

CASE STUDY

Indonesian Environmental Impact Control Centre Facilities — Pusarpedal

Indonesia
Environmental and automotive
Sound level meters, sound intensity, PULSE, pass-by

Pusarpedal is an environmental laboratory under the Indonesian Environment Ministry, performing environmental quality testing and monitoring. It also verifies data from other laboratories and works to develop environmental laboratories at the provincial level.

Photos courtesy of Pusarpedal



The organisation

Pusarpedal is the Environment Reference Laboratory in Indonesia accredited to ISO/IEC 17025 by the National Accreditation Body (KAN)

The Environmental Impact Control Centre Facilities (Pusarpedal) is an environmental laboratory providing test result data for use in environmental management. It performs environmental quality testing and monitoring, data verification of results received from other environmental laboratories, and works to develop environmental laboratories at the province and district level. The technical services supplied by Pusarpedal include quality monitoring and testing, as well as calibration, and they perform R&D and troubleshooting for customers including Toyota, Nissan, Mitsubishi and Mercedes.



Pusarpedal is under the Indonesian Environment Ministry, although it is located on a site owned by the Ministry of Research and Industry. A non-profit making organisation, it takes on third-party projects that help towards the costs of running the facility. Under the overall manager Hari Wahyudi, Pusarpedal has 114 people on site.

Pusarpedal also acts as the training centre for all of Indonesia's 450 local government authorities in environmental noise issues.

History

Pusarpedal was established as an environment reference laboratory with grants from the Japanese government in 1993. It then received the testing laboratory accreditation certificate from the National Accreditation Committee (KAN) on February 7, 2001.

Standards

Motorbike noise regulations were introduced in Indonesia in 2010



Pusarpedal conducted the study that set the Indonesian standards and defined the official testing methodologies, both of which refer to international ones.

With more than 10 million motorbikes in Indonesia, a significant noise problem led to the introduction of regulations in 2010.

Noise and vibration laboratory

Wisnu Yulyanto is a researcher with 18 years' experience in sound and vibration

The six people in Pusarpedal's noise and vibration laboratory report to Wisnu Eka Yulyanto, who was involved in the initial setup of the laboratory in 1993, and has been working there ever since. Like Wisnu, the laboratory is the top authority on noise and vibration in the country. As he says, "This is like no other lab in Indonesia. There are others that we cooperate with that focus on specific matters, but don't have the same facilities or competences."



Here, they also develop wider competencies by working with universities, and in this capacity Wisnu has supervised 50 students to date.

Environmental operations

Since their core competency is environmental noise issues, it is no surprise that Wisnu has presented many technical papers on the subject. In addition, his team was responsible for city noise projects in 13 major cities between 2006 and 2008. Other environmental areas include building acoustics and performing sound power levels on industrial and electrical equipment such as generators.

Projects have included providing sound power measurements on industrial and electric equipment



As part of their airport noise commitments, they also conducted a two-year programme to investigate airborne noise in residential areas, covering over 1000 aircraft at 10 airports. At present they use a Sound Level Meter Type 2250 to do this, and they are currently planning to upgrade to a Noise Monitoring Terminal.

Recently, Pusarpedal's noise and vibration laboratory has turned some of its attention to focus on railways, where they are currently investigating environmental noise and vibration issues.

Automotive operations

Pass-by noise legislation is used to certify all vehicles built in and imported into Indonesia.

At present, Pusarpedal use an actual road for most testing, rather than a dedicated test track, and instead they rent a track with an asphalt or concrete surface when it is required. However, they plan to have their own 420-metre pass-by test track within three years. Measurement projects include pass-by noise testing on trucks, with the major brands in Indonesia being Hino, Nissan and Isuzu.

Reports are made in Microsoft® Excel, with Brüel & Kjær's PULSE system now running under Microsoft® Windows® 7. Data is saved onto the PC hard drive, and then backed up after every measurement. According to Wisnu, "We keep the data permanently in an archive, and it is always very easy to find and retrieve the data."

Pusarpedal also has a hemi-anechoic chamber for sound power measurements.

Why buy Brüel & Kjær?

As a national standard-bearer, Pusarpedal cannot risk errors in the data quality or lack of functionality, so the global reputation of Brüel & Kjær as the global standard-setter was key in the decision-making process. And this has been borne out, as after 20 years as Brüel & Kjær customers, everything that they have ever bought still works exactly as it should. According to Wisnu, "There are no other instruments in the world like Brüel & Kjær's for sound and vibration measurements."

Their decision to buy a pass-by system was made in 2006, but due to financial constraints the budget was not approved until 2011. Then their new equipment was delivered at the end of 2011, and commissioned in February 2012. The commissioning was attended by many people including top-level managers from the Environment Ministry, and went without a hitch.

Next, Pusarpedal has plans to buy a material testing system in 2013, and subject to financial approval Wisnu's intention is to invest in an indoor pass-by system.

Pusarpedal's equipment

Software:

*PULSE Vehicle Pass-by Test Software
Dual-channel building acoustics
FFT analysis software
Maintenance Agreement*

Hardware:

*Sound Level Meters Type 2260, equipped for sound intensity measurements
Sound Level Meter Type 2250
Portable Noise Monitoring Unit
Hand-held Sound Intensity System 2270-G*

3x PULSE systems:

Two are dedicated to pass-by noise assessment.

One is a 5-channel B-frame for general noise measurements.

They also have a large quantity of Brüel & Kjær microphones, accelerometers, calibrators.

Distributor

A key reason for Pusarpedal's confidence in Brüel & Kjær's reputation and reliability is the excellent local support and service from our distributor in Indonesia, PT. Alltechindo Nusajaya, represented to Pusarpedal by joint-owner Elvairuz Abadi – who only works with Brüel & Kjær equipment.

PT. Alltechindo Nusajaya is Brüel & Kjær's exclusive distributor for industrial and environmental noise solutions in Indonesia. As Elvairuz says, "There is a huge potential for growth in Indonesia. I have over 10 years experience of working with Brüel & Kjær, and we are honoured to represent the finest manufacturer of sound and vibration solutions in the world. Like our customers, we get great support from people far away, including Brüel & Kjær's headquarters in Denmark."