

NOTICE

This Exploratory Project Solicitation is being released to Data Analytics Expertise Pre-Qualified Contractors as a result of Open Market RFP #0A1199 Supplement Two.

This Exploratory Project Solicitation is limited to those Contractors Pre-Qualified by the State under Contract 0A1199 Supplement Two

Life Sciences and Public Health Expertise or Risk Management (Insurance & Claims Management)

and is provided for informational purposes to other interested parties

An alphabetical listing of Pre-Qualified Contractors to participate in this opportunity follows:

| | | |
|-------------------------------|--|---------------------------------|
| 3M Health Information Systems | Health Integrity LLC | Onix Networking Corporation |
| Accenture | Health Monitoring Systems, Inc. | Optimum Technology |
| ASR Analytics, LLC | Indus Corporation | Optum |
| Battelle | Information Control Company LLC (ICC) | Persistent Systems Inc. |
| Carahsoft Technology Corp. | JJR Solutions LLC | Pulselight LLC |
| CGI Technologies | KSM Consulting | SAS Institute |
| Civis Analytics | Logic Soft Inc. | Sense Corp. |
| Competitive Analytics | Mathematica | Signet Accell, LLC |
| CrossCHX | McKinsey & Company, Inc. | Super H LLC |
| Deloitte Consulting, LLP | Nationwide Children's Hospital | Sutherland Government Solutions |
| Devcare Solutions | Nationwide Children's Research Institute | Tech Zavy |
| DXC Technology | Navigator Management Partners LLC | Teradata Government Systems |
| Elite Analytics | Opera Solutions | The Ohio State University |

ONLY those Pre-Qualified Contractors in the Domains: Life Sciences and Public Health or Risk Management (Insurance & Claims Management) Expertise are eligible to submit proposal responses AND to submit inquiries. The State does not intend to respond to inquiries or to accept proposals submitted by organizations not Pre-Qualified in this Data Analytics Expertise Domain.

REQUEST FOR EXPLORATORY PROJECT SOLICITATION PROPOSALS

Life Sciences and Public Health Expertise
or
Risk Management (Insurance & Claims Management)

Exploratory Project Solicitation Number: DADMR-18-EP-006

Reference RFP Number: 0A1199

Date Issued: August 13, 2018

The Ohio Department Developmental Disabilities

Claims Cost and Fraud Optimization

Inquiry Period Begins: August 13, 2018

Inquiry Period Ends: August 20, 2018 at 8:00 AM

Opening Date and Time: August 27, 2018 at 1:00 P.M.

Pre-Qualified Contractor Intent to Bid or Abstain from Bidding Statement (required of all Contractors Pre-Qualified under the Expertise Domain(s) pertinent to this Solicitation.

August 17, 2018

This Exploratory Project Solicitation is limited to those Contractors Pre-Qualified by the State under Contract 0A1199 Supplement Two in either of:

**Life Sciences and Public Health Expertise
or
Risk Management (Insurance & Claims Management)**

and is provided for informational purposes to other interested parties

Introduction and Background

See attachment(s): Attachment 1, Statement of Work and Requirements

Administrative

All administrative instructions regarding this Data Analytics Exploratory Project Work Solicitation are below.

All Pre-Qualified Contractors submitting an Exploratory Project Solicitation Proposal must be pre-qualified under Contract 0A1199, Supplement 2, in either of Life Sciences and Public Health Expertise or Risk Management (Insurance & Claims Management). This Solicitation is incorporated into and governed by RFP 0A1199 Supplement Two.

Due Dates. All Exploratory Project Solicitations are due by the **Proposal Due Date** in the table below as a single PDF emailed to the Project Representative. Any proposals received after the required time and date specified for receipt shall be considered late and non-responsive. Any late proposal will not be evaluated for award.

Schedule of Events. All times are Eastern Standard Time (EST).

| Event | Date |
|---|-------------------|
| 1. Exploratory Project Solicitation Distribution to Pre-Qualified Contractors | 08/13/2018 |
| 2. Inquiry Period Begins | 08/13/2018 |
| 3. Pre-Qualified Contractor Intent to Bid or Abstain from Bidding Statement (required of all Contractors Pre-Qualified under the Expertise Domain(s) pertinent to this Solicitation. | 08/17/2018 |
| 4. Inquiry Period Ends | 08/20/2018 |
| 5. Proposal Due Date | 08/27/2018 |
| 6. Target Date for Review of Proposals | 08/29/2018 |
| 7. Interviews of Candidates, if needed | August/2018 |
| 8. Anticipated decision and selection of Contractor | August/2018 |
| 9. Anticipated Work Commencement Date | September 2018 |

Proposal Inquiries. Pre-Qualified Contractors may make inquiries regarding this Exploratory Project Solicitation at any time during the inquiry period specified within the schedule events, which is detailed within this section. The State may not respond to any improperly formatted inquiries. The State will try to respond to all inquiries within 24 hours, excluding weekends and State holidays. The State will not respond to any inquiries received after 8:00 am on the inquiry period end date.

To make an inquiry, Pre-Qualified Contractors must use the process outlined below.

- Access the State Procurement Web site at <http://procure.ohio.gov/>
- Select "Doc/Bid/Schedule #" as the Type.
- Enter the Exploratory Project Solicitation number found on the first page of this Exploratory Project Work Solicitation
- On the document information page, click the "Submit Inquiry" button.
- On the document inquiry page, complete the required "Personal Information" section by providing:
 - First and last name of the prospective Pre-Qualified Contractor's representative who is responsible for the inquiry;
 - Name of the prospective Pre-Qualified Contractor;
 - Representative's business phone number, and
 - Representative's e-mail address.
- Type the inquiry in the space provided, including:
 - A reference to the relevant part of this Exploratory Project Work Solicitation;

- The heading for the provision under question, and
- The page number of the Exploratory Project Work Solicitation where the provision can be found.
- Click the “Submit” button.

A Pre-Qualified Contractor submitting an inquiry will receive an immediate acknowledgement that the State has received the inquiry in the form of an e-mail acknowledging receipt. The Pre-Qualified Contractor will not receive a personalized response to the question nor notification when the State has answered the question.

Pre-Qualified Contractor may view inquiries and responses on the State’s Procurement Web site by clicking the “View Q & A” button on the document information page.

All questions must be submitted by the Due Date (“Inquiry Period Ends”) in the table detailed within this section. Questions submitted after this time will not receive a response from the state.

Evaluation Factors for Award.

| Pre-Qualified Contractor Criteria | | | | | | | Accept or Reject |
|---|---|---|--------------------------------|---------------------------------|----------------|--------------------------|--|
| The Pre-Qualified Contractor, as the prime Contractor, is Contracted under RFP 0A1199, Supplement 2 | | | | | | | Accept or Reject |
| Supplement 2, Data Analytics Expertise Domain(s) Eligible to Participate in this Exploratory Project Work Solicitation | | | | | | | |
| Life Sciences & Public Health ----- eligible to respond | Waste, Fraud & Abuse Eligible to Respond | Risk Management (Insurance & Claims Management) ----- eligible to respond | Cyber/Security | Environment & Natural Resources | Workforce | Public Safety / Security | |
| Crime, Corrections & Recidivism | Education | Government Process Automation / Decision Making | Audit, Compliance & Regulation | Commerce & Industry | Transportation | Utilities | |
| Pre-Qualified Contractor Evaluation Factors | | | | | | | Weighting % of Overall Technical Score |
| Pre-Qualified Contractor’s Proposed Approach, Analytical Methods and Tools and Demonstrated Understanding of the Exploratory Project Solicitation, its Analysis Dimensions and Anticipated Outcomes | | | | | | | 40% |
| Pre-Qualified Contractor Proposed Team in performing the work (experience with similar projects, data analytics tools, methods and techniques) | | | | | | | 30% |
| Pre-Qualified Contractor’s proposed cost, as a firm fixed price not to exceed. | | | | | | | 30% |
| Total | | | | | | | 100% |

Guidelines for Proposal Preparation

Pre-Qualified Contractor Intention to Bid or Abstain from Bidding. The State requires a definitive and unambiguous Statement as to their intention to bid, or to abstain from bidding – in which case a brief business justification or rationale must be provided to the State. Such indication must be provided via email to the State Agency contact listed contained herein. Pre-Qualified Contractors who fail to bid on opportunities within Expertise Domains in which they are contracted under Contract 0A1199 on a repeated basis without providing such rationale to the State may, at the State’s discretion, be eliminated from consideration in participating in future Exploratory Projects. Intention to bid or abstain from bidding should be directed to the Agency contact listed within the Proposal

Submittal section of this solicitation. Contractors are to note that the State requires either of: 1) a written indication of its intention to bid or 2) a written indication to abstain from bidding with a brief business rationale. Should Contractors not provide this indication to the State on a repeated basis for solicitations in which they are Pre-Qualified Contractors, the State may eliminate the Contractor from participating in future solicitations or cancel the Contractor's contract in its entirety.

Proposal Submittal. Each Pre-Qualified Contractor must electronically submit via email a complete and signed copy of its Exploratory Project Solicitation proposal as a single PDF. **The Exploratory Project Solicitation Number DADMR-18-EP-006 should be included in the title of the email.** The Pre-Qualified Contractor's response shall clearly demonstrate how their proposed solution meets the requirements outlined in this Exploratory Project Solicitation. Each proposal must be organized in the same format as described below. Any material deviation from the format outlined below may result in a rejection of the non-conforming proposal. Each proposal must contain an identifiable tab sheet preceding each section of the proposal. The proposal shall be good for a minimum of 45 days. Proposals MUST be submitted to the Agency Project Representative no later than the date and time listed in the Schedule of Events:

Michelle Burk
Michelle.Burk@dodd.ohio.gov

Proposal Content. Pre-Qualified Contractors are requested to limit their proposal to not more than fifty (50) pages in its entirety.

- Cover Letter
- Pre-Qualified Contractor Proposal in Response to Attachment 1 the Statement of Work
- Cost Summary
- Proof of Insurance

Cover Letter. The cover letter must be in the form of a standard business letter and must be signed by an individual authorized to legally bind the Pre-Qualified Contractor. The letter must have the following:

- a. The Pre-Qualified Contractor's principal place of business;
- b. A list of the people who prepared the Proposal, including their titles and email addresses;
- c. A list of Subcontractors proposed for this project; and
- d. An acknowledgement of the Limitation of Liability.

Pre-Qualified Contractor Proposal in Response to Attachment 1 the Statement of Work and Requirements. The Pre-Qualified Contractor's proposal must describe in detail how the proposed solution meets the Work and requirements described in this Exploratory Project Solicitation. The Pre-Qualified Contractor may not simply state that the proposed services will meet or exceed the specified requirements. Instead, the Pre-Qualified Contractor must provide a written narrative that shows that the Pre-Qualified Contractor understands the requirements of this Exploratory Project Solicitation and demonstrates how the Pre-Qualified Contractor's proposed services meets those requirements. **Pre-Qualified Contractors, as part of their proposal in response to this Attachment, must include the following elements:**

1. An overall **Analytical Approach** inclusive of analytical methods, tools and technologies and expected outcomes;
2. A **Data Security & Confidentiality** plan that explains how Business Associate Safeguard requirements will be implemented and adhered to over the course of the Project;
3. A comprehensive **Project Workplan** inclusive of all State required milestones, activities and deliverables with anticipated delivery dates;
4. A **Staffing Plan** inclusive of all Pre-Qualified Contractor staff, Pre-Qualified Contractor staff locations (e.g., State premise or Pre-Qualified Contractor premise) and requirements for State personnel involvement for the duration of the project, by each phase of the project, regardless of implementation methodology that includes all requirements elaboration, design, development, system and acceptance testing and production deployment work elements;

5. **Proposed Pre-Qualified Contractor team** inclusive of 1-2-page biographical resumes for all team members that will be on State premise, or interact with State personnel as applicable to perform and complete the work.

Cost Summary. This Exploratory Project Solicitation includes a Cost Summary table. Pre-Qualified Contractors must complete the Cost Summary table and may not reformat the State's Cost Summary table. Pre-Qualified Contractors may re-order (but not renumber) the deliverables as to align with their approach and project plan for performing the Exploratory Project Solicitation proposal as they see fit with an indication of the general scheduled due date for each Deliverable.

| Cost Element | Deliverable Title | Scheduled Due Date | Cost |
|--|--|--------------------|------|
| Milestone 1 | Confirmation of State and, if applicable Contractor Provided Datasets | MM/DD/YYYY | n/a |
| Dimension 1 | Create a Universal Model of DODD services recipients | MM/DD/YYYY | \$ |
| Dimension 2 | Enhancement of Predictive Models to Optimize Financial Performance of Claims | MM/DD/YYYY | \$ |
| Dimension 3 | Provider Optimization and Extension | MM/DD/YYYY | \$ |
| Dimension 4 | Fraud Framework Model and Detection Analytics | MM/DD/YYYY | \$ |
| Deliverable 1 | Creation of Operational, Predictive and Audit Views of DODD Data | MM/DD/YYYY | \$ |
| Final Deliverable | Executive Presentation of a Summary of the deliverables to be conducted at a date and time mutually convenient to the State and Pre-Qualified Contractor | MM/DD/YYYY | \$ |
| Due Date and Total Not to Exceed Firm Fixed Price | | MM/DD/YYYY | \$ |

For invoicing and payment information, refer to Attachment Two: Special Provisions Applicable to Exploratory Projects, Submittal of Exploratory Project Deliverables of RFP 0A1199. The State's acceptance of Exploratory Project deliverables is conditioned on the deliverable fully conforming to the Exploratory Project Solicitation and all applicable Exploratory Project Specifications.

Proof of Insurance. The Pre-Qualified Contractor must provide the certificate of insurance as required in section: Guidelines for Proposal Preparation. The policy may be written on an occurrence or claims made basis.

Proprietary Information. All proposals and other material submitted will become the property of the State and may be returned only at the State's option. Proprietary information should not be included in a proposal or supporting materials because the State will have the right to use any materials or ideas submitted in any proposal without compensation to the Pre-Qualified Contractor. Additionally, all proposals will be open to the public after the contract has been awarded. The State may reject any proposal if the Pre-Qualified Contractor takes exception to the terms and conditions of this Exploratory Project Solicitation.

Evaluation of Proposals

This Exploratory Project Solicitation asks for proposals from Pre-Qualified Contractors. While each criterion represents only a part of the total basis for a decision to award the contract to a Pre-Qualified Contractor, a failure by a Pre-Qualified Contractor to make a required submission or meet a requirement will normally result in a rejection of that Pre-Qualified Contractor's proposal. The value assigned to each criterion is only a value used to determine which proposal is the most advantageous to the State in relation to the other proposals that the State received. It is not a basis for determining the importance of meeting any requirement to participate in the Exploratory Project Solicitation process.

The evaluation process may consist of up to three distinct phases:

1. The Project representative's initial review of all proposals for defects;
2. The evaluation committee's evaluation of the proposals; and
3. Interviews (optional).

Initial Review. The Project representative normally will reject any incomplete or incorrectly formatted Exploratory Project Solicitation proposal, though the representative may elect to waive any defects or allow a Pre-Qualified Contractor to submit a correction. If a late proposal is rejected, the procurement representative will not open or evaluate the late proposals. The procurement representative will forward all timely, complete, and properly formatted proposals to an evaluation committee, which the procurement representative will chair.

Committee Review of the Proposals. The evaluation committee will evaluate and numerically score each proposal that the procurement representative has forwarded to it. The evaluation will result in a point total being calculated for each proposal. Those Pre-Qualified Contractors submitting the highest-rated proposals may be scheduled for the next phase. The number of proposals forwarded to the next phase will be within the evaluation committee's discretion, but regardless of the number of proposals selected for the next phase, they will always be the highest rated proposals from this phase. At any time during this phase, the State may ask a Pre-Qualified Contractors to correct, revise, or clarify any portions of its proposal. The State will document all major decisions in writing and make these a part of the file along with the evaluation results for each proposal considered. Once the technical merits of a proposal are considered, the costs of that proposal will be considered. But the State may also consider costs before evaluating the technical merits of the proposals by doing an initial review of costs to determine if any proposals should be rejected because of excessive cost. And the State may reconsider the excessiveness of any proposal's cost at any time in the evaluation process.

Clarifications and Corrections. During the evaluation process, the State may request clarifications from any Pre-Qualified Contractor under active consideration. It also may give any Pre-Qualified Contractor the opportunity to correct defects in its proposal. But the State will allow corrections only if they do not result in an unfair advantage for the Pre-Qualified Contractor and it is in the State's best interest.

Interviews. The State may require top-ranking candidates to interview with the State. Such interviews provide the State an opportunity to test and probe the professionalism, qualifications, skills and work knowledge of the top-ranking proposals. The interviews will be scheduled at the discretion of the State and will be held at a pre-identified State Facility. At its own expense, the Pre-Qualified Contractor must make its proposed team available on-site within five working days following the State's notification.

Changing Candidates. The major criterion on which the State bases the award of the contract is the quality of the Pre-Qualified Contractor's candidate(s). Changing personnel after the award may be a basis for termination of the contract.

Rejection of proposals. The State may reject any proposal that is not in the required format, does not address all the requirements of this Exploratory Project Solicitation, or that the State believes is excessive in price or otherwise not in its interest to consider or to accept. The State will reject any proposals from Pre-Qualified Contractors who are not Contracted under Contract 0A1199, Supplement 2 in the specific Data Analytics Expertise Domain for this request. In addition, the State may cancel this Exploratory Project Solicitation, reject all the proposals, and seek to do the work through a new Exploratory Project Solicitation or other means.

Work Award Process. It is the State's intention to award work under the scope of this Exploratory Project Solicitation and as based on the Exploratory Project Solicitation Schedule of Events schedule, so long as the State determines that doing so is in the State's best interests and the State has not otherwise changed the award date. After the State makes its decision under this Exploratory Project Solicitation, the agency representative will usually notify Pre-Qualified Contractors. Pre-Qualified Contractors may also access award information from the State Procurement website.

Supplemental Terms and Conditions Relevant to this Solicitation.

Insurance Requirements. The Pre-Qualified Contractor must provide the following insurance coverage at its own expense throughout the term of the work resulting from this Exploratory Project Solicitation. Pre-Qualified Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Pre-Qualified Contractor, its agents, representatives, or employees. Pre-Qualified Contractor shall procure and maintain

for the duration of the contract insurance for claims arising out of their professional services and including, but not limited to loss, damage, theft or other misuse of data, infringement of intellectual property, invasion of privacy and breach of data.

MINIMUM SCOPE AND LIMIT OF INSURANCE

Coverage shall be at least as broad as:

1. Commercial General Liability (CGL): written on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit. Defense costs shall be outside the policy limit.
2. Automobile Liability: covering Code 1 (any auto), or if Pre-Qualified Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with a limit no less than \$1,000,000 per accident for bodily injury and property damage.
3. Workers' Compensation insurance as required by the State of Ohio, or the state in which the work will be performed, with Statutory Limits, and Employer's Liability Insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease. If Pre-Qualified Contractor is a sole proprietor, partnership or has no statutory requirement for workers' compensation, Pre-Qualified Contractor must provide a letter stating that it is exempt and agreeing to hold Entity harmless from loss or liability for such.
4. Technology Professional Liability (Errors and Omissions) Insurance appropriate to the Pre-Qualified Contractor's profession, with limits not less than \$2,000,000 per occurrence or claim, \$2,000,000 aggregate. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Pre-Qualified Contractor in this agreement and shall cover all applicable Pre-Qualified Contractor personnel or subcontractors who perform professional services related to this agreement.
5. Cyber liability (first and third party) with limits not less than \$5,000,000 per claim, \$10,000,000 aggregate. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Pre-Qualified Contractor in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, including but not limited to infringement of copyright, trademark, trade dress, invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The coverage shall provide for breach response costs as well as regulatory fines and penalties and credit monitoring expenses with limits sufficient to respond to these obligations.

The Insurance obligations under this agreement shall be the minimum Insurance coverage requirements and/or limits shown in this agreement. Any insurance proceeds in excess of or broader than the minimum required coverage and/or minimum required limits, which are applicable to a given loss, shall be available to the State of Ohio. No representation is made that the minimum Insurance requirements of this agreement are sufficient to cover the obligations of the Pre-Qualified Contractor under this agreement.

The insurance policies are to contain, or be endorsed to contain, the following provisions:

Additional Insured Status. Except for Workers' Compensation and Professional Liability insurance, the State of Ohio, its officers, officials and employees are to be covered as additional insureds with respect to liability arising out of work or operations performed by or on behalf of the Pre-Qualified Contractor including materials, parts, or equipment furnished in connection with such work or operations. Coverage can be provided in the form of an endorsement to the Pre-Qualified Contractor's insurance.

Primary Coverage. For any claims related to this contract, the Pre-Qualified Contractor's insurance coverage shall be primary insurance. Any insurance or self-insurance maintained by the State of Ohio, its officers, officials and employees shall be excess of the Pre-Qualified Contractor's insurance and shall not contribute with it.

Umbrella or Excess Insurance Policies. Umbrella or excess commercial liability policies may be used in combination with primary policies to satisfy the limit requirements above. Such Umbrella or excess commercial liability policies shall apply without any gaps in the limits of coverage and be at least as broad as and follow the form of the underlying primary coverage required above.

Notice of Cancellation. Pre-Qualified Contractor shall provide State of Ohio with 30 days written notice of cancellation or material change to any insurance policy required above, except for non-payment cancellation. Material change shall be defined as any change to the insurance limits, terms or conditions that would limit or alter the State's available recovery under any of the policies required above. A lapse in any required insurance coverage during this Agreement shall be a breach of this Agreement.

Waiver of Subrogation. Pre-Qualified Contractor hereby grants to State of Ohio a waiver of any right to subrogation which any insurer of said Pre-Qualified Contractor may acquire against the State of Ohio by virtue of the payment of any loss under such insurance. Pre-Qualified Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the State of Ohio has received a waiver of subrogation endorsement from the insurer.

Deductibles and Self-Insured Retentions. Deductibles and self-insured retentions must be declared to and approved by the State. The State may require the Pre-Qualified Contractor to provide proof of ability to pay losses and related investigations, claims administration and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the deductible or self-insured retention may be satisfied by either the named insured or the State.

Claims Made Policies. If any of the required policies provide coverage on a claims-made basis:

1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work.
3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the Pre-Qualified Contractor must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work. The Discovery Period must be active during the Extended Reporting Period.

Verification of Coverage. Pre-Qualified Contractor shall furnish the State of Ohio with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by the State of Ohio before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Pre-Qualified Contractor's obligation to provide them. The State of Ohio reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

Subcontractors. Pre-Qualified Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Pre-Qualified Contractor shall ensure that State of Ohio is an additional insured on insurance required from subcontractors.

Special Risks or Circumstances. State of Ohio reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Limitation of Liability. Neither party will be liable for any indirect, incidental, or consequential loss or damage of the other party, including but not limited to lost profits, even if the parties have been advised, knew, or should have known of the possibility of such damages. Additionally, neither party will be liable to the other for direct or other damages in excess of two times not to exceed the fixed price of the Not-To-Exceed Fixed Price of this Contract. The limitations in this paragraph do not apply to any obligation of the Pre-Qualified Contractor to indemnify the State against claims made against it or for damages to the State caused by the disclosure of personal health information or other State confidential information by Pre-Qualified Contractor's negligence or other tortious conduct.

Background Check. All Pre-Qualified Contractor employees, subcontractors, and Replacement Personnel working on this Project must have a criminal background check performed prior to employment. The Pre-Qualified Contractor must provide the results of employee, subcontractor, and Replacement Personnel background checks in a manner that allows the Pre-Qualified Contractor to take appropriate action if the background is unacceptable

to the State while maintaining the employee, subcontractor's, or Replacement Personnel's confidentiality. Any employee, subcontractor, or Replacement Personnel with a background check that is unacceptable to the State will be immediately removed from consideration.

Attachment 1:

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1. Exploratory Project Background and Overview

1.1. DODD Claims Background and Introduction

The Ohio Department of Developmental Disabilities (DODD) Claims data mart contains over 286 Million records of billing information since the calendar year 2002. Claims data can be linked to DODD individuals, providers, services, and projected cost/budget which results in a much larger and complex data set. Querying billing data associated with the other entities described above can be very difficult, time consuming, and resource intensive for complex reporting or analysis.

Nearly 96,000 Ohioans access DODD services by working with their county board of developmental disabilities, direct service providers, and provider agencies to get the support they need to live the life they want. More than 36,600 people access person-centered supports through home and community-based service waiver settings; that might be someone living at home on their own, with family, with a roommate, or with someone who provides full-time care through Ohio Shared Living.

Claims information with individuals, providers, and cost projection/budget data in the State of Ohio Data Analytics platform will provide distributed processing power, faster storage, and analytical tools for data science processing and statistical analysis. DODD power users will be able to run faster queries. Analytical and projection algorithms implemented against data will be able to provide results fast and in timely manner.

1.2. DODD Claims Cost and Fraud Optimization Project Overview:

Under the direction of DODD, a Contractor that is pre-qualified as a Data Analytics expert in applicable Expertise Domains per Ohio DAS Contract # 0A1199, Supplement 2 is sought to conduct an exploratory applied analytics project to develop detailed DODD Claims analytics and reports to drive insights into DODD's claims data and optimize claims performance and minimize fraud.

The analytic work should be specific to Ohio's population and should result in ideas for actionable interventions that will help detect fraud, improve cost projections, and streamline claims analysis. The successful Pre-Qualified Contractor for this project must present an innovative, achievable, and coherent project plan utilizing qualified data scientists, project managers and clinical, social or behavioral science subject matter experts. After completion of this first phase of the project, a subsequent Exploratory Project Solicitation may be issued by DODD to implement and track progress on interventions identified by the first phase of the project, or in the sole discretion of DODD seek to competitively procure such services.

1.3. DODD Claims Scope of Work

In consultation and agreement with the State, the Pre-Qualified Contractor must focus the initial work on conducting advanced statistical analysis techniques to achieve the following goals and outcomes:

General

- Collaborate with State resources to build upon the existing sourcing and knowledge base regarding DODD Claims
- Develop a process to store claims, individual, provider, projected cost/budget data in a structured format into a target system

- Develop a model integrated with State analytics and visualization tools (e.g., Tableau) to create reports, dashboards and analytical queries that drive insights and help the Agency optimize operations, performance and outcomes for our constituents

Analytics and Predictive Models

The Pre-Qualified Contractor must collaborate with Agency policy, operations and claims team to expand, enhance and extend:

- Predictive models and profiling models to improve Cost analysis with actual, projected and budgeted data
- Predictive models and profiling models to determine Claims fraud
- Predictive models and profiling models to improve Cost Projections
- Predictive models and profiling models to improve Actual vs Budget analysis
- Predictive models and profiling models to predict Service usage and enhance existing predictive models and profiling models to improve Claims analysis by individual
- Predictive models and profiling models to improve Claims analysis by provider

Potential statistical techniques to be used for this project include but are not limited to:

- Nonlinear complex multivariate simulations
- Nonparametric regression
- Analysis of homogeneity of variance, covariance, multivariate cluster/outlier analyses
- Artificial Intelligence
- Cognitive Computing
- Data Mining, Neural Networks
- Micro and Macro Trending, Outlier Analysis
- Machine Learning & Deep Learning
- Geospatial Technology, Analytics and Modelling

Datasets available for analysis will be provided by the State of Ohio as allowed by applicable state and federal law. Whenever possible, individual level data will be provided to assist in building the risk profile. Section 2 lists datasets containing information that have been identified as potentially related to claims in DODD. Additional datasets sourced outside of state government and other datasets identified within the state enterprise may be used if agreed upon by the State and Pre-Qualified Contractor.

1.4. DODD ITS Systems Audit Records Background and Introduction

The Ohio Department of Developmental Disabilities (DODD) primary data systems contain over 63 Million audit records containing data change history of various attributes. This data is stored in a semi-structured format and requires extensive parsing and database resources to display results in an analytical or reporting format. Currently, this process is done on DODD Online Transactional Processing (OLTP) systems during audit inquires and upon business request. Querying large amount of audit data from OLTP databases impacts system performance and production resources. Also, analysis on this kind of data can only be possible to do during off hours since it may cause system outages affecting DODD customers.

DODD maintains a variety of predictive and analytical models designed to administer claims for constituents, manage and compensate providers of services, operate and maintain day-to-day operations as well as to ensure that Agency disbursements are auditable, and that individuals and business entities are consuming and providing DODD services as intended and required.

Migrating audit data to another environment which allows distributed processing, large data storage, and query tools for data analysis will benefit DODD systems in many ways. As a result of this project, DODD transaction systems may purge historical audit records from OLTP database while still meeting required audit standards to keep so many years of data offline. It would also decrease 1/3 size of the database and improve system performance. Storing data into analytical platform will provide opportunity to store information in structured and logical format to run queries as well as to employ Contractor developed analytical functions and predictive models on an ongoing basis operationally.

1.5. DODD ITS Systems Audit Records Project Overview:

Under the direction of DODD, a Contractor that is pre-qualified as a Data Analytics expert in domains listed in this solicitation under DAS Contract # 0A1199, Supplement 2 is sought to conduct an exploratory applied analytic project to develop detailed DODD ITS Systems Audit Record analytics and reports.

The analytic work must specific to DODD's ITS Systems and must result in ideas for actionable interventions that will help detect fraud and improve data integrity. Additionally, all deliverables must be designed in such a manner as to be placed into production operations and use following the conclusion of the project in such a manner as that the State can successfully operate and maintain the models, dashboards and predictive models without the future involvement of the Contractor. The successful Pre-Qualified Contractor for this project must present an innovative, achievable, and coherent project plan utilizing qualified data scientists, project managers and clinical, social or behavioral science subject matter experts. After completion of this first phase of the project, a subsequent Exploratory Project Solicitation may be issued to implement and track progress on interventions identified by the first phase of the project.

1.6. DODD ITS Systems Audit Records Scope of Work

In consultation and agreement with the State, the Pre-Qualified Contractor must focus the initial work on conducting advanced statistical analysis techniques to achieve the following goals:

- Collaborate with State resources to build upon the existing sourcing and knowledge base regarding DODD Audit Recording
- Develop a process to store audit history with entity and subject information in a structured format into a target system
- Develop a model integrated with BI/Query tools like Tableau, Cognos, etc. to create reports, dashboards and analytical queries
- Expand and enhance existing predictive models and profiling models to show records modified by a user for one or more entities; systems modified by a user; subject record change history by entity; records changes during unusual hours
- Expand and enhance existing predictive models and profiling models to improve business and auditor requests
- Expand and enhance existing predictive models and profiling models to improve analytic reporting with data integrity issues and change risk analysis

1.7. DODD Predictive Models: Service Usage, Delivery and Consumption

The Contractor must review existing DODD data sources/sets and predictive models to help the Department create an informed view of the profiles of recipients and understand usage, delivery and consumption patterns associated with DODD services and delivery channels. As part of this requirement area the Contractor must, using existing models and DODD subject matter experts assemble and analyze State data within the following Analysis Dimensions:

Dimension 1: Create a Universal Model of DODD Services Recipients with a 360-degree view of the recipient (as clustered profile groupings as opposed to individuals) with regard to:

- Patient demographics - including recipient locations, service facilities, developmental and special needs, accommodations, treatment and therapy options;
- Expanding and enhancing existing predictive models and profiling models to predict Service usage and optimization of service delivery in light of the demographics of DODD patients; and
- Expanding and enhancing existing predictive models and profiling models to improve claims analysis by individual.

Dimension 2: Enhancement of Predictive Models to Optimize Financial Performance of Claims processing including:

- Financial processes and models associated with planning, budgeting, forecasting, and cost projections;
- Methods to identify, isolate and remediate erroneous, incomplete or incomplete data that adversely impacts financial modeling and operational performance associated with delivering care to DODD patients; and
- Assessment and improvements to existing models (or new models) to improve business performance and auditor requests.

Dimension 3: Provider Optimization and Extension which is a vital element of the DODD mission. The Contractor must include in this assessment:

- Methods to better align and deliver Early Intervention programs to support a person with developmental disabilities across their lifespan;
- Provision of services to parents of children younger than three years old who have developmental delays or disabilities;
- Early Intervention provides support and resources to assist families in enhancing their child's development through everyday learning; and
- Analysis and recommendations as to how to better identify and obtain more direct service providers (DSPs) in the developmental disabilities field. Direct Support Ohio <http://www.dspohio.org/> is a Statewide initiative to identify DSPs, engage them, and align such individuals with the needs of Ohio's communities.

1.8. DODD Predictive Models: Provider Performance and Fraud Assessment

Following the completion of the above Dimensions (e.g., 1, 2, and 3), the Contractor must focus the work and build on models pertaining to service recipients and service delivery as they relate to potential operations improvements and reduction of the State's exposure to fraud.

Dimension 4: Fraud Framework Model and Detection Analytics the Contractor must develop analytical models to profile providers and claims as to detect fraudulent or suspicious behaviors such as:

- Agency billing for services to an individual for a week while the person is in the hospital or otherwise not available to receive services;

- Provider billing for units of services not rendered;
- Submission of claims for services to an individual for any day after they stopped providing services;
- Provider billing in excess of 24 hours per day;
- Independent provider bills for more than one individual at the same time in different locations;
- Provider paying a "kick back" for not reporting they are billing for services they did not provide;
- Provider billing for services not authorized in the individual's plan or relevant to an individual's needs; and
- Provider misrepresentation of the service delivery ratios to receive a higher rate of pay.

In addition, as part of this Analysis Dimension, the Contractor must provide generalized analytical skills pertinent to identifying claims fraud, suspicious behaviors common to Medicaid and public assistance/support fraud and analyze DODD provided data to identify such potential fraud and develop analytical methods, reports and dashboards to routinely investigate DODD data for such behaviors on an ongoing basis as an operational benefit to DODD claims, payments and audit/fraud subject matter experts.

1.9. DODD Analytical Technical Environment Improvements & Operationalization of Predictive Models

Deliverable 1: Creation of Operational, Predictive and Audit Views of DODD Data

The Contractor must assess DODD provided data in the recipient, service providers, claims and fraud models to implement operational reports and dashboards to:

- Organize and store analytical data stores as to support ongoing application of analytical methods to support the operational use of work products, analytical and predictive models developed as a result of completion of Analysis Dimensions 1-4 inclusive;
- Organize and store analytical data associated with audit and claims history to offload this data from operational systems while maximizing the use and usefulness of the data utilizing the State's Data Analytics Platform;
- Implement an IT change model to identify all records changed or modified by users, including users that change multiple records or records associated with multiple entities (e.g., recipients, claims, payments or other operational aspects) that may indicate inappropriate or fraudulent activities (e.g., unusual data accesses, changes, programmatic changes, unapproved, suspicious changes or changes outside of "normal" operating hours or standards);
- Develop a comprehensive record change history by entity e.g., recipients, claims, payments or other operational aspects) to report on "normal" (i.e., legitimate business uses and access) as well as "abnormal" record access potentially related to inappropriate or fraudulent behaviors as identified in Dimensions 1-4;
- Provide the State operational tools to support all elements of this Section via tabular, graphical or visual dashboards (as mutually agreed) to operationalize all analyses, models and reports contained in this solicitation.

1.10. State Team and Responsibilities

The State of Ohio will be responsible for ensuring that all subject matter experts (SMEs), datasets, and any relevant previous work done to date are made available to the Pre-Qualified Contractor in a timely fashion. Specifically, the State will provide timely access to etiology SMEs (policy, intervention), relevant etiological documentation (to the extent that it exists), data SMEs, and data quality SMEs. In addition, the State will provide experts to help guide the analysis and troubleshoot any problems as the project progresses to ensure a successful outcome.

The State will provide State resources to the Project as follows:

| State Organization(s) | Resource(s) | Participation Level |
|--|--|--|
| Ohio Department of Developmental Disabilities (“DODD”) | Data, Analytics, and Research Staff Information Technology Services Staff | Consultative, at least 5 hours per week (or more upon agreement). Full Time, for the duration of the project. |
| | Dataset Subject Matter Expert(s) | At least one (1) SME per dataset, prioritized situational access as required by Pre-Qualified Contractor. |
| | Health IT Expertise | At least one (1) Expert per dataset, prioritized situational access as required by Pre-Qualified Contractor (data sourcing, quality, interpretation, normalization and correlation) advisory services. |
| Ohio Department of Administrative Services, Office of Information Technology (“DAS/OIT”) | State Data Analytics Platform Expertise (multiple situational part-time roles) | Data Access, Handling, Storage, Security/Privacy Experts as required. |
| | State Data Analytics Platform Expertise (multiple situational part-time roles) | Data Access, Handling, Storage, Security/Privacy Experts as required. |

1.11. Pre-Qualified Contractor Responsibilities

The Pre-Qualified Contractor must conduct all analyses using State provided analytics platforms and (if necessary) Pre-Qualified Contractor hardware and software, create any necessary visualizations, and regularly update State staff on progress through weekly reports and participation in meetings. In addition to the analysis dimensions and deliverable contained in Section 2, upon completion of the project, a written report and presentation for agency leadership and any relevant stakeholders outlining the findings of the analysis, and recommendations for interventions to detect DODD Claims fraud and improve cost projections is required. The State would also take any recommendations under advisement to improve State data systems.

1.12. Initial Project Duration and Approach

The State seeks an initial project that is time-boxed, and of fixed scope and price inclusive of the Scope of Work, State Identified Analysis Dimensions, State and (if applicable) Pre-Qualified Contractor provided data of **no more than three (3) months**. However, should the State determine that it would be advantageous for the Pre-Qualified to perform additional analysis, analysis dimensions, data or other factors related to Claim Cost and Fraud Optimization, the State may request the Contractor to perform such additional work. The State may also decide to issue additional competitively sourced Exploratory Project(s) solicitations to additional Pre-Qualified Vendors to explore different facets, dimensions or scope(s) of work.

2. Analysis Dimensions, Project Datasets and Taxonomies

2.1. State Provided Datasets

The State, upon commencement of the Project, will provide the Pre-Qualified Contractor with access to the following datasets in a machine-readable form, with corresponding data taxonomies, record/column descriptions and other information pertinent to ingestion, analysis and use of this data for the Project:

| Database Name/Description | Years of Data Available | Number of Rows (Approximate per year) | Number of Columns (Variables) | Database Size (range in GB) |
|---|-------------------------|---------------------------------------|-------------------------------|-----------------------------|
| Ohio Department of Developmental Disabilities Datasets | | | | |
| DODD Claims | 28 | 20M | 58 | 250 |
| DODD ITS Systems Audit Records | 4 | 20M | 10 | 35 |

2.2. Pre-Qualified Contractor Provided (Non-State) Datasets

Should the Pre-Qualified Contractor possess or have license to additional, non-State datasets that will assist, inform, provide additional perspectives or otherwise be useful to this Exploratory Project Solicitation, the Pre-Qualified Contractor shall be permitted to utilize such data as part of the Project. At the end of the Project, the Pre-Qualified Contractor must ensure that the Pre-Qualified Contractor no longer has access to such data (unless the data is generally in the Public Domain and available to the State) and all such data is removed from State computing platforms.

The Pre-Qualified Contractor, as part of its proposal, must list such datasets, as well as provide their anticipated use and usefulness to the State in performing the Exploratory Project:

| Contractor Provided, Non-State Datasets | | |
|---|---|--|
| Dataset (Logical Name) and Source | Dataset Contents (Descriptive Details) | Dataset Source and License (if applicable) |
| <i>[Illustrative Example]</i> Data.gov Workers Compensation Claim Data https://catalog.data.gov/dataset?tags=workers-compensation | National Workers Compensation Claim Data Companies Self-Insured for Workers Compensation Data Workers Compensation Currently Filed Deviations | ▪ Data.Gov |
| [Contractor to provide if applicable] | [Contractor to provide if applicable] | [Contractor to provide if applicable] |
| [Contractor to provide if applicable] | [Contractor to provide if applicable] | [Contractor to provide if applicable] |
| [Contractor to provide if applicable] | [Contractor to provide if applicable] | [Contractor to provide if applicable] |
| [Contractor to provide if applicable] | [Contractor to provide if applicable] | [Contractor to provide if applicable] |

2.3. Project Data Privacy and Handling Requirements

Due to the nature of the data contained in this Exploratory Project Solicitation, the Federal and State laws referenced in the sections below are applicable to the project.

2.3.1. Definitions

Protected Health Information ("PHI") means individually identifiable information relating to the past, present or future physical or mental health or condition of an individual, provision of health care to an individual, or the past, present or future payment for health care provided to an individual, as more fully defined 45 CFR §§ 160.103 and 164.514, and any amendments thereto, created, received, maintained, or transmitted from or on behalf of the Agency

Business Associate, must have the meaning given to such term in 45 CFR § 160.103.

Individual means the person who is the subject of the PHI, as defined in 45 CFR § 160.103, and includes the person's personal representative.

Privacy Rule means the Standards for Privacy of Individually Identifiable Health Information found at 45 CFR Parts 160 and Part 164, Subparts A and E, and any amendments thereto.

Agency means a government entity subject to 45 CFR § 164.504(e)(2)(iii)

2.3.2. Permitted Use

Project participants agree that they shall not receive, create, use or disclose PHI except as follows:

Covered Functions. For the purposes of performing the Data Analytics Project described herein. Furthermore, all uses, and disclosures must be in accordance with the privacy and security regulations [45 CFR Part 164].

Disclosure Restrictions. If necessary for the proper management and administration of the Data Analytics Exploratory Project Solicitation or to carry out legal responsibilities of a Project participant. PHI may only be disclosed to another person/entity for such purposes if disclosure is required by law;

Data Aggregation. To permit Project participants to provide data aggregation services relating to the health care operations of the State as defined in 45 CFR § 164.501. Aggregation is defined as combining PHI received from multiple Covered Entities to produce data analysis that relates to the operation of the respective Covered Entities

Minimize Use of PHI. All Project participants agree that they will not request, use or release more than the minimum necessary amount of PHI to accomplish the purpose of the use, disclosure or request.

Business Associate Safeguards. All Project participants agree to use appropriate safeguards to prevent any unauthorized use or disclosure of PHI and shall implement the administrative, physical and technical safeguards that reasonably protect the confidentiality, integrity and availability of the PHI that it creates, receives, maintains or transmits on behalf of the State will use all appropriate safeguards under:

45 CFR 164 Subpart C including those identified as addressable;

74 FR 19006 Guidance Specifying the Technologies and Methodologies That Render PHI Unusable, Unreadable, or Indecipherable to Unauthorized Individuals for Purposes of the Breach Notification Requirements under Section 13402 of Title XIII; and

State of Ohio IT security policies, standards and bulletins.

2.4. Unauthorized Disclosure and Incident Reporting and Remediation and Privacy and Security Breach Notification

2.3.3. Incident Reporting

Project participants shall report the following:

- Any use or disclosure of PHI which is not in compliance with the terms of this agreement or applicable law of which it becomes aware; and
- Any security incident of which it becomes aware. For purposes of this agreement, "security incident" means the unauthorized access, use, disclosure, modification, or destruction of information or interference with system operations in an information system.

As soon as it is practical, following the discovery of a reportable security incident as described above, Project participants agree to convene to review the existence and nature of the incident as understood at that time. Project participants shall immediately investigate the incident and within 72 hours of discovery shall provide a written report describing the status and any results of the investigation.

Reporting and other communications made under this section must be made to the HIPAA privacy officer from the Ohio Department of Developmental Disabilities and the Ohio Department of Administrative Services, Office of Information Security and Privacy.

Coordination. Project participants agree to coordinate with one another to determine additional, specific actions that will be required for the mitigation of the breach, which may include notification to the individuals, entities or other authorities.

Subcontractor Obligations. Project participants shall ensure that all of its contractors and agents are bound, in writing, by the same restrictions and obligations contained herein, including but not limited to the obligation to implement reasonable and appropriate safeguards to protect the information, whenever the subcontractor or agent creates, receives, maintains, or transmits PHI on behalf of the Business Associate.

Access to PHI. Project participants shall make all PHI and related information maintained by the source providing the data or its agents or contractors available as soon as practicable following a request for PHI, to the extent necessary to fulfill the following obligations:

- **Inspection and Copying.** Make the PHI maintained by Associate or its agents or subcontractors in Designated Record Sets available to the source providing the data for inspection and copying to enable the source providing the data to fulfill its obligations under the Privacy Rule, including, but not limited to, 45 CFR § 164.524.
- **Accounting.** To account for disclosures of PHI in accordance with the provisions of the Privacy Rule, including, but not limited to 45 CFR § 164.528; and shall make all PHI in its possession available to the Agency Providing the Data as soon as practicable following a request for PHI, to fulfill the Agency Providing the Data's obligation to amend PHI and related information in accordance with 45 CFR § 164.526, and shall, as directed by the Agency Providing the Data, incorporate any amendments or related statements into the information held by the Agencies participating in the project and any contractors or agents.

Compliance and HHS Access. Project participants shall make available to the source providing the data and to the Secretary of the U.S. Department of Health and Human Services any and all internal practices, documentation, books, and records related to the use and disclosure of PHI received from the Agency Providing the Data, or created or received by Project participants on behalf of the Agency Providing the Data. Such access is for the purpose of determining the Agency Providing the Data's compliance with HIPAA, regulations promulgated by the United States Department of Health and Human Services, and any amendment thereto.

Ownership and Destruction of Information. The PHI and any related information, received, maintained, or transmitted on behalf of the Agency Providing the Data is and shall remain the property of the Agency Providing the Data. Upon termination of the underlying service, the Project participants agree, at the option of the Agency Providing the Data, to return or securely destroy all PHI created or received from or on behalf of the Agency

Providing the Data following 74 FR 19006 Guidance Specifying the Technologies and Methodologies That Render PHI Unusable, Unreadable, or Indecipherable to Unauthorized Individuals for Purposes of the Breach Notification Requirements under Section 13402 of Title XIII. If return or destruction of all PHI and all copies of PHI is not feasible,

Project participants agree to extend the protections of this agreement to such information for as long as it is maintained and to limit further uses and disclosures to those which make return or destruction infeasible.

The Pre-Qualified Contractor, prior to commencement of the project will be required to execute a Business Associate Agreement (BAA) with the State.

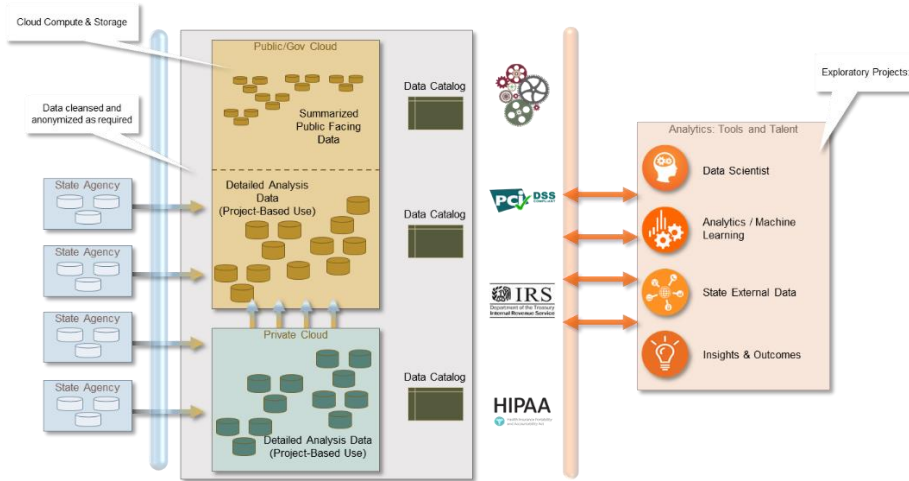
3. 3. Additional Information

| Item | Embedded File(s) |
|---|---|
| <ul style="list-style-type: none"> • Sample Business Associate Agreement | <p style="color: red; text-align: center;">DOUBLE-CLICK ICON BELOW TO ACCESS CONTENTS</p> <div style="text-align: center;">  <p>HIPAA-BAA Form.pdf</p> </div> |

- **State Data Analytics Platform: Summary Capabilities and Background Information**

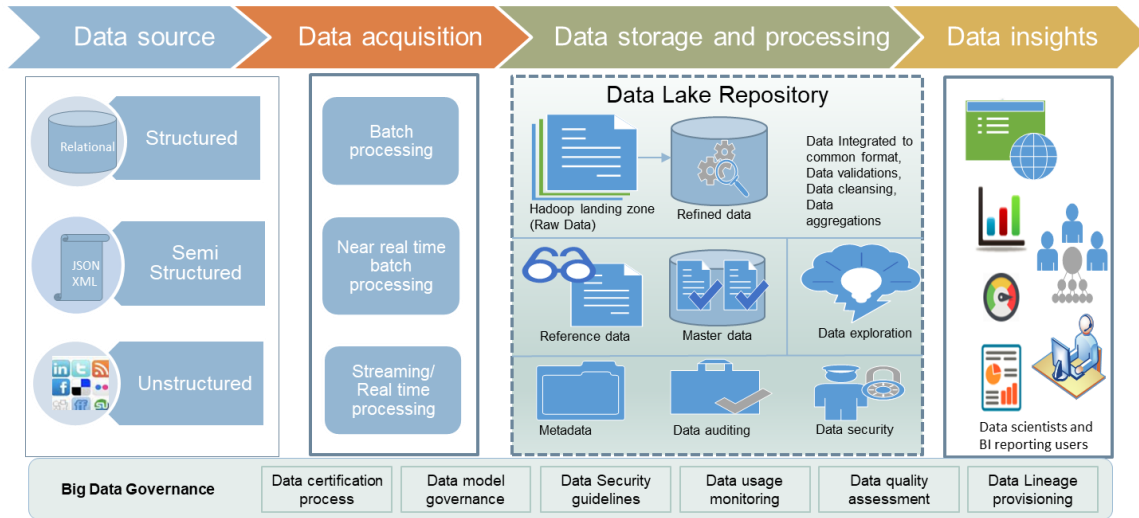
The State owns and maintains a Data Analytics platform for State staff and the pre-qualified Expert Data Analytics firms to conduct exploratory projects. Conceptually, this platform contains data sourced from a variety of State agency systems that may include some form of Sensitive Data (e.g., health data), non-sensitive data (e.g., traffic data), external data (e.g., sourced from Federal or Open Source datasets) and analytics expert firm proprietary data (e.g., owned and used by an analytics firm performing a project).

Conceptual View of State Data Analytics Platform




Logically, this platform is based on the Cloudera Hadoop Distribution and resides on an Oracle Big Data Appliance (Oracle/BDA) within the State Data Center. The State has implemented a robust security and data governance model to ensure that Agencies maintain access controls over their datasets as maintained in the system and “grant” or “revoke” this access to other Agencies or Data Analytics Expert firms to perform analytical exploratory projects. The guiding principle is that State Agencies must retain stewardship of their data and have assurances that the privacy and confidentiality of their data is maintained within the State’s Data Analytics Platform.

Logical View: State Data Analytics Platform



From a technical perspective, the State's Data Analytics platform has been built upon the Oracle/BDA under the below configuration summary:

| Hardware Configuration | | State BDA Software Configuration |
|---|---|--|
| Production Cluster (10 node) | Non-Prod cluster (6 node) | BDA version: X6-2, Operating system: Oracle Linux 6.9 |
| Per node info below: | Per node info below: | Integrated Software: |
| <ul style="list-style-type: none"> BDA version 4.9 Number of disks: 12 Memory: 252 GB CPU Cores: 88 Total cluster capacity: 790 TB | <ul style="list-style-type: none"> BDA version 4.9 Number of disks: 12 Memory: 252 GB CPU Cores: 88 Total cluster capacity: 458 TB | Cloudera Enterprise 5.11 – Data Hub Edition with support for: <ul style="list-style-type: none"> Cloudera's Distribution including Apache Hadoop (CDH) Cloudera Impala Cloudera Search (Solr) Apache HBase Apache Spark Cloudera Manager Cloudera Navigator Apache Flume Apache Sentry Apache Hive Hue Apache Sqoop Oracle Perfect Balance |
| Oracle Data Sheet Reference (Embedded PDF): | | <p>CLICK ICON BELOW TO ACCESS CONTENTS</p>  <p>bigdataappliance-d atasheet-1883358.p</p> |

Edge Nodes (aka gateway nodes) are the interface between Hadoop Big Data cluster (Oracle BDA) and the outside network. Edge Nodes are used to run client applications (Hadoop CLI tools like Beeline). Users SSH via VPN to Edge Nodes and upload all job artifacts and then execute API or commands from shell. Edge nodes available upon request for multiple agencies/vendors based on the requirement with different services.

