



# INDUSTRY SOLUTIONS: Remote Monitoring in Mining

There's no question, Mining equipment is expensive. Capital expenditures are high, requiring close attention to the utilization and productivity of mine equipment in order to maximize capital efficiency. The challenge is how to do that. There is an evolution happening in industrial environments such as mining. Innovation is bringing Machine Learning, Analytics, Artificial Intelligence, and the Industrial Internet of Things (IIOT) with the promise of higher production, lower operating costs, improved performance, optimized operations and more. In order to take advantage of this evolution, you need access to data. Your machines and equipment can provide useful business intelligence. Your equipment can talk to you!

## Goals and Challenges

- Keeping engines running at peak performance
- Avoiding or minimizing costly unplanned shutdowns
- Optimizing equipment utilization and safety

Challenges that make this difficult

- Lack of data from equipment
- Shortage of manpower hours/qualified personnel  
Analysis of the data
- Insufficient industrial communications  
To collect data you want and need

## The Solution

### Connected Equipment Data Acquisition



### Data Analysis and Visualization

**mCore<sup>SDR</sup>**



- Preconfigured by Monico
- Connects to Machine ECM Network
- Translates Protocols (Cat<sup>®</sup> CDL, J1939)
- Streams and Transmits real-time data to:  
IIOT Platforms (using OMF and MQTT)  
OSIsoft<sup>®</sup> PI Systems  
**MonicoLive<sup>™</sup>**  
SCADA, HMI, PLC

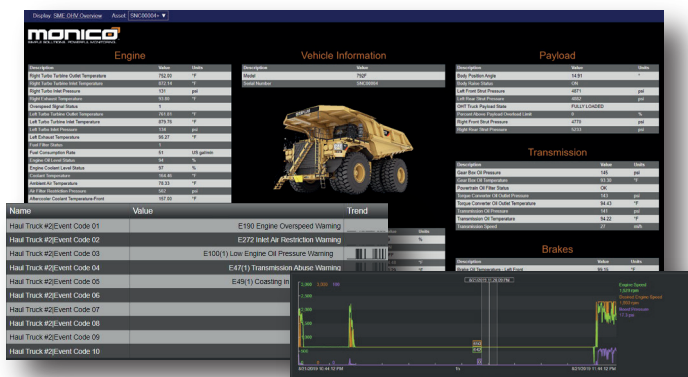
#### Secure UI

- Live data view
- On-board data logs
- Edge Analytics Capability
- Capture/Transmit Fault Codes  
Incl. Cat<sup>®</sup> fault codes
- Buffering of Data (to prevent data loss)

### Benefits Of The Solution

- Immediate access to the power of OSIsoft<sup>®</sup> PI via **MonicoLive<sup>™</sup>**
- Enables proactive maintenance and service
- Improves visibility of mine asset performance and utilization
- *Real Time High Fidelity Data* for use in Diagnostics and Analytics

**MONICO<sup>LIVE</sup>**



- Provides **Alerts and Notifications** (email and text)
- **Visualize Data** from engine and industrial assets
- **Stores data** for historical analysis
- Readable **Fault & Diagnostic Codes**  
Receive comprehensive Cat<sup>®</sup> fault codes
- **Subject Matter Expertise**
  - Creation of pre-configured visualizations
  - Development of Edge, Cloud and Visual Analytics  
Edge, Cloud, and Visual - Working with your experts
  - Cooperative Machine Troubleshooting

**Your machine. Your data. Your way.**

**MONICO**  
SIMPLE SOLUTIONS. POWERFUL MONITORING.

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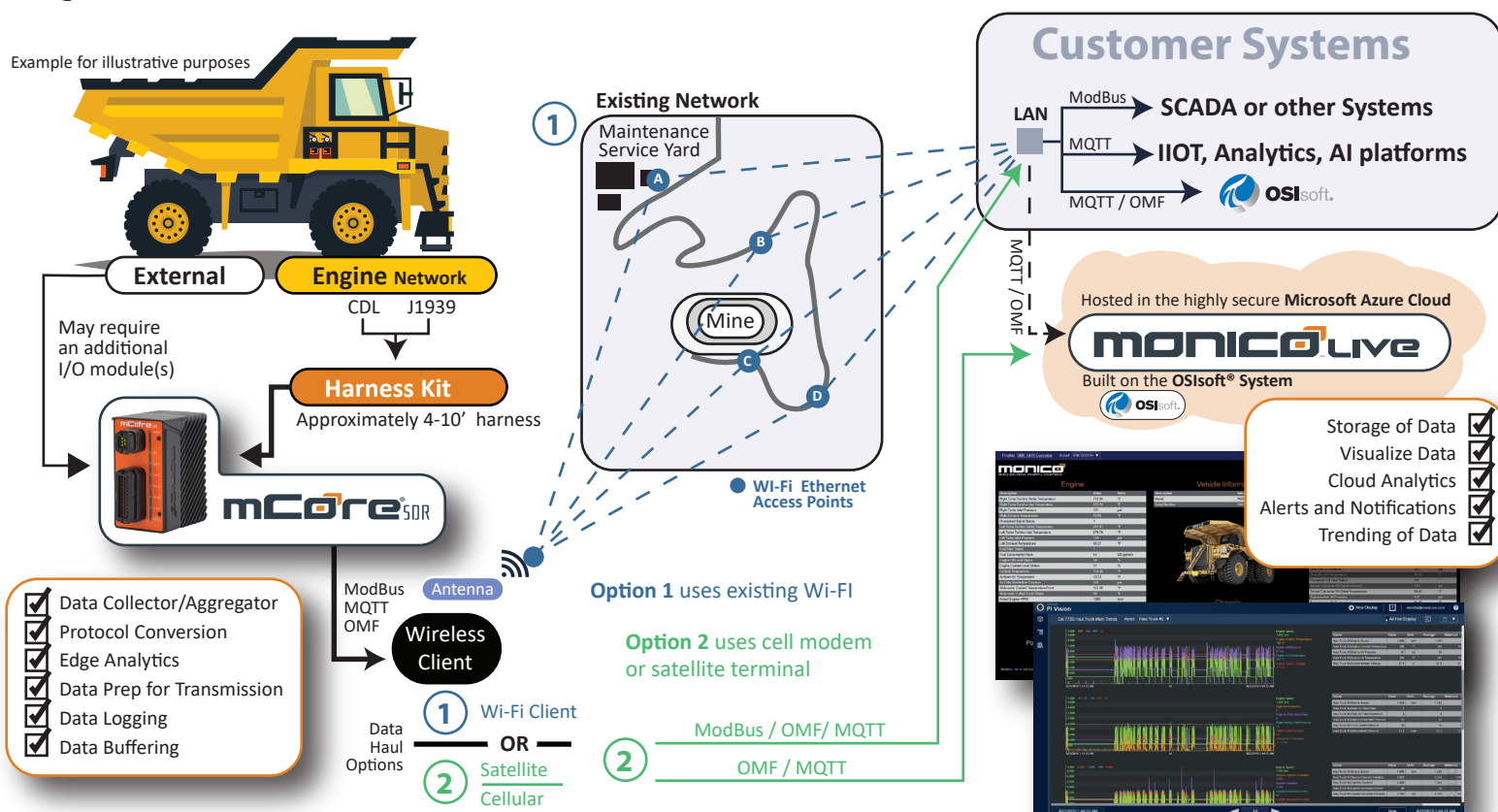


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**mCore®SDR** is a pre-configured data collection solution that can collect detailed streaming asset data from the machine network and push that data into monitoring systems. Mine trucks can have up to 8 computers that control the engine, transmission, brakes and payload systems. mCore®SDR can communicate with all these in Real-Time, providing increased visibility. This increased visibility can help with maintenance, planning of downtime and ensuring that mine equipment is operating at peak efficiency. With its rugged enclosure, high temperature specifications, and ability to communicate with multiple ECMs on a single piece of equipment, mCore®SDR is the perfect solution for your mining fleet.

## How it works:

Engine and industrial asset data is streamed in real-time using the **mCore®SDR** and then transmitted to either an existing OSIsoft® PI Solution, other Control or Monitoring Systems (IIOT, SCADA, HMI, etc.), or **MonicoLive™ Remote Monitoring Solution** hosted in the Microsoft® Azure Cloud.



With Monico's Remote Monitoring Solution, you can put real time streaming data to work for you and increase your awareness and improve your equipment's performance, utilization, productivity and more. Monico provides the bridge between machines and operational efficiency gains that advance notifications & alerts, edge and cloud analytics and visualization of data and trending can provide. With mCore®SDR and MonicoLive™ we help our customers turn real-time streaming data into useful information.

For more information please visit: [www.monicoinc.com](http://www.monicoinc.com)