

## Western Cape Branch Event – 23 June 2016

On the evening of 23 June, INCOSE members in the Western Cape were treated to an entertaining talk by Dr. Ronnie McKenzie. The talk revolved around the application of Systems Engineering to large scale Water Resource Planning in South Africa.

The meeting was opened by our President Elect – Suja Joseph-Malherbe. Suja restated the tasks she set for herself as president, commencing in 2017, and the expected results of these goals for INCOSE SA. Her main focus areas are: Developing Skills Continuity; Sharing Systems Engineering Value with other engineering domains; and Executing on the operations plan for INCOSE SA.

Ronnie, as always, gave a very entertaining talk in his signature Scottish accent. His talk seemed particularly relevant when taking into consideration the water shortages across the country and the possibility of further water restrictions coming into effect. However, we need not be too worried right now. We are by no means experiencing a doomsday scenario. As Ronnie informed us, droughts are part of the cycle and you are either heading into a drought or out of a drought. There is no status quo. There is usually a drought event every  $\pm 10$  years.

South Africa has quite an extensive and well planned water network with a storage capacity of roughly half the river flow in South Africa. About 31500 million cubic meters. The water resource planning in South Africa was modelled as a transportation problem and a transportation solver was used to solve this complicated network.

Besides building more dams, there are “lower hanging fruit” to manage our water supply and one of the easiest things to do is to focus on leaks. An elegant solution that was implemented in the Western Cape in Khayelitsha was to lower the water pressure between 22:00 and 06:00. This ensured that less water was being lost through the leaks during these off-peak times. This ended up saving the equivalent of an Olympic swimming pool of water per day and the solution ended up paying for itself within two months.

The recording of Ronnie’s talk as well as his slides are available at <http://iono.fm/c/123>

A very enjoyable meeting ending off with lovely snacks and wine and continued discussions.

