



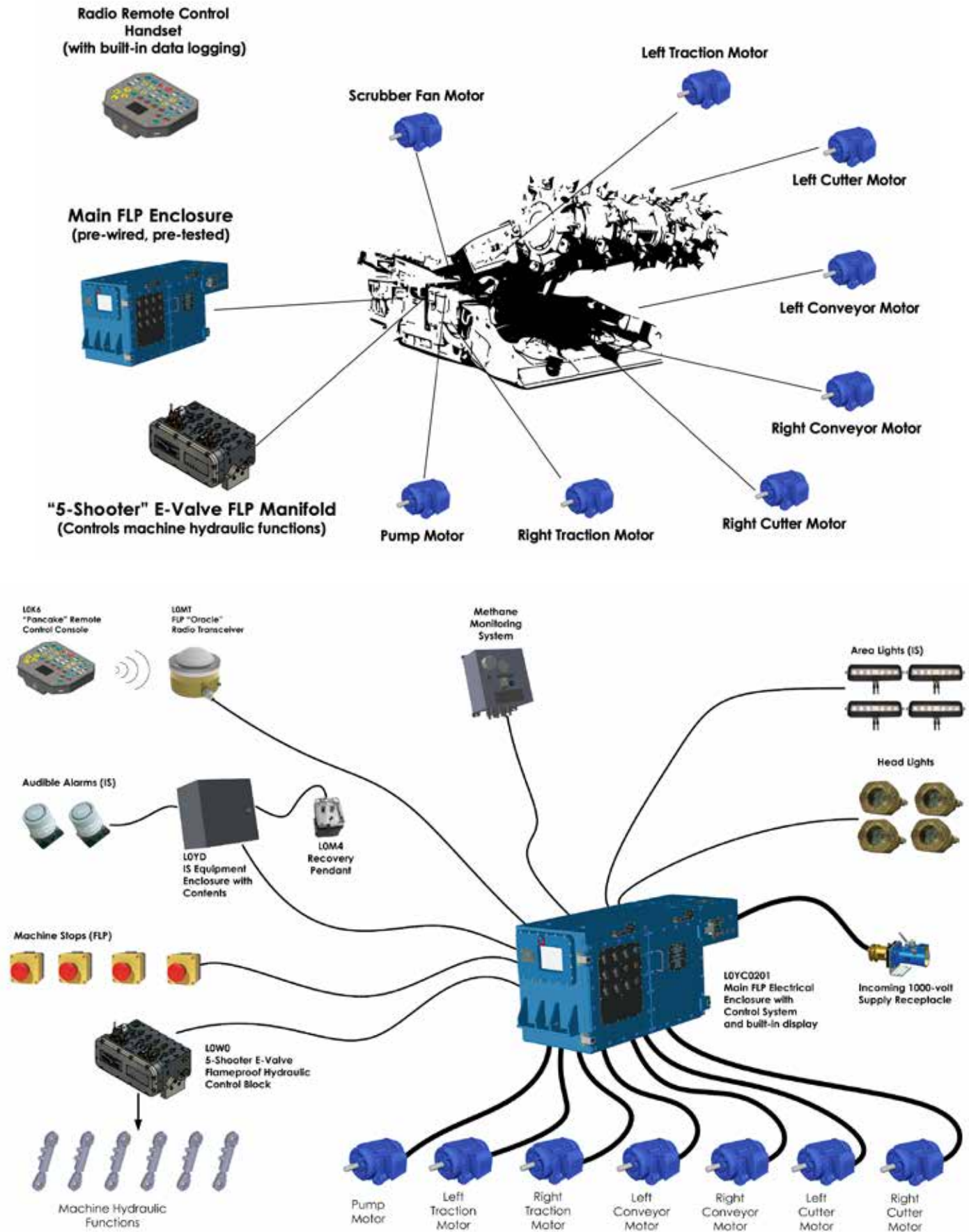
2020 Mining Control Systems

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Continuous Miner Control System



Bolter Miner Control System - Electric Traction

"5-Shooter" E-Valve FLP Manifolds
(Control machine hydraulic functions)



Main FLP Enclosure
(pre-wired, pre-tested)



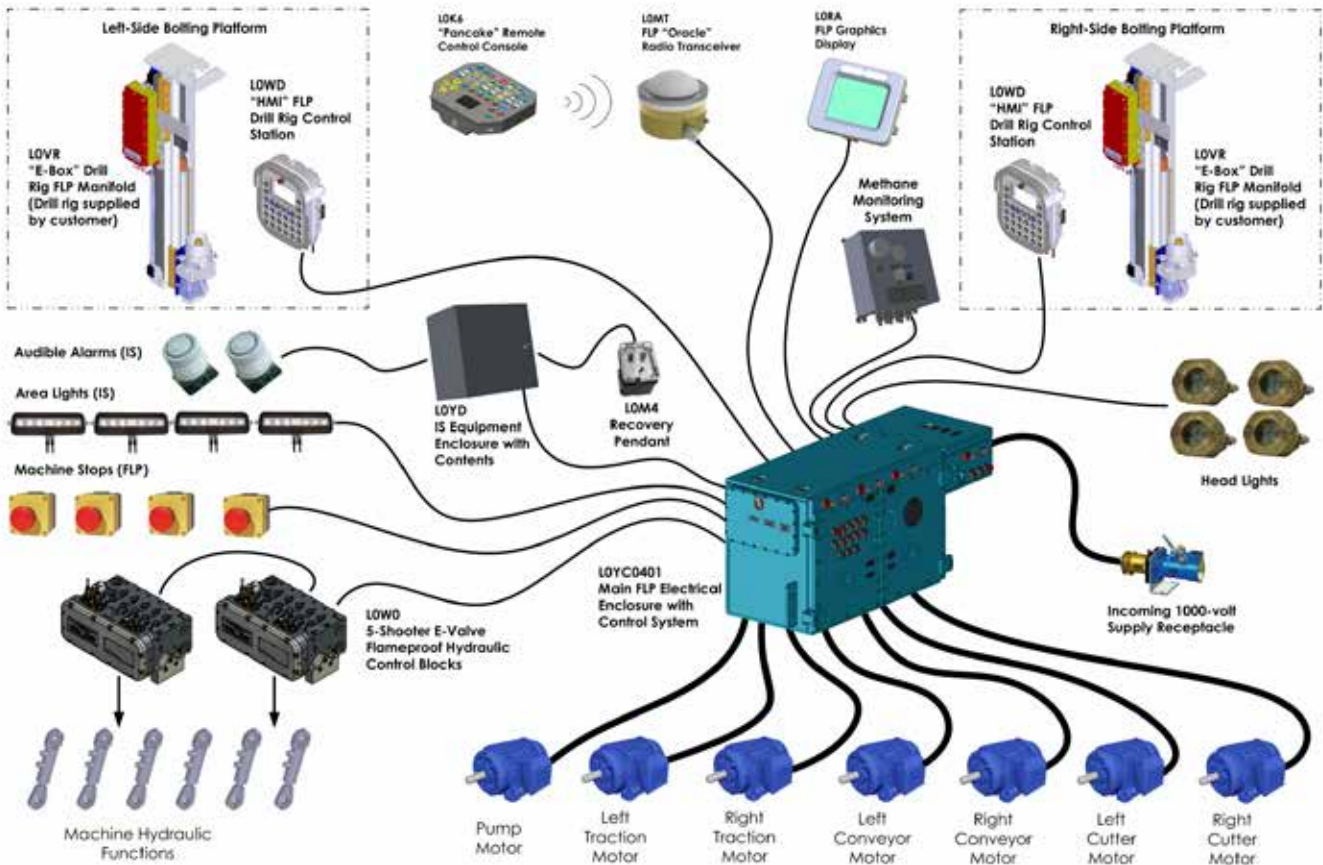
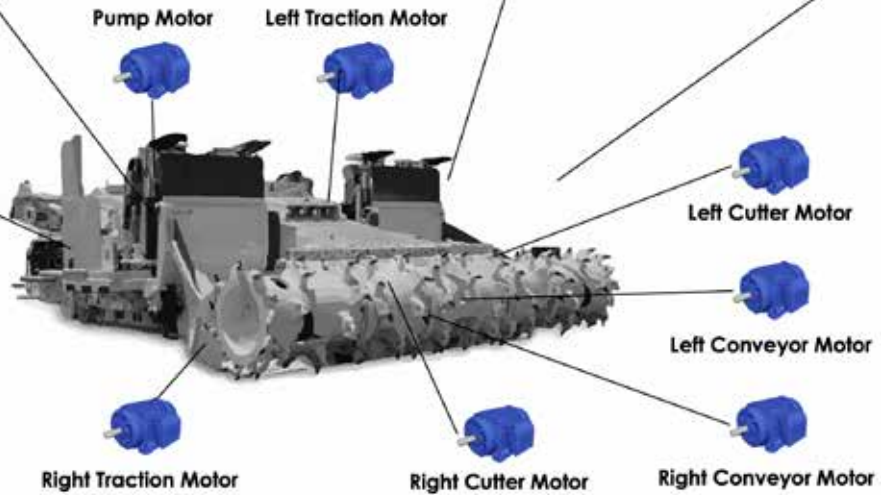
Radio Remote Control Handset
(with built-in data logging)

"E-Box" FLP Drill Rig Manifolds
(Installed, pre-tested on customer drill rigs)

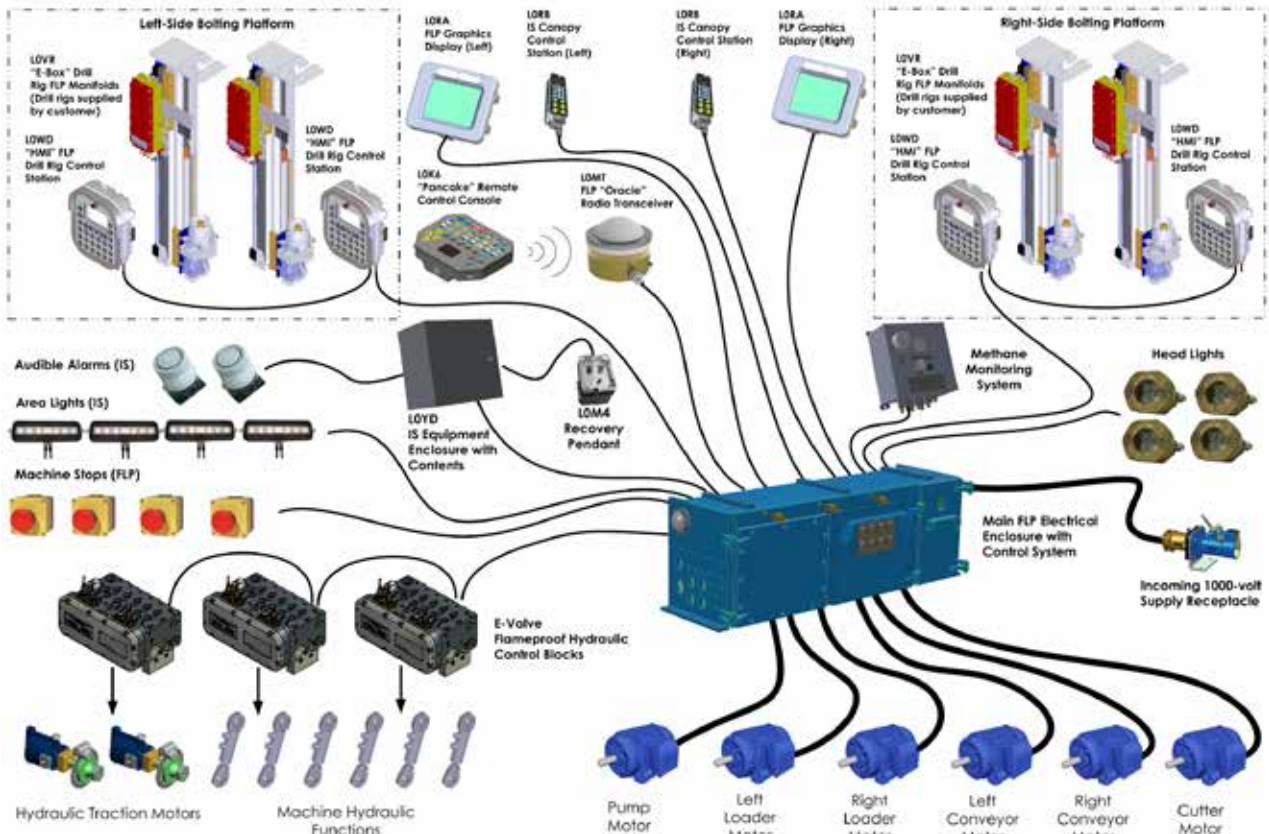
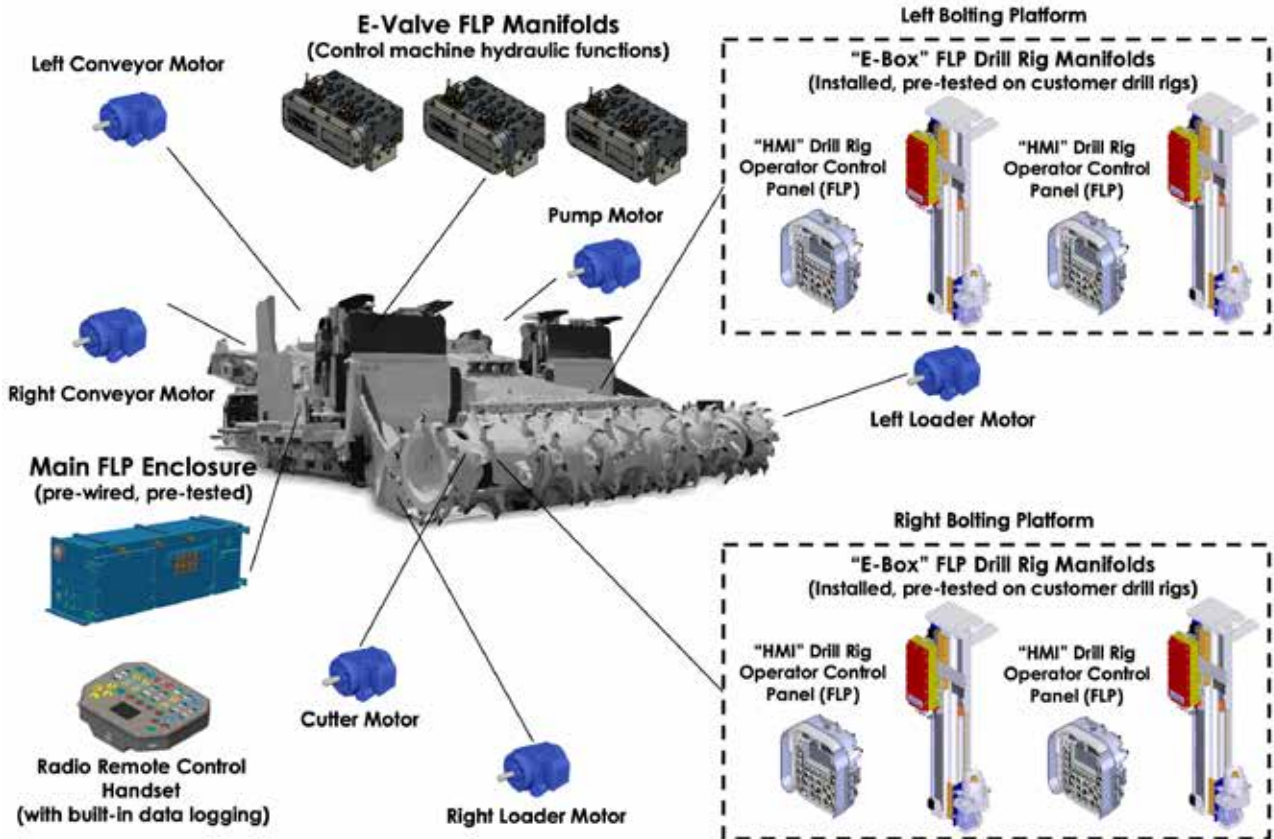
"HMI" Drill Rig Operator Control Panel (FLP)



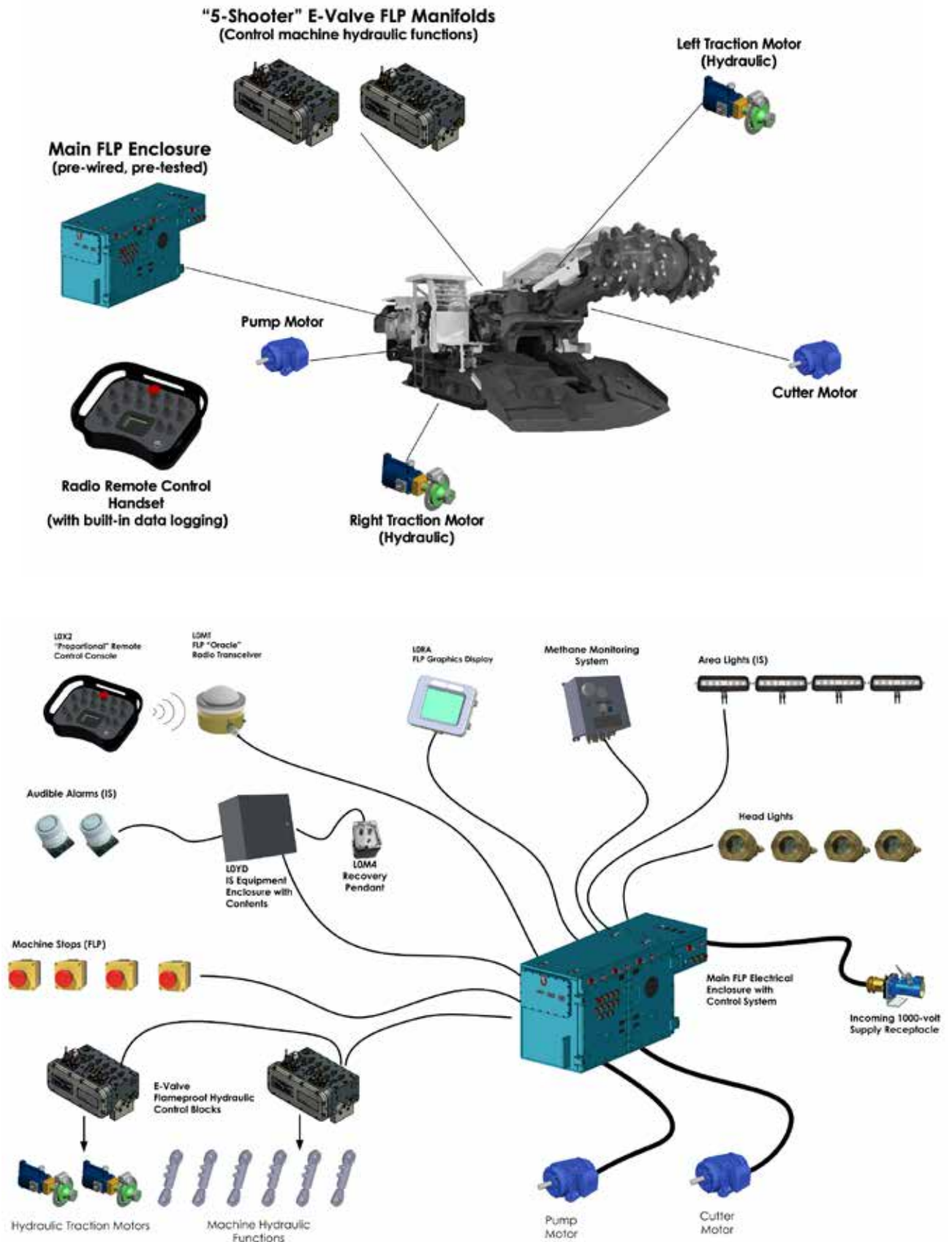
"HMI" Drill Rig Operator Control Panel (FLP)



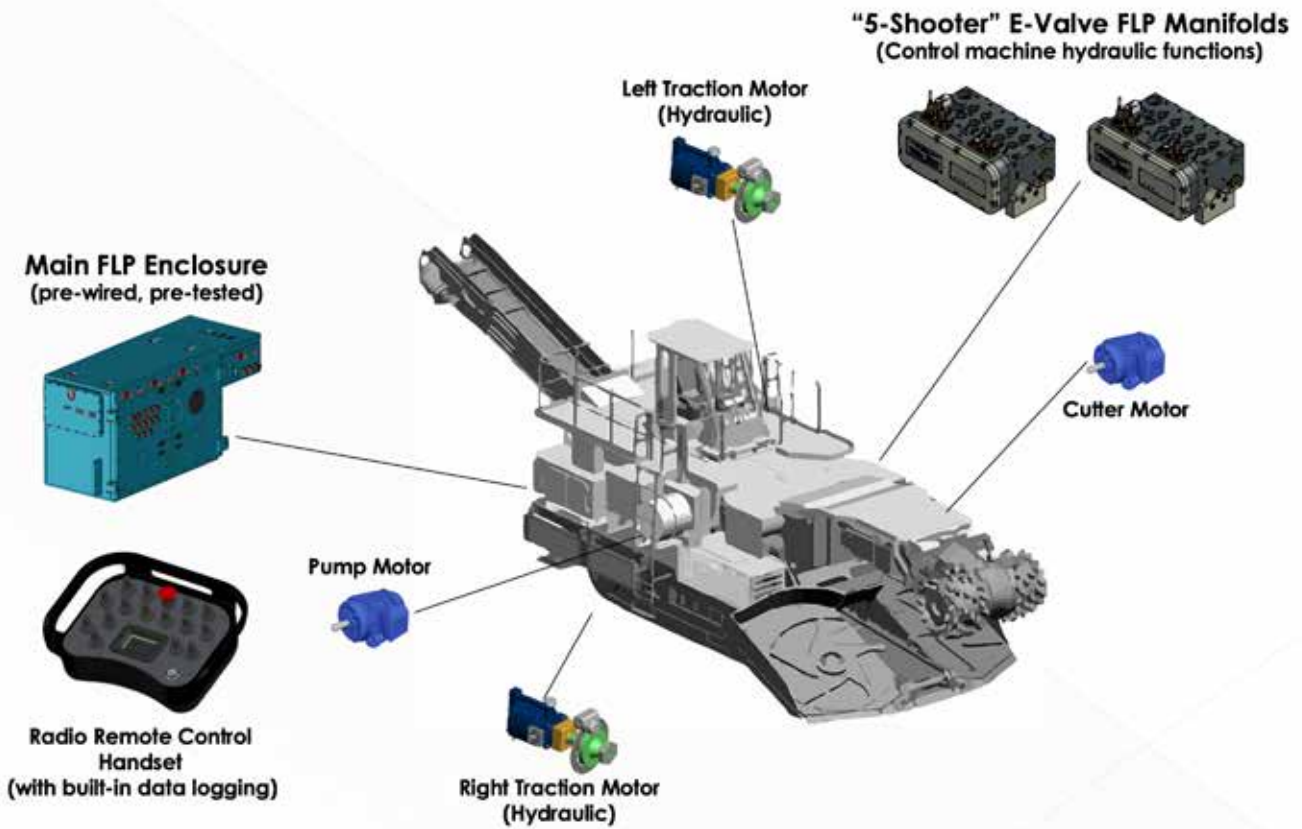
Bolter Miner Control System – Hydraulic Traction



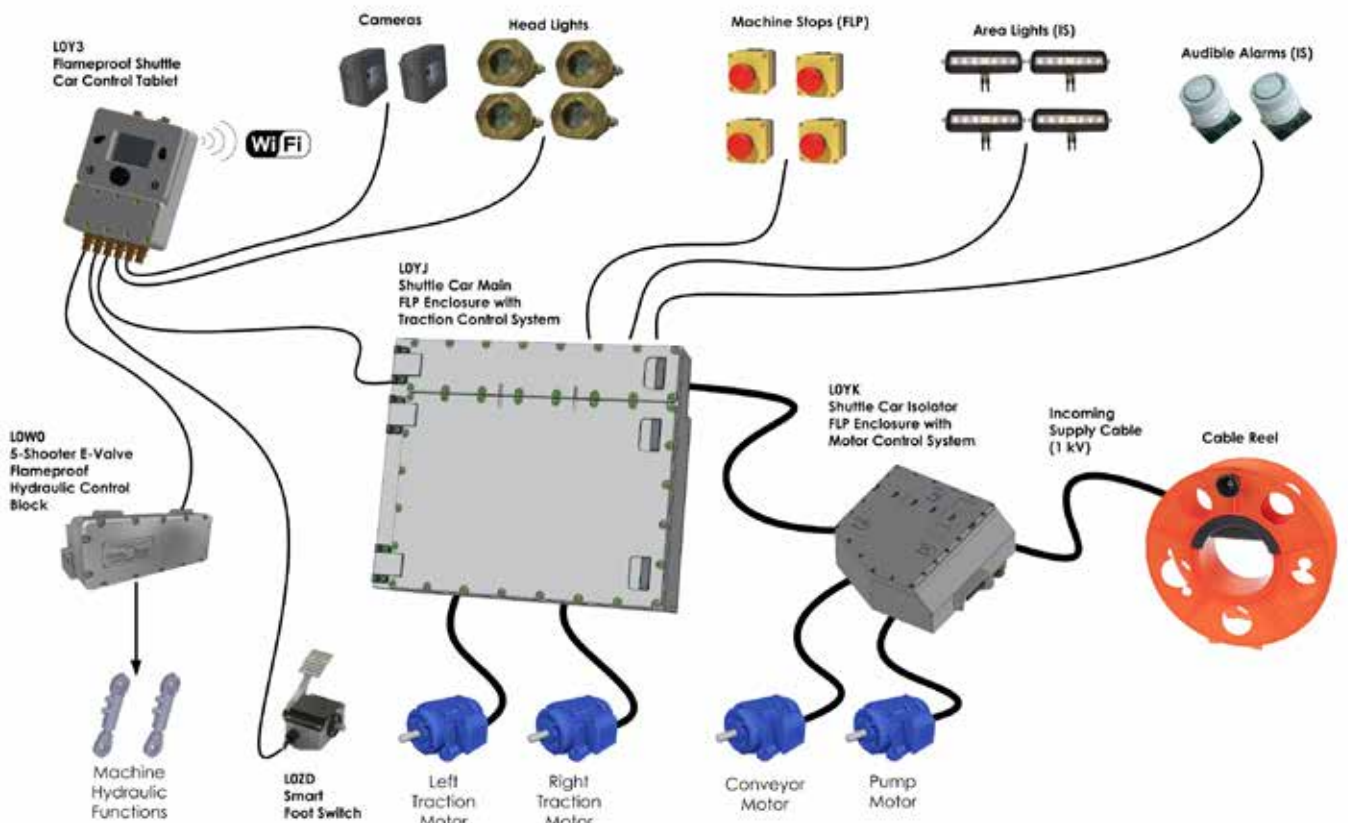
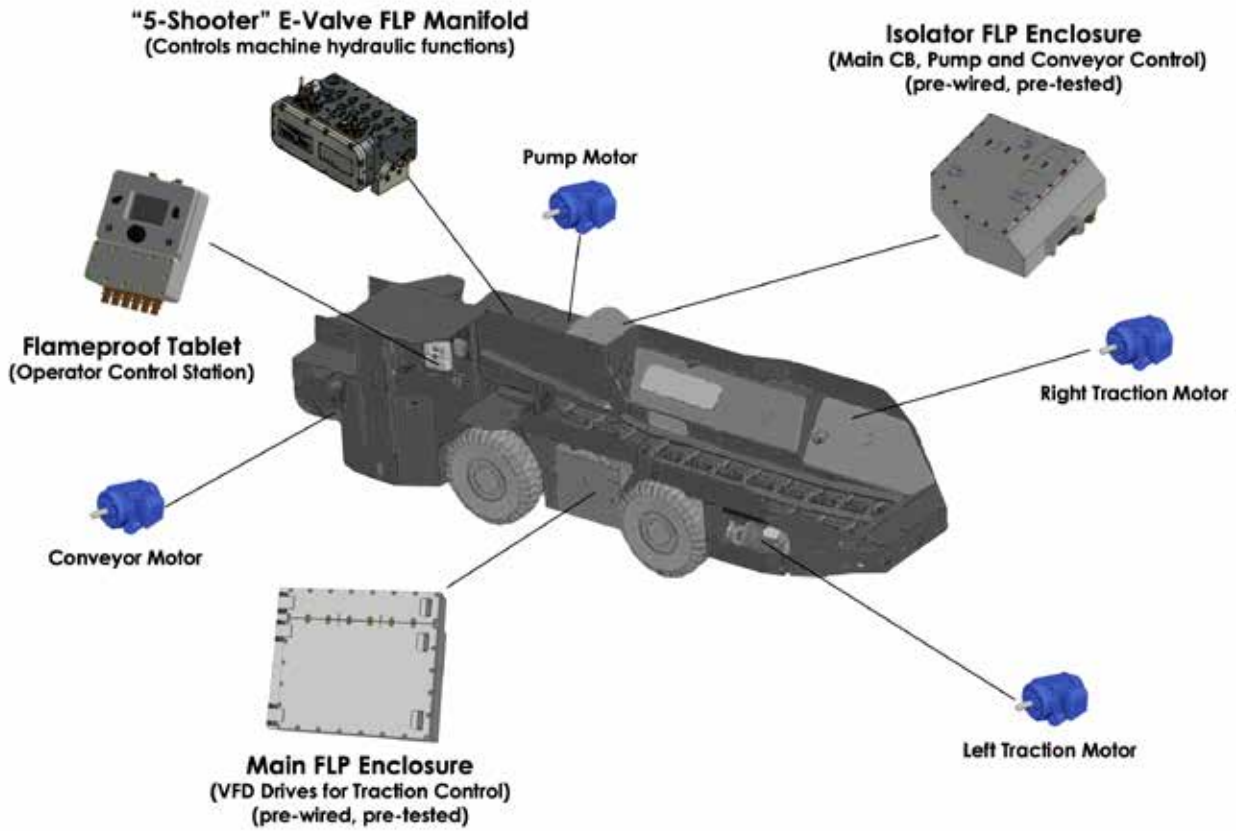
Small Road Header Control System



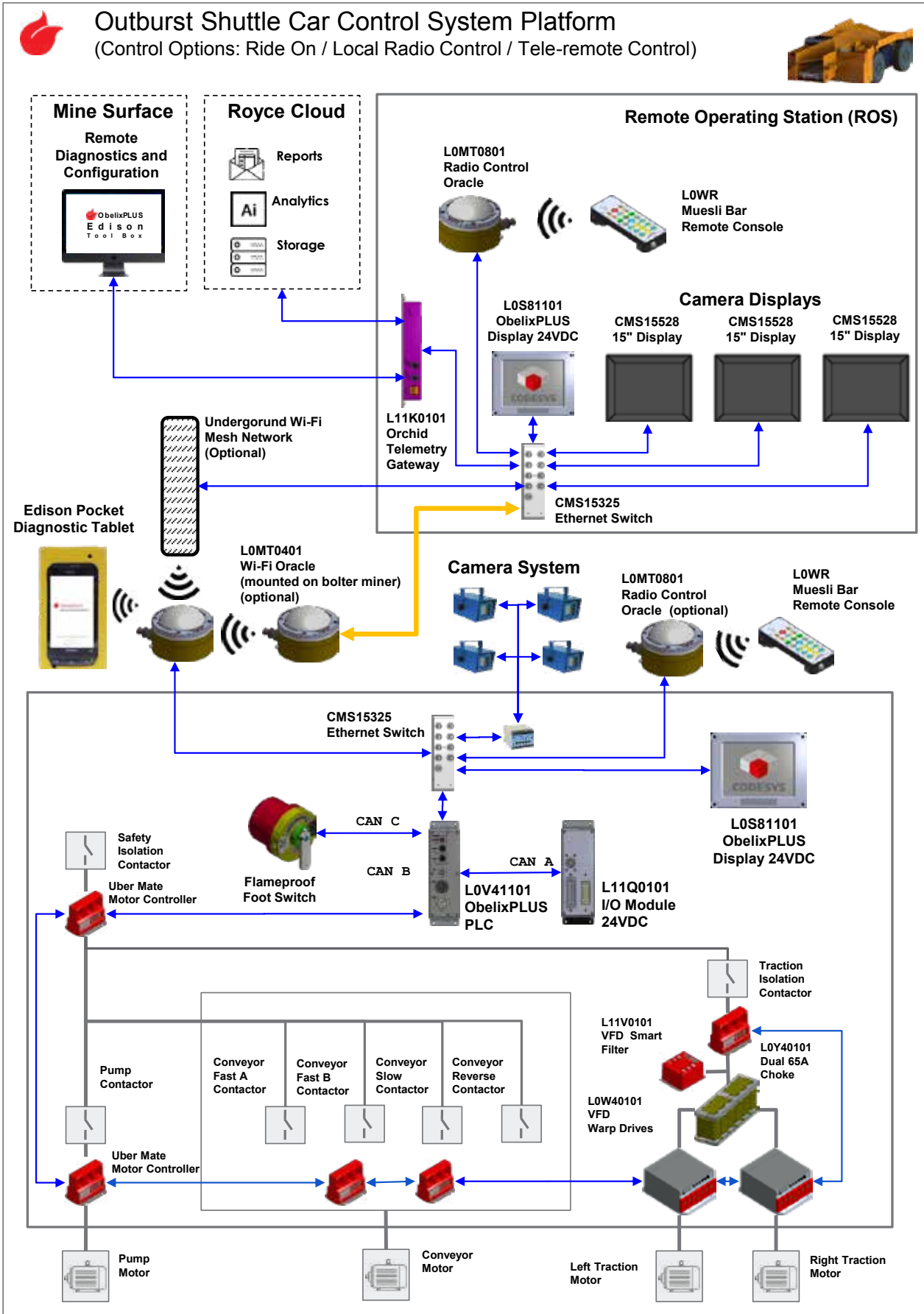
Large Road Header Control System



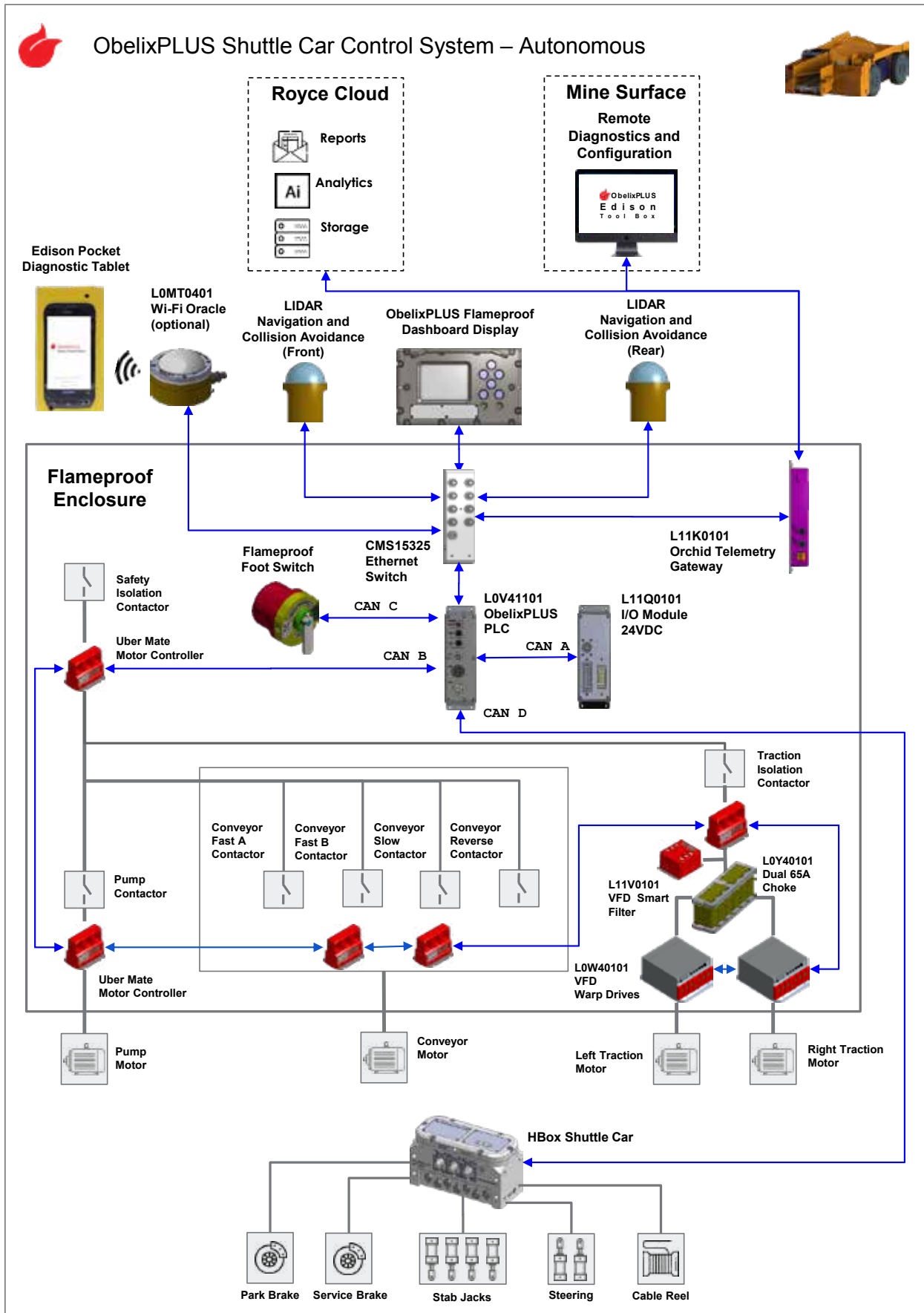
Shuttle Car Control System – AC Traction Motors



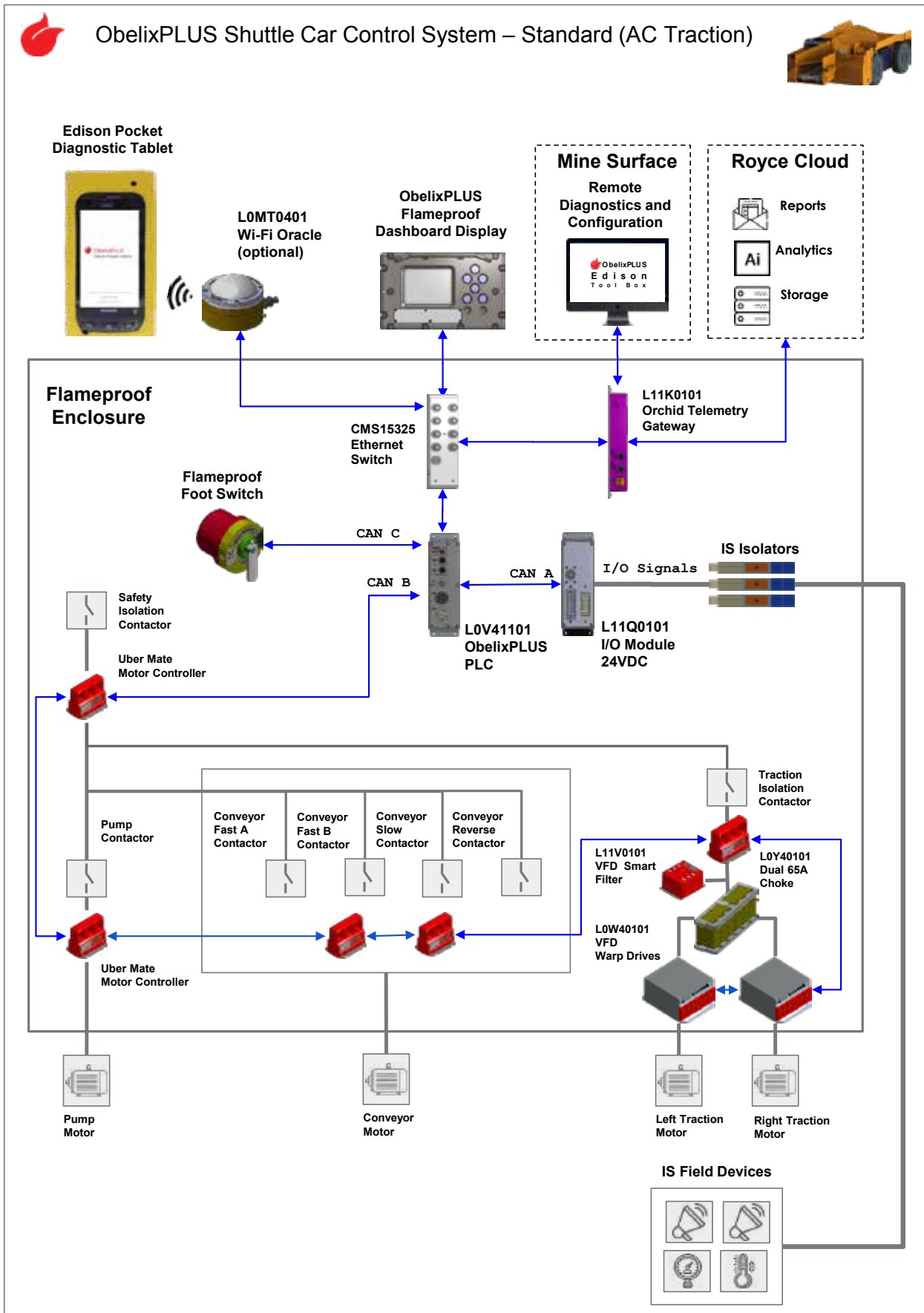
Shuttle Car - Control System (Outburst)



Shuttle Car - Control System (Autonomous)



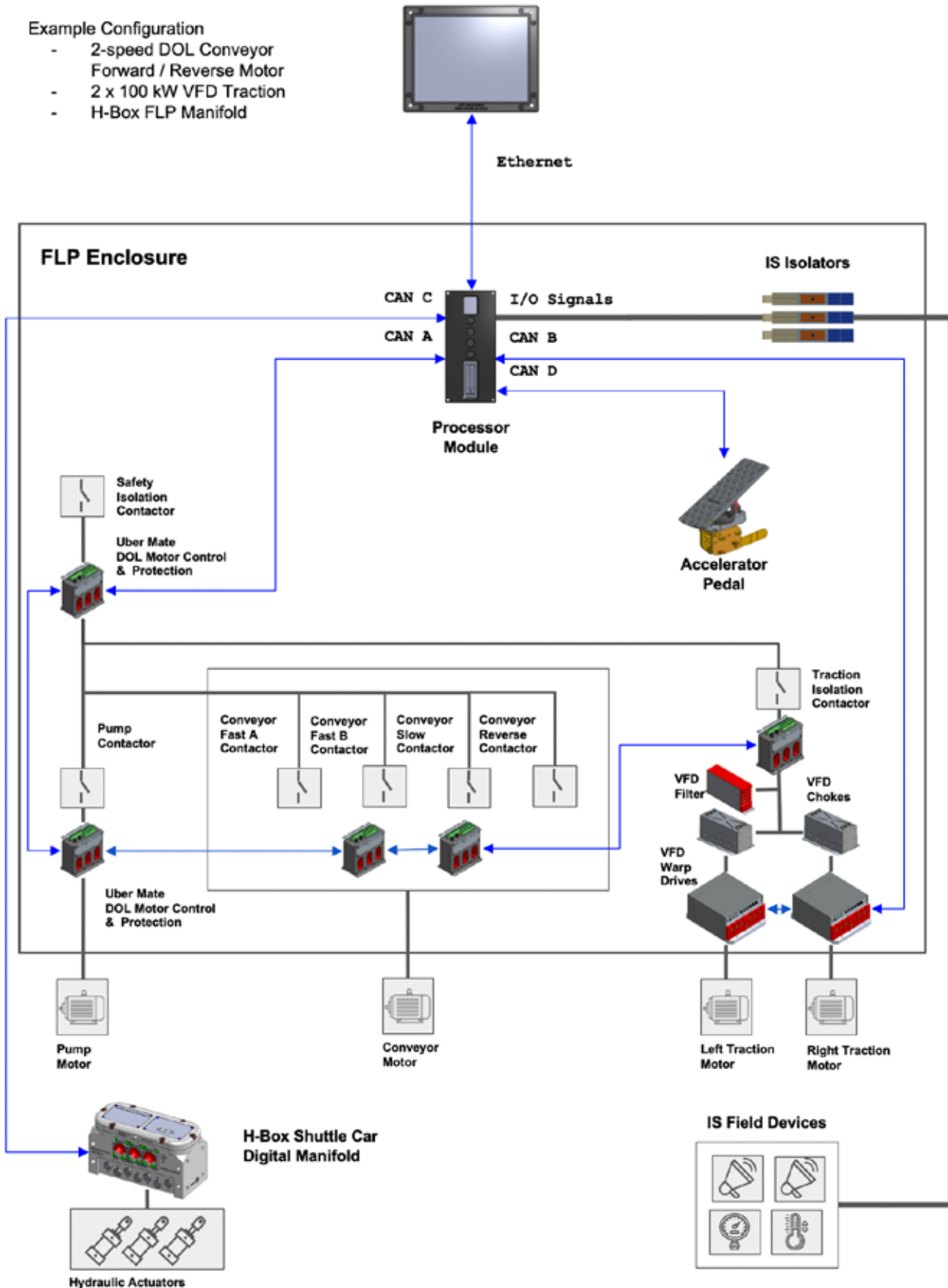
Shuttle Car - Control System (AC Traction ObelixPLUS)



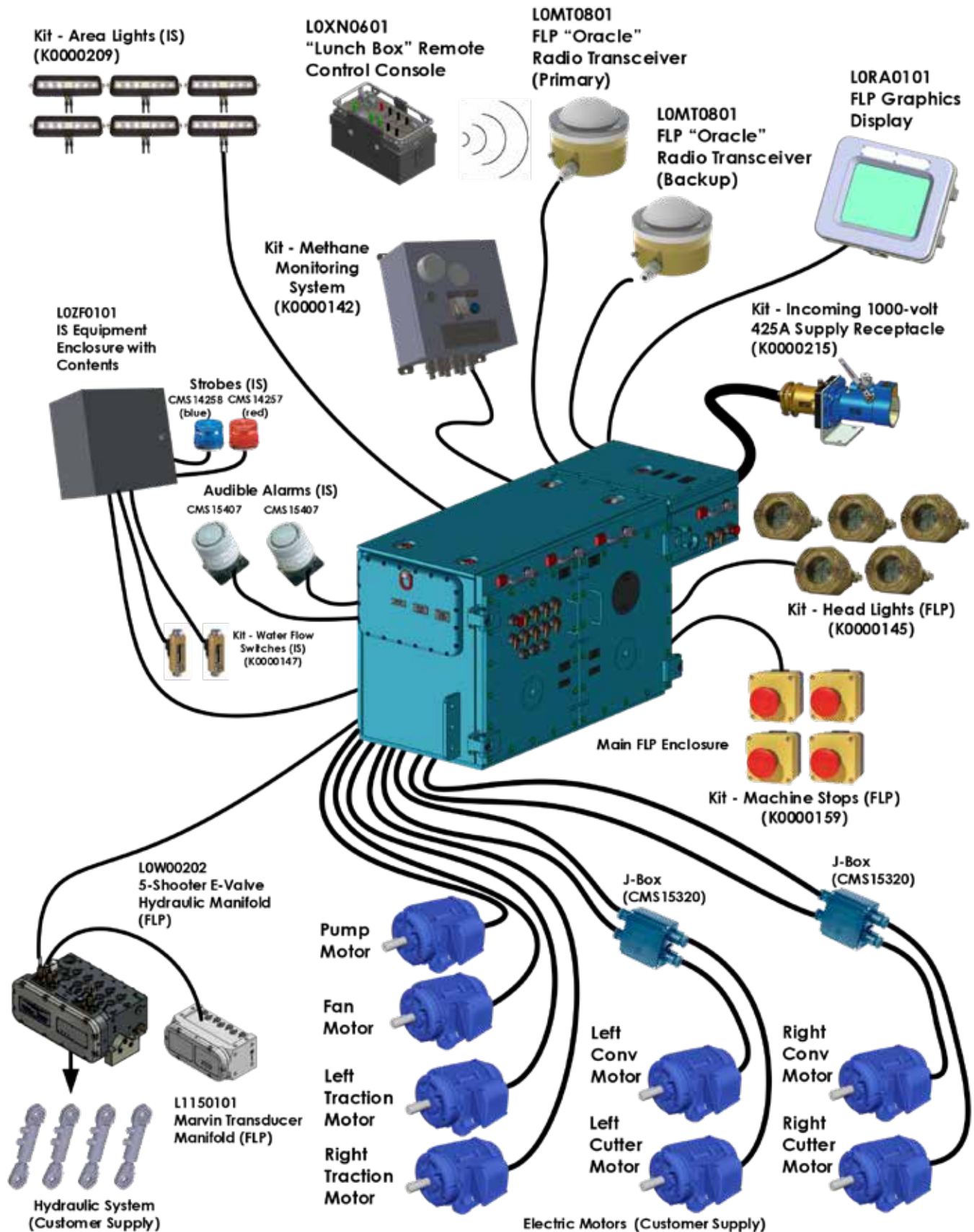
UberMate - Typical Shuttle Car Control System

Example Configuration

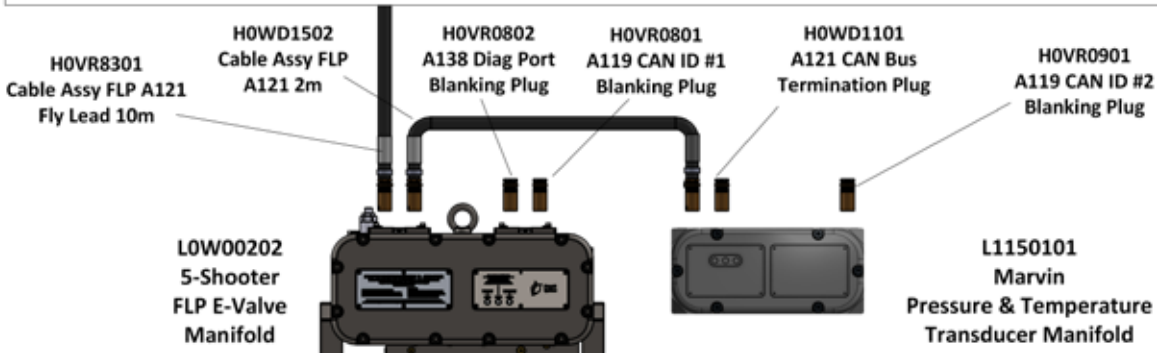
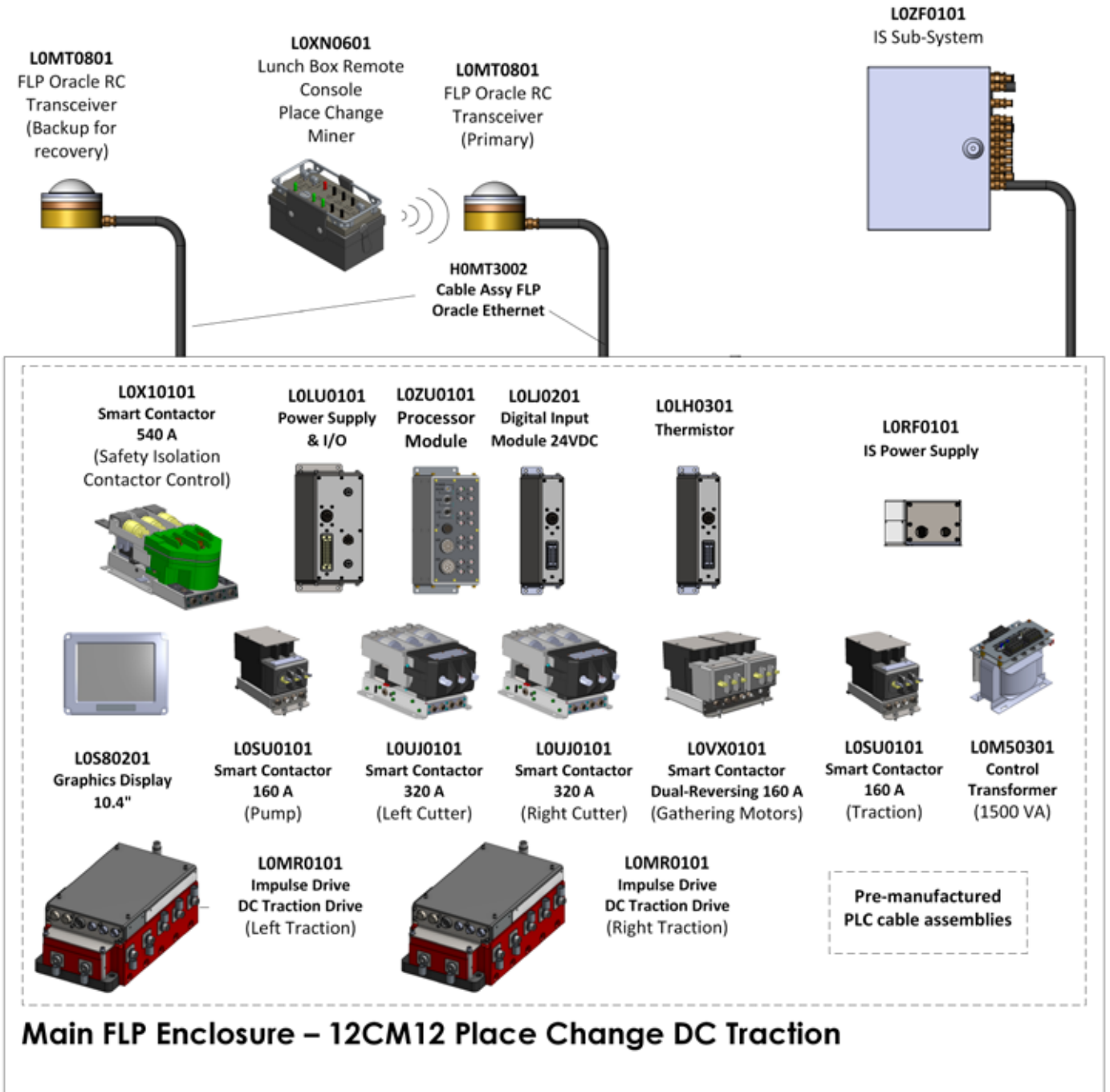
- 2-speed DOL Conveyor Forward / Reverse Motor
- 2 x 100 kW VFD Traction
- H-Box FLP Manifold



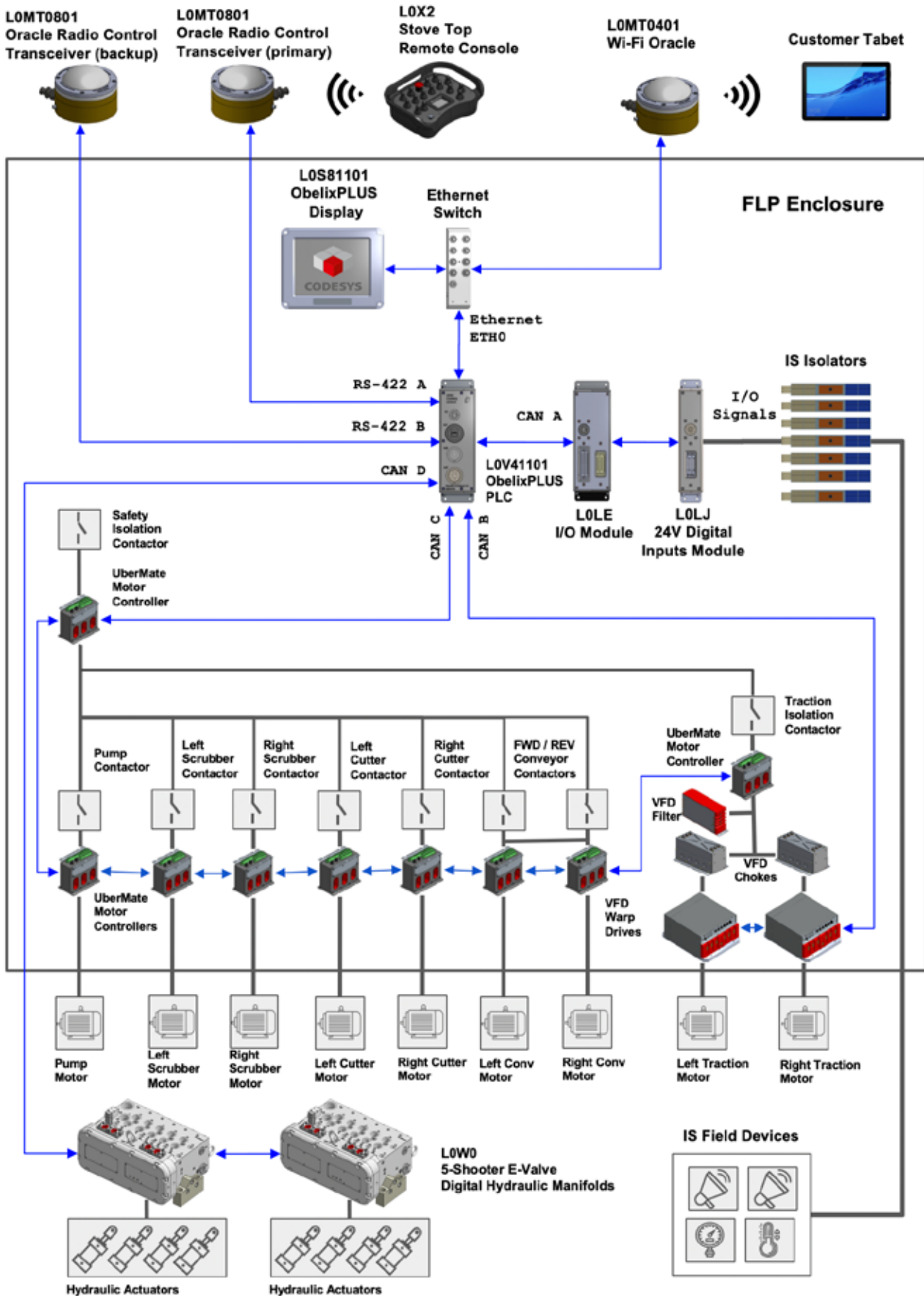
12CM12 Place Change Machine Control System



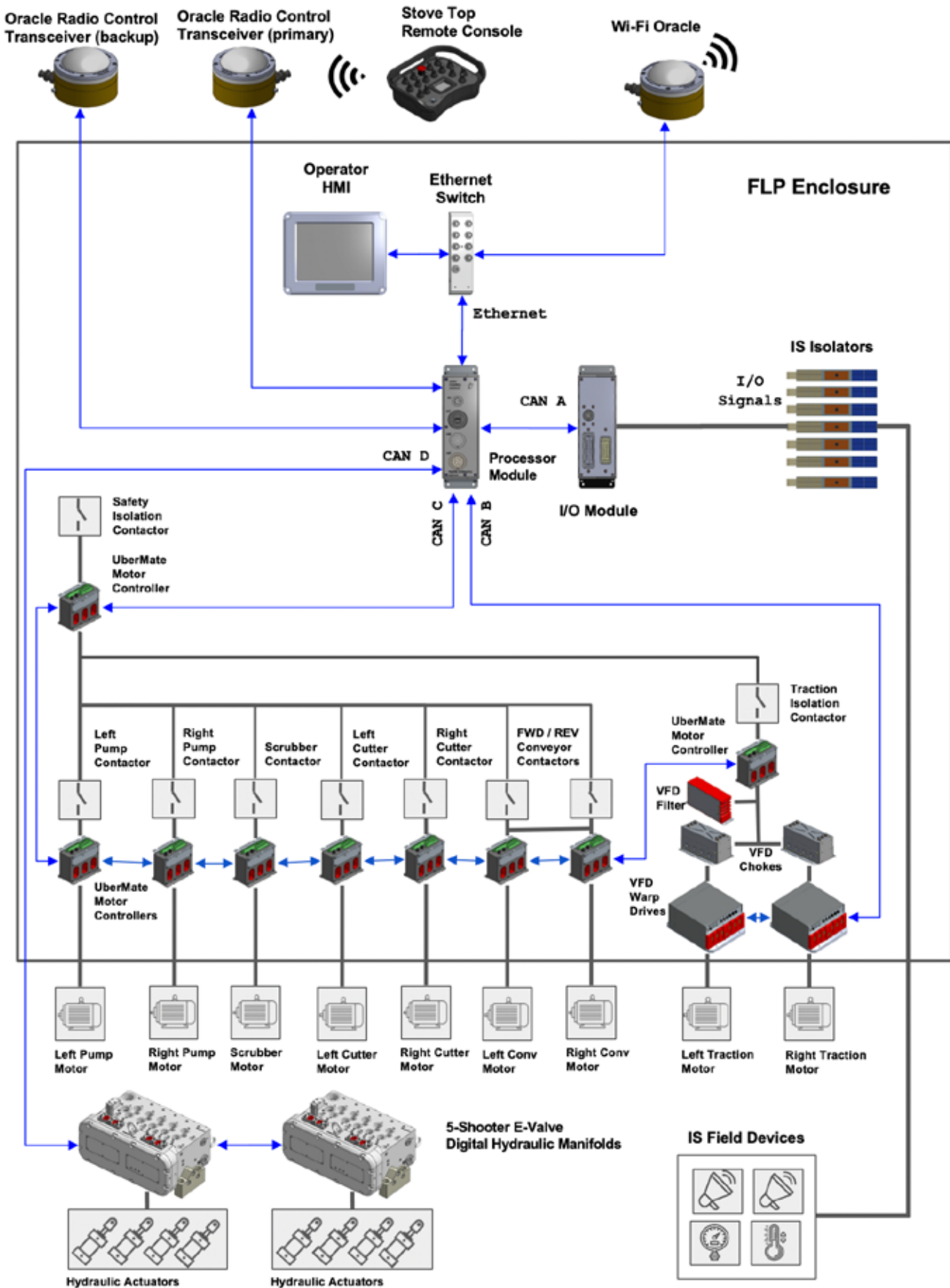
12CM12 Place Change Miner Control System



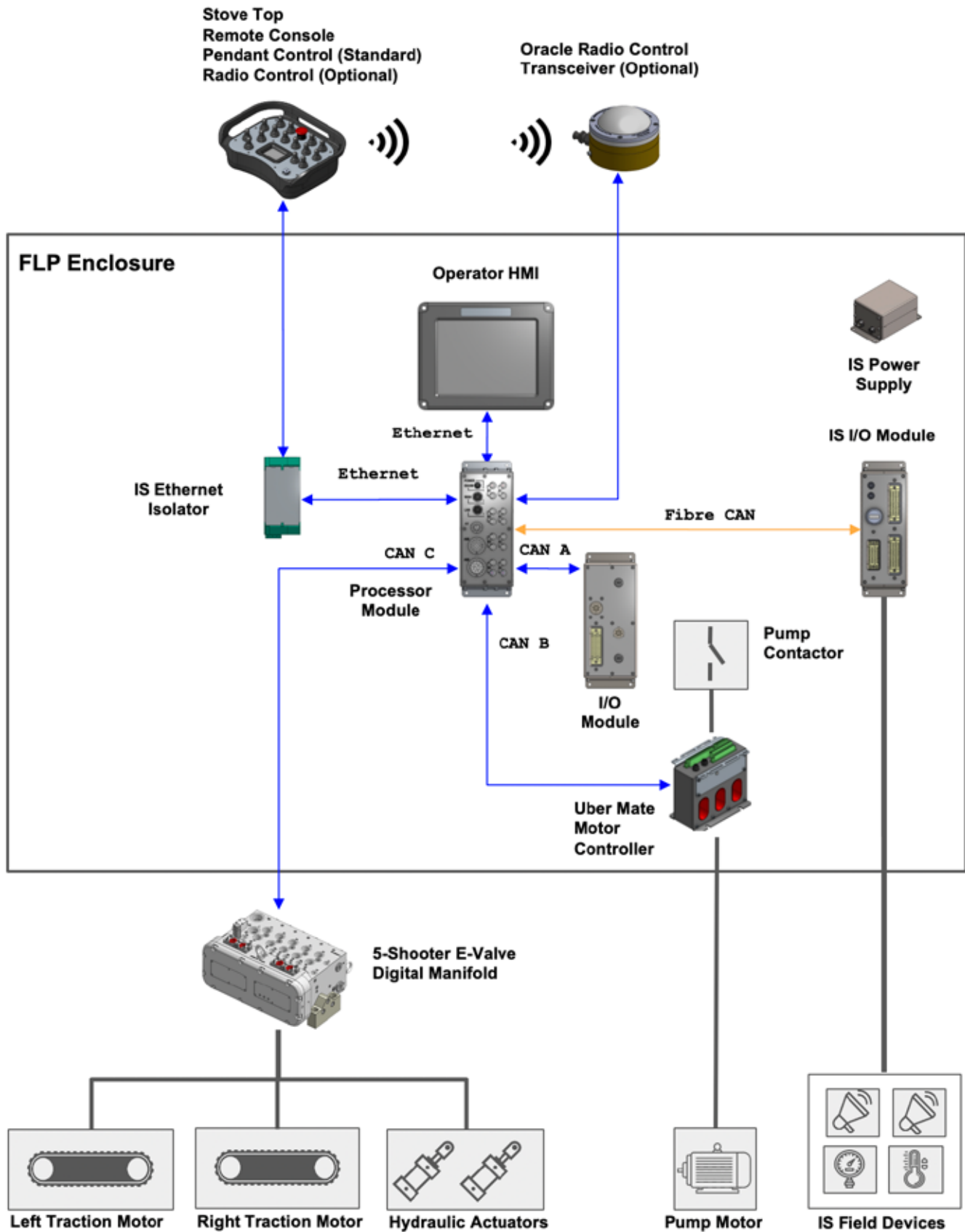
UberMate - 12CM12 Place Change Miner Control System



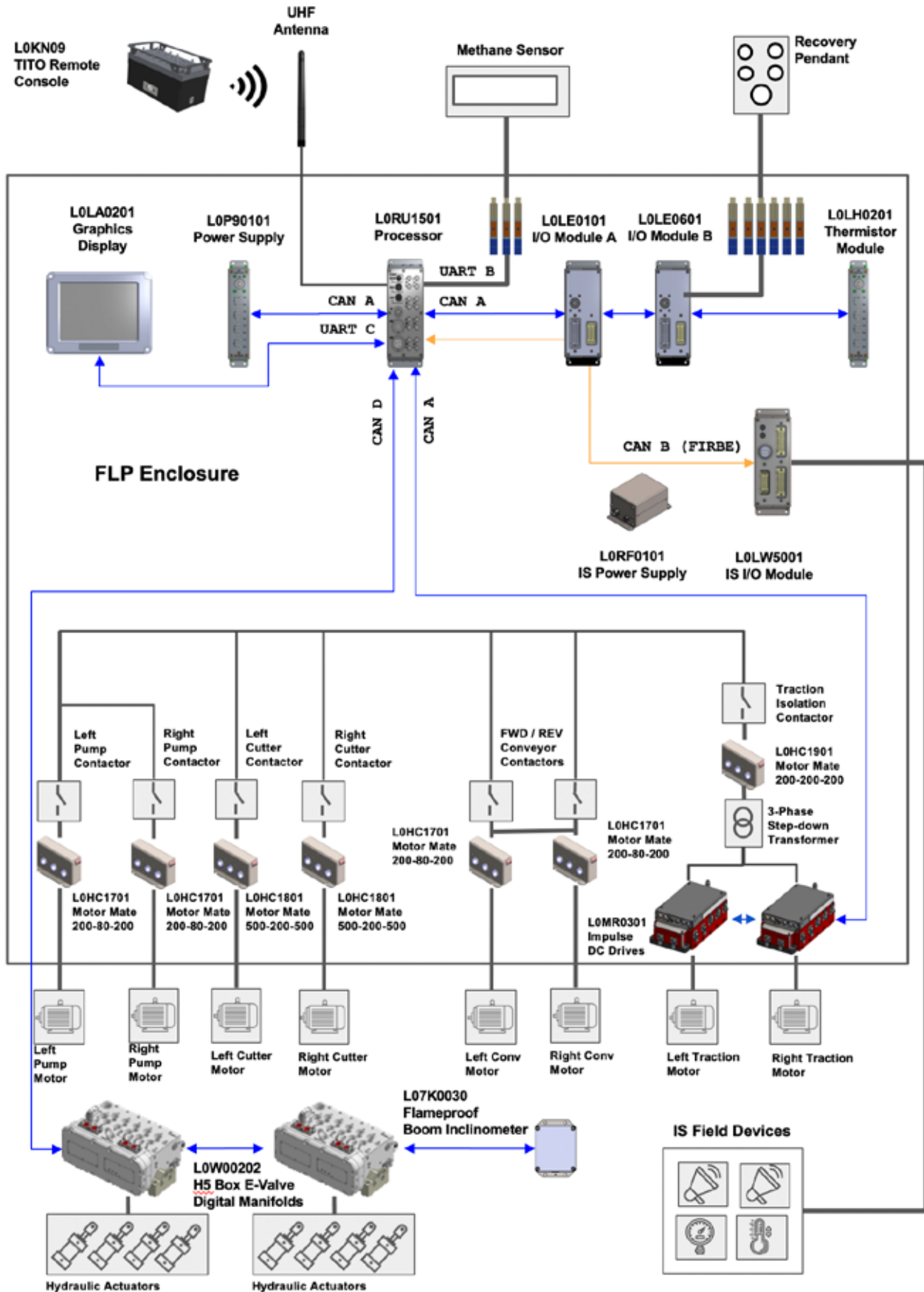
UberMate - 12CM12 Typical Change Miner Control System



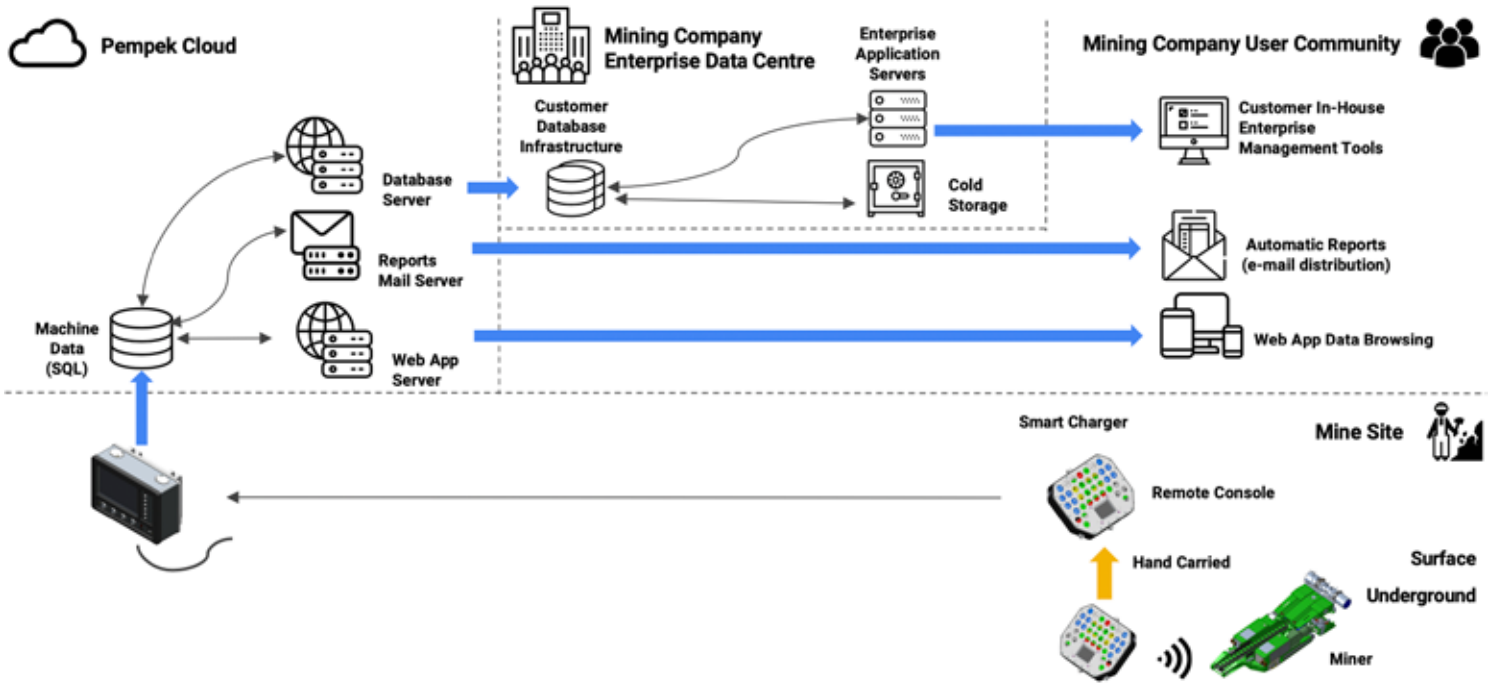
UberMate -Feeder Breaker Control System



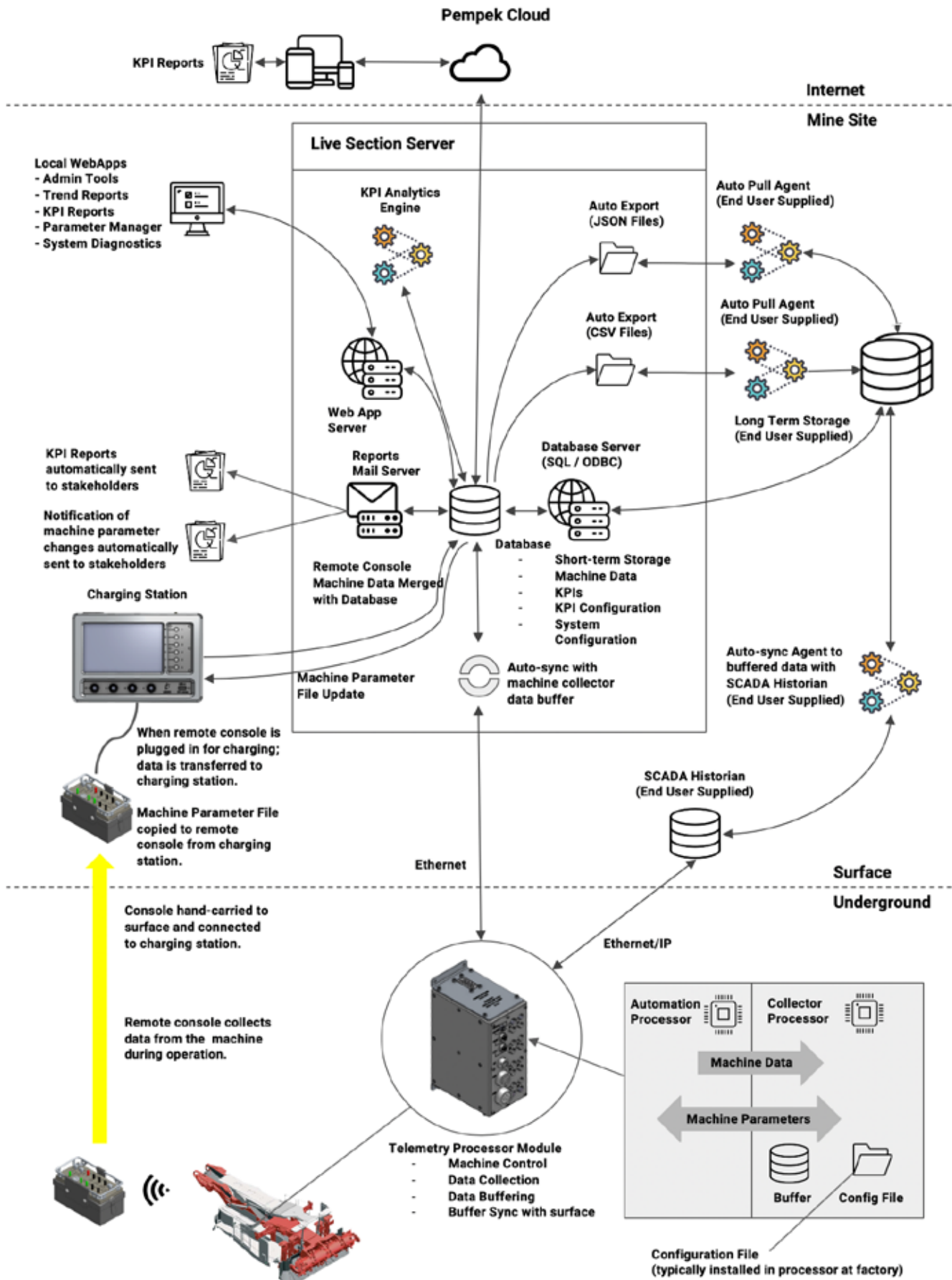
Obelix - Bolter Miner Control System Example



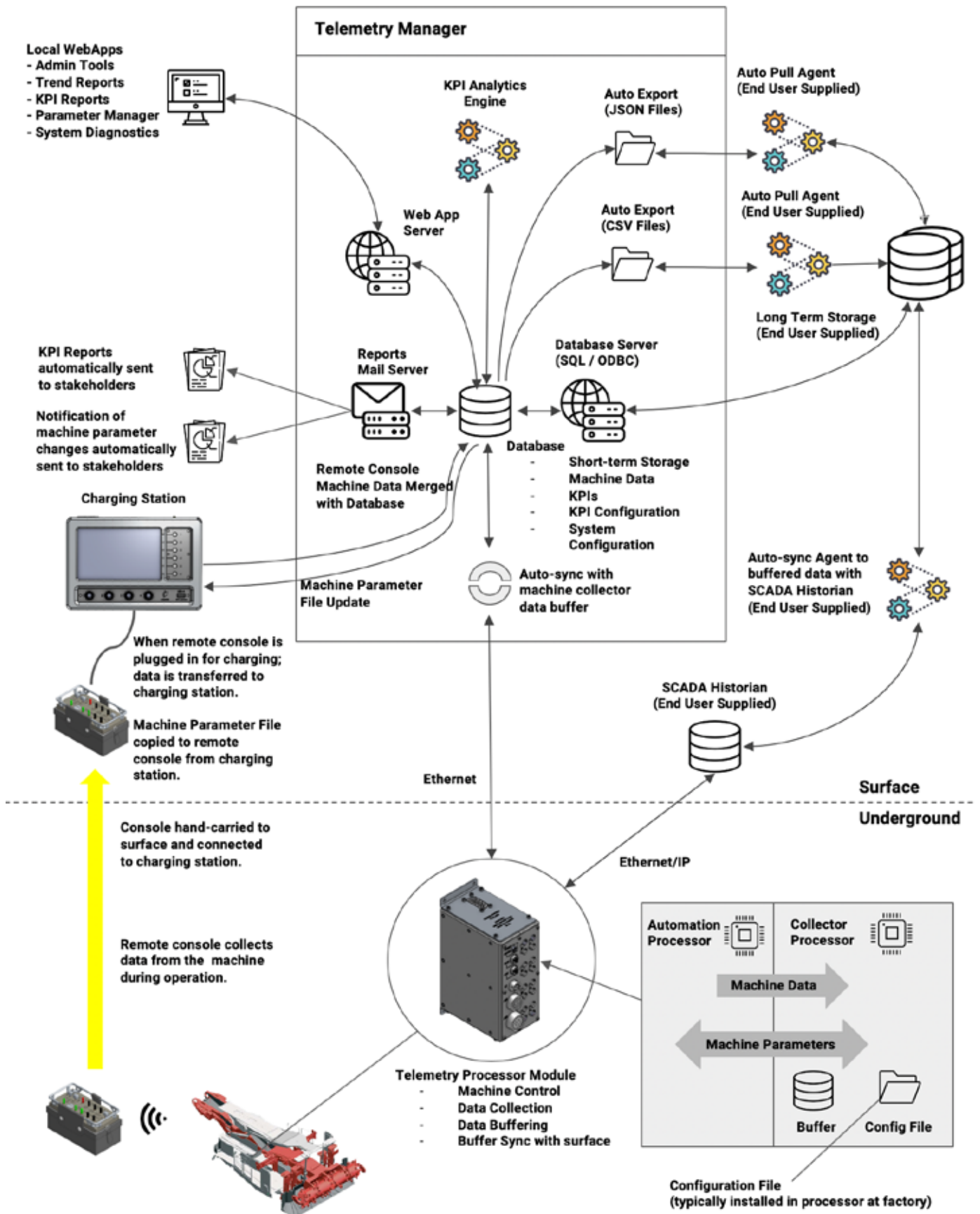
Telemetry - Live Section - Data Management



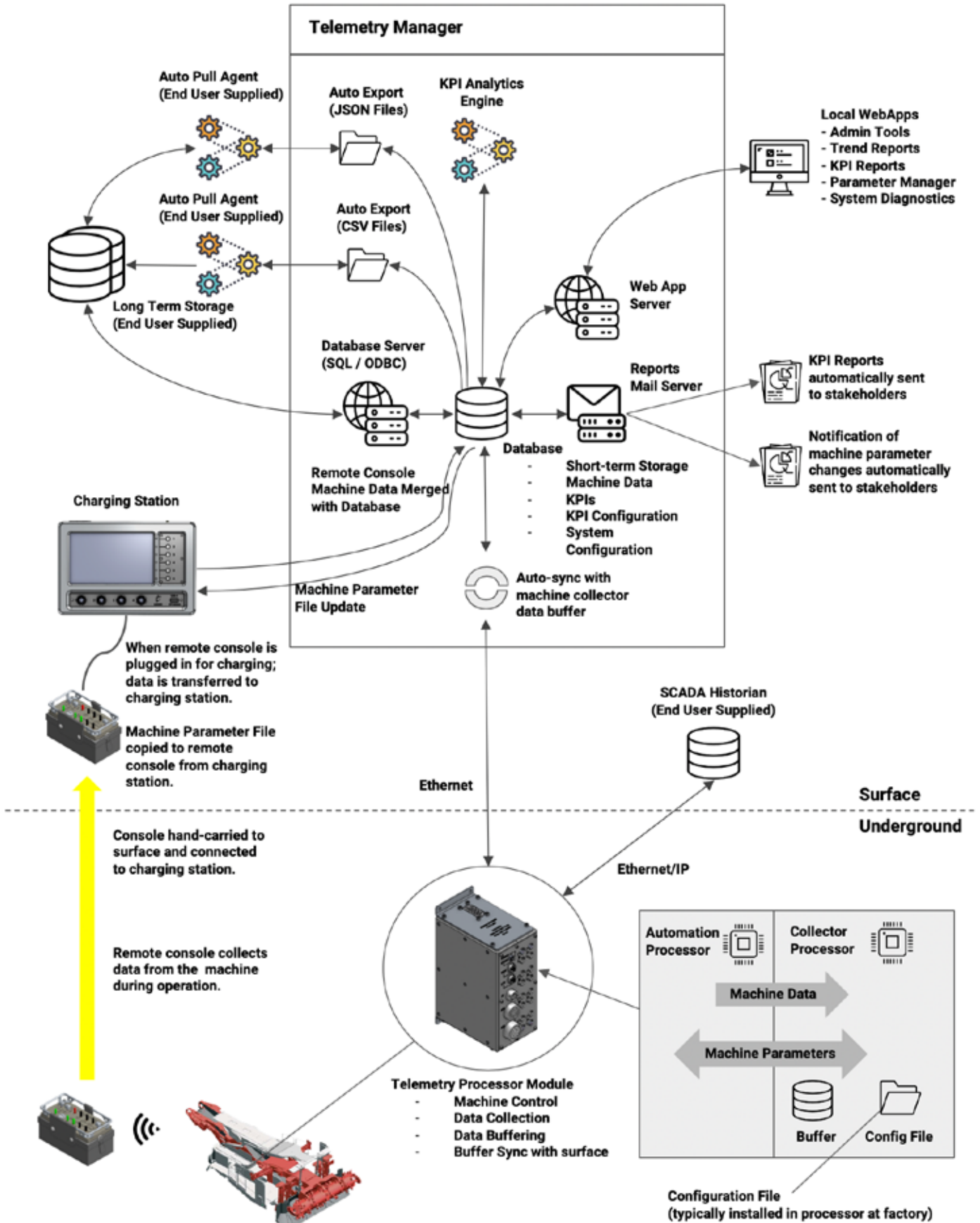
Telemetry - Live Section Sever Example



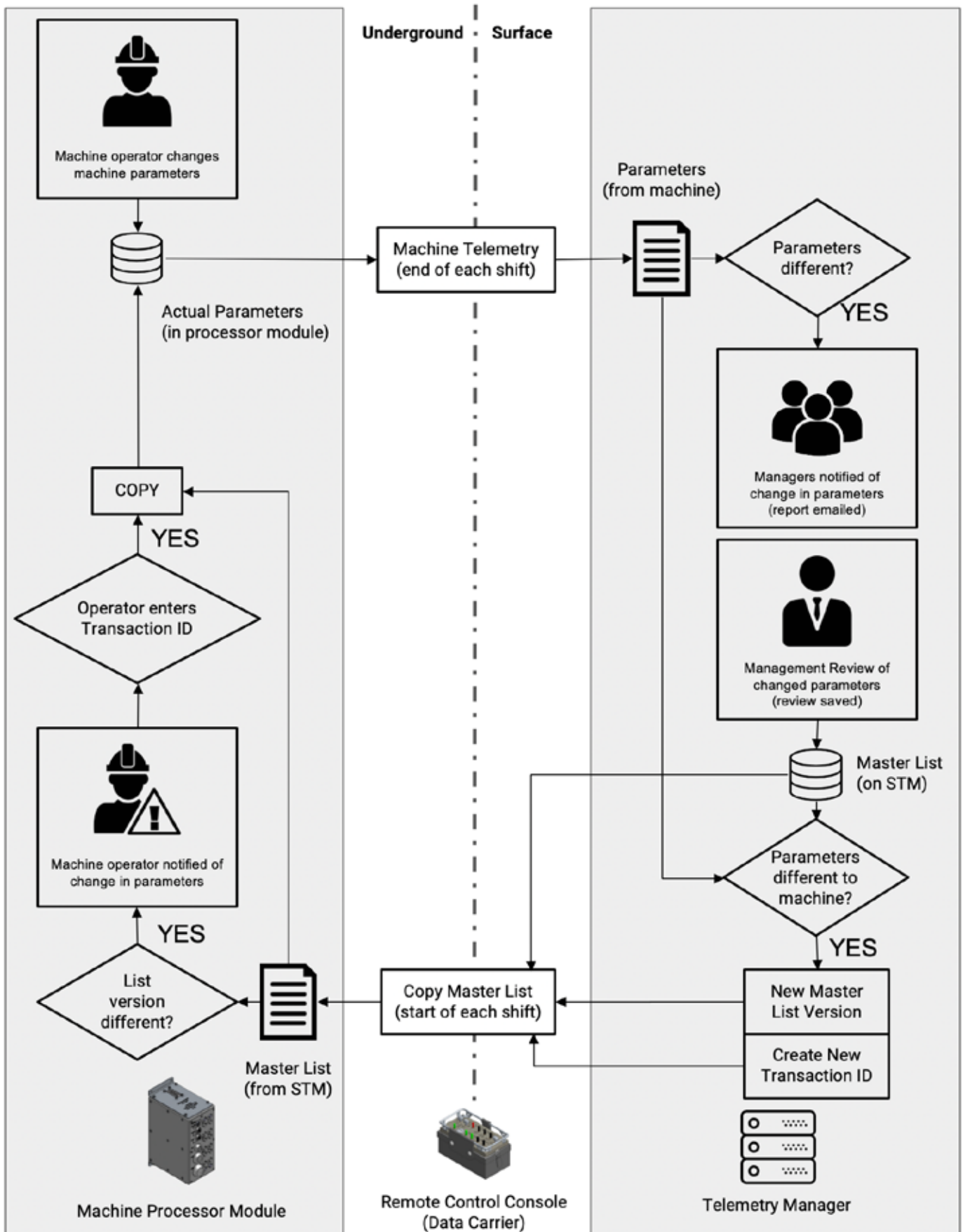
Telemetry - Manager Example



Telemetry - Manager Example



Telemetry - Parameter Surveillance - Control and Data Flows





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