likely also be combined with enhanced document analysis, comparison, and other similar and related capabilities, further supporting holistic improvement in how filings are reviewed, and reducing "Ingestion to Consumption" timelines.

Secondly, outputs from the improved Validation Engine should be harnessed by additional system capabilities (e.g., common workflow management and automation techniques and technology) that automate and streamline communications with filers (to resolve identified

issues, confirm agreement to changes in data, or to request further data and input) and improve routing and assignment of issues, further reducing inherent "friction points" that increase the time and level of effort required to resolve validation issues and errors identified.

Finally, to complement increased automation, drive "throughput" speed (i.e., reduce time filings spend in "Ingestion"), and reduce (low value) manual interventions and activities, additional capabilities, tools, and functionality should be built into the modernized FDR to further improve data validation, workflow automation, resource management (e.g., staffing of resources to specific filings, etc.), communication and collaboration with filers, and the general processes, tasks, and activities within Ingestion to complete validation and arrive at a "finalized" filing ready for "Consumption".

Obviously, such improvements within Ingestion feed back into and enable previously mentioned elements (e.g., improved communication with filers via the "Portal").

However, such improvements are also intertwined with the desired improvements within "Operational Reporting": specifically, the desire to have improved automation, better visibility into the status of a filing, including its current state "validation issues identified", next steps identified, who has been assigned to the filing, etc.

Improvements in Operational Reporting will deliver benefits from greater transparency in validation results, filing status, and "suggested next steps", enabled by improvements in Submission and Ingestion, as well as clarity on improved efficiency and effectiveness (and opportunities for even greater improvements to key metrics), which in turn can be used to drive increased FDR stakeholder satisfaction. Likewise, they will also support improved workflow and resource management.

In summary, the desired improvements should maximize the efficient use of resources and management of workloads and make it easier for users to triage incoming filings, set and follow work prioritization strategies, and provide visibility to managers on status of work queues and outcomes, with the additional ability to track status and communications, including the opportunity for reporting and retrieval whenever necessary.

Key improvements in Ingestion and Operational Reporting will enable more consistent and efficient Filing Review, leveraging technology so NAIC staff can focus on true "value added" activities, with more streamlined handling of the process of resolving validation errors with filers, automation of routine tasks, and tools and reporting that supports decision making.

Storage

Storage is a key infrastructure enabler of both Ingestion and Consumption.

As such, to deliver many of the improvements desired within the modernized FDR, improvements in the FDR approach to storage and data management are needed, including better data layer segmentation (e.g., Raw Data Layer, Enrichment Data Layer, Presentation Data Layer) and improved Document Storage Management capabilities, complimented by general improvements and enhancements of "Storage" capabilities and functionality.

Consumption

The ability to customize and configure views, screens and reports within Consumption is a common enhancement request.

The modernized FDR should enable and support the ability of NAIC Consumption systems and tools to provide self-service capabilities, and to customize the Consumption experience for FDR data, through both standard and custom reporting options, as well as data export functionality and integration with third party tools and systems.

Data is consumed by both internal and external stakeholders. For example, regulators consume this data by directly accessing the data or through some form of data transmission/receipt. Regulators then leverage this data to produce the output necessary to support their efforts (as described above).

A modernized FDR solution should efficiently interface with the NAIC Enterprise Data Platform to provide multiple avenues for this consumption such as self-service analytics, visualizations, data streaming, machine learning, and artificial intelligence.

Current Best Thinking | High Level Requirements

Further details on the desired improvements, as well as details on new and advanced capabilities needed within the modernized FDR, plus additional supporting information, will be supplied to all vendors who intend to respond to this RFP and submit an intent to bid notice to NAIC within the specified timelines.

Rationale for Proof-of-Concept Approach

The NAIC's vision for the modernized FDR is ambitious, and there are several key concepts central to the current best thinking on FDR modernization that need to be tested and proven prior to "full" development and execution of any implementation plan.

Therefore, the NAIC has defined that the next phase of the FDR Modernization project is the development of a Proof of Concept (POC) for the modernized FDR and is searching for a vendor with relevant expertise to partner with on this initiative (thus this RFP).

The intent of this POC is to focus on those components which present the highest level of unanswered questions / unknowns, and therefore risk, to the overall modernization effort.

While only a subset of components has been selected for the POC it should be noted the importance that these components are feasible within the complete modernization. Therefore, significant consideration should be given to ensure that the components are foundationally aligned with the overall modernization effort.

Concepts to be Tested / Validated by the POC

1. Viability of "Buy versus Build" Preference

    - Prove that it is possible to replicate the functionality of the current FDR system (a predominantly "in-house" custom coded solution) using a backbone of off-the-shelf (OTS) and open-source components.

    - Identify to what extent OTS and open-source components can be used to create a modernized FDR (i.e., what would still have to be "custom"), and what levels of configuration and customization of the OTS components would be needed in order to be fit for purpose.

    - Identify what, if any, of the current system componentry could / should be used as is or re-developed and then re-used as part of the modernized FDR technology stack.

    - Determine whether the required levels of configuration and customization of OTS and open-source components make a "Buy versus Build" preference viable and likely to deliver against specific core FDR modernization objectives (e.g., evergreen systems, ease of ongoing support and maintenance, etc.).

2. <u>Impact of Blanks Reengineering + Ingestion Technology improvements</u>

  - Demonstrate the extent to which effective Blanks Reengineering could reduce the resource intensive nature of the current processes of re-coding and re-configuring the FDR system (to accommodate and reflect the regular changes to the FDR Blanks): i.e., to what extent and reliability can systems changes necessitated by annual FDR Blanks be automatically perpetuated across system components or perpetuated with minimal manual intervention and testing throughout the FDR system.

  - Demonstrate and quantify the extent to which Blanks Reengineering and Ingestion Technology improvements can increase automation and reduce manual quality checks, data interventions, and NAIC resource effort, etc. (versus current state FDR).

  - Demonstrate and quantify the extent to which Blanks Reengineering and Ingestion Technology improvements increase filing acceptance, reduce validation errors, improve filing data accuracy, etc. (versus current state FDR).

  - Demonstrate and quantify the extent to which Blanks Reengineering and Ingestion Technology improvements can improve workflow, communication, and collaboration automation (versus current state FDR).

  - Demonstrate and quantify the extent to which Blanks Reengineering and Ingestion Technology improvements can enable improved status visibility and reporting, NAIC resource allocation and management, and operational reporting (versus current state FDR).

  - Demonstrate and quantify the extent to which Blanks Reengineering and Ingestion Technology improvements will impact resources required to operate, support, develop, and maintain the modernized FDR ongoing (versus current state FDR).

  - Confirm or refute that a move to the XBRL (eXtensible Business Reporting Language) data standard is (a) a workable solution, (b) necessary to enable Blanks Reengineering, and (c) overall beneficial (as part of FDR Modernization).

  NAIC will provide relevant "test data" to facilitate and enable valid comparisons and robust quantification (versus current state FDR).

3. <u>"Full" Modernization Implementation Approach + Costs can be accurately identified</u>

  - Prove, to a high confidence level, that a workable technology solution for FDR modernization can be identified (i.e., delivery of a high-quality technology solution proposal for full-scale implementation that fulfils or exceeds all requirements and other considerations listed and discovered).

- Prove, to a high confidence level, that a workable implementation approach for "full" FDR modernization can be identified and delivered (i.e., delivery of a high-quality implementation plan for full-scale implementation).

- Estimate, to a high degree of accuracy and confidence level, the time, budgets, and other resources needed to implement to proposed technology solution and implementation approach (i.e., delivery of high-quality project plan(s), resource plan(s), and cost estimate(s) for full-scale implementation).

- Demonstrate that the projected costs and challenges of implementation are justified by the projected benefits (i.e., delivery high quality analyses of total-cost-of-ownership, impact(s) assessment(s), and benefits case(s) for full-scale implementation).

POC Goals and Expectations | General

The goal of the modernized FDR POC is not to develop a fully working and "fleshed out" prototype of the modernized FDR, but to build a minimal as possible yet directionally representative and accurate (in terms of outcomes) demonstration version of the modernized FDR that:

- "Proves out" the core concepts listed above.

- Gives confidence that a "scaled up" version of the POC can deliver against the full requirements for a modernized FDR.

- Delivers valuable learnings for planning, building, and implementing the full-scale "production" version of the modernized FDR.

- Delivers deeper understanding of the process of transitioning from the current state FDR to the modernized FDR, which will then be used to inform mobilization planning (i.e., the implementation, project management, and change management plans).

- Solidifies the resource and expenditure requirements (including phasing, by year), to a high degree of confidence.

- Lowers execution risks to the NAIC.

In effect, the NAIC is seeking to take a "steel thread" approach to the POC, meaning that the prototype can "shallow dive" into the general technical implementation of the modernized FDR design across every "vertical" element (e.g., Blanks, Vendor Prep, Submission, etc.), with

"horizontal" functionality developed to appropriate depth (deep when needs to be, shallow when not) to prove out the core concepts and demonstrate the desired improvements.

Therefore:

- System configuration and component selection within the POC does not have to reflect "full-scale production".

- The POC is not expected to have all the features, functions, and UI / UX of a "fully baked" modernized FDR.

- The NAIC approach to the POC leaves room for vendors to display their "creativity", expertise, and know how.

- The POC test data will be representative of "real" FDR data but may not be as large or as complex a data set as a "real" FDR filing.[5]

However:

- The POC must be developed enough to evaluate the proposed technological approach and solutions to the requirements for full-scale implementation, and also enable directionally accurate quantification of both the quantitative and qualitative costs and benefits.

  For example, it will not be required to perform the most complex multi-test consistency validations, but it will need to demonstrate the ability to perform multi-test validations.

  Similarly, it will not need to support each of the five statement types, nor every filing set (logical groupings of data tables such as all the tables within the risk-based capital (RBC) supplement) within a single statement type for the annual or quarterly filing period, but it will need to demonstrate that it is able to set up separate requirements for multiple statement types (and filing sets within a statement type).

- The POC must be able to take FDR test data "from start to finish" and deliver outputs that can be easily and accurately compared to how the current state FDR platform would perform and deliver (with the same test data).

- Every risk, problem, and uncertainty that may arise (from a technical perspective) should be included in the proof of technology.

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[5] E.g., the test data may be restricted in the number of insurance products, or the number of states, but will be complex enough, including in the combinations of insurance types and states, to ensure results of the POC are sufficiently robust.

- If the POC can display representative improvements in UI and UX likely to be delivered in the modernized FDR, this would be a very large "plus".[6]

POC Goals and Expectations | Specific

The technology POC aims to find and check any meaningful technical issues that are likely to arise during development, and to demonstrate numerous specific features of modernized FDR, both in isolation, and as part of a compatible end-to-end process.

Such specific features include:

<u>Blanks</u>

- It is not necessary for the POC to consider or demonstrate changes in the technology platform, processes, or approaches related to annual vendor testing, that will be necessitated by the (likely significant) re-engineering of FDR Blanks.

- The POC must demonstrate and test enhanced data structure and design elements of the Blanks, and evidence how they improve performance and automation in the Submission, Ingestion, work-in-progress Storage, Operational Reporting, and Consumption phases of FDR.

  The current best thinking is that a foundational enabling feature of Blank Re-engineering will be to move data captured on FDR "Blanks" to a common and well understood open data standard. Initial research suggests that XBRL should be that standard. However, NAIC is open to other standards.

  The POC should approach Blanks Reengineering from the perspective that changing how the Blanks are engineered will likely be foundational to enabling the desired improvements in FDR performance, efficiency, and effectiveness (e.g., automation) "up-stream" in the FDR system, and thereby consider and answer whether a move to XBRL should be part of these fundamental changes to how the FDR Blanks are engineered.

- The results of the POC must determine the data format approach for full-scale implementation (XBRL or other).

- The POC must demonstrate, <u>in detail</u>, how changes across the system, necessitated by updates to Blanks, perpetuate automatically, or with minimal manual intervention and testing, across the rest of the FDR platform.

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[6] The high-level requirements discuss some of the UI and UX "pain points" and desired improvements across all FDR stakeholder groups. Within the POC, ability to achieve "MS Excel like" functionality (e.g., cut, paste, export, automate, etc.) "out of the box" or with minimal configuration will be of particular interest.

- For comparison purposes, the POC must accommodate NAIC provided test data, and perform end-to-end processing of this data, from Submission, through Ingestion, to Storage.

- The results of the POC must enable quantification, to a reasonable level of confidence, of the direct impacts (people, processes, technology, resources, etc.) of changes to the Blanks, Submission, Ingestion, and Storage processes within FDR, as well as the indirect impacts to the Vendor Prep, Operational Reporting, and Consumption processes within FDR.

Vendor Prep

- The POC must evidence the potential for enhancements to the Internet Filing Portal (discussed previously).

Submission

- The POC must evidence a standardized method for Submission that delivers improved pre-submission and initial ("at submission") validation of FDR filings.

- The POC should evidence improved communication and filing status / filing tracking for FDR filers.

- The POC does not have to evidence improvements at the Submission point that are predominantly driven by enhancements to systems outside FDR (or enhanced integration), such as filing fee calculation and option to pay at the time of filing (driven predominantly by the NAIC ERP system)

Ingestion

- The POC should demonstrate and test an improved FDR "calculation and rules engine" with more explicit "error conditions" and better "error code" explanations that enable better pinpointing of the location of the error in the filing, provide more complete information, and, wherever possible, suggest potential resolutions to the errors identified.

- The POC should demonstrate and test integration of an improved FDR "calculation and rules engine" with broader FDR business processes to evidence delivery against the goals of increased automation such as enablement of improved workflow management and enhanced communication and collaboration (e.g., filers "signing off" on corrections in a more automated way).

- If leveraging AI or Machine Learning, the POC must evidence that it supports a complex validation path as well as being able to "learn" when data can be accepted when it doesn't meet, exactly, the requirement for a specific field, and that it can strike a balance between ingesting data quickly, and the quality of the data that is ingested.

Storage

- The POC should demonstrate:

  - The ability to store and update work-in-progress filings.

  - The ability to track submitted filings as the data "flows" through the Ingestion process, with the basic reports that can be generated "along the way".

  - The ability to drive "real time" operational reporting (e.g., status of the filing)

Operating Reports

- The POC must evidence enhanced Operational Reporting that (i) enables better management and utilization of NAIC resources and (ii) enables better progress tracking and status reporting of filings (up to the point of consumption) for both internal and external FDR users.

Consumption

- The POC should generate data file output suitable for Consumption reporting but does not need to demonstrate integration with Consumption reporting (i.e., does not need to demonstrate a "push" to Consumption reporting, or production of sample Consumption reports broadly similar to current state FDR).

Additional Considerations

Additional considerations relevant to the POC requirements are covered in Appendix 3.

POC | Assumptions

- NAIC will provide technical and business subject matter experts to assist in the Proof-of-Concept (POC) phase.

- Selected Vendor will provide complete development and test environment.

- Selected Vendor will provide program and project management and governance that conforms to NAIC standards (i.e., Agile SAFe® –Scaled Agile Framework®) for the POC.

- Selected vendor will provide access to the development and test environments to NAIC resources for evaluation and testing purposes.

POC | Deliverables

Modernized FDR Proof-of-Concept

- A functioning Technological Proof-of-Concept (POC) that demonstrates and tests the functionality and capabilities of a future-state, modernized FDR platform, using test data to deliver effective comparisons versus the current-state FDR, with results suitable for extrapolation and interpolation into plans for full-scale mobilization of FDR modernization.

- Demonstration and documentation of how the POC achieves the criteria laid out in throughout Section 4 of this document, and how this is applicable to recommendations for the full-scale mobilization of a modernized FDR.

- Demonstration and testing of pilot applications, using test data, working with selected NAIC stakeholders, to developed detailed measurements, insights, and understanding, that can be leveraged for the purposes of making technical recommendations for the full-scale modernized FDR, and for planning the full-scale mobilization of the FDR modernization program.

Modernized FDR | Proposed Platform Architecture ("full-scale" implementation)

- Detailed future-state architecture diagrams, including depiction of:

  - Purchased and open-source components.
  - Custom developed components.
  - Integration points and solutions.

- Detailed documentation of proposed Architectural approach.

- Detailed documentation of proposed Infrastructure approach.

- Supporting information on the proposed technology approach, including the proposed software development and implementation approaches to implementation.

- Documentation of all internal and third-party dependencies, open-questions, and "to be determined" issues that might impact or affect the development and / or implementation of the proposed solutions.

Impact Analyses ("full-scale" implementation)

- High-level impact analyses of:

    - Directly affected NAIC Organization and Resources (including FDR Development, Support, Maintenance, and Operations groups).

    - Indirectly affected NAIC Organization and Resources.

    - Directly related / affected Systems, Processes, and Technology Architecture.

    - Indirectly related / affected Systems, Processes, and Technology Architecture.

    - NAIC short-term, medium-term, and long-term FDR / Information Technology related People Management, Resource Management, and Capability Management strategies.

    - NAIC's broader Enterprise IT strategy.

    - NAIC external stakeholders (e.g., Vendors, State Commissioners, etc.).

    - Any other relevant factors and / or considerations.

- High-level cost / benefit analysis (non-financial).

- Mitigation plans for any critical / key issues or opportunities identified.

- Project Risk Assessment and Risk Management plans.

Mobilization Planning

This RFP covers both the undertaking of the POC, and a "Mobilization Planning" phase.

After the successful completion of the FDR Modernization POC, leveraging the insights gained from the POC, and the detailed understanding of the practical elements and demands of "full-scale" implementation of FDR Modernization (developed from their involvement in the POC), the selected vendor will also be required to develop a detailed "Mobilization Plan" that outlines the delivery plan to complete the "full-scale" implementation of FDR Modernization, and the projected budgets and other resources needed, aligned to the technology and implementation approaches outlined in the POC deliverables.

Mobilization Planning Phase | Assumptions

- It is understood that to develop such a delivery plan, this phase will require the time and resources of the selected vendor to go through an alignment and decision-making process with NAIC stakeholders on multiple considerations, including the systems, platforms, and architectural approach to be taken, as well as working with NAIC stakeholders to quantify and account for all relevant change management concerns.

- NAIC will provide technical and business subject matter experts to assist in the Mobilization Planning phase.

- Due to the likely financial scale, organizational importance, and general nature and degree of complexity, and to conform to NAIC procurement rules and processes, it may be necessary for NAIC to run an RFP process for the full-scale implementation phase of the FDR Modernization initiative.

  However, based on the outcomes of the POC and Mobilization Planning phase, NAIC may waive the RFP requirement for full-scale implementation and retain the vendor selected to perform the POC and Mobilization Planning to carry out the implementation.

  At this stage, the formal guidance on this issue is that the outcomes of the POC and Mobilization Planning phase will inform an assessment of if the best vendor was originally chosen, and if so, this vendor will be the leading candidate for consideration to be the key vendor for any future implementation phases.

Mobilization Planning Phase | Deliverables

Mobilization Plan

- Detailed "full-scale" Implementation Roadmap, including:

    – Plan for development of new platform.

    – Transition / rollout plan from current to new system.

    – Data migration best-thinking.

    – Change Management plans and activities.

    – Information on any additional project phases required prior to starting planning, development, and implementation of the modernized FDR platform.

    – Any additional information or commentary to support NAIC's understanding and acceptance of the proposed Mobilization Plan.

- Detailed Resourcing Plan for the "full-scale" implementation of FDR Modernization.

- Sufficiently detailed supporting information on proposed Software Development, Project Management, Stakeholder Management, and Governance approaches for the full-scale" implementation of FDR Modernization.

Ongoing Operational Plan

- Sufficiently detailed projections of internal resource requirements and ongoing operational budgets for the modernized FDR.

- Relevant recommendations on high-level operating strategies to support, maintain, and develop the resulting modernized FDR and ensure sufficient organizational capabilities going forward.

<u>Financial Projections</u>

- Detailed 10-year Total-Cost-of-Ownership (TCO) analysis / projections, including:

    - Initial hardware and infrastructure procurement costs for the full-scale"
      implementation of FDR Modernization.

    - Initial software procurement costs for the full-scale" implementation of FDR
      Modernization.

    - Ongoing hardware and infrastructure costs for the modernized FDR.

    - Ongoing software licensing and related costs for the modernized FDR.

    - Initial development costs (development costs for the full-scale"
      implementation of FDR Modernization).

    - Change management related costs for the full-scale" implementation of
      FDR Modernization.

    - All other implementation-related costs for the "full-scale" implementation
      of FDR Modernization.

    - Ongoing support and maintenance costs for the modernized FDR.

    - All other costs that are likely to have a meaningful impact on the TCO for
      the modernized FDR.

    - Required / suggested contingency budgets for the "full-scale"
      implementation of FDR Modernization.

    - Projected timing / phasing of all costs for the "full-scale" implementation of
      FDR Modernization.

- Financial benefits analysis (comparison vs. current state) for the "full-scale"
  implementation of FDR Modernization.

Section 6 | RFP Response Requirements

Required Sections and Information

Respondents to this RFP are asked to include the following sections and information in their submitted proposals:

1 | Respondent Company Overview

- Concise description and overview of the company and its history.

- Outline of services the company offers, as it relates to requirements outlined in this RFP.

- A brief history and description of any work carried out for NAIC in the last ten (10) years.

- A brief history and description of delivery of projects of this type.

- A detailed description of the capabilities and experience of the company to perform the requirements of this RFP.

- Details of the point of contact who will facilitate this project, their biography, experience, and contact information.

- Biographies of key personnel to be assigned to this project, including their role and specific experience and expertise.

- Detailed description of three to five similar engagements completed, noting projection duration and total cost, and a client reference for each.

- Any other information that the respondent feels relevant / useful as it pertains to the requirements outlined in this RFP.

2 | Detailed RFP Response / Proposal

Respondents should prepare a detailed RFP response / proposal, that includes the following sub-sections:

<u>POC | Technology Approach</u>

A preliminary proposal of technology solutions for the Proof-of-Concept, outlining:

- How the proposed approach will achieve the goals and objectives of the POC.

- Specific "off-the-shelf" and open-source system components to replicate core FDR functionality across "Blanks", "Vendor Prep", "Submission", "Ingestion", "Storage", "Operating Reports", and "Consumption".

- Any cloud data platforms to support specific or general functionality.

- Specific components related to:

    - RPA (Robotic Process Automation)
    - LCAP (Low Code Application Platforms)
    - DMS (Data Management Systems)
    - IDP (Intelligent Document Processing)
    - Platform Integration
    - Portals and Websites
    - Managed File Transfer
    - Decision Support
    - Workflow Validation
    - Business Rule Validation
    - Data Warehousing
    - Data Aggregation
    - Data Analytics
    - Data Storage and Management
    - Data Reporting and Visualization
    - Business Reporting and Visualization
    - Document, Data, and Report Configuration and Export

- Supporting diagrams.

- Details of any additional vendors or sub-contractors to be leveraged during the POC phase (name, what aspects of the technology solution they will be involved in, etc.).

- Any other relevant information, requirements, open issues / questions, that will help in the evaluation of the submitted proposal.

Project Plans

Project plans for completion of (1) the FDR Modernization POC and, (2) the Mobilization Planning phase, as outlined in this RFP, that include, to a reasonable amount of detail:

- Key tasks, activities, milestones, and deliverables.

- Relevant timelines, schedules, and input / decision points.

- Any critical assumptions and / or dependencies.

Acceptable formats for the project plans include MS Project and MS Excel.

POC | Development Approach

Additional detail and relevant supporting information on the proposed Software Development approach(es), tools, and processes to be used within the development of POC, and how they relate to and impact the proposed POC Project Plan, POC Resource Plan, and POC Budget and Contingency Plans.

Resources Plan

Detailed resource plans to deliver (1) the FDR Modernization POC and (2) the Mobilization Planning phase, as outlined in this RFP, that include, to a reasonable amount of detail:

- Resources (both vendor and NAIC) required.

- Hours per week, by resource (both vendor and NAIC).

- Location (on-shore, off-shore) of vendor resources.

- Rates (costs per hour) of vendor resources.

The resources plans should align to the project plans (in terms of key activities, milestones, and deliverables) and the fee schedule / pricing information.

<u>Fee Schedule and Pricing Information</u>

Detailed fee schedules, total projected budgets, and other pricing information for (1) the FDR Modernization POC and (2) the Mobilization Planning phase, including assumptions on:

- Additional Expenses (e.g., travel, lodging, meals, etc.)

- Technology costs (e.g., hardware, software licensing, etc.) to set up and maintain the Modernized FDR POC.

- Key Milestones and Deliverables (and how they relate to payment phasing).

- Recommended financial contingency provisions.

The NAIC will consider both fixed-fee and "time and materials" bids for the combined FDR Modernization POC and Mobilization Planning phase.

<u>Project Management</u>

A detailed explanation of the project management tools, processes, and approaches to be used on the project, including:

- How vendor resources will integrate with NAIC resources.

- A communication plan (including key tasks, activities, milestones, resources needed, etc.) for the project explaining how key stakeholders will be engaged and kept updated on progress to date, hours / budget vs. plan, issues, and input and decisions needed, etc.

- A change management plan (including key tasks, activities, milestones, resources needed, etc.) for the project explaining how effective change will be delivered across all stakeholders to ensure the long-term success of the modernized FDR.

- Project governance considerations.

- A project risk assessment and risk management plan.

3 | Additional Required Documentation

Respondents must provide the following information as part of their proposal:

- W-9 Form.

- Certificate of Insurance for Worker's Compensation.

- Certificate of Insurance for Professional Liability.

- Certificate of Insurance for Cybersecurity.

- Signed NAIC Conflict of Interest Form (see Appendix 4).

- Vendor Standard Terms and Conditions (if you do not agree to, or if they vary from the NAIC Standard Terms and Conditions, see Appendix 5).

Additional Instructions

- Please reference RFP-2096 on all parts of the proposal.

- Please ensure you have provided the following Point of Contact Information:

    - NAME

    - COMPANY

    - EMAIL

    - PHONE

Proposal Submission

Proposals must be received by 5pm Central time on May 15, 2024, via email to Jim Woody at Proposals@naic.org.

RFP Provisional Timeline

	ACTIVITY	DATE
1	NAIC Issuance of RFP	Mar. 1, 2024
2	NAIC public posting of RFP on website + press release	Mar. 1, 2024
3	NAIC hosted project clarification & Q&A Session register here	Mar. 21, 2024
4	Vendor intent to Bid due to Proposals@naic.org [7]	Mar. 27, 2024
5	Vendor RFP questions due to Proposals@naic.org [8]	Apr. 10, 2024
6	NAIC responses to vendor questions [9]	Apr. 17, 2024
7	Vendor proposal submissions due to Proposals@naic.org	May 15, 2024
8	NAIC notice of selection for vendor interview [10]	May 22, 2024
9	Vendor Interviews	May 22-June 7, 2024
10	NAIC issuance of award to the selected vendor - projected	Aug. 2024 *
	Projected Project Start Date	Q3, 2024

The NAIC reserves the right to change or alter timing and activities as appropriate.

* NAIC's Executive Committee has the final authority to direct contract execution for the selected vendor.

Point of Contact

Any questions regarding the requirements outlined in the RFP should be directed to Proposals@naic.org by April 10, 2024.

Questions related to any other matter should be directed to NAIC Chief Financial Officer Jim Woody at JWoody@naic.org, who is the NAIC point-of-contact for this RFP.

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[7] Potential respondents are asked to submit an email indicating their intent to bid by Mar. 27, 2024 via email to Jim Woody at Proposals@naic.org.

[8] Each respondent is asked to send a single set of questions (vs. multiple sets of questions) related to the RFP and response requirements.

[9] Submitted questions will be anonymized and responses to all questions will be posted to the NAIC website.

[10] The NAIC reserves the right to interview a limited number of bidders based on its evaluation of the submitted proposals. Submission of a proposal does not guarantee an interview.

Section 8 | Selection Process and Assessment Criteria

Selection Process

A committee including NAIC senior leadership has been designated to review the proposals, interview selected bidders, and, if appropriate, select a vendor to complete the scope of work outlined in this RFP.

This committee will also conduct regular progress meetings with the selected firm during the development and demonstration of the Proof of Concept, and during the Mobilization Planning phase.

Assessment Criteria

The following factors will be considered in making the vendor selection:

- Knowledge and understanding of NAIC systems, processes, and organization.

- Knowledge of the specific requirements and ability to understand the project.

- Experience with similar projects.

- Qualifications of staff dedicated to project.

- Professional reputation of the firm.

- Proposed project costs and timelines.

- Quality of project plans.

- Completeness of proposal.

- Proven ability to provide the identified deliverables on time and within budget.

Presentations

Based on responses, NAIC reserves the right to request a presentation of the RFP response and demonstration of capabilities included in the RFP response document.

Presentations are currently scheduled to take place from May 22 through June 7, 2024.

Conflicts of Interest

The NAIC recognizes that, given the broad scope of this project, any vendor with the experience reasonably necessary to produce the work may have certain conflicts of interest based upon past associations with regulators or industry participants.

These conflicts of interest will not automatically disqualify the vendor, but the vendor must have verifiable policies and procedures in place designed in compliance with established industry standards to address conflict-of-interest issues that may arise.

All relevant items must be approved prior to contract execution by NAIC's Acting Chief Executive Officer/COO/CLO.

NAIC Reserved Rights

The submission of a proposal does not guarantee an interview with the selection committee or a demonstration of capabilities to the committee.

The NAIC reserves the right to reject any or all proposals, request new proposals, or request additional information.

NAIC also reserves the right to further negotiate with any or all bidders.

The NAIC also reserves the right not to award a contract for this project.

Reasons for not awarding a contract could include, but are not limited to:

- Lack of acceptable proposals.

- An inability to come to terms with a vendor.

- A finding that insufficient funds are available to proceed.

The NAIC also reserves the right to redirect the project as is deemed advisable.

The NAIC also reserves the right to cancel this RFP at the direction of its membership.
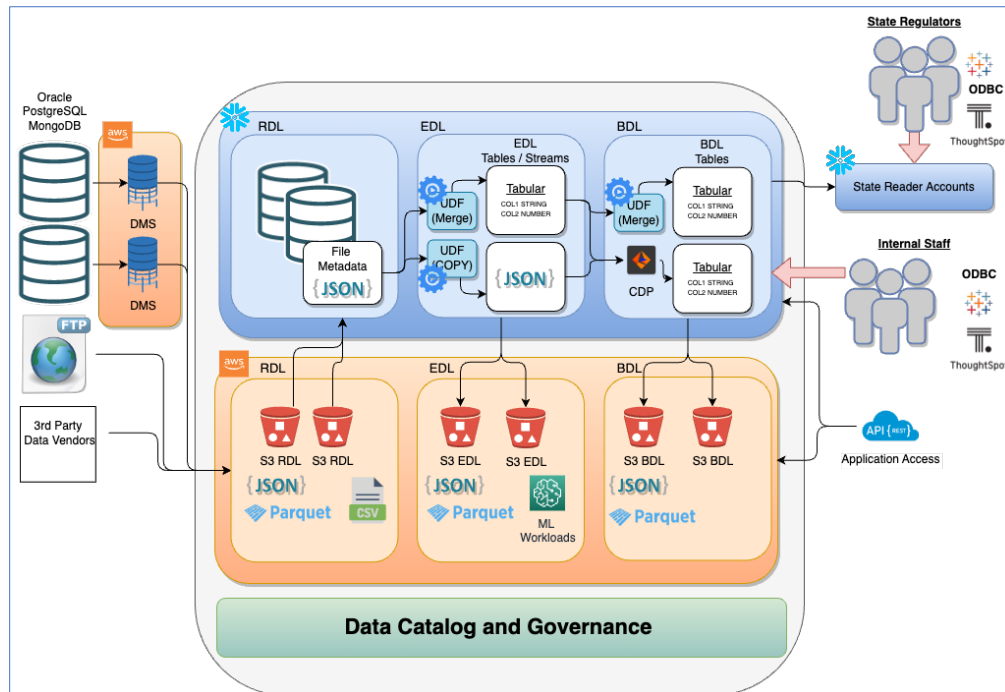
APPENDICES

Appendix 1	Additional Supporting Information - FDR Current State
Appendix 2	Additional FDR metrics
Appendix 3	Additional Considerations | POC Requirements
Appendix 4	NAIC Conflict of Interest Form
Appendix 5	NAIC Standard Terms and Conditions

Current Technology Stack
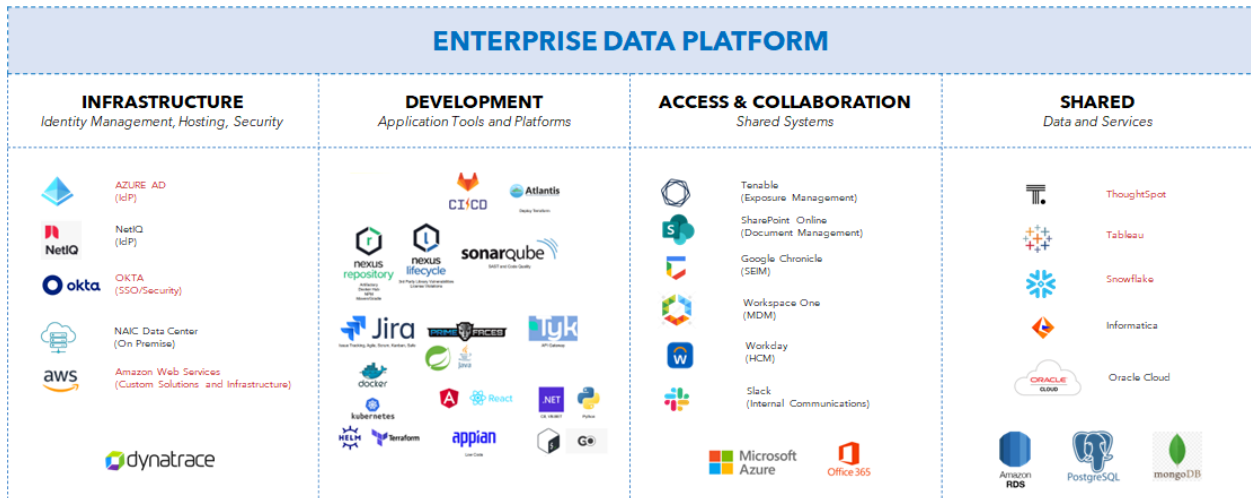
Enterprise Data Platform

Environments (Realms and Tools)

Systems Prep
Specs, VRI
-Spec Gen
-FM   [SUDO/KITTY]
-BAS
-STM

Data Quality/QA
-COD   -COI
-Reports   -CORR
-FDUI   -Workflow

Tech Prod Support
(Systems & Vendor Testing)
-Flow   -Online DV
-Deletes   -All other Apps in CAAT

Metadata vs Code Flow

Prod   QA   INT   DEV   **Code/Application**

Prod.Blank_Support   BSA/BUS
Prod NAIC

QA.Blank_Support   BSA
QA NAIC

DVLP.Blank_Support_INT   SQE / BSA
DVLP.NAIC_INT

DVLP.Blank_Support   Developer
DVLP.NAIC

Data (Components and Domain)

DATA COMPONENT	DOMAIN
Data Storage	▪ Relational Database: Oracle 12c ▪ Real Time database access ▪ Over 250,000 data elements captured per individual insurer's Annual filing ▪ 500+ million records considering retention period (10 yrs) ▪ Metadata driven using proprietary specifications
Data Schema	▪ Blanks Metadata Tables ▪ Formula Metadata Tables ▪ Supporting Calcs Metadata Tables ▪ Financial Data Tables ▪ Company Data Tables ▪ All Other Tables for Processing Data
Data Structure	▪ OLTP {Realm - PROD, QA, DVLP} ▪ Schema for Blank_Support ▪ Schema for NAIC ▪ Table Metadata

Appendix 2 | Additional FDR metrics

Total number of database tables for FDR financial data (split amongst the four statement types).

Table Count YEAR	Statement Type Code	Annual Statement	Risk-Based Capital	Separate Accounts	Quarterly Statement
2021	L/H	389	64	131	119
	P/C	476	108		123
	Title	199			100
	Health	245	39		114
2021 Total		1,309	211	131	456
2022	L/H	390	64	131	117
	P/C	476	109		121
	Title	199			100
	Health	246	39		112
2022 Total		1,311	212	131	450
2023	L/H	388	63	131	117
	P/C	477	109		121
	Title	200			100
	Health	242	39		112
2023 Total		1,307	211	131	450

Table Metadata = 25 tables

Validation Rule Metadata = 37 tables

Row count for all FDR financial data tables for 2022 Annual and Quarterly:

Row Count					
Row Range Type	Period	Annual Statement	Risk-Based Capital	Separate Accounts	Quarterly
Fixed Row	Annual	23,475	3,022	2,379	
	Quarterly				8,733
Variable Row Range	Annual	4,591	23	927	
	Quarterly				2,315

Approximate count of data records committed to the 2022 Annual and Quarterly Financial tables:

Row Count				
Period	Annual Statement	Risk-Based Capital	Separate Accounts	Quarterly
Annual	43,211,121	6,145,851	1,322,388	
Quarterly				37,731,368

Appendix 3 | Additional Considerations: POC Requirements

Blanks | Data Being Collected

Despite the ambitious vision and wide-ranging objectives of FDR Modernization, NAIC is not seeking a "radical" change to the current FDR business strategy and, due to the criticality of the FDR system and its data to the insurance regulators' use, NAIC (with the guidance of its Blanks Working Group) is not seeking to change the actual data that is collected.

This should inform the RFP respondents proposed approach to Blanks Re-engineering.

Role of FSP Vendors

NAIC foresees maintaining the current role of FSP vendors within the Modernized FDR processes.

POC Hosting and Development Environment

The vendor selected to develop the modernized FDR POC should assume that the POC will not be hosted within an NAIC environment and will be free to make appropriate choices on the hosting and development environment for the POC.

However, because NAIC provided data will be used for testing purposes the vendor will need to adhere to certain NAIC cyber security standards. This will include, but is not limited to, transmission, receipt, storage, and usage of the test data.

Platform Architecture

The NAIC is looking to enhance, extend, and replace capabilities of the current system with new code, applications, and packaged products and services that deliver increased functionality in the user interface, API layer, and data services.

While the NAIC is open to all proposed platform architecture choices for the POC, the NAIC's selected cloud provider is AWS. Therefore, when considering cloud platform architecture, tools, and components for the POC, it should be understood that the NAIC has a clear preference towards AWS and may be a factor in considering the ultimate architecture of the modernized FDR.

Data Architecture

NAIC is currently undertaking separate Enterprise Data initiatives that seek to elevate data to the level of a managed institutional asset, optimize data and information storage and usage, and drive improvements in the daily data related work of state insurance regulators and internal employees. The preferred data platform for these efforts is Snowflake.

While the NAIC is open to all proposed data architecture and platform choices for the POC, ability to evidence alignment between the proposed data approach for the POC and the goals, roadmap, toolsets, and other choices within the NAIC's Enterprise Data initiatives will be viewed positively when assessing respondents submitted proposals.

Integration Architecture | External Integration

The ability for state and industry organizations to integrate with the modernized FDR, either directly or through third parties, is critical. It is anticipated that new APIs and a new client-side UI will be developed as the current application is decomposed into smaller components or replaced by alternative solutions.

During the Mobilization planning phase, API management platforms should be evaluated to determine if one would enhance FDR's integration capabilities, but the NAIC currently prefers Tyk.

However, for the purposes of the POC, deep consideration of external integrations and external integration extensibility is not required.

Integration Architecture | Internal Integration

The current state FDR has multiple integration points and one and two-way dependencies between itself and other NAIC systems, in particular with the NAIC MCAS (Market Conduct Annual Statement) system.

For the purposes of the POC, deep consideration of how these integration points will be approached in a modernized FDR is not required: the POC simply must demonstrate the features, functionality, and performance enhancements described in detail previously.

During Mobilization planning, the selected vendor will be expected to identify the implications of the proposed future state technology approach and full-scale implementation plan vis a vis the FDR and NAIC "other systems" current state, and to build in integration considerations (including mitigation of the effects of FDR Modernization on other FDR systems) into these plans, and the budgetary / cost analysis for FDR Modernization.

Usage of FDR systems beyond current FDR use cases | External

Strategically, NAIC wishes to ensure that a Modernized FDR can continue to support additional regulatory projects (for States such as New York and Pennsylvania): these states have partnered with NAIC to use the current state FDR system to handle other types of regulatory filings.

It is also the NAIC's hope that a modernized FDR will be architected and built in such a way that these existing partnerships can be further broadened, and that partnerships with additional states can also be established, where the modernized FDR can be configured to take on additional regulatory filings and regulatory filings processing tasks.

The NAIC also desires to investigate and pursue other potential business opportunities related to FDR data (such as the NAIC Product team providing existing financial data to new clients for purposes such as investment reporting), which may necessitate future development of the reporting (aka "Consumption") layer of FDR.

For the purposes of the POC, this desire for extensibility should be ignored.

For the purposes of Mobilization planning, accommodation of these desires should be considered within the broad scope of work and requirements of FDR Modernization.

Usage of FDR systems beyond current FDR use cases | Internal

As previously discussed, the current state FDR has multiple integrations to other NAIC systems, such as MCAS. In addition, the NAIC recognizes that while there are distinct differences between systems such as SERFF (System for Electronic Rates and Forms Filing), MCAS, and FDR, many of these core systems share basic critical processes (e.g., data "submission" and "data validation").

For the purposes of the POC, any opportunity to share modernized FDR componentry with other NAIC systems, as part of a broader "enterprise" approach, should be ignored.

During the Mobilization planning phase, the selected vendor should perform a high-level assessment of the extensibility opportunities for core components of the modernized FDR (to be leveraged in other NAIC systems), and of the potential pros, cons, and benefits of such an approach, as part of the required impact analyses (see POC deliverables section).

Reuse of POC elements in full-scale Development and Implementation

In line with a proof-of-concept approach, while the end-state POC should be representative of what a fully developed and modernized FDR will be capable of, and the technical approaches taken to achieve this, it is assumed that software components and architecture chosen and used for the POC may not be wholly the same as those used within the fully development modernized FDR.

Equally, the NAIC is realistic that some of the development work for the POC may well be "throw-away".

The NAIC is comfortable with such approaches, if "substitutions", "workarounds", "proxies", etc. are:

- Clearly flagged and explained in the RFP response.

- Clearly flagged and explained in any subsequent recommendations coming from the POC.

- Adequately addressed within cost projections and impact analyses.

Furthermore, the POC must account for scalability (in terms of a "full-scale" application for a modernized FDR) and the ability to replicate the proposed approaches and solutions "at scale".

Security

- The modernized FDR platform must comply with all NAIC security policies, including any infrastructure related to the project. The POC a modernized FDR should also comply with these policies.

- 3rd party SaaS / cloud-based systems will need to have capabilities to support SSO and Multifactor Authentication. Due to regulatory needs, FDR data storage outside of NAIC environments must be within the geographical US region and comply with all legal and regulatory requirements.

- Vendor Assessments and Contractual discussions will be a part of determining compliance with security needs for both the POC and Modernization efforts.

Appendix 4 | NAIC Conflict of Interest Form

Any Entity that desires to contract with the NAIC must complete this form, including suppliers, consultants and purchasers of goods or services. All potential conflicts must be disclosed and approved before contract execution.

<table>
<tr>
<td>CERTIFICATION</td>
<td>

_____("Entity") did not provide gifts, favors, membership points or any other benefits to any employee or representative of the NAIC to affect the bidding and selection process for this contract.
Entity did not and will not receive gifts, favors, membership points or any other benefits from any employee or representative of the NAIC in connection with the negotiation or implementation of this contract.
Entity owners, principals and employees negotiating or implementing this contract on behalf of Entity are not former NAIC employees unless disclosed below.
Entity owners, principals and employees negotiating or implementing this contract on behalf of Entity are not immediate family members of NAIC employees unless disclosed below.

<p>The signatory below is a duly authorized representative of Entity and hereby certifies to the authenticity and veracity of this disclosure.</p>

<p>_____   _____
Authorized Entity Signature   Date</p>

<p>_____
Print Name & Company Name</p>
</td>
</tr>
<tr>
<td>DISCLOSURE</td>
<td>
DISCLOSURE OF POTENTIAL CONFLICT
………………………………………………………………………
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_____   _____
NAIC CEO or COO   Date
</td>
</tr>
</table>

NAIC 8/14

STANDARD TERMS AND CONDITIONS
for
NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS PURCHASE ORDERS FOR SERVICES

As used herein, "Seller" means the person, firm, or corporation to whom this Purchase Order is issued; "Buyer" means the National Association of Insurance Commissioners, a nonprofit Delaware corporation.

1. **Acceptance of Terms and Conditions.** Seller agrees to perform the services ("Services") described in any purchase order ("Purchase Order") in accordance with these Terms and Conditions. Upon acceptance of a Purchase Order or upon commencement of Services, Seller shall be bound by these Terms and Conditions and all provisions set forth on the face of any applicable Purchase Order, whether Seller signs or otherwise acknowledges these Terms & Conditions or the Purchase Order, unless Seller objects to such Terms and Conditions in writing prior to commencing Services.

2. **Revocable.** This writing does not constitute a firm offer and may be revoked at any time prior to acceptance.

3. **No modification.** No agreement or other understanding in any way altering the terms, prices or conditions of the applicable Purchase Order or these Terms and Conditions shall be binding upon Buyer unless made in writing and signed by Buyer's duly authorized representative.

4. **Termination.** Buyer may immediately terminate the Purchase Order upon written notice to Seller if Seller fails to perform or otherwise breaches these Terms and Conditions, files a petition in bankruptcy, becomes insolvent, or dissolves. Buyer may terminate the Purchase Order for any other reason upon thirty (30) days' written notice to Seller. Upon receipt of notice of termination, Seller shall cease to provide Goods and/or perform Services pursuant to the Purchase Order. In the event of termination, Buyer shall be liable to Seller only for those Services satisfactorily performed before the date of termination, less appropriate offsets. Buyer shall not be subject to any charges or other fees as a result of such cancellation. Seller may terminate this Agreement upon written notice to Buyer if Buyer fails to pay Seller within sixty (60) days after Seller notified Buyer in writing that payment is past due and that it intends to terminate the Purchase Order.

5. **Warranty of Services.** Seller represents and warrants that all Services shall be completed in a professional, workmanlike manner, with the degree of skill and care that is required by current, good, and sound professional procedures. Further, Seller warrants that the Services shall be completed in accordance with applicable specifications. Seller represents and warrants that the performance of Services hereunder will not conflict with or be prohibited in any way by any other agreement or statutory restriction to which Seller is bound.

6. **Seller's Indemnification.** Seller shall indemnify, hold harmless, and at Buyer's request, defend Buyer, its officers, directors, agents and employees, against all claims, liabilities, damages, losses and expenses, including attorneys' fees and costs of suit arising out of or in any way connected with any claim by a third party against Buyer alleging that the Services infringe a patent, copyright, trademark, trade secret or other proprietary right of third party. Seller shall not settle any such suit or claim without Buyer's prior written consent. Seller shall also indemnify and hold harmless Buyer from any injury to person or property arising out of or caused by Seller's performance of the Purchase Order. Seller agrees to pay or reimburse all costs that may be incurred by Buyer in enforcing this indemnity provision, including attorneys' fees.

7. **Compliance with Laws.** Seller shall comply with all laws and regulations of federal, state and local governments, including without limitation, laws and regulations dealing with fair labor standards, civil rights, and public contracts. Seller further warrants that all Services performed pursuant to the Purchase Order have been produced or performed in compliance with such laws and regulations and Seller agrees to indemnify Buyer for any liability resulting from such noncompliance by the Seller.

8. **Price.** The price to be paid by the Buyer shall be the price contained in Seller's bid and/or the price stated on the face of the Purchase Order whichever is less. Seller represents the price contained in Seller's bid is no higher than Seller's current prices on orders by others for similar products or services under similar or like conditions and methods of purchase.

9. **Invoices.** Seller shall submit invoices on each Purchase Order after each delivery. Buyer shall not be charged sales tax and shall furnish a tax exemption certificate upon request. Discounts will be taken from the date of acceptance of services or date the invoice is received by Buyer whichever is later. Buyer shall retain the right of offset.

10. **Force Majeure.** Buyer shall not be liable for any failure to perform including failure to: (1) accept performance of Services, or, (2) take delivery of the Goods as provided if caused by circumstances beyond Buyer's control which make such performance commercially impractical including, but not limited to, acts of God, fire, flood, acts of war, government action, accident, labor difficulties or shortage, or the inability to obtain materials, equipment or transportation.

    Seller shall not be liable for any failure to perform including failure to: (1) provide Services, or (2) deliver Goods as provided if caused by circumstances beyond Seller's control which make such performance commercially impractical including, but not limited to, acts of God, fire, flood, acts of war, government action, accident, labor difficulties or shortage, or the inability to obtain materials, equipment or transportation.

11. **Insurance.** Seller shall be solely responsible for maintaining adequate auto, workers' compensation, unemployment compensation, disability, liability and other applicable insurance, as is required by law or as is the common practice in Seller's trade or business, whichever affords greater coverage. Seller shall carry Comprehensive General Liability coverage and Umbrella or Excess Liability coverage with minimum limits of $1,000,000 per occurrence and $2,000,000 in the aggregate for property damage and bodily injury. Upon request, Seller shall provide Buyer with certificates of insurance evidencing adequate coverage naming the Buyer as additional insured.

12. **Limitation of Liability.** IN NO EVENT SHALL BUYER BE LIABLE TO SELLER OR SELLER'S AGENTS, OR ANY THIRD PARTY FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR IN CONNECTION WITH, THIS AGREEMENT, WHETHER OR NOT BUYER WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

13. **Confidentiality.** In the event Seller gains written or oral confidential information of or from the Buyer, Seller agrees not to reveal to anyone or make use of such knowledge and information at any time for any purposes except as necessary in the course and scope of provision of Goods or performance of Services specified hereunder. Upon termination of the Purchase Order, Seller agrees to deliver to Buyer all such confidential information or work product belonging to Buyer.

14. **Assignability.** Seller shall not assign or subcontract this Purchase Order or any of its rights or obligations hereunder without the prior written consent of Buyer. Any assignment or transfer without such written consent shall be null and void.

15. **Publicity.** Seller shall not use Buyer's name in any form or attribution in connection with any solicitation, publicity, advertising, endorsement, or other promotion.

16. **Survivability.** Any obligations and duties, which by their nature extend beyond the expiration or termination of this Purchase Order shall survive the expiration or termination hereof.

17. **Choice of Law.** This Purchase Order shall be construed in accordance with, and disputes shall be governed by, the laws of the State of Missouri.

18. **Severability.** If any provision of this Purchase Order shall be deemed to be invalid, illegal, or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

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Do you agree to the NAIC Terms & Conditions? Please sign one.

YES	_____Signature	_____Date
NO	_____Signature	_____Date
If NO,	Please provide your Terms and Conditions of Services if you do not agree to the NAIC Terms & Conditions attached.	

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