

UltraVision 3.9R9

Classic and Touch versions

Product Bulletin

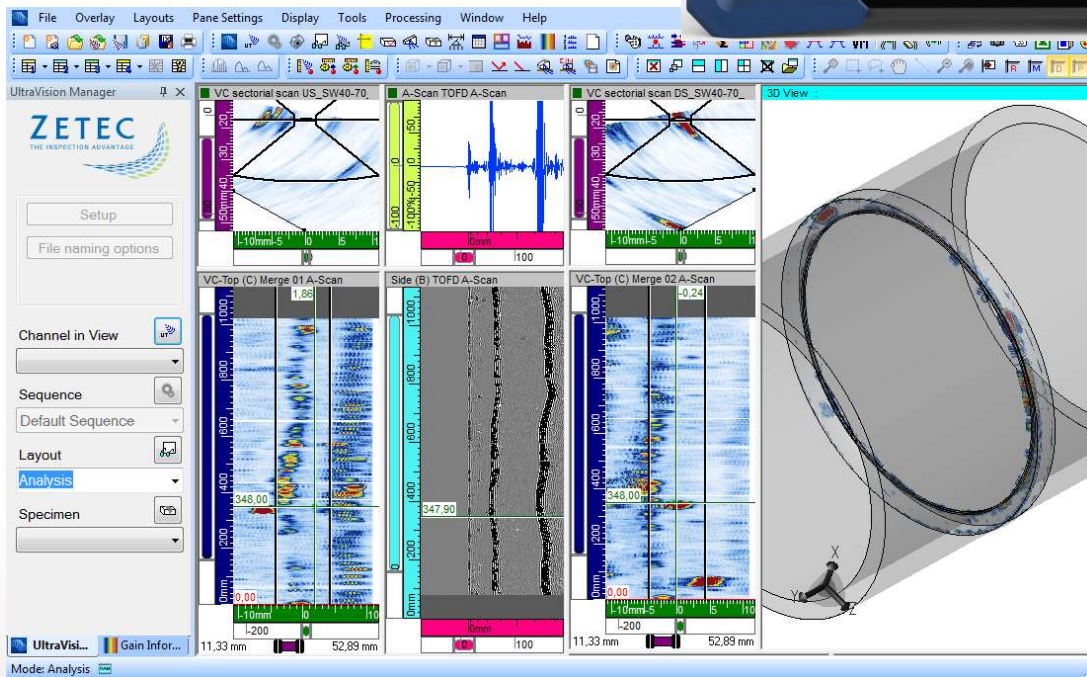


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UltraVision Touch 3.9R9

Zetec has just released UltraVision Touch version 3.9R9. This software version can be used on the TOP Δ Z, TOP Δ Z¹⁶, TOP Δ Z³² and TOP Δ Z⁶⁴ models as well as on a PC running Windows[®] 10 or Windows[®] 7.

This product bulletin presents an overview of the new features and changes that are included in the new UltraVision Touch 3.9R9 software release.

UltraVision Touch 3.9R9 is available in three embedded versions for the TOP Δ Z product family:

- **Topaz 3.9R9** for TOP Δ Z instruments
- **Topaz16 3.9R9** for TOP Δ Z¹⁶ instruments
- **Topaz32 3.9R9 (x64)** for TOP Δ Z³² instruments
- **Topaz64 3.9R9 (x64)** for TOP Δ Z⁶⁴ instruments

As well, UltraVision Touch 3.9R9 is available in two PC versions:

- **UltraVision Touch 3.9R9** for 32-bit version environments
- **UltraVision Touch 3.9R9(x64)** for 64-bit version environments

To download UltraVision Touch 3.9R9 or any other UltraVision version, and to obtain access to the latest software documentation, please visit www.zetec.com

UltraVision Classic 3.9R9

UltraVision Classic 3.9R9 can be used on PC running Windows[®] 10 (or Windows 7) and is available in two versions:

- **UltraVision 3.9R9** for 32-bit version
- **UltraVision 3.9R9(x64)** for 64-bit version

Purpose of UltraVision 3.9R9

UltraVision and UltraVision Touch 3.9R9 are Zetec's latest upgrade for Zetec's UltraVision software. This software release includes several new features and improvements. 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 the changes between the previous UltraVision Touch versions (3.5R10, 3.6R1, 3.6R5, 3.7R1, 3.7R21, 3.8R7, 3.8R11, 3.8R13, 3.8R16 and 3.8R30) to UltraVision Touch 3.9R9 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 also includes additions of mathematical modules used for the positioning of indications or for geometric conditions adjustments.

UltraVision Touch New Features and Improvements

Total Focusing Method (TFM) Configuration

With UltraVision Touch 3.9R9, a new channel configuration is now available: Total Focusing Method (TFM) based on a Full Matrix Capture (FMC) acquisition.

| | |
|---------------------------|---|
| Phased Array-Pulse Echo | |
| Phased Array-PitchCatch | |
| TFM-Pulse Echo | ← |
| TFM-Pitch Catch | ← |
| Conventional-Pulse Echo | |
| Conventional-PitchCatch | |
| Conventional-TOFD | |
| Conventional-PE (on PA) | |
| Conventional-PC (on PA) | |
| Conventional-TOFD (on PA) | |

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. FMC has the advantage of acquiring high amounts of data that may be reused later in many ways. Once the data of this matrix is collected, the signal is processed using the Total Focusing Method (TFM) to produce an image (or frame) where each pixel is one dedicated and focused focal law in the region of interest. TFM is particularly useful for reconstructing the data for defect characterization.

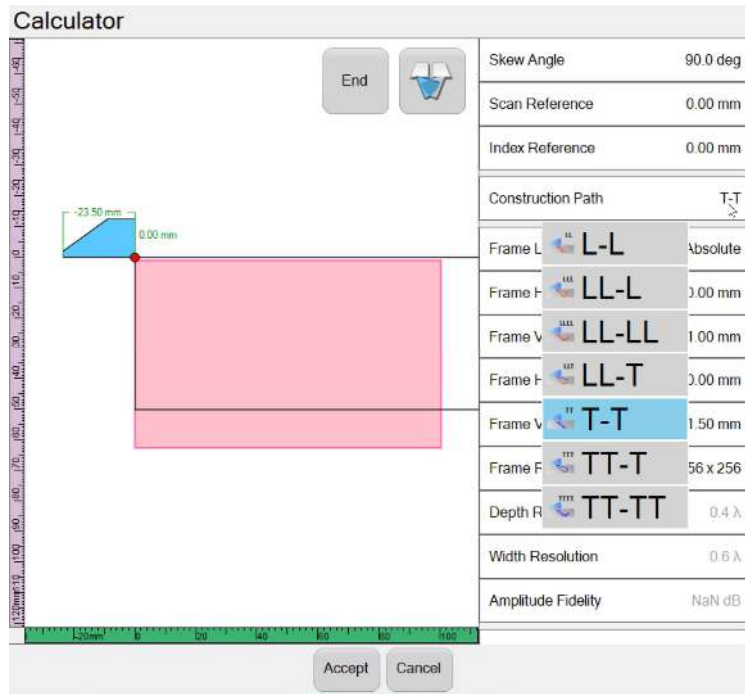
The **Total Focusing Method** (TFM) is a Phased Array (PA)-processing method using collected FMC data to generate a frame of pixels, where each pixel is computed using a dedicated focalized focal law. Using the A-scans, reconstruction can be performed on-the-spot during data collection, or post-processed during analysis.

The TFM configuration is available in both Pulse-Echo or Pitch & Catch Mode. It is possible to set two (2) different channels with TFM configuration at the same time. Those two channels can be set on the same probe or on two different probes. It is also possible to use a TFM channel combines with a Phased Array, Conventional or TOFD channel.

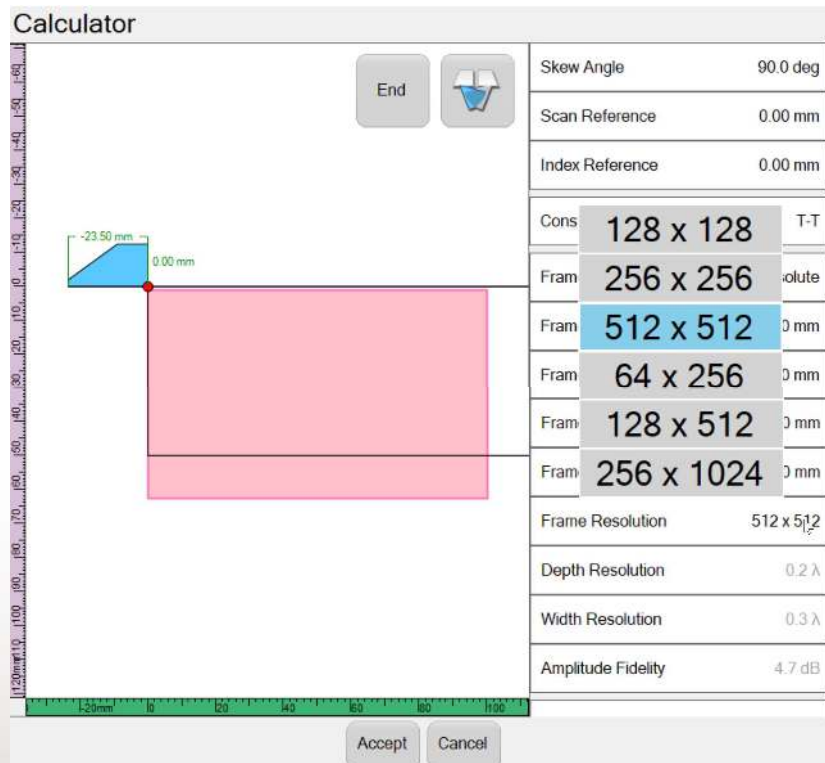


Dual TFM setup

The TFM configuration can be set using the same easy calculator as used for the standard Phased Array channel. Multiple reconstruction paths are available when setting the channel:



Frame resolution can be set up to 512 x 512 pixels:

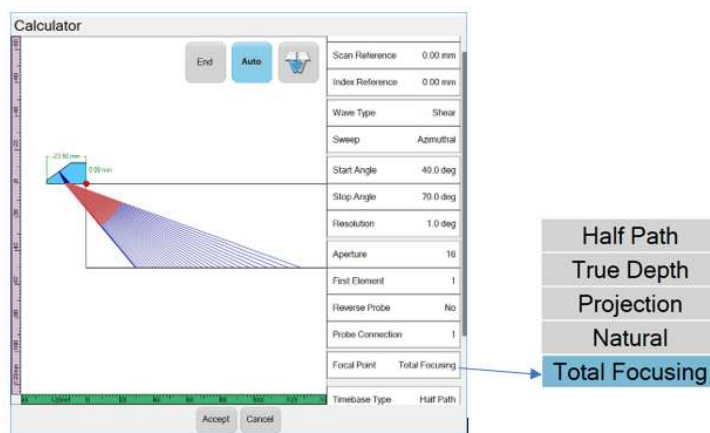


Gates can be set and used with the TFM configuration just like with any other channels:



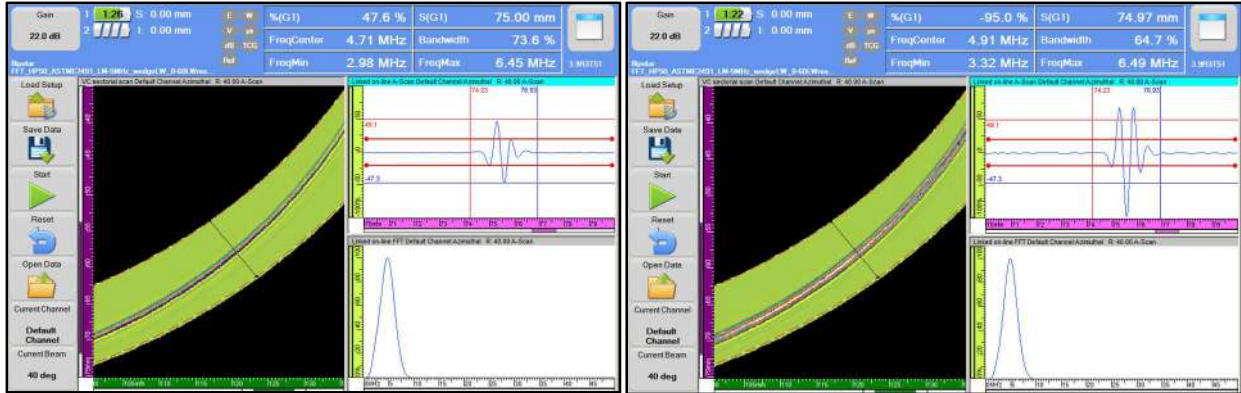
Sectorial Total Focusing

When defining a traditional Phased Array azimuthal scan, a new focalization option called **Total Focusing** is available. It applies a TFM type focalization on an Azimuthal Scan, meaning instead of using a unique focal point for each beam, every pixel in the image is focalized thanks to the TFM computing approach.



Bipolar Pulser (TOPAZ64 only)

A new bipolar pulser at 150Vpp is available in the TOPAZ64 with the new UltraVision Touch 3.9R9. This feature provides up to 40% more acoustic energy to the probe, thus increasing the signal amplitude by up to 6dB without modifying the frequency content of the signal.



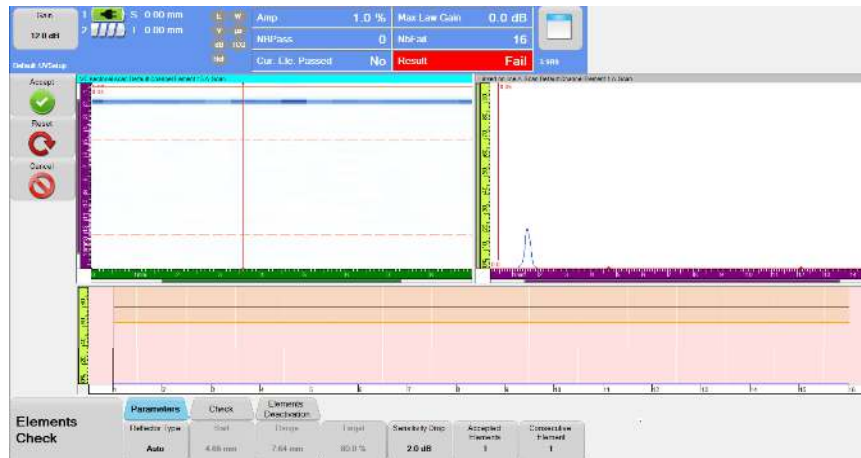
Unipolar Pulse

Bipolar Pulse

Element Check Calibration Improvements



An improved **Element Check** calibration tool now allows for deactivating elements that are out of tolerance or damaged.



Wedge Check Calibration

A new **Wedge Check** calibration is now also available with UltraVision Touch 3.9R9. The Wedge Check tool measure the real wedge angle, compensating for the wedge angle change because or manufacturing tolerances and wear during focal law calculations.



This new Wedge check calibration gives the possibility to validate that the wedge parameters have not physically changed with time.

Auto Detect Max Law

This new feature, when activated from the View Properties windows, automatically tracks the maximum signal within the view.

| View Properties | | | |
|---------------------|-----------------|----------------------|----------------|
| View Type | Sectorial | Volume Corrected | Yes |
| Current Channel | Default Channel | Scan | Distance .## |
| Current Gate | - | Index | Distance .## |
| Active Channel | Yes | USound | True Depth .## |
| Cursors | Hide | Amplitude | Percentage .# |
| Probe Cursor | - | Envelope | - |
| Gates | Show | Palette | Rainbow |
| Reverse Index Axis | Normal | Invert | Off No |
| Reverse USound Axis | Reverse | Symm | Full A-Scan No |
| Exchange Axis | Normal | Auto Detect Max Law | Off |
| TCG/DAC Curve(s) | - | Keep soft gate range | No |
| Keep 1:1 Ratio | No | Index resolution | - |
| Smoothing | Off | USound resolution | - |

Close

Spanish Language

UltraVision Touch is now fully available in Spanish. Language can be changed from the Language option in **Tools -> Options -> System** menu.

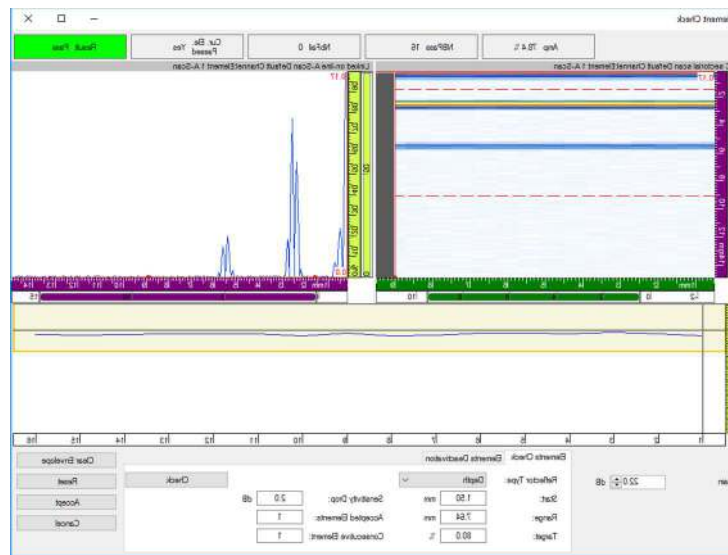
UltraVision Classic

Calibration Tools improvements

UltraVision Classic 3.9R9 now features the Calibration Tools only available in Touch version.

The Wedge Check, Velocity and Wedge Delay tools are now available using the same interface format previously available for UltraVision Touch.

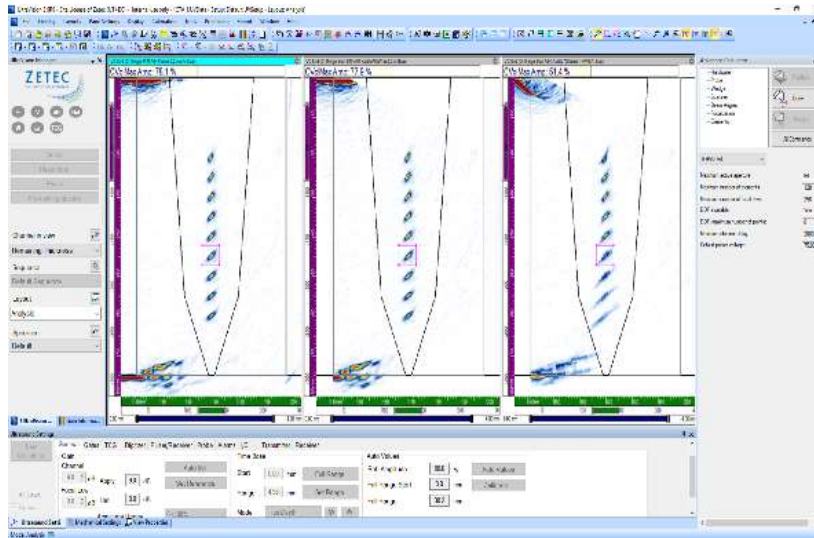
This improve tools measure the wedge actual angle and compared it to the nominal angle.



FMC/TFM support for TOPAZ64

UltraVision 3.9R9 adds FMC/TFM support for TOPAZ64. It is now possible to use UltraVision Classic in a remote-control configuration with TOPAZ64.

Please refer to UltraVision Touch Product Bulletin document for details about the new FMC/TFM features available in TOPAZ64.

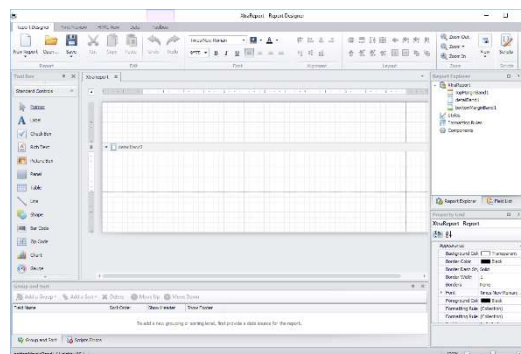
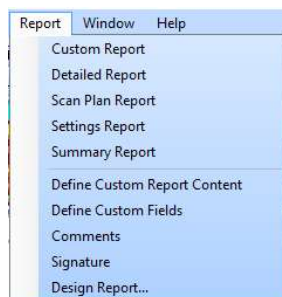


New Reports content

In UltraVision 3.9R9 we have completely redesigned the report generation tool. This new report generation engine improves report generation both in terms of performance and content.

The new tools, also allow users to create their own reports. The new Custom Reports tool available in UltraVision Classic 3.9R9 enables advanced users to design and create custom reports using a specifically designed report design environment.

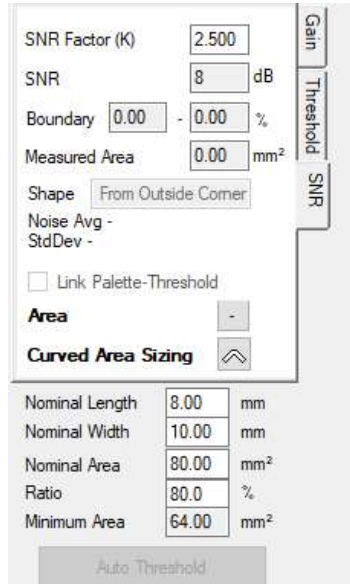
For more information about using this tool and for getting the technical documentation for report design, please contact us at Support-UTProducts@zetec.com



Enhanced BAC5980 support - Curved Area Size Correction

BAC5980 related tools have been enhanced to add Curved Area Size Correction capability.

It is now possible to compensate for Curved Areas both on Outside *Corner* or *Inside Corner* situations.



The image shows a software configuration window for BAC5980. The window has a vertical sidebar on the right with tabs for 'Gain', 'Threshold', and 'SNR'. The main area contains several input fields and a 'Curved Area Sizing' section.

| | |
|---|-----------------------|
| SNR Factor (K) | 2.500 |
| SNR | 8 dB |
| Boundary | 0.00 - 0.00 % |
| Measured Area | 0.00 mm ² |
| Shape | From Outside Corner |
| Noise Avg - StdDev | - |
| <input type="checkbox"/> Link Palette-Threshold | |
| Area | - |
| Curved Area Sizing | ⤴ |
| Nominal Length | 8.00 mm |
| Nominal Width | 10.00 mm |
| Nominal Area | 80.00 mm ² |
| Ratio | 80.0 % |
| Minimum Area | 64.00 mm ² |

Auto Threshold

Downloading and installing UltraVision Touch 3.9R9 for TOPAZ

To upgrade the TOPAZ product family software to the new 3.9R9 version, please download the appropriate UltraVision Touch version according to your instrument model from our website:

www.zetec.com

UltraVision Touch is available in two main versions (embedded or PC-based) and there are several install files available according to the software version and platform:

- *UltraVisionTouch 3.9R9*: Install file of UltraVision Touch for PC in 32-bit version.
- *UltraVisionTouch 3.9R9 (x64)*: Install file of UltraVision Touch for PC in 64-bit version.
- *Topaz 3.9R9*: Install file of UltraVision Touch for TOPAZ.
- *Topaz16 3.9R9*: Install file of UltraVision Touch for TOPAZ¹⁶.
- *Topaz32 3.9R9 (x64)*: Install file of UltraVision Touch for TOPAZ³².
- *Topaz64 3.9R9 (x64)*: Install file of UltraVision Touch for TOPAZ⁶⁴.

To install the downloaded version on your TOPAZ:

1. Save the file and unzip it on a USB drive.
2. Connect the USB drive to your TOPAZ.
3. Go to **TOOLS > SYSTEM** and click on **System Update**.
4. In the dialog, you should already see the TOPAZ 3.9R9 installer from your USB drive, but if not, click on the arrow at the top-right corner of the dialog until you see your USB, and select the TOPAZ 3.9R9 installer.
5. Click **Install**.

UltraVision PC recommended requirements

The following PC specifications are recommended for running UltraVision software:

- Windows 10 Pro (64 bits edition)
- Microsoft Office Professional 2016
- Quad-core i7 3.6 GHz processor
- Minimum of 16 GBytes RAM
- High-speed (1 Gb/s) Ethernet link
- High performance graphics card (Nvidia® Quadro® M2000M w/4GB GDDR5)
- High performance SSD (Solid State Drive) 256 GB or bigger

Quality

All work is performed in accordance with ZETEC Quality standards program, which complies with 10CFR50 Appendix B, ISO 9001:2008 and ISO/IEC 17025:2005.



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