



Customer Use Case

Condition Monitoring with AI on conveyors (International Airport UK)

- Wireless Vibration monitoring (motor + gearbox + chain)
- Wireless Current waveform monitoring – MCSA (Var. Speed Drives)

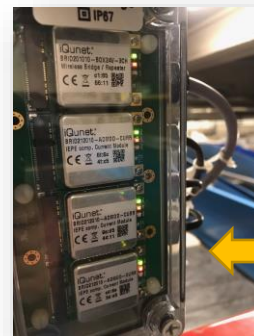
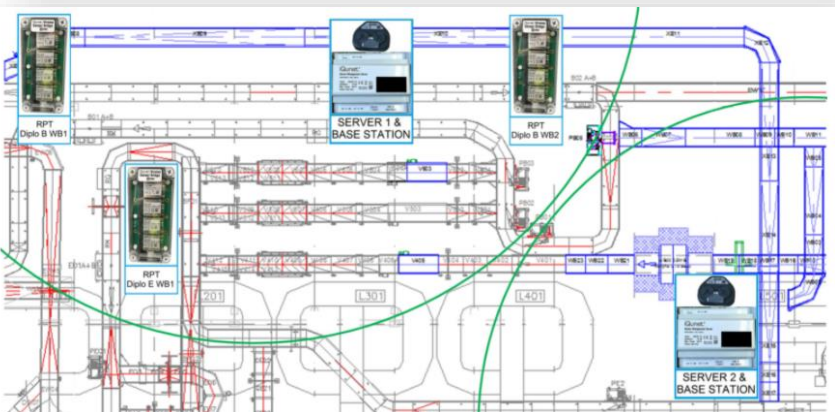
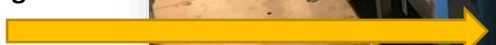


Use case: Back Bone conveyor monitoring Bagage Handling

Sensor Base Station



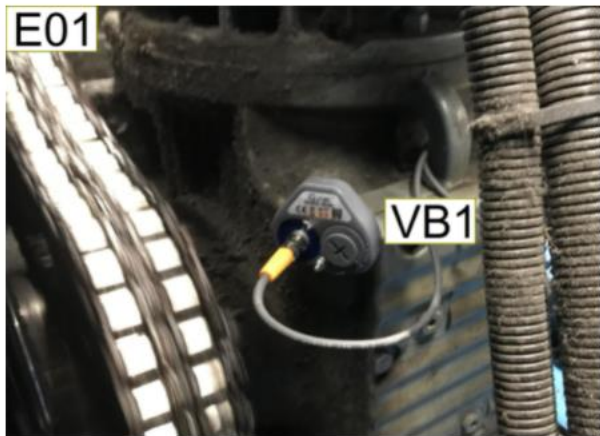
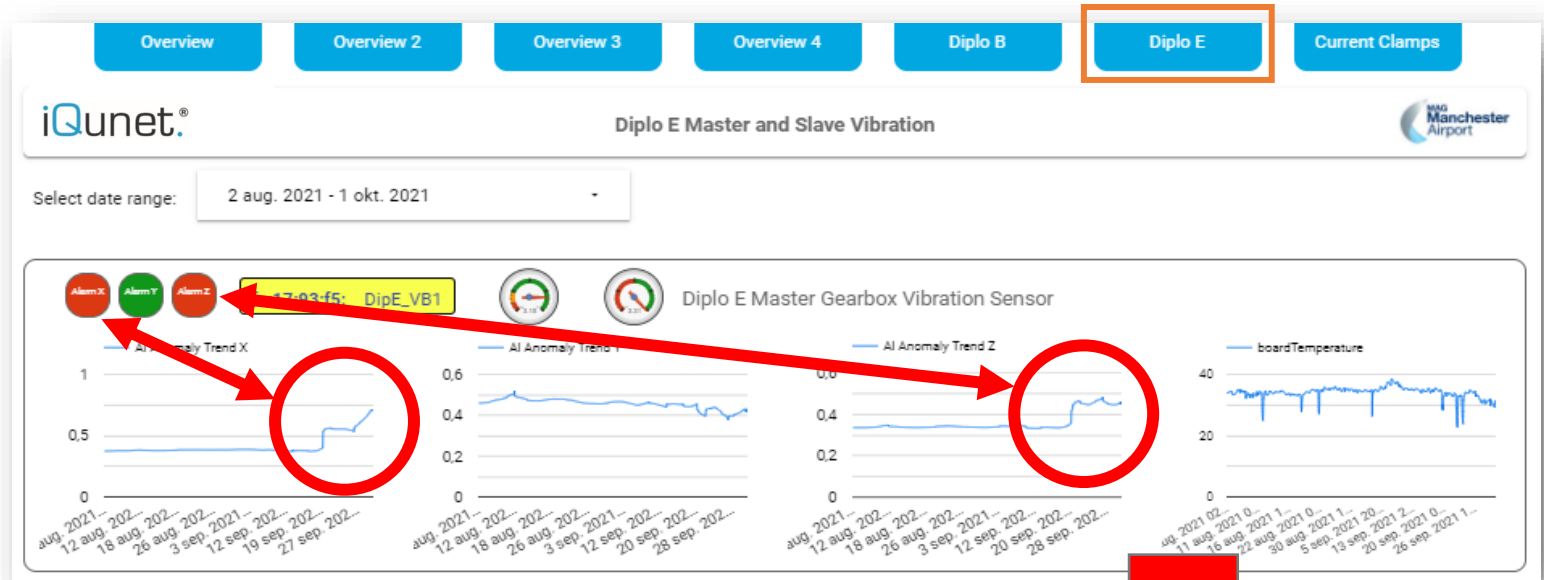
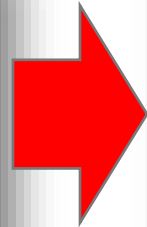
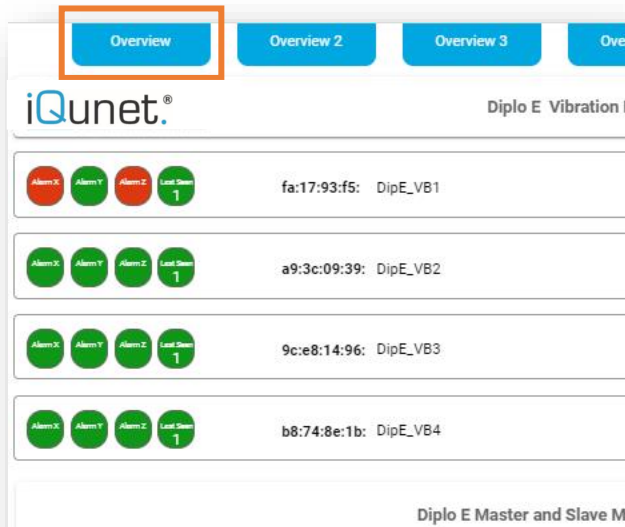
iQunet Edge Server



Wireless Bridge (Current Clamps)

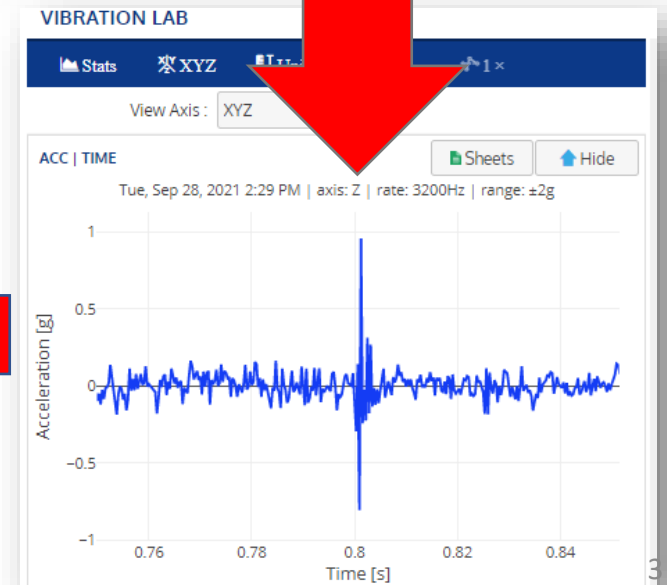
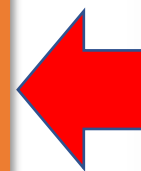


Vibration Monitoring

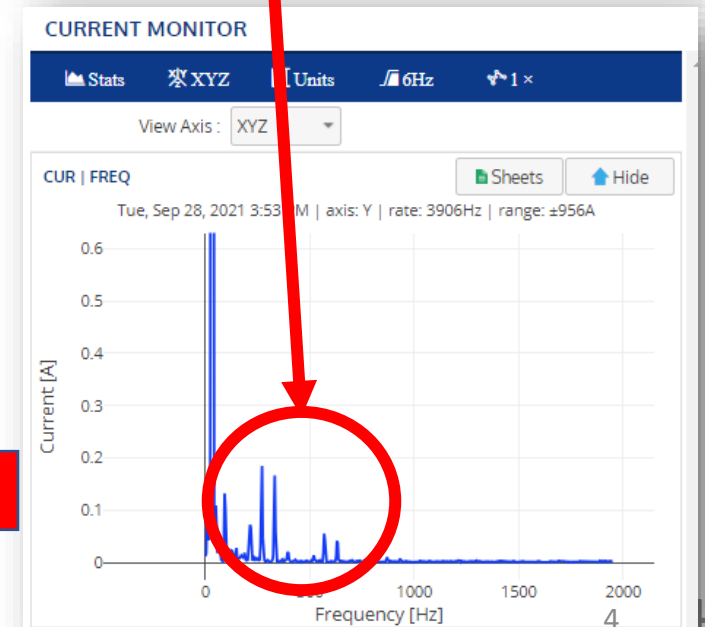
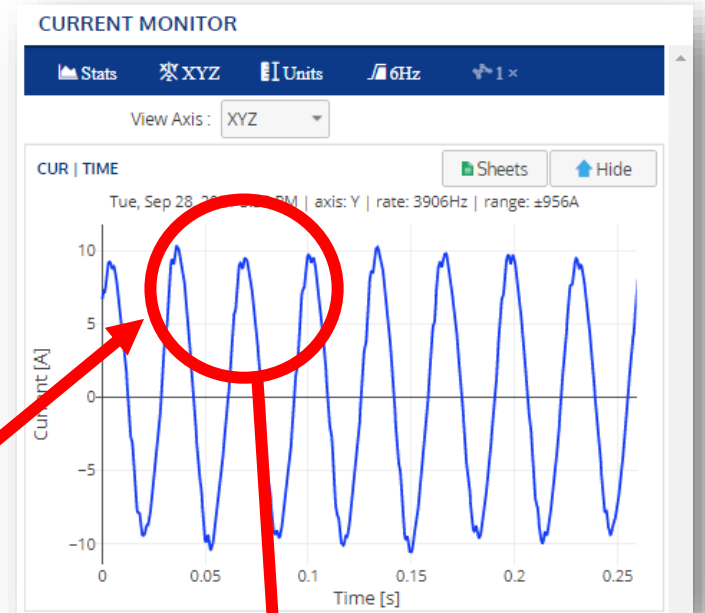
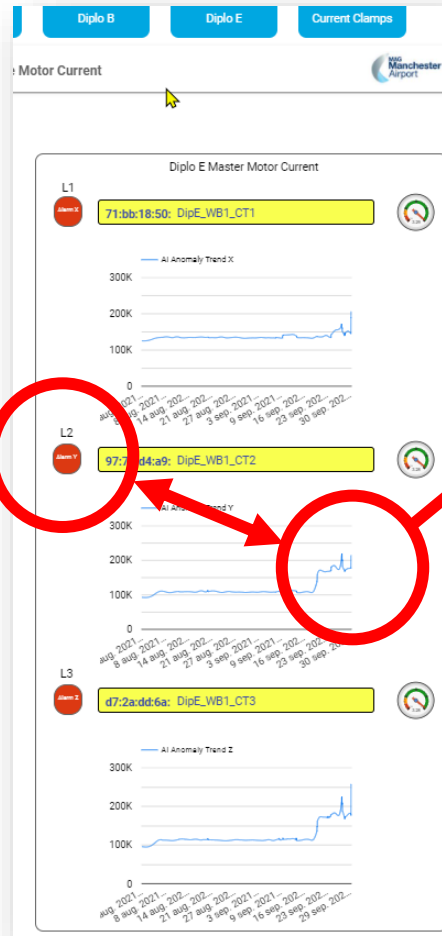
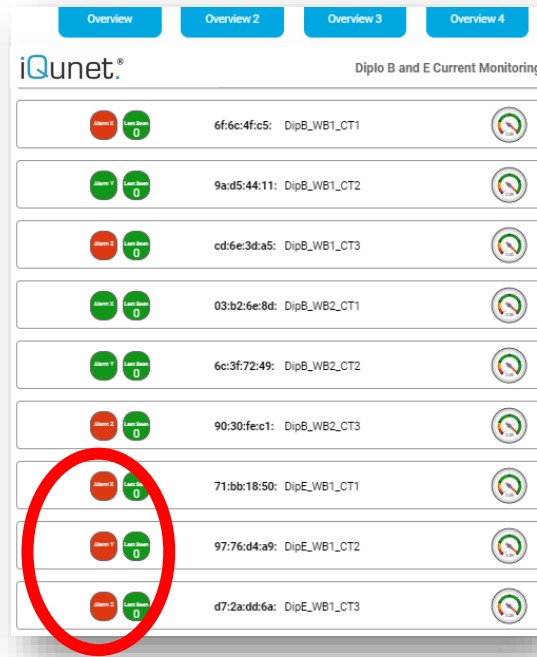
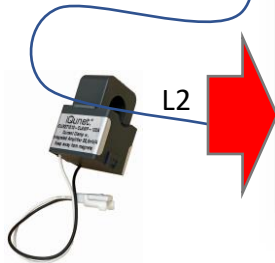


Impact detected (early warning)

- Recommended actions:
 - Check chain links
 - Check sprocket teeth
 - Lubricate and check change
- Follow behaviour to exclude gearbox inside teeth damage
- Follow up anomaly trend graphs



Wireless Motor Current Waveform Monitoring



Motor Current [A] harmonics detected

- Recommended actions:
 - Follow up anomaly trend in time
 - Follow up harmonics in freq. domain
 - If quick sustainable increase, prepare for motor repair

iQunet Anomaly Monitor (“engine” behind the dashboards)

Sensor list

- 3ax vibration sensors + T°
- Current clamps (waveform)

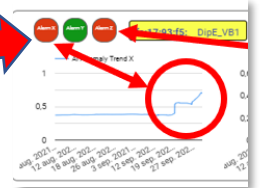
The dashboard displays the following components:

- MONITORED DEVICES:** A list of sensors including DipE_VB1, DipB_WB2_CT3, DipE_WB1_CT2, etc.
- ANOMALY MONITOR:** Shows an active alarm for sensor FA:17:93:F5 with an alarm level of 0.4.
- VIBRATION ANOMALY (TFL3_4096_3200_2_X):** A line graph showing predicted error over time with trend lines (expectiles) and a raw anomaly spike on Sep 30, 2021.
- Related time series:** A graph showing acceleration over time with a highlighted spike labeled 'Cause of the anomaly'.
- HISTORIAN:** A heatmap showing data points across months from June to September 2021.
- MODEL SUMMARY:** Details for sensor DipE_VB1, including name, type (Autoencoder), version, license, and training information.
- Most important Raw Anomalies:** A table listing peak MAE and ISO-8601 dates for various anomalies.

ML type

Machine Learning (unsupervised learning)

Trained on data from ±1000 initial sensor measurements = VERY ACCURATE MONITORING



MAINTENANCE ACTION REQUIRED !

Historical data

Spectrum graphs
Spectrum 3D graphs
RMS graphs
Kurtosis graphs