THREE-DIMENSIONAL DEFECT MAPPING

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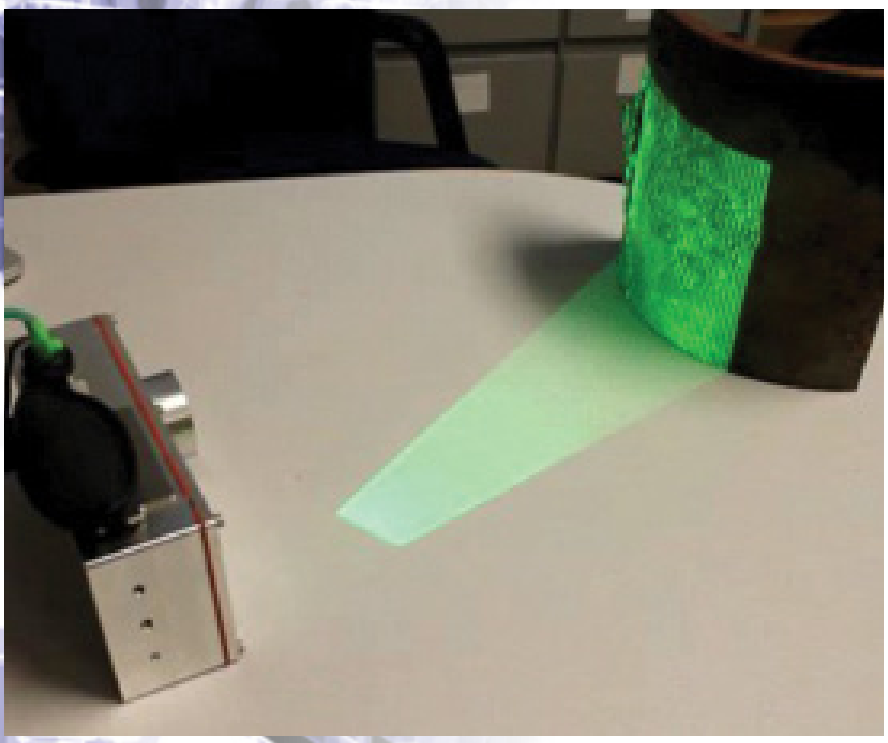
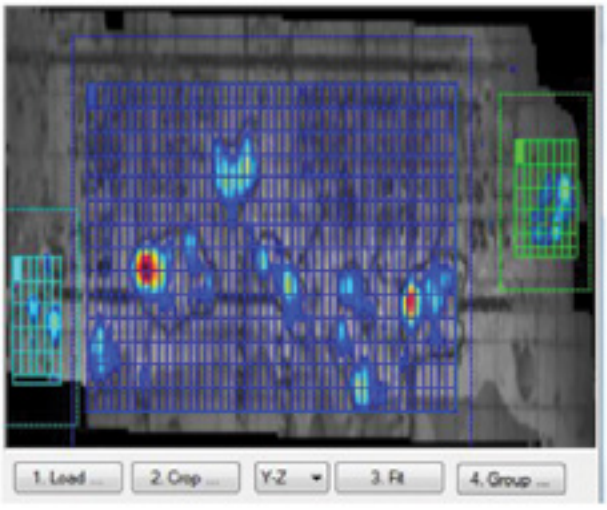
Structural Integrity has recently added the Technical Toolboxes Inc. (TTI) 3D Toolbox to our NDE service offering, which leverages Seikowave's structured light 3-Dimensional scanning tools. The 3D Toolbox is a complete measurement system for inspecting oil and gas pipeline and other facility infrastructure. Included with the 3D Toolbox is the eVox LCG 3D imaging system: a compact 3D measurement system with 40mW optical power, which uses real-time measurements and unique algorithms to process accurate measurements of three-dimensional objects and surfaces. The figures below provide an overview of this system, which can be used for mapping and quantifying external defects such as external corrosion, dents, and gouges.

Similar to laser profilometery, detailed defect information (geometry, depth, etc.) can be captured along with a digital image retained for permanent record. However, the speed and efficiency of data collection, along with the ability to import into advanced analysis tools such as RSTRENG® and Finite Element Analysis (FEA) models is extremely beneficial. Multiple scans can be linked together for analyzing larger areas and/or for capturing greater resolution of defects. Digital records with depth values in high resolution grids, along with river bottom profiles and other data formats, can be viewed and exported for further analysis.





Feature	Volumetric Loss	Max Depth	Area	Width	Length
01	3494.569	6.3	16450.00	235.0	70.0
02	301.978	3.0	1000.00	40.0	25.0
03	151.777	3.1	750.00	30.0	25.0