Programme 4 (Research Development and Support) 2019/20 Technical Indicator Descriptors (TIDs)

PROGRAMME 4: TECHNICAL INDICATOR DESCRIPTIONS (TIDs) 2019/20

Performance Indicator 1

Medium–term objectives, measure/indicator, outputs, and targets	**Output Name** PhD students awarded bursaries annually through NRF and relevant entities.	**Date** 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Contribute to human capital development	
Objective Statement and definition (also supported by Indicator Definitions)		To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities.	
Indicator title		**Total number of PhD students awarded bursaries annually as reflected in the reports from the NRF and relevant entities by 31 March 2020**	
Purpose of indicator	To measure the total number of PhD students awarded bursaries annually	Type of indicator	Input indicator
Measure / Indicator Definition	Total number of PhD and DTech students awarded bursaries annually as reflected in the reports from NRF and relevant entities	Measure / Indicator Formula	Total number of PhD students awarded bursaries annually through NRF, ARC, SANSA and ARC funded programmes.
New Indicator	Continues with some changes to the indicator to meet SMART principle	Desired performance	High – a number of students awarded bursaries
Measure / Indicator Owner	Director: High End Skills	Worked example	Number of students awarded bursaries, e.g. (100 PhD)
Target set for current year	**Annual:** Not less than 3 100 PhD students awarded an annual bursary as reflected in the reports from the NRF and relevant entities by 31 March 2020 **Quarterly:** **Q1** – Not less than [1] 1 500 PhD students awarded an annual bursary as reflected in the reports from NRF and relevant entities **Q2** – Not less than 2 300 PhD students awarded an annual bursary as reflected	Target achieved	Actual target achieved. Q1 – Q2 – Q3 – Q4 – YTD - :

[1] The quarterly figures for this indicator are cumulative to year-end

	in the reports from NRF and relevant entities **Q3** – Not less than 2 800 PhD students awarded an annual bursary as reflected in the reports from NRF and relevant entities **Q4** – No less than 3 100 PhD students awarded an annual bursary as reflected in the reports from the NRF and relevant entities by 31 March 2020		
Data limitations	• The NRF quarterly reports that do not contain the final quarterly data on students due to the late finalisation and auditing of data from their side, thus resulting in the DST first reporting on preliminary data contained in an e-mail from the NRF. The preliminary data is then updated when the agency sends a formal performance information letter to the DST. • These are only bursaries awarded from Programme 4 funds through the NRF and relevant entities, including the CSIR, SANSA and the Agricultural Research Council. • Given that the database will contain high volume of data of over 3 100 of student records (i.e. student award letters by institutions or entity) there is bound to be some error, especially since it is a new addition in 2019/20 financial year, and that there are no established systems to support this type of data extraction, and this will only be available in the 4th Quarter.		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator	
Source data	• Contracts entered into with the NRF and relevant entitie (CSIR, SANSA, ARC) • Payment stubs on funds transferred relating to the bursaries. • Progress reports on individual programmes and letters confirming the reported quarterly outputs • Database of PhD students with ID numbers, student numbers, course details etc. • Database of award letters (with the letterhead, stamp and signature by the Registrar) from institutions or entity
Collection Frequency of Source data	Quarterly
Archiving of Source Data	Quarterly
Type of information to be extracted from the source data	Number of PhD students funded through NRF and relevant entities
IT Systems/ Tools used to capture extracted data	Alfresco
Source Data Capturing Frequency	Quarterly

Individual(s) responsible for collecting the source data	Deputy Director: New Generation Researchers' Programmes	**Individual(s) responsible for filing/ archiving the collected source data**	Deputy Director: New Generation Researchers' Programmes
Individual(s) responsible for extracting the required information from the source data	Deputy Director: New Generation Researchers	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	Director: Research Development and Chief Director: HCSP
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: New Generation Researchers'	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director: Research Development and Chief Director: HCSP

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco	
Type of performance information to be extracted/ used		Number of PhD students	
Calculations required on extracted information		Number of PhD students	
Archiving of Extracted / Recalculated Information		Alfresco	
Return Format		Word document in Alfresco	
Reporting Frequency		Quarterly.	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Deputy Director: New Generation Researchers'	Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information	Director: Research Development and Chief Director: HCSP
Individual(s) responsible for archiving the extracted/ recalculated performance information	Deputy Director: New Generation Researchers'	Individual(s) responsible for sending the information in the required return format to the ----------	Director: Research Development and Chief Director: HCSP

Performance Indicator 2

Medium–term objectives, measure/indicator, outputs, and targets	Output Name Pipeline postgraduate students awarded bursaries and fellowships through NRF and DST	Date 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Contribute to human capital development	
Objective Statement and definition (also supported by Indicator Definitions)		To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities.	
Indicator title		**Total number of pipeline postgraduate students awarded bursaries annually as reflected in the reports from the NRF and relevant entities by 31 March 2020**	
Purpose of indicator	To measure the total number of pipeline[2] postgraduate students awarded bursaries annually by level of study (B. Tech, Master's).	Type of indicator	Input indicator
Measure / Indicator Definition	Total number of pipeline postgraduate students (BTech and honours, Master's and MTech) students awarded bursaries annually as reflected in the reports from the NRF and relevant entities.	Measure / Indicator Formula	Total number of students awarded bursaries annually through NRF and relevant entities'-funded programmes (B. Tech and Honours+ Master's)
New Indicator	Continues with some changes to the indicator to meet SMART principle	Desired performance	High – a number of students awarded bursaries
Measure / Indicator Owner	Director: Research Development	Worked example	Number of students awarded bursaries, e.g. (100 B. Tech and Honours+ 150 Master's)
Target set for current year	**Annual:** Not less than 10 800 pipeline postgraduate students awarded an annual bursary as reflected in the reports from the NRF and relevant entities by 31 March 2020 **Quarterly:** **Q1 –** Not less than [3]5 400 pipeline postgraduate	Target achieved	Actual target achieved. Q1 – Q2 – Q3 – Q4 – YTD - :

[2] Pipeline includes final year undergraduates, honours and masters leading to a PhD.
[3] The quarterly figures for this indicator are cumulative to year-end

	students (BTech and honours, and master's students) awarded an annual bursary **Q2 –** Not less than 8 100 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary **Q3 –** Not less than 9 500 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary **Q4 -** Not less than 10 800 pipeline postgraduate students (BTech and honours, and master's students) awarded an annual bursary		
Data limitations	• The NRF quarterly reports that do not contain final quarterly data on students due to the late finalisation and auditing of data from their side, thus resulting in the DST first reporting on preliminary data contained in an e-mail from the NRF. The preliminary data is then updated when the agency sends a formal performance information letter to the DST. • These are only bursaries awarded from Programme 4 funds through the NRF and relevant entities, including the CSIR, SANSA and the Agricultural Research Council • Given that the database will contain high volume of data of over 10 000 of student records (i.e. student award letters by institutions or entity) there is bound to be some error, especially since it is a new addition in 2019/20 financial year, and that there are no established systems to support this type of data extraction, and this will only be available in the 4th Quarter.		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator	
Source data	• Contracts entered into with the NRF and relevant entities (CSIR, SANSA, ARC) • Payment stubs on funds transferred relating to the bursaries. • Progress reports on individual programmes from NRF, SANSA, CSIR and ARC (per quarter) - Letter confirming the reported quarterly outputs • Database of postgraduate students with ID numbers, student numbers, course details etc. • Award letters (with the letterhead, stamp and signature by the Registrar) from institutions or entity.
Collection Frequency of Source data	Quarterly

Archiving of Source Data		Quarterly	
Type of information to be extracted from the source data		Number of postgraduate students awarded bursaries through NRF and relevant entities by level of study (B. Tech, honours, Master's).	
IT Systems/ Tools used to capture extracted data		Alfresco	
Source Data Capturing Frequency		Quarterly	
Individual(s) responsible for collecting the source data	Deputy Director: New Generation Researchers' Programmes	**Individual(s) responsible for filing/ archiving the collected source data**	Deputy Director: New Generation Researchers' Programmes
Individual(s) responsible for extracting the required information from the source data	Deputy Director: New Generation Researchers'	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	Director : Research Development (RD) and Chief Director: HCSP
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: New Generation Researchers'	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director: RD and Chief Director: HCSP

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco	
Type of performance information to be extracted/ used		Number of pipeline postgraduate students (honours and Master's) awarded bursaries.	
Calculations required on extracted information		Number of pipeline post graduate students funded at each level (B Tech, honours, Masters)	
Archiving of Extracted / Recalculated Information		Alfresco	
Return Format		Word document in Alfresco	
Reporting Frequency		Quarterly.	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Deputy Director: New Generation Researchers'	Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information	Director: RD Chief Director: HCSP
Individual(s) responsible for archiving the extracted/ recalculated	Deputy Director: New Generation Researchers'	Individual(s) responsible for sending the information in the required	Director: RD

performance information		return format to the ----------	

Performance Indicator 3

Medium–term objectives, measure/indicator, outputs, and targets	**Output Name** Graduates and students placed in DST-funded work preparation programmes in science, engineering and technology institutions (SETI)	**Date** 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Contribute to human capital development	
Objective Statement and definition (also supported by Indicator Definitions)		To contribute to the development of representative, high-level human capital able to pursue locally relevant, globally competitive research and innovation activities.	
Indicator title		**Total number of graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2020**	
Purpose of indicator	To measure the number of graduates and students placed in DST-funded work preparation programmes in order to gain the necessary work experience	Type of indicator	Input indicator
Measure / Indicator Definition	Total number of graduates and students placed in DST-funded work preparation programmes (through internship programme and National Youth Service) in science, engineering, technology and innovation (SETI) institutions	Measure / Indicator Formula	Total number of graduates and students placed through DST/NRF Internship Programme and National Youth Service
New Indicator	The indicator continues from previous financial year	Desired performance	High – a number of graduates and students placed in DST-funded work preparation programmes
Measure / Indicator Owner	Director: Research Support and Director: Science Promotion	Worked example	Total number of graduate/students placed = No. of internships supported students (140) + No. of National Youth Service Students (40) = 180 total number of graduates/students
Target set for current year	**Annual:** 650 graduates and students placed in DST-funded work preparation programmes in SETI institutions by 31 March 2020	Target achieved	Actual target achieved. Q1 – Q2 – Q3 – Q4 – YTD - :

	Quarterly: **Q1 -** [4]500 graduates and students placed in DST-funded work preparation programmes in SETI institutions **Q2 –** 550 graduates and students placed in DST-funded work preparation programmes in SETI institutions **Q3 –** 600 graduates and students placed in DST-funded work preparation programmes in SETI institutions **Q4 –** 650 graduates and students placed in DST-funded work preparation programmes in SETI institutions		
Data limitations	Data focuses on students and graduates that have been placed in the work preparation programmes through the DST-NRF Internship Programme and the National Youth Service in a given year. The programme is implemented by the NRF and data gets submitted on a quarterly basis.		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator	
Source data	• Consolidated HCD contract entered into with the NRF on funding of interns. • Payment stub on funds transferred relating to the workplace preparation programmes. • NRF progress reports on workplace preparation programmes • DST-NRF internship database interns; and • DST-National Youth Service database of students.
Collection Frequency of Source data	Quarterly
Archiving of Source Data	Alfresco
Type of information to be extracted from the source data	Number of graduates and students placed in DST-funded work preparation programmes in science, engineering, technology and innovation (SETI) institutions.
IT Systems/ Tools used to capture extracted data	Alfresco
Source Data Capturing Frequency	Quarterly.

[4] The quarterly figures for this indicator are cumulative to year-end

Individual(s) responsible for collecting the source data	Deputy Director: Work Preparation Programmes and Deputy Director: Science Promotion	**Individual(s) responsible for filing/ archiving the collected source data**	Deputy Director: Work Preparation Programmes and Deputy Director: Science Promotion
Individual(s) responsible for extracting the required information from the source data	Deputy Director: Work Preparation Programmes	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	Director: Research Support and Director: Science Promotion Chief Director: HCSP
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: Work Preparation Programmes and Deputy Director: Science Promotion	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director Research Support and Director Science Promotion Chief Director: HCSP

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco/ funded students and graduates in work preparation programmes statistics.	
Type of performance information to be extracted/ used		Number of graduates and students placed in DST-funded work preparation programmes Number of graduates and students funded at each level (bachelors, honours and masters)	
Calculations required on extracted information		Number of graduates and students placed by levels (bachelors, honors and masters).	
Archiving of Extracted / Recalculated Information		Alfresco	
Return Format		Spreadsheet	
Reporting Frequency		Quarterly	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Deputy Director: Work Preparation Programmes and Deputy Director: Science Promotion	Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information	Director: Research Support and Director: Science Promotion. Chief Director: HCSP
Individual(s) responsible for archiving the extracted/ recalculated performance information	Deputy Director: Work Preparation Programmes and Deputy Director: Science Promotion	Individual(s) responsible for sending the information in the required return format to the ----------	Director: Research Support and Director: Science Promotion. Chief Director: HCSP

Performance Indicator 4:

Medium–term objectives, measure/indicator, outputs, and targets		**Output Name:** Research infrastructure grants	**Date:** 31 March 2020
1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Provision of research and innovation infrastructure	
Objective Statement and definition (also supported by Indicator Definitions)		To ensure availability of and access to internationally comparable research and innovation infrastructure in order to generate new knowledge and train new researchers.	
Indicator title		**Number of research infrastructure grants awarded annually as per award letters annually 31 March 2020**[5]	
Purpose of indicator	To ensure the availability of appropriate infrastructure for enhancement of RDI competitiveness	**Type of indicator**	Input indicator
Measure / Indicator Definition	Number of research infrastructure grants awarded as per award letters across all the 5 research infrastructure categories and to the research community across the entire NSI. Research infrastructure (RI) refers to facilities, resources and services that are used by research communities to conduct research and foster innovation. RI include major scientific equipment (or sets of instruments) knowledge-based resources such as collections, archives and scientific data, e-infrastructures, such as data and computing systems and communication networks and any other tools that are essential to achieve excellence in research and innovation.	**Measure / Indicator Formula**	Number of research infrastructure grants awarded as per award letters per annum
New Indicator	Target continues from the previous year	**Desired performance**	High performance is desired
Measure / Indicator Owner	Charles Mokonoto, Director: Infrastructure	**Worked example**	To award 30 research infrastructure across the system
Target set for current year	**Annual target:** 20 annual research infrastructure grants awarded as per award letters by 31 March 2020 **Q1-** No target **Q2-.**	**Target achieved**	Q1 -. Q2 – Q3 - .

[5] In some instances one letter (issued by the accounting officer on approval) will be used as source data or evidence of the grants awarded for the period of three years as per three-year contracts.

	Call for proposals on awarding of research infrastructure grants issued by 30 September 2019 **Q3-** No target **Q4-** 20 annual research infrastructure grants awarded as per award letters		
Data limitations	The collection of data is partially (for the awards made through the National Equipment Programme of the NRF) done by the implementing agency and the process is not in the control of the DST. The data for the awarding of high-end infrastructure is collated by the department internally. Only awards made against RDS allocations are counted.		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator			
Source data	• Contracts with implementing agency (NRF) and other DST entities such as the CSIR • Annual report from implementing agency (NRF) and other DST entities such as the CSIR • Payment stub of funds transferred to implementing agencies • Award letters		
Collection Frequency of Source data	Biannually		
Archiving of Source Data	Data is stored on Alfresco		
Type of information to be extracted from the source data	Number of infrastructure grants awarded across the NSI annually		
IT Systems/ Tools used to capture extracted data	The data is presented to the DST in the form of report which are then stored and saved on Alfresco		
Source Data Capturing Frequency	Biannually		
Individual(s) responsible for collecting the source data	D: Infrastructure	**Individual(s) responsible for filing/ archiving the collected source data**	DD: Infrastructure
Individual(s) responsible for extracting the required information from the source data	DD: Infrastructure	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	D: Infrastructure CD: BSI
Individual(s) responsible for capturing the extracted information onto the IT System	DD: Infrastructure	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	D: Infrastructure CD: BSI

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco	
Type of performance information to be extracted/ used		Type of an equipment, amount or grant awarded for the equipment, institution where the equipment has been placed, principal researcher, number of students.	
Calculations required on extracted information		Number of grants awarded	
Archiving of Extracted / Recalculated Information		Reports filed and saved on Alfresco	
Return Format		Word documents	
Reporting Frequency		Biannually	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Director: Infrastructure	Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information	Director: Infrastructure CD: BSI
Individual(s) responsible for archiving the extracted/ recalculated performance information	Director: Infrastructure	Individual(s) responsible for sending the information in the required return format to the ----------	Director: Infrastructure

Performance Indicator 5:

Medium–term objectives, measure/indicator, outputs, and targets	**Output Name:** A gigabit per second total available broadband capacity network providing transmission of data to all research and academic institutions	**Date:** 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Provision of research and innovation infrastructure	
Objective Statement and definition (also supported by Indicator Definitions)		To ensure availability of and access to internationally-comparable research and innovation infrastructure in order to generate new knowledge and train new researchers	
Indicator title		**Total available broadband capacity provided by SANReN per annum by 31 March 2020**	
Purpose of indicator	To ensure sufficient broadband capacity is available for transmission of data to and from research and academic institutions connected	Type of indicator	This is an input indicator
Measure / Indicator Definition	Total available broadband capacity through SANReN as at 31 March 2020 Increased availability of broadband connectivity for Science, Education and Innovation Initiatives for public benefit This will include research, development and support services for science, education and innovation Links consist of a combination of transmission equipment and the connecting circuit	Measure / Indicator Formula	Total available broadband capacity = the available link bandwidths summed across all the active links of SANReN, where active links considered in the calculation include those where SANReN has invested in the transmission equipment and/or the connecting circuit
New Indicator	Target continues from the previous year	Desired performance	Higher performance, as it measures also the available capacity provided to transport data to and from research and academic sites connected to SANReN.
Measure / Indicator Owner	Charles Mokonoto, Director: Infrastructure	Worked example	Say there are 3 links active in SANReN with individual available capacities as follows: bandwidth = 100Gbps bandwidth = 10Gbps bandwidth = 1 Gbps Total available capacity = 100Gbps + 10Gbps + 1 Gbps = 111Gbps.

Target set for current year	**Annual target:** 3 500 Gbps total available broadband capacity provided by SANReN by 31 March 2020 **Q1** – No target **Q2** - New links and upgrade plan finalised by 30 September 2019 **Q3** – No target **Q4** – 3 500 Gbps total available broadband capacity provided by SANReN	**Target achieved**	Q1 - Q2 – Q3 -.
Data limitations	Internal audited report from the CSIR (NICIS annual report) is only available end June. A signed letter indicating the TABC calculation for the financial year will be signed after 31 March 2020 (A month after the end of the financial year)). The operational network diagram is confidential and can only be viewed on request at the CSIR. In the 2019/20 financial year, the TABC can exponentially increase due to dark fiber installation.		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator			
Source data	Signed letter indicating the TABC calculation for the financial year. A spreadsheet capturing the details of the calculation Internal audited annual reports from the CSIR (NICIS annual report)		
Collection Frequency of Source data	Biannually		
Archiving of Source Data	The CSIR documents are stored in Alfresco		
Type of information to be extracted from the source data	Total available broadband capacity provided by SANReN at the end of the reporting period is extracted from the signed letter from the CSIR Document capturing the details of the TABC calculations		
IT Systems/ Tools used to capture extracted data	Reports are prepared in MS Word and stored on Alfresco		
Source Data Capturing Frequency	Bi-annual		
Individual(s) responsible for collecting the source data	D: Infrastructure	**Individual(s) responsible for filing/ archiving the collected source data**	DD: Cyber Infrastructure
Individual(s) responsible for extracting the required	D: Infrastructure	**Individual(s) responsible for verifying the accuracy and**	D: Infrastructure CD: BSI

information from the source data		**completeness of the extracted information**	
Individual(s) responsible for capturing the extracted information onto the IT System	D: Infrastructure	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	DD: Infrastructure CD: BSI

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco	
Type of performance information to be extracted/ used		Total available broadband capacity provided by SANReN at 31 March 2019	
Calculations required on extracted information		Total available broadband capacity provided by SANReN at 31 March 2019	
Archiving of Extracted / Recalculated Information		Reports filed and saved on Alfresco	
Return Format		Word documents, Excel spreadsheets, pdf documents	
Reporting Frequency		bi-annually	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Director: Infrastructure	Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information	Director: Infrastructure CD: BSI
Individual(s) responsible for archiving the extracted/ recalculated performance information	Director: Infrastructure	Individual(s) responsible for sending the information in the required return format to the ----------	Director: Infrastructure

Performance Indicator 6

Medium–term objectives, measure/indicator, outputs, and targets	**Output Name** Researchers awarded research grants through NRF-managed programmes	**Date** 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Production of new knowledge	
Objective Statement and definition (also supported by Indicator Definitions)		To support and promote research that develops basic sciences through production of new knowledge and relevant training opportunities	
Indicator title		**Total number of researchers awarded research grants annually through NRF-managed programmes as reflected in the NRF project reports by 31 march 2020**	
Purpose of indicator	To measure the total number of researchers who get research grants from NRF-managed research grant programmes annually	**Type of indicator**	Input indicator
Measure / Indicator Definition	Total number of researchers awarded research grants annually through NRF-managed programmes as reflected in the NRF project reports. Researchers awarded research grants to conduct research and supervise postgraduate students (e.g. including Research Chairs, rated researchers, Centre of Excellence Researchers)	**Measure / Indicator Formula**	Summation of researchers that are awarded research grants
New Indicator	Continues from previous financial year	**Desired performance**	High – research grants awarded to researchers
Measure / Indicator Owner	Director: Research Support	**Worked example**	This indicator is the total number of researchers who receive research grant support from the NRF through its various programmes. This is the total number of research grant holders be they from emerging researcher programmes (i.e. Thuthuka) or established researchers programmes (e.g. SARChIs, CoEs, rated researchers etc). Therefore the indicator is the sum of all researchers receiving NRF grants.

Target set for current year	**Annual:** Not less than 4 500 researchers awarded an annual research grant through NRF-managed programmes as reflected by the NRF project reports by 31 March 2020 **Quarterly:** **Q1 –** [6]Not less than 2 000 researchers awarded an annual research grant through NRF-managed programmes **Q2 –** Not less than 3 500 researchers awarded an annual research grant through NRF-managed programmes **Q3 –** Not less than 4 000 researchers awarded an annual research grant through NRF-managed programmes **Q4 –** Not less than 4 500 researchers awarded an annual research grant through NRF-managed programmes	Target achieved	Actual target achieved. Q1 – Q2 – Q3 – Q4 – YTD - :
Data limitations	The NRF quarterly reports that do not contain final quarterly data on researchers due to the late finalisation and auditing of data from their side, thus resulting in the DST first reporting on preliminary data contained in an e-mail from the NRF. The preliminary data is then updated when the agency sends a formal performance information letter to the DST. • Given that the database for researchers will contain high volume of data of over R4 500 (i.e. individual award letters and contracts entered into between the implementing agency and researchers), there is bound to be some error, especially since it is a new addition in 2019/20 financial year, and that there are no established systems to support this type of data extraction, and this will only be available in the 4th Quarter.		
Reasons for variances between the target set and actual achieved	N/A		

[6] The quarterly figures for this indicator are cumulative to year-end.

2. Collection of source data to enable effective reporting on the adopted output measure / indicator			
Source data		• HCD Contracts entered into with the NRF in respect of programmes aimed at the funding of researchers. • Payment stubs on funds transferred relating to funding of researchers. • NRF progress report on researchers awarded research grants • Database of researchers (with names, ID, institution) • Database of award letters and contracts between the entity and researchers	
Collection Frequency of Source data		Quarterly	
Archiving of Source Data		Alfresco	
Type of information to be extracted from the source data		Number of researchers awarded research grants through NRF-managed programmes	
IT Systems/ Tools used to capture extracted data		Alfresco	
Source Data Capturing Frequency		Quarterly	
Individual(s) responsible for collecting the source data	Deputy Director: Research Support	**Individual(s) responsible for filing/ archiving the collected source data**	Deputy Director: Research Support
Individual(s) responsible for extracting the required information from the source data	Deputy Director: Research Support	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	Director: Research Support and Chief Director: HCSP
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: Research Support	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director: Research Support and Chief Director: HCSP

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco/funded researchers statistics.	
Type of performance information to be extracted/ used		Number of researchers awarded research grants through NRF-managed	
Calculations required on extracted information		Number of researchers awarded research grants	
Archiving of Extracted / Recalculated Information		Word document in Alfresco	
Return Format		Word document	
Reporting Frequency		Quarterly	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Deputy Director: High End Skills	**Individual(s) responsible for verifying the accuracy and completeness of the**	Director: Research Support and Chief Director: HCSP

		extracted performance information	
Individual(s) responsible for archiving the extracted/ recalculated performance information	Deputy Director: High End Skills	Individual(s) responsible for sending the information in the required return format to the ----------	Director: Research Support and Chief Director: HCSP

Performance Indicator 7:

Medium–term objectives, measure/indicator, outputs, and targets	**Output Name** Internationally accredited research articles from researchers awarded research grants through NRF-managed programmes.	**Date** 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Production of new knowledge	
Objective Statement and definition (also supported by Indicator Definitions)		To support and promote research that develops basic sciences through production of new knowledge and relevant training opportunities	
Indicator title		**Number of research articles published by NRF-funded researchers and cited in the Thomson Reuters Web of Science Citation Database as reflected in the NRF project reports by 31 March 2020**	
Purpose of indicator	To measure the research outputs in the form of research articles published in internationally recognised, peer-reviewed journals (cited in the Thomson Reuters Web of Science Citation Database)	**Type of indicator**	Output
Measure / Indicator Definition	Number of accredited research articles published by NRF-funded researchers and cited in the Thomson Reuters Web of Science Citation Database as reflected in the NRF project reports. The articles reported on are those published within an academic year (1 January to 31 December) and each article reported on is distinct.	**Measure / Indicator Formula**	Approximately 1.6 research output units per NRF funded researcher.
New Indicator	Continues from the previous financial year	**Desired performance**	High – research articles published by NRF–funded researchers and cited in the Web of Science Citation Database
Measure / Indicator Owner	Director: Research Support	**Worked example**	4 500 NRF funded researchers producing 7 200 research articles and cited in the Web of Science Citation Database
Target set for current year	**Annual:** Not less than 7 000 research articles published by NRF-funded researchers and cited in the Web of Science Citation Database as	**Target achieved**	This is an annual target. There are no quarterly targets.

	reflected in the NRF project reports by 31 March 2020 **Quarterly:** **Q1** - No target **Q2** - No target **Q3** - No target **Q4** - Not less than 7 000 research articles published by NRF-funded researchers		
Data limitations	The collection of data is done by the implementing agency and the comprehensive information is only available after the close of the financial year. The articles reported on are those published within an academic year (1 January to 31 December) and each article reported on is distinct.		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator			
Source data	• Consolidated HCD contracts entered into with the NRF on funding of researchers. • Payment stub on funds transferred relating to the funds in the consolidated contract. NRF project reports on accredited research papers • Database or list of peer-reviewed accredited research papers published		
Collection Frequency of Source data	Annually		
Archiving of Source Data	Alfresco.		
Type of information to be extracted from the source data	Number of accredited research articles published by NRF-funded researchers.		
IT Systems/ Tools used to capture extracted data	Alfresco		
Source Data Capturing Frequency	Annually		
Individual(s) responsible for collecting the source data	Deputy Directors in the Research Support unit	**Individual(s) responsible for filing/ archiving the collected source data**	Deputy Director: Research Support
Individual(s) responsible for extracting the required information from the source data	Deputy Director: Research Support	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	Director: Research Support unit CD: HCSP
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: Research Support	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director: Research Support unit CD: HCSP

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco/Funded researchers - research articles in the Web of Science Database	
Type of performance information to be extracted/ used		Published research articles	
Calculations required on extracted information		Sum of research articles in the Web of Science Database published by NRF-funded researchers	
Archiving of Extracted / Recalculated Information		Alfresco.	
Return Format		Spreadsheet.	
Reporting Frequency		Annually	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Deputy Director: Research Support	**Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information**	Director: Research Support CD: HCSP
Individual(s) responsible for archiving the extracted/ recalculated performance information	Deputy Director: Research Support	**Individual(s) responsible for sending the information in the required return format to the ----------**	Director: Research Support

Performance Indicator 8

Medium–term objectives, measure/indicator, outputs, and targets	Output Name Enhance science modes capability of MeerKAT through additional receivers and correlator installation	Date 31 March 2020

Overview of the objective, output, measure / indicator and target to be reported on			
Programme #		Programme 4	
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans		Development of priority science areas	
Objective Statement		To strategically develop priority science areas in which South Africa enjoys a competitive advantage, by promoting internationally competitive research and training activities and outputs.	
Indicator title		**Number of science mode receivers installed on MeerKAT by 31 March 2020**	
Purpose of indicator	To enable scientific observations and to allow MeerKAT correlator to produce good quality images of the telescope	Type of indicator	Output
Measure / Indicator Definition	Number of large survey project science modes installed on MeerKAT correlator LSP demonstration observations . This is an additional frequency range covered by the telescope)	Measure / Indicator Formula	Number of survey science modes installed on MeerKAT on MeerKAT correlator.
New Indicator	Yes	Desired performance	8 Large survey project science mode installed on MeerKAT correlator (Director's report) - Satisfactory performance would be good quality images of the telescope confirmed by the SKA SA User Committee confirmation letter.
Measure / Indicator Owner	DDG: RDS	Worked example	
Target set for current year	**Annual:** 8 Large survey project (LSP) science mode installed on MeerKAT correlator by 31 March 2020	Target achieved	Actual target achieved. Q1 – N/A Q2 – Q3 – Q4 – YTD - :

	Quarterly: **Q1** – No target **Q2** – SKA SA Project approved progress report on installation of LSP science modes on MeerKAT correlator provided by 30 September 2019 **Q3** – No target **Q4** – 8 LSP science mode installed on MeerKAT correlator by 31 March 2020		
Data limitations	Nominally, at any time about 5% of antennas may be in for maintenance, and this can affect the MeerKAT correlator and the science modes		
Reasons for variances between the target set and actual achieved	N/A		

2. Collection of source data to enable effective reporting on the adopted output measure / indicator			
Source data	• Official SKA Report • Letter from SKA SA Project Director (available 2nd, and 4th quarter)		
Collection Frequency of Source data	Biannually		
Archiving of Source Data	Alfresco		
Type of information to be extracted from the source data	Measure of Array Functionality for the Q4 goal.		
IT Systems/ Tools used to capture extracted data	Alfresco		
Source Data Capturing Frequency	Biannually		
Individual(s) responsible for collecting the source data	Deputy Director: Radio Astronomy Projects:	**Individual(s) responsible for filing/ archiving the collected source data**	Deputy Director: Radio Astronomy Projects:
Individual(s) responsible for extracting the required	Deputy Director: Radio Astronomy Projects	**Individual(s) responsible for verifying the accuracy and completeness of**	Director: Radio Astronomy Projects

information from the source data		**the extracted information**	
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: Radio Astronomy Projects:	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director: Radio Astronomy Projects

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information			
Performance Information Source		Alfresco	
Type of performance information to be extracted/ used		Progress towards achieving the Q4 (Annual) Goal with reference to baselined schedule provided.	
Calculations required on extracted information		Verify whether identified milestones in baselined plan has been achieved	
Archiving of Extracted / Recalculated Information		Alfresco	
Return Format		Word document	
Reporting Frequency		Biannually	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	Deputy Directors	Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information	Director: Radio Astronomy Projects Act Chief Director: Astronomy
Individual(s) responsible for archiving the extracted/ recalculated performance information	Directors	Individual(s) responsible for sending the information in the required return format to the ----------	Director: Radio Astronomy Projects

Performance Indicator 9

Medium–term objectives, measure/indicator, outputs, and targets	Output Name Participants in science awareness and engagement programmes managed by the NRF and other service providers.	Date 31 March 2020

1. Overview of the objective, output, measure / indicator and target to be reported on			
Programme #	Programme 4		
Programme's Strategic Objectives (as per the Strategic Plan and the annual Performance Plans	Promote science engagement		
Objective Statement and definition (also supported by Indicator Definitions)	To promote public engagement on science, technology and innovation.		
Indicator title	**Number of participants in science awareness and engagement programmes annually as reflected in project reports of the NRF and other service providers.**		
Purpose of indicator	Quantifies participants in science awareness and engagement programmes	Type of indicator	Output indicator
Measure / Indicator Definition	Minimum number of participants in science awareness and engagement programmes (STEMI Olympiads and competitions, science festivals, National Science Week and science centres) as reflected in the NRF project reports and those of other service providers. Participants include members of the public who took part in awareness and engagement activities.	Measure / Indicator Formula	Number of participants = Minimum estimates of various members of the public who took part in science awareness and engagement activities (through the National Science Week, science festivals, science centres, conferences and STEMI Olympiads, as well as social and mainstream media)
New Indicator	Continues from the previous financial year	Desired performance	Yearly increase
Measure / Indicator Owner	Director: Science Promotion	Worked example	Due to a range of different activities involved, a variety of approaches are used to measure publics' participation in science awareness and engagement. Approaches used are explained in the annual covering report and they include, but not limited to headcount. Headcount example:

			10 000 learners participated in Eskom Expo for Young Scientists in 2016/17. The total number of participants comprises 4 000 male learners and 6 000 female learners who presented projects at regional finals of the Expo.
Target set for current year	**Annual:** Not less than 2.1 million participants (learners and members of the public) in science awareness and engagement programmes annually as reflected in the project reports of the NRF and other service providers by 31 March 2020 **Quarterly:** **Q1 –** Grant funding awarded to organisations implementing the initiatives by 30 June 2019 **Q2 –** National Science Week held by 30 September 2019 **Q3 –** 3 science festivals and 6 science, technology, engineering, mathematics and innovation Olympiads and competitions held by 31 December 2019 **Q4 –** 4 science festivals conducted and not less than 2.1million participants in science awareness and engagement programmes as reflected in project reports of the NRF and other service providers by 31 March 2020	Target achieved	Actual target achieved. Q1 – Q2 – Q3 – Q4 – YTD - :
Data limitations	• Complete data on participation is only available after receipt of preliminary annual or final project reports (Quarter 4) from the NRF and other relevant service providers. The acceptable margin of error on reported data is up to 7%. • Participants can participate in more than one event or engagement, increasing the chance of repeated counting, if not timeously detected.		

Reasons for variances between the target set and actual achieved	N/A

2. Collection of source data to enable effective reporting on the adopted output measure / indicator			
Source data		• Contracts entered into with the NRF and other service providers • Quarterly projects reports submitted by the NRF and other relevant service providers. • Annual or final project reports submitted by the NRF and other service providers • Internally produced Annual Science Engagement Synoptic Report	
Collection Frequency of Source data		Quarterly	
Archiving of Source Data		Alfresco	
Type of information to be extracted from the source data		Number of participants in science awareness and engagement programmes Demographic information of participants Analysis of stakeholders and role players	
IT Systems/ Tools used to capture extracted data		Alfresco/spreadsheet	
Source Data Capturing Frequency		Quarterly	
Individual(s) responsible for collecting the source data	Livhuwani Masevhe (Deputy Director: Science Promotion) Bersan Lesch (Deputy Director: Science Promotion)	**Individual(s) responsible for filing/ archiving the collected source data**	Livhuwani Masevhe (Deputy Director: Science Promotion) Bersan Lesch (Deputy Director: Science Promotion)
Individual(s) responsible for extracting the required information from the source data	Livhuwani Masevhe (Deputy Director: Science Promotion) Bersan Lesch (Deputy Director: Science Promotion)	**Individual(s) responsible for verifying the accuracy and completeness of the extracted information**	Director: Science Promotion Chief Director: HCSP
Individual(s) responsible for capturing the extracted information onto the IT System	Deputy Director: Science Promotion	**Individual(s) responsible for verifying the accuracy and completeness of the captured information**	Director: Science Promotion Chief Director: HCSP

3. Quarterly and Annual Reporting of Collected/ Extracted Performance Information	
Performance Information Source	Quarterly and annual project reports from the NRF and relevant service providers
Type of performance information to be extracted/ used	Number of participants in science awareness and engagement programmes Participation according to demographics Stakeholders' and related organisations' participation

Calculations required on extracted information		Number of participants in science awareness and engagement programmes	
Archiving of Extracted / Recalculated Information		Alfresco	
Return Format		Microsoft word and/or spreadsheet	
Reporting Frequency		Quarterly	
Individual(s) responsible for extracting, calculating and consolidating the reported performance information	• Livhuwani Masevhe (Deputy Director: Science Promotion) • Bersan Lesch (Deputy Director: Science Promotion)	**Individual(s) responsible for verifying the accuracy and completeness of the extracted performance information**	Director: Science Promotion Chief Director: HCSP
Individual(s) responsible for archiving the extracted/ recalculated performance information	Deputy Director: Science Promotion	**Individual(s) responsible for sending the information in the required return format to the ----------**	Director: Science Promotion