In-situ tooling, fixtures and integrated UT solutions for composite materials, rotating equipment, heat exchangers, pressure vessels and piping welds.
Sensor Networks uses industry-preferred design and simulation tools to create an optimized mechanical, electrical and ultrasonic model of the inspection task, including its scan plan.

Successful Ultrasonic Applications Engineering

is the result of 3 major elements:

- **Experience**
- **Capabilities**
- **Process**

Our experienced team of engineers, technicians, assemblers and general management has an extremely deep level of knowledge and background in solving unusual, demanding and complicated NDT projects with an average and aggregate of 20 and 250 years, respectively, of experience. Industries served over this time include aerospace engines and airframes, nuclear vessels and heat exchangers, large gas turbines and others.

SNI’s deep domain expertise enhances NDT solutions through the selection, design and optimization of the ultrasonic technique. The transducer’s efficiency is paramount for converting electrical energy into sound, then coupling and directing that acoustic energy into the test piece to maximize its signal-to-noise ratio.

In-house CAD/CAM capabilities, including our 5-axis CNC Mill, allows for rapid prototyping of complex shapes in most engineering materials.

Our Process:

1. Customer issue
2. Application request
3. Concept development
4. Extensive consultation
5. Special probe request
6. Finalize design
7. Produce solution
8. Document solution
9. Test prototype
10. Build prototype
11. Import or model test subject geometry
12. Design prototype
13. Modify prototype
14. Test prototype
15. Build prototype
16. Finalize design
17. Produce solution
18. Document solution
19. Test prototype
20. Build prototype
21. Import or model test subject geometry
22. Design prototype
23. Modify prototype
24. Test prototype
25. Build prototype
26. Finalize design
27. Produce solution
28. Document solution
29. Test prototype
30. Build prototype
31. Import or model test subject geometry
32. Design prototype
33. Modify prototype
34. Test prototype
35. Build prototype
36. Finalize design
37. Produce solution
38. Document solution
39. Test prototype
40. Build prototype
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42. Design prototype
43. Modify prototype
44. Test prototype
45. Build prototype
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47. Produce solution
48. Document solution
49. Test prototype
50. Build prototype
51. Import or model test subject geometry
52. Design prototype
53. Modify prototype
54. Test prototype
55. Build prototype
56. Finalize design
57. Produce solution
58. Document solution
59. Test prototype
60. Build prototype

Who We Are:

Sensor Networks is a Pennsylvania-based technology company specializing in the design and fabrication of industrial ultrasonic transducers and tooling for demanding in-situ test and inspection applications. Engineered for precision, ease-of-use and maximum durability, our offering includes ultrasonic transducers, fixtures, couplant-delivery systems, qualification/calibration standards, procedure development, personnel training and instrumentation.
SensorScan™ Transducers

Quick-swap Angle-beam Transducers
Conventional transducers for quick-swapping onto delay lines or wedges

- Features quick-swap screw-in attachment.
- Features state-of-the-art piezo-composite elements.
- Offered with quick-swap wedges for shear-wave weld inspection.
- Available with new MCX-style low-profile swivel connectors.
- Available in a wide variety of sizes and frequencies.
- Ships with certification documents. (RF waveform, frequency spectrum, average center-frequency calculations.)

Delay-line Transducers

- Highly damped signal and removable delay line provides better near-surface resolution than contact transducers.
- Enables measurement of very thin parts and finding small near-surface flaws using direct contact pulse-echo technique.
- Contoured delays available to improve coupling to curved parts.
- Ships with certification documents. (RF waveform, frequency spectrum, average center-frequency calculations.)

AWS Angle-beam Transducers

- Complies with American Welding Society D1.1 and D1.5
- Square elements available.
- Available with state-of-the-art piezo-composite elements or traditional monolithic elements.
- Available with AWS wedges for shear-wave weld inspection.
- Ships with certification documents. (RF waveform, frequency spectrum, average center-frequency calculations.)

Microdot

1 00-010137MD 00-010138MD 00-010211MD
1.5 00-010216MD 00-010217MD 00-010218MD 00-010212MD
2.25 00-010122MD 00-010123MD 00-010124MD 00-010213MD
3.5 00-010125MD 00-010126MD 00-010127MD 00-010214MD
5 00-010128MD 00-010129MD 00-010130MD 00-010215MD
7.5 00-010131MD 00-010132MD 00-010133MD
10 00-010134MD 00-010135MD 00-010136MD

MCX

1 00-010137MCX 00-010138MCX 00-010211MCX
1.5 00-010216MCX 00-010217MCX 00-010218MCX 00-010212MCX
2.25 00-010122MCX 00-010123MCX 00-010124MCX 00-010213MCX
3.5 00-010125MCX 00-010126MCX 00-010127MCX 00-010214MCX
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30 01-010189 01-010193 01-010197 01-010201
45 01-010190 01-010194 01-010198 01-010200
60 01-010191 01-010195 01-010199 01-010201
70 01-010192 01-010196 01-010200 01-010204

Special angles, curves, skews and combinations available on request.
TOFD Transducers

- Highly damped longitudinal wave transducers.
- Features quick-swap screw-in attachment.
- Incorporates state-of-the-art piezo-composite elements.
- Time-of-flight Diffraction (TOFD) technique involves refracted longitudinal waves used for crack sizing in steel welds.
- Ships with certification documents. (RF waveform, frequency spectrum, average center-frequency calculations.)

Phased-array Transducers

- Linear arrays, matrix arrays, dual matrix arrays, curved arrays, annular arrays, annular sectorial.
- Available with multiple connector options.
- Ships with certification documents. (RF waveform, frequency spectrum, average center-frequency calculations.)
- Available with standard 2.5m cable; other lengths and connectors available on request.
Optimized Solutions for Cost-effective Productivity

Sensor Networks offers transducer solutions in a variety of styles, compatible with any major manufacturer’s conventional or phased-array instruments.

**In-situ:** self-aligning wand transducers for hard-to-access rotating equipment

**O.D. Transducers:** for tubing weld or braze joints

**Phased-array:** linear & matrix • annular, daisy & circular • contact & immersion • single & dual • flat & curved

**ASME Section XI:** compound-radius wedges • refracted longitudinal • phased-array duals • contact or immersion • TOFD • complex wedges & delays

**Small-diameter (< 0.25”/6 mm)**

**ID Bore Probes:** shear-wave, L-wave, duals and tandem types

**7 MHz Ultra-high-temp Delay-line:** transducer and mounting clamp for continuous 500°C (932°F)

**SensorScan™ QS:** conventional transducers for quick swapping onto delay lines or wedges

**2 MHz PAUT Dual:** with 2×16 elements per probe and detachable wedge

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