



C-AIM Consult, a business unit of Enterprises University of Pretoria (Pty) Ltd, is based at the University of Pretoria's Department of Mechanical and Aeronautical Engineering. C-AIM Consult offers research and advisory services in asset integrity management and vibration monitoring and recently acquired a state-of-the-art acoustic/sound camera.

The Siemens LMS Sound Camera is a modular, high-quality digital microphone array that offers an instant overview of sound sources for any noise-generating object. It's a versatile and configurable solution, making it a great tool to work with in multiple test conditions.

**CORE COMPETENCIES
OF THE CAMERA**

BUSINESS UNIT

**C-AIM
CONSULT**

STRUCTURAL INTEGRITY | VIBRATION | ACOUSTICS

- Modular and quick to set-up.
- High-quality digital microphone array.
- Instant overview of sound sources on any noise-generating object.
- Wide frequency range from 200 Hz to 20 kHz (depending on configuration).
- Improves ability to quickly discern noise sources closely spaced together.
- Accurately isolate noise coming from selected mechanical components (up to four components).
- Easy ranking of different noise sources (on the same machine or different machines).
- Reduced measurement and analysis time.
- Immediate results (real-time data).
- Report and share results as video and pictures.
- Work can be conducted on objects of different sizes and at different distances.
- Additional processing using LMS Test.Lab Software to increase engineering insight (envisioned capability) i.e. ability to discern moving noise sources.

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Shifting knowledge to insight



BENEFITS TO YOUR COMPANY

- Perform efficient acoustic troubleshooting.
- Minimise time spent in tracking down sources which contribute to unwanted noise.
- Enable product acoustic design enhancement.
- Enhanced on-site analysis.
- Interactive analyses that are available in real time.

APPLICATION EXAMPLES

- **Automotive and transportation** e.g. acoustic leak detection, powertrain noise qualification, door slams, windshield wipers and brake systems.
- **Heavy equipment and industrial machinery** e.g. assessment of bulldozers or excavators to help diminish overall noise by identifying the parts that require optimisation.
- **Aviation and space** e.g. in-flight or wind tunnel acoustic testing can be complemented to quickly and economically assess acoustic performance, measurement of exterior noise on the ground, and detecting cabin noise, seal leakage and source contribution.
- **Consumer and white goods** e.g. identify weak spots in product acoustics and sound design to manage brand perception (i.e. washing machines).

	Centre	Long arms
Typical usage	Trouble-shooting, handheld	Advanced, outdoor
Typical distance	nearfield <0.5m	Near-field and far field (~0.3 to >2m)
Typical freq. range	1000 to 20kHz	200 to 10kHz
Diameter and mics	30cm with 45 mics	150cm with 117 mics
Dynamic range	14 dB	12 dB

COMPANY PROFILE

Having played a profound part in the history of South Africa for more than 100 years, the University of Pretoria boasts a lasting legacy that endures through a cluster of innovative and multidisciplinary services rendered through Enterprises University of Pretoria.

Our products and services translate into increased productivity and enhanced customer service excellence within any industry. Drawing on the knowledge of academic and industry

experts from the University of Pretoria, our track record includes high-quality, customised practical solutions that set us apart from a traditional skills development and research organisation. With some of South Africa's most acclaimed academics and thought leaders on our teams of course leaders and research specialists, we ensure that our clients continuously engage in ground-breaking knowledge transfer – *shifting knowledge to insight.*

WHY PARTNER WITH US?



A single point of entry for all training, research and advisory services.



Access to all knowledge outputs from the University of Pretoria.



Personalised services to achieve unique business and professional development goals.



Innovative solutions for targeted training and critical business insight.



An extensive international footprint spanning six continents.



Draw from leading industry experts and South Africa's finest thought leaders.



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