TÜVNORDGROUP

The right *move*

Magazine 2023

TÜV®

At home in **50** countries

> 500 locations worldwide

> 14,000 employees worldwide

1,583.3 revenue in € million

A brief profile of the TÜV NORD GROUP

With its considerable armoury of skills and innovative strength, the TÜV NORD GROUP is a pioneer of technological progress and a leading global provider of inspection and certification services. The focus of all its activities is on the protection of people, technology and the environment in the areas of mobility, industry, engineering, natural resources, health and training. One of the Group's most important characteristics is its expertise in the energy sector. The TÜV NORD GROUP is increasingly focusing on services in the future-oriented areas of IT security, New Space, Artificial Intelligence and the semiconductor market. Alongside TÜV NORD, the Group's brands are DMT, ALTER and TÜVIT. In 2023, the TÜV NORD GROUP achieved revenues of €1,583.3 million and an operating result (EBIT) of €84.5 million. The Group is consistently pursuing its sustainability strategy and has set itself the goal of becoming climate-neutral by 2030. Founded in Hamburg in 1869, the TÜV NORD GROUP is now active in the most important markets on all continents and employs a diverse team of more than 14,000 people. What unites them all is a Group-wide mission statement, shared values and one single driving force: "We create trust in technology – below ground, on ground, in space."

TÜVNORDGROUP · TÜVNORD · DMT · ALTER · TÜVIT

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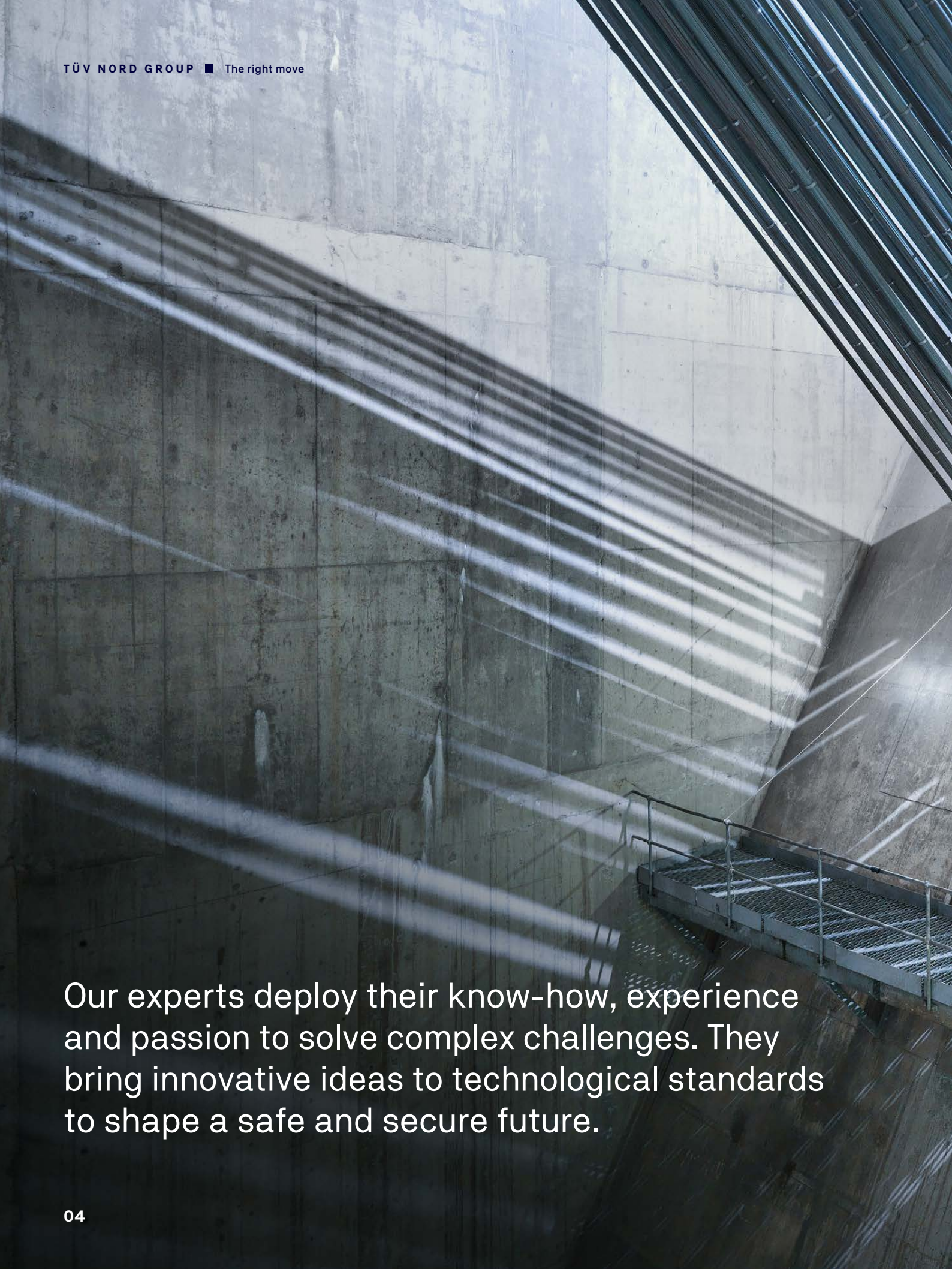


Our experts deploy their know-how, experience and passion to solve complex challenges. They bring innovative ideas to technological standards to shape a safe and secure future.

We help our customers implement their sustainable technologies safely and effectively. Together we are making a contribution to the sustainable development of the economy, society and the environment.

Safety and trust define our actions.
In both analogue and digital spheres.
Below ground, on ground, in space.

The basis of our connected world

Semiconductors are everywhere in our daily lives, even though we hardly ever get to see them. They are concealed in all our technical devices, from hairdryers to satellites. In this interview, Holger Krumme, Managing Director of HTV Halbleiter-Test & Vertriebs-GmbH and HTV Conservation GmbH, offers some insights into this hidden world.

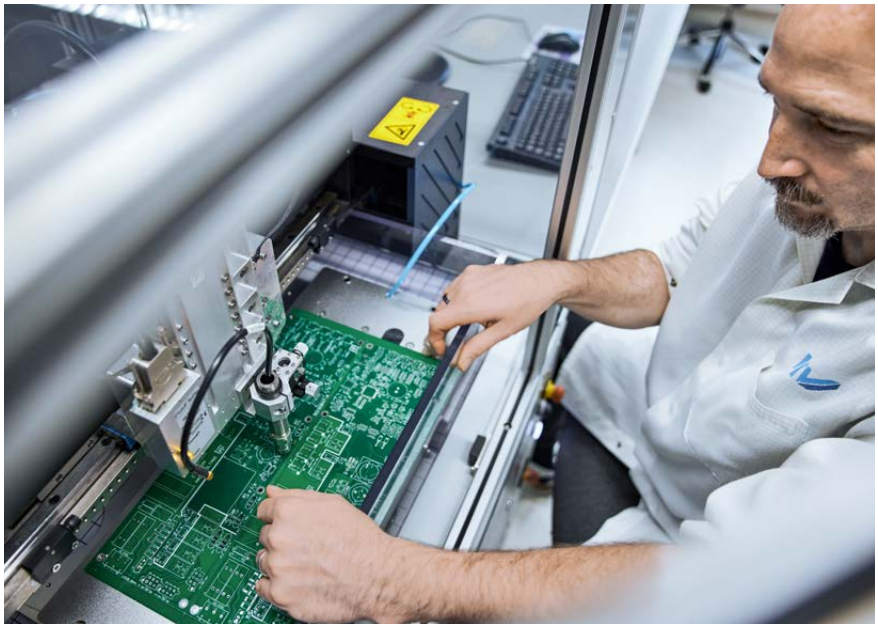
Mr. Krumme, in February 2023, the TÜV NORD GROUP acquired a majority holding in the HTV Group through its tech subsidiary, ALTER. What kind of role does HTV play in the world of semiconductors?

Semiconductors are the fundamental building block in microchips, the little black boards with lots of metal pins that you find on all printed circuit boards. They are the basis of our connected world. Without them, we wouldn't be able to make phone calls or drive our cars. We wouldn't even have electricity: Huge numbers of microchips are installed in every wind turbine and every coal-fired power plant. Our job at HTV is to ensure that our customers, who come from sectors including the automotive industry, medical technology and industry in general, only process chips of the very highest quality. It's especially crucial in these sectors for these products to function as reliably as possible for as long as possible.

With what issues do your customers come to you?

36 years ago, we started testing electronic components and assemblies, principally for industrial applications. Not every part that you get from an electronics dealer is of the same quality. We take responsibility for selection, which means that we test every component and only pass on those products to our customers that satisfy their quality requirements.

Managing Director Holger Krumme is proud of the services offered by HTV, one of the very few companies in the world that can conserve electronic components for up to 50 years in a highly secure warehouse.



An expert uses an acoustic microscope to examine a printed circuit board. The method is non-destructive, so the board can be reused.

We also program components. A microchip has no inherent function; you can use the same chip to adjust the rear-view mirror in your car or wind the windows up or down. It all depends on the programming. The carmaker sends us the relevant software, and we transfer it onto the chips: This is known as “flashing”.

Customers also bring defective components and assemblies for us to find out the cause of the problem. We have our own accredited institute for material analysis for this purpose. When it comes to material fractures, we start off with a light microscope to assess the surface. We can then use a scanning electron microscope to bring even more details to light, and our metallographic analysis offers insights into the inner structure of the materials.

How was the semiconductor crisis of 2020 to 2022 for you?

Whenever a product becomes scarce and its price goes up forgers try to cash in by making copies. This was also the case with microchips. During this time our customers had to contend with a lot of fakes, and we were frequently called upon to verify whether a supplied product really had been made by the stated manufacturer. The forgers are constantly refining their methods, which means that it’s becoming increasingly difficult to spot fakes. Here’s an example: If the writing on a chip can be wiped off with solvent, this will be indicative of a forgery, because the original data are etched on with a laser, making them indelible. With more recent forgeries, this wipe test is no longer fit for purpose, because the writing is embedded in additional layers that are impervious to solvent. What we do here is to make the deepest layer visible using an ultrasound method. But we also open every component to verify that what’s going on inside is consistent with the labelling.

“We relieve our customers of all anxiety related to theft, fire and natural disasters at a stroke.”

Holger Krumme, Managing Director of HTV Halbleiter-Test & Vertriebs-GmbH and HTV Conservation GmbH

Did the shortage of semiconductors have a knock-on effect on other business fields?

Yes, demand is increasing, even for long-term storage purposes. During the shortage, anyone wanting to get hold of high-quality chips would stockpile them to avoid future restocking issues. While lead times may since have normalised, the storage issue remains a hot potato, because chip manufacturers are constantly faced with the problem of no longer being able to make their products. If a chip series drops out of the range, our customers are faced with two options: They must either rework their product to adapt it to the new range or buy in so much material that their original product version can survive and enough replacement parts will be available. Medical technology products in particular have a very long life and need carefully certified assemblies. This means, of course, that the manufacturers would rather overhaul them to avoid having to recertify, so they prefer instead to stock up on parts.

Why do companies get you to conserve components instead of storing them themselves?

You can’t just put newly produced semiconductors on a shelf and pick them up later for further processing. If a microchip is not installed within one to two years, the contacts can oxidise, preventing the current from flowing. The blobs of solder and plastics emit plasticisers and solvents in gaseous form, and the structure of the carrier materials changes. We’ve developed a method that prevents corrosion and stops the ageing process. With thermic absorptive gassing (TAB®), we pack the components in bags with a special coating, fill them with a complex mix of gases and add absorber material which is exactly tailored to the materials. This allows us to set the oxygen and air humidity

levels in the packet to the optimal values. We keep the packets in cold stores in our high-security building. This is made of solid armoured concrete and monitored by elaborate alarm and camera technology. Not only that, but the atmosphere in the storerooms is precisely calibrated to preclude the possibility of fire. In other words, we relieve our customers of all anxiety related to theft, fire and natural disasters at a stroke.

We check the stored components at regular intervals. This means that we run electric current through them at least once a year and test whether they are still working. This enables electrolytic capacitors to maintain their electrical properties. The low temperatures prevent the electrolytes from evaporating. This allows us to offer guaranteed storage periods of up to 50 years. As far as I know, this service is unique globally, which is why we have customers from all over, including Eastern Europe and Hong Kong.

What do you think about the plans to get more chip manufacturers to set up in Europe and Germany?

The pandemic and the semiconductor crisis have made it crystal clear how important it is for the German and European economies to wean themselves off their dependence on Asian manufacturers. The goal of setting up more production sites in Germany by 2030 is an ambitious one. Even if it takes longer, it's going to be critical to start off this wave of new providers, which will gradually develop into an ecosystem. You can already see this happening in the Silicon Saxony area around Dresden.

And it goes without saying that building up production capacity will bring benefits for the HTV Group. As an experienced provider for testing and process development, we'll be able to get on board as soon as the new market takes off. We're planning to develop new capacities for packaging; this is the process in which semiconductors are given their black casings and fitted with connections pins. The semiconductor manufacturers don't do this themselves; they pass this work on to service providers. Because we're part of ALTER, we're one of the few companies in Europe to have access to this expertise.

How is the takeover by the TÜV NORD GROUP impacting your work?

We've enjoyed the cooperation very much since the start and see a lot of opportunities for synergies. The TÜV NORD GROUP is very strong in aerospace technology, which is giving us access to a whole new industry. Assemblies installed in satellites, for example, have to function for a long time under extremely hard conditions. They must be able to withstand vacuum conditions, cosmic radiation and huge fluctuations in temperature.

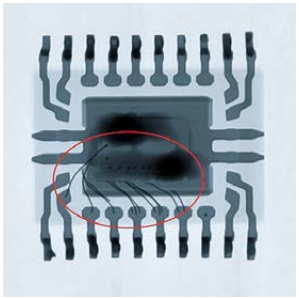
For our part, we're bringing in skills that aren't yet so well established in the TÜV NORD GROUP. For space travel, you tend to work with lower production volumes. We can offer automatic handling systems for the testing and processing of large-scale batches that the automotive sector requires, for instance; our services also include programming and long-term storage.

The conditions for space research are very good in Germany. Which is why we're so delighted to be able to complement our own expertise with that of the TÜV NORD GROUP. This will allow us to work together in the future to develop a shared field of research.

The HTV team uses state-of-the-art, fully automated large-scale testing systems to test hundreds of thousands of parts each day.

In the case of components of dubious origin, an X-ray examination reveals whether the component even contains a chip.

It also shows up breakages among the very finest connecting wires.



The right *move*

In the TÜV NORD GROUP we set great store by dialogue in the spirit of partnership between the customers and our experts. We listen and work together to come up with solutions. Here are six examples which show how we have helped our customers take the right steps.


Smart Industrial Control System
Dashboard
Overview
Product report
Performance
Product Quality
Machine State
Machine 1
Machine 2
Machine 3
Monthly Summary
32.04%
Product Quality
99%
Performance
Power consumption
Machine State
25%
67%
Fine

A new era of cybersecurity

Digitalisation is ubiquitous, Artificial Intelligence is revealing hitherto undreamt-of possibilities, and, in many businesses at least, Industry 4.0 is already here. At the same time, this is giving rise to new vulnerabilities. For instance, roughly 80 percent of all German companies fell victim to cyberattacks in 2023. And the number of digital attacks is continuing to increase.

Michelle Michael, cybersecurity expert, and **Gerald Krebs,** Global Account Manager Cybersecurity, TÜVIT

It is for this reason that the certification of processes, systems and products is such an important countermeasure against cybercriminality. The certificates issued in accordance with the normative parts of IEC 62443, which TÜVIT was instrumental in drafting, help companies probe their IT for industrial automation systems for vulnerabilities and protect them from attacks. “The manufacturers need to rethink everything to do with cybersecurity and consider IT security at all times right from the start of product development, rather than waiting until the development phase is over,” explains Gerald Krebs, Global Account Manager Cybersecurity at TÜVIT. “Otherwise, they run the risk of the product getting hacked as soon as it is launched.”

However, problems like this are guaranteed not to arise in the Smart Infrastructure, Electrification & Automotion (SI EA) division of Siemens. This is because Siemens commissioned TÜVIT with the certification of the “Lean Product Lifecycle@SI EA” production process at the very highest level of security. TÜVIT tested the security concepts, measures and processes at every stage of the entire development lifecycle and, in a global first, issued a Maturity Level 4 certificate in accordance with standard IEC 62443, the highest level for industrial cybersecurity processes, for the product development process. It is with this proof of quality of the highest degree of maturity that Siemens is now embarking on the development of its industrial products.

Certification of this kind of complexity requires a lot of professional expertise, such as that of cybersecurity expert Michelle Michael. “For many manufacturers and integrators, the requirements of this kind of certificate are a real challenge. This is why it’s so important for us to be a strong partner to our customers,” she explains. This order was a world first for TÜVIT, too, Michelle Michael says. “This makes us the world’s first accredited provider to undertake this Maturity Level 4 test.”

Talking, not writing

How Artificial Intelligence is helping TÜV NORD experts with periodic technical inspections.

Lea Reuter, Head of the TÜV NORD Station in Wilhelmshaven

One of the most common defects that experts unearth during periodic technical inspections is excessive brake lining wear. Instead of heading for the computer to enter this finding, the vehicle experts can now use the AI-based "Voize" app. Lea Reuter heads up the Wilhelmshaven TÜV NORD Station and is a big fan: "Voize makes the testing much easier. I can simply say the defect into my mobile, and it automatically gets documented." It doesn't matter what term Ms. Reuter uses to describe the condition of the brake lining: "The developers have trained the AI to assign terms that use everyday language to the catalogue of defects," explains Roman Meier-Andrae, Head of IT & Digitalisation at TÜV NORD Mobilität. "There are about 40,000 items in the catalogue, and until now the testers have had to know, at least roughly, which category the defect in question should be assigned to.

The app was originally used in nursing, where care services need to be documented. It took some two years to tailor an initial version to the needs of vehicle inspectors. A preliminary usage study involving engineers working at TÜV NORD Stations or in workshops gave rise to some important insights for the developers. "The conditions are quite different in these two cases," Mr. Meier-Andrae explains. It's for this reason that Voize is designed to allow all experts to tailor the app to their own needs, regardless of where they do their work. "Since we started the trial, the pilot users have been able to give us feedback on a weekly basis. Over 90 percent of the app's functions have emerged out of this dialogue," Mr. Meier-Andrae adds. By the end of December 2023, 306 experts had registered to use the app.

The app is freely offered, and no one is obliged to use it. All testers are free to carry on documenting their work as they always have. And yet, Lea Reuter is optimistic: "Word will soon get around about how well Voize works. After all, the app is just very, very practical."


Passion
for
Safety

Digital below ground

Talk of mining conjures up images of men toiling away in the darkness deep underground. But these times are long gone. The DMT Group is digitalising work processes underground to make them more efficient.

Carlos García Piña, geologist, DMT

As a TÜV NORD subsidiary, the DMT Group is using a comprehensive tool box to help mining companies digitalise their processes. Automation, enhanced efficiency, improved quality, environmentally sound practices and increased safety for the workforce are all key factors here.

Carlos García Piña, a geologist at DMT, and Dr. Vassilis Roubos, a mining engineer and head of DMT's consultancy service, are both part of this change. With over 15 years of experience in research and product development at DMT, these two men have created digital instruments that will shape the future of mining.

"For years, the mining industry was too conservative and too slow to accept new technologies," says Dr. Vassilis Roubos. This is slowly changing. "Our goal is to optimise processes and reduce costs while also improving both performance and sustainability," he explains.

"We can digitalise rock sampling and extract high-quality information based on sensors," Carlos García Piña says. This offers insights into the samples' geology and chemical composition, he adds.

And digitalisation is having a positive impact on employee safety, too. It is now possible to closely monitor environmental conditions to identify potential dangers in good time. "We use smart uniforms to track people underground. This allows us to be sure that no one will enter an unsafe zone," Dr. Vassilis Roubos says, adding: "We always know how many people are in the mine and can evacuate them more quickly in an emergency." At the same time, workers can be warned of blasting or safety work.

Both researchers agree that efficiency and safety could improve further in the future. "In five to ten years, digitalisation will be an integral element of mining," says Carlos García Piña.

Wind power for Egypt

With the support of TÜV NORD, 500 megawatts of green electricity are set to be provided to 800,000 Egyptian homes by 2025.

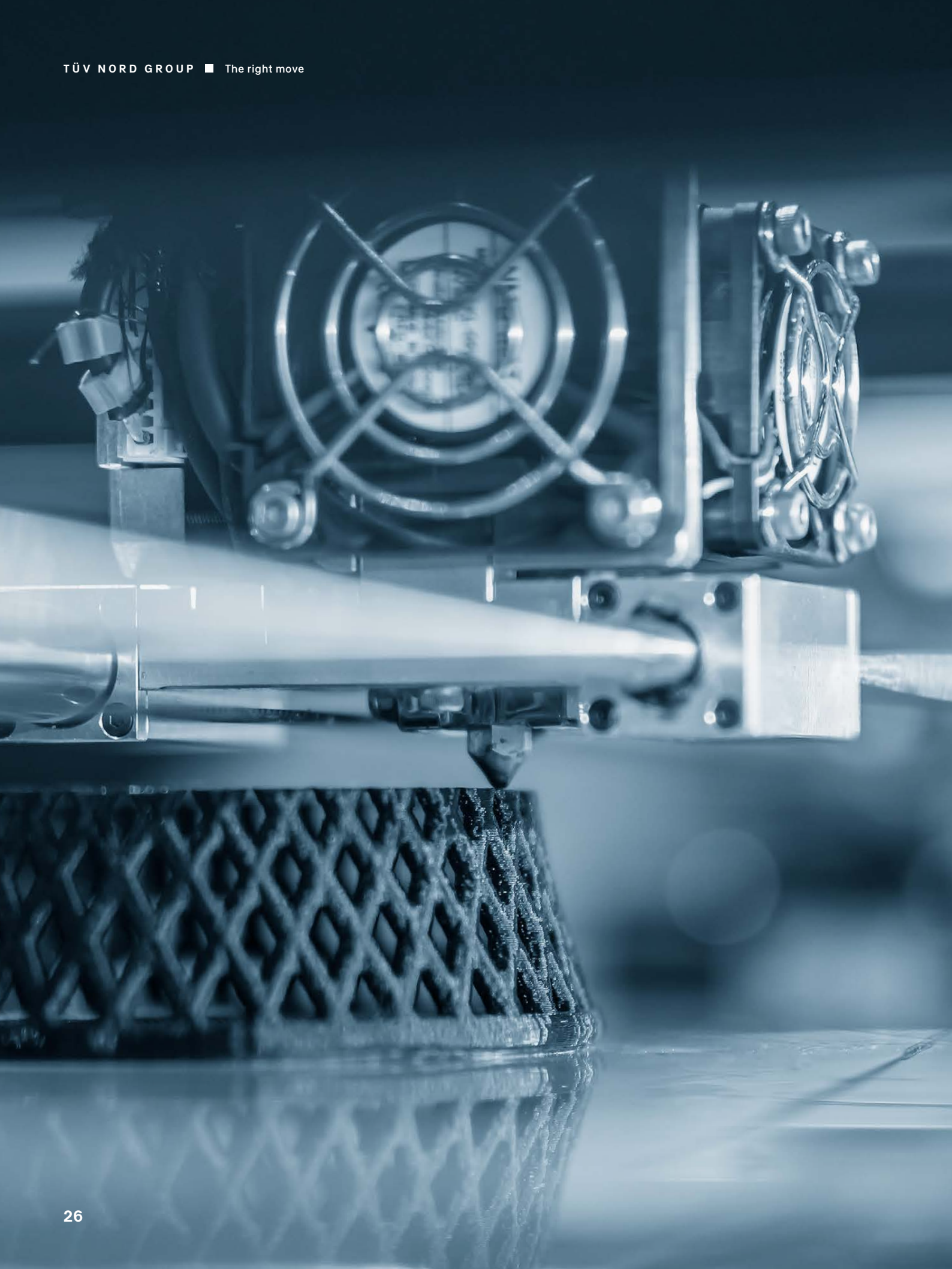
Alexander Ohff, Executive Vice President Renewables, TÜV NORD, and **Ahmed Marei,** Managing Director, TÜV NORD Egypt

Africa's largest wind farm is being built close to the Egyptian city of Ras Gharib, 300 kilometres southeast of Cairo. The region offers suitable conditions for the generation of wind power. From 2025, the "Gulf of Suez" wind farm, with its 77 turbines, each of which is 180 metres high, will deliver 500 megawatts of green electricity to 800,000 homes. TÜV NORD is playing a crucial role in this development: The company is monitoring the structural, mechanical and electrical quality of the project being delivered by AMEA Power, a leading developer of renewable energy sources. International consulting group COWI has meanwhile assumed responsibility for the project management and design review. Cooperation is the key to success here: "COWI and TÜV NORD are an ideal match with complementary portfolios and a high level of cultural alignment," says Alexander Ohff, Executive Vice President Renewables at TÜV NORD.

Ahmed Marei, Managing Director of TÜV NORD EGYPT: "This project is strategically important for us, as it will contribute to Egypt's goal of more sustainable development."

The project will also have a positive impact on the local community by creating a large number of jobs during the construction phase. TÜV NORD attaches great importance to recognised international safety standards which are designed to counteract work-related injuries and illnesses.

The "Gulf of Suez" wind farm marks just the beginning of the cooperation between TÜV NORD and COWI and will pave the way to many more joint projects.



Making spare parts layer by layer

3-D printing has proved its worth as a manufacturing method. A new standard is set to improve production quality.

Jens Groffmann, project manager for additive production, TÜV NORD

The new ISO/ASTM 52920:2023 standard had only just been published in June 2023 when TÜV NORD certified one the first companies in the world to have the new standard applied to its manufacturing operation: Deutsche Bahn's additive production site in Neumünster. DB Fahrzeuginstandhaltung (vehicle maintenance) supplies the company's entire fleet of railway vehicles with replacement parts. Some Intercity trains were built in the 1980s, which means that they have been in use on the rail network for forty years. But what happens if the manufacturers of older components are no longer active on the market? One missing replacement part can paralyse an entire train – causing massive economic damage. Jens Groffmann, project manager for additive production at TÜV NORD, explains: "With the aid of 3-D printing, Deutsche Bahn can respond quickly and flexibly to get the train up and running again."

In normal metalworking, a solid piece of metal is sawn, turned and milled until the component emerges. A 3-D printer, on the other hand, constructs the part layer by layer, without material wastage. As well as metal, plastics and rubberlike materials can also be processed in three dimensions. In Neumünster, for instance, clothes hooks and light fittings for train interiors are printed. The certification guarantees that all production processes are reliable and repeatable – from preparation and printing right through to postprocessing of the part. In this way, consistently high quality is ensured, and the components can be supplied on an industrial scale.

Deutsche Bahn is breaking new ground in this area, with over 100,000 parts having been produced using the additive method since 2015; the idea is for ten percent of all components for new train types to be printable by 2030. "Deutsche Bahn is at some point going to need more printed parts than it can make for itself. Which is why this certification is so very important for suppliers. After all, it confirms that a company can supply the required quality, making it an attractive service provider," Mr. Groffmann explains. This doesn't just apply to Deutsche Bahn but also to other industrial sectors that use 3-D printed parts, such as the auto industry, food companies and the aerospace sector, he adds.

Safely getting the hang of data protection

Aspiring information security officers are learning their trade at the TÜV NORD Akademie.

Jennifer Hildebrandt, Sales Manager, TÜV NORD Akademie

Digitalisation is making our lives easier in many areas. However, the more widely connected everything is, the higher the risk that information will get into the wrong hands – and this also applies to commercial players. “Information is the most valuable thing any company can have. It is fundamental to business success, which is why it also needs to be protected,” Jaime Taboada Aparicio, IT consultant at Lufthansa Industry Solutions, explains.

It is for this reason that the service provider, in its role as a professional IT consultancy, offers comprehensive support in the information security field to Lufthansa companies and third-party firms on the market. One milestone in this area is certification in accordance with the international ISO 27001 standard. “We need information security officers who don’t just have theoretical knowledge of the ISO standard but can also implement it in practice,” Mr. Taboada Aparicio explains. “It’s for this reason that we have organised trainings for the subsidiaries of Lufthansa Technik AG.” The TÜV NORD Akademie was appointed quickly – partly due to its multitiered system which allows it to offer international training across all the time zones, from the US to China for instance. 17 employees have completed the four-day training to date, and between 20 and 30 others are planned for 2024. “The training is designed to be very practical,” Jennifer Hildebrandt, Sales Manager at the TÜV NORD Akademie, explains. “The participants learn how to proceed in line with ISO 27001 and develop an understanding of basic IT protection in the process. They can then immediately implement the information security methods they’ve learned back in their own companies.”

The TÜV NORD Akademie offers the training online and face to face, and it concludes with the award of a TÜV certificate. One important element is the interactive group discussions which provide the participants with a forum to ask questions and talk to each other. Mr. Taboada Aparicio has done the online training himself and is a big fan: “The training helps teams develop the necessary specialist knowledge that will allow them also to pass future recertifications within Lufthansa Technik AG.”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A hive of activity despite shutdown

bp distils almost five million tons of crude oil per annum into heating oil, gas and fuel at its refinery in Emsland. TÜV NORD is on hand to ensure that it can operate safely.

Olaf Schikorra, Senior Vice President Central-East Process Technology, TÜV NORD

The machinery is impressive: 82 distillation columns, 110 air coolers, 34 ovens and 517 heat exchangers are all connected by miles of pipework. To ensure that everything works smoothly within this labyrinth, the facility is regularly tested in line with the industrial safety ordinance. The experts carefully scrutinise every valve and every screw. To allow them to do so, the refinery has to shut down. And yet, the site is a hive of activity: This is because it is a good opportunity for the operator to carry out maintenance on the whole installation. 3,500 people were working there during the major audit in April and May. They took machines to pieces, cleaned vessels and repaired anything that had succumbed to the stress and strain of permanent operation.

What's more, 67 employees from TÜV NORD were also on site. Olaf Schikorra coordinated the communication with bp, the repair companies and the work of the experts. "Most of the inspection work was in the steam and pressure field. But electrical engineering experts were also on site, alongside their counterparts for functional safety and water resources legislation," explains the Senior Vice President Central-East Process Technology at TÜV NORD in Osnabrück.

Mr. Schikorra is especially proud of the digital tool developed by expert Mario Meiners. This uses explosion-proof mobile phones to lead the experts with the exact GPS coordinates to their next test subject. All the work is documented with this method. To be able to call up the current status at the touch of a button was something new in this project, Mr. Schikorra reports, adding that it was very valuable especially as the project approached its conclusion. He particularly stresses the team's achievements: "My colleagues on site worked brilliantly together. As a team we managed to keep to the schedule, which meant that the refinery was up and running again on time."

SECUNDERABAD RAILWAY STATION

Scope of services:
Project management services including supervision, monitoring and reporting

Project duration:
36 months

Contract awarded:
May 2023

PUDUCHERRY RAILWAY STATION

Scope of services:
Project management services including supervision, monitoring and reporting

Project duration:
24 months

Contract awarded:
January 2023

MADURAI RAILWAY STATION

Scope of services:
Project management services including supervision, monitoring and reporting

Project duration:
36 months

Contract awarded:
November 2022

RAMESWARAM RAILWAY STATION

Scope of services:
Project management services including supervision, monitoring and reporting

Project duration:
18 months

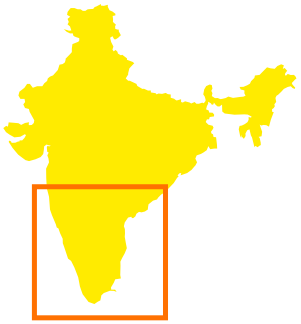
Contract awarded:
November 2022

KANNIYAKUMARI RAILWAY STATION

Scope of services:
Project management services including supervision, monitoring and reporting

Project duration:
19 months

Contract awarded:
March 2023



Expertise for modern railway stations

India is a land of superlatives. It covers a vast area, its economy is growing, and it is the world's most populous country. The Indian state is investing huge sums in making its transport infrastructure fit to meet the country's growing requirements. A programme just to modernise its railway stations is set to cost the equivalent of 30 billion euros. TÜV India has successfully landed some lucrative orders in project management and project supervision.

Every day, 23 million people in India make journeys in over 10,000 passenger trains. And then there are the 7,000 goods trains which carry three million tons' worth of freight. India boasts the world's fourth largest railway industry, with a total track length of 68,000 kilometres. The operator is state-owned Indian Railways, which, with some 1.3 million employees, is the largest employer in India and the eighth largest in the world. But India's rail network is not just one of the world's biggest: It's also one of the oldest. Over half of its assets predate Indian independence. Tracks, signal boxes, trains and wagons are in many cases over 70 years old and in urgent need of modernisation. The same applies to most of the stations, of which there are 7,325 nationwide.

"The 'Amrit Bharat Station Scheme' will breathe new life into our railway stations," explains Velayutham Viswanathan, Senior Executive Vice President of Railway, Building & Renewable at TÜV India. "Amrit Bharat" means "eternal country" and is the name of one of the programmes of India's railway ministry. The programme has earmarked 30 billion euros for Indian Railways to convert and modernise 1,275 of its stations in the next five years. Its goals are ambitious: The antiquated stations are to be transformed into modern travel centres from which passengers will be able to travel in the kind of comfort they would otherwise expect at an international airport. To this end, the intention is for the modernisation of the access points with lifts and escalators or new sanitary facilities to be accompanied by the addition of comfortable, air-conditioned waiting rooms, modern passenger information systems, free Wi-Fi, lounges or rooms for business meetings.

The railway station as urban centre

A further aim of the conversion work is to integrate the stations better into the surrounding municipalities. The idea is for them to become a kind of urban centre, not just for commuters but also for the public at large, with large covered plazas and facilities such as food courts or children's playgrounds. The aim of the "One Station One Product" initiative (OSOP) is to create a market for local products. Railway stations offer an opportunity for the prominent showcasing and sale of local products. This will also offer local people the prospect of new sources of income. At the same time, travellers will be able to rely on the high quality of the goods

"These projects are a major boost for TÜV NORD, and not just financially."

Dr. Stefan Pöting, Executive Vice President Rail, TÜV NORD

offered in the stations. The "Amrit Bharat Station Scheme" is one of a whole raft of government initiatives with the aim of ensuring that the transport infrastructure will meet the growing requirements. There are numerous points of contact, one example being with the "Gati Shakti Scheme", which concerns the development and expansion of multimodal transport connections, and another being "Bharatmala", a project which intends to connect the 550 district capitals of India with motorways with at least four lanes.

"So far, we've managed to pick up ten projects from tenders for the 'Amrit Bharat Station Scheme'," Mr. Viswanathan explains. In five of them, all of which concern railway buildings in the south of the country, the work has already begun. TÜV India is providing services in two areas as part of the conversion work: One of them concerns project management services for the railway station conversion work. Here, engineers from TÜV India have taken on official tasks on behalf of the Railway ministry. Depending on the aims of the project in question, they review, verify and validate draft designs, plan deadlines, monitor the project and write reports. The second area concerns the railway infrastructure associated with the stations. Tracks, points, signalling equipment and signal boxes are also to be overhauled as part of the programme. In this case, the engineers from TÜV India are offering project supervision services. Their task is to ensure that the construction work is carried out in accordance with previously defined specifications and standards and that deadlines are met. The project values vary depending on the size of the station and the scope of the planned conversion work. The envisaged average project length is two years. Indian Railways is awarding the contracts in a multistage tender process. The assessment is based on the "Quality cum Cost Based Selection" (QCBS)" method, with 70 percent technical and 30 percent financial weighting.

Major boost for TÜV NORD

"We at TÜV India are proud to be helping to modernise the stations and their infrastructure as official representatives on behalf of the railway ministry," Mr. Viswanathan explains. The task is a special one, both for his company and for him personally: "It's a privilege for us to be an important player in this national development project." Out of the more than 2,000 employees of TÜV India, 215 are working exclusively on the ten railway station projects; of that number, up to 20 inspectors have been assigned to each project as key personnel. The services in the project management field are being offered by experts from the construction sector; the project supervision tasks are being taken on by both construction experts and railway engineers. "This work is allowing us to offer all our expertise in civil engineering and railway construction," Mr. Viswanathan says.

“It’s a privilege for us to be an important player in this national development project.”

Velayutham Viswanathan, Senior Executive Vice President of Railway, Building and Renewable, TÜV India

“These projects are a major boost for TÜV NORD, and not just financially,” says Dr. Stefan Pöting, Executive Vice President Rail at TÜV NORD. “We’re working very intensively with our colleagues in India. Our aim for the future is to create a strong international team that we will be able to deploy not just in India but all over the world.” The focus here is on the market for Independent Safety Assessments, or ISA for short: The independent safety monitoring and certification of vehicles, construction projects and, especially, trackside signalling equipment. “It’s basically all about independent reviews of whether all the risks have safely been identified and mitigated to ensure that people who operate or use the system in the future come to no harm.”

Expertise appreciated

European and, above all, German know-how is rated very highly in these matters, even if it comes at a higher price. “As the TÜV NORD GROUP, we have a brand and a reputation to defend,” Dr. Pöting says. This includes going above and beyond the normal requirements in any given country, he adds. With the tenders for the “Amrit Bharat Station Scheme”, this has resulted in a successful outcome. “When we were travelling with our colleagues in India, we also visited the authorities who issued the invitations to tender. There we found that there is a great deal of confidence in the quality of the TÜV NORD GROUP and its safety standards. And that people are willing to pay for this.” Both Dr. Pöting and Mr. Viswanathan are confident that further orders will come as part of this huge project.

Mr. Viswanathan himself loves taking the train, especially with his family. “The ‘Amrit Bharat Station Scheme’ is one of the measures that will make travelling by train safer, cleaner and more comfortable,” he says. “If you add up how long departures and arrivals, checking in and getting through security take at the airport, you will find that flying will sometimes take longer than going by train.” This is particularly true of the Vande Bharat Express, a semi-high-speed train which TÜV India is responsible for inspecting. “If you look at the overall length of the journey and compare the costs, it makes more sense to take the train for trips of up to 500 kilometres. Especially if the stations offer the same level of travel comfort as airports.”

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