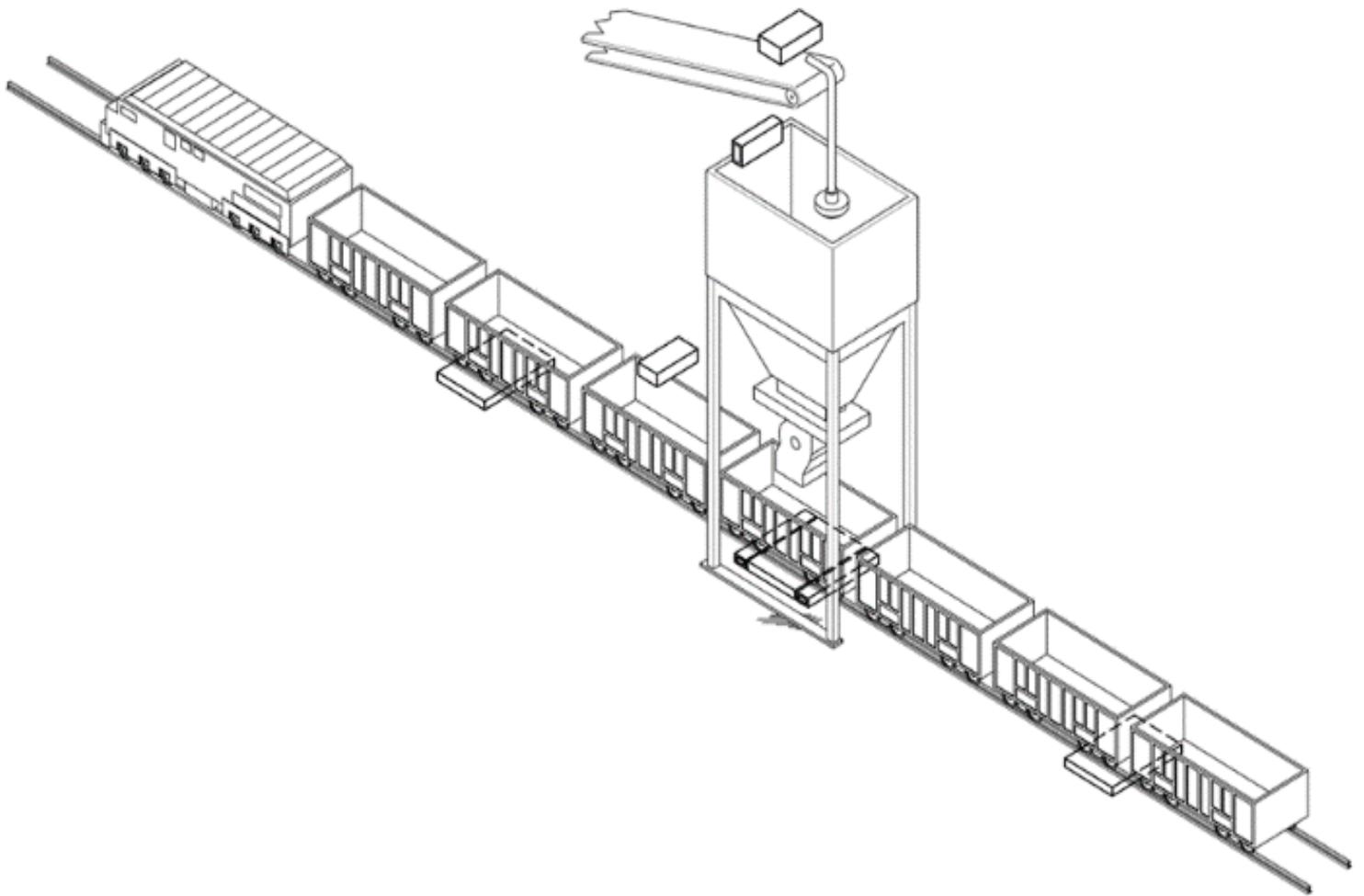


iTLO

Under-chute Trackscales

(AU Patent 2018214111)



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THE TRAIN LOADING PROBLEM

The inability to accurately and consistently measure wagon weight whilst loading is one of the major issues troubling modern train load out facilities. Conservative wagon weight setpoints are often required to safeguard against costly reloading efforts or derailment potential. Although these lower setpoints allow for reduced loss time incidents, it comes at a significant opportunity loss as trains are not loaded to their true maximum capacity

ResOpt have specialised in train load out optimisation for over a decade, spending significant time and resources understanding the complex issues involved in accurate dynamic weight measurement. In 2018 we successfully patented our track scale technology which allows for accurate measurement underneath the loading chute area. This technology provides real wagon weight significantly earlier than the commonly used and outdated systems.

The iTLO system has been proudly developed and manufactured in Western Australia, the heart of Australian mining.

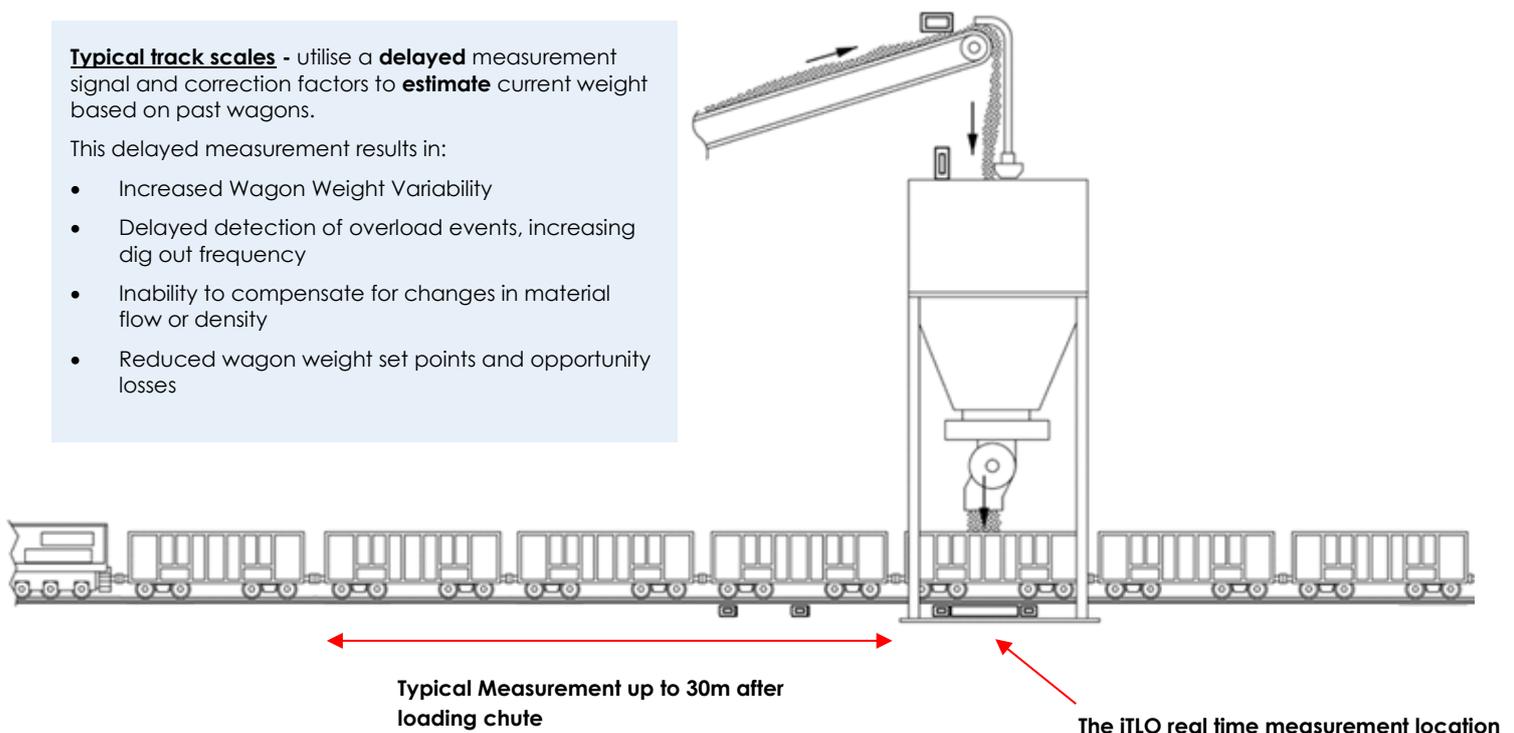
TECHNOLOGY LIMITATION - TYPICAL TRACK SCALES

The technology used by typical track scale installations is unable to compensate for the noise and dynamic nature of stress applied to the rail underneath the loading chute area. Due to this limitation, the measurement zone is usually located between 20 to 30 meters after the loading chute area and utilises several "fudge" factors to estimate the weight of the wagon currently being loaded. This method has proved unsatisfactory in many cases as it is unable to swiftly accommodate for density or material fluctuations and can often lead to costly overload and dig out events. In addition, these systems are often "black box" systems with limited support, resulting in increased downtime and troubleshooting effort.

Typical track scales - utilise a **delayed** measurement signal and correction factors to **estimate** current weight based on past wagons.

This delayed measurement results in:

- Increased Wagon Weight Variability
- Delayed detection of overload events, increasing dig out frequency
- Inability to compensate for changes in material flow or density
- Reduced wagon weight set points and opportunity losses



The Solution

The Australian made and patented **iTLO system** has been specifically designed to accurately measure wagon weight underneath the loading chute area.

iTLO Advantages include:

- ✓ Real time, accurate wagon weight measurement
- ✓ Early detection of overload/dig out events, allowing train speed increases, lost time prevention and overall efficiency gains
- ✓ Ability to measure "real weight" as opposed to "fudge" factors which often fail to compensate for changes in material type
- ✓ Clamp on (non-intrusive) loadcell technology, reducing installation times and accommodating for installation to existing systems
- ✓ Ability to increase set points closer to true wagon weight limits
- ✓ Reduced wagon weight variability and metering conflicts with port/client measurement systems
- ✓ Industrial, non-PC based system providing high reliability and data loss prevention

BUILT FOR HARSH ENVIROMENTS

The iTLO system has been designed and built to withstand the harsh environments found in typical mining applications. All components have undergone extensive laboratory and industrial grade tests to guarantee their performance and accuracy.



Figure 1: Iron Ore TLO



Figure 2: iTLO Field Panel



Figure 3: iTLO Master and Slave Controller



Figure 4: Loadcell and track switch installation

CONTACT US

The team at ResOpt have more than 10 years of experience in Train Load Out improvement and have increased production throughput for our clients both locally and internationally.

To find out more about our iTLO range of products, please visit www.resopt.com.au or email us at info@resopt.com.au