POLARIS INSIGHT

MEET ARJAN TER HUERNE

polaris

From packaging to performance:
how NEWAYS strengthens RF integration in POLARIS

As POLARIS moves from ambition into execution, the ability to translate research into reliable, high-performance hardware becomes critical. In this phase, the added value of strong industrial partners becomes increasingly visible.

In this POLARIS Insight, we zoom in on the growing contribution of Neways to the program, and on the role of Arjan ter Huerne as one of the key connectors between system thinking, engineering practice, and long-term industrial impact.

What has changed:
from packaging capability to performance ownership

What started with advanced packaging expertise has evolved into a broader capability set, directly supporting POLARIS ambitions in radar and RF front-end integration. What is fundamentally new is the higher level of integration: the package is no longer just a carrier, but an active part of the system performance. It is not only about how packages are built, but about how their electrical and RF behavior is designed, analyzed, and validated as an integral element of the total system.

In a conversation with Arjan ter Huerne, Principal Architect at Neways Technologies, it becomes clear how the growing contribution adds tangible value to POLARIS, both technically and strategically.

Engineering as a starting point

Neways is widely known as a high-end electronics manufacturing partner, active in sectors such as Semicon solutions, Defense & Mobility, Connectivity. Over the past decade, the company has deliberately shifted its focus upstream: engineering is no longer a supporting function, but a starting point.

"We want to be involved early in System and product development," Arjan explains. *"That is where critical design choices are made, choices that later determine performance, robustness, and manufacturability."*

Within Neways Technologies, engineering is organized around five domains. For POLARIS, the focus lies firmly in High-Speed Data Acquisition and Processing domains, where high-speed digital design, signal integrity, and RF meet.

Nationaal Groeifonds

Profile

Neways : Enabling engineering and industrialization across the full technology chain.

Neways is a high-tech electronics company that combines deep engineering expertise with industrial-scale manufacturing. Its strength lies in operating across the full value chain: from early system and hardware design, through advanced packaging and microelectronics, to reliable series-production and long-term lifecycle support.

Over the past decade, Neways has deliberately **moved upstream**. Where it once focused mainly on production, it now positions engineering as a springboard, engaging early in customer development to shape system performance, reduce risk, and ensure manufacturability from day one. This approach is supported by strong capabilities in PCB and interposer design, RF and high-speed data integrity, thermal and power management, functional safety, and cybersecurity.

A defining aspect of Neways' positioning is that it does **not** act as a product owner or system OEM. Instead, it operates as an **enabling technology partner** for organizations that develop and own complex high-tech systems. By deliberately avoiding its own product portfolio, Neways remains fully aligned with the interests of its partners. It delivers engineering depth and industrial-grade execution exactly where customers need it, while leaving product ownership, market positioning, and application leadership firmly with those partners.

Organizationally, Neways functions as a network rather than a rigid hierarchy. Specialized operating companies collaborate closely, allowing expertise to flow quickly across domains and locations. This makes Neways flexible, pragmatic, and well suited to complex, long-lifecycle markets such as semicon, defense, medical, and industrial systems.

Within POLARIS, Neways brings the mindset of a system integrator with production DNA. It translates advanced research into robust, testable, and scalable solutions, strengthening collaboration in a multi-party environment where reliability, knowledge sharing, and long-term impact are essential. Not just smart packaging, but smart systems, built to perform in the real world, for decades to come.

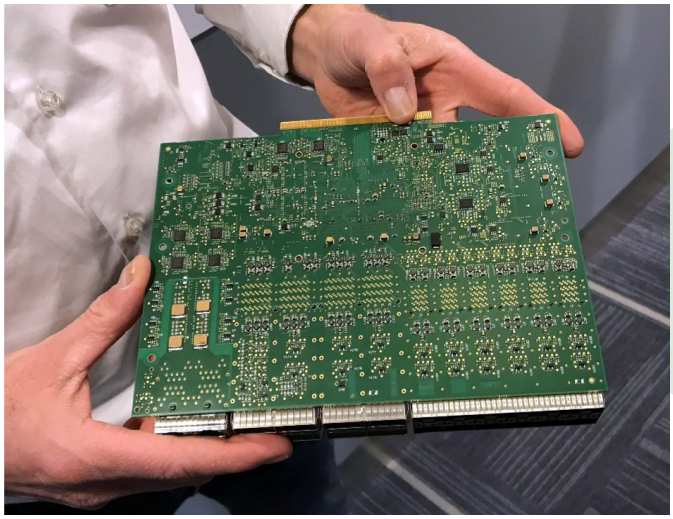
Where high-speed data meets RF

At first glance, digital data systems and RF may seem like separate worlds. In practice, they are closely connected. High-speed links on PCBs, interposers, and packages must be treated as transmission lines. Reflections, return loss, crosstalk and impedances mismatches must be managed in both domains.

"Signal integrity and RF share the same physics." Arjan says. *"Advanced packaging is now a shared discipline between RF and highspeed digital engineering."*

Advanced packaging for RF (Radio Frequency) ICs moves far beyond simple protective housings. At mmWave and subTHz frequencies, the **package becomes part of the RF design**, influencing signal integrity, thermal behavior, parasitic effects and overall system performance. RF packaging requires extremely careful engineering because line width, dielectric properties, conductor roughness, and parasitic coupling all scale aggressively with frequency.

This overlap is exactly where Neways adds value in POLARIS. Using simulation and modelling tools, Neways analyses complete signal paths, from chip, through package and interposer, onto the carrier board, optimizing layout, materials, and RF transitions before anything is built.



"In POLARIS, the doors are more open by design," Arjan says. *"You find yourself collaborating directly with chip designers, system engineers from industry, and academic experts. That diversity of expertise accelerates learning on all sides."*

A concrete POLARIS example: radar TX/RX packaging

Within POLARIS, Neways is involved in a radar work package focused on the industrialization of a compact TX/RX module. The module integrates multiple chips into a single package that will later be used by Thales.

Neways' role goes beyond assembling the package. Together with NAM, Neways Technologies integrates multiple chips and peripheral components into a single, highly robust packaged module engineered for exceptional performance, proven producibility, and consistently high yield.

Learning together inside the consortium

This work differs fundamentally from a typical customer–supplier setup because of the POLARIS framework. Here, knowledge sharing is intentional and central to the mission.

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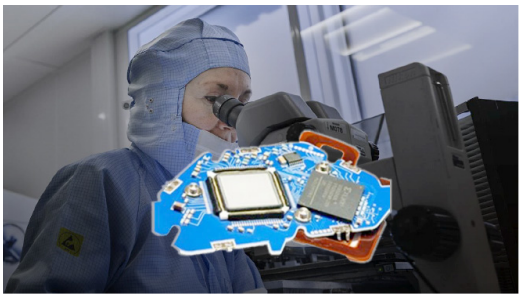
Insights gained in one context, RF transitions, thermal behavior, long-term robustness, are immediately relevant for others. In a traditional project, this knowledge would remain inside a single organization. Within POLARIS, it becomes a shared capability.

Why this matters beyond POLARIS

For Neways, POLARIS is not just about delivering a demonstrator. It is about building lasting capability.

"In defense RADAR applications, every requirement is missioncritical," Arjan explains. *"It's never enough to show that a solution works in the lab. Customers expect hard evidence to achieve confidence that the system will remain precise, reliable, and resilient decades into the future."*

By developing and validating these capabilities within POLARIS, Neways will be able to demonstrate concrete, proven results to customers across the five technology domains on which Neways Technologies focuses: High-Speed Data Acquisition & Processing, Intelligent Connected Solutions, Embedded Drive and Control Systems, Power Electronics, and Electronic Cabinets.



Inside the team

Arjan ter Huerne, Principal Architect at Neways Technologies, brings over 25 years of experience in high-reliability electronics, including radar and microwave work at Thales. He combines deep RF expertise with a system-level view, connecting packaging, high-speed design, and long-term performance. That background strongly shapes how his team works.

Behind him is a compact, highly specialized group where experienced engineers and young talent work side by side on demanding designs. System architects, PCB and signal-integrity specialists translate abstract requirements into hardware where performance is decided early.

One of the younger engineers is Jan Fikse, trained in Electrical Engineering and Embedded Systems. Within POLARIS, he works on critical packaging and system-integration challenges.

"Everything becomes more precise," Jan says. *"You design less by size, and more by behavior."*

Together, the team adds not just engineering capacity, but engineering judgement, turning advanced packaging into system-level performance.

Looking ahead

Three years from now, success for Neways means more than a finished module. It means:

- proven, defense-grade advanced-packaging technologies that deliver the critical integration performance modern systems demand
- extensive in-house know-how in advanced-package transitions and the critical behaviors that influence complex signal paths
- reusable knowledge that strengthens the Dutch RF ecosystem

"For us, POLARIS is the vehicle to connect Dutch knowledge partners and turn that combined expertise into real, high-performance advanced packaging."

Contact Information

For questions or suggestions regarding the POLARIS Insight, feel free to email us at info@polaris-ngf.nl

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