Benelux LMAG Newsletter

January 2026

First of all the executive committee of the IEEE Benelux Life Member Affinity Group (LMAG) wishes everybody a Healthy, Successful and Happy 2026! We look forward to meet each other again on future LMAG events!

In this Newsletter:

Reserve the date: 26 February 2026: visit to Caeleste, Mechelen

Caeleste is a supplier of turn-key, high-end, beyond state-of-the-art CMOS image sensors. Our activities include custom image sensor design, manufacture, assembly and characterization. Caeleste is the originator of many novel concepts as high-speed, low-noise image sensors, indirect X-ray detectors with photon counting, color X-ray sensors, and sub-0.5 noise electron read noise CMOS pixels.

Caeleste focuses on:

- Image sensors for scientific imaging and instrumentation
- Medical imaging (X-ray devices with either direct or indirect X-ray photon conversion)
- Particle detection (electrons – protons)
- Industrial image sensors
- Space and radiation hard design
- Photonic devices for life science applications

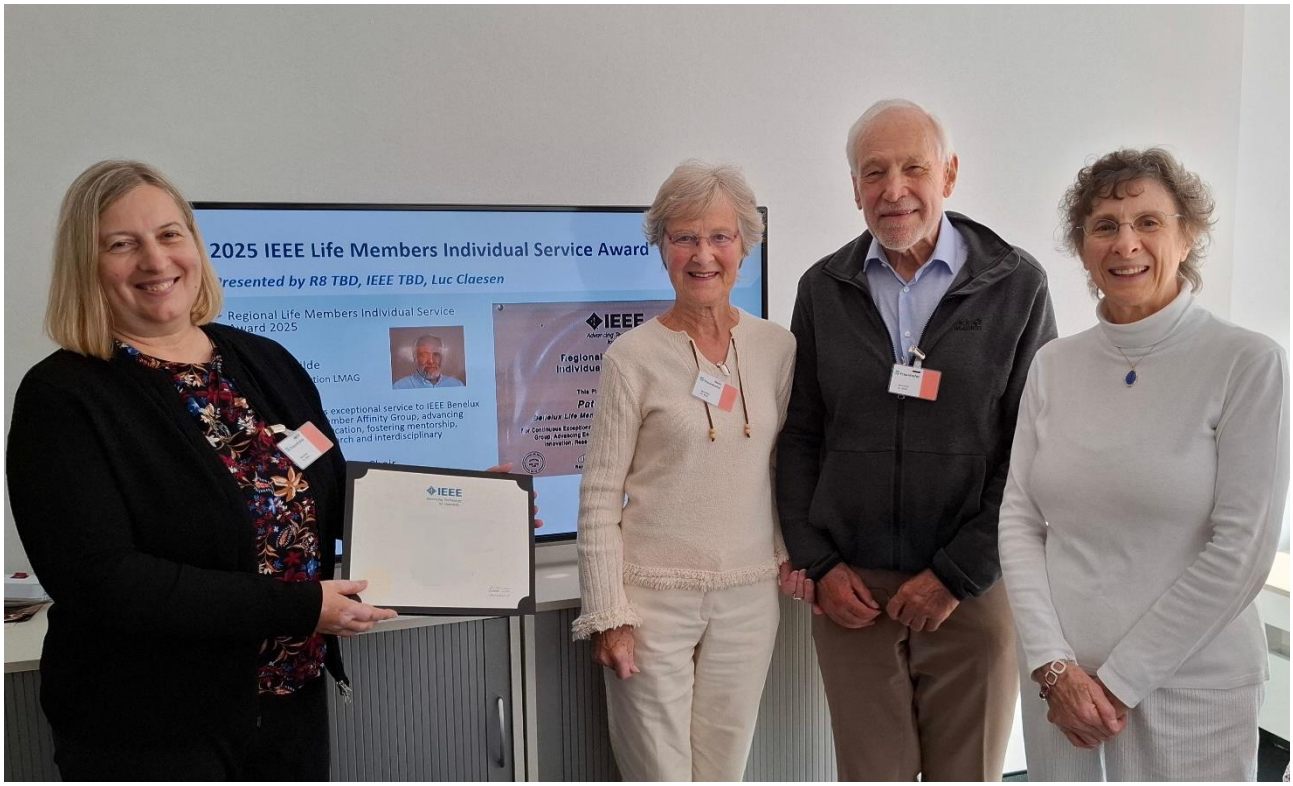
Caeleste was co-founded by dr. ir. Bart Dierickx. More details will be included in the invitation that will be sent afterward.

https://caeleste.be/

A Lifetime of Service: Prof. Patrick Dewilde Receives 2025 LMAG Individual Service Award

Bonn, Sept. 29, 2025. In a ceremony during the IEEE Life Member Affinity Group (LMAG) meeting in Bonn organized by Past Chair Dr.-Ing. Péter Magyar, Region 8 Director Prof. Dušanka Bošković and VC TA Prof. Tiziana Tambosso presented the prestigious 2025 LMAG Individual Service Award to Prof. Patrick Dewilde, IEEE Life Fellow.

The award citation honors Prof. Dewilde "**for his exceptional and continuous service to IEEE and the Benelux Section LMAG, advancing engineering education, fostering mentorship, innovation, research, and interdisciplinary collaboration.**"



Prof. Dewilde's illustrious career is marked by foundational leadership across European academia and industry. He is an emeritus professor at KU Leuven (Belgium), TU Delft (Netherlands), and TU Munich (Germany). His significant organizational roles include Director of the Delft Institute of Microelectronics and Submicron Technology (DIMES) and Founding Director of the Institute of Advanced Study at TU Munich.

His dedication to IEEE spans nearly six decades. Prof. Dewilde co-founded and was the first chair of the KU Leuven IEEE Student Branch in 1966, later founding the Student Branch at Delft University in 1978. He served as IEEE Benelux Section Chair in 1988-1989 and was instrumental in co-founding the Benelux Section LMAG in 2015, where he has since acted as treasurer and vice-chair.

A pioneer in the conference arena, Prof. Dewilde is the co-originator and occasional chairman of major IEEE-sponsored international conferences, including MTNS and ECCTD, and was the founding chairman of DATE (Design Automation and Test in Europe).

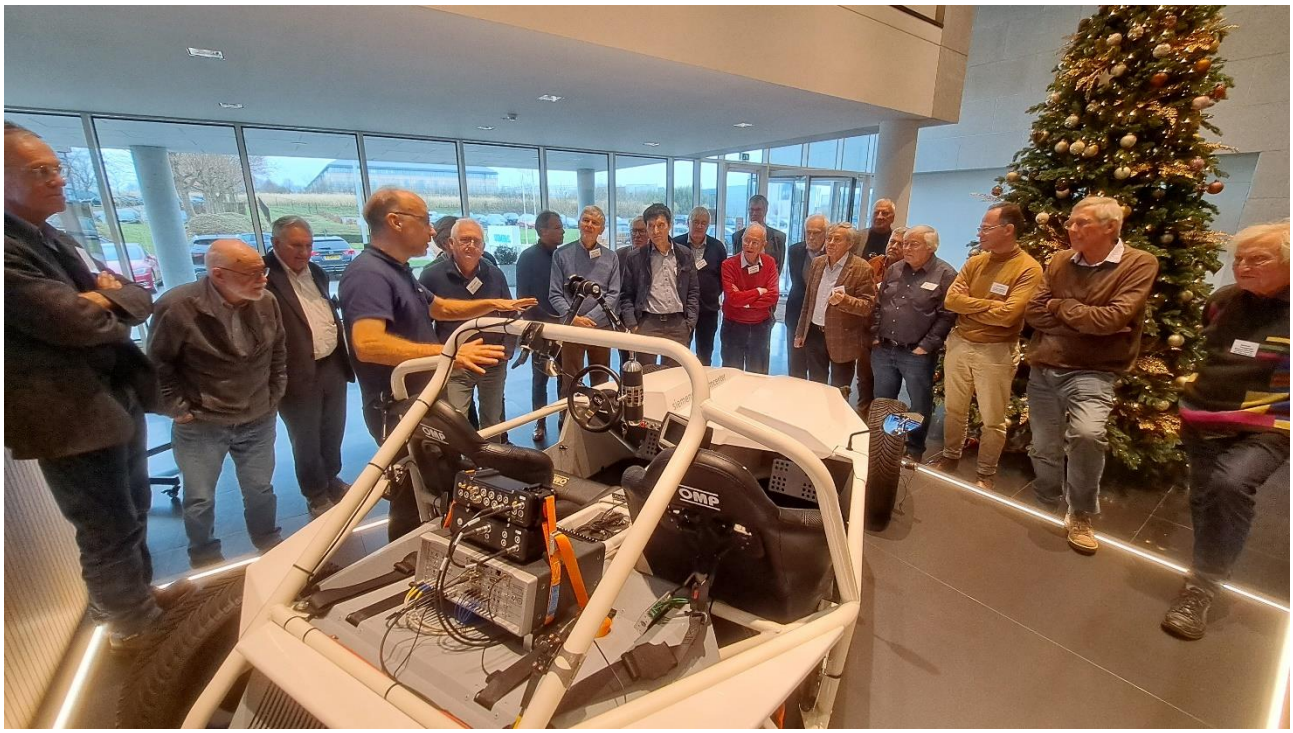
Even in his recent work, Prof. Dewilde’s commitment to the scientific community remains unwavering, as demonstrated by his 2024 book, “Time-Variant and Quasi-separable Systems: Matrix Theory, Recursions and Computations.”

Engineering the Digital Twin: A Benelux LMAG Visit to Siemens Digital Industries Software

The IEEE Benelux Life Members Affinity Group was treated to a captivating visit at the Siemens Digital Industries Software facility in Heverlee on December 5, 2024. The event, organized by former CTO Prof. Herman Van Der Auweraer, delved into the heart of industrial digitalization.

The company originally started as LMS, Leuven Measurement Systems, the second spin-off of KU Leuven in 1979, bringing advanced dynamic testing, analysis and simulation software solutions to the worldwide automotive, aerospace and other high-performance industry markets. After a successful expansion over 30 years, LMS was acquired by Siemens in 2013 to complement the Siemens Digital Industries Software portfolio with its unique solutions, to become the headquarters of the Simulation and Testing Solutions Segment.

Technical presentations showcased how the software addresses core industry shifts, from vehicle electrification to autonomous driving, emphasizing the pivotal role of AI and cloud computing. The tour brought this to life, featuring an acoustic test hall for NVH analysis, a high-fidelity vehicle sound simulator, and a thrilling 6-DoF Stewart platform driving simulator which participants could experience by themselves. The visit brilliantly illustrated the fusion of deep engineering knowledge with the power of the digital twin.



https://www.sw.siemens.com/en-US/

Seeing the Light: IEEE Benelux LMAG Explores Color Technology at ADMESY

On March 19, 2025, members of the IEEE Benelux Section Life Member Affinity Group (LMAG) gained colorful insights during their visit to ADMESY N.V. in Ittervoort, Netherlands. This globally recognized company, founded in 2006 by former Philips engineers, has established itself as a leader in advanced measurement instruments for color and light.

The visit began with fascinating presentations by ADMESY CEO Steven Goetstouwers and colleagues on the science behind color perception, exploring how our brain interprets color and the crucial role technology plays in this process. Members learned how the interaction between neurons in the retina and visual cortex shapes our perception of colors and surfaces, providing a neural foundation for understanding ADMESY's technological innovations.

ADMESY showcased their impressive product lineup, including their flagship spectrometers and display colorimeters, that are used by the major monitor, automotive, pc, tablet and smartphone producers in the world for their display quality inspection and calibration in the production lines. The company's optical engines and high-speed sampling electronics deliver unmatched speed and sensitivity for color measurement applications.

The factory tour revealed ADMESY's commitment to repeatable high-quality precision manufacturing, with dedicated facilities including research and development departments and a specialized clean room for sensor and multi-layer highly selective color filter fabrication. Members witnessed firsthand how these high-performance instruments are meticulously crafted to serve diverse industries ranging from smartphone and computer displays to automotive applications and lighting systems.

https://www.admesy.com/

IEEE Benelux Life Members Tour World-Leading IMEC Facilities

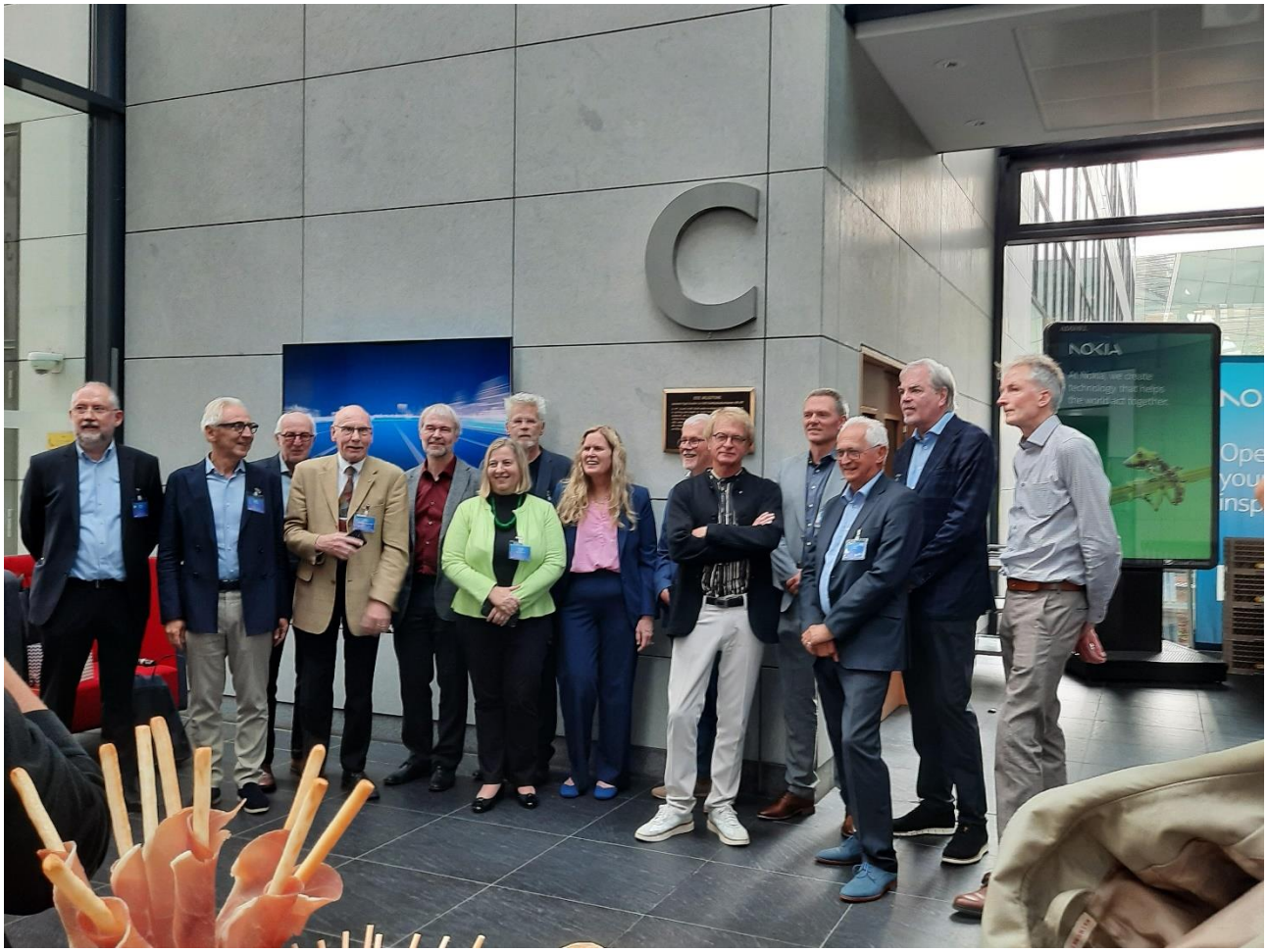
On June 19 2025, the IEEE Benelux Life Member Affinity Group enjoyed a privileged visit to IMEC in Leuven, Belgium, organized by Dirk Rabaey. Recognized as the world's top independent nanoelectronics research institute, IMEC opened its doors to showcase the technologies shaping our industry's future.

The agenda featured expert presentations, including a session by Dr. Kurt Ronse on the frontiers of lithography, highlighting IMEC's pioneering installation of ASML's Extreme Ultra-Violet (EUV) machines. Further talks covered design optimization and advanced packaging. The visit culminated in a tour of IMEC's immense, state-of-the-art cleanrooms—the largest of their kind for R&D—offering a firsthand look at the environment where global leaders like Intel, TSMC, and NVIDIA collaborate on next-generation innovations.

https://www.imec.be/

From Twisted Pair to Global Broadband: IEEE Milestone for ADSL Celebrated in Antwerp

In a fitting tribute to a technology that silently underpins our digital lives, a historic breakthrough in broadband communication was formally honored on 4 September 2025. An IEEE Milestone was unveiled at Nokia Labs in Antwerp, Belgium, celebrating the development of the pioneering Asymmetric Digital Subscriber Line (ADSL) system. The ceremony, presided over by IEEE President Prof. Dr. Kathleen Kramer and Region 8 Director Prof. Dr. Dušanka Bošković, was attended by over 200 former project collaborators and IEEE members, marking a celebration of Belgian innovation.



The story begins not in the 1990s, but in 1881, with Alexander Graham Bell's patent for twisted-pair cabling to prevent interference in telephony. This humble copper wire became the global standard for voice communication, creating a vast installed base. The Belgian connection runs deep; Bell's father-in-law: Gardiner Hubbard, together with Francis Welles, co-founded the "Bell Telephone Manufacturing Company" in Antwerp in 1882.

Over a century later, this same network presented both a challenge and an opportunity. While the internet was emerging, data speeds over copper wires were painfully slow. At the accompanying symposium, ADSL pioneer Martin De Prycker narrated the journey of a small, intrapreneurial team within the company (part of Alcatel, later Nokia). They envisioned a radical idea: to squeeze megabits of data through the kilohertz-rated copper lines designed only for voice.

Their success was not guaranteed. The team's strategy was a masterclass in innovation: creating an agile "Virtual Company" within the larger corporate structure, pivoting from a focus on Video-on-Demand to the exploding internet market, and designing dedicated supporting chips early on. A key victory was winning the crucial JPC contract, which established their ADSL product as a global, interoperable standard. Today, the ability to stream high-definition video, conduct video calls, and use bandwidth-heavy online applications traces its origins back to this breakthrough.

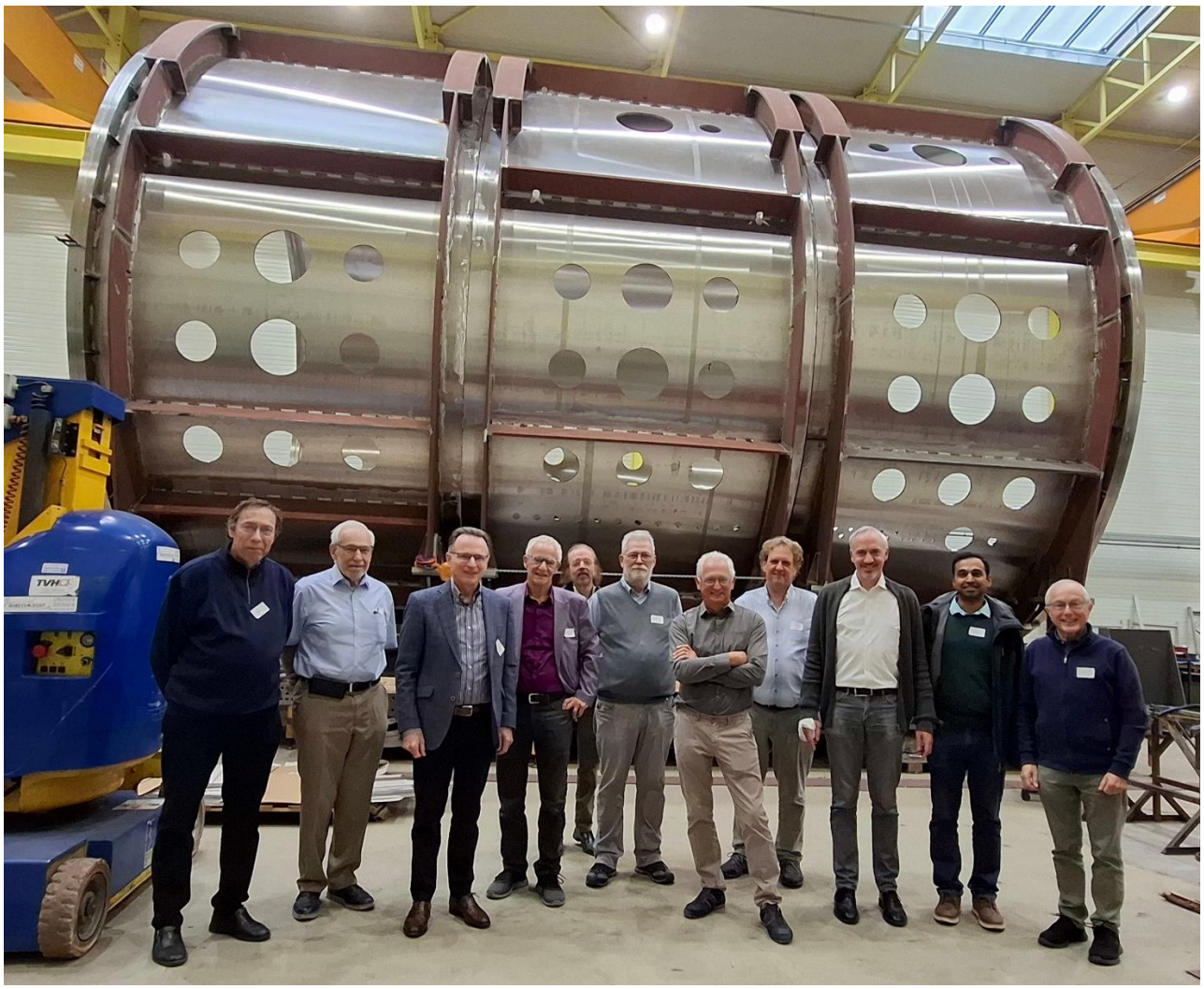
The IEEE Milestone citation reads: "Asymmetric Digital Subscriber Line (ADSL) Enabling Broadband Internet, 1993-1997. In 1997, Alcatel's A1000 ASAM product revolutionized broadband Internet access by providing multi-megabit per second downstream speeds over ubiquitous but decades-old and ill-conditioned subscriber telephone lines. A team based in Antwerp, Belgium began development of the product in 1993. The combination of ADSL technology, innovative signal processing, cutting-edge silicon integration, and a revolutionary architecture brought affordable broadband Internet to nearly one billion people worldwide."

This IEEE Milestone stands as a testament to a Belgian team that saw the future not in tearing up the old, but in brilliantly reimagining it, turning the world's telephone lines into the on-ramp for the global internet.

For more information on this IEEE Milestone, please visit: https://ieeemilestones.ethw.org/Milestone-Proposal:ADSL

A Glimpse into the Final Frontier: Benelux LMAG Explores Liège's Space Hub

On 25 September 2025, members of the Benelux Life Member Affinity Group (LMAG) were treated to an extraordinary look into Belgium's world-class contributions to space science and technology. Organized by Prof. Pierre Wolper, the visit to the Centre Spatial de Liège (CSL) and AMOS showcased the cutting-edge work happening right in our region.



Our day began at CSL, introduced by Prof. Serge Habraken. Founded even before ESA, this applied research center of Université Liège is a powerhouse for developing and testing space instruments. We toured its formidable facilities, including massive, vibration-isolated vacuum chambers that simulate the harsh conditions of deep space. CSL's expertise in optics, cryogenics, and quantum key distribution is vital for renowned missions like Euclid and Solar Orbiter.

We then visited AMOS, where Dr. Xavier Verjans revealed how this company designs and polishes high-precision telescopes and optical systems with nanometer accuracy for a global clientele. The synergy between these institutions was clear, especially in their collaboration on the ambitious Einstein Telescope project. This visit was a powerful reminder of the pioneering spirit and advanced engineering thriving within our Benelux community, pushing the boundaries of what is possible in space exploration.

https://www.csl.uliege.be/cms/c_10241774/en/csl

https://www.amos.be/

From Heritage to High Tech: IEEE Benelux Life Members Visit TNO Waalsdorp

On 4 November 2025, 30 members of the IEEE Benelux Section Life Member Affinity Group (LMAG) visited TNO's Defence, Safety & Security (DSS) facilities at Waalsdorp, The Netherlands.

TNO DSS develops innovative solutions to enhance societal safety and resilience, working closely with government bodies, industry, and international partners, including NATO. During the afternoon presentations, participants were introduced to ongoing research in radar and sensor systems, antennas, and ultrasonics, illustrating how advanced physics and engineering underpin modern defence, security, and situational awareness capabilities.

The Waalsdorp site has a distinguished history dating back to 1927, when the "Meetgebouw" laboratory of the Dutch Commission for Physical Armament began operations. Early pioneering work in aeroacoustics, radio-frequency systems, underwater acoustics, and radar laid foundations that still influence present-day technologies. Although much early material was lost during World War II, renewed efforts since the 1970s have preserved this heritage.

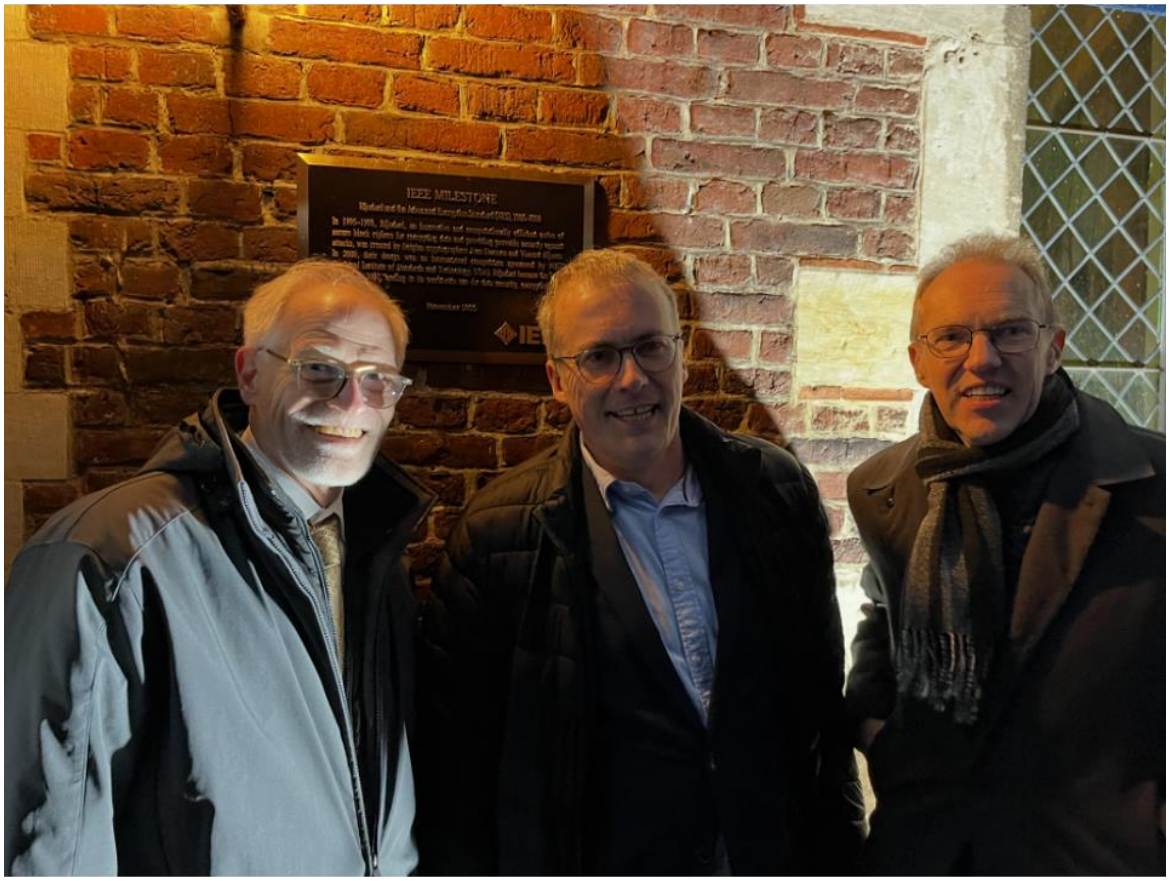
A highlight of the visit was the guided tour of Museum Waalsdorp, where LMAG members received detailed explanations of historic instruments and prototypes. These exhibits vividly demonstrated the novelty and ingenuity of past developments and their basic operating principles, many of which remain relevant today.

The combination of technical presentations, historical context, and collegial discussion made this visit both informative and inspiring, showing how decades of innovation at Waalsdorp continue to shape modern defence, safety, and security research.

https://www.tno.nl/en/ https://www.museumwaalsdorp.nl/nl/index/

IEEE Milestone Honors Rijndael and the Advanced Encryption Standard

On 18 November 2025 the dedication ceremony for the Rijndael AES (Advanced Encryption Standard) development and a bronze IEEE Milestone plaque was unveiled in presence of former IEEE President Thomas Coughlin with more than 150 attendees. IEEE has awarded an IEEE Milestone to Rijndael and the Advanced Encryption Standard, recognizing one of the most influential achievements in modern cybersecurity. Selected by NIST in 2000 and adopted as a U.S. federal standard in 2001, AES has become the global foundation for secure digital communication. It protects internet traffic, mobile devices, banking systems, critical infrastructure, and classified government information, and is embedded in modern processors and major security protocols such as HTTPS, TLS, 5G, and WPA3.



Left to right: IEEE President Tom Coughlin, prof. Vincent Rijmen, prof. Joan Daemen

AES is based on the Rijndael algorithm, developed between 1995 and 1998 by cryptographers Vincent Rijmen and Joan Daemen. Rijndael was chosen through an open international competition to replace the aging DES, distinguished by its strong security, efficiency on constrained hardware, and support for multiple key lengths.

The IEEE Milestone plaque was installed at the historical Arenberg Castle in Heverlee. The dedication was accompanied by a symposium featuring expert talks on privacy, side-channel security, and reflections by the inventors themselves on 25 years of AES. Despite intense scrutiny over decades, AES remains one of the most trusted and widely used cryptographic standards worldwide.

A detailed report and photos on: https://region8today.ieeer8.org/ieee-milestone-dedication-rijndael-and-the-advanced-encryption-standard-aes-1995-1998/