

Noise Monitoring at Race Track

CASE STUDY: Online Noise Monitoring at Motorsport Race Track Tor Poznań

Measurement Operator:

Automobilklub
Wielkopolski

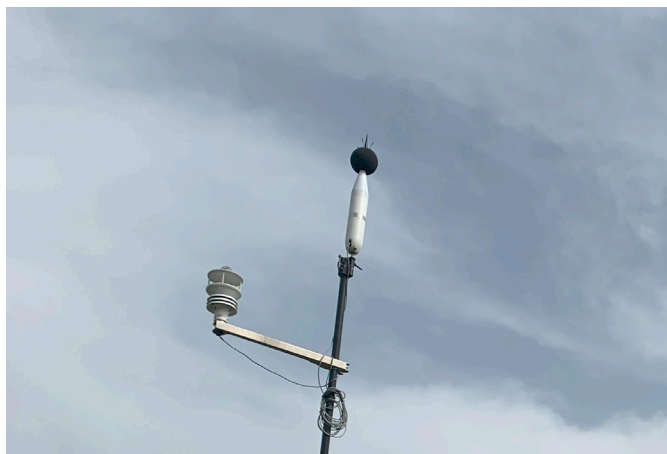
Monitoring Instrumentation:

SV307A – Class 1 Noise Monitoring Station
SvanNET – Cloud-Based Monitoring Services
SvanNET AI – Acoustic Event Recognition



Challenge:

Motorsport events generate very high noise levels, posing risks to hearing, affecting the local community, and requiring strict regulatory compliance. Aware of these challenges, Automobilklub Wielkopolski sought a proactive solution to monitor and manage noise emissions transparently — ensuring safety, legal compliance, and maintaining community trust.



Motorsport events deliver adrenaline-fueled excitement but also generate exceptionally high noise levels — often exceeding 130–140 dB, comparable to a jet engine at takeoff. While exhilarating for fans, this noise raises

“By combining Class 1 noise monitoring hardware, AI-driven analysis, and meteorological data, we deliver unparalleled precision in assessing motorsport noise — enabling real-time response, compliance, and transparency for both the racing community and local residents.”

Karol Sałagan, Noise & Vibration Expert

significant concerns related to hearing protection, community disturbance, and regulatory compliance.

At Tor Poznań, the management — represented by Automobklub Wielkopolski — recognized these challenges early on. As a professional event organizer with a long-standing tradition in Polish motorsport, Automobklub Wielkopolski has consistently focused on delivering top-quality racing experiences while respecting environmental standards and the expectations of the local community.

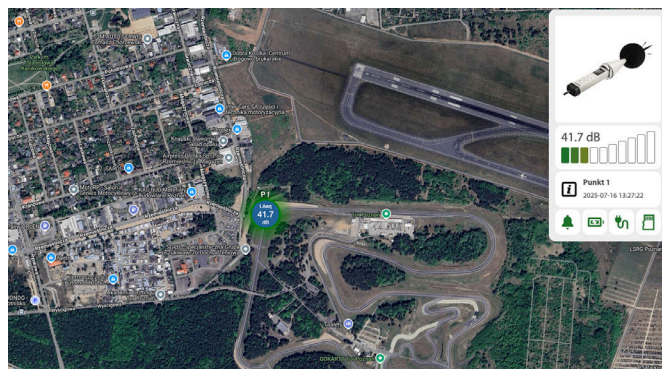
Seeking a forward-thinking solution to proactively manage noise emissions, they looked for a system that would ensure transparency, regulatory compliance, and community trust.

Measurement Methodology

To address the challenge of continuous noise monitoring during racing events, Automobklub Wielkopolski implemented an integrated solution based on the **SV307A** Noise Monitoring Station combined with the **SvanNET** Cloud Service and SvanNET AI. The **SV307A** — a Class 1 certified sound level meter — was selected for its proven reliability in outdoor, unattended monitoring, making it ideal for the demanding race track environment. Installed in a fixed location, the station continuously captured sound pressure levels, automatically compensating for weather conditions through its built-in diagnostics and protective features.

To enhance the analysis of noise propagation, the monitoring setup was complemented by a meteorological station that provided real-time wind speed and direction data. This allowed for a comprehensive assessment of how noise spreads depending on atmospheric conditions — a crucial factor for understanding the environmental impact on the surrounding community.

All noise data, including live measurements and historical records, were transmitted 24/7 via the **SvanNET** Cloud Service, giving race organizers and acoustic experts immediate online access to the monitoring results. The system's ability to generate instant alerts on exceedances enabled swift response

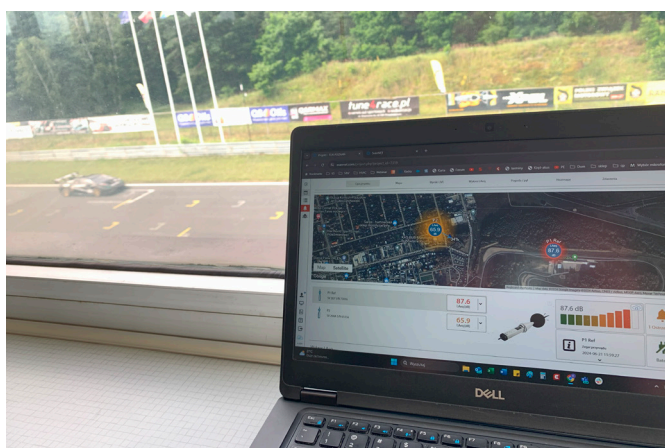
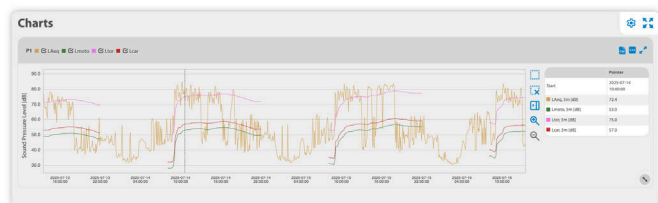


actions whenever noise levels approached regulatory thresholds.

Crucially, the methodology also incorporated **SvanNET AI**, an advanced acoustic event recognition tool that automatically analyzed incoming noise data. The AI identified



and classified specific noise events, such as engine noise peaks surpassing preset limits, while capturing synchronized audio recordings for later verification. This automated, intelligent approach ensured that noise monitoring was both continuous and effective, reducing the need for manual supervision and enhancing the transparency of noise management at the venue.



Results

The implementation of the **SV 307A** Noise Monitoring Station, combined with **SvanNET** Online Services and **SvanNET AI**, enabled Automobilklub Wielkopolski to establish a comprehensive, autonomous noise monitoring system that delivers continuous measurements with real-time alerts on exceedances. By integrating weather data from a connected meteorological station, the system provided deeper insights into noise propagation under varying environmental conditions. The use of AI-driven event detection allowed for the automatic

identification, classification, and recording of critical noise events, ensuring precise analysis without the need for constant manual oversight. With 24/7 online access to both live and historical noise data, the monitoring system supported transparent reporting and proactive communication with local stakeholders and authorities. This approach empowered Automobilklub Wielkopolski to effectively manage environmental risks, strengthen its position as a responsible motorsport organizer, and demonstrate that high-performance racing can coexist with community and environmental stewardship.



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