



# Freedom eLOG: Delivering Overall Equipment Effectiveness Metrics



Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives.

Caterpillar had a strategic initiative to increase manufacturing efficiency through the use of Overall Equipment Effectiveness (OEE) metrics. OEE was a requirement of the Caterpillar Production System (CPS).

Prior to deployment of Freedom eLOG, plant floor data was being manually collected and the OEE reports were being manually generated in Excel, which was a tedious, time consuming and arduous process.

## The Challenge

A Caterpillar Plant in East Peoria had a very large population of plant floor assets, with huge variability in machine brand, control type, process, and age.

Caterpillar had experimented with Asset Monitoring solutions in the past; however, those initiatives proved unsuccessful. This was most likely due to the fact that previous solutions utilized interfaces that required hardware, as well as PLC logic and/or part program, modifications.

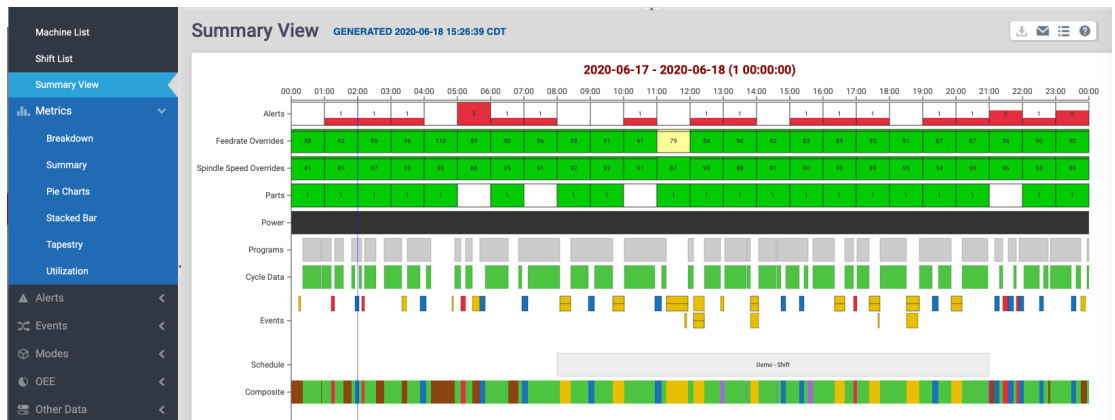
This resulted in very lengthy integration times, as well as inconsistent and inaccurate data.



### The Solution

The solution was to implement Freedom eLOG as a means of automatically extracting the manufacturing data from the plant floor assets in real time. Freedom eLOG generates reports and analytics based on the data to deliver OEE Metrics, as well as In-Cycle/Out-of-Cycle, Delay Events, Repair Events, Process Events, and Alarms/Alerts.

“Freedom eLOG was the **quickest and easiest** to implement, while also producing the best data.”



### The Result

After 12 months, Caterpillar saw dramatic improvements in response time to delays (the time it takes to get out of a delay and back to producing parts) and enough detailed information has been gathered to start improvement efforts to reduce delays further.

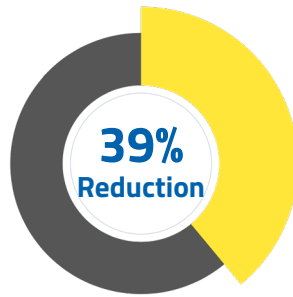




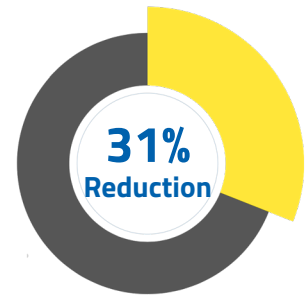
Thus far, Caterpillar plant has noted:



Delay time has dropped by 59% per occurrence



Part Setup Time has dropped 39% per occurrence



Waiting for Quality Lab has dropped 31% per occurrence

“...Has led to \$1.2 million in production value...”

The ROI gains are based on reductions in delays; therefore, the In-Cycle time for the targeted machines has risen 11%. This increase has led to \$1.2 million in production value and saves approximately 15 minutes per machine.

As a significant topic of discussion with everyone from operators to managers, the benefit of implementing Freedom eLOG has been apparent across the floor.

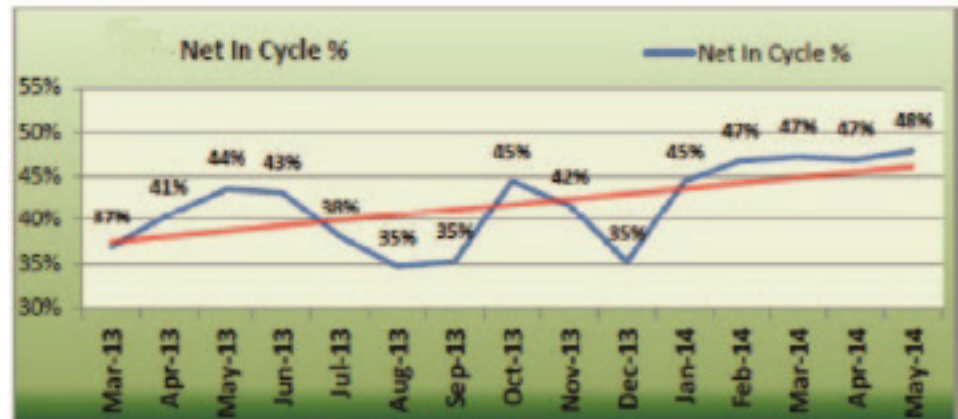
Use of the data and associated reports has become standard operating procedure and the entire production team now has real-time visibility to the production floor – so no delay will go unnoticed without someone raising a flag.



**The Summary**

In 12 months, Caterpillar has cut the average length of their delays in half and improved their machine in-cycle times by 11% across the machines where Freedom eLOG was installed, which amounted to \$1.2M increase in value-add.

**“In 12 months, Caterpillar cut the average length of their delays in half..”**



It was found that the electronic “fact-based” data was far better, more accurate, and less emotional than the paper system/manual process that was used previously.



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