



Interview with Johnny Søreng,
Manager for Phased Array and X-ray at Aker Solutions

Where sound and light allow fabrication to move

In the halls at Aker Verdal, production never truly pauses, but inspection decides the rhythm. Between sound and radiation, geometry and time, the flow is negotiated weld by weld.

You were born here in Verdal and never really left. How did that shape your path into Aker and NDT?

"I was born here, and I still live in the same area where I grew up, close to my parents' home, with the Aker yard just nearby. My grandfather worked here. Then my father worked here as a welder and plumber. And now I do as well. So, we are three generations in the same yard. I trained as a mechanic, but when mechanical jobs were scarce locally, I applied for an NDT apprenticeship at Aker in 2006.

I didn't know much about NDT at the time. Only what my father told me about his work here. Today, I have two kids, aged 10 and 7, and since April, I have led both phased array and X-ray inspections at Aker Verdal. I manage people, projects, priorities, and equipment."

From light to sound – the inspection range

How did your technical development evolve once you entered NDT?

"We started with radiation, MT, and PT at Level II. I worked mainly with X-ray for 2.5 to 3 years. I trained in ultrasonics in 2009 and later took Level II in X-ray and phased array.

What type of X-ray technology have you worked with, and how are radioactive sources handled over time?

"We used gamma with iridium and selenium and the Comet EVO portable X-ray systems. As the gamma sources weaken, inspections take longer, and then we replace them. "

Phased array inspection of a weld on a steel element at Aker Solutions - performed in the yard, where inspection follows the structure, ensuring defects are identified before the steel is moved to the next station





Why has phased array become so central in fabrication at Aker Verdal?

We use phased array because of radiation and shielding. With phased array, we can work next to the welders without evacuating people. If we do X-rays during fabrication, we often must do them at night, when fewer people are present. Evacuating people is costly. It holds production. The choice of inspection method directly influences production flow. If you have to stop work to clear areas, you lose time immediately."

What the defect hides, and how it is found

How do X-ray and phased array divide the work between them?

"For porosity and slag, X-ray is easier. For lack of fusion, especially side-wall lack of fusion in narrow gaps, phased array is better. Phased array needs a flat surface for proper sound reflection.

Some joints can't be inspected with ultrasonic or phased array, so you need X-ray. And sometimes it's the other way around. They don't replace each other. They complement each other due to their geometry and defect type. Using the wrong method increases the risk of missing the wrong defect. We mostly use phased arrays in fabrication, but we also use X-ray and conventional ultrasonics. It depends on what is being produced."

"Fabrication and inspection move as one"

Johnny Sørensen,
Manager for Phased Array and X-ray

Where investment follows geometry

How does what Aker builds influence inspection investment?

"If we only build jackets and steel structures, there is not much X-ray needed. Structural steel requires X-ray only in limited joints. Then the investment will mainly go to ultrasonic and phased-array technologies. Piping from external companies and subsea flow loops require X-ray inspection due to their geometry. So, we will continue to invest in X-ray as well. That is the work handled in the bunker. Six-inch and two-inch pipes."

What is allowed to fail the least

What drives your equipment choices from an operational risk perspective?

"The most important thing is the service we get from the distributor and manufacturer. Holger Hartmann's support is very important. When equipment stops, production feels it immediately. I expect the equipment to have a long lifespan and to handle rough use. Accidents happen, so the systems must be rugged. We've only worked with these for X-ray. For ultrasonic and phased-array systems, we tested several brands. We chose the brand with the best quality and service. They are portable and reliable."

Where steel is still, until it is allowed to move

What happens when fabrication, flow, and inspection meet?

"I manage phased array and X-ray, as well as people, projects, priorities, and equipment, with fourteen people reporting directly to me. Fabrication and inspection move as one, as jackets, piping, and subsea components pass through production, where access, geometry, and defect type determine the inspection method used. Phased array allows inspection to continue alongside welding, while X-ray provides volumetric visibility where sound

alone is insufficient.

Together, they stabilize the workflow, reduce unnecessary stops, and lower the risk of premature steel closure. Steel is only closed, moved, and shipped after inspection; if that sequence is broken, production stops, time is lost, costs grow, and risk moves forward with the steel instead of staying behind in the yard."

At Aker Verdal, speed is never separated from certainty. Every method, every choice, every inspection step is part of the same equation. Let the sequence break, and everything stands still.



"Phased array allows inspection to continue alongside welding. X-ray provides volumetric visibility where sound alone is insufficient"

Johnny Sørensen,
Manager for Phased Array and X-ray



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