



## V-MON Product line



A product range dedicated to rail infrastructure monitoring

# V-MON Product line

## Predictive Monitoring system of railway assets

By implementing this system, railway networks avoid assets failure and curative maintenance : they can predict a break and perform preventive maintenance. Vossloh offers the V-MON Monitoring solutions composed of several modules (turnout, track circuit, events and cable).

## Remote Event Monitoring module



The V-MON event module provides a large range of data acquisition I/O interfaces able to check, in real time, information picked up along track, or in any technical or signalling room.

Events and alarms are displayed on monitor and a user-friendly man-machine interface allows operators to manage maintenance actions on monitored equipment.

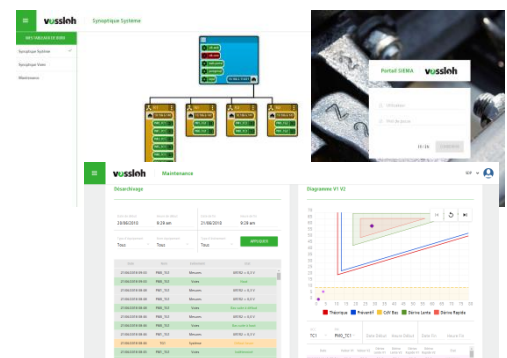
Energy stations, communication devices, signals, signalling equipment, track circuit, level crossing, turnouts... are some examples of equipment monitored by V-MON.

V-MON Event Monitoring is adapted to any kind of railway line. More than 2000 stations on high-speed lines, secondary lines, or urban lines are equipped with V-MON Event Monitoring on SNCF lines.

## Remote Condition Monitoring module

Turnout module and track-circuit module are two solutions of the V-MON product line dedicated to monitor switches & crossings and track circuits.

These products predict trends and tendencies of equipment behavior in order to alert the maintenance operator that something has happened or will happen.



V-MON turnout module and V-MON track-circuit module have a broad range of control systems which take full advantage of the V-MON line capabilities, including an event recorder, a user configuration tool, a local diagnostic tool, and a web server diagnostic tool.



## Remote Security Monitoring module

Cable theft monitoring module allows for real-time detection of a cut cable. The alarm is sent in less than 20 seconds to concerned people (police, security team, maintenance team). A dedicated MMI allows to manage alerts, localizes the cut in a map and communicates between the different teams.

V-MON cable theft monitoring module allows to significantly decrease the cost of a cable theft by reducing traffic lost time and helping security teams to arrest vandals.



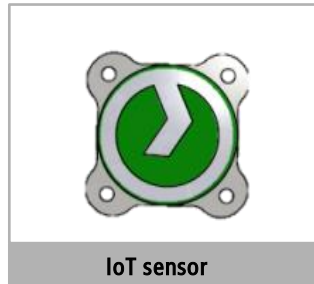
## A large range of sensors dedicated to railway

In order to be connected on a V-MON System, a wide range of sensors has been developed, allowing for example to measure or detect the:

- Active power supply of the turnout
- Switch displacement
- Vibrations
- Current and voltage of a point machine
- Cable cut position
- Parameters of the track circuits



Current detection



IoT sensor



SIL4 acquisition sensor



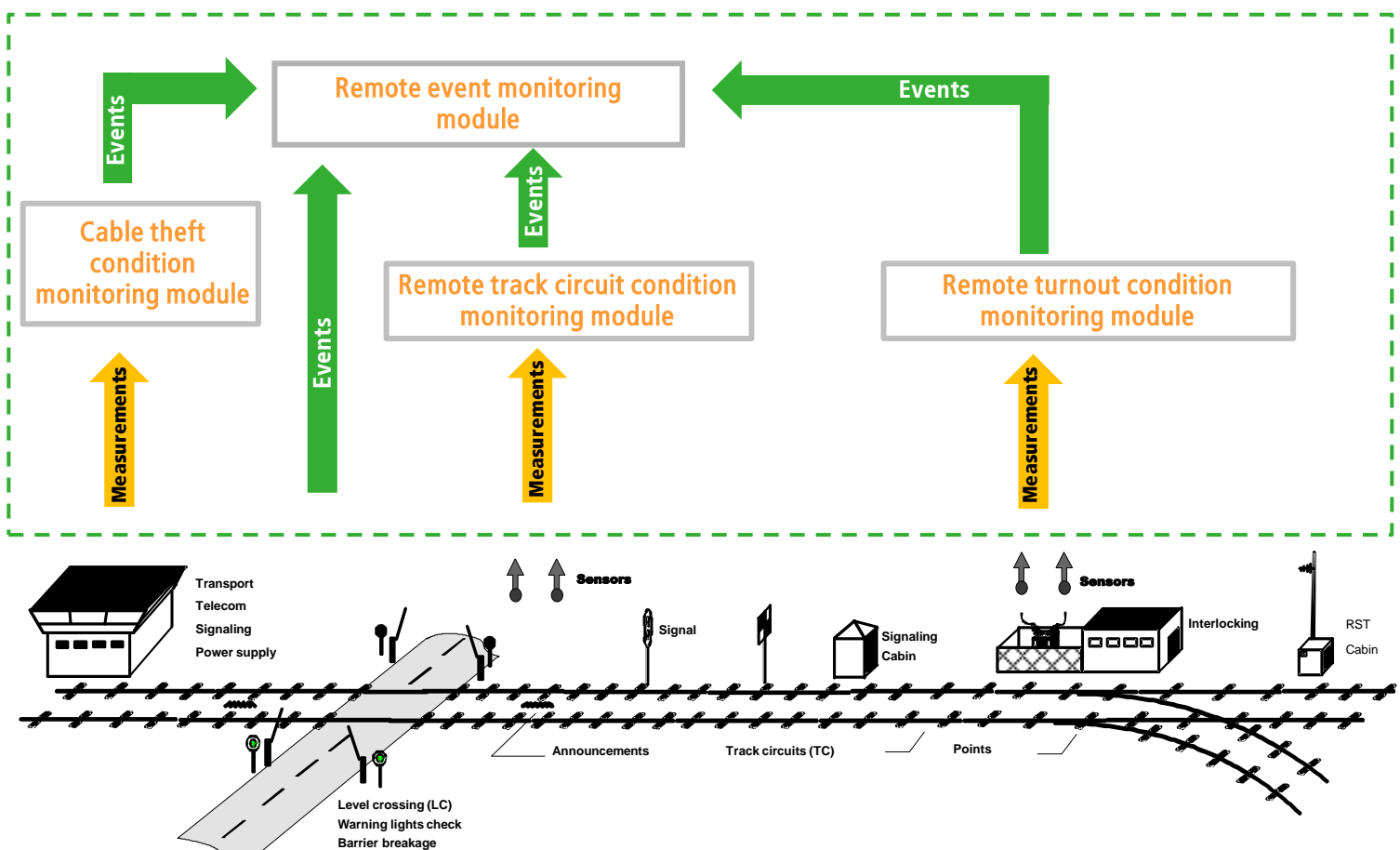
Force

### IN BRIEF

- ▶ Predictive diagnosis
- ▶ A large product line from sensor to software
- ▶ A large range of sensors

These sensors are installed either in a technical room or along the track. They can be adapted on customer requirement. Completely designed or adapted for railway applications they are designed for severe environment (NF EN 50125-3).

## Sites to monitor along the track



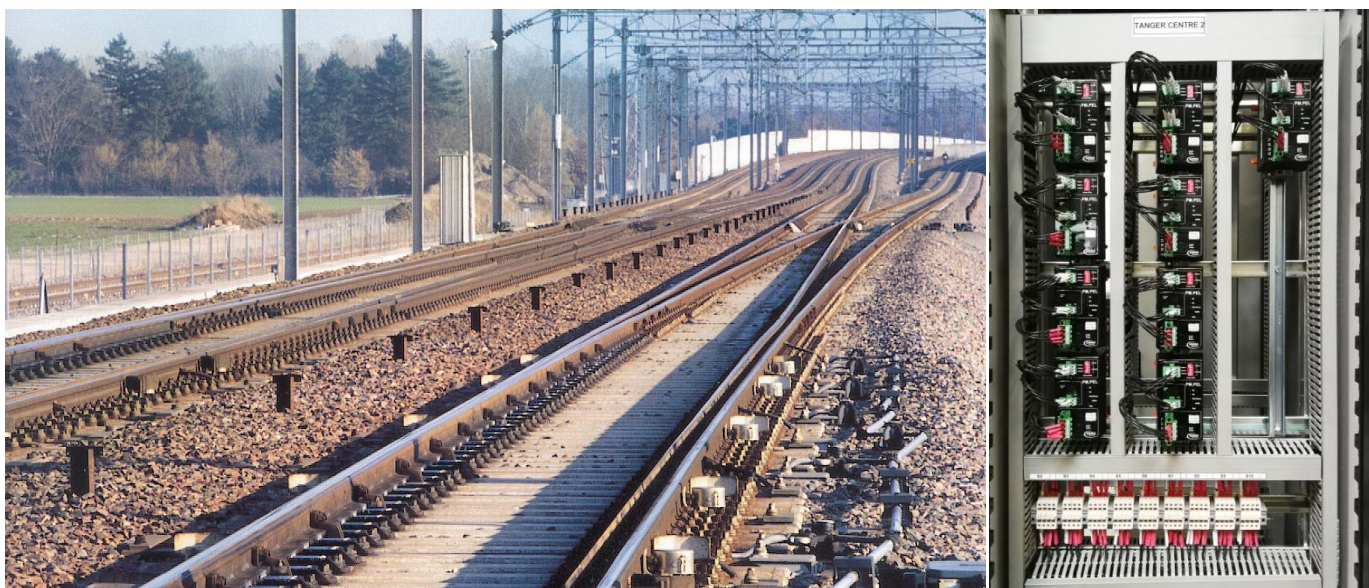
## V-MON Product line

A product range dedicated to event and condition based monitoring for railway equipment.

### References

- ANSALDO STS
- COSEA/INEO (TOURS-BORDEAUX LINE FRANCE)
- ERE EIFFAGE
- OCVIA
- ONCF (MOROCCO)
- SNCF (FRENCH NATIONAL RAILWAY COMPANY)
- SNCFT (TUNISIA)
- TP FERRO (FRANCE-SPAIN)

And several other infrastructure and maintenance railway companies...



Vossloh experts are ready to help any railway or urban network to examine a specific technical and economic solution adapted to their maintenance performance.

**For further information, please contact :**

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