

# HELIOS

> INTEGRATED SENSORS



## Consorcio VTS-KATSO

STARCOM  
Systems



**KATSO**  
Communications SAC



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# > MINING VEHICLES & EQUIPMENT MONITORING



5805.023 km  
0 km/h  
138 l  
1890 rpm  
0 ton  
12.80 l/h  
Correct location

40 m  
100 l  
6 km/h  
4500 rpm

12 km  
30 l  
20 km/h  
1200 rpm  
200 m

out of order  
0 km  
20 l  
0 rpm  
0 ton  
9.80 l/h  
Correct location

8800.019 km  
0 km/h  
60 l  
0 rpm  
250.9 ton  
1.80 l/h  
Correct location

1905.023 km  
0 km/h  
240 l  
890 rpm  
2.0 ton  
9.80 l/h  
Correct location

1254.033 km  
0 km/h  
20 l  
890 rpm  
0 ton  
9.80 l/h  
Correct location

-  Machine running time tracking
-  Location control
-  Fuel thefts preventing
-  Fuel consumption monitoring
-  Axle load and cargo weight

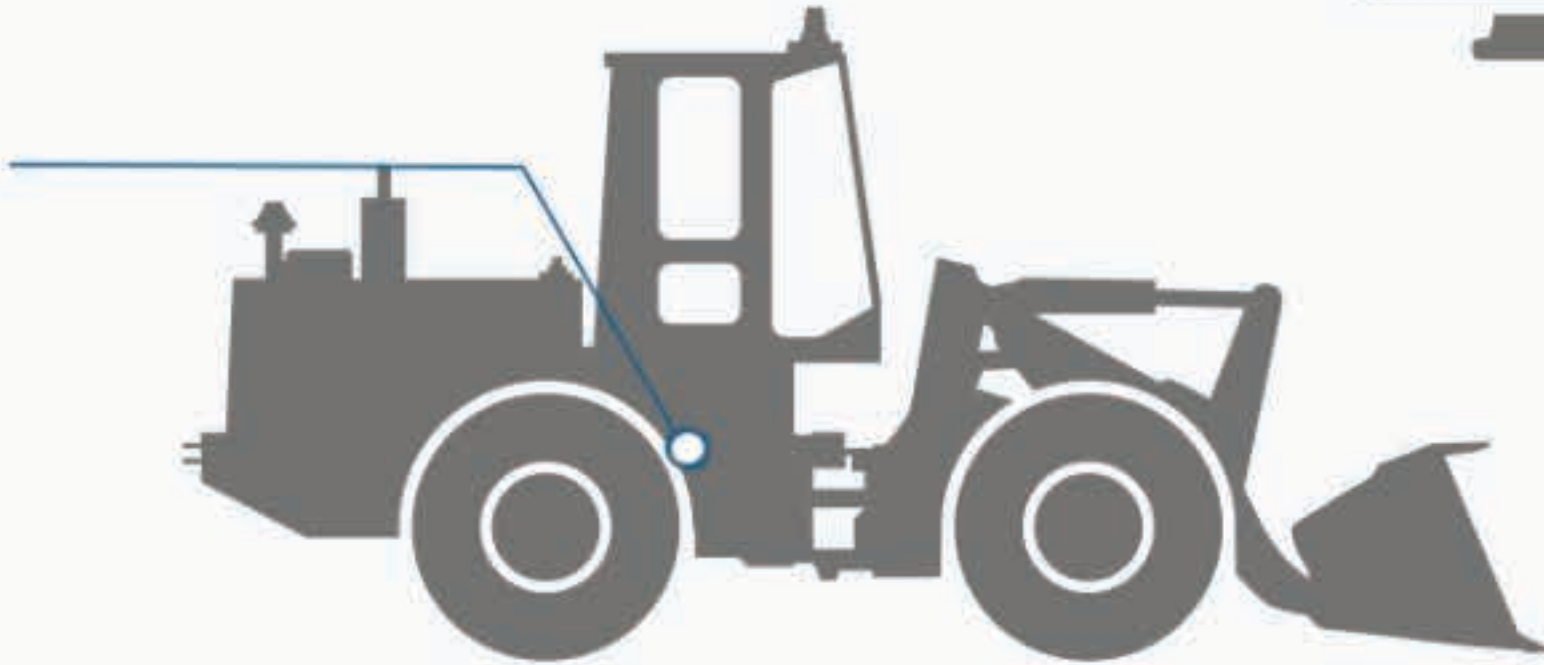


# FUEL CONTROL IN THE TANK



**DUT-E GSM**

Fuel level sensor with built-in GSM module



**DUT-E**

Fuel level sensor



**DUT-E GSM**

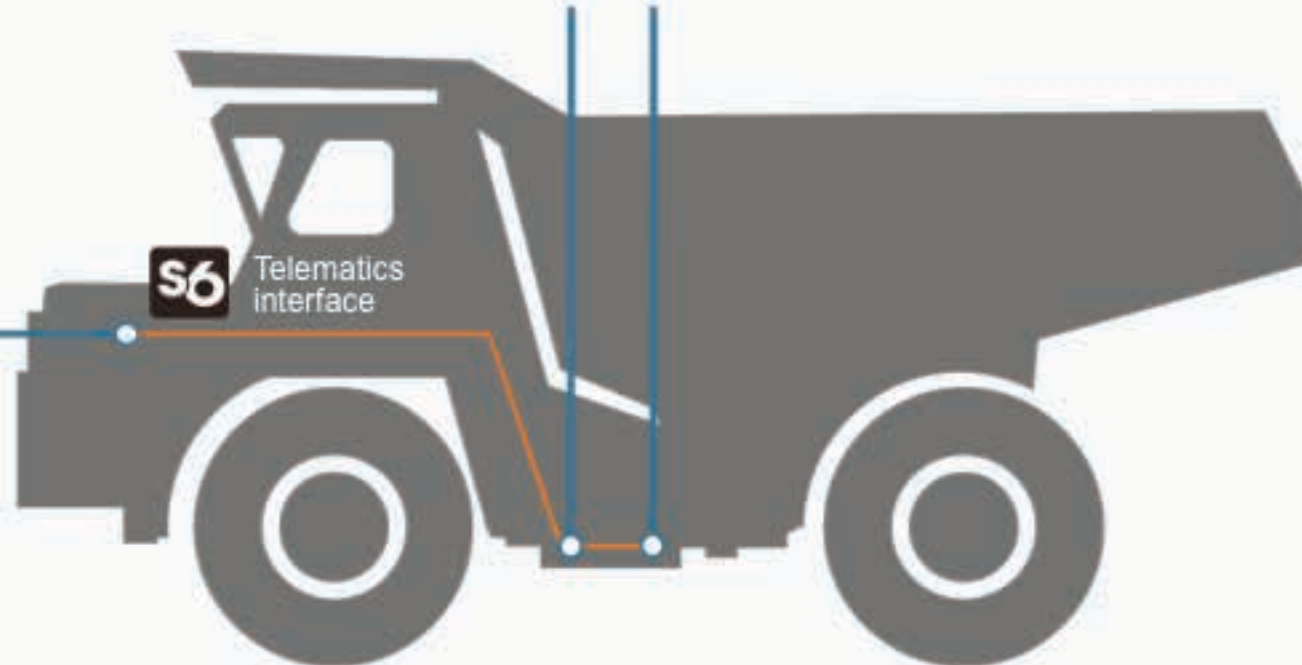
Fuel level sensor with built-in GSM module

# FUEL CONTROL IN THE LINE

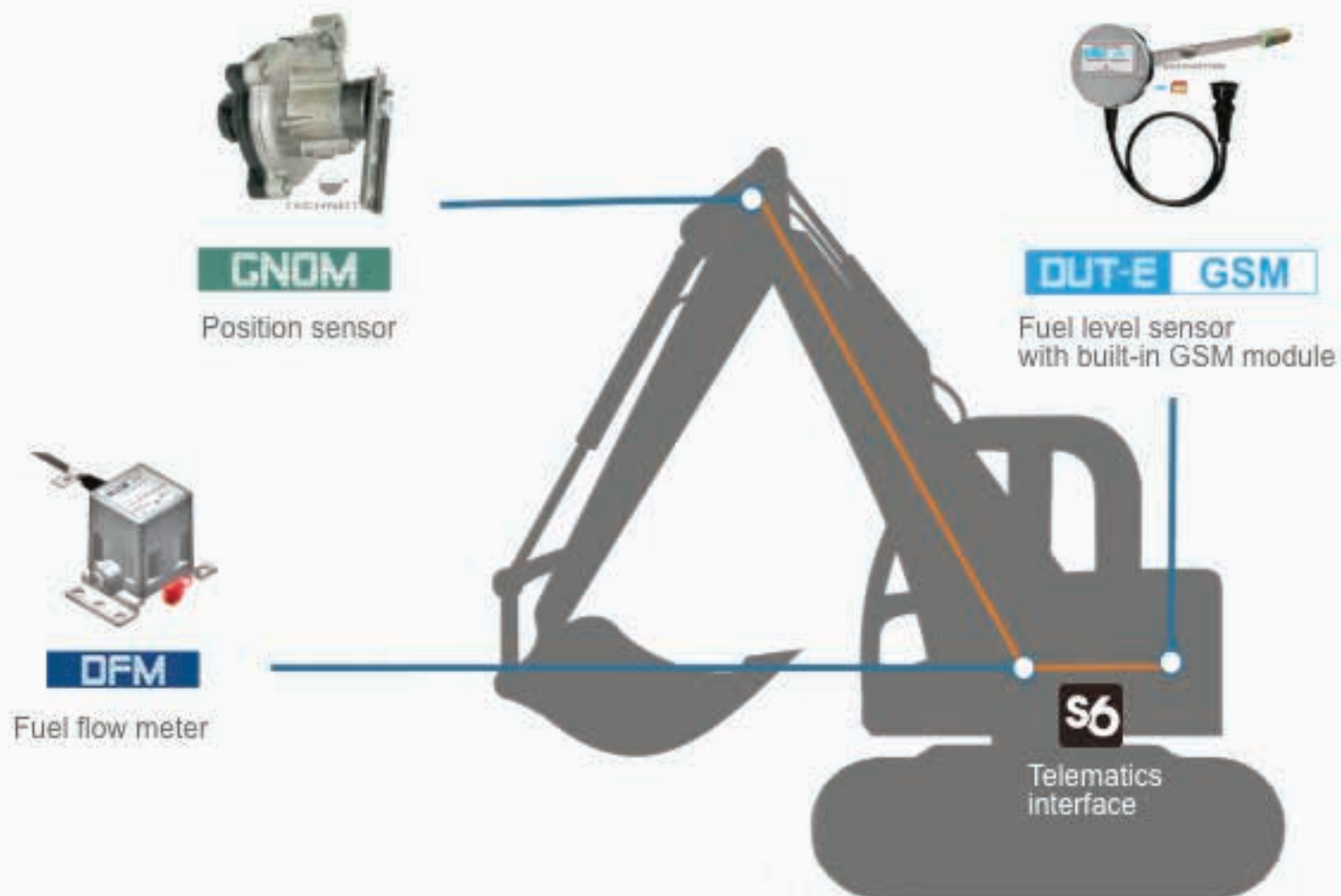


**DFM**

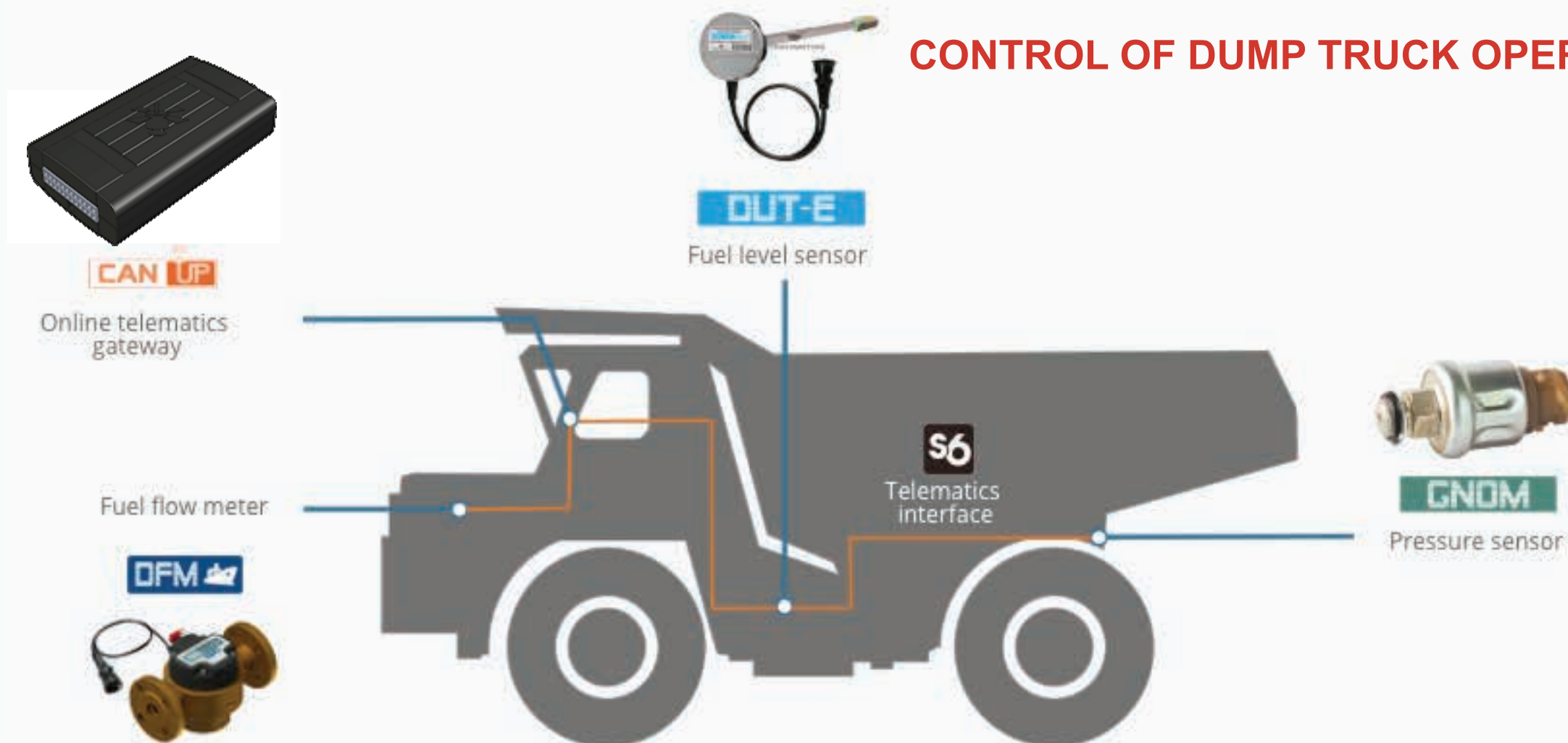
Fuel flow meter



# MONITORING OF THE OPERATION OF BUCKET-TYPE RIPPER-LOADER



# CONTROL OF DUMP TRUCK OPERATION





# LOKIES

## Keyless Smart Padlock

### Remote Openness & Smart Design



Protection for:

**EXPLOSIVES  
MINING EQUIPMENT**

- Remote Openness from Control Center
- Openness with Fingerprint for authorized users
- Record of Location, Date, Time and User through Openness with Fingerprint
- Events Programming with labor scheduling
- Mobile App & Monitoring Center

Shackles Physical Dimensions  
110mm

Padlock Physical Dimensions  
80x80x32mm

IP protection  
-20°C to +60°C operational  
-40°C to +85°C storage

Authorized Digital Fingerprint Capture in our platform

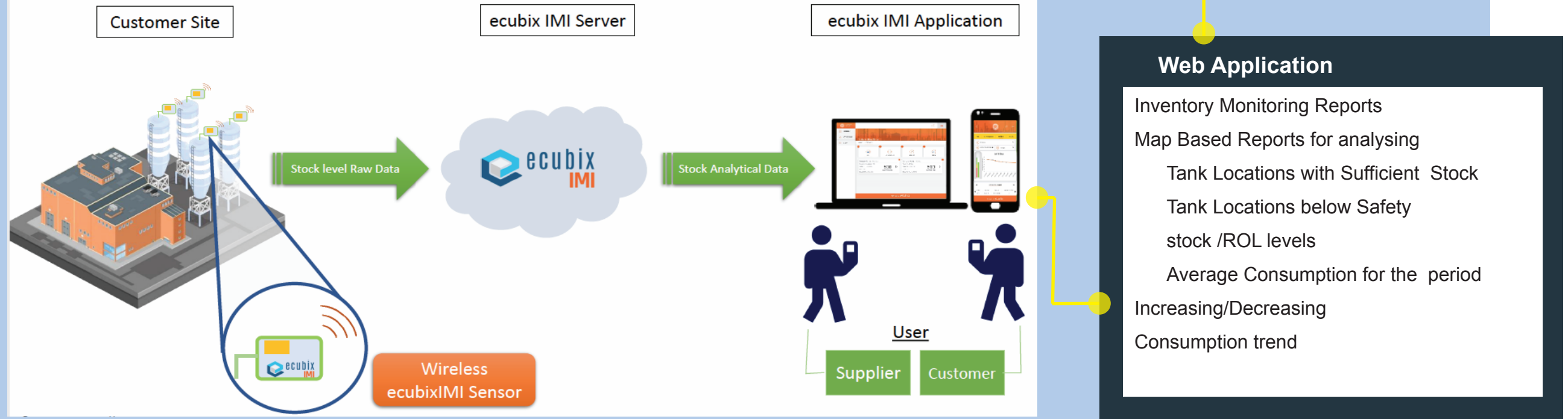
● Color



# MONITORING

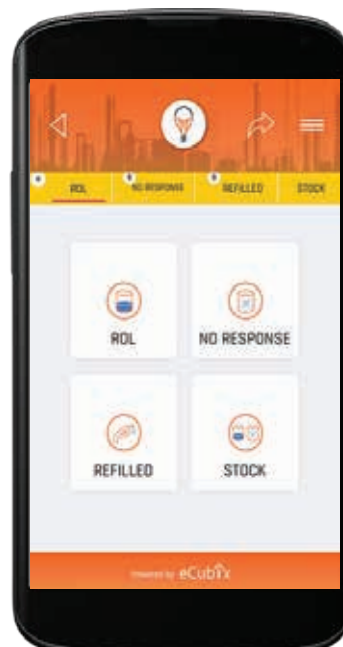
OF CONSUMPTION LEVELS REMOTELY IN TANKS OF SUPPLYING

Manage consumers Tank levels remotely on your mobile with highgrade of accuracy, robust architecture, near Real time visibility and intelligent auto alerts to assist achieving your operational excellence and KPIs.



## Mobile Application

Daily, Weekly, Monthly Trend of Stock movement  
 Map Based Reports for tank location and stock trend  
 Customer category wise Stock Situation  
 Customer Category wise Distance wise stock situation visibility for Dispatch planning.  
 Supports Multi Lingual  
 Multi Themes for UI



## Notifications & Alerts

Auto SMS/eMail Alerts for various parameters

- Stock Nearing Safety Stock
- Stock Near/Below Re Order Level
- Stock above Max Stock
- Stock Out

Supports Multi Lingual SMS/eMail

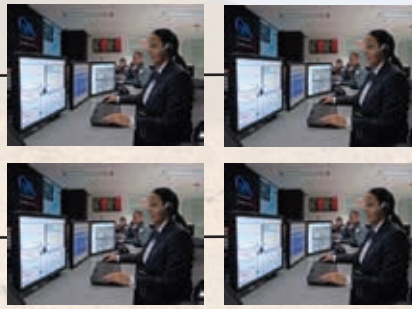


### Coporate Security



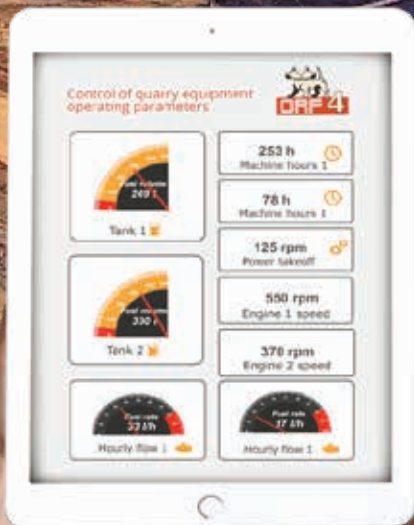
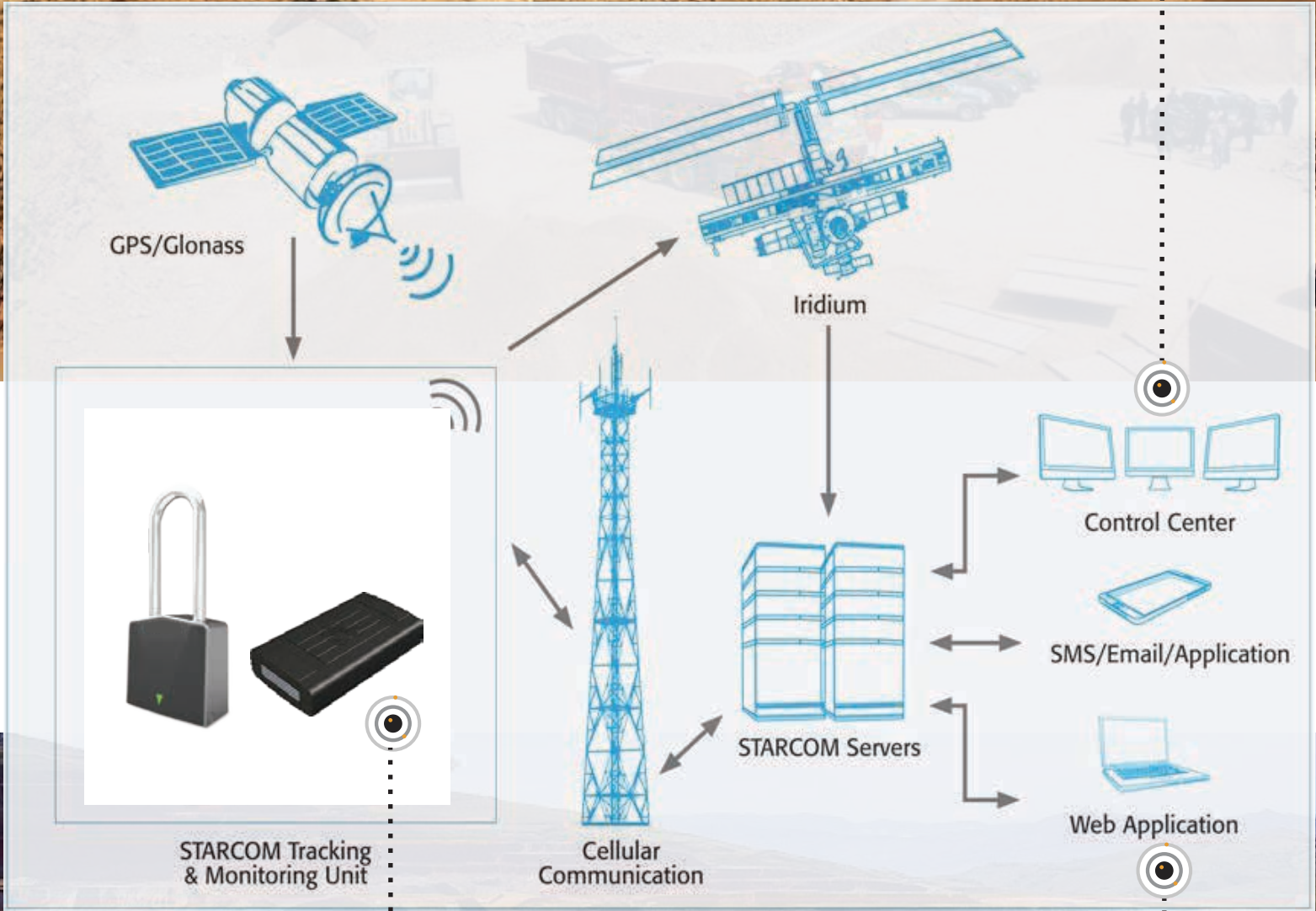
**CENTRAL MONITORING CENTER**

### Mining Units



**LOCAL MONITORING CENTER**

- Air communication with each unit
- Automatic alerts
- Events Monitoring
- 100% availability of location with satellite communication and cellular telephony



- HW programming
- Integrated antennas
- Integration with vehicular sensors
- Digital integration with vehicles
- Analogue integration with vehicles



**Monitoring Apps for authorized users**

- Events Configuration
- Variables Configuration
- Alerts Configuration
- User Configuration
- Access and Security Profiles
- Web platform
- SW Programming

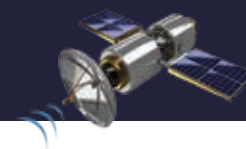


# HELIOS ADVANCED HYBRID

## Monitoreo satelital para lugares remotos sin conexión celular



IRIDIUM SATELITAL MODEM FOR TRACKING AND LOCATION



## Uses

### Remote locations without access to the cellular network

monitoring in remote sites without access to the cellular network and it has a high risk of theft.

### Remote locations with the risk of theft,

remote sites of difficult access, without access to the cellular network, which are prone to theft or kidnapping.

### Roads through deserts and jungles

roads without communication, such as deserts and jungles, that may be of risk to the carrier by an accident or mechanical failure.

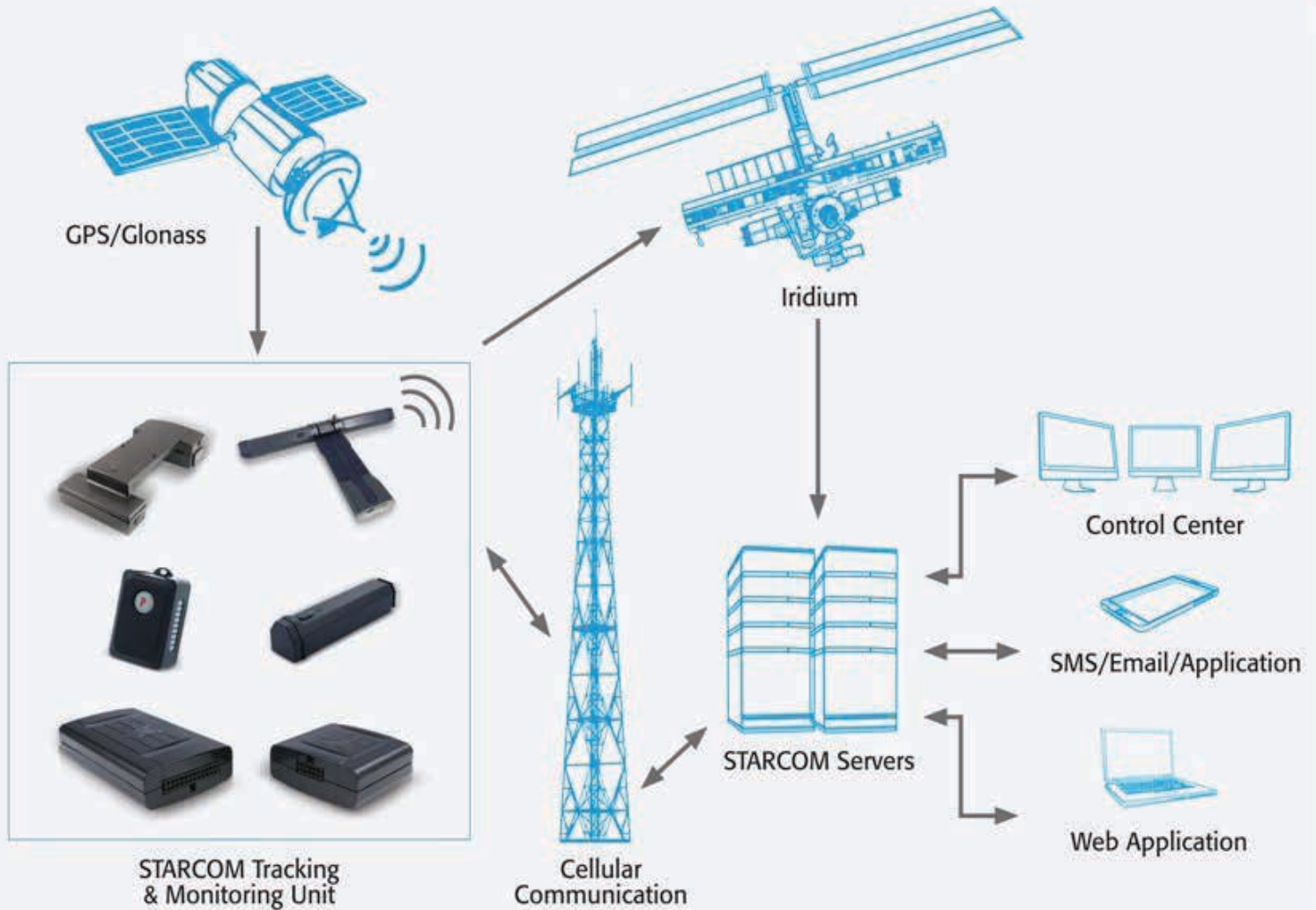
### Roads between mountains

highways of hard accessibility, that the module of the satellite can prevent risks on track and prevent accidents.





# Application Architecture Starcom Online



## Integrated Sensors





## Technology

The entire cellular technology solution (GSM / CDMA / HSDPA) and location (GPS / GLONASS) allow real-time tracking throughout the world through a user-friendly web-based application, which can be easily implemented and accessed from anywhere in the world, in almost any language. All of Starcom's GPS tracking systems are certified to ISO-9001: 2008 and meet the most stringent industry standards, including:

### ISO-9002

Products tested in the field with global certification.



Federal Communications Commission



EU Formaldehyde Emission Standard

## GPS/Glonass and the latest in cellular technology

2G, 3G y 4G - LTE.

## Global Compliance Regulations





# ONLINE PLATFORM



## Advanced Web-based Fleet Management with flexible event generator exclusive of Starcom.

Starcom Online offers advanced features:

Detailed maps at street level.

Complete management solution - with Starcom Online, you can manage all your vehicles, assets, employees and much more, all in the same tool.

Define your own events with the Starcom Event Generator.

Receive predefined alerts under the required configuration according to the needs of THE CLIENT.

Automatic generation of customized daily, weekly or monthly reports

Obtain all the information of the needs of THE CUSTOMER to handle his requirements, from multiple databases, vehicle data, work schedules and much more.



## Starcom Unique Event Generator:

The unique Starcom Online Event Generator allows you to predefine an event that uses a combination of components or conditions. For example, an event might consist of speed in a specified area, opening the door or stopping vehicles in unauthorized areas, defining geographic fences and recording the time the vehicle enters or leaves the field or geographical fence .

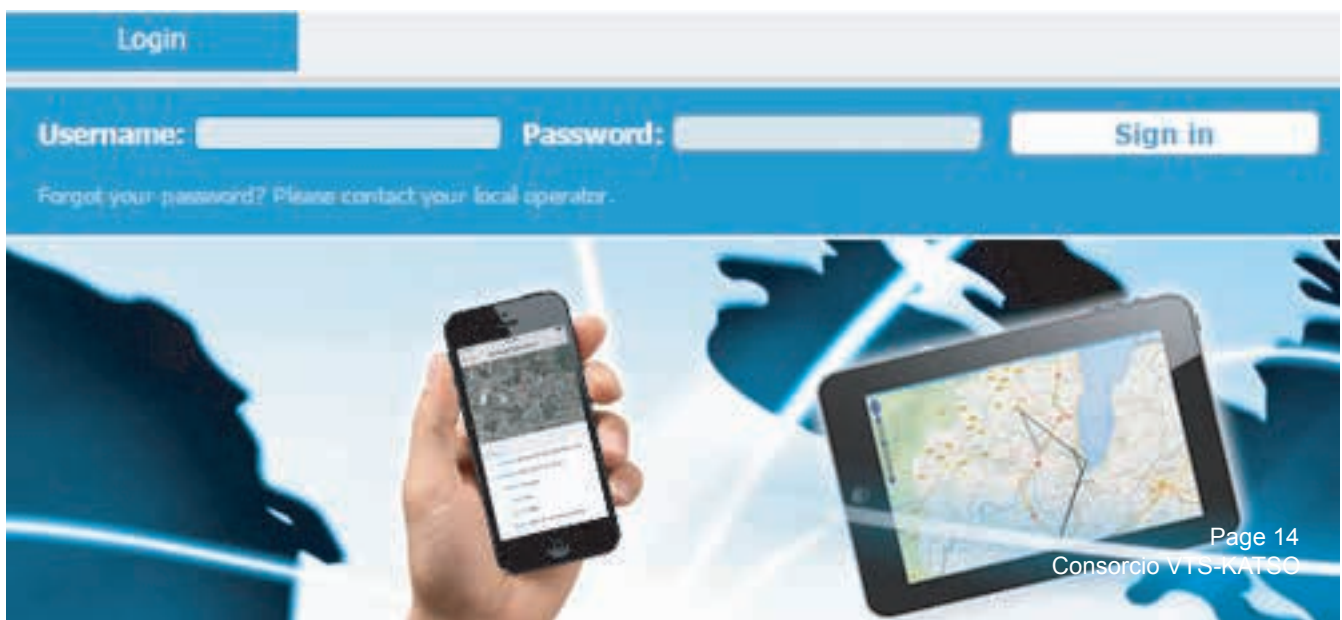
## Starcom Online - advanced solution that provides many benefits:

**Easy to use** - Starcom Online is friendly and does not require installation.

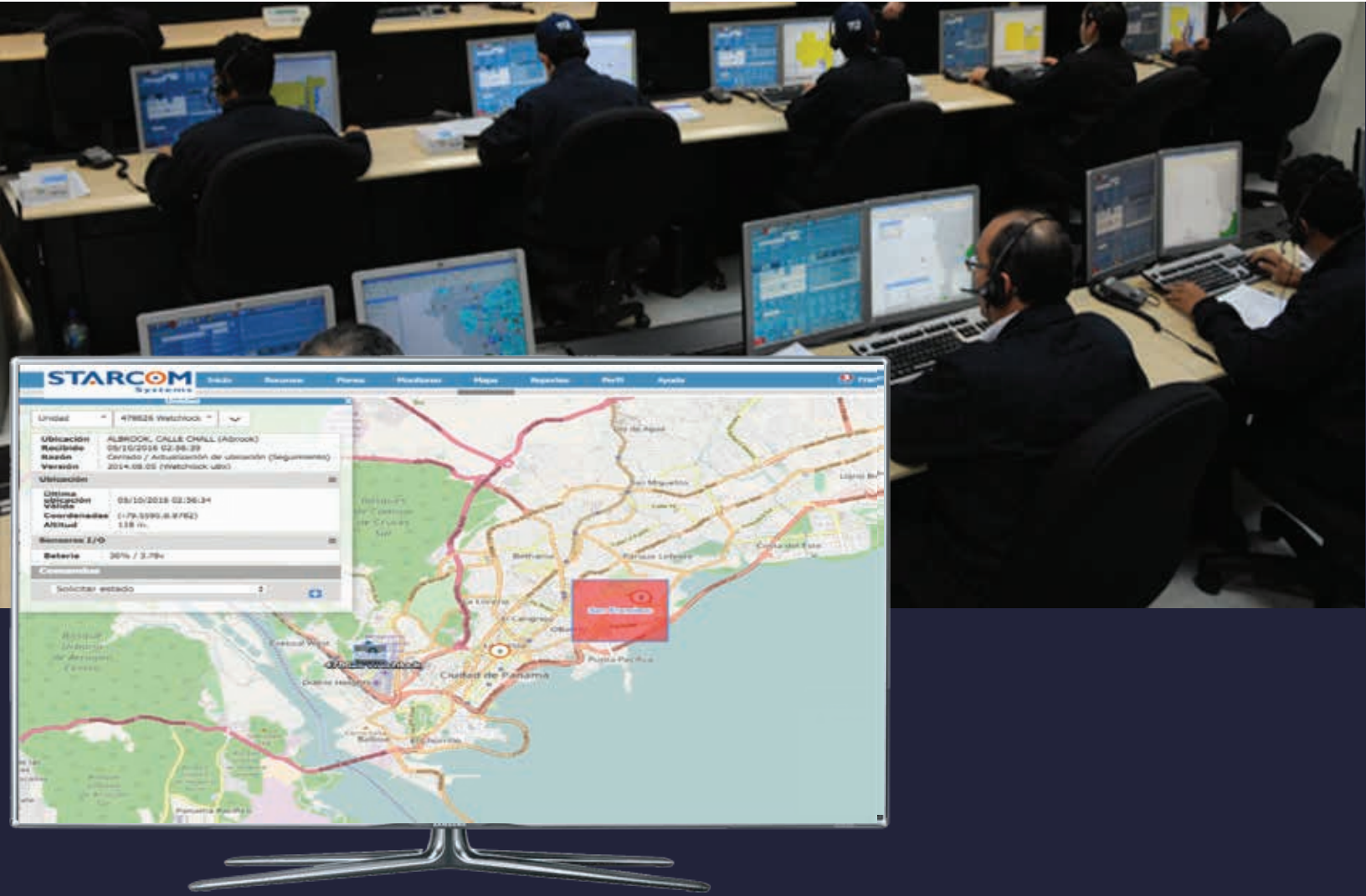
**Cost Reduction** - Monitoring driver behavior to achieve an immediate reduction in costs.

**Supervision and Total Control** - Starcom Online helps you create a more efficient organization.

**Application available** anytime and anywhere. Access to the Starcom Online platform from anywhere at any time..







# Remote Monitoring Center

**Alarms, Events, and notifications** are handled as incidents from the Monitoring Center in Real Time.

**Alarm activations attention** to detection of the location of the event.

The incidences reported, and managed by the Center **can be integrated with the delivery order of ERP (SAP, Oracle, Sage, Microsoft, Odoo).**





**ODBC support:** The software uses ODBC connections, and therefore you can connect to any database platform.

**Customers:** contains all the information about the VH, including entity, Location, Model, etc.

**Emergency Services:** Contains information about the emergency services for each zone, for calls to bodies of private or public security.

**Stations of installation:** Contains information about the authorized installation stations and their authorized employees.

**Operators:** Contains the list of operators registered in the system, including permissions to access the software for each of them.

**Displays the units:** in a map with the monitoring system of the unit, presenting to the nearest emergency body that can provide assistance and relevant information.

**Keeps a record** of all actions, dates and users.

**Customizable chain of events** in case of an emergency



# Mobile App for monitoring of reaction of security agents



**Identification** of the unit in Emergency or Accident

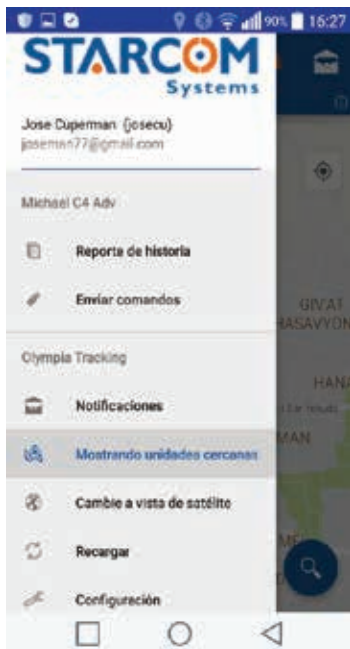
Allows the **location of the unit** through the download of apps.

**The follow-up** to notification, alarm or event linked to the vehicle using Apps.

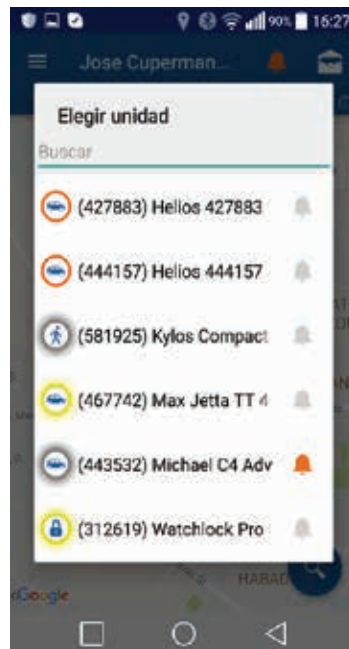
**Access authorization** for monitoring through the Apps for security forces.



# Mobile App



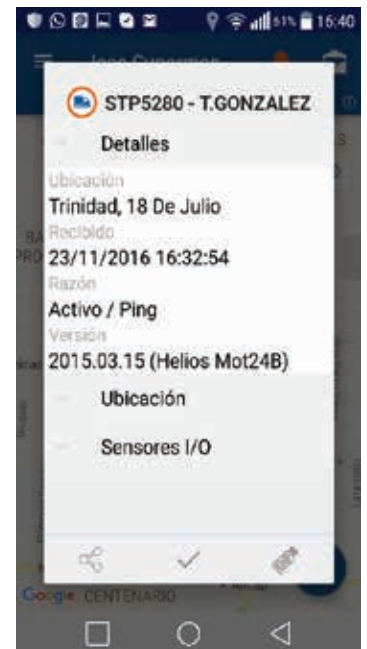
**Options**



**Units**



**Location**



**Details**



**Receives alerts in real time**

**Visualization of the location of the fixed assets or in motion**

**Gives all the details of each active device by**

**Viewing the list of notifications**

**Displays details and location of each notification**

**Notification Settings**

**Historical reports per unit**

**Compatible with devices with IOS or Android system**





# Mining Sector References



**1,500** units installed in the mining sector with

# HELIOS ADVANCED HYBRID



*Track your vehicle anytime, anywhere!*

**Track & Trace Zambia Ltd.**  
info@trackandtracezm.com  
+260978786911

**Local Partner**

*The Ultimate Tracking Solution*



- 
- Sudán 350 units
  - República del Congo 330 units
  - Kenia 350 units
  - Tanzania 300 units
  - Ucrania 220 units

# HELIOS

> Sensors Integrated



- Autonomous units
- Quick and easy installation
- Events configuration
- Audit log
- Geofencing
- Accelerometer
- Information in memory
- Roles and Authorizations for users
- System based on the web
- Multiple languages.

Starcom Systems is a leading global company, specializing in advanced automated real-time systems for remote tracking and management of vehicles, containers, assets and people. All systems are characterized in strength, stability and continuous performance.



Starcom Systems is publically traded on the AIM Market of the London Stock Exchange, conforming to the highest and most strict regulations in the market, proving its stability and reliability.

Starcom's systems provide a complete solution, consisting of innovative equipment and unique software. Thanks to the user-friendliness of the system, it provides useful and effective solutions, based on each user's settings and requirements.

With more than 15 years of experience and expertise, Starcom Systems distributes and sells its products through 110 technology partners and independent operators in more than 53 countries, and its application operates in 32 languages. As a global company, Starcom Systems' products include certifications from all the leading standards in the



## Certificate ISO 9002

Products tested in the field  
with global certification  
(TUV, FCC, E-24, and EMC)

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www.vtssolution.com/gpsstore







**EEUU**

## **Virtualdoxx**

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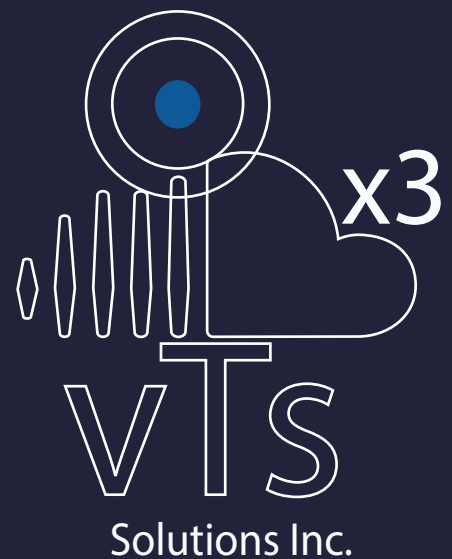
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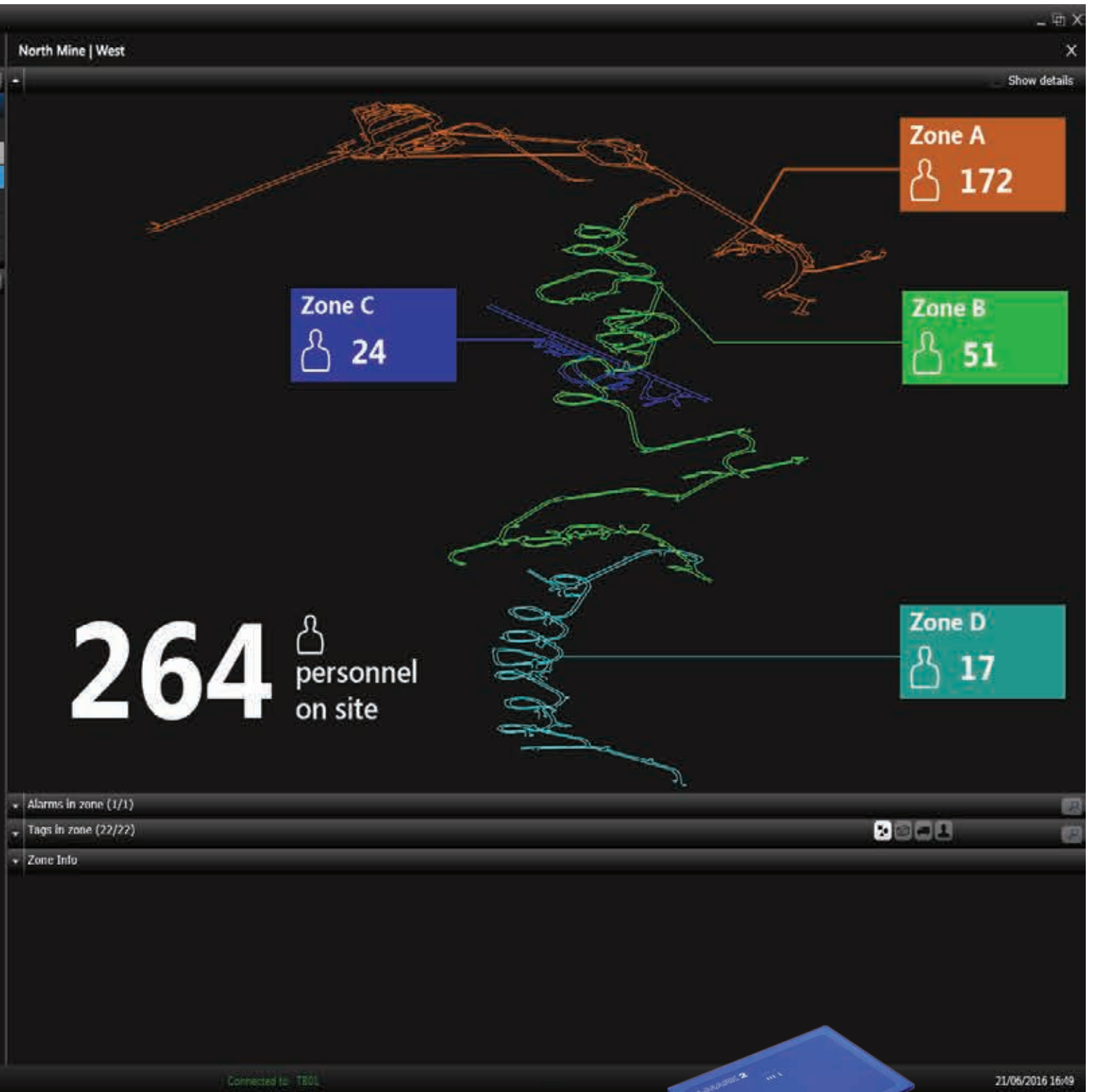
# MONITORING

IN REAL-TIME OF PERSONNEL OPERATIONS UNDERGROUND, AND TUNNELING



Rastreo, Seguimiento e Identificación del Personal

North Mine Inc.		
All zones		
Name	Out	In
North Mine   West	15	0
Zone A	21	1
Zone B		
Zone C		
Zone D		
All unregistered tags (0/0)		



## Monitoring of personnel underground

Monitoring of personnel underground

Information in real time and at the precise moment

Compliance with HS&E directives

Visibility of possible emergency situations

Real-time location of employees by zones

Significant improvement in staff safety.

Increased efficiency in evacuation situations

Improves the security of daily operations

## Automated Personnel Management underground

Automated personnel count

Location visibility

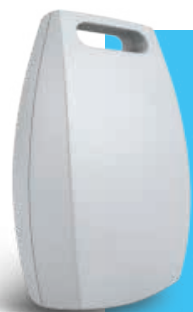
Conglomerate of automated personnel

Greater efficiency during emergency drills.

Monitoring of key KPIs

Cost-effective solution

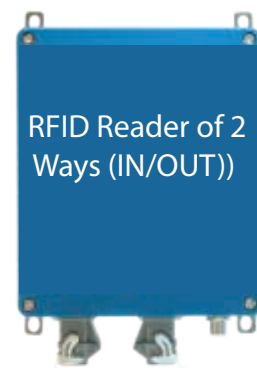
Audit tests



Wide range technology, enables the tracking of personnel from access to the tunnel to other locations determined by zones



Bracelet with active RFID used for security applications such as personnel conglomerate, personnel monitoring working alone, and access control in dangerous environments.



RFID Reader of 2 Ways (IN/OUT))



Bluetooth mobile reader for active and personal tracking, ideal in an emergency situation where you can locate lost personnel



The positioning marker is used to provide the exact location of a label for access control, as well as a closed door and a control door. They are used in pairs to detect the direction of movement