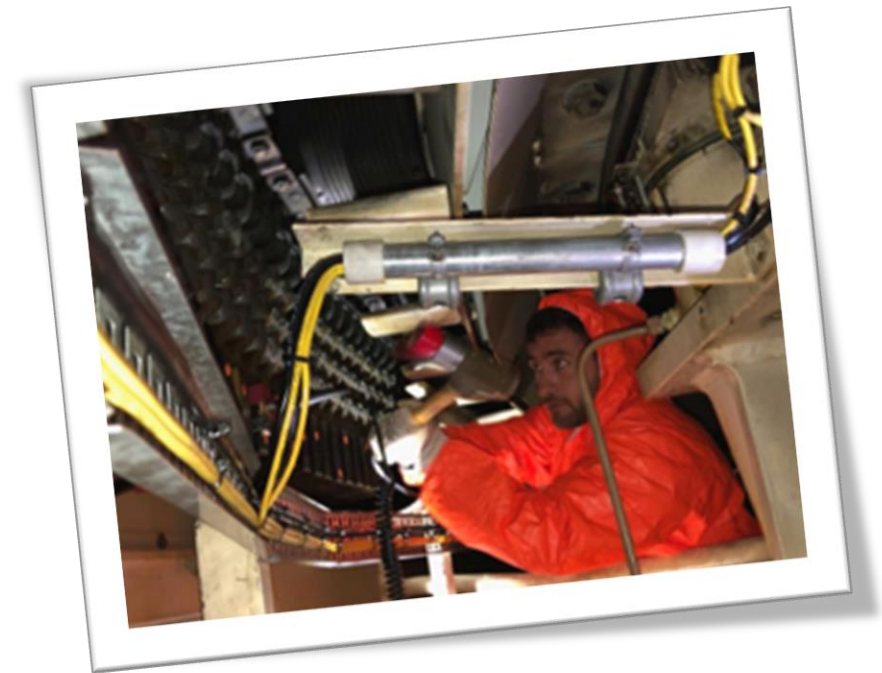




# Enhancing Continuous Online Monitoring of a Power Generators for an industrial site

# Who we are

- Optmonitor provide monitoring and data analysis solutions to help asset managers and prevent unexpected failure.
- Optmonitor is part of Machinemonitor Group.
- Machinemonitor provides specialized engineering services from commissioning to end of life of critical electrical assets.



# What we will talk about today

- Site overview
- Continuous online monitoring challenges
- Proposed solution
- Added values to end user

- Manufactory facility - SA
- #1 Generator
- #2 Motors
- #7 Dry type Transformers



# Generator online continuous monitoring

## Asset details:

Function: *Generator*

Manufacturer: *Solar Turbines*

Rotor Type: *Salient Poles*

Rated Voltage [kV]: *11*

Rated Power [MVA]: *29.625*

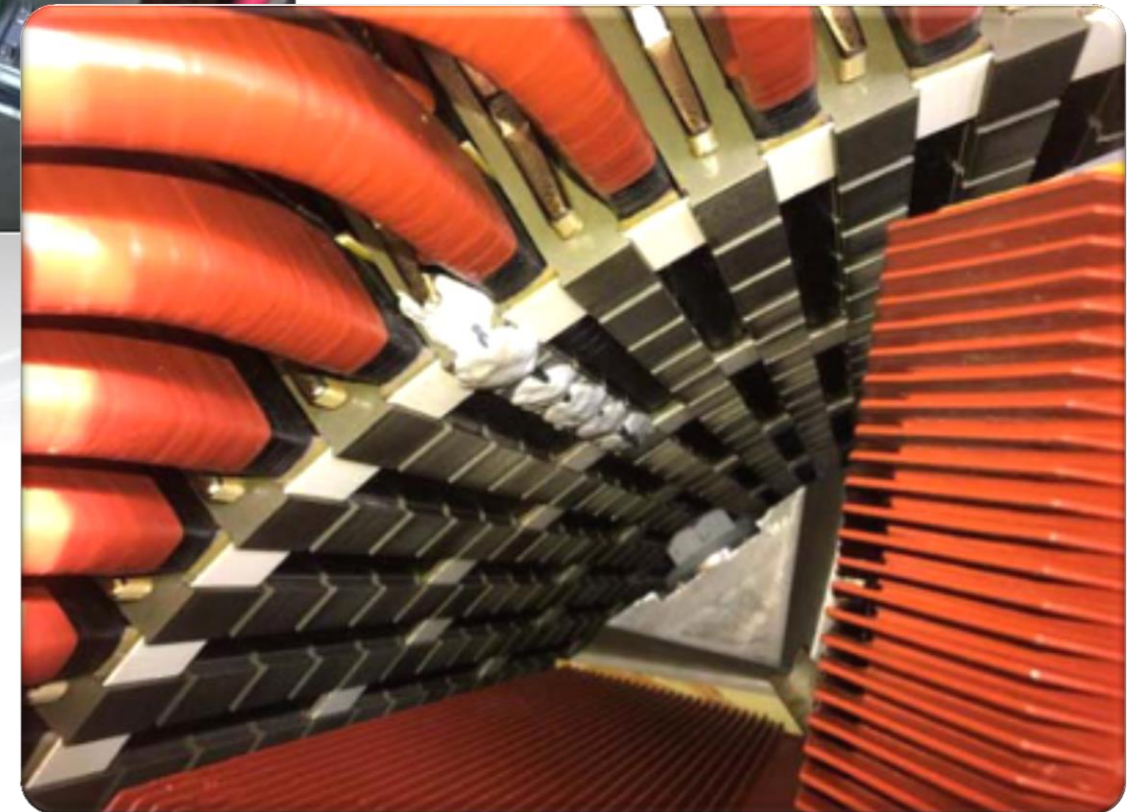
Rated Speed [rpm]: *1500*

Year of manufactured: *2012*

Year of installation: *2012*

Serial number: *8268652*

Frame type: *AMS 1120 LG*



# Generator online continuous monitoring



## IRIS Guard System:

- Online PD monitoring
- Rotor flux monitoring

**Operating in stand-alone mode**

# Challenges faced by the customer

1. Data to be downloaded/review periodically



2. No specialized knowledge available

3. No integration of the results with other diagnostic tests carried out regularly



# What do we do about it?



1. Data to be downloaded/review periodically



2. No specialized knowledge available



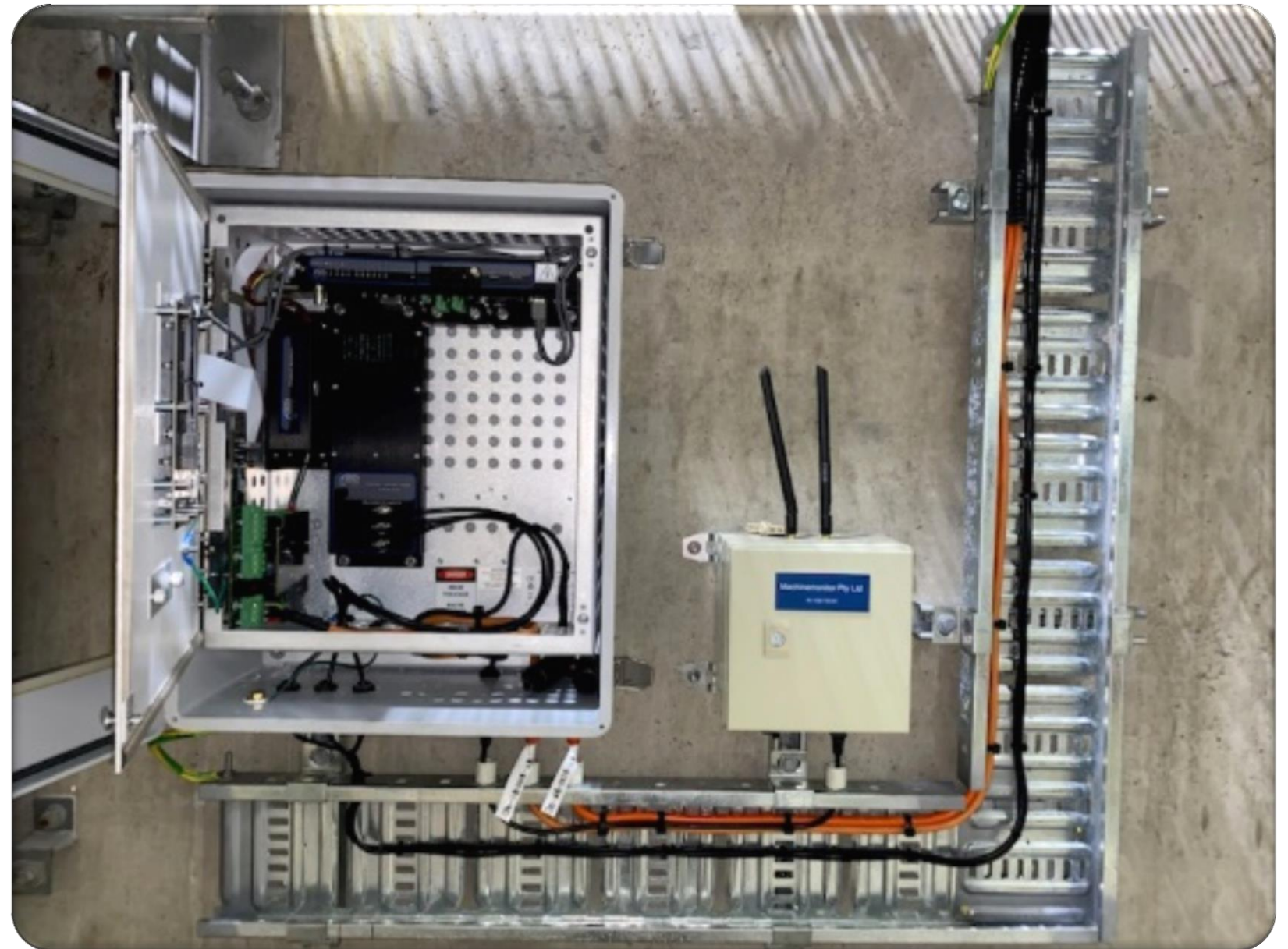
3. No integration of the results with other diagnostic tests carried out regularly





### Remote monitoring:

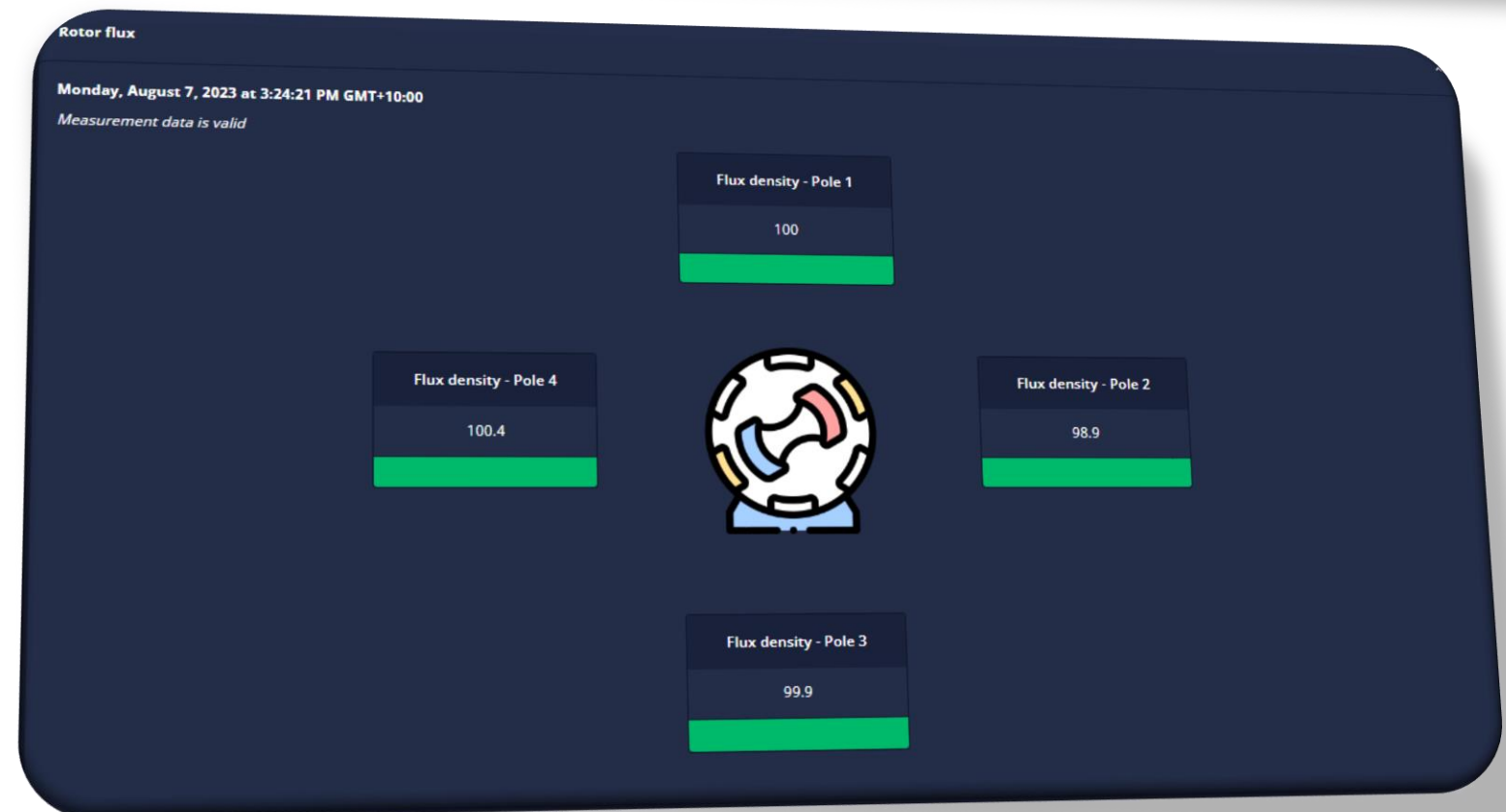
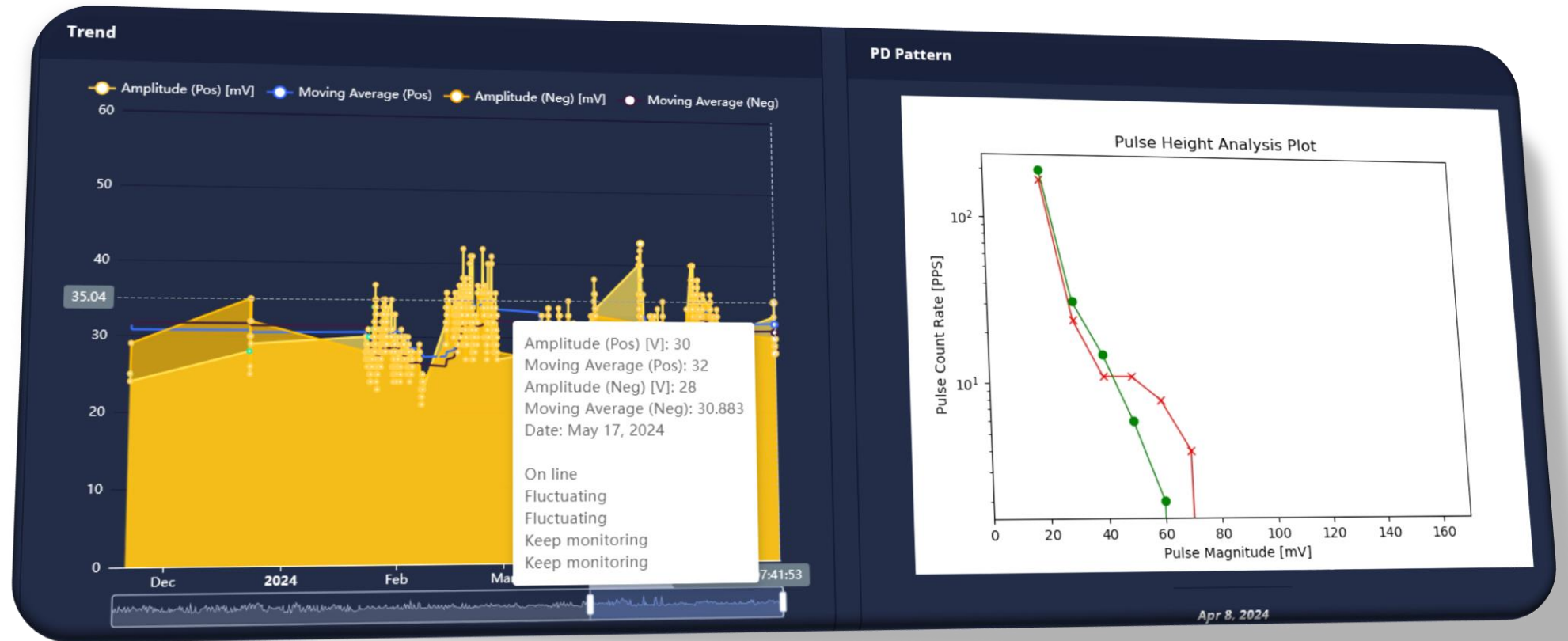
- Data transfer via 4G



# Proposed solution – 1 and 2

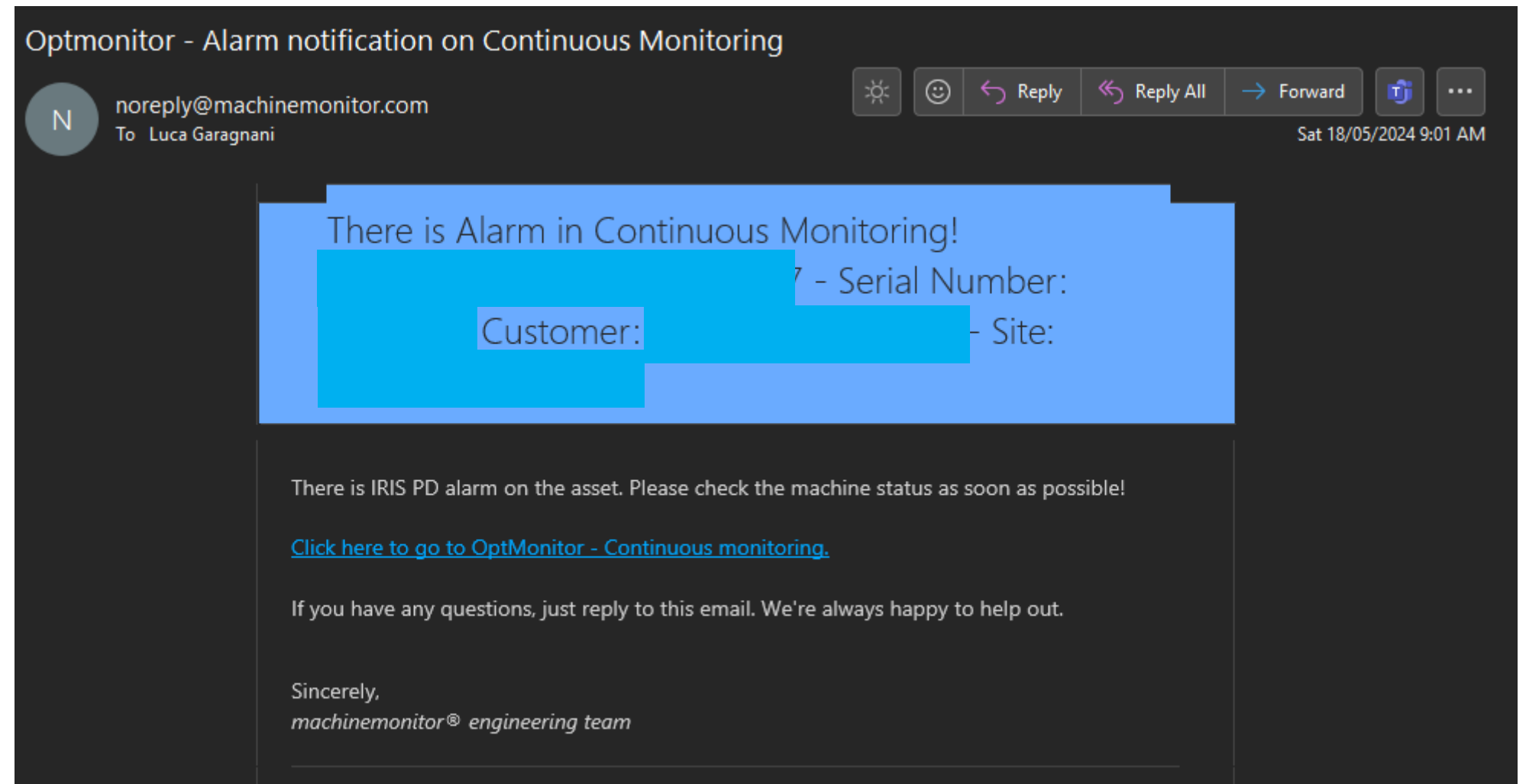
## Remote monitoring:

- Data transfer via 4G
- Live data trend



## Remote monitoring:

- Data transfer via 4G
- Live data trend
- Automatic alarms sent directly to expert



# What do we do about it?

1. Data to be downloaded/review periodically



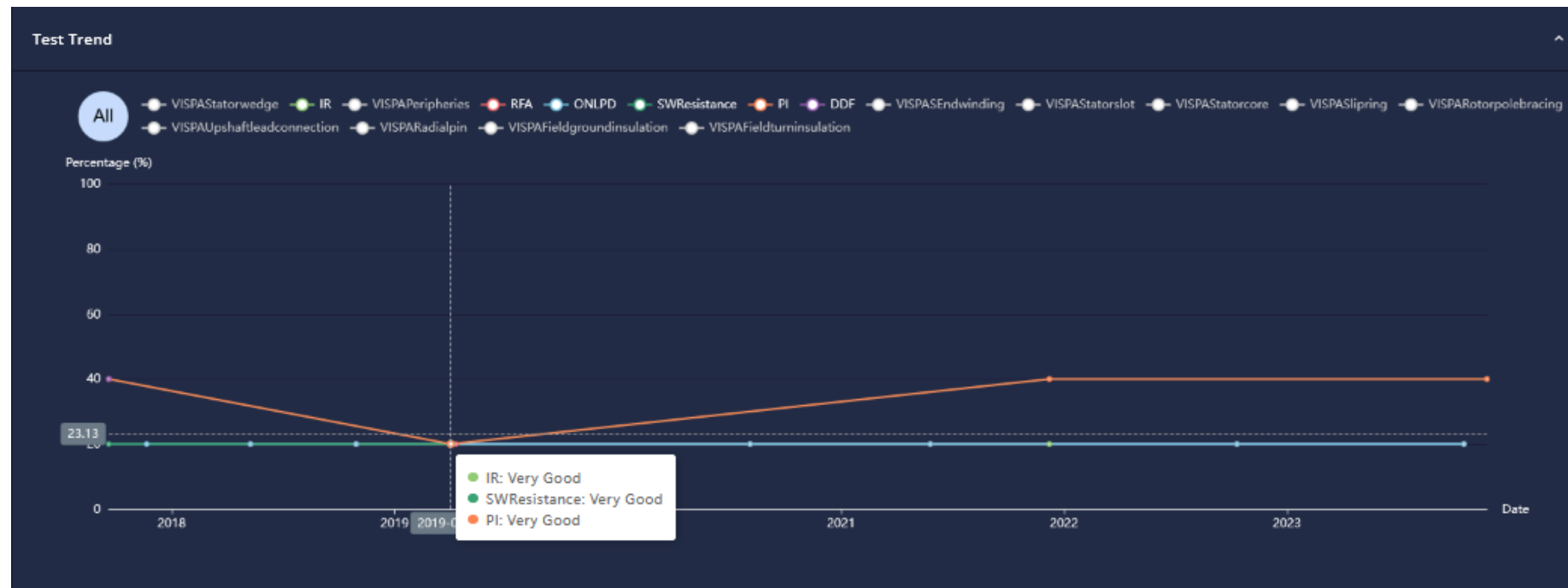
2. No specialized knowledge available



3. No integration of the results with other diagnostic tests carried out regularly



# Proposed solution – 3



## Integration to comprehensive platform:

- Offline test results



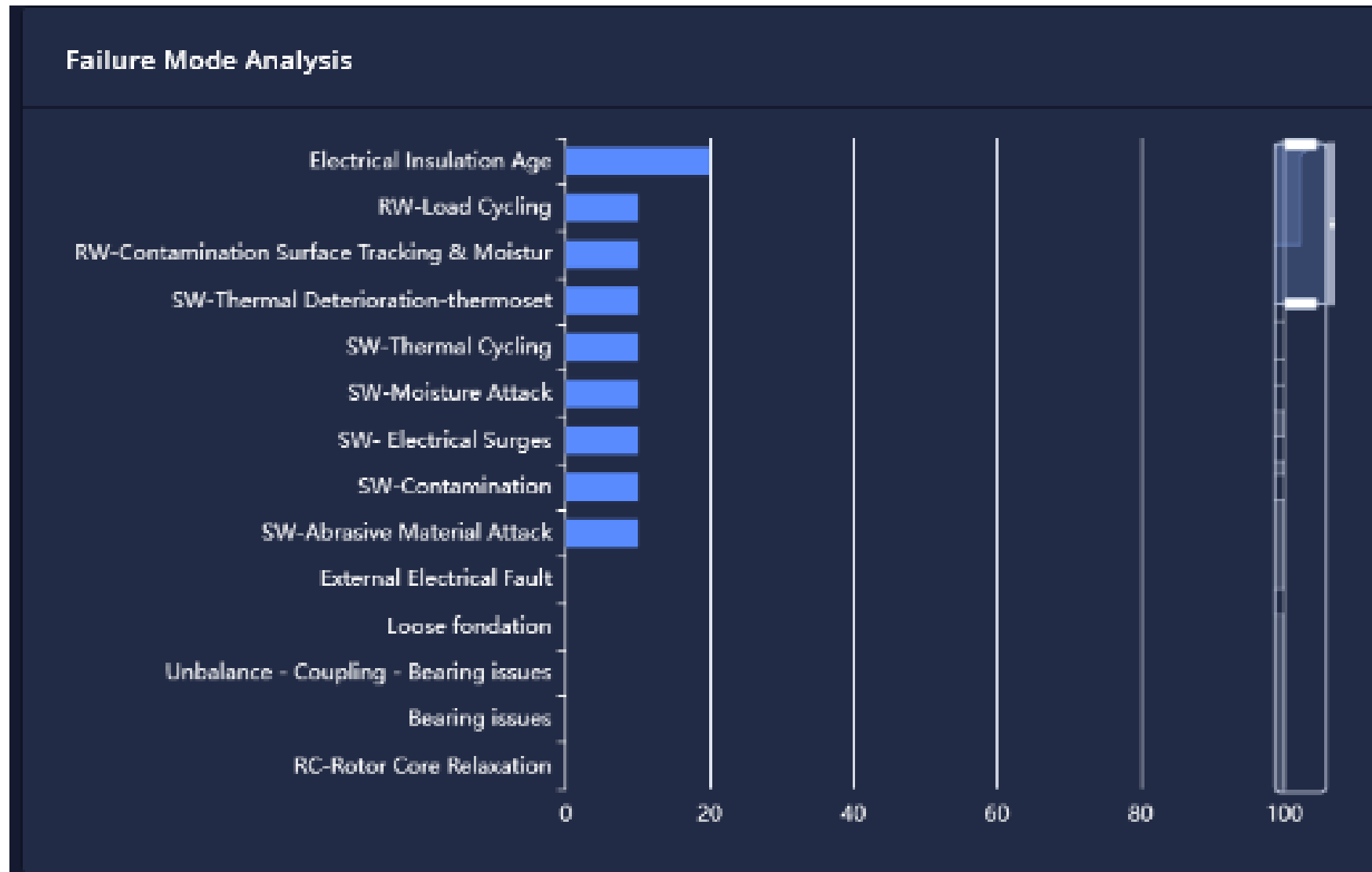
**Visual Inspection**

Available components in this Test:

MACHINE PERIPHERIES STATOR ENDWINDING STATOR SLOT STATOR CORE SLIP RING ROTOR POLE BRACING UPSHAFT-LEAD CONNECTION

POLARISATION INDEX FIELD GROUND INSULATION FIELD TURN INSULATION

Item	Description	Status	Observation
MP01	General. Identify issues associated with the general condition of the	Not Observed	
MP02	Terminal Boxes. Look for loose fasteners, worn or missing gaskets,	Observed	Oil film over DE bearing housing and bed plate. Oil was also found in base of Exotier. See figures 1, 2, 5.
MP03	Bearing Assemblies. Look for leaks of oil. Check mounting of the RTDs	Not Observed	Heat exchanger was dismantled, and tubes cleaned. Gaskets replaced. See figures 3, 4.
MP04	Heat Exchange and Fan Cowls. Look for corrosion of the tubes and	Observed	Grouting around foundation cracked and loose. See figure 7.



## Integration to comprehensive platform:

- Offline test results
- Risk assessment

# What do we do about it?

1. Data to be downloaded/review periodically



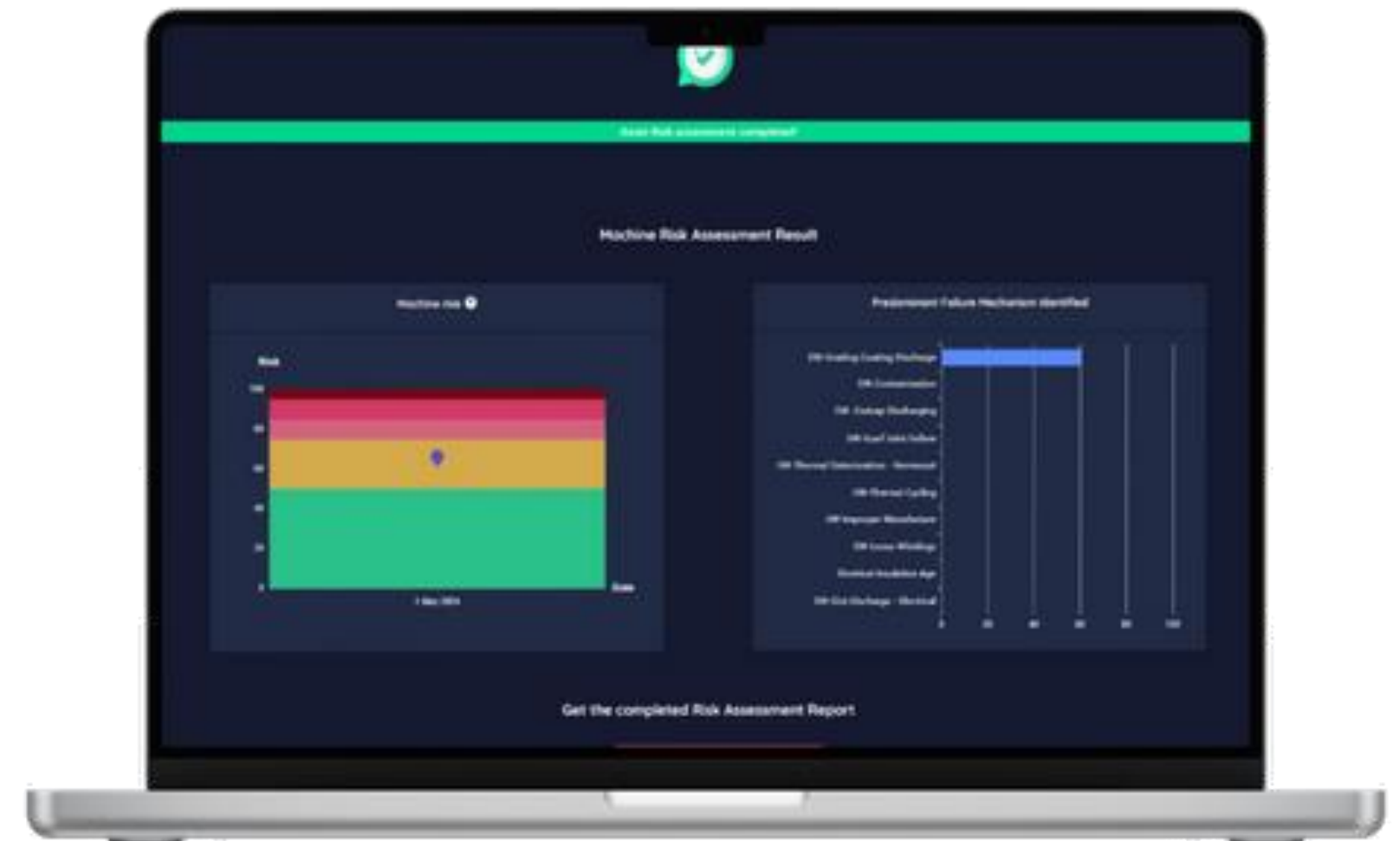
2. No specialized knowledge available



3. No integration of the results with other diagnostic tests carried out regularly

## Added values to end user

- Elimination of complexity
- Improved risk assessment
- Organized tests data





# Thank you

**RiskMonitor** PRO



*Do you like our Risk Assessment?*

*You can generate it for your machine in few minutes!*