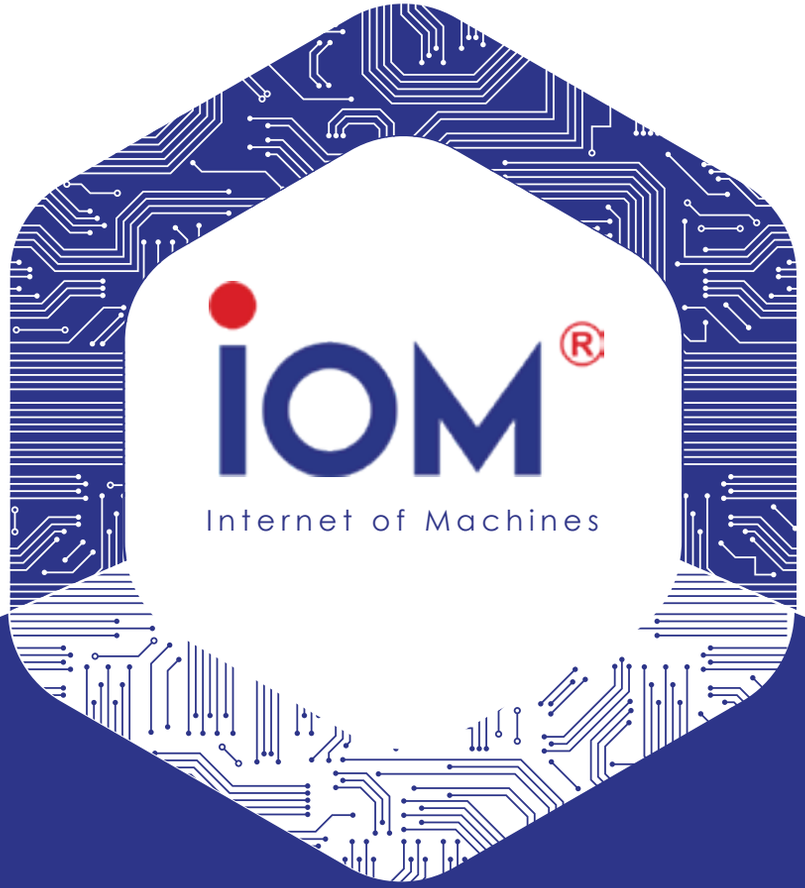
INNOVAL®
Value of Innovation



REMOTE MONITORING SYSTEM

www.innoval.biz

INNOVAL®

35+
years of experience

Innoval was born from ***35years of experience*** of its technical and operational team in electronic Systems for industrial mobile vehicles.

100
customers

Innoval proudly serves a network of more than 100 clients across ***multiple industries***, including ***port terminals***, ***construction sites***, ***still mills*** and ***quarries***.

5000
systems

We design all our products by ourselves, ***hardware*** and ***software***, for this reason our strong points are the customization and flexibility.

11
countries

Our electronic systems are installed on industrial machines operating ***worldwide***.

OEM

We supply our systems to manufacturers of industrial mobile vehicles to have global control in real time, with Windows CE operating system, CAN-bus, CANopen, J1939, FMS protocols.

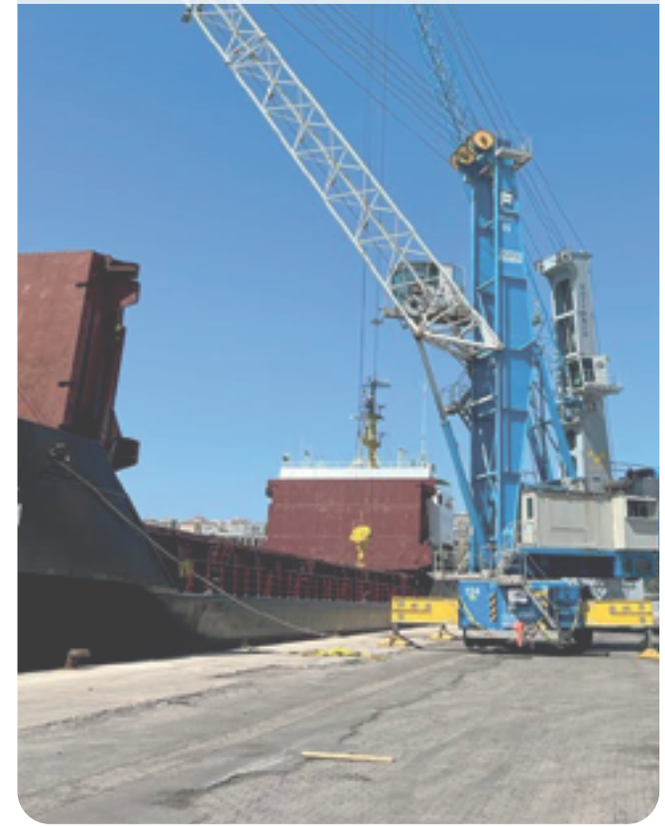
iOM®

We offer our electronic systems to end customers to be able to remotely monitor all the industrial mobile vehicles in their fleet with ONE system.

(Linux operating system)

REVAMPING

To ensure that the vehicles are efficient even after several years, we carry out a complete electronic revamping of Mobile Harbor Cranes, Reachstackers, Forklift and Spreaders of different brands.



IOM®

"***Internet of Machines*** is a next generation machine telemetry and fleet remote monitoring System that can satisfy customer needs and used on machines of different types and brands.''

Industries


Ports
& Logistics


Construction
& Oil and Gas


Steel mills
& Heavy Industries


Quarries
& Mining

What do customers want?

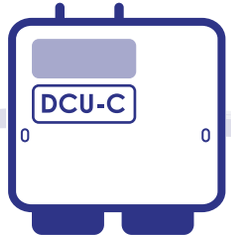
- Know if the machine is working
- Know if the machine is operating correctly
- Know the position of the machine
- Inspect malfunctions easily and rapidly
- Plan machine maintenance in advance
- Quickly monitor all vehicles

What do INNOVAL provide?

- Faster response to machine problems
- Historical data for machine efficiency analysis
- Machine fault predictions
- Control unit with GPS/LTE on the machine
- Real time alerts and warnings
- 24/7 monitoring
- A single interface to remote monitor all vehicle

Innoval System includes:

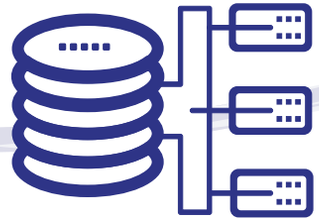
CONTROL UNIT



Deployment of ***DCU-C V2 control unit*** in the machine and a VGA display (optional).

Linux operating system.

DATA COLLECTOR



DC runs ***On Premise*** or on ***AWS Cloud***

Records machine data in a database allowing big data elaborations such as KPI (Key Performance Indicator) computation and long term analysis

DASHBOARD

Interactive ***dashboard*** for end user to view the interest data

What WE MANAGE

START

- User authentication by NFC badge
- Management of operator list enabled to the utilization
- Checklist for the vehicle start
- Operator detection (sensor located on the driver seat)

SAFETY

- Recording of all faults, alarm, system by-pass
- Spreader Status (TL seated, TL locked, TL unlocked)
- Stability Reserve Status
- Any active alarms
- Signalization for motor speed at minimum for long time
- Collision avoidance systems management
- A.I. camera and UWB sensors management

MAINTENANCE

- Customizable maintenance checklist
- Monitoring of traction unit
- Monitoring of hydraulic parts
- Suspension Monitoring
- Steering monitoring
- Tires pressure and temperature monitoring TPMS
- Pre alarms and alarms based on abnormal conditions

BUMPS

- Longitude and Latitude
- Resultant and local acceleration (3-axis)
- Direction of impact
- Acceleration diagram
- Speed data before and after impact
- Map showing the accident path
- Recording and sending images in case of bumps

GPS

- Real time position of the machine via GPS tracking
- Acceleration/Speed reduction based on areas
- Trace route of veichles
- Geofencing

LABOR

- Date and Time of container handling start and ending
- Travelled Distance of the machine during the handling
- Container pick up and release height
- Container Heandling time duration
- Handled Container Size and Weight
- Burnt fuel during the handling
- Lifting Height of Spreder
- Actual Load Lifted

ENGINE

- Engine Oil Pressure and Temperature
- Engine Coolant Temperature
- Hydraulic Lift Cylinders Pressure
- Engine Fuel Level
- Engine Torque
- Engine Rpm

REMOTE

- Inhibition to start the machine from remote
- Real Time graphic monitoring of parameters and recording
- Data encryption and compression before being sent to Server
- Remote file updating
- Remote software updating
- Multi language software
- VNC Virtual Network Computing

Dashboard

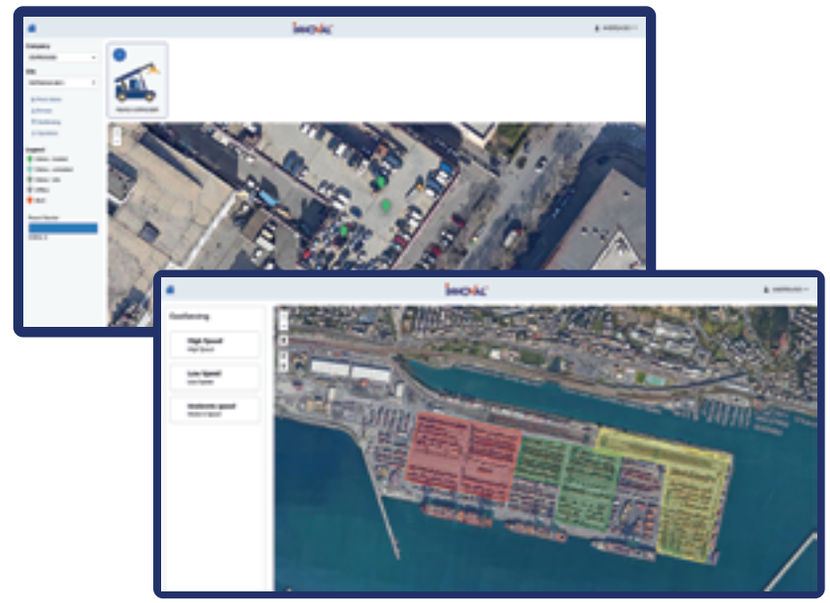
Customer may develop its own dashboard by accessing the saved machine data or INNOVAL can supply its own dashboard

WEB PORTAL BASED
(rest API based)

CONFIGURABLE
machine report measures

CUSTOMIZABLE
layout

MULTI
user/customer/dealer



DCU-C V2

Master Control Unit

The DCU-C V2 is a fully programmable automotive grade controller designed to be used as high performance master controller and Man-Machine-Interface (combined with an external VGA) in industrial vehicles.

SPECIFICATION:

CPU master: NXP i.MX6DL (2 x Cortex-A9 @ 800Mhz), Internal memory: 144 kByte RAM (OCRAM), 32i + 32d kByte L1 Cache, 512 kByte L2 Cache

External memory:

- Ram : 1 GByte DDR3, (2 / 4 GByte DDR3 optional)
- NAND Flash : 512 Mbyte, (1 / 2 / 4 GByte optional)
- 2 x Slot micro Sd-card (optional memory up to 2 x 32 Gbyte)

CPU slave (supervisor): NXP LPX5526 150 MHz (Cortex-M33), Memory: 256 kByte Flash, 144 kByte RAM

3 axis accelerometer and 3 axis gyroscope

3 axis magnetic-sensor (optional)

miniPCIe slot for LTE/4G with micro SIM-Holder

M.2 slot (optional)

GPS module

OUTPUTS:

Standard VGA output

HDMI Output (optional)

Audio output (optional)

6 high-side PWM (4A max.), with self diagnostics and short circuit protection

5Vdc output/1A max. for external sensors

PoE 24Vcc/48Vcc output (optional)

INPUTS:

Audio input line or Mic (optional)

4 programmable analog inputs (0..5V, 0..25mA, 0..500mV o 0..25mA), one with programmable current pump (0..30mA).

16 digital inputs configurable via software for high-side or low-side operation, 4 usable as RPM / frequency inputs (up to 2kHz) and one as D+ input (controlled power down).

3 video (PAL/NTSC/SECAM) camera inputs (only one camera at a time handled)

CONNETTIVITY:

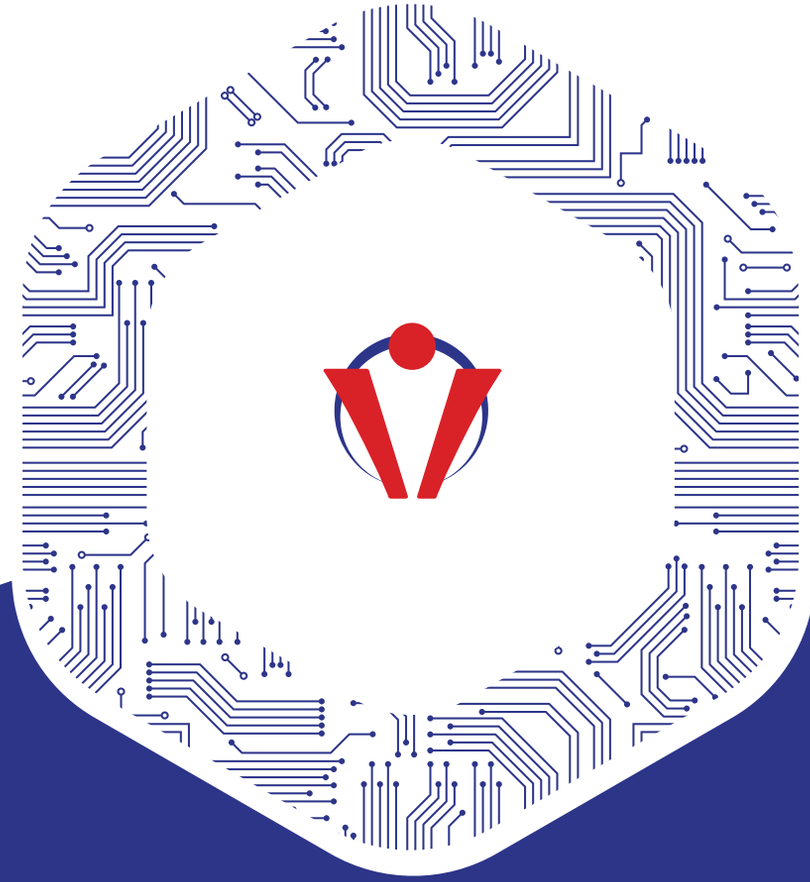
Serial interface RS232 or RS422/RS485 (configurable in SW) with programmable baud-rate from 1.2kBit/s to 115,2 kBit/s

2 USB 2.0 interfaces (Hi-speed): 1 Host and 1 Device

Ethernet 10/100 MBit/s

1 CAN-FD Bus (backward compatible with CAN 2.0B) from 125kBit/s to 8MBit/s

2 CAN-bus full 2.0B, programmable baud-rate from 125kBit/s to 1MBit/s, CANOpen and J1939 protocols (optional ISOBUS)



CONTACT US

Address:
Via Reanata Bianchi, 38
Genova, 16152

Phone:
+39 010 6044220

Mail:
info@innoval.biz

Web:
www.innoval.biz