OPHTHALMOLOGY MANAGEMENT GROUP (PTY) LTD

REQUEST FOR PROPOSAL TO APPOINT A SUITABLY
QUALIFIED BIDDER FOR THE DEVELOPMENT,
IMPLEMENTATION AND MAINTENANCE OF A DATA LAKE

RFP ISSUE DATE: 26 MAY 2021
PROPOSALS DUE BY: 9 JULY 2021
BID VALIDITY PERIOD: 45 CALENDAR DAYS

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1. General Tender Information

TENDER ADVERTISED	:	26 May 2021
CLARIFICATION MEETING	:	14:00 SAST on 2 June 2021 (Compulsory)
VENUE OF CLARIFICATION MEETING	:	Virtual Microsoft Teams Meeting
CLOSING DATE	:	9 July 2021
CLOSING TIME	:	12:00 SAST
CLOSING VENUE	:	Hand delivery / courier Dr. F. J. Potgieter Optimed Eye and Laser Clinic 1199 Woodlands Drive Queenswood Pretoria 0186 (Telephonic, facsimile or e-mailed submissions will not be accepted)
TENDER OFFER VALIDITY	:	The tender offer validity period is **45 calendar days**
RELEVANT TENDER DOCUMENTS	:	OMG RFP Document (.pdf) Returnable Tender Submission Document to be submitted by Bidder with submission. Includes a List of Returnable Documents. (.docx) Returnable non-disclosure agreement to be submitted by Bidder with expression of interest (.pdf) Information schedule to non-disclosure agreement (.pdf)
RETURNABLE DOCUMENTS CHECKLIST	:	Please complete and submit the checklist of returnable documents with your Tender Submission Document (TSD).
CONTACT DETAILS	:	Please send all enquiries related to this tender to rfp@nationaleyeregistry.com

2. Company Background

The Ophthalmology Management Group (RF) (Pty) Ltd (OMG) was established in 1996 to assist the Ophthalmological Society of South Africa (OSSA) with the fulfilment of the business functions related to private ophthalmology practice.

It is a Management Services Organisation with 25 years of solid track record and experience in the private health sector, established for the benefit of private practicing ophthalmologists, and ophthalmologists in the Public Sector with limited private practice. OMG focuses on all matters relating to the business of private practicing ophthalmologists, which includes practice management support and dealing with issues relating to medical schemes, administrators and other stakeholders.

OMG is a ring-fenced private company with a democratically elected board. Each member ophthalmologist is also a shareholder, ensuring that it always acts in the best interest of all its members. OMG currently has 267 members throughout South Africa as of May 2021.

3. Statement of Purpose

A need exists to develop a data lake for data importing, data manipulation and data visualisation in the form of functional dashboards and reporting. The users of the data lake will be skilled data scientist/s, actuaries, healthcare analysts, as well as professionals within the specific field. The data lake is expected to support the agility required by the data developers, data scientists, and analysts, to easily configure and reconfigure data models, queries, and applications. The overarching requirement is for a large database, where multiple data sources are consolidated and can be used to perform advanced analytics, employ artificial intelligence, utilise machine learning, and investigate anomalies or correlations in the data to gain in-depth insight into the results and real-world application of the data. The purpose of this project is to be able to leverage the power of data already being captured and to enable the integration of any new data sources in the future to support the field of ophthalmology in its mission to provide affordable, specialised eye-care, improved operational efficiency and exceptional clinical outcomes.

4. Scope of Work

A significant amount of data is generated as part of the general day-to-day running of an ophthalmology practice, and during each patient journey specifically with data being generated at each point of care. At present, most of this data either moves through administrative systems without being captured for use in downstream reporting and analytics, or when captured, is often saved in silos and underutilised. The objective of this scope of work is thus to create a data environment from which as complete a view as is possible can be created of each healthcare event experienced (from start to end over any given time and delivered at various locations). To this end, unique recipients and providers of healthcare services will need to be identified so that longitudinal information can be collated.

Data sources include: claims submitted by practices; screening data predominantly as medical images from a diverse number of capturing sites; the ingestion of historical data from previous data acquisition projects; clinical data collected by practices, including free-form text and medical images; financial data generated by practices; claims processing data generated by medical scheme administrators; hospital pre-authorisation data generated by hospitals and medical scheme administrators; hospital admission data generated by hospitals. Much of this information is shared electronically between the various stakeholders and interfaced through adapted software and switches provided by third parties.

OMG is embarking on a project to begin capturing these data and storing it in a data lake. The ultimate vision is for the serving layer to directly access to the data lake to serve various users and applications in near-real-time. A simplified diagram of the envisaged data lake is provided below.
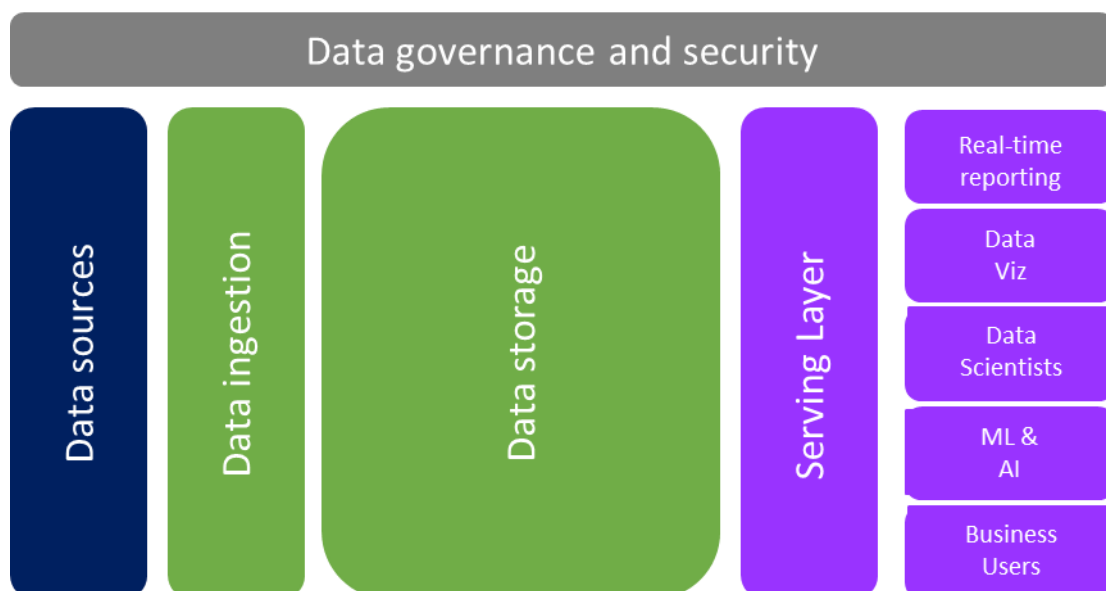
The project will be conducted in several phases. In the first phase, the data lake infrastructure will be built and data from several sources will be ingested and stored in the data lake. During subsequent phases, the number of data sources will be expanded, and the serving layer will be developed.

OMG is seeking a suitable vendor to develop the data lake. This RFP specifically looks to appoint a vendor for phase 1 of the project as outlined above; however, successful completion of this phase could lead to an expansion of scope and appointment to assist with subsequent project phases.

The scope of work for phase 1 is summarised below.

<u>In scope</u>

1. Technical assistance and involvement with OMG's engagement with owners and other stakeholders of the data sources to be ingested into the data lake;

2. Development of the data ingestion layer;

3. Setup and provision of cost-effective and extensible data storage; and

4. Overseeing the running and ongoing maintenance of the data lake for a period as defined in Section 6 of this document.

<u>Out-of-scope</u>

1. Development of the serving layer; and

2. Development of end-user applications such as BI dashboards and AI & ML models.

<u>Technical requirements</u>

1. Data ingestion
   a. The data lake needs to be able to retrieve data from various sources and various data types, preferably in an automated and modular fashion depending on the source.
   b. The import process needs to cater possible future data requirements.
   c. The data ingestion process needs to be robust and secure.
   d. The data lake needs to support all data types.
   e. Incoming data must be validated.
   f. A log of all checks, alerts and warnings of process success and failure is mandatory.
2. Data storage
   a. The data must be stored in a cloud-based system and be accessible to OMG as the data owners. The data ingestion and storage process should not be contingent on the successful bidder being contracted to oversee the ongoing running and maintenance of the data lake.
   b. The cloud-based data centre must be physically located within the borders of the Republic of South Africa.
   c. Data storage must be cost effective.
   d. Data storage must be easily scalable.
   e. Meta data must be extracted and stored.
   f. Data must be catalogued for querying.
   g. Backup management and data recovery must be provided.

5. Deliverables, outcomes, and performance standards

1. At the end of the initial development period, expected to be a period of no more than three months but subject to reasonable timelines that may be proposed by the bidder in their response to this RFP, OMG expects to receive a "live" data lake that regularly and automatically collects different types of data from various sources and that stores this data cost effectively and securely in a cloud-based data centre, and that complies with the POPI Act and all Technical Requirements set out in the Scope of Work.

2. The project is separated into two practical completion phases.

   a. The first practical completion phase consists of a period of three months post completion during which the client is able to use and test the data lake built for review and recourse for any changes or corrections to work performed that may be required.
   b. The second practical completion phase: 6 months post completion by which period all works associated with the project need to be completed.

3. The data lake should have an automated set of reports of issues that may arise, including at least the following:

   a. A report of downtime
   b. A report of failures during the data ingestion process

4. The successful bidder must provide OMG with the details of technical support personnel and the hours during which support will be provided as well as the expected query turnaround time.

5. The successful bidder must provide OMG with a schedule of data importation from source, including the frequency of the import, and checks, testing and QA performed.

6. The successful bidder must provide OMG with a record of all hardware and software on which the data lake is dependent.

7. The successful bidder must provide OMG with a maintenance schedule to ensure that the data lake uses up-to-date hardware and software, and to ensure continued security from malicious breaches.

8. The successful bidder must provide OMG with documentation for the software tools as well as the code which was developed. Ownership of both the documentation and code vests in OMG.

6. Contractual Terms and Conditions

1. The successful bidder will be appointed to develop the components of the data lake as outlined in the Scope of Work, and to oversee the ongoing operation and maintenance of the data lake for a minimum initial period of one year or longer as stipulated or agreed upon.

2. The project will commence as soon as contract terms have been agreed with the successful bidder. The latest estimated project start date is 23 August 2021.

3. The latest expected completion date for the development phase is 24 November 2021, but subject to negotiation with the successful bidder.

4. Joint ventures (JVs) must submit their contracts with one another and clearly explain how their joint venture works. The explanation must include a discussion of the responsibilities of each partner in the project. CVs must be submitted for team members from all JV contributors.

5. Anticipated outsourcing of work by the bidder must be detailed in the proposal. CVs and details of companies to which work may be outsourced must be included. The bidder must clearly outline what project responsibilities will be outsourced.

6. By submission of the tender to the OMG, the tenderer offers and agrees to execute and complete the works and remedy any defects in conformity with the specification for the tender sum stated – to be paid in instalments as work is completed.

7. The tender shall remain in full legal force for forty-five (45) calendar days from the closing date of the tender. The tenderer accepts liability for damages that may be suffered by the employer should the tender validity period not be honoured.

8. The lowest or any offer will not necessarily be accepted by OMG, nor need reasons be given for such a decision.

9. Any provision in this agreement that may confer any benefit or right in favour of any subcontractor shall be binding on the parties and be capable of acceptance by such subcontractor at any time.

10. Any contract awarded pursuant to this RFP will incorporate the requirements, specifications, terms, and conditions contained in this RFP, as well as the contents of the Bidder's proposal as accepted by OMG. OMG reserves the right to negotiate the modification of proposed terms and conditions with the apparent successful bidder in conjunction with the award criteria contained herein, prior to the execution of a contract to ensure a satisfactory product or service. If the parties are unable to reach an

agreement, OMG may commence negotiations with the next bidder according to the evaluation criteria set out in Section 10.

11. The Contractor, its officers, agents, employees, and consultants shall hold in confidence any information or materials identified as proprietary and/or confidential to OMG or to any third party, to which the Contractor may have access in the course of performing its obligations under this Agreement. The Contractor shall not disclose or authorise disclosure to others, or use for its own benefit, such confidential information, or materials without the express written consent of OMG or any third-party owner. This entire RFP document should be considered proprietary and confidential to OMG. This obligation for non-disclosure shall survive this Agreement and continue until such confidential information or materials are otherwise legally obtained or placed in the public domain.

12. The successful Bidder agrees to negotiate in good faith with the OMG, a progress payment schedule based on significant milestones identified in the scope of work and/or the implementation schedule included in the resulting contract. Bidders should provide a suggested payment schedule as part of their proposal.

7. Payments, incentives, and penalties

The contract will consist of a project fee (with no escalation) for the initial development of the data lake components as outlined in the Scope of Work, and a fee to cover the ongoing running and maintenance costs of the data lake.

All bidders will be required to submit a detailed project roadmap which must include project timelines and project objectives linked to milestones. OMG is amenable to paying portions of the initial project fee upon the successful completion of interim milestones as proposed by the successful bidder in its response to this RFP.

The tender sum proposed must be compiled in the following manner:

- appear in South African Rands (ZAR).
- be presented excluding VAT,
- show the VAT amount at 15%,
- include a total amount inclusive of VAT,
- in addition to figures must be written in words

The tender sum compilation sheet is included in the returnable Tender Submission Document (TSD) provided.

On successful completion of this phase, the successful bidder will be considered a preferred provider for subsequent project phases which will include the development of a business intelligence serving layer to provide access to data in the data lake for various use cases including, but not limited to, relational databases, data visualisation and a machine learning environment.

8. Submission requirements

All submission requirements are specified in the checklist in the returnable Tender Submission Document (TSD) for the bidder.

All submissions must be in in the format specified in the returnable TSD.

All submission must be delivered by hand to the following address:

Reception: Dr. F. J. Potgieter
Optimed Eye and Laser Clinic
1199 Woodlands Drive
Queenswood
Pretoria
0186

Telephonic, facsimile or e-mailed submissions will not be accepted.

All bidders must respond to the following questions in their response in the template provided in the returnable TSD.

Relevant experience and suitability

Explain why your organisation is suited to this project. Your response should cover the relevant experience within your team and examples of similar projects successfully completed in the past.

The response should not be longer than five pages, including tables and figures.

Fee proposal

Provide a detailed fee proposal for the project. The fee proposal must consider the following project elements separately:

1. Initial development cost.
2. Ongoing cost of the data lake, including data storage and other computing costs, including software license fees, that may be needed to support data ingestion and storage.
3. Ongoing maintenance costs per annum.

The costing should account for all the costs that OMG can be expected to incur in developing and maintaining the data lake as outlined in the Scope of Work.

When considering the cost of storage, please quote the cost per terabyte (TB) of storage.

The tender sum compilation template must be completed for each project element.

Proposed project schedule

Provide the roadmap to successfully developing the data lake. The roadmap must include the necessary project timelines and project objectives linked to each milestone.

The response should not be longer than five pages, including tables and figures.

Technology stack

Clearly define the technology stack that will be used to develop, implement and maintain the data lake. All dependencies must be listed. While not a requirement, OMG wishes to express a preference for open-source technologies wherever possible and or practical.

The response should not be longer than five pages, including tables and figures.

Project team composition

Please indicate the composition of your team expected to perform the scope of work according to the template provided in the returnable TSD. Also provide brief CVs for key members of your team according to the template provided in the returnable TSD.

Technical question: Scalability

Explain how the data lake can be effectively and cost efficiently scaled. Consider both the addition of new data sources and types, as well as the volume of data stored in the lake.

The response should not be longer than two pages, including tables and figures.

Technical question: Data cataloguing

Explain how the data and associated metadata could be catalogued and stored to support downstream tasks, including directly querying the data lake and for possible structured databases to be constructed on top of the data lake.

The response should not be longer than two pages, including tables and figures.

Technical question: Data validation

Describe what data validation should be performed during the data ingestion process. Your response should consider the different types of data. You may discuss the type of validation that may be performed during ingestion for an unstructured data lake of this nature versus what should be performed elsewhere, for example during the development of a structured database on top of the lake.

The response should not be longer than two pages, including tables and figures.

Technical question: Confidentiality and Security

The data lake will store highly confidential information and security is critical. Please describe what steps will be taken to ensure the security of the data. The response must

consider security during the data ingestion process and during storage, including how access to the data lake will be managed.

The response should not be longer than two pages, including tables and figures.

<u>Capability to perform subsequent project phases</u>

On successful completion of this phase, the successful bidder will be considered a preferred provider for subsequent project phases which will include the development of a business intelligence serving layer to provide access to data in the data lake for various use cases including, but not limited to, relational databases, data visualisation and a machine learning environment.

Please indicate your organisation's capability and availability to complete subsequent project phases anticipated to be initiated in the first quarter of 2022, and briefly describe your relevant experience in this regard.

The response should not be longer than two pages, including tables and figures.

9. Evaluation and awards process

Phase 1 – Compliance evaluation

Only bids that meet the following criteria will pass phase 1:

1. The bidder attended the compulsory information session
2. The bidder submitted all documents listed in the returnable Tender Submission Document (TSD)
3. The bidder's fee proposal in within OMG's available budget

Phase 2 – Technical evaluation

Measure	Evaluation method	Points
Previous experience/past performance history with data lake projects	0 – 10: The bidder has demonstrated only a minimal amount of past experience 11 – 20: The bidder has successfully completed five or fewer relevant projects 21 – 30: The bidder has successfully completed more than five relevant projects. The bidder does not have experience in the South African healthcare industry and/or relies on sub-contractors to complete part of the work 31 – 40: The bidder has successfully completed more than five relevant projects. The bidder has demonstrated experience in the South African healthcare industry and has the resources to complete the project without outsourcing.	40
Project cost	Maximum points will be awarded to the bidder with the lowest cost. Points will be awarded to other bidders on a linear scale relative to the lowest-cost bidder according to the following formula: $$\frac{\text{cost}_{min}}{cost} \times 40$$	40
Quality of proposal	Points will be awarded based on the bidder's project roadmap and responses to the four technical questions contained in the RFP. • Up to 4 points awarded if the project time schedule is clearly defined and within OMG's required timeframe. • Up to 4 points awarded if the bidder has clearly outlined how the data lake can be <u>effectively</u> and <u>cost efficiently</u> scaled. • Up to 4 points awarded if the bidder has clearly outlined how data and associated metadata stored in the data lake will be catalogued. • Up to 4 points awarded if the bidder has clearly outlined how incoming data will be validated, a <u>validation process</u> has been described and different <u>data types</u> has been considered. • Up to 4 points awarded if the bidder has clearly outlined how data confidentially and security will be ensured, covering both the <u>ingestion process</u>, the <u>data storage</u> and <u>access</u> to the data.	20

10.   Tender process schedule

1. The RFP will be open to all interested bidders and will remain open for a period of 44 calendar days.

2. Interested bidders must express their interest to bid in writing within five calendar days after the RFP process is opened to rfp@nationaleyeregistry.com. The expression of interest must include a signed copy of the non-disclosure agreement that is attached to this RFP.

3. A virtual (online) briefing session will be held seven days after the RFP process is opened. This briefing session will be compulsory to attend for all interested bidders. Only bidders who expressed their interest in writing and have signed OMG's non-disclosure agreement will be invited to the briefing session.

4. Subsequent to the information session, interested bidders will have 9 calendar days to submit written questions or request additional information from OMG.

5. OMG will respond to all written questions and requests received for additional information within 5 calendar days. The responses will be shared with all interested bidders.

6. OMG will confirm receipt of submission within one business day from the time the submission was received.

7. Tenders will only be opened in the presence of a witness on the closing date of the tender.

8. The bids will be evaluated and ranked according to the criteria described in Section 9. The ranking of the bids constitutes the recommendations of the technical evaluation team.

9. The final decision sits with the OMG Board of Directors. The Board reserves the right to not award the contract to any bidder or to cancel this RFP.

Date (all times in SAST)	Calendar days from start	Item
Wed 26 May 2021		RFP open to the public
Mon 31 May 2021 14:00	5 days	Bidders to indicate their interest to bid in writing
Wed 2 June 2021 14:00	7 days	A compulsory briefing session with all interested bidders will be held virtually
Fri 11 Jun 2021	16 days	Deadline for interested bidders to submit questions and requests for additional information to OMG
Wed 16 Jun 2021	21 days	OMG to circulate responses to questions and requests for additional information to all interested bidders
Fri 9 Jul 2021 12:00	44 days	Final submission date
Tue 10 Aug 2021	76 days	Latest date by which OMG will inform its decision to bidders

11. Contact Information

All correspondence related to this RFP must be made in writing and addressed to:

Dr. Frik Potgieter

Chairman: Ophthalmology Management Group

rfp@nationaleyeregistry.com