Dear Kevin

Data is calculated from date of invoice to date sensor returns received at VST, as these are definite fixed date points for all sensors.

We can work out when received by the OEMs and for many we have the date of when the issues were first reported to us. However, there are some instances where sensors were returned without prior notification.

It would be useful data to know when the customer received the sensor from the OEM, when sensors were put into service and when an issue was first noted. This could then be added into our system. The added difficulty is that some OEMs sell via distribution.

We don't know when OEMs delivered to customers or when the customers first experienced problems, therefore some of the time frames stated could be reduced significantly.

What would resolve the situation is if OEMs adopted the use of 'smart sensors' with on-board data logging.

When an OEM first reports a problem we issue a SRS (Service Repair Sheet) number; each component of the return, i.e. each sensor is given an individual SRN (Service Returns Number). With the serial number we can then correlate all data concerning a sensor, whether it be from manufacturing, QA, test or returns…

We also carry out on-going post market surveillance reviews of sensor type, model, OEM, OEM delivery point, analysis codes - all against our own system 'trigger' levels.

Days before failure data - based on the same sample set of 10,000 sensors:

All returns	
Shortest	30 days
Longest	408 days
Average	149 days
Median	111 days

All faults	
Shortest	51 days
Longest	408 days
Average	151 days
Median	112 days

All faults – connector washer galvanic corrosion returns (6 sensors)	
Shortest	51 days
Longest	208 days
Average	95 days
Median	67 days

Does the above help, is it what you wanted?

Steve