Company Overview

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Establishment: April 16th, 2010
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Business details:
① 3D scanner development and sales, measurement work,
② Development and sales of damage analysis software,
③ Sales of software compliant with service suitability assessment standards (ASME FFS-2/API-579, WES2820)

Products/Services (As of October 2023) :
・3D Scanner :
① 3DSL-ScanProHD sales
~ System for close visual inspection
~ Damage analysis software included
② 3D scanner for drone installation (under development)
・Measurement contract service :
① Corrosion thinning measurement/analysis/report of plant equipment
② Measurement, analysis, and reporting service
~ Especially applied to iron structures and concrete structures.
③ Measurement service using micro scanner
~ For quality control of welding lines, observation of aging deterioration, etc.
・Software sales :
① "POLYGONALmeister®" for damage analysis
② "uni-Fitness®" for service suitability evaluation

Main product uses :
① Corrosion thinning analysis of pressure equipment, evaluation of suitability for service
② Corrosion measurement, analysis, and evaluation of bridges, etc.
③ Painting/paint film deformation measurement/analysis
④ Surface measurement and analysis of concrete structures

New business :
① Measurement service using drones at operating plants based on our patented technology (in preparation)
② Sales of the above system (in preparation)

Participating academic societies/associations:
・Japan Welding Association, Japan High Pressure Technology Association, Japan Nondestructive Testing Association, Corrosion Prevention Society, Japan Society of Civil Engineers, Precision Engineering Society, API, ASME

Host/Lead Manager Forum:
・3DFFS Technology Forum
・Optical 3D Measurement Research Committee (Japan Nondestructive Inspection Association)

Products

1. 3D Scanner : 3DSL-ScanProHD

【Features】
● Uses pattern projection method
● For proximity/non-contact measurement
● High-definition scan mode/ Rapid scan mode
● Lineup of analysis and evaluation software
・POLYGONALmeister®: For unevenness analysis
・ uni-Fitness ® : WES2820 (API-579)-compatible service suitability evaluation) (Sole separately)
● Application field: Surface damage measurement of infrastructure and production equipment

【Specification】	HD Scan mode	Rapid Scan mode
Mesh length	0.2mm ~ 3mm	0.25mm ~ 3mm
Accuracy	0.045mm	0.1mm
Working distance	510mm	510mm
Scanning speed	10fps	30fps
One-shot scanning area	209mm x 160mm ~ 310mm x 240mm	209mm x 160mm ~ 310mm x 240mm

Dimension of the scanner body: 250mm [H] x 155mm [L] x 50mm [D]
Weight of the scanner body (cable included): 1,250g

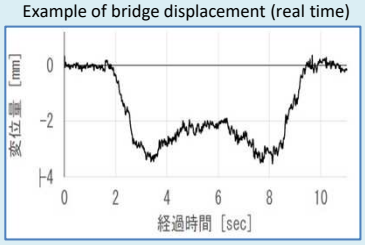
Turn table, mini tripod, calibration plate and markers are included in the hard carrying case. PC is selectable (with or without).

2. Non-contact displacement meter

【Features】
●Acquire highly accurate real-time displacement information from images taken with a camera
● Application scenarios: Vibration and load testing (deflection) of bridges, measurement of subsidence of panels, external walls, and ground

Measurement situation

Example of bridge displacement (real time)



【Specification】	Non-contact displacement meter
Mesh length	0.05mm
Working distance	10m～100m
Scanning speed	100fps (It depends on cameras)

※ Partner: Maiko Co., Ltd., University of Fukui

POLYGONALmeister®

Surface unevenness analysis software

POLYGONALmeister®
~SEIKOWAVE Edition

~Features~

Based on the ability to simply edit and modify 3D data (PLY format) obtained from a 3D scanner, it is possible to express the characteristics of various shapes and surfaces with color maps.
Even if the shape is slightly distorted, its characteristics can be understood.
Now available in SEIKOWAVE Edition.

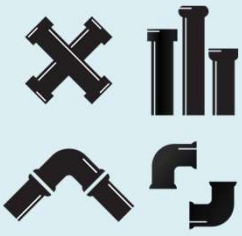
~Main Functions~

・Quickly perform unevenness analysis
・Display of corrosion depth (detection of maximum depth point within specified area)
・Display height/depth of click point
・Compare two 3D data
・Color mapping after unevenness inspection
・Reflect on the color map by changing the maximum value/minimum value/intermediate value of the color bar
・CSV data output after unevenness inspection
・Statistics function (maximum value, minimum value, standard deviation)

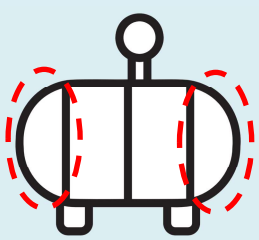
~ Example of target shape ~

・Piping (straight pipe, elbow part)
・Mirror plate
・Spherical tank
・Tank bottom plate etc.

Spherical tank



Piping
(straight、elbow)



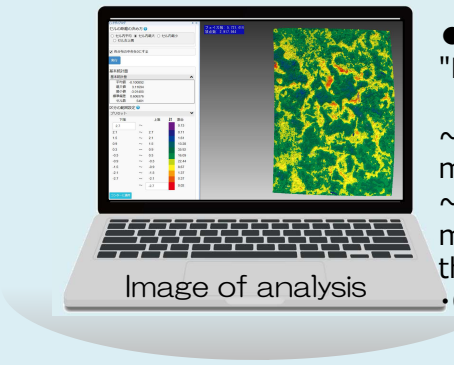
Pressure vessel end plate

※POLYGONALmeister® is a product of UEL Corporation.

<Image: from measurement to analysis>

① Measurement with 3D scanner: Acquisition of 3D data

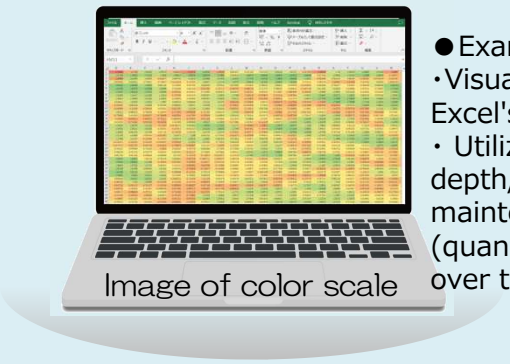
② Modify and analyze of 3D data



●Software :
"POLYGONALmeister®(SW)"

~Unevenness inspection: Color mapping, digitalization
~ Obtaining the maximum and minimum distance values within the specified area
・CSV file output, etc…

③ Utilization of CSV data: Report creation



●Examples
・Visualize unevenness using Excel's color scale function
・ Utilize the output depth/height values for future maintenance management (quantification of changes over time)

Manage secular changes with data!

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