

TERMS OF REFERENCE
OF THE
MATHEMATICAL SCIENCES STRATEGIC ALLIANCE

(version of 27 February 2024)

PREAMBLE: The significance of the mathematical sciences is paramount as it underpins most South Africa’s national initiatives, both existing and in planning stages. The efficacy and success of these initiatives are predicated upon a robust mathematical sciences foundation. The central role of the mathematical sciences in 21st century innovations as well as being an indispensable tool in addressing and responding to contemporary global challenges is universally well recognised. The current epoch is marked by the omnipresence of the mathematical sciences.

A national review of the mathematical sciences commissioned by the erstwhile Department of Science and Technology acknowledged that, although South Africa boasts certain areas of excellence in mathematical research and education, the overall educational infrastructure exhibits substantial deficiencies. Despite significant investments by multiple role players and stakeholders in addressing the chronic under-performance, these problems persist. The Mathematical Sciences Strategic Alliance (MSSA) seeks to initiate a national dialogue that will bring about greater coordination and collaboration in strengthening the mathematical sciences in South Africa. This could lead to developing a medium-to-long term holistic National Strategy for the Mathematical Sciences.

Purpose: The Mathematical Sciences Strategic Alliance is dedicated to elevating the status and quality of the mathematical sciences in South Africa through strategic planning and collaborative engagement. Its main objective is to shine a spotlight on the need to build a robust mathematical sciences infrastructure to best address the challenges of underperformance of the educational system in a unified manner; and to foster coordination and collaboration amongst the various players concerned with ensuring that South Africa best unleashes the power of the mathematical sciences in responding to contemporary challenges.

Principles: The activities of the Mathematical Sciences Strategic Alliance will be underpinned by the following principles:

- Inclusivity.
- Diversity.
- Collaborative.
- Action-driven.
- Consultative.
- Accountability.

Governance: The Mathematical Sciences Strategic Alliance will initially be led by an independent compact agile Strategy and Steering Committee which will consist of the leadership of the entities listed below covering the mathematical sciences, and who are strongly committed to the aims and objectives of the Mathematical Sciences Strategic Alliance initiative. They are drawn from national organisations and entities that met in Stellenbosch in June 2023 under the theme *“Towards a National Strategy for the Mathematical Sciences”*.

- (a) African Institute for Mathematical Sciences
- (b) Association for Mathematics Education in South Africa
- (c) Centre of Excellence for the Mathematical and Statistical Sciences
- (d) Community of Practice in Mathematical Sciences of USAF
- (e) National Graduate Academy for Mathematical and Statistical Sciences
- (f) National Institute for Theoretical and Computational Sciences
- (g) Operations Research Society of South Africa
- (h) South African Gravity Society
- (i) South African Mathematical Society
- (j) South African Mathematics Foundation
- (k) South African Statistical Association
- (l) Southern African Mathematical Sciences Association

The Strategy and Steering Committee (SSC) will elect two Co-Chairpersons from amongst its membership.

Role of the Strategy and Steering Committee: The primary role of the Strategy and Steering Committee is to provide strategic leadership for the Mathematical Sciences Strategic Alliance and mobilise broad support for its goals and objectives. Its responsibilities will include, but not be restricted to

(a) Short term goals

- Undertake a broad and comprehensive consultative process promoting the vision of the Mathematical Sciences Strategic Alliance.
- Ensure that an inclusive broad-based platform is established that involves all the role players in Academia, Government, and Industry.

- Ensure that the workstreams established after the June meeting deliver on their mandate and put forward recommendations that can be acted on to realise the short-term goals identified in June 2023.
- Ensure that its activities are aligned with and/or enhance those of the existing organisations active in the national mathematical sciences landscape.
- Mobilise the necessary resources required to achieve the goals above.

(b) Medium-to-long term goals

- Advocate for the development of a National Strategy for the Mathematical Sciences.
- Seek professional advice and consult broadly about creating a national Mathematical Sciences Development Fund.
- Identify new structure(s), for example a National Institute for the Mathematical Sciences, that may need to be established in order to realise the long-term objectives of a well-functioning and productive mathematical sciences infrastructure.

Power and Authority: The Strategy and Steering Committee will have the power and authority to

(a) Establish subcommittees or workstreams which will be charged with developing plans around issues identified by the SSC.

(b) Co-opt members who may have special skills or, where necessary, to give effect to the principles enunciated above.

The Strategy and Steering Committee will not have the authority to speak on behalf of organisations involved with the Mathematical Sciences Strategic Alliance; and will avoid any actions that may be seen to be in competition with those of members of the Alliance.

Administrative and Management Support: The work of the Mathematical Sciences Strategic Alliance will be supported by South African Mathematics Foundation (SAMF) under the leadership of SAMF General Manager. The SAMF will:

- Act as a funding body to raise and award funding to support all of the MSSA's work.
- Appoint a Project Manager who will carry out the MSSA's strategic, technical, administrative and logistical functions as directed by the SSC.
- Develop and maintain a mathematical sciences landscape base.

Dissolution: The Mathematical Sciences Strategic Alliance may be dissolved, subsumed into or replaced by appropriate structures that are best suited to deliver on the long-term goals that serve the mathematical sciences in South Africa.