

## TERMS OF REFERENCE: ANNEXURE A

SCM /Tender Ref #:	DPME 12/2022-2023
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Request for proposals for:	Request for a service provider to provide resources of Data Scientists to the DPME
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### 1. BACKGROUND / CONTEXT

The Government and sixth administration Cabinet entered a new term that is concurrent with the Fourth Industrial Revolution. This requires government departments to re-look at data generation and utilisation as well as coming up with innovative systems. Persistent service delivery challenges place the monitoring of the implementation of the National Development Plan (NDP) in the context of the seven associated priorities and policy analysis at the core of effective government planning and service delivery.

The DPME has the mandate of improving efficiency through evidence-based decision-making and planning processes in government. To this end, the department aims to facilitate access to up to date data to support Planning, Monitoring and Evaluation (PM&E) as per the NDP, MTSF and other priority policies/programmes. During the previous financial years, the DPME through Data Integration and Analysis (DIA) unit have received data requests from different units within the DPME and its stakeholders, e.g. the Presidency on data visualisation and overlaying of different datasets to respond to the planning, monitoring and evaluation, including the early response to challenges on service delivery at the community level.

The DPME sources, collects, collates and analyse data to support its mandate of planning, monitoring and evaluation to improve government performance. Different government programmes often request data in different formats to inform their operations and citizens on progress related to service delivery issues. However, data for these different requests are not aligned or integrated to give a clearer picture of progress. In additions, it does not provide a clear view of where the country is progressing in terms of service delivery. The department has identified a gap regarding the analysis of data to provide predictive models or forecasting capabilities. Therefore, capacity of data scientist resources is required to provide support related to sourcing, collections and producing data visualisation for government programmes. For example, SONA commitments monitoring and Economic Reconstruction and Recovery Plans (ERRP) and others.

### 2. PROBLEM STATEMENT / PURPOSE

During the financial year 2021/2022, DIA unit received requests to develop dashboards to support the early warning system, monitoring of programmes and projects within government. Currently, the system used by the DPME does not provide the forecasts or projections on the indicators used for monitoring and the current data sets are not aligned or integrated to have them overlaid on each other.

Amongst other sources of data, social Media is another form of data for which DPME can leverage to understand the citizens perceptions on service delivery by government which is not being explored optimally. This data can be over-layed on other datasets within the DPME to identify service delivery challenges that need to be resolved urgently.

### 3. OBJECTIVES AND SCOPE OF PROJECT

The objective is to appoint an independent service provider that will support the work of Data Integration and Analysis (DIA) unit. The service provider will assist in the development of databases and dashboards to capture, store, conduct data scraping and data visualisations. The service provider must have knowledge and exposure to Data Science and Analytics work and should demonstrate in the proposal.

The scope of the Data Science work to the DPME includes:

- **Building predictive models and forecasting** for all priorities indicators so that progress towards the set target can be seen and interventions can be implemented in time if the country is not performing well in the indicators;

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- **Building data visualisation and analytical dashboards** on the web-platform on agreed indicators relating to government policies, which will be presented spatially to enable users to make urgent informed decision. Early warning system dashboard will also need to be built;
- **Development of Database/ Data warehouse** to capture the data required for the dashboards;
- **Social Media analysis** to understand the citizens perceptions on service delivery by government;
- **Data integration** for all the datasets the DPME is utilising for producing evidence. This will include the integration of social media data with that collected through the Presidential hotline, Government Communication and Information systems and Social media. The integration will provide a better evidence on the perception of citizens on service delivery. The integration of the key sources such as the MTSF Monitoring and Reporting system, Presidential Hotline and electronic Quarterly Performance Reporting System (EQPRs) will be vital in the work and
- **Mining of the historical data** in the DPME information systems.
- **Deploy and monitor the functionality** of the developed analytical products
- **Maintenance and Support** of the developed analytical products
- **Skills transfer** to DIA and Office of the CIO's units identified officials

### 4. PROPOSED METHODOLOGY / APPROACH

The appointed service provider is expected to allocate three (3) Data Scientists and a Project Manager to support the DPME in executing the data projects. The allocated Data Scientists will be supported by the Data Integration and Analysis unit within the DPME.

Appointed service provider will be expected to propose the method to execute the project. The proposal should cover:

1. CVs of the project team should be included
2. Qualification and experience of the project team
  - a. Relevant qualifications and experience
  - b. Proven track record
3. Outline the approach to be used to execute the project
4. It should provide the resource plan to ensure availability and business continuity
5. Project Plan
6. State any assumptions inclusions and exclusions, risk and mitigation plan that may hamper the successful delivery of services
7. Demonstrate how transfer of skills to DPME will be done
8. References of previous Data Sciences, Business Intelligence, Data Analytics, Data warehousing and related work

### 5. DELIVERABLES AND TIME FRAMES

Description	Expected date	% of project (Payment)
<b>Contract Management</b> <ul style="list-style-type: none"> <li>• Inception report</li> <li>• Signed Service Level Agreement (SLA)</li> </ul>		0
<b>Development of Database/ Data warehouse</b> <ul style="list-style-type: none"> <li>• Extract usable data from different data sources and mapping of the data</li> <li>• Develop a data collection tools and procedures that include all relevant information</li> <li>• Develop a database for programmes that use paper-based system within the DPME</li> <li>• Sourcing of social media data</li> </ul>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Data Processing</b> <ul style="list-style-type: none"> <li>• Data Cleaning</li> <li>• Validation of data to be used for dashboard development</li> </ul>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Data integration</b> <ul style="list-style-type: none"> <li>• Integration of Datasets from different data sources</li> <li>• Mining of historical data from DPME for integration</li> </ul>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Data Analysis</b> <ul style="list-style-type: none"> <li>• Develop predictive and forecasting models</li> </ul>	As and when required	100% Delivery, and completion of

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<ul style="list-style-type: none"> <li>Identify assumptions for the model</li> </ul>		deliverables as well as signed timesheets
<b>Data dashboard or analytical dashboard</b> <ul style="list-style-type: none"> <li>Designing of the analytical dashboard</li> <li>Data analytics dashboard</li> </ul>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Deploy and monitor the functionality</b>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Skills transfer</b> <ul style="list-style-type: none"> <li>Skills transfer done</li> </ul>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Maintenance and Support</b>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets
<b>Project Management</b> <ul style="list-style-type: none"> <li>Project Plans, statement of work, identification of risk and mitigation project inclusions and exclusions, project reporting</li> </ul>	As and when required	100% Delivery, and completion of deliverables as well as signed timesheets

### 6. PROJECT MANAGEMENT / REPORTING ARRANGEMENTS

The project will be managed by the Data Integration and Analysis (DIA) unit within the DPME. The service provider will report to DIA on a continuous basis. The service provider will be supported by both DIA unit and Office of the Chief Information Officer in the DPME.

### 7. PEER REVIEW

N/A

### 8. OTHER

N/A