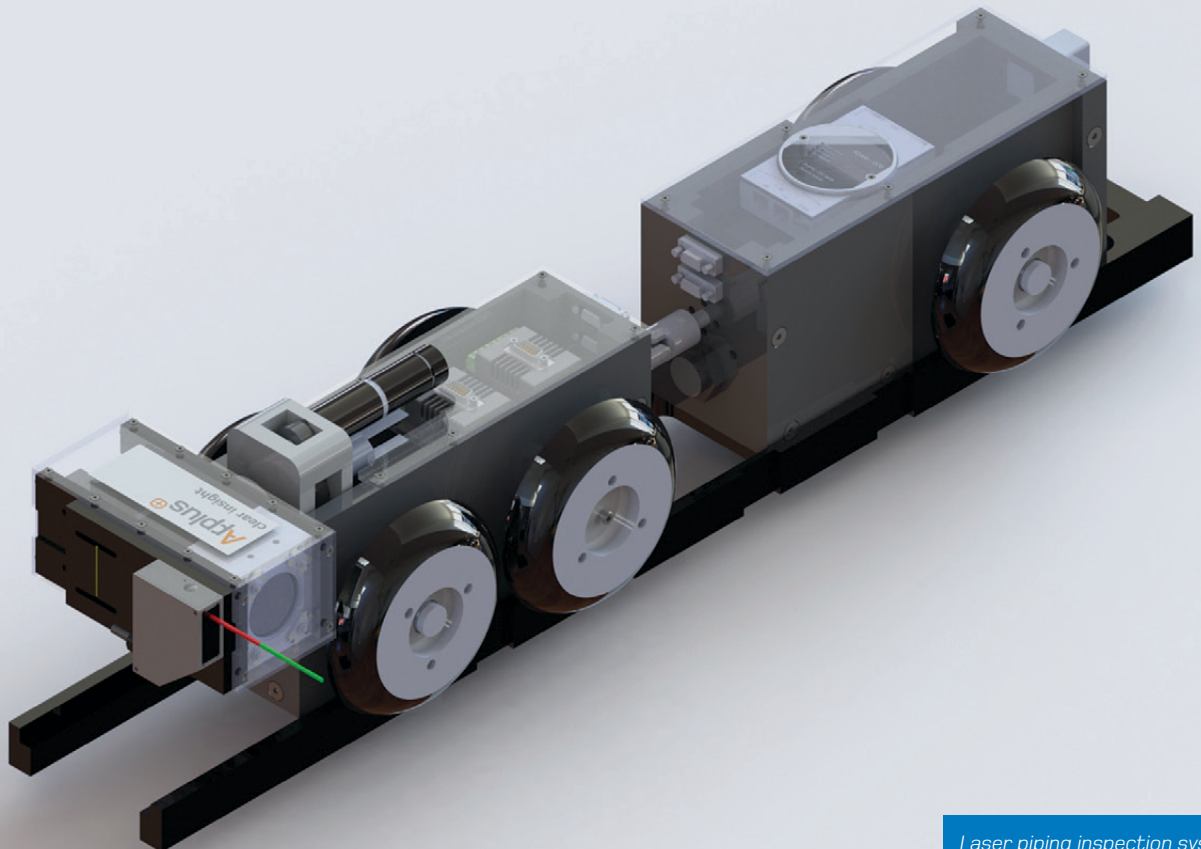


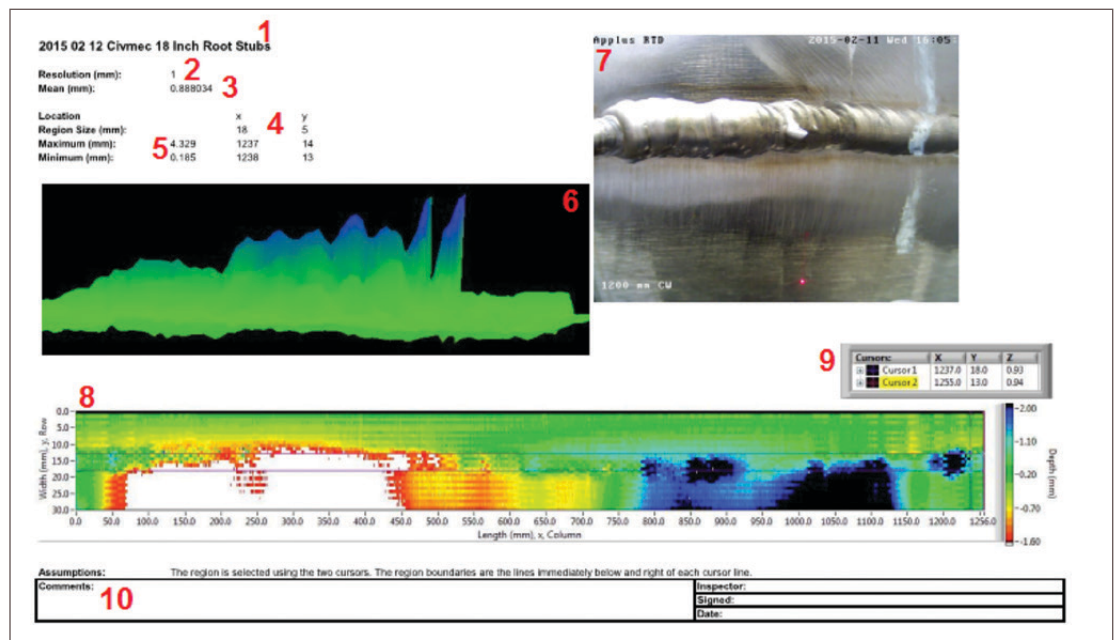
Camera Aided Visual and Laser Inspection



Laser piping inspection system

Key Features:

- ⊕ Laser piping inspection system
- ⊕ Greater accuracy and resolution over conventional inspection systems
- ⊕ Live laser cloud mapping of internal surface areas
- ⊕ Out of round piping inspection
- ⊕ Partial root/hot pass internal inspection on CRA piping to DNV-OS-F101
- ⊕ Live full HD colour camera with 30° optical zoom
- ⊕ Video and photo capabilities
- ⊕ Video overlay capabilities
- ⊕ Fully encoded
- ⊕ On board adjustable lighting
- ⊕ Instant reporting to DNV OS F101
- ⊕ Waterproof to 250 m
- ⊕ Umbilical length of 250 m
- ⊕ Assets greater than 180 mm (7") access
- ⊕ Numerous 5D 90° bends.



CAVALI (Camera Aided Visual and Laser Inspection)

All mechanical, electrical and software designing, implementation and testing was carried out in-house (in Perth, Western Australia)

To assist in ensuring the repeatability and robustness of the CAVALI crawler, a camera validation and laser validation is carried out before each spool. This ensures the system is qualified to the required specification before each asset is inspected.

The crawler houses a compact Full HD colour camera with 30° optical zoom and on-board lighting. These facilities can be remotely adjusted, thus allowing unparalleled vision of the weld root.

Reporting:

Visual data can be saved as both still images and video. The crawler houses two encoders, one for the drive and one for the rotation. These, as well as the weld identification numbers, date and any other key information required can be overlaid onto the video and photos.

The laser results are produced live and presented in three different formats:

- 1 Single point measurement indicating depth and height at the selected point.
- 2 A top view of the complete weld root with adjustable colours to indicate depths and heights.
- 3 Fully interactive 3D view of the completed weld root.

Accuracy:

Erosion, corrosion and pitting can be mapped to accuracies better than 0.05 mm.

Applus+ provides the following services as individual packages or combined to provide a total Asset Integrity Management programme.

- ⊕ Advanced (non-intrusive) Inspection Services.
- ⊕ Sub-sea Inspection Services.
- ⊕ Engineering Design Solutions.
- ⊕ Risk Based Inspection Planning.
- ⊕ Inspection Management Services.
- ⊕ In Service Inspection.
- ⊕ Plant Life Management.
- ⊕ Metallurgical Services.

Importantly, Applus+ can also call upon extensive in-house expertise and resources for advanced inspection and conventional NDT, providing a total capability for management of through life plant integrity.

Applus+, in collaboration with our local and international partners, has extensive experience in the application of these services to a wide range of industries including:

- ⊕ Oil & Gas.
- ⊕ Petrochemical.
- ⊕ Refining.
- ⊕ Ore Processing and Handling.
- ⊕ Power Generation.

Applus+

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