



science & innovation

Department:  
Science and Innovation  
REPUBLIC OF SOUTH AFRICA

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## THE SOUTH AFRICAN POLAR RESEARCH INFRASTRUCTURE (SAPRI)

Internationalisation-Collaboration-Integration-Optimisation-  
Innovation

Credit: Andrew McDonnell (NSF)

# Next steps



- Update community and get feedback
- Final signing of contract between NRF and DSI, then enter implementation phase
- Appoint interim SAPRI manager
- Address points raised by community and continue stakeholder engagement
- Begin the process of setting up various panels and committees
- Begin the transformation plan

# A Transformed SAPRI - The Evolution:

Through transformative change, nature can still be conserved, restored and used sustainably. By transformative change we mean a fundamental, system-wide reorganisation across technological, economic and social factors, including paradigms, goals and value

Sir Robert Watson, Chair of IPBES

## SAPRI in 3 years time:

- 4 black PDP instrument scientists across the IFs
- At least 4 black PIs submitting SANAP proposals
- A full disclosure report on transformation and diversity within polar sciences in South Africa and a plan implemented to address the blockages
- Current SANAP PIs actively driving transformation
- At least 70% of SAPRI staff are from designated groups

## SAPRI in 5-8 years time:

- 6-8 black PDP instrument scientists across the IFs, those finishing after 3-5 years employed in related positions
- 4 black PIs within SANAP
- Blockages to polar science released
- A transformed SANAP at the PI level
- Polar science programs active in HDIs
- Black polar science mentors

## Collaboration

Work in partnership with SAIAB's ACEP Phuhlisa and joint marine lab in a holistic non-competitive way that benefits the country

Role of DEFF & IFs and SANAP community  
- Provide trainers, internships, access, careers

## Society (DPS)

Use polar science in schools to support the curriculum, create awareness of opportunities through visiting the ship etc

Enhance public understanding of Polar science, create interest and a pipeline from the ground up

Significant ring fenced resources (in addition to the minimum budget) needed to make a recognisable shift, as well as a long term vision.

**Effective Transformation**  
To transform polar sciences we need to move to a diverse and equitable landscape that is inclusive and transformational at the institutional level

Short term impacts will not make a significant difference, adopt a long term vision with KPIs that grow accordingly

## How?

## Students

Association of Polar Early Career Scientists APECS. Encourage PIs of SANAP to be mentors

Continue to work closely with SEAmester to inspire students from all SA HEIs in all disciplines of polar science

In parallel use internships, PDPs and learning from the SKA/SAAO approach and ensure that students get to spend time in the integrated facilities to elevate their skills, this will be at the natural and social science, technical and engineering levels

## SAPRI Staff

Recruitment in transformation - following NRF policies but also looking to the long term at career paths and developing staff

## SAPRI Management Task

co-develop an approach with previously disadvantaged Universities, in collaboration with SAIAB

identify keen researchers from PDHEIs new to polar science

build up from co-supervision

look at possible start up grants/thuthuka funding





SANAP PI's get involved, act as mentors, discuss with ASSAf, work with HEIs who are currently part of SANAP, workshops to support proposal writing, encourage researchers from other disciplines, provide mentorship, attendance at SANAP symposium



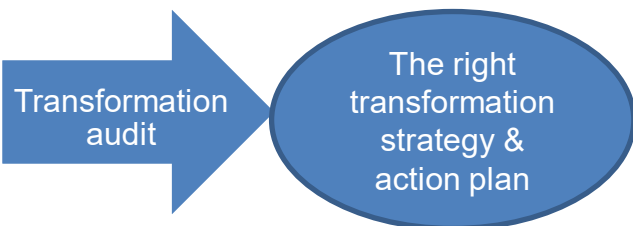
Adapt science for grades 11-12, highlight polar careers, provide role model type videos, involvement in Antarctic coalition, social media campaigns, in the long term create a road show providing the Antarctic experience



Enhance science context module of Antarctic legacy and roll it out to first year undergrads in across disciplines, across the country, initiate polar open days at universities. Create Icemester or Seamester Marion and include a polar component on Seamester



Co-develop approach with PDIs and key stakeholders, identify keen researchers from PDIs new to polar science, look at possible start up grants funding, build up from co-supervision. Recruitment - follow NRF policies but also look to long term career paths and developing staff



A service provider to design, facilitate, monitor and evaluate the SAPRI transformation process

# A Three-prong Transformation Plan:

## PDP Accelerator Program:

- 4-6 black PDP (Postdoc instrument scientists)
- 3 years funding, with possibility for 2 year extension
- Develop infrastructure and instrument scientists
- E.g. areas of interest - Benthic instruments, atmospheric, space science, autonomous ocean platforms, polar lab, geomorphology in Antarctica, top predators
- Develop small programs around each PDP
- Need not have had experience in Southern Ocean
- Funded by the SAPRI

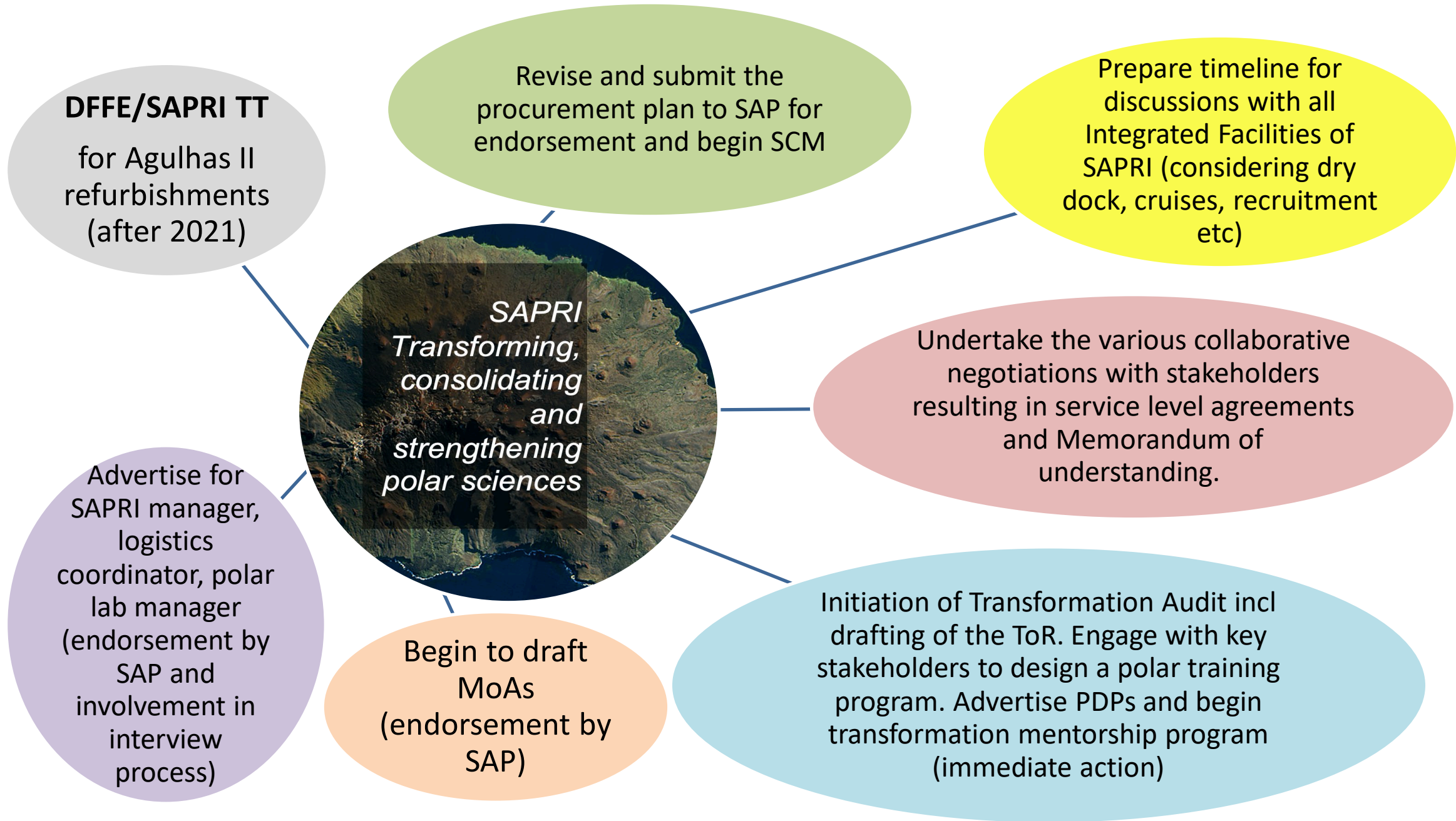
## Transformation Mentor Program:

- Established black researchers (with support of their institutes) who may have missed, or been under-supported, during the SANAP calls
- Build research infrastructure based programs around them
- Mentor 1-2 students / young researchers per Mentor (with co mentorship if required from well established SANAP researcher)
- Thus an incubator for transformed science in Polar Research

## Consultancy on Transformation:

- Impartial consultant undertakes an overview of blockages holding back transformation in Polar Research
- Diversity workshops held with all current, and even historical, SANAP PIs





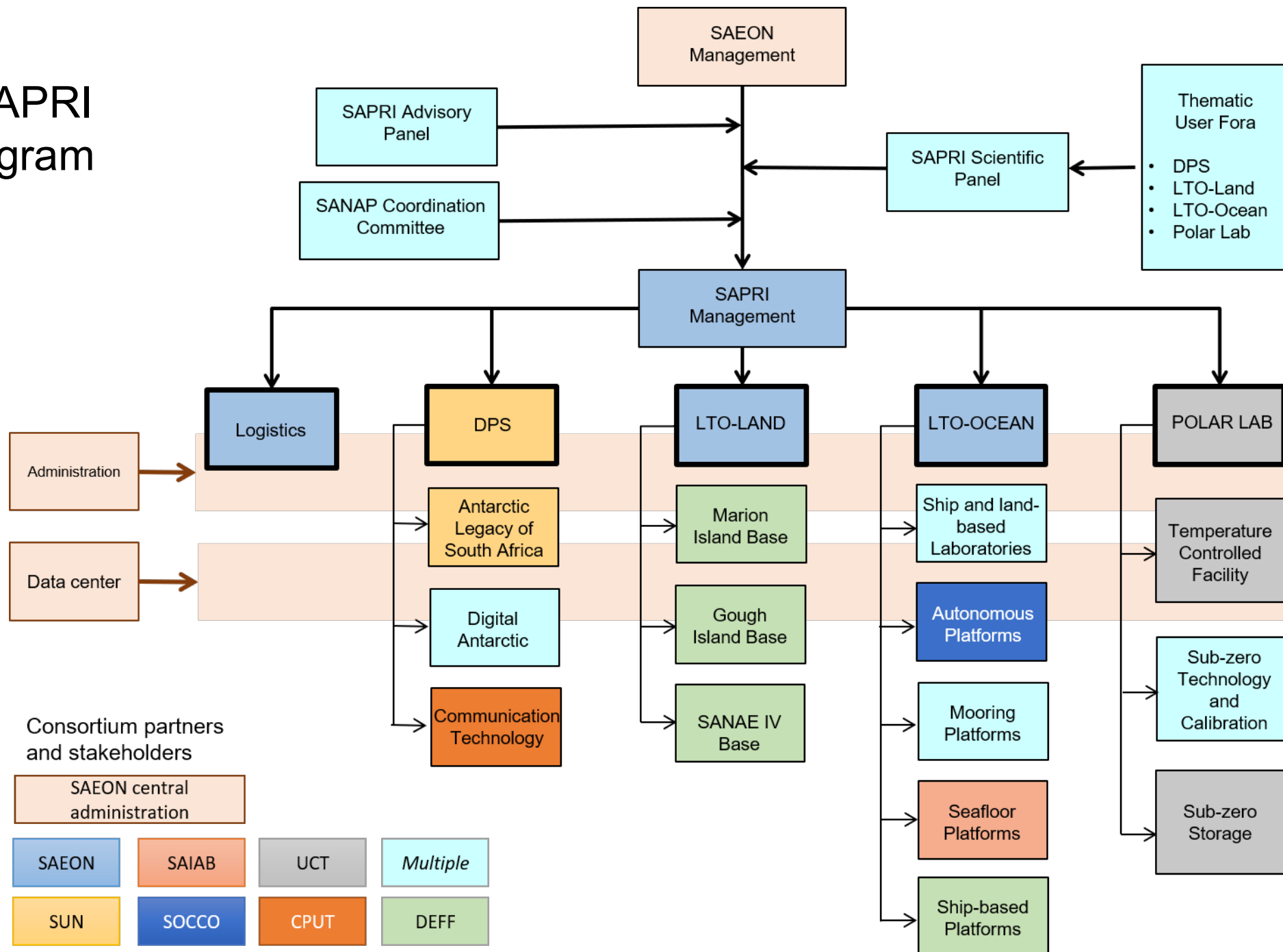
# Draft procurement plan

Infrastructure	Year 1	Year 2	Year 3
Multi-beam echosounder <sup>3</sup>	n/a	R8,000,000	n/a
DIGSAA2 vessel racks	R700,000	n/a	n/a
Wave Radar	R5,000,000	n/a	n/a
Vessel refurbishment (labs, sensors, instrumentation)	R1,450,000	n/a	n/a
GAW installation on vessel	n/a	n/a	R2,000,000
PCO2 refurbishment on vessel	n/a	n/a	R2,000,000
SOCCO (and STS contract)	R5,000,000	R2,500,000	R2,500,000
Terrestrial field gear (all bases)	R500,000	R500,000	R500,000
Terrestrial field refurbishment (skidoos, etc)	n/a	R500,000	R500,000
Pisten bully and new transport vehicles (Antarctica)	R2,000,000	n/a	n/a
Marion Island tags (mammals)	n/a	R200,000	R200,000
Mooring infrastructure	R500,000	R250,000	R500,000
Floats, drifters, sea ice trackers	R1,000,000	n/a	R325,000
SANSA infrastructure	R1,000,000	R1,000,000	R1,000,000
Benthic instruments	R900,000	R750,000	R750,000
Sub-zero polar container lab	R1,000,000	n/a	n/a

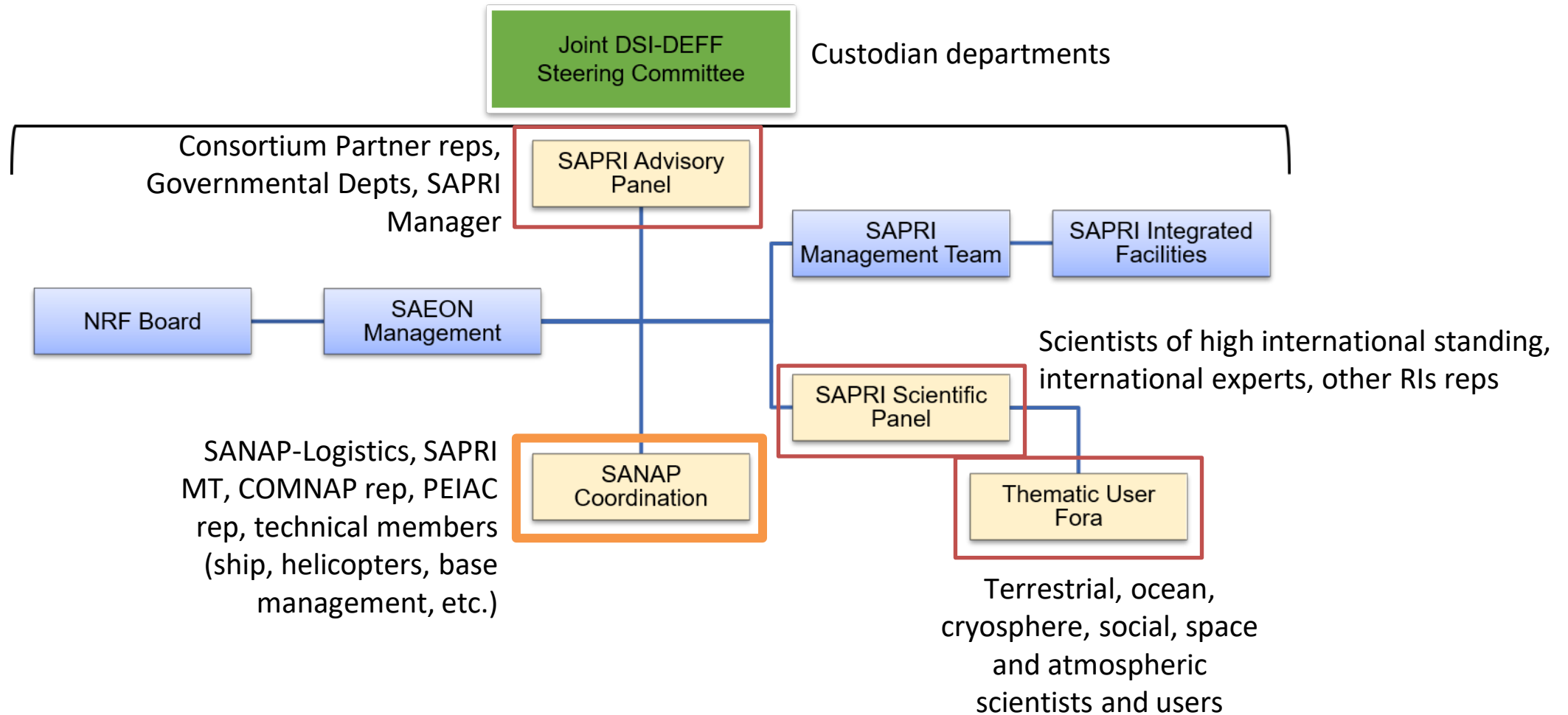
	SAPRI Data Centre Infrastructure	R500,000	n/a	n/a
<b>Sub-total - Infrastructure:</b>		<b>R19,550,000</b>	<b>R13,700,000</b>	<b>R10,275,000</b>
<b>Running Costs</b>	Transformation audit	R150,000	R200,000	R 200,000
	ICT (staff)	R300,000	R350,000	R50,000
	Mooring consumables	n/a	n/a	R500,000
	Laboratories consumables	n/a	R500,000	R605,295
	Administration	R100,000	R107,250	R110,250
	Training	R100,000	R303,000	R275,893
	General travel	R200,000	R209,000	R220,495
	UCT Polar Laboratory consumables	R250,000	R500,000	R527,500
	Report writing	R50,000	n/a	n/a
<b>Sub-total - Running Costs:</b>		<b>R1,150,000</b>	<b>R2,169,250</b>	<b>R2,489,433</b>



# The SAPRI organigram



# Proposed SAPRI Advisory Structures



# What

# Who

# Why

# How

**SAPRI  
advisory  
panel**

(interim) SAPRI manager, DFFE and DSI representative, IF representatives, other government departments eg DIRCO PWI, DoT

Approve ToRs for task teams and procurement plans for SAPRI Ifs, connection to ASOS, align SAPRI infrastructure to SANAP. Will have larger role until scientific committee is formed

Draft ToR to be written, nominations sought from institutional stakeholders via official letter from the SAPRI (interim) manager

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Ensure alignment of SANAP science projects with infrastructure availability including integration of Antarctic legacy and data

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Oversee science objectives of the SAPRI, provide recommendations to the advisory board

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## SAPRI thematic user fora

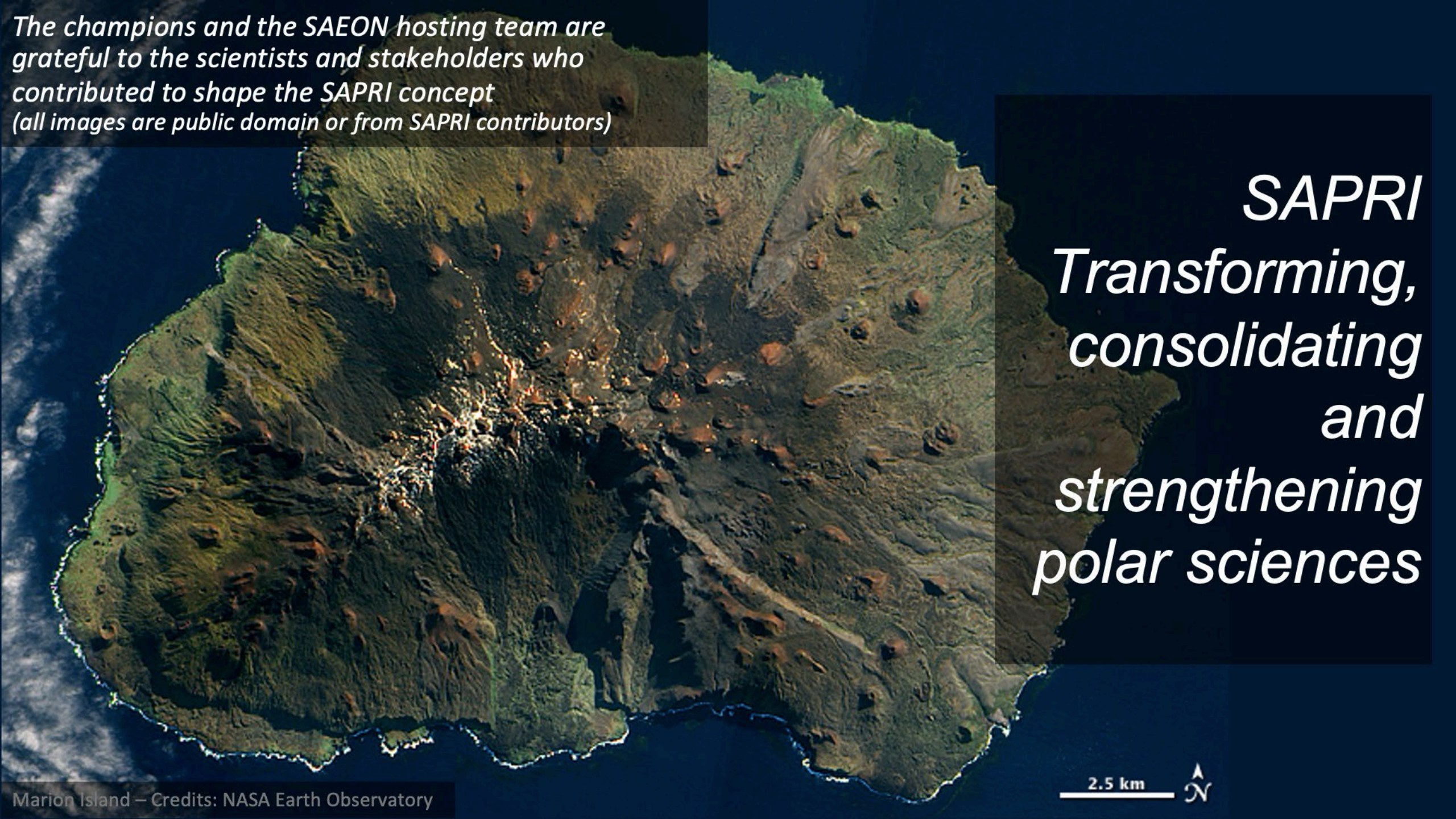
interim chaired by SAPRI team until the coordinating officers are appointed (DPS, LT Land, LTO, polar lab)

Provide community input into SAPRI, provide recommendations to science panel

Through self nomination, a form will be widely circulated



*The champions and the SAEON hosting team are grateful to the scientists and stakeholders who contributed to shape the SAPRI concept (all images are public domain or from SAPRI contributors)*



**SAPRI**  
*Transforming,  
consolidating  
and  
strengthening  
polar sciences*