



**POLAR AUT SERVICES**  
ADVANCED ULTRASONICS TESTING



## Customer Success Story: Polar AUT Services

### Polar AUT Makes the Most of its Powerhouse UT Tools



"TOPAZ is the heart of my inspection system. As a technician, it makes me more productive. As a businessperson, it makes me more valuable. It does everything I need and goes everywhere I go."

- Tibor Szabo,  
Owner,  
Polar AUT Services

When Tibor Szabo started his NDT inspection services business in 2015, the Alberta oil and gas industry was on the cusp of a massive downturn. The price of oil began to collapse the previous year, marking the end of a five-year rally that brought thousands of jobs and substantial investments in plants and pipelines to the oilpatch.

"Advanced UT and especially corrosion mapping is a highly operator-dependent method of inspection," said Szabo, whose company, Polar AUT Services in Sherwood Park, Alberta, specializes in advanced ultrasound inspections. "I'd already had a nice career in ultrasonics and knew I had the experience and equipment to succeed even when times were tough. I'm glad I stuck it out."

#### **TOPAZ: At the Heart of the Inspection Solution**

The right equipment is vital for a turnkey inspection business. Polar AUT specializes in phased array UT (PAUT) and Time-of-Flight Diffraction (TOFD) scanning in the oil and gas business, and Szabo's instrument of choice for corrosion mapping, hydrogen induced cracking (HIC) testing, and other advanced ultrasonic inspection techniques is the Zetec TOPAZ®32 with UltraVision® Touch software.

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TOPAZ32 is a fully integrated portable phased array system featuring up to 32 active channels on up to 128 element probes. It can use the same 32 transmitters and receivers or can be operated in PR mode using up to 32 channels as transmitters and 32 other receivers for advanced inspections.

The onboard calculator simplifies and streamlines the process for determining focal laws for 2D matrix arrays, and makes it possible to define 2D matrix probes, wedges (either pulse-echo or pitch-and-catch, with or without roof angle), beam steering, beam skewing, and focusing depth directly from the TOPAZ32 interface.

“Setups are done right there on the TOPAZ32, using UltraVision and the onboard calculator,” Szabo says. “I don’t have to import focal law files or remote-control the system using some other piece of hardware or software. I can spend my time doing actual inspection work.”

## **Detecting Wall-Thickness Reduction and Mapping Corrosion**

The ability to detect wall-thickness reductions and map corrosion, abrasion, or erosion is vital in oil and gas NDT. Szabo pairs TOPAZ32 with Zetec’s NDT PaintBrush™ scanner, which is designed for UT inspections of flat and curved surfaces.

Two side-by-side encoders can determine at any instant the probe position and the scanner’s orientation, which is ideal in situations where ensuring complete coverage is a challenge. Szabo can immediately spot a missed area and compensate.

“I can say with confidence that PaintBrush has helped me lock down new business,” he says. “My probability of detection has increased dramatically compared to other scanners, and because of its size, magnetic wheels, and easy handling I can inspect areas that wouldn’t be accessible otherwise.”

Szabo integrates the NDT PaintBrush scanner with Zetec’s UltraVision 3D software extension to generate a 3D plot of corrosion data, including a depth reading.

“The ability to produce beautiful 3D images that illustrate the extent of corrosion, combined with the ability to export all the thickness readings into a customized workbook, means I can provide the customer with everything they need to know about the condition of their asset. When I write my reports, they’re concise because the images and data speak for themselves.”

## **Efficiently Inspecting Multiple Weld Types**

He also uses Zetec’s WELD Crawler® to deliver scanning control during the inspection of multiple weld types across various form factors and operating conditions. It can operate in the harshest of conditions and in applications offering a very low clearance. “The WELD Crawler and TOPAZ together has to be the most efficient weld inspection system in the market,” Szabo says. “Using this system has decreased my turnaround time significantly. It’s one of the best business decisions that I have made.”

## A Smart Investment

Szabo says one of the keys to Polar AUT's success is the technical support Zetec provides. Twice he has traveled to Zetec's technology center in Quebec City for training with product engineers and UT experts, and expects to make future trips as his investments in TOPAZ increase.

"The personalized training aspect is so important because I want to maximize the services I can offer to my clients," Szabo said. "Polar AUT is a growing business but working in the energy business means you have to stay lean, be flexible, and make the most out of my tools and technology. My investment in Zetec, and myself, continues to pay off."



Zetec holds ISO 9001  
and ISO/IEC 17025  
certifications



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