



TLS simulation model of the Dalrymple Bay Coal Terminal (DBCT) and Goonyella rail network.

## Complex Supply Chain Modelling

The Goonyella supply chain in Queensland, Australia is one of the largest and most complex mine-to-port supply chains in the world.

In this system, thermal and metallurgical coal from 31 mines in the Bowen Basin is transported by train to three marine terminals. In total, this coal network delivers 150+ Mt/y with 6,000+ railcars.

To help decision-making for the supply chain, Ausenco was contracted by the owner of DBCT to develop a sophisticated mine to vessel simulation model using our industry-leading Transportation Logistics Simulation (TLS) software.

The model captured the movement of trains, inloading systems, stockyard operations, and the marine loading and transportation component.

In all, over 1,400 unique objects were input to the model.

Despite the complexity of the system, the model was developed in four months. Throughout the process, Ausenco liaised with DBCT Management to ensure that model logic for train movements and terminal stockyard management reflected real-life operations.

The dynamic nature of the model enabled the testing of numerous operation scenarios. This allowed DBCT to identify potential bottlenecks in the system, validate practical capacity of DBCT, and evaluate the feasibility for further expansion scenarios.

**Project**

Goonyella Supply Chain Simulation Model

**Location**

Queensland, Australia

**Business line**

Process Infrastructure

**Client**

DBCT Management

**Timeframe**

2015

**Scope**

Modelling of complex supply chain including: rail, stockyard, export terminals

**Services**

Simulation modelling