COMMUNITIES OF PRACTICE (COP)
INTEGRATED WORKSHOP AND TRAINING **2026**

Satellite Communications and Navigation

INTEGRATED WORKSHOP

An initiative of the DSTI that is hosted and managed by the CSIR

science, technology & innovation
Department:
Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

NEOSS
NATIONAL EARTH OBSERVATIONS AND SPACE SECRETARIAT

Draft Strategy and Workplan 2026–2030

SAOGEO
SOUTH AFRICAN GROUP ON EARTH OBSERVATIONS

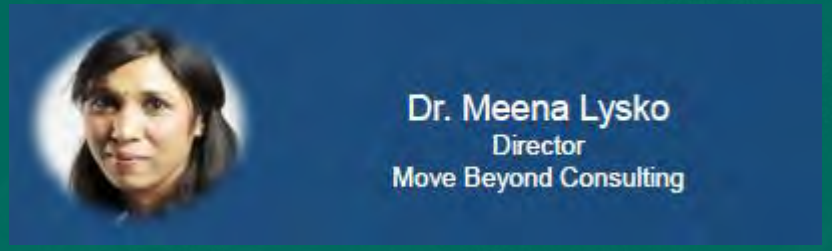
SAOGSC
SOUTH AFRICAN GROUP ON SATELLITE COMMUNICATIONS

SAOGSN
SOUTH AFRICAN GROUP ON SATELLITE NAVIGATION

CSIR
Touching lives through innovation

CoP Co-Chairs

Contributed as a member of the B20 ITI (industrial transformation & innovation) taskforce. He's Director at ZASpace & Aerospace Maritime Defence industry association, Chairing the Space Committee and AI &Quantum sub-committee. As Deputy Chair of Manufacturing at BRICS Business Council he has directed the ToR (2023) for 4IR/5IR ready industrialisation. He also supported the drafting of the BRICS Regional Aviation MoU (2018). With Science Diplomacy at hand, matched to dual-use technologies and indigenous intellectual property rights, he is enabling meaningful PPPs as a signatory to the 2019 Pretoria Statement/ Recommendation on Science Technology & Innovation



Over two decades of experience bridging applied research, programme delivery, and stakeholder coordination in space and Earth observation–related initiatives. She holds a PhD in Physics and has contributed to national programmes spanning Earth observation calibration/validation, space capability development, and data-driven decision support. Has led multi-partner projects involving curriculum design, capacity building, and evidence-based monitoring and evaluation, with a strong focus on inclusive participation and practical institutional uptake.

Strategy at a glance

A coordinated, inclusive and resilient satellite communications and PNT ecosystem for South Africa and the region

Element	Proposed position
Vision	**A trusted, inclusive and resilient** satellite communications and PNT services ecosystem that improves lives, strengthens public services and enables sustainable socio-economic development in South Africa and the region.
Mission	Mobilise a **user-led** national and regional community that identifies requirements, coordinates capabilities, builds knowledge, enables **collaborative innovation** and accelerates **responsible adoption** of satellite communications and navigation solutions.
Strategic premise	Satellite communicators and PNT are application domains and **enabling infrastructure** for Earth intelligence, **inclusive connectivity**, **safe mobility**, **disaster resilience**, **critical infrastructure** and **regional integration**.
Operating stance	**Neutral convener**, requirements broker, **knowledge platform**, technical advisory community, **testbed catalyst**, **standards** and **regulatory-awareness forum**, and **collaboration incubator**.
Delivery discipline	A small portfolio of **prioritised**, **resourced** and **measurable** work packages with explicit **adoption pathways**, independent **evaluation** and **annual reporting**.
Geographic orientation	**South Africa first**, with deliberate **SADC**, **African Union**, broader **African**, **Global South** and **Global North** collaboration where common infrastructure, standards and user needs justify a regional approach.

Our geographic reach

South Africa First | SADC | African Union | Broader African | Global South | Global North

Our guiding values

Inclusivity & user-centricity | Integrity & transparency | Resilience & safety | Collaboration & partnership | Impact & sustainability

Strategy at a glance

Our challenge areas guide a coordinated, user-centred approach to deliver impact

From Strategy to Delivery: Three-Year Roadmap

Establish the enabling environment, demonstrate priority solutions

Year 1: Establish and design

- Approve governance, resource and sustainability model
- Establish user-requirements, capability and duplication registers
- Regulatory Guide
- National and SADC SATCOM alignment workshop
- Funding, partnership and data-room templates

Year 2: Demonstrate and mobilise

- Apply the operating model across the portfolio
- Use requirements in selected pilots
- Update regulatory guidance and coordination inputs
- Develop regional concepts and key messaging
- Support with elevator pitch and brainstorming (minimal viable product)

Year 3: Evaluate and scale

- Review and refine the operating model
- Assess influence and refresh priorities
- Conduct annual regulatory and impact review
- Maintain regional liaison and scale selected initiatives
- Furnish initial due diligence checklist, term-sheet processes and scale-up finance networking

Cross-cutting enablers: governance | regulatory readiness | user ownership | technology neutrality | funding and bankability | evidence-based decision checkpoints

Priority Missions and Demonstrators

A focused portfolio responding to connectivity, resilience, transport and environmental needs.

Rural and emergency connectivity

Multi-provider satellite–terrestrial pilots for underserved communities and emergency services.

Y1 design + approvals | Y2 implement + measure | Y3 adopt, redesign or stop

Responsible space operations

Operator-contact readiness, UN SOCH awareness and service-continuity exercises.

Y1 contact framework | Y2 exercise + refine | Y3 annual readiness cycle

Assured PNT and signal augmentation

Digital sandbox, hardware testing and field validation under degraded conditions.

Y1 sandbox + design | Y2 controlled tests | Y3 independent evaluation + scale decision

Space-enabled aviation: SAATM/AfCFTA

GNSS/SBAS, communications, surveillance, space weather and regional aviation infrastructure.

Y1 scope + baseline | Y2 green paper + demonstrator design | Y3 corridor prep or handover

Satellite IoT

Hybrid sensing solutions for agriculture, water, conservation, mining and remote infrastructure.

Y1 select + design | Y2 implement pilots | Y3 evaluate + scale selected cases

National and SADC SATCOM alignment

Consolidated user requirements, complementary programmes and shared regional opportunities.

Y1 alignment + requirements | Y2 regional concepts + proposals | Y3 liaison + selected scale-up

Primary partners: user owners | DCDT + SANSA | SADC institutions | ICASA + sector authorities | operators | ATNS + SACAA | research and social-impact teams

Building Future Capability and Sustainable Impact

Developing advanced technologies, skills, partnerships and investment readiness.

Optical and quantum communications

Capability map → ground demonstrator → conditional mission decision
Focus: photonics, optical ground segment, standards and communications security.

Quantum-enabled maritime and GNSS-denied PNT

Evidence map → green paper + expert review → conditional hardware trial
Focus: civilian, industrial and dual-use requirements with rigorous benchmarking.

Human capital and industrialisation

Skills framework → training + industry participation → outcomes and export-readiness review
Focus: SMMEs, suppliers, standards participation and technology transfer.

Knowledge, collaboration and bankability

Register + templates → business cases + data rooms → due diligence and scale-up finance
Focus: funders, investors, insurers and implementation-ready projects.

Intended impact by 2030

- Active challenge-based innovation community contributing validated requirements, datasets and solutions
- Stronger local research capability, specialist skills, SMME and industry participation
- Pipeline of technically credible, bankable and insurable projects with adoption pathways

Guardrail: advanced technology progresses only after validated need, benchmark evidence, funding, mandate alignment and adoption path

Implementation roadmap

Phased approach to establish, develop, demonstrate and scale the CoP over 18 months

1	2a	2b	3	4	5	6	7
ESTABLISH Aug–Oct '25	**BASELINE & REQUIREMENTS** Sep '25–Feb '27	**BUSINESS MODEL & FUNDING** Oct '25–Mar '27	**PRIORITISE PORTFOLIO** Jan–Apr '27	**DESIGN & MOBILISE** Apr–Sep '27	**DEMONSTRATE & MEASURE** Oct '27–Dec '28	**EVALUATE & OPERATIONALISE** Jan–Jun '29	**SCALE & REPLICATE** Jul '29–Sep '30
Establish CoP Approve strategy and ToR, confirm governance, Steering Committee, workstreams, rules and initial annual plan.	**Baseline and requirements** Stakeholder map, capability and facility inventory, project register, regulatory/ orbital observatory, user requirements and duplication analysis.	**Business model and funding** Establish the Funding and Partnership Opportunity Register, develop bankability, term-sheet readiness and data-room templates; identify initial funding and insurance pathways for priority projects.	**Prioritise portfolio** Select work packages and flagship pilots; confirm users, implementation leads, baselines, metrics and funding concepts; Match projects to relevant funders and financing instruments.	**Design and mobilise** Prepare business cases, technical requirements, partnerships, funding proposals, bankability assessments, data rooms, test plans and governance approvals.	**Demonstrate and measure** Implement selected pilots and testbeds; measure performance, cost, usability, resilience, inclusion and societal benefit.	**Evaluate and operationalise** Decide which pilots to scale, redesign or stop; prepare adoption, procurement and operating or handover plans.	**Scale and replicate** Mobilise scale-up finance, investment and appropriate insurance, deepen skills and industrial participation, and publish impact.

CROSS-CUTTING ENABLERS

- User needs & ownership
- Regulatory readiness & compliance
- Partnerships & collaboration
- Funding, bankability & resource mobilisation
- Evidence, monitoring & impact
- Transparency, ethics & security

Our outcome by 2030

- A thriving, inclusive CoP delivering evidence-based solutions to real user needs across Africa.
- Stronger capability, skills and industrial participation, with measurable contribution to economic growth and resilience.
- A pipeline of bankable, insurable projects matched to funding and adoption pathways for scale impact.

Boundaries and mandate safeguards

- ***The proposed sandbox and test environment will be a collaborative, pre-operational research and validation capability.***
- Operational mandates, licensing, safety approval, measurement standards and accreditation remain with the legally responsible organisations.
- The CoP will not allocate spectrum, issue licences, make formal legal determinations or act as a regulator.
- The CoP will not select or promote a preferred satellite operator, constellation, orbit, vendor or proprietary platform.
- The CoP will not operate a national satellite communications, navigation, space-weather, air-navigation, calibration, certification or accreditation service.
- Activities involving RF transmission, intentional interference, controlled airspace, operational transport systems, protected astronomy sites, critical infrastructure, defence or classified material will proceed only through the responsible institutional and regulatory channels.
- General quantum computing, free-electron lasers and broad AI topics are not core activities unless directly tied to communications, navigation, timing, sensing, service assurance or a validated user need.

Need members to participate

- Review and comment on the draft strategy
- Confirm expectations and priority needs for the CoP
- Indicate work packages of interest
- Volunteer for a workstream or task team
- Identify relevant expertise, facilities, data or partnerships
- Confirm possible in-kind contributions
- Assist by direct membership referrals
- Setup frequent/regular CoP project development meetings

How to reach us

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