

## Greatest Young Systems Engineers of the Year Challenge (GYSEYOY) 2015

*By Cobus Scannell*



In 2015 INCOSE South Africa launched a first of its kind Systems Engineering Challenge for up and coming young engineers. The goal of this challenge was to foster a deep interest, and a proficiency in Systems Engineering in our young engineers by means of a challenge. This initiative was named the Greatest Young Systems Engineers of the Year Challenge and abbreviated to GYSEYOY (pronounced jaai-soy).

As part of this challenge, the participating teams received 2 days training from Ad Sparrius on the Principles of Systems Engineering as well as 2 days training from Cobus Scannell on implementing these principles in the model-based systems engineering tool CORE™. The teams then received a basic problem statement with a few requirements as a starting point for the challenge. By using solid systems engineering processes and techniques, they had to come up with a concept to address the need detailed in the problem statement. This year the problem was from the medical field and revolved around the early detection of colorectal cancer. All the participants were from companies in the defence industry and challenging them to a problem in the medical domain really levelled the playing field.

There were two major milestones for this challenge, the first being the Requirements Review and the second the final review. At the requirements review the teams had to demonstrate how they applied Systems Engineering techniques to end up with a good set of requirements based on the problem statement. This included traceability and verification and validation. At the final review the participants needed to convince the evaluation panel of the process they followed to get to their final concept to address the need detailed by the problem statement.



In the end, the following three teams made it to the final review of the GYSEYOY 2015 Challenge:

- Armscor: Oubrey Maditsi, Victor Ndala, Morne Rapuling and Ashlin Ramdas.
- Denel Dynamics: Elsabé Ebersohn, Jeff Joseph, Purusha Naidoo and Yoshlyn Naidoo.
- Denel Land Systems: Gundo Phathela, Cameron Pillay, Pooven Pillay and Sergio Pillay.

The teams really stepped up to the challenge and the quality of their deliverables were exceptional. It was clear that they spent a significant amount of time and effort to get to their final concepts. The evaluation panel – Riaan van der Watt, Dr. Gareth Digby, Getnet Fanta under lead of Dr. Louwrence Erasmus – concluded that the team from Denel Dynamics were the winners of the GYSEYOY 2015 Challenge and this was announced on the first day of the INCOSE SA 2015 Conference in Pretoria. They also identified Purusha Naidoo as the Sharpest Young System Engineer of the year for 2015.

GYSEYOY had a dedicated track at the INCOSE SA 2015 conference. During this track the participating teams could share their concepts and how they got to them with a wider audience of conference attendees. As part of this track there was also a panel discussion about the GYSEYOY 2015 challenge and from this we received extremely valuable feedback from the participants as well as the INCOSE community.

This challenge gave a group of young engineers early exposure to systems engineering. Hopefully these learnings will serve them well in their careers. They were able to fine tune their knowledge of systems engineering by applying it to an actual problem and through this gain the confidence to share their opinions and defend their decisions.

A big thank you goes out to all of the people involved in making GYSEYOY 2015 such a success. This includes the organising team (Daniël Malherbe, Cobus Scannell and Ad Sparrius), the evaluation panel, and the participants and their respective companies for making the time available to participate. We would also like to particularly thank Denel Dynamics for making their venue available to us free of charge for the training and two review sessions. The final word of thanks to INCOSE South Africa for supporting and financing this first of its kind endeavor and for its continued support and passion for the development of our young systems engineers in South Africa.

We look forward to GYSEYOY 2016!