

Now See Your Sound
and Vibration!

SM Instruments Inc.

2017.10.



| SM Instruments Ltd.

We makes innovation in **Sound and Vibration** Measurements

- Sound Localization
- Machine Condition Monitoring
- S&V Measurement Automation
- Squeak and Rattle Measurements



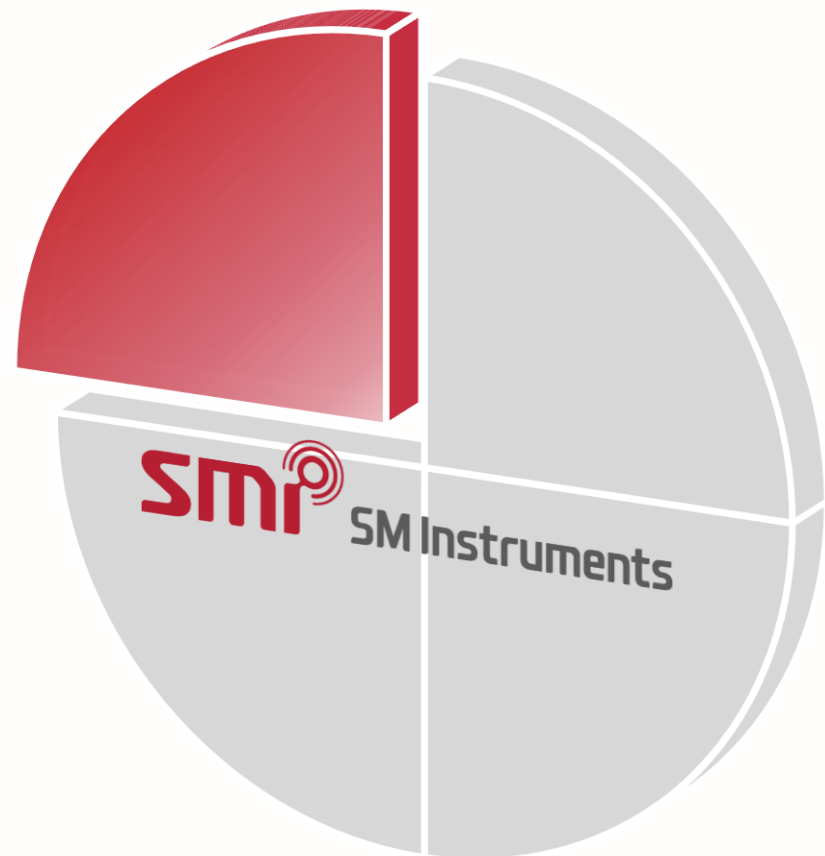
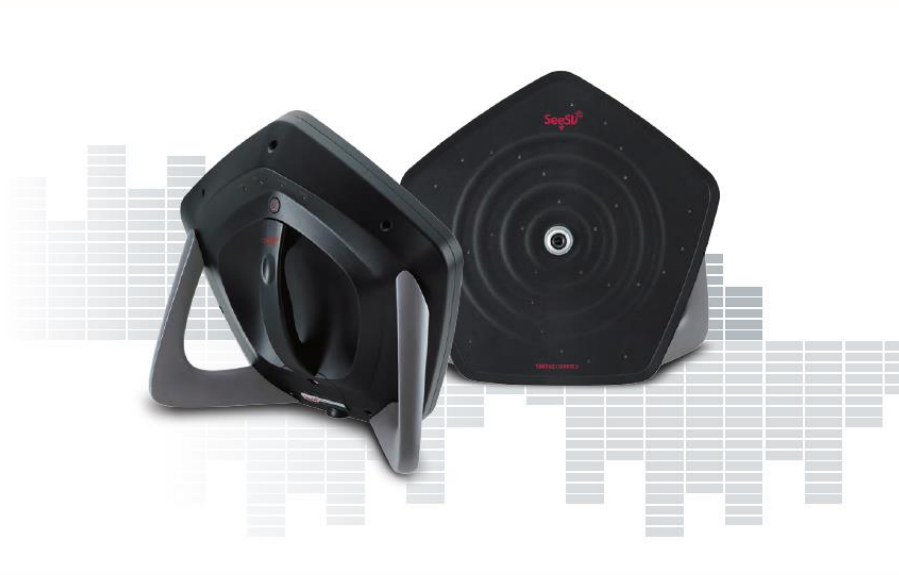
| History



2006, January	Foundation of SM Instruments Inc.
2006, March	National Instrument's Alliance Member
2006, April	Professional Engineering (PE) Office (11-03-022)
2006, December	Established SM Instruments R&D Center
2008, November	ISO 9001, ISO 14001
2009, March	Government Certification in Sound Level Meter (NESM-136)
2010, September	Installation of 9 Wind Turbine CMSs on Young-Heung Site
2011, October	World Wide Deployment of Refrigerator Test Systems
2011, November	World Wide Deployment of Panel TV Test Systems
2012, September	Prime Minister's Award for Innovative Company
2013, March	Reddot design award winner 2013
2014, May	Moving to new own building
2014, August	National Instruments 'NI Engineering Impact Award'
2014, November	Germanisher Lloyd Certificate for Wind Turbine CMS
2015, October	Selected as promising small & medium businesses
2016, July	NEP(New Excellent Product) Certificate from Institute of Stand and Technology
2016, August	National Instruments "Product Partner of the year Award"

Sound Localization

Portable Sound Camera
Panoramic Sound Camera
Ultrasonic Sound Camera



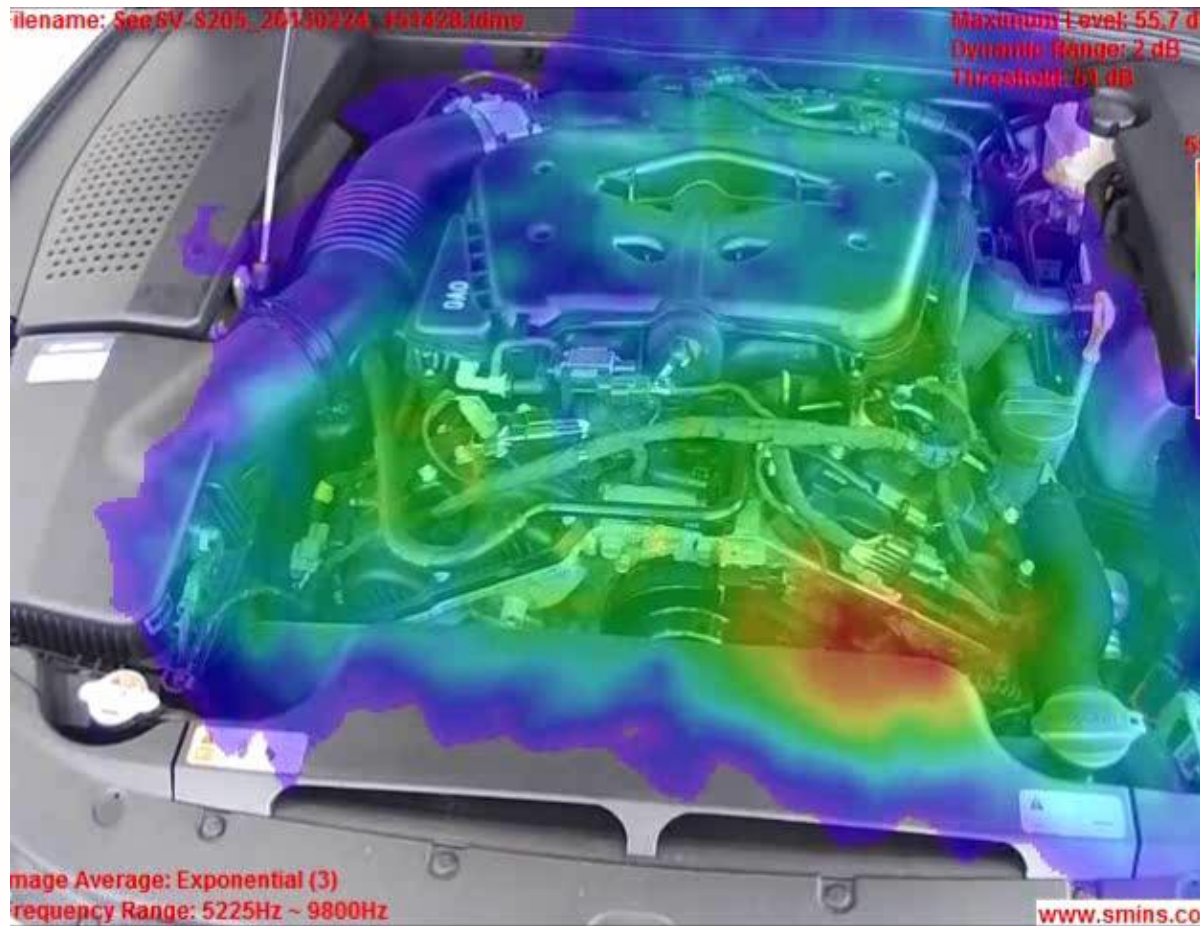
Sound Localization: Sound Camera

- Optical Camera + Microphone Sensors



Sound Localization: Sound Camera

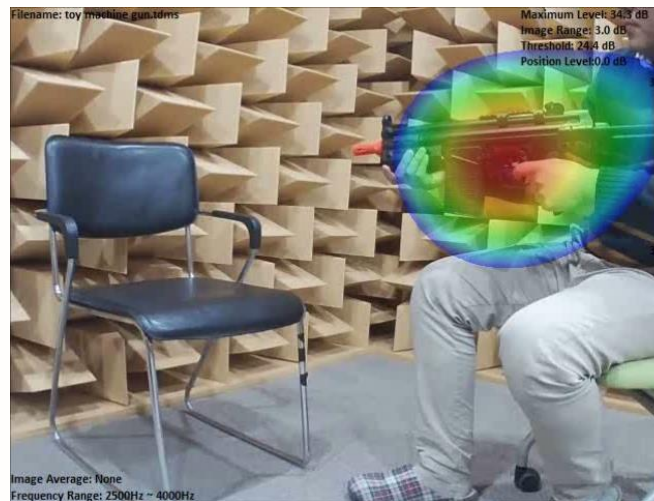
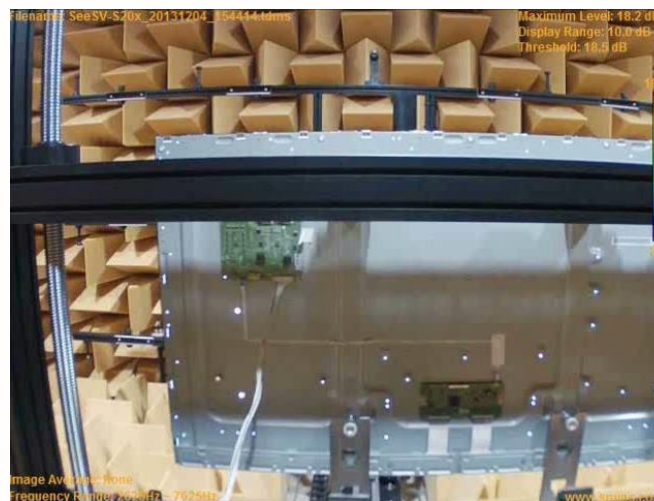
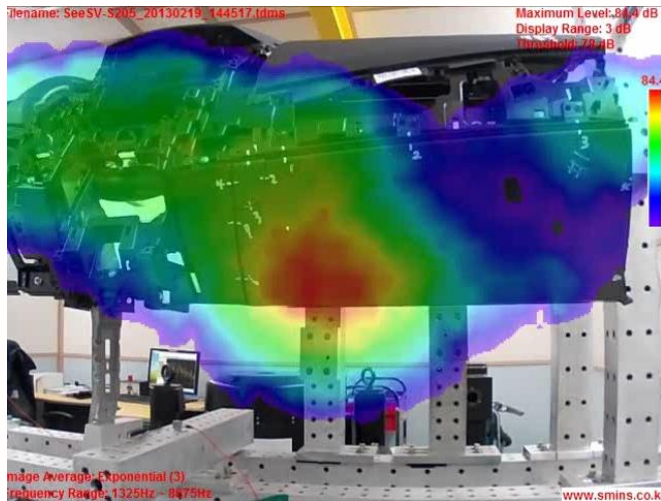
- Sound Camera indicates where the noise sources are.



SeeSV[®] S205
Portable Sound Camera

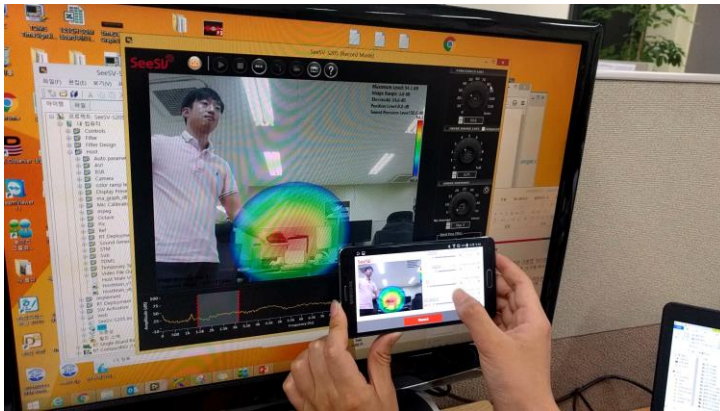


Sound Localization: Sound Camera Applications



Sound Localization: Sound Camera

- Portable display by using web-service system.



| Sound Localization: Sound Camera

- Sound Camera Line-Up

SeeSV[®] S205
Portable Sound Camera



SeeSV[®] S206
Portable Sound Camera Mini

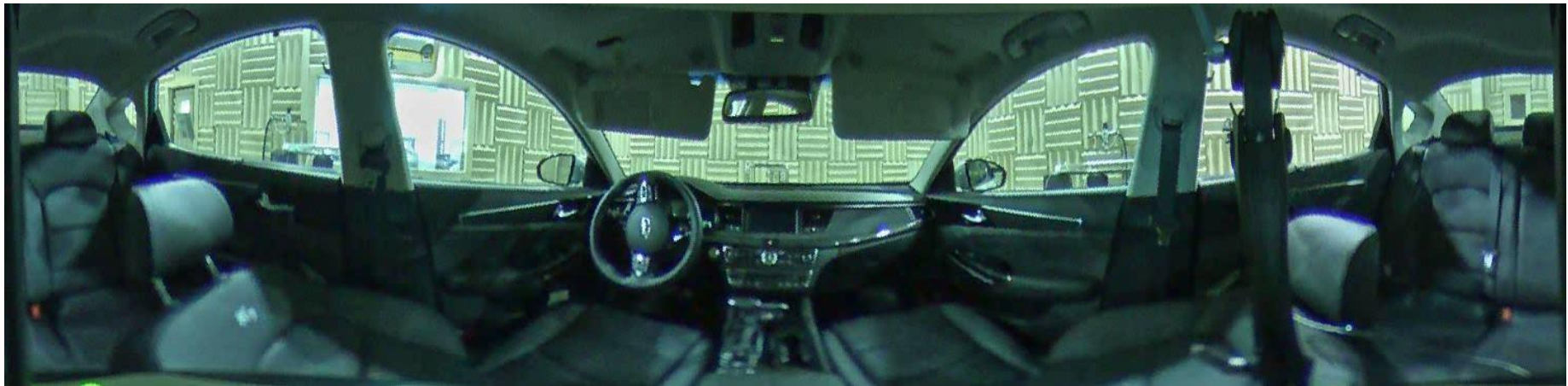


SeeSV[®] S306
Panoramic Sound Camera



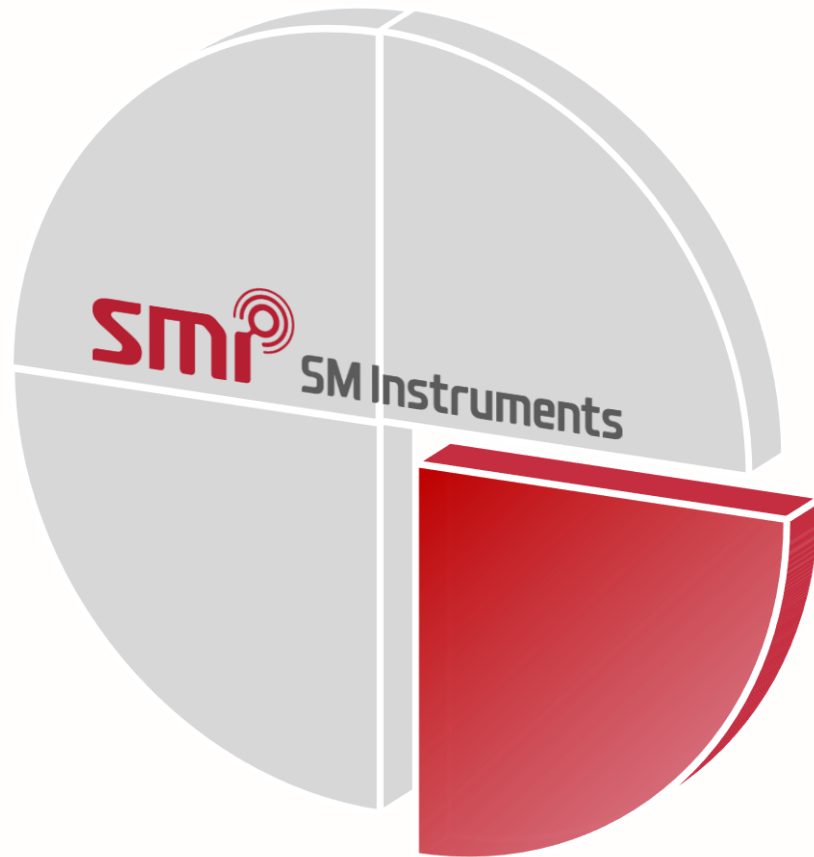
Sound Localization: Sound Camera

- Panoramic Sound Camera Visualize 360°



SeeSV[®] S306
Panoramic Sound Camera

| Machine Condition Monitoring



Conditioning Monitoring

- GreenEye CR-A0
- GreenEye CR-B0

Machine Condition Monitoring

- Wind Turbine Condition Monitoring by GreenEye-CRA0

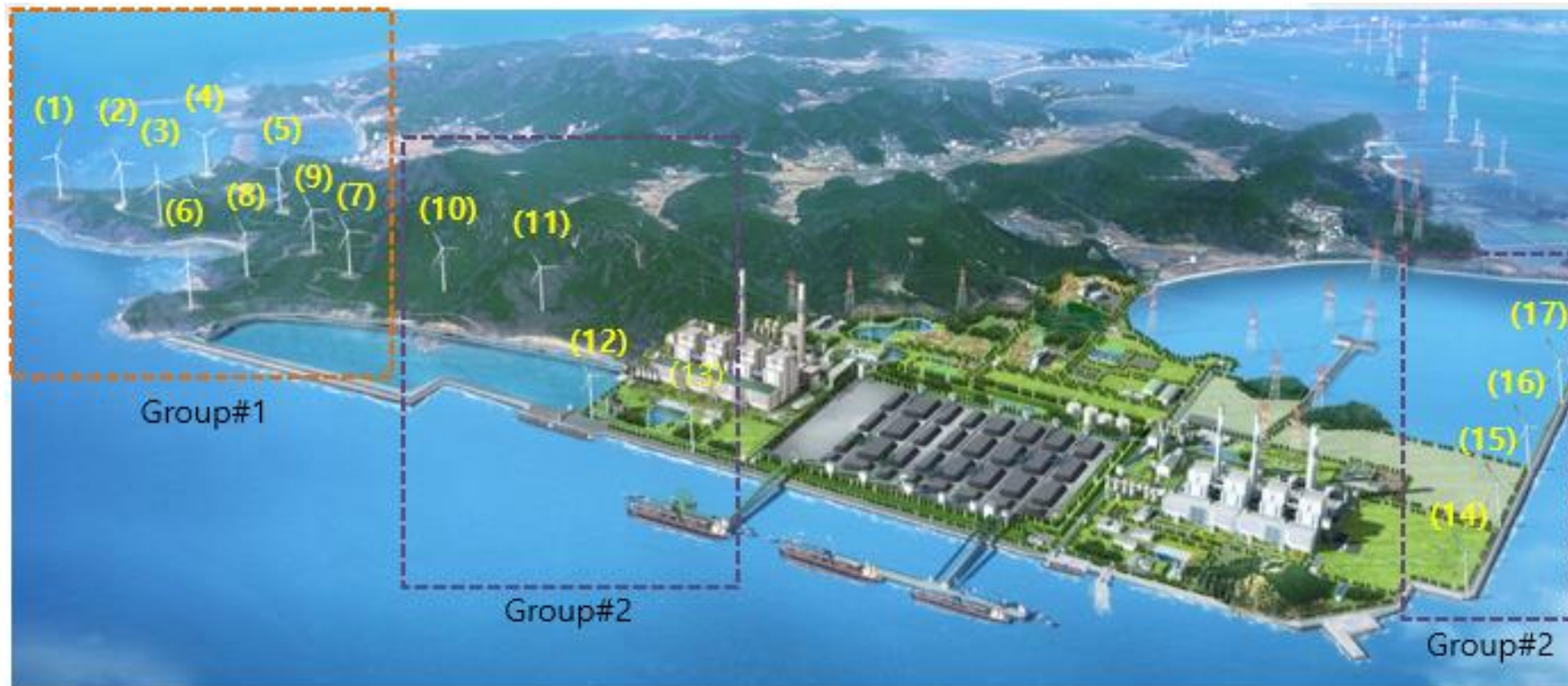


DNVGL Certification



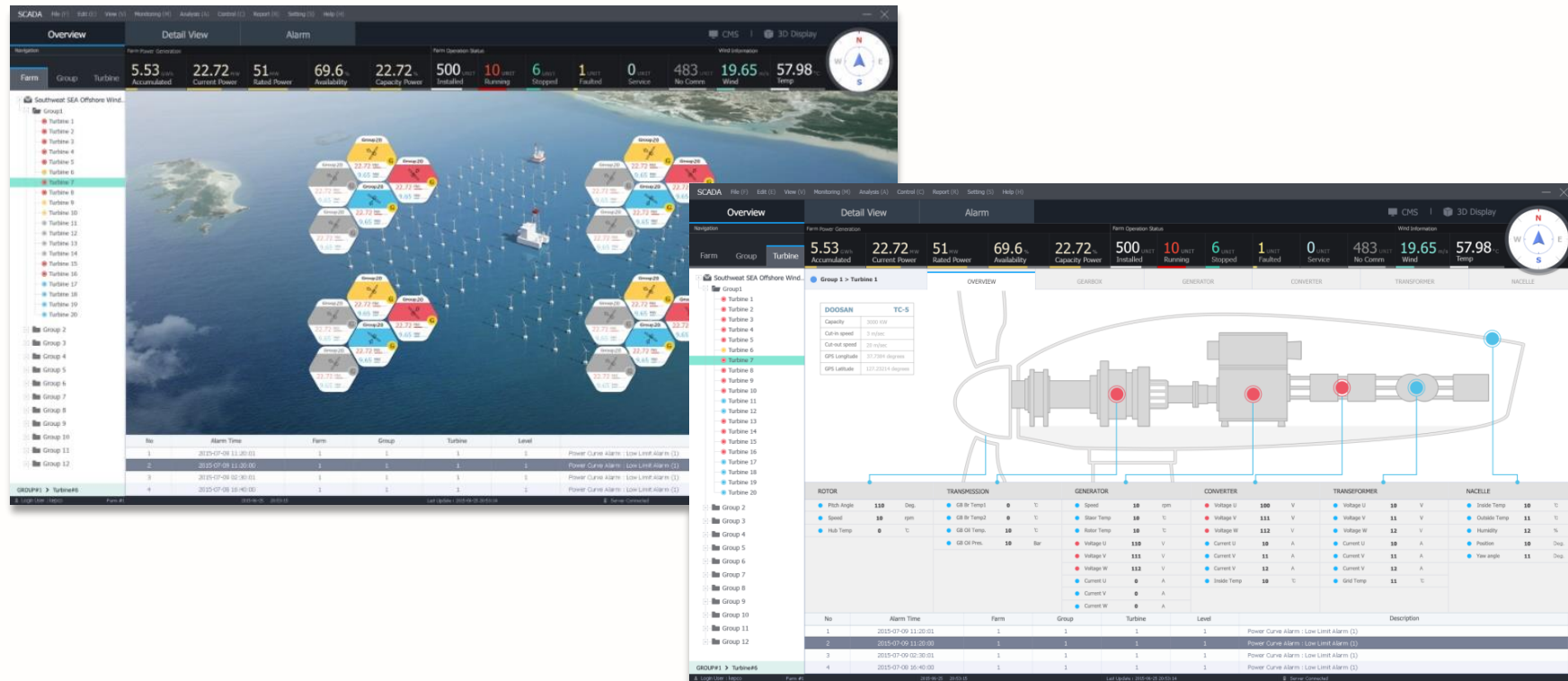
Machine Condition Monitoring

- Commercially running at YH Wind Farm since 2010.
- Will be installed in SW Offshore Wind Farm in 2018.

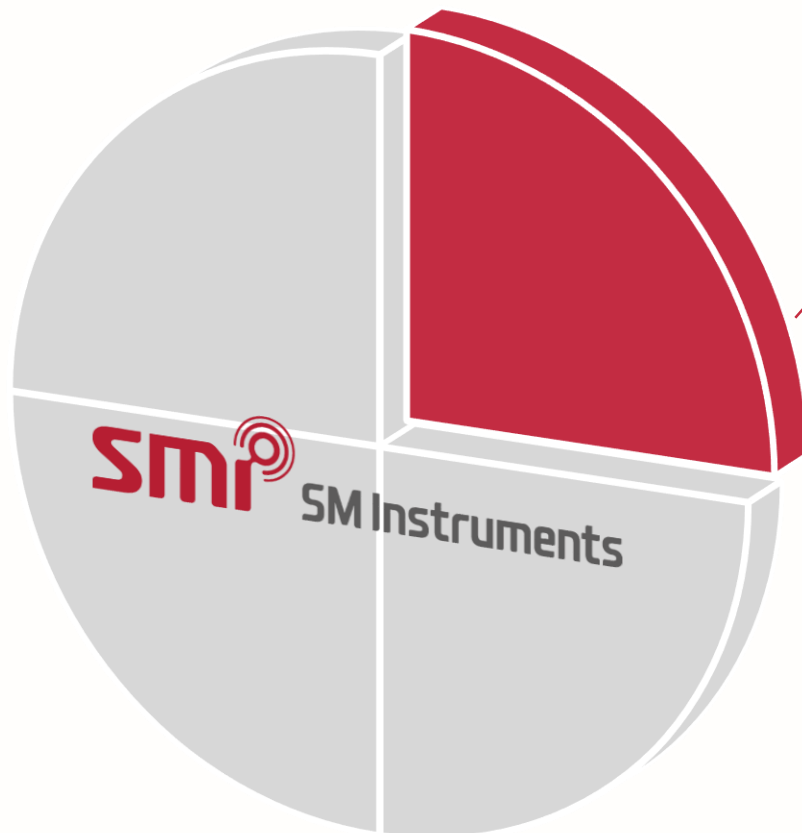


Machine Condition Monitoring: SCADA

- Wind Farm Supervisory Control and Data Acquisition System (SCADA) GreenEye SF-01



| S&V Measurement Automation



End of Line Test
System Integration



S&V Measurement Automation

- “Solution Masters’ Customizing Service”



Problem Defining

Define what you need by consulting from experienced sound and vibration experts.

Proof of Concept

Generates test concept and performs benchmark. Simple preliminary tests insure the success of the project.

Design and Prototyping

Design tests, instruments and interfaces with connecting devices. Develop prototype instruments for Phase II run.

Customizing

Operate developed prototypes in actual situations and customize parameters. Fix unexpected behavior and give confidence to customers.

Deploy

Produce test instruments for real application in several test locations. Version and quality managements are main issues.

Maintenance and Calibration

Provide optimized maintenance and calibration strategy for stable operation.

S&V Measurement Automation

- End-of-Line Testing

- **Panel TV, Monitor Quality Assurance System** (Korea, Brazil, Mexico, Poland and Russia)
- **Noise Tester for Motor Driven Power Steering (MDPS) Driving Module** (Korea and Slovakia)
- **Noise Tester for C-MDPS Steering Gear** (Korea and China)
- **In-Line Noise Tester for Refrigerator** (Korea, India, Mexico, and Poland)
- **Hard Disk Balancing Device** (Korea and China)
- **Vehicle HVAC System Noise Detector** (Korea and Slovakia)
- **Automotive Break Module Noise Tester**



S&V Measurement Automation: EOL Solutions

- EOL Turnkey Solution Provider
 - Test Procedure Design
 - Automatic Test Machine
 - Measurement SW and HW



S&V Measurement Automation: Test System Integration

- Test System Integrator
 - Test Procedure Design
 - Automatic Test Machine
 - Measurement SW and HW



S&V Measurement Automation: Simulators

- Test System Simulator
 - Simulator Design
 - Manufacturing
 - Operation SW and HW
 - Monitoring SW and HW



Squeak & Rattle Measurements: BSR Tools

 BSRObserver

 BSRChecker

 BSRProbe

 BSRQuality



BSR Tools

- BSR Tools measure and analyze BSR elements.



BSRObserver



BSRChecker



BSRQuality

People – We propagate innovation

- as sound and vibration experts
- as signal processing experts
- as LabVIEW experts



R&D Environments

- Facilitated major research utilities.
- Attractive R&D environment
- Located in the middle of the science complex



Business Network

- National Instruments Gold Alliance Partner**

SM Instruments is a Gold Alliance Partner of National Instruments (NI), which is an USA test, measurement and control instruments company.



[NI Home](#) > [Products & Services](#) > [Sound and Vibration Measurement and Analysis](#) > [Sound and Vibration Sy](#)

Sound and Vibration Measurement and Analysis

- ▶ Sound and Vibration Software
- ▶ Sound and Vibration Hardware
- ▼ Sound and Vibration Systems
 - ▶ Ethernet Based Real-Time Acoustic Camera
 - ▶ Acoustic and Vibration Starter Kit
 - ▶ Distributed Machine Condition Monitoring (MCM) System
 - ▶ Microphone Array Measurement System
- ▶ DSA Sensors and Accessories

SeeSV-S205

Real-Time Acoustic Sound Camera

[E-mail this Page](#) [Print](#) [PDF](#)



[\[+\] Enlarge Picture](#)

[Overview](#)

[Pricing](#)

[Resources](#)

Customers



Mercedes-Benz



Now See Your Sound
and Vibration!

Thank you

| WAR GAME!

**30ch. Spherical Array
Wargame Demo**

SM Instruments