Solving 2D corrosion mapping ultrasonic inspection challenges

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Ultrasonic corrosion mapping inspection using conventional single-element UT probes is slow and only capable of acquiring low-density data. Inspecting large areas using conventional UT typically requires a configuration involving complex, expansive, and difficult-to-set up motorized scanners. Offering a wider beam coverage than conventional UT, phased array ultrasonic testing (PAUT) has gained popularity in recent years for corrosion mapping, as it helps improve inspection rates while increasing data quality. Although the wider beam is an advantage, the probe still needs to be moved sideways between each scan line to perform 2D mapping of the targeted inspection area. To encode the probe's position on two axes, a typical phased array search unit needs to be mounted on an external dual encoded scanning system, further increasing the inspection costs and complexity. Evident has developed a solution to this problem—a new phased array scanner with two integrated encoders to record its position on the part for both x- and y-axis scanning, thereby removing the need for an auxiliary scanner. This presentation will provide details on the different innovations implemented in this new system and explain how it can be used to increase productivity and data quality while reducing the costs and complexity of 2D corrosion mapping.