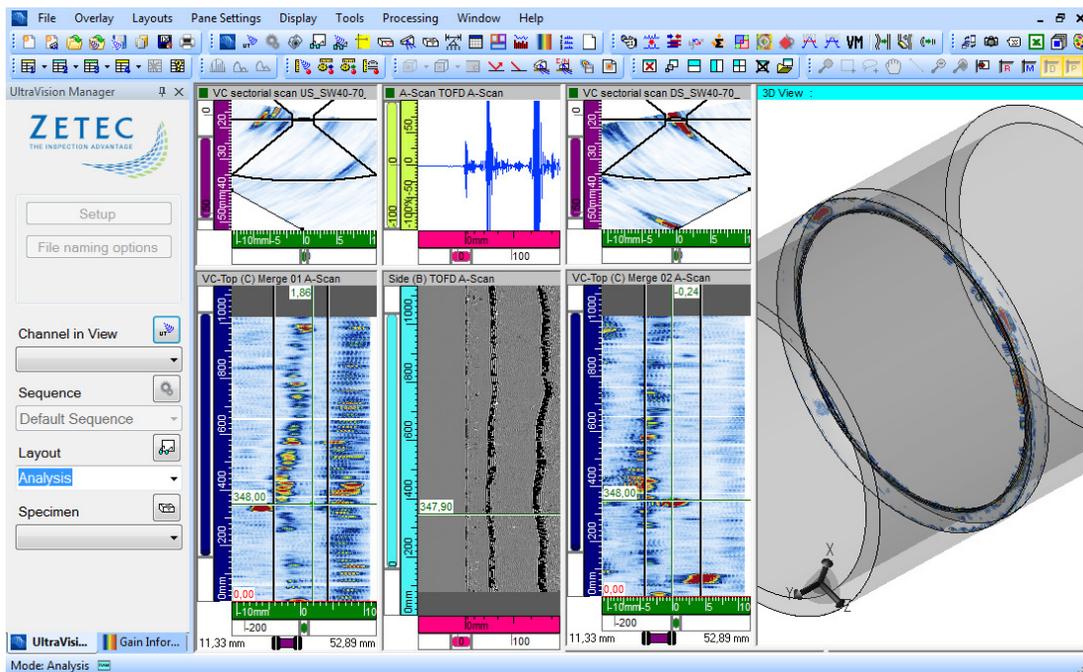


ULTRAVISION 3.7R21

Product Bulletin



UltraVision, a complete UT and Phased Array inspection package!

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November 9th, 2015

UltraVision 3.7R21 Product Bulletin

Zetec has just released UltraVision 3.7R21. This product bulletin gives an overview of the features offered in this software version.

Purpose of UltraVision 3.7R21

UltraVision 3.7R21 is the standard upgrade for user currently working with a previous version of UltraVision 3.

Zetec's hardware and software development process is performed according to a quality system that is certified ISO 9001-2008.

With this certified software development process, Zetec guarantees that changes between UltraVision 3.6R5 and UltraVision 3.7R21 have no consequences on the sensitivity and the accuracy of the signal amplitude and flight time outputs displayed, recorded or automatically processed by the software. This includes also additions of mathematical modules used for the positioning of indications or for geometric conditions adjustments.

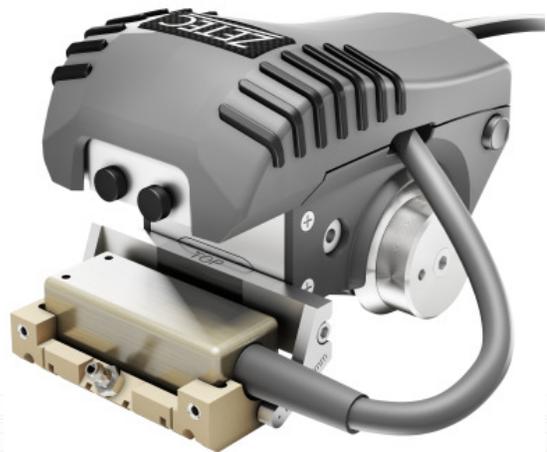
Corrosion

Support of NDT PaintBrush

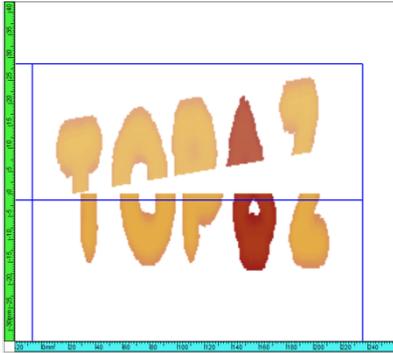
NDT PaintBrush from Zetec is the latest evolution in the field of inspection solutions for wall-thickness measurement when inspecting for corrosion, abrasion or erosion.

NDT PaintBrush allows inspecting on plates, pipes or curved surfaces, without the limitation of complex mechanical structures. Magnetic or composites specific wheels allow using NDT PaintBrush on different surfaces.

UltraVision 3.7R21 adds full NDT PaintBrush support for TOPAZ. Get more information about [NDT PaintBrush](#).



C-Scan Stitching



When inspecting a large surface, it can be useful to separate the inspection job into smaller sections for an easier approach.

The new C-Scan Data Stitching feature allows merging different data files into one consolidated file, easily reconstructing the full inspection.

With the Data Stitching function, it is easy to adjust the position of the data sections and to correct for angular misalignments during the scanning process.

Probe position marker

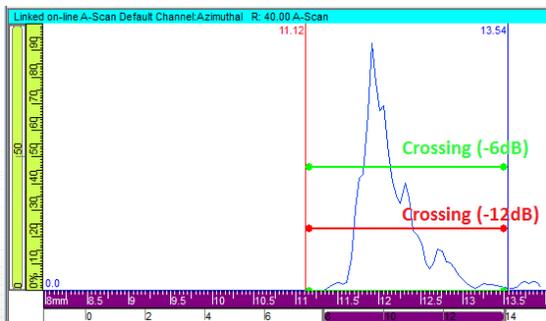
Probe position marker is a live cursor that displays the probe's position in real time during inspection. This new feature simplifies the inspection process ensuring a reliable and constant visual feedback.

The agility of NDT PaintBrush combined with real-time data visualization optimizes and simplifies the inspection process.



New Gates detection features

Floating Gates



The floating gates feature allows changing gate level based on the last cycle echo amplitude.

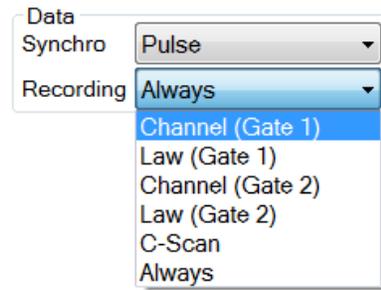
This feature can compensate for signal response variations due to an uneven reflection surface (mainly because of corrosion).

Conditional A-Scan recording

New conditional A-Scan recording options have been added.

It is now possible to only record the data when a selected gate is crossed. Within these data, it is possible to record only the Focal laws for which the signal has crossed the gate or the complete channel.

A new way to optimize your inspection!



Pitch and Catch probe improved path correction

A new axis for the USound dimension is available when using a Pitch/Catch probe configuration (separated emission and reception elements on the same probe). This *True Depth P/C* axis has the same color than the existing True depth axis and includes a small *P/C* tag to provide visual confirmation of the current axis type change.

The new USound axis is selected when:

- Probe configuration is Pitch/Catch;
- Sweep angle is Linear.

New data analysis features

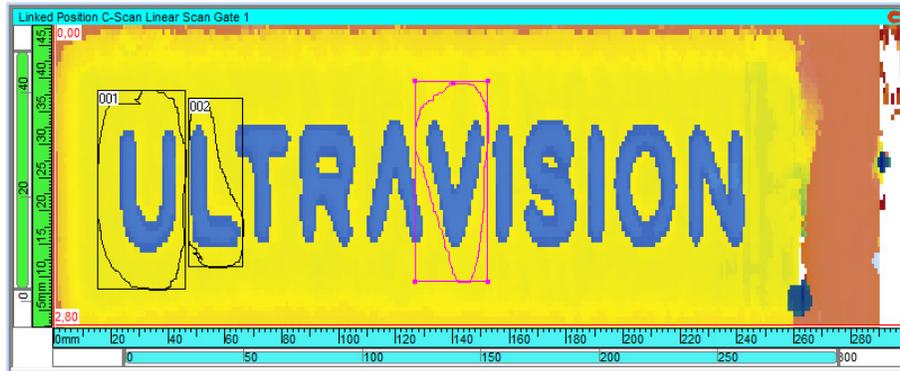
3D Plotting of C-Scan

With UltraVision 3.7R21 it is possible to visualize C-Scans data on 3D views, giving the user an improved and easier way to analyze and represent the acquired data. Creating an elevation map has never been easier.



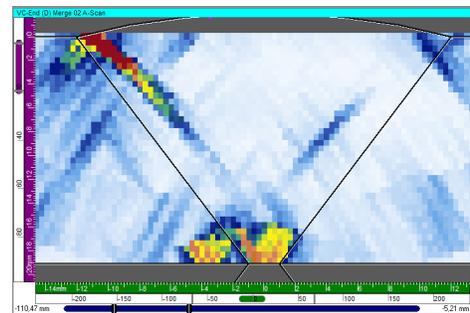
Freeform Contour

Users are now able to create freeform contours around indications. Not limited to a rectangular shape, the contour around the indication can be adjusted to the actual shape of the defect without catching anything else.



Interpolation for Volumetric Merge

Volumetric Merge function adds the use of sectorial interpolation, filling empty spaces of the merged views for an improved data presentation.

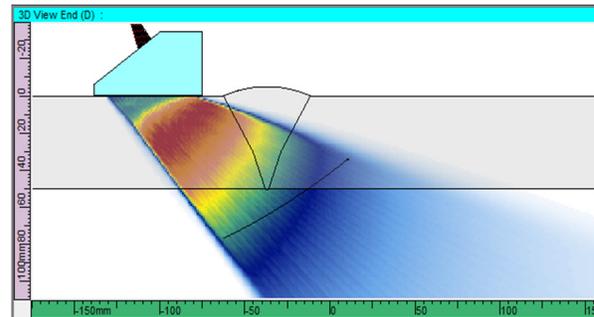


Advanced Calculator Features

Compound Scanning

Starting from version 3.7R21 UltraVision now allows creating a Compound Scanning configuration (combination of sectorial and linear scans).

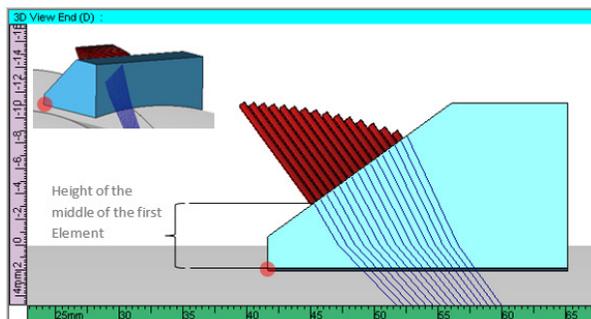
Compound Scanning results in a sweep that has better coverage than traditional Sectorial or Linear scanning.



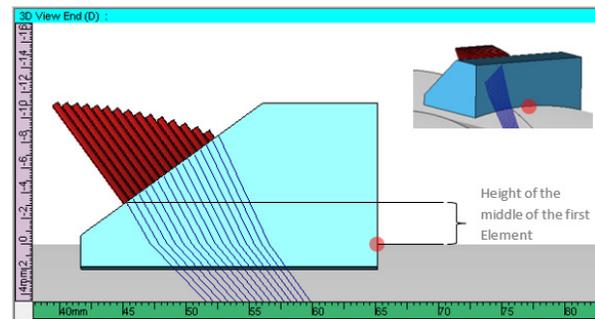
New Wedge Definition Mode

UltraVision has now two different wedge definition modes available.

Legacy Mode allows defining the height of the first element on the wedge by using the back left corner of the wedge as the reference (as it was always done with UltraVision).



Legacy Mode definition



Default Mode definition

In **Default Mode**, the height of the first element on the wedge is defined using the front middle of the wedge as reference.

For plate examination, there's no difference between the two modes, it will only affect the height of the first element in the case of a pipe examination.

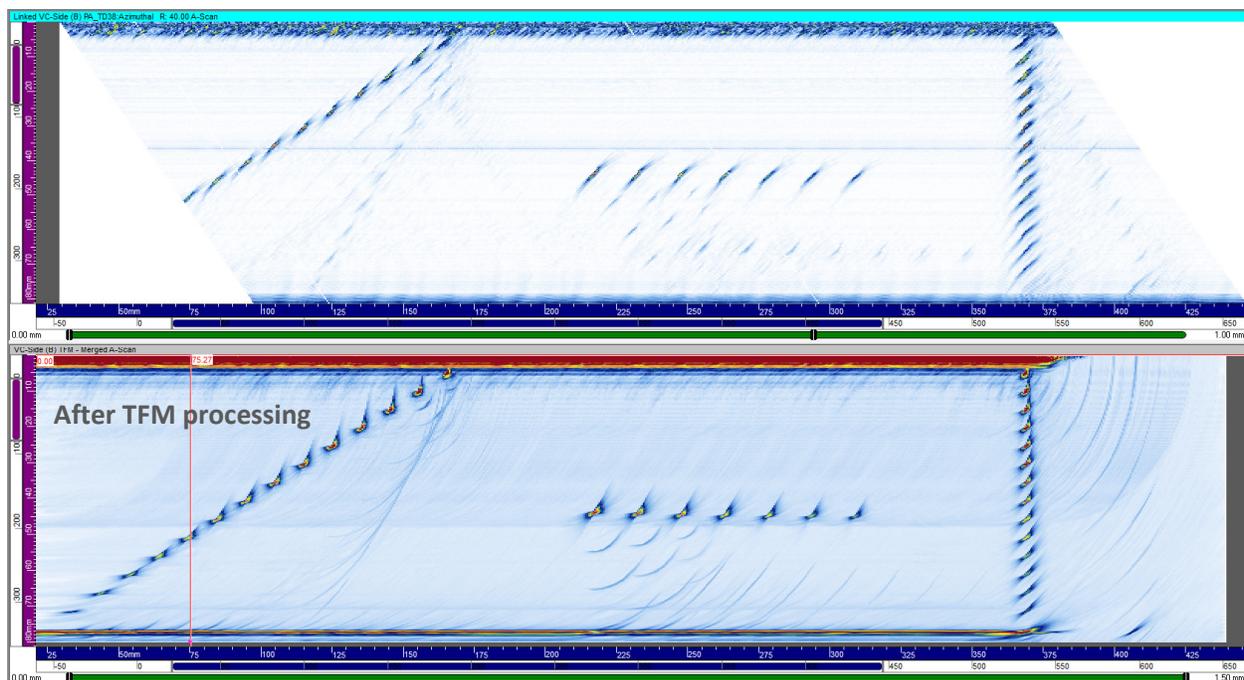
New advanced features

FMC and TFM support

Full Matrix Capture (FMC) is a data-acquisition process where each array element is sequentially used as a single emitter and all array elements are used as receivers creating a matrix of A-Scan data strings.

Once this matrix is completed, signal is analyzed using the **Total Focusing Method (TFM)** where each point is used to calculate focal laws generating an image perfectly focused at all points in the region of interest.

Starting with version 3.7R21, UltraVision supports Full Matrix Capture (FMC) and Total Focusing Method (TFM).



Time Reversal support

Time Reversal is an adaptive focusing process used to dynamically compensate for geometrical variations on a part's surface during inspection.

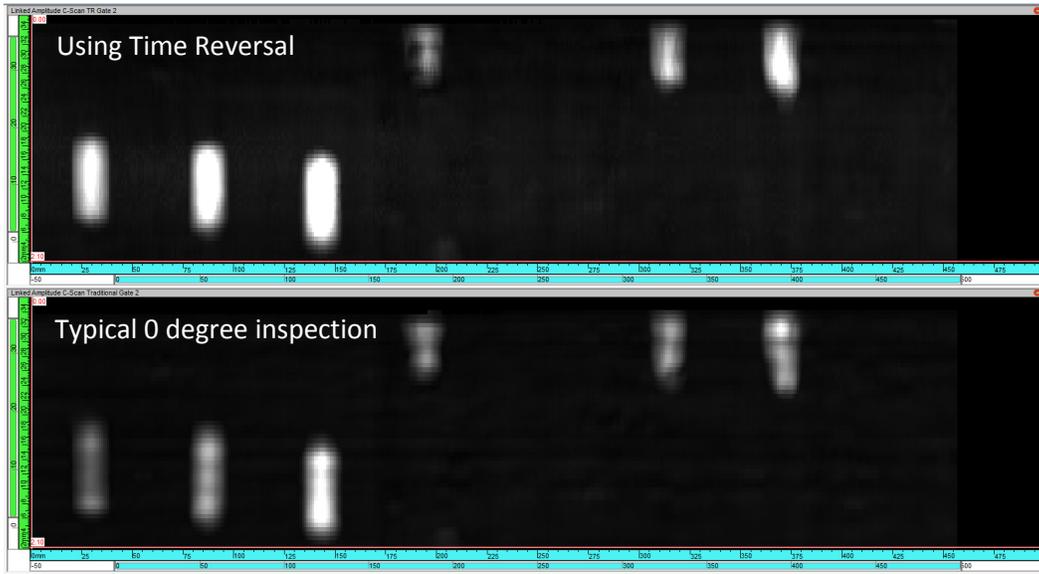
When applying the **Time Reversal** technique, the beam delays are not fixed as in the typical beam forming configurations, but are dynamically adjusted to compensate for the piece from surface changes.

Time Reversal works on a two steps approach. On the first one, the profile of the surface to be inspected is measured. In the second step, inspection focal laws are adapted in real time to be perpendicular to the surface to inspect.

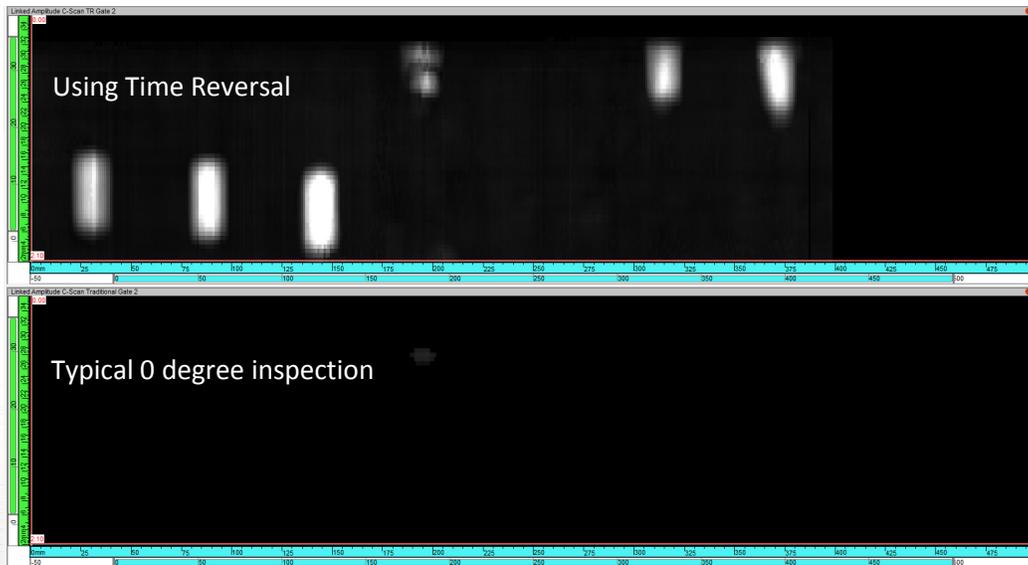
This dynamic geometrical compensation allows inspecting without additional probe manipulations for compensating for the part geometry.

Time Reversal is an excellent tool for the inspection of composite material where the part profiles can often change, making the inspection process very complex.

Example 1- Probe properly aligned with the surface



Example 2- Probe misaligned from the surface



Bugs corrections

B1031 – 3D View – Automatic A-Scan Ray in 3D View according to Setup

B1047 – 3D View – Red and Blue cursor should not appear by default

B1094 – Advanced PA Calculator – Tandem Focal Laws – UV Crashes on cylindrical specimen

B1096 – Scan Calibration – Unable to calibrate the axis in degrees in Analysis

B1341 - TOFD position change when Probe orientation is changed

B1362 – File – File lost on Save if memory drive is full

B1402 - Focal law Calculator - Near field is not properly computed

B1453 - TCG - Changing gain - Unwanted correction applied

B1609 - Jitter on the Index value affecting raster scans