

TERMS OF REFERENCE: ANNEXURE A

SCM /Tender Ref #:	DPME 05-2021/22
--------------------	-----------------

Request for proposals for:	Appointment of a bidder to provide resources to develop a Centralised Data Management and Analytical System (CDMAS) for the Department of Planning Monitoring and Evaluation
----------------------------	--

1. BACKGROUND / CONTEXT

Government departments and institutions are increasingly looking to use data to create more evidence-based policies and to make better decisions, and the Department of Planning Monitoring and Evaluation (DPME) is no exception.

Data can be viewed as a foundation to the mandate of DPME which is to guide planning and implementation of government programmes and policy priorities. Planning calls for evidence-based plans, thus monitoring generates data and it is used as evidence to either change the trajectory of, ineffective programmes or strengthen identified opportunities within a good programme. Data, therefore, plays a pivotal role in the evaluation of programmes and policies. Data also plays an important role in assessing progress in the implementation of the National Development Plan (NDP) priorities especially on the persistent triple challenges of poverty, unemployment and inequality.

In order to use data to drive decision support and the mandate of DPME, at minimum the following data elements should exist:

- Clarity about data sources;
- Understanding of the accuracy and completeness of the data;
- Transparency of data extraction and analysis methods;
- Data access frequency to primary and secondary data.

Thus, the DPME embarked on re-looking at its data management and analytical environment, the result of which is a concept of implementing a Centralised Data Management and Analytical System (CDMAS). The CDMAS seeks to address data challenges and advance analytics in the department to enable integrated and exploratory methods to support evidence-based decision-making.

This proposed system aims to increase the efficient use of relevant, quality data, and innovative analysis to inform decision-making, policy and outcomes performance. The use of CDMAS will improve DPME's efficiency and productivity by reducing the time it takes to access current, historical and new datasets, and streamline the user/user's team time to generate reports related to the NDP vision 2030. Users will be able to extract data from qualitative and quantitative sources that once required lengthy reading and extraction time. It will also minimise the time taken to access new datasets and provide a platform for data exploration before detailed analysis. This will allow advanced users to explore new data analysis opportunities and produce data case studies and reports proactively. The system will allow for spatial presentation of the data for the executive to be able to view areas that need urgent attention and plan accordingly.

DPME carried out some work with the support of external partners who undertook diagnostic and conceptual design work to develop detailed functional and business requirements for CDMAS. These were developed after engaging both internal stakeholders (DPME officials) and external stakeholders (a select number of government officials from sector departments). The work provides the basis for which the development of the CDMAS is to be based on and is well documented. There are various existing systems that provide for a range of functions that fall within the mandate of DPME that will need to be considered for i.e. integration and or interface towards the development of CDMAS.

2. PROBLEM STATEMENT / PURPOSE

2.1. PROBLEM STATEMENT

TERMS OF REFERENCE: ANNEXURE A

The DPME underwent various changes since its formation from being a monitoring department under The Presidency, to being merged with the National Planning Commission in 2013, which also necessitated the internal restructuring of the department to form the Department of Planning Monitoring and Evaluation. These changes have created fragmented structures in terms of data acquisition, use and management. Various units would respond to the demands placed on their respective mandates by creating standalone systems to respond to the various demands and requests. This is compounded by the fact that most of the DPME data is drawn from outside DPME of which most of this data resides in sector departments and challenges of access and timely access of data become a problem in addition to the format for which the data is received. This creates a ripple effect of challenges with analysing the data and producing reports which are of quality. Therefore, the department had to review the status quo of DPME using the lenses of data, people, processes, documentation and technology to identify the challenges blocking DPME to be efficient in carrying out its planning, monitoring and evaluation mandate.

The following is the problem statement that needs to be addressed:

- Fragmented data requesting and sourcing – refers to the management of data requests within DPME and outside of DPME.
- Lack of central data storage and central access – refers to the lack of a centralised source of data that can enable users to monitor and control data access easily and clarifying the process of data custody and minimising the risk involved in mishandling sensitive information.
- Lack of Big Data Analysis Capabilities.
- Lack of role clarity between DPME units about data – refers to the lack of clear governance of data.
- Lack of centralised secondary data requesting process – refers to different sections requesting the same data or statistics from the data provider
- Tedious data collection and extraction – refers to various formats that are used to share data that currently are performed manually.
- The poor orientation of data services within DPME – this refers to the data workflow that is unclear within the business areas of DPME making it impossible to track data lineage and metadata.
- Lack of integrations of information systems within the DPME – refers to the DPME systems that are not linked and making it difficult to analyse them together
- Data quality for data management program in DPME – refers to the need to define a set of practices to maintain a high quality of data and information.

To be able to address these challenges, DPME requires particular skills set. As the President announced in the State Of The Nation Address (SONA 2019) on the seven key priority areas of the 6th Administration, the implementation of government programmes and policies require quality and timely data. There is therefore, an urgency to address the challenges posed around data. Internally, resources are limited which then necessitates seeking professional services to developing this system, to respond to these data challenges.

2.2. DPME ICT ENVIRONMENT (SOFTWARE & HOSTING ENVIRONMENT)

The DPME, currently utilizes the following technologies that the bidder must consider in providing the resources required for this project:

- Database: Microsoft SQL.
- Integrated Development Environment (IDE): Microsoft Visual Studio.
- GIS: ESRI GIS.
- Window server 2019 Operating System
- MS Power-BI server

2.3. PURPOSE

The DPME seeks to appoint an external service provider to provide human resources to develop a system that is able to facilitate improved data access and analysis for the horizontal and vertical oversight role of DPME encompassing planning, monitoring and evaluation functions.

The service provider should have experience in developing system in an environment which is rapidly changing and requires quick and correct decision making. In addition, the service provider should demonstrate experience in data warehousing, business intelligence, data analytics, data science etc.

TERMS OF REFERENCE: ANNEXURE A

3. OBJECTIVES AND SCOPE OF THE PROJECT

The objectives are:

- Develop the CDMAS system and related functionalities to address the data and analytical challenges DPME faces
- Develop the system in an agile manner using the Minimum Viable Product (MVP) approach to show tangibles at various stages of the project
- Empower the relevant technical staff in DPME to ensure continuity
- Advisory on innovative techniques and solutions to ensure efficiency and efficient in building the system.

The scope is:

- a) Develop and deliver system (CDMAS) with accordance to departmental project management and systems development frameworks/methodologies i.e. Systems Development Life Cycle and Agile project management
- b) Integrate CDMAS with other internal and external information systems and databases that contains structured and unstructured content including spatial data
- c) Identification and analysis of the priority requirement list of each MVP product to be developed
- d) Translate the documented business and user requirements into system specifications for each MVP
- e) Design, develop, test and deploy systems features and functionalities to meet the requirements of users and business for each MVP
- f) Provide maintenance and support for each MVP deployed
- g) Provide new or update existing documentation including project management, business requirements specifications, functional requirements specifications, deployment guides, training manuals and etc.
- h) Ensure that the project is delivered within the agreed scope, quality and timelines
- i) Identify the risks associated with the project and provide mitigation plan
- j) Conduct change management including training
- k) Comply with relevant departmental policies, standards and procedures.

3.1. Business requirements (BR)

The following are the key business requirements, that were identified throughout the CDMAS Business Case and identified through workshops with various DPME internal stakeholders.

Number	Requirement Name
BR-1.0	To have the ability to create, capture and upload planning, monitoring, and evaluation products created or acquired by DPME.
BR-2.0	To have a capability to capture, upload and import plans based on the MTFS framework and associated indicators.
BR-3.0	To have a capability to capture, upload and import reports based on indicators and associated government entities monitored by DPME
BR-4.0	To have a capability to capture, upload and import reports and artefacts produced by DPME based on the MTFS framework, indicators and associated government entities.
BR-5.0	To retain data and make it easily and intuitively accessible to DPME existing systems and users based on stringent access control.
BR-6.0	To have a capability for advanced data processing, analytics, dynamic reporting, and interactive dashboards.

TERMS OF REFERENCE: ANNEXURE A

Number	Requirement Name
BR-7.0	To be intuitive to use, capable of being used by all DPME users.
BR-8.0	To provide interfaces to capture, upload, import and process data of varying formats.
BR-9.0	To have a capability for analysis of data across different datasets based on different qualitative content.
BR-10.0	To provide integration and interfaces for data exchange with specified external software systems including those active within DPME.
BR-11.0.	To support the capability to store data persistently and centrally concerning all the MTFs framework functions with DPME.
BR-12.0	To enhance DPME planning, monitoring and evaluation functions in fulfilment of the MTFs framework.
BR-13.0	Have role-based access to ensure only authorised data exposure.
BR-14.0	To contain learning material on its usage and other data analytics content.
BR-15.0	To provide advanced data visualisation.
BR-16.0	To have a capability to allow for processes execution, workflow, authorizations and approvals framework (Delegation of Authority and Allocation of access).
BR-17.0	To be able to map data about indicators to a geographical information system (GIS) to enable geographical/spatial analysis.
BR-18.0	To have all the necessary legislative compliance with relevant policies, acts and regulations in South Africa.
BR-19.0	To have a data governance framework.
BR-20.0	To track and keep audit logs of all user and data activity, to improve duplication of effort and misuse.
BR-21.0	To have efficient data collection capabilities from primary and secondary data sources.
BR-22.0	To have a data request and ticketing capability to streamline data acquisition.

4. PROPOSED METHODOLOGY/APPROACH

DPME seeks to use an agile approach to this project. The envisaged CDMAS is expected to cater for DPME's overall data needs as informed by the MTSF, the NDP and key government priorities. However, an agile methodology through the Minimum Viable Product (MVP) concept will be the first delivery of meaningful capability of a CDMAS product. The developed MVP shall have a collection of features that provide enough capability to accomplish minimum functionality for the targeted end-user so that this early user of the system can provide feedback to influence future development iterations. The MVP is expected to provide all the CDMAS functionalities and demonstrate how the full system will function.

To successfully achieve this approach, the MVP should be a manageable piece of work that provides the ability to use and assess how the targeted system solution performs in a production setting and give fast feedback to the system development team to be incorporated into future iterations. As the focus for the first MVP, DPME has

TERMS OF REFERENCE: ANNEXURE A

selected one Priority of the MTSF. The first deployed MVP of the CDMAS is expected within 6 months of service provider appointment. The solution is for DPME and its stakeholders in government e.g. The Presidency office, the National Planning Commission (NPC).

The bidder must include in the proposal, an approach that will be taken in terms of the delivering the project for the stipulated period including maintenance.

- a) The bidders must specify in full the plan which it intends to follow in response to the project objectives and scope.
- b) Bidders must demonstrate how they will deliver the project using the agile project management
- c) Bidders must indicate the support and maintenance plan
- d) Bidders must provide the resource plan to ensure availability and business continuity
- e) The detailed proposal, in light of the objective and scope to include:
 - deliverables as guided by section 5
 - opportunity to state any assumptions, inclusions and exclusions
 - state known risks and mitigation plans that may hamper the successful delivery of the services
 - Include the proposed change control processes and the components that will be affected
 - demonstrate how the bidder will transfer skills to DPME.

TERMS OF REFERENCE: ANNEXURE A

5. DELIVERABLES, TIME FRAMES AND PAYMENT SCHEDULE

5.1. Timeframes

*Description of deliverable	*Time Frame	% of project (Payment)
<p>1. Contract management:</p> <p>1.1. Signed SLA by both parties (once-off)</p>	2 weeks after issuing of Order number	100% When Delivered and successfully completed
<p>2. Project Management and Advisory per MVP:</p> <p>2.1. Approved project plan: Planning of projects to ensure proper estimation time lines and costs as well as resource allocation</p> <p>2.2. Approved Statement of Work (SoW)</p> <p>2.3. Approved Priority Requirements List</p> <p>2.4. Identification of projects risks and mitigation measures</p> <p>2.5. Identification of project Inclusions and Exclusions</p> <p>2.6. Project reporting</p> <p>2.7. Ensure that the department realize value in the technological investments</p> <p>2.8. Ensure that any proposed BI or Applications Development within CDMAS will add value to the department to ensure efficiency, by checking for duplications of existing applications or capabilities.</p> <p>2.9. Facilitate change management to ensure adoption and implementation of the project (Project and organisational level)</p> <p>2.10. Support data governance initiatives.</p>	Ongoing	100% When Delivered and successfully completed
<p>3. CDMAS solution requirement decomposition per MVP</p> <p>3.1. Identify Use Cases</p> <p>3.2. Classify and Prioritise Use Cases</p> <p>3.3. Define the exact internal and external integration requirements for the system and roles from the identified stakeholders.</p> <p>3.4. Define the data requirements for each data source.</p> <p>3.5. Assessment of reporting indicators</p>	As and when required	100% When Delivered and successfully completed
<p>4. Define solution Architecture and Technical Specifications per MVP:</p> <p>4.1. Define solution Architecture and Technical Specifications</p> <p>4.2. Assess and refine systems that will interface with CDMAS, as well as how interfacing will be achieved</p>	As and when required	100% When Delivered and successfully completed
<p>5. Develop workflow processes per MVP and logic design document:</p> <p>5.1. Defining structure workflow (DPME Programme, indicators, etc) sequence and activities</p> <p>5.2. Defining execution workflows (Planning, Budgeting, Performance M&E, Reporting, etc) sequence and activities.</p> <p>5.3. Defining internal/external access and integration (Who, when and how) rules.</p> <p>5.4. Defining interfaces (User Portals, APIs, and Communications Protocols)</p>	As and when required	100% When Delivered and successfully completed
<p>6. Data Sourcing and collection capability per MVP:</p> <p>6.1. Creating reliable data provision channels with existing sources.</p> <p>6.2. Creating capability that structure, and organise information</p> <p>6.3. Review data management/governance tools developed by DPME</p>	As and when required	100% When Delivered and successfully completed

TERMS OF REFERENCE: ANNEXURE A

<p>7. Data Processing and Integration per MVP: 7.1. Clean, correlate and profile the collected data to improve data quality 7.2. Integrate datasets of varied structure and formats (Spatial, CSV, text, etc). In addition, fix geocoding projections and other related issues. 7.3. Develop custom tools/scripts for processing specific scenarios 7.4. Develop search and retrieval features (Data processing) 7.5. Develop data cleaning features that minimises human involvement</p>	As and when required	100% When Delivered and successfully completed
<p>8. Data Analysis and Reporting per MVP: 8.1. Data Profiling and Discovery 8.2. Data Analytics 8.3. Data Modelling and Simulation 8.4. Build and configure dynamic dashboards for real-time system features 8.5. Build custom and standard reporting features within the Data management application. 8.6. Build automated reports features</p>	As and when required	100% When Delivered and successfully completed
<p>9. Deploy and provide support per MVP: 9.1. System processes include: - System Production deployment - Back-up strategy and business continuity strategy 9.2. Usage processes include: - User acceptance test (UAT) - Prepare training material - Conduct a training workshop(s) for the selected CDMAS personnel - Disaster Recovery Testing - Bug Fixes - Hand-over of the MVP complete system 9.3. Prepare for Deployment, Pilot and Go-Live Activities 9.4. Support services as defined in the Service Level Agreement.</p>	As and when required	100% When Delivered and successfully completed
<p>10. Advisory services per MVP 10.1. Advisory services per MVP</p>	As and when required	100% When Delivered and successfully completed
<p>11. Documentation per MVP: 11.1. Produce Project and Technical documentation per EACH deliverable 11.2. All source-codes</p>	As and when required	100% When Delivered and successfully completed
<p>12. Maintenance and support including skills transfer per MVP</p>	As and when required	100%
<p>Total project implementation</p>	36 months	100 %

* At each deliverable stage, the DPME reserves the right to terminate the contract if the deliverable does not meet the agreed standards.