

CASE STUDY

MIND THE GAP

THE APPLICATION

The T24 wireless telemetry sensor technology was used in conjunction with Inora, a leader in data analysis technology, to provide OEM automotive manufacturers with a wireless system to dramatically increase the reliability, repeatability, speed and accuracy of door seal gap measurement to prevent water leakage and wind noise.

KEY BENEFITS

- ▶ T24 wireless telemetry technology provides increased accuracy, repeatability, reliability and increased speed for measurement of seal gaps on car doors
- ▶ Provides the ability to wirelessly measure in multiple modes: static, real time and high speed
- ▶ Allows Research & Development teams to understand and address door fit issues prior to launch, providing time and cost savings



THE PROJECT:

WIRELESS TELEMETRY ENABLES DOOR SEAL GAP MEASUREMENT

THE APPLICATION

The WISEgap system was developed by Inora using customised T24 wireless telemetry technology from Mantracourt, to address the perennial customer complaint issues of wind noise and water leakage. Previously the measurement of the door seal gap area was performed with time intensive tools and methods which also relied heavily on operator skill and provided limited accuracy, feedback and control.

THE CHALLENGE

The Automotive OEM's wanted a faster, more accurate and less cumbersome measurement system, capable of measuring door seal gaps between two adjoining panels and able to pass the (AIAG) standard gauge R&R test. The need arose from consistent complaints from customers of wind noise and/or water leakage, which are symptoms of a poor fit between the car door and body.

Methods previously used relied heavily on operator skill, had long setup times, and were severely lacking in accuracy. Because of the consistent issues in this area the OEM's also wanted a superior system to monitor, diagnose, root cause and prevent these issues.

Automotive OEM's wanted a way where they could instantaneously capture data on the door fit, have instant visual feedback and the ability to collect and store the data digitally so they could better monitor

and understand the fit of the doors over time and after specific changes. Additionally, having live feedback and the ability to record high frequency dynamic measurements would allow R&D applications to further understand and address door fit issues prior to launch.

THE SOLUTION

The WISEgap system, which incorporates customised T24 wireless telemetry technology, lets automotive OEM's do all the above - instantly record door fit conditions in both production and engineering / development environments.

It also provides the ability to wirelessly measure in multiple modes: static, real time dynamic and high speed dynamic as well as the capability of being able to apply a single system across all models and closures with one investment in a system that exceeds the reliability, accuracy, repeatability, and reproducibility of any other system in the market.

WISEgap also allows automotive OEM's with the tools to self-calibrate the system and the ability to apply the technology across models and applications due to the flexible nature of the wireless system.

The process for measuring door seal gaps in this way was patented by Inora as a part of system creation.



THE RESULTS: WIRELESS TELEMETRY ENABLES DOOR SEAL GAP MEASUREMENT

THE RESULTS

The WISEgap system dramatically improved accuracy, repeatability, reliability, reproducibility and provided time savings from ~2 hours per door, to ~5 minutes per door, for setup and measurements.

Nick Turicek, Account Relations Manager at Inora explains "One of the key elements of the WISEgap system is its ability to wirelessly measure door seal gaps, allowing user friendly operation in applications ranging from manufacturing facilities to design and engineering, where the wireless component allows dynamic testing. This key wireless communication is made possible by the T24 wireless module from Mantracourt, which powers the system. We worked closely with the engineers at Mantracourt to create a wireless solution to suit our exact requirements".

He continues "Automotive OEM's are better able to prevent water leakage and wind noise issues in all stages of production as well as conduct analysis and testing that was previously unavailable".

"Customer feedback is positive. While certain areas may only use a portion of the system's full capability, it's flexibility on both hardware and software allows OEM's to utilize it in the way that makes the most sense for them. It is used during launches to improve the door fit and over the long term has helped OEM's understand door fit designs".

PRODUCTS USED



T24-WG

2.4 GHz WiseGap Module



T24-BSu

USB base station



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Nick Turicek, Accounts
Relations Manager at Inora