



# Hear From Our Experts

Take 5 with Dirk Schumann, Advanced NDT Services Director at TÜV Rheinland, as he discusses how we're leading the way in technology-driven solutions

**MARYBETH MICELI, PRESIDENT AT MICELI INFRASTRUCTURE CONSULTING, PRINCIPAL AT WE-NDT**

Hello and welcome to the first edition of TÜV Rheinland's "Take 5 with the TÜV Team" where we'll be talking with some of our top industry experts about their careers, what they see as some of the challenges facing the industry and get some insight about where they see the industry headed.

Today's guest is Dirk Schumann, a well-known veteran of the NDT industry.

Welcome Dirk!

**DIRK SCHUMANN, ADVANCED NDT SERVICES DIRECTOR AT TÜV RHEINLAND**

Thanks for having me.

**Miceli:** So, let's get right to it so can you tell us a little bit about your current role with TÜV Rheinland?

**Schumann:** Certainly - my position is Director of Advanced NDT and I'm tasked with expanding advanced NDT with our current customer base and then of course increasing our customer base to include advanced NDT as well.

**Miceli:** Excellent, and can you tell us a little bit about what advanced NDT is for our listeners who may not know?

**Schumann:** I would love to do that. So advanced NDT the term has been around for a long time and some of the advanced NDT methods have evolved to become conventional NDT as well as you would expect if you look at new technologies and I'll begin with a couple that are pretty obvious or prevalent in the marketplace today like Phased Array Ultrasonics. It is an advanced method of NDT that's now becoming much more commonplace almost to the point where it is conventional NDT and then you have some cutting edge stuff like guided wave testing (GWT). It's a screening test on usually on piping that is still new and exciting. Then you have heat exchanger inspection where Eddy Current Testing and other heat exchanger inspection methods, all of that lumps together in advanced NDT. There are other smaller methods like LIDAR which is light detection and ranging, it's one that we're really getting into now and we're finding that it is, well it piques my interest but it also piques our client base their interest as well. So among some other things that's about all.

**Miceli:** Excellent thank you. So you clearly have a lot of experience in the industry can you tell us a little bit about how you got started in this industry?

**Schumann:** After I finished school I looked for work and it was challenging to find work that my education would have brought me to. It was at a time when engineering in the United States was at its lowest requirements. And I knew a guy, I mean who doesn't know a guy that gets you a job? I knew a guy who had



a job at a nuclear power plant and they needed someone to help with inspection work and I needed a job, it worked out perfectly. I went on this job and found that I really did like inspection work. I was an assistant for a short period of time that evolved into doing eddy current inspection on heat exchangers where I spent the next 10 years doing that work in Nuclear Power Plants. And then that evolved into becoming a supervisor doing eddy current testing in heat exchanger inspection for a company full time here in the Chicago area. I continued from there into learning additional methods like phased array and also guided wave testing and some of the other things. That then led me more into the advanced NDT portion of our industry which kind of leads me to where I am today.

**Miceli:** Excellent. So with that being said is there a project that you can think of, where maybe you're most proud of or where you think you've had the most impact on the industry?

**Schumann:** For certain I think the single biggest impact I had was proving to the industry that a method of inspecting underground piping using several different combinations of NDT, including guided wave, including AUT and some others could be put together as a package and be really successful. We have a refinery here in Chicago that had a government mandate that said that anything that holds hydrocarbons including underground piping needed to be inspected. The client was simply exposing them, digging them up, daylighting them is what they call it, and then doing a conventional API 570 inspection including ultrasonic thickness. So that was their plan then the plan had started in 1999 and by the time I got involved, it was 2007 and they were 5% complete. They had a total of 15 years to be complete so 2014 was their deadline they were at 5% a little more than halfway through [their allotted time].

I went to a lot of meetings with that client and listened to a lot of people and continued to make my case for using this Advanced NDT and finally I got an opportunity to do exactly that. They gave us a road crossing to inspect. We did our guided wave inspection then they dug it up anyway and compared our

results to theirs and, knock on wood, we were spot on. We did a great job, our technicians did a fantastic job. [But] now we had to hustle because we were not prepared to do six technicians and six assistants and six pieces of equipment, seven days a week for the next five years. We weren't prepared for that at all because the demand for this technology hadn't been there before. And now with showcasing how well it did, we were given, I don't want to say carte blanche, but we were given a lot of opportunity in a very short period of time to make this work and we did. Now we built slowly at first we had some hiccups at first with training new people on how to use the technologies that we were applying until we found that we had a good methodology of how we trained the people in advance to get them ready to take the testing that was required for them to apply these new tools. Once we had that sorted out the crew grew very quickly and grew very effectively and we finished the project about a year early, saving the client millions upon millions of dollars in exposing piping that didn't need to be exposed. So that worked out really well for them. It worked out really well for us as a group. We took that group and went national with them and kept them busy. Today the group still exists and is still busy.

**Miceli:** Wow that's really impressive and that's the kind of problem solving thinking that you've become known for in your career so that was really great to hear about that. So I guess with your perspective being that you've been in the industry for a long time you've seen the industry how it's changed and grown what do you think is the biggest challenge facing the NDT industry and professionals today, particularly in the oil and gas industry.

**Schumann:** You could put it across the board in NDT in general and the biggest challenge you have is it's not one of those careers that gets a lot of attention. So if you think about, I stumbled into it. I'd never heard of nondestructive testing and for me to go into that career I was an outlier. None of my friends knew what it was except for the one who got me my first job. And quite honestly it is difficult to attract people to this profession because of that. So because the pool is limited you



have to make sure that you work really hard to get the right people and then you have to pay them the right amount of money, you have to give them the right training and experience to make sure that they do their jobs well. And then lastly you have to make sure that they have the most important quality of any inspector, a high level of integrity. And if you can get all of that wrapped up into one person, you have a great addition to your team. It takes some time, it takes a lot of effort on many peoples' parts to make a successful technician.

I guess the challenge there is at an entry level where we bring people in to start in our career there is so much competition in that space. If you think about what I got paid on my first job, it's funny my son and I, we did a calculation on the inflation rate from when I started to today, and basically the pay is still the same roughly [to] what I made back then adjusted for inflation. Unfortunately, there are jobs which are typically closer to home. Amazon, their warehouse pays the same and doesn't require you to travel for your work, you go to the same place every day. But of course it's our job to promote this by saying that where is the career path in warehouse work? Which I'm not knocking warehouse work, it needs to get done, it's vital for us to get done, especially when I love the fact that I can choose something on my computer and it arrives on my doorstep the next day. But recognizing that NDT has a career path which can be very rewarding, as a technician [and] as a senior technician you make a very good living doing NDT and of that there is no question.

But to get there is a little tougher so you really do have to sell it sell it hard with the initial pay not being as enticing as some other careers but knowing that it leads to a career that has done me very well. I think that someone who can be shown that there is a career path and if you follow that career path well it will provide a great career and a great living for yourself and your family. So the biggest challenge that we have today is that sale to get someone who's young interested enough in NDT, to get them started; once we get them started it comes naturally. They see the benefits. But it's not the kind of career that someone sees when they're in high school or college. As you

I see a lot of remote data acquisition where we can put devices on those structures that can you monitor remotely so there's so much opportunity and there's so many people working really hard on making those particular devices they are out there... But still it has to be people who do the work, people who take those devices and install them, people who monitor them.

know, [there's no] lightbulb moment where oh what a great career I should do that unless they've known somebody who does it themselves.

**Miceli:** For sure that's a great point and we see that a lot and we hear that a lot because nobody knows what NDT is for the most part so it's true. So even with those challenges can you tell us where you see the industry headed in the next 10 years?



**Schumann:** Well, I think that it's going to continue strongly in the automotive sector and continue strongly in the rail sector because we see more cars being sold today than ever before, even with the shortages, that they have now cars are selling quickly and that requires the NDT companies [to be] involved with a lot of that automotive work. Rail as well and then in oil and gas. I think oil and gas is one of those where we already see change. We already recognize that there's going to be clean or green energies and I think our oil and gas sector will be involved with that as well. So I don't see any slowdown in in NDT requirements for those industries.

I also see an aging infrastructure here in the United States that we are getting on top of or trying to get on top of with renewal projects. But even then, I see a lot of that where we're doing a lot of remote data acquisition, where we can put devices on those structures that can you monitor remotely so there's so much opportunity and there's so many people working really hard on making those particular devices they are out there. But still it has to be people who do the work, people who take those devices and install them, people who monitor them.

Then of course the nuts and bolts of NDT still putting your hands on a piece of pipe and make sure that that pipe, the weld is good, or the vessel is the right thickness or has no corrosion or something along those lines. So NDT is going to be strong that's my opinion and I see so much evidence of that I think that our biggest challenges come from within and that's managing that change. As long as we work hard to manage that change and keep our eyes up and focused on the future we will be part of that future but the future [of NDT] will be there.

**Miceli:** Excellent insight there. Well is there anything else that you'd like to tell our listeners today about the NDT industry or what you're currently working on well as a company?

**Schumann:** TÜV Rheinland is continuing to grow which is important to me we've looked at adding other companies to help increase our footprint here in the United States. And then because sometimes it is difficult to hire individuals, we look at maybe an acquisition might be a better way to acquire those same people that we need with a current workforce, a current book of business, and also an outlook which matches what we're doing right now. Then of course we're still hiring people, as always, and looking for those right people to help us grow and we're seeing that growth every day.

**Miceli:** Well good luck with all the hiring. I know that's always a challenge but I am sure with all of your expertise and your experience managing folks that you will be able to attract some really good talent to work for you in the advanced services group.

And thank you again for being here today Dirk

**Schumann:** Oh you're welcome I'm glad to have been invited

**Miceli:** And thanks to all of you for listening we'll see you soon at Take 5 with the TÜV Team.

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