

# Key Challenges Facing Heavy Industry

## HAZARDOUS WORKSITES

The UN reports occupational accidents to account for 2.78 million deaths a year, with manufacturing, construction, transportation, and mining being the industries leading work-related accidents.

## OPERATIONAL COMPLEXITY

Heavy industries feature a mix of machines, materials, contractors, logistics, and several activities running in parallel - driving demand for communication devices, IoT sensors, telematics, and automation processes.

## ENVIRONMENTAL

According to the World Economic Forum, heavy industry is responsible for nearly one-third of carbon emissions. As such these industries play a key roll in helping reduce carbon emissions and reducing negative environmental impacts.

## MISSION-CRITICAL CONNECTIVITY

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## LABOR SHORTAGE

A talent squeeze across industries and mass migration of worker preference into new industries is impacting recruitment and retention. The need to automate and digitally transform has become essential to overcome labor shortages.

## Satellite-Enabled Mobile Connectivity: Applications in Heavy Industry Key Use Cases

### AGRICULTURE / FORESTRY



Unmanned Ground Vehicle (UGV)  
Remote control tractors and mulchers

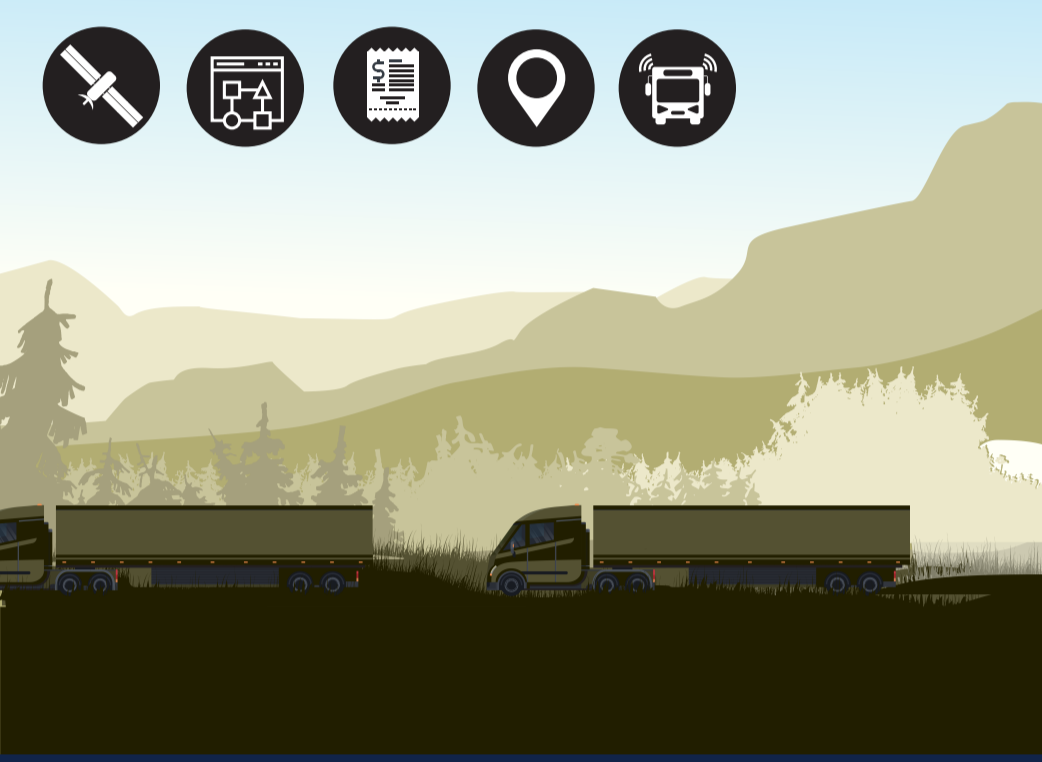
### CONSTRUCTION



Unmanned Ground Vehicle (UGV)  
Remote control cranes, tractors, and excavators  
Condition monitoring  
Equipment data collection



Unmanned Ground Vehicles (UGV) at mining and tunnel face  
Remote control excavators and cranes  
Remote trucks for haulage  
Data Collection



Truck data collection  
Automated toll and ticketing  
Route optimization  
Truck tracking

### MINING

### TRANSPORTATION

### Industry 4.0 Processes Improve Operational Performance and Reduce TCO

CONNECTED EQUIPMENT OFFERS  
CAPEX SAVINGS  
OPEX SAVINGS

STREAMLINING PRODUCTION  
IMPROVED YIELD  
PERSONNEL PRODUCTIVITY GAINS

DOWNTIME REDUCTION  
ENERGY CONSERVATION  
DOWNTIME RECONFIGURATION

Resulting in Increased Profitability and Production Volume

## Intelsat FlexMove Fleet Solutions: Complete Visibility and Connection with Operations

### CAPABILITIES AND FEATURES

Unified system  
Global High-Throughput Coverage  
99.999% Satellite Network uptime  
Global IP/MPLS fiber backbone  
Flexible, cost-effective service plans  
Scalable, Solution for expansion  
Seamless integration to networks and cloud



Multi-orbit HTS Fleet Connectivity

AND

NGSO Connectivity

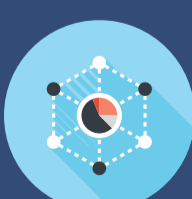


## Leverage Satellite Connectivity Key advantages of connectivity use cases in remote worksites

Connect your heavy equipment fleet and unlock industry 4.0 applications at any site in the world with Intelsat's FlexMove Fleet.



IP67  
SAEJ1455  
BLE, Wi-Fi  
ESA Active-3rd Gen RFIC  
1Mbps (FL) / 1 Mbps (RL)  
12-24 VDC Pin Connector



TCO to establish additional on-site connectivity can be reduced on average by 62% compared to a private cellular deployment.



OpEx savings can also be achieved by deploying automated machines and connected devices to enhance worker productivity and efficiency.



CapEx savings can be achieved through low-cost connected terminals vice expensive connectivity and backhaul nodes.



Scope 1 emissions from heavy equipment fleets can be reduced by 162 tons while scope 2 emissions can be reduced by 93.6%

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