



Bongani Mabuza (ASEP)

1 Candidate Statement

Vision (2020-2025)

- To influence government structures by providing professional advice in terms of implementing the national development plan, specifically, in contributing towards the national system of innovation.
- To expand SE education across the South African Universities and ensure it is part of the postgraduate studies by fostering collaboration between different Universities and organisations offering SE training by 2025.
- To have mentorship and coaching programmes by 2020 that would grow and enable future system engineers.
- To uphold the vision of INCOSE SA CHAPTER towards being the leader in fostering the definition, understanding, and practice of world-class systems engineering in industry, academia, and government.
- To uphold the Global INCOSE Vision 2025 in terms of expanding the SE to many domains which would add their unique perspectives to the role systems engineering plays in serving our world's many complicated demands

Primary goals

- Collaboration: To support and seek opportunities for collaborative programmes with industry players, academic institutions and the government system of innovation initiatives in order to enhance and promote the research and practice of systems engineering.
- SE Training: To promote SE Education, skills development and knowledge sharing by supporting training initiatives and creating knowledge sharing environment.
- INCOSE SA membership: to support and drive initiatives aimed at expanding the INCOSE members
- SE competency framework: To assist in planning and professional development for system engineers. Hopefully, to also assist organisation in terms of recruiting system engineers.
- Seminar/Conferences/Meetings: To create more opportunities that would enable regular engagements for the SE community and also to contribute to SE body of knowledge.

2 Biography

Bongani Mabuza completed his matriculation at St. Josef's Comprehensive High School and pursued his further education at University of Pretoria where he obtained his Bachelor and Master's degree. During his postgraduate studies, he joined the Department of Electrical, Electronics and Computer Engineering at the University of Pretoria as a Teaching Assistance and later was appointed as junior lecture involved with research and lecturing undergraduate courses.

In pursuit of practical experience, he left University of Pretoria to join the industry and has worked at: Nokia Siemens Networks as a Software Developer for charging and billing applications for service provider, i.e. Vodacom; at Denel Dynamics as an Engineer working with IR signature, Radiometry and Electro-optics Department; and at SKA SA as System Analyst within system engineering team for the MeerKAT Telescope project. Currently, he works at CSIR Defence Peace Safety and Security division as Radar System and Signal Analyst.

His interest includes academic research, technical training, outreach programs to promote science and technology, signal processing, system analysis, signal analysis, system engineering, radar systems and microelectronics. His career objective is to enhance his personal growth and expertise through continued professional development and to apply his skills to solve problems in the ever changing and dynamic challenges of our lives.

3 Exposure to System Engineering

RCS Measurement Facility

- Involved in concept development, which include evaluating use cases, deriving high level requirements and costing the concept.
- Involved in drafting funding proposals for both internal and external funding.
- Providing system engineering support for capturing requirements into a CORE model and conducting some requirements review for the purpose of consistency and resolving conflicts.

MeerKAT Project

- The role was about analysing the required and actual performance of the telescope, and to evaluate the system will satisfy the user's needs.
- System analysis, modelling and trade-off studies for the purpose of requirements analysis. Includes analysing data and interpreting results to verify that subsystems or the system meet the requirements.
- Support of other System Engineering activities as and when required; including scripting.
- At SKA SA, I was instrumental in starting a System engineering workgroup as part of understanding the formal system engineering processes as defined by INCOSE handbook.
- Completed INCOSE ASEP certification exam together with SKA SE team.