



## Baumot UK Case Study

### HED<sup>®</sup> & Baumot collaborate to design remote diesel emissions monitoring system based on HED<sup>®</sup> CANect<sup>®</sup> Portfolio

When Transport For London (TFL) sought a real-time emissions monitoring system to track diesel engine performance on the streets of London, they turned to Preferred Supplier and trusted partner, Baumot UK. Baumot, a leading European supplier of exhaust gas after-treatment products for busses, coaches, and off-road vehicle, selected HED's<sup>®</sup> CANect<sup>®</sup> telematics products and services to co-develop a powerful asset tracking and performance dashboard for TFL bus fleet management.

TFL concluded that to have a real impact on improving air quality within the city limits, it required "authentic" data. It was believed that variables affecting engine performance under real operational conditions - traffic patterns, weather conditions, driver habits, etc. – would enable much better understanding of all impacts. With Baumot devices, extensive engine performance data was already available. That data needed to relate the performance to the operational situation. Baumot needed a partner to handle the data management and visualization.

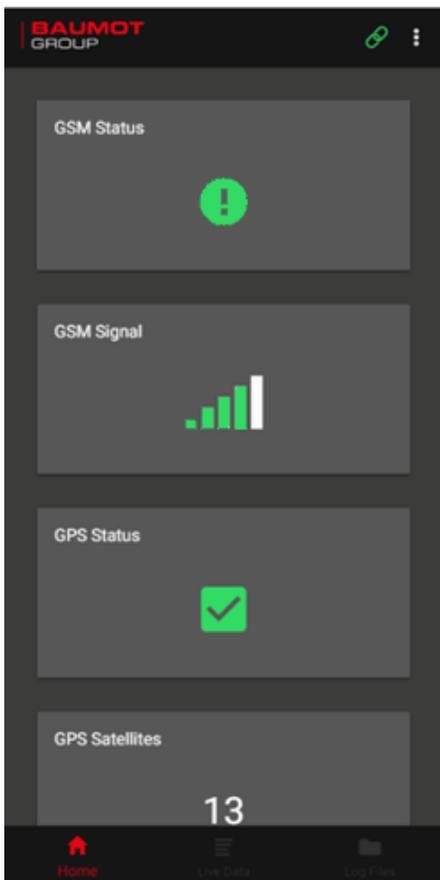
According to Bobby Sohal, Baumot UK Lead Electronic Engineer on the project, "The joint collaboration between HED<sup>®</sup> and Baumot UK created a powerful data processing and acquisition device to monitor exhaust gas after-treatment systems. HEDs<sup>®</sup> open architecture, technical design and applications support allowed us to realize a unified solution, meeting the strict emissions compliance requirement set by the TFL."

Once the companies had gathered and organized the needs of the TFL, HED@s experience in creating a functional on-vehicle interface with CANect View™ and remote back-office dashboard using CANect Portal™ enabled TFL to easily visualize the valuable data generated by the Baumot UK BNOX System.

“CANect is bringing clarity to diesel emission and trends by providing real-time monitoring and reporting with on-vehicle views and by aggregating Baumot UK data for cloud storage and post-process analysis” according to Sohal. “Together we have created a quick and easy way to identify vehicles that are not meeting emission standards along with the contributing operational conditions.”

At the vehicle level, a series of simple mission-specific panel views were created to enable the driver to verify connectivity and monitor engine performance.

**SIGNAL CONDITION**



**PARAMETER VIEW**

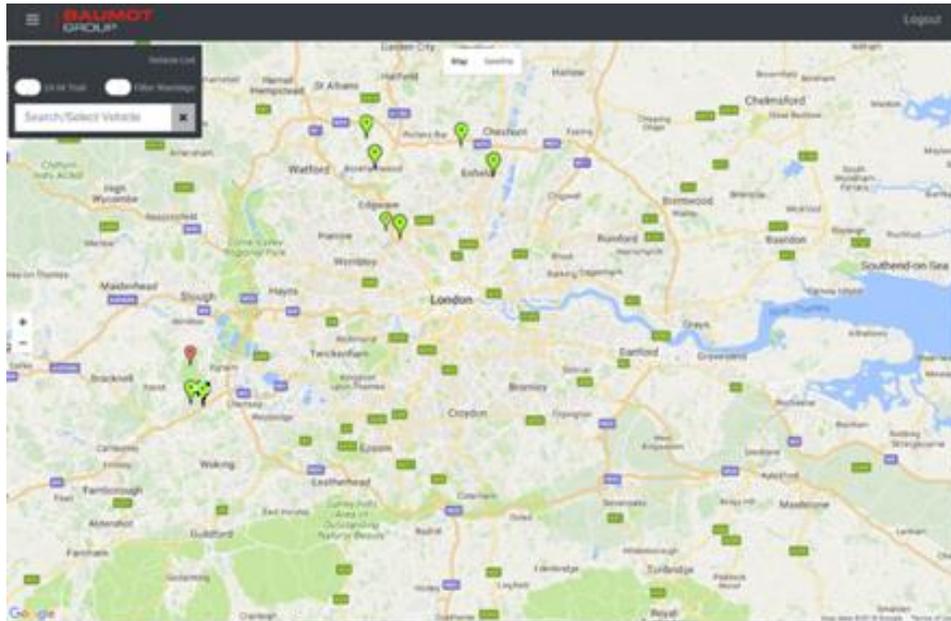
BAUMOT GROUP	
DEC Engine RPM	RPM
DEC Error Code	0.00
DEC HCR Amps CH1	45.54 Amps
DEC HCR Amps CH2	62.04 Amps
DEC HCR Error CH1	No errors found
DEC HCR Error CH2	No errors found
DEC HCR PWM CH1	50.00 %
DEC HCR PWM CH2	50.00 %
DEC HCR Temp	36.00 Deg C
DEC HCR Vin	25.92 VDC
DEC HCR Vout CH1	25.92 VDC
DEC HCR Vout CH2	25.92 VDC
DEC NOx1 Inlet O2	15.60 %
DEC NOx1 Outlet O2	21.68 %
DEC NOx2 Outlet	597.60 ppm
DEC QEx	51.40 L/s

**LOG FILE VIEW**

BAUMOT GROUP		
Name	Size	Modified
20180309235539_F.log	314.6 Kb	Mar 9 2018 11:58 PM
20180309235836_F.log	95.6 Kb	Mar 9 2018 11:59 PM
20180309235935_F.log	944 Kb	Mar 10 2018 12:08 AM
20180310000824_F.log	872 Kb	Mar 10 2018 12:16 AM
20180310001719_F.log	358 Kb	Mar 10 2018 12:20 AM
20180310002045_F.log	944 Kb	Mar 10 2018 12:29 AM
20180310002933_F.log	841.6 Kb	Mar 10 2018 12:37 AM
20180310003755_F.log	944.1 Kb	Mar 10 2018 12:46 AM
20180310004642_F.log	944.2 Kb	Mar 10 2018 12:55 AM
20180310005528_F.log	944.2 Kb	Mar 10 2018 1:04 AM
20180310010415_F.log	944.1 Kb	Mar 10 2018 1:13 AM
20180310011302_F.log	944.2 Kb	Mar 10 2018 1:21 AM
20180310012149_F.log	944.2 Kb	Mar 10 2018 1:30 AM
20180310013036_F.log	944.1 Kb	Mar 10 2018 1:39 AM
20180310013923_F.log	944.1 Kb	Mar 10 2018 1:48 AM

For remote monitoring, a series of windows enables the viewer to immediately locate the entire fleet, identify non-conforming vehicles in real-time, and investigate current and historic performance of an individual asset.

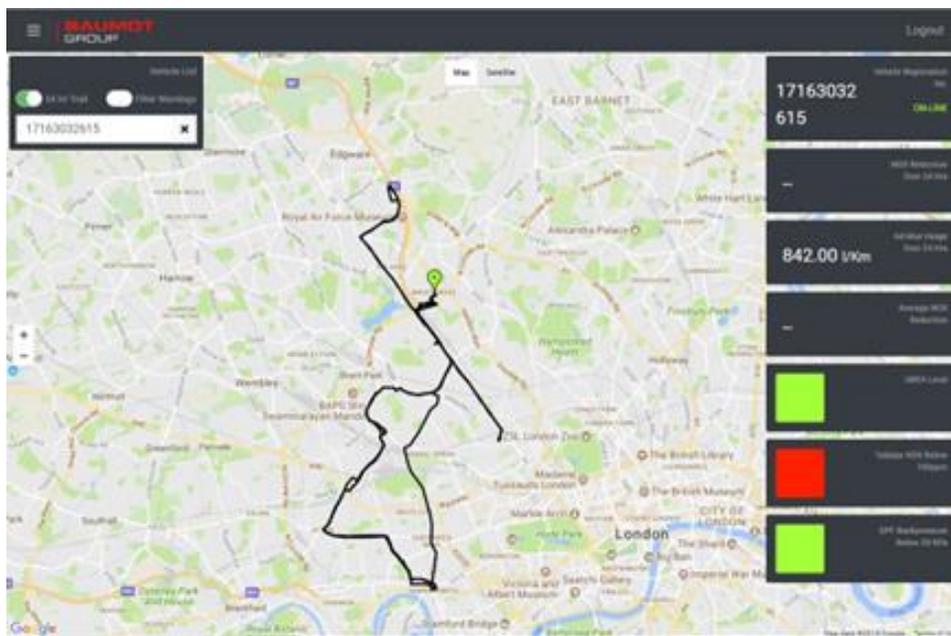
## MAP VIEW



In the map view dashboard window, the location of each asset is shown geographically and red/green/yellow (stoplight) markers make it visually easy to identify and select assets of greatest interest.

Asset selection and investigation is as easy as a click. The asset view window provides vehicle location track over 24 hours along with real-time stoplight indication of emission system parameters identified as mission critical.

## ASSET VIEW



For a deeper dive into specific asset performance over time, the analytics page is designed to graphically present historical performance of selected parameters along with numeric indication of the number of warnings triggered within the timeframe.

**ANALYTICS VIEW**



With HED’s integrated data logging tool any user can log CAN traffic and any other internal module parameters or statistics and export that data to any ftp or S3 bucket. With Baumot we have created a UI that links to that data for easy upload for analysis. HED can present this data in just about any format needed.