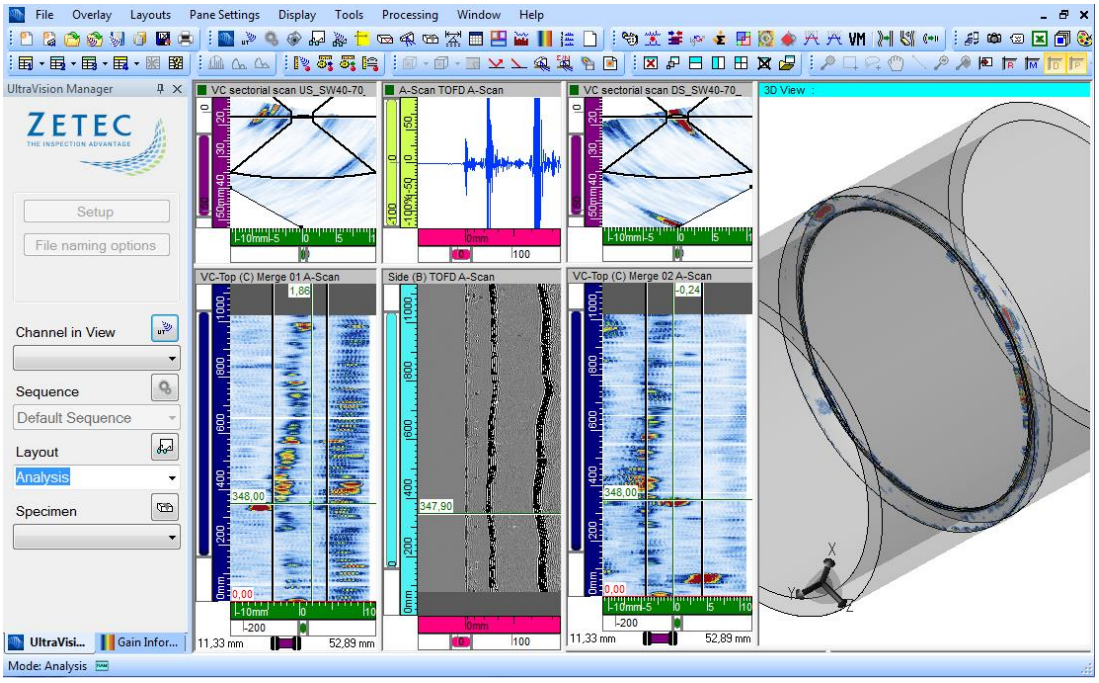
UltraVision 3

Technical Guidelines – Release 3.8R30



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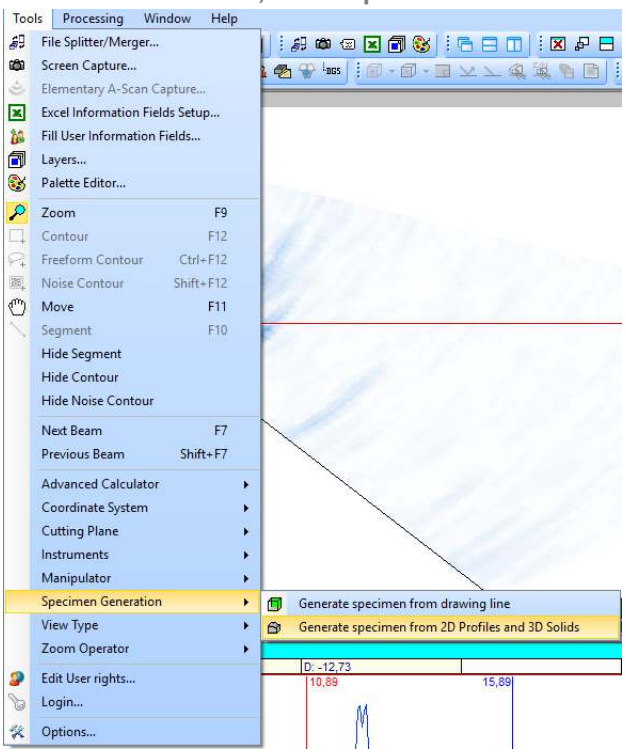
1 Specimen settings

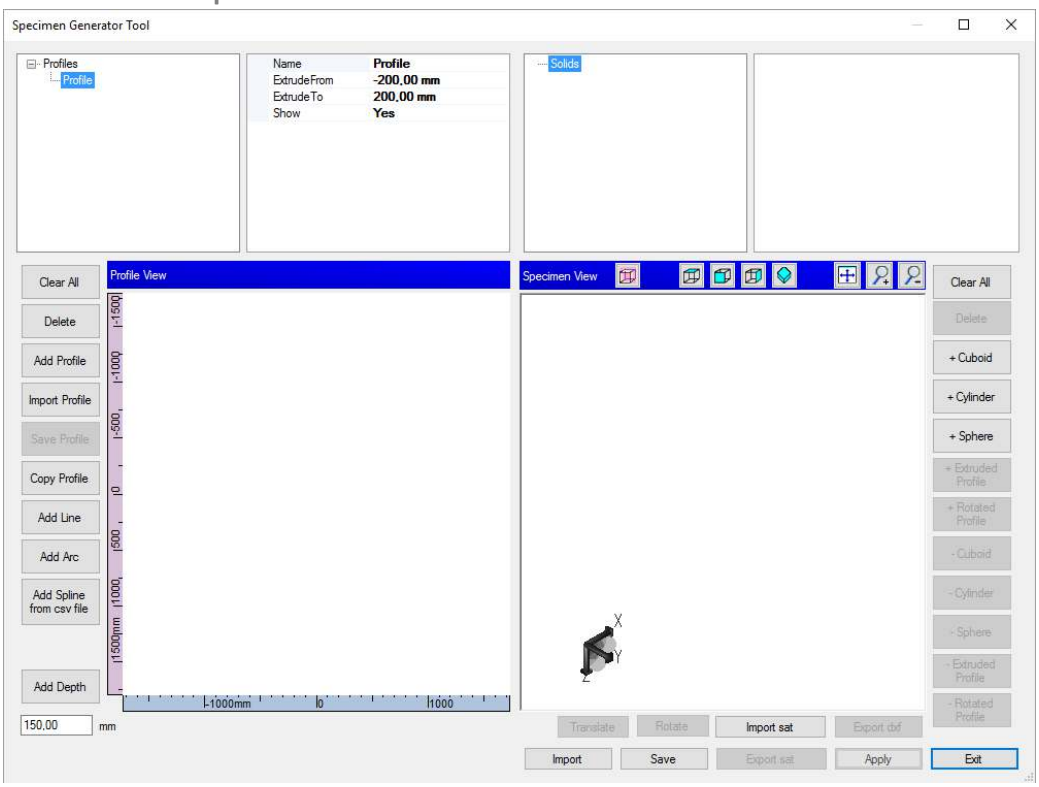
1.1 Creation of 2D profile DXF file

To accompany the UltraVision Touch Custom Overlay support, it is now easy to generate a 2D profile in DXF format to import either to UltraVision or to UltraVision Touch.

1. From the **Tools** menu, select **Specimen Generation**.



2. Select **Generate specimen from 2D Profiles and 3D Solids**.



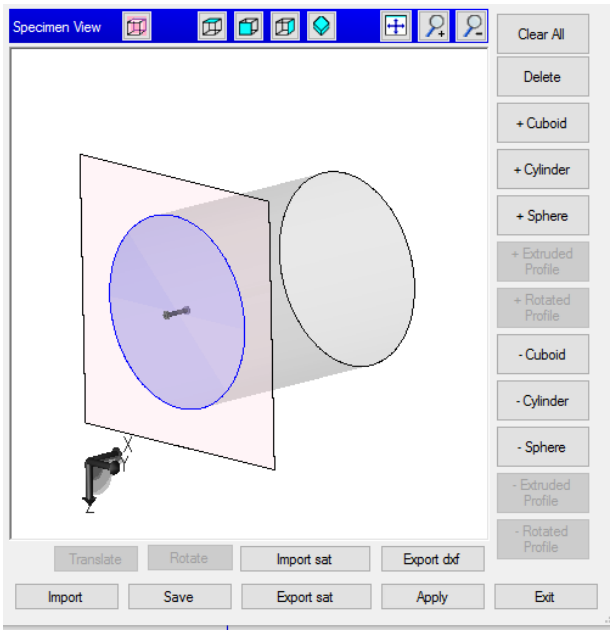
3. Create a custom specimen or import one using the button on the right side of the **Specimen View.**

4. Tap  at the top of **Specimen View.**
   A cutting plane appears following the Y-Z plane of the specimen.

5. Tap  again several times.
   The cutting plane rotates 90° to follow the X-Y plane; tapping again will rotate to follow the X-Z plane. Tapping this button a fourth time hides the cutting plane.

6. Select the arrow at the center of the cutting plane and drag it.
   The cutting plane is dragged over the specimen. The part of the specimen on one side of the cutting plane is hidden.

7. Select **Export DXF**.
   The DXF file is created and can be imported in the **Specimen Settings** or in the UltraVision Touch Custom Overlay.



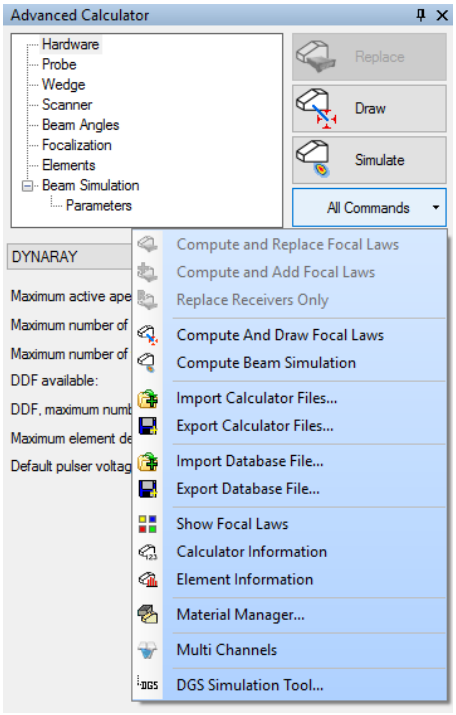
2 Setup Creation

2.1 Number of rebounds inside specimen

UltraVision now allows you to control the number of rebounds displayed in the **Calculator** view.

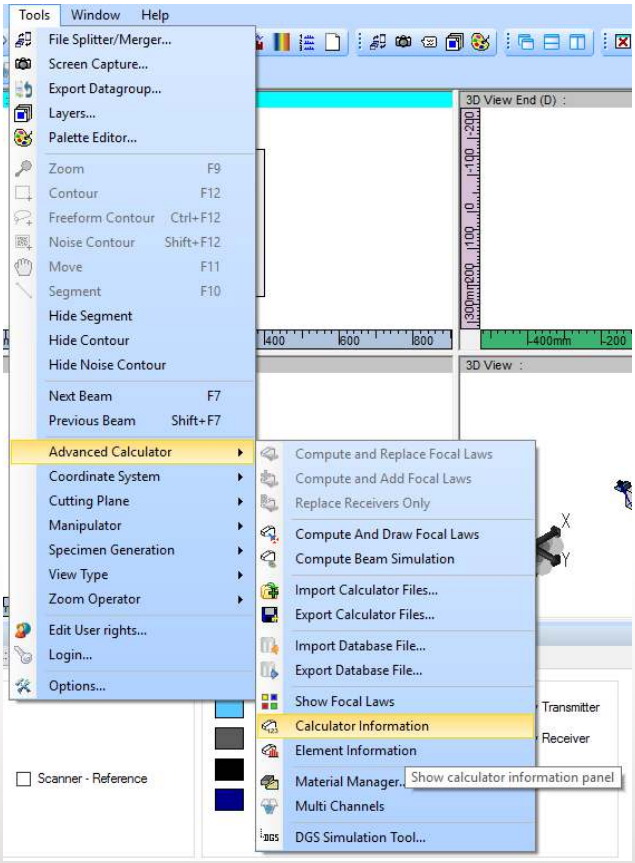
To use the tool:

1. From the **Advanced Calculator** menu, select **All Commands,** and then select **Calculator Information** in the list.



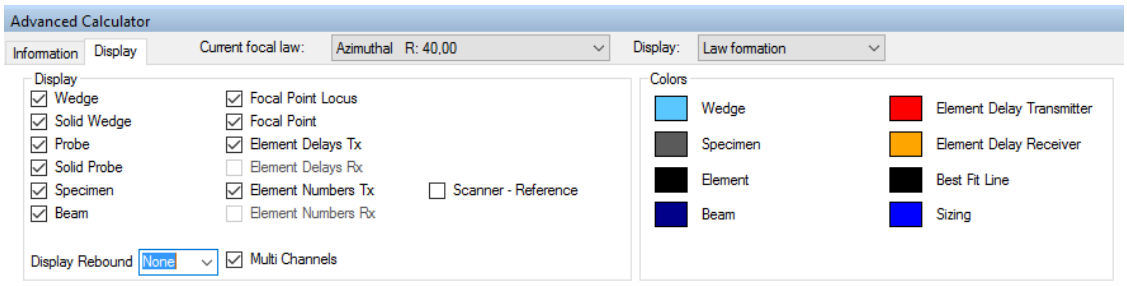
or,

From the **Tools** menu, select **Advance Calculator,** and then select **Calculator Information.**

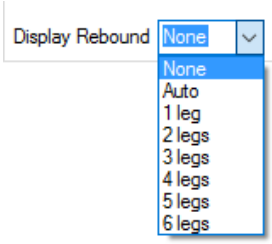


The **Calculator Information** menu opens.

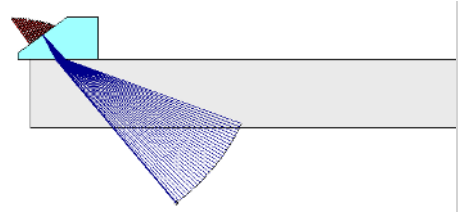
2. Select the **Display** tab.



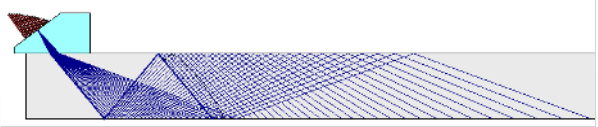
3. Select Display Rebound.



When **Display Rebound** is set to **None**, the beam will not rebound on the surface of the specimen if the focal point is further than the interface.



When **Display Rebound** is set to **Auto**, the beam will use the minimum number of rebounds to reach the focal point, all the while staying inside the specimen.

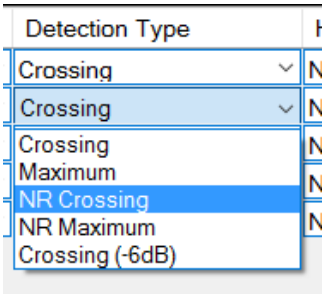


The **Display Rebound** option also allows you to select the number of rebounds displayed in the **Calculator** view up to six rebounds.

3 Inspection tools

3.1 Noise Recording Gates

Noise Recording Gates is a new addition to our corrosion inspection tools. These gates can be activated in **Setup** and **Inspection** mode, but can also be created offline.



NR Crossing adds noise recording capability to the Crossing mode gates. **NR Maximum** allows recording noise on when using **Maximum** crossing mode.

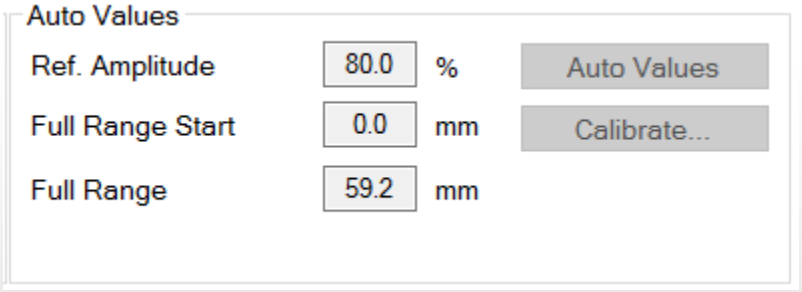
3.2 AWS information fields

3.2.1 Understanding AWS readings

The American Welding Society Structural Welding defines in Code section D1.1 a technique for classifying discontinuities in welds per a “D rating” that is calculated based on three different parameters A, B and C.

The procedures and standards set forth in Code D1.1 Part F typically apply for the UT inspection of groove welds and HAZs between the thicknesses of 8 mm and 200 mm (5/16 in and 8 in) inclusive.

A is the indication level in dB (calculated using the **Reference Amplitude** value from **General** tab of the **Ultrasonic Setting** window.



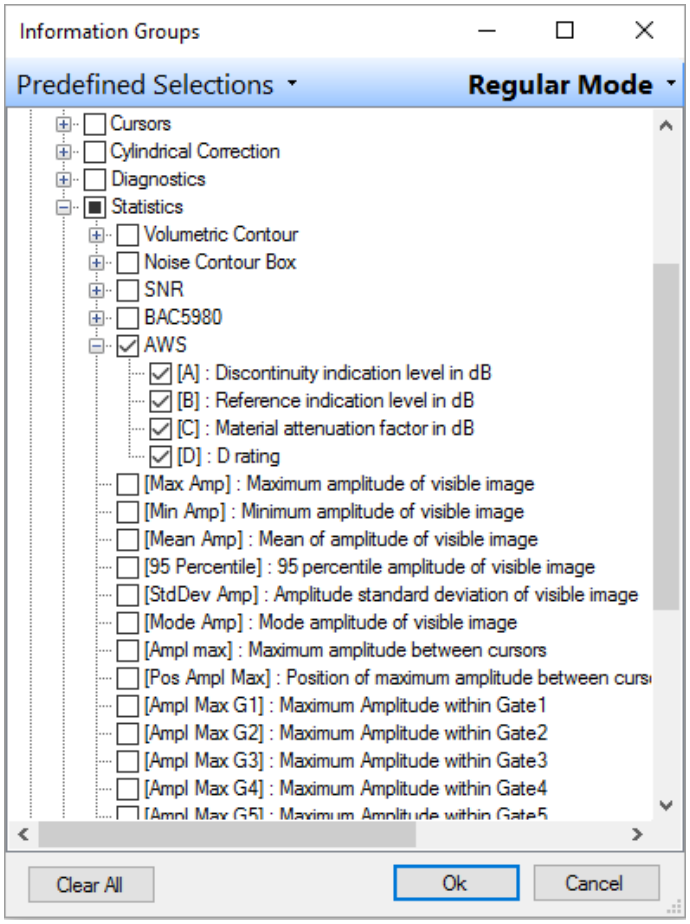
B = Reference indication level in dB (Reference Gain)

C = Material attenuation factor expressed in dB calculated as *(2x [sound-path length in inches – 1 in.])* if using the U.S. Customary Units **or** *(2x [sound-path length in mm – 25mm] x 0.08* if using the SI Units

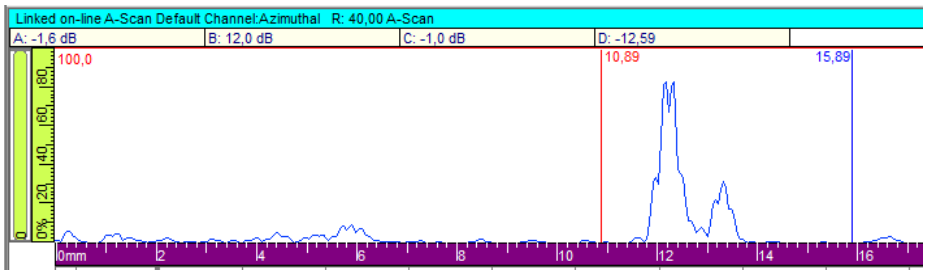
The indication rating D is calculated as **D = A – B – C**

The Statistics information field category now contains the AWS information fields allowing you to evaluate the defect according to the AWS code.

1. Select the **Information Fields** from the **Pane Settings** menu or the **View Information** toolbar.
2. Select **Statistics** category and check the **AWS** info fields.



1. Display the information field Group on an A-Scan view by clicking on the Group number in the **View Information** toolbar.
2. Position your reference and measurement cursors on each side of the indication signal. The **A** information field will determine the amplitude level of the highest peak between both cursors.



B field indicates the total gain applied on the current law (Hard Gain + Law Gain).

C field calculates the material attenuation using the AWS code formula.

D = A – B - C

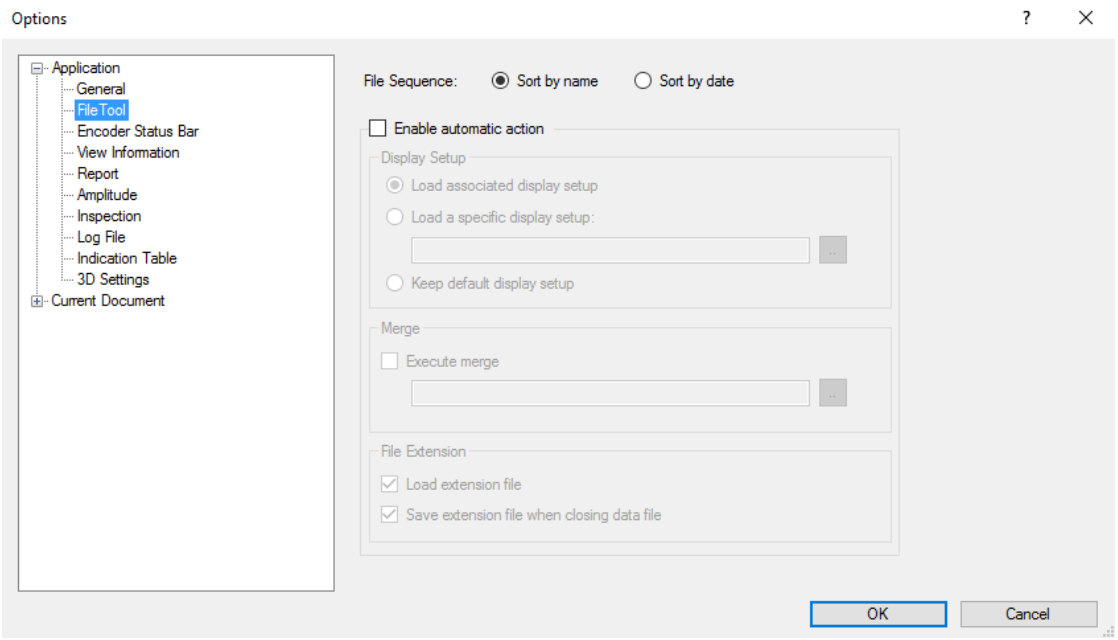
4 File Management

4.1 File Management Configuration

The **File Tool** configuration window (Tools -> Options -> Application) manages the automatic options available for **File Save**, **File Close** and **File Opening**, which include the **Previous** and **Next File**. Previously, the **Element Check** function required the user to import multiple parameters increasing the complexity. In order to simplify the process, a new **Element Check** tool similar to that found in UV Touch is now available for UltraVision 3.8R30.

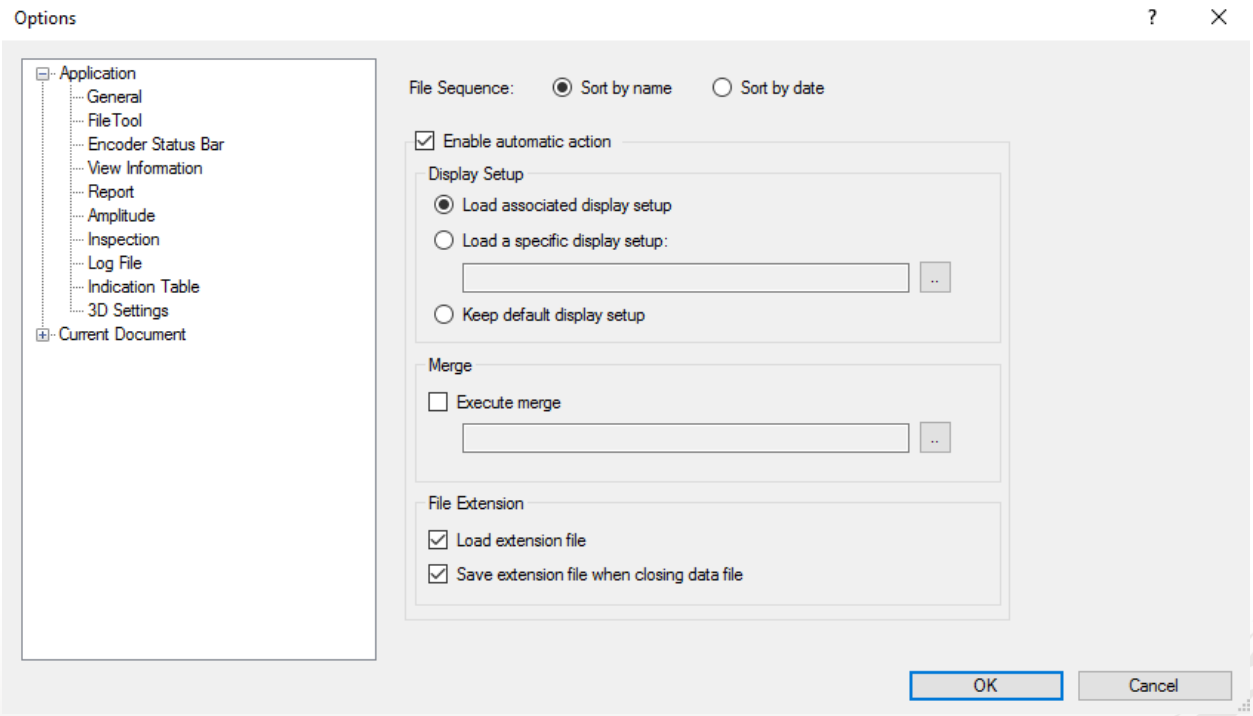
To activate the **File Tool** options:

1. From the **Tools** menu, select **Options.**
2. From the Application tree view, select **File Tool**.



The **File Sequence** allows you to sort the file by name, or by date, in the **Open File** dialog boxes.

3. Check the **Enable automatic action** box.
   You can now set the automatic action on **File Save**, **File Close** and **File Opening**.



The **Display Setup** option allows you to open automatically a selected display setup when opening a data file.

The **Merge** option allows you to select a BVM (Batch Volumetric Merge) or a VMX file to automatically generate one or several merged channels when opening a data file.

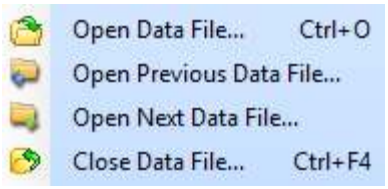
The **File Extension** option will automatically load, or not, the associated extension file. It also selects the possibility to automatically save your modifications in an associated extension file, or to never save it.

4.2 Previous/Next file

UltraVision now allows you to run through the files from a folder as it did the earlier UltraVision 1. The **Previous** and **Next** options are available from the **File** toolbar and the **File** menu.

1. Open a data file.

2. From the **File** toolbar, select  or from the **File** menu, select **Previous** or **Next** file. The current data file will be closed, and the previous (or the next) file will be open.



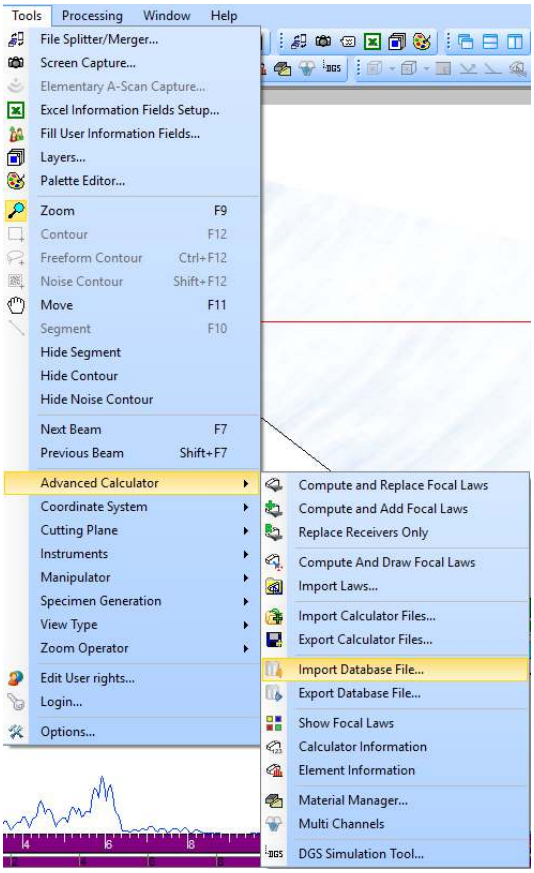
4.3 Import/Export Custom Database

The **Import/Export Database File** will let you import/export all custom items from **Material**, **Probe** and **Wedge** databases.

1. From the **Calculator** menu, select **All Commands** and select **Import Database File/Export Database File** in the list.

   or,

   From the **Tools** menu, select **Advanced Calculator** and select **Import Database File...**


Tools
Processing
Window
Help
File Splitter/Merger...
Screen Capture...
Elementary A-Scan Capture...
Excel Information Fields Setup...
Fill User Information Fields...
Layers...
Palette Editor...
Zoom F9
Contour F12
Freeform Contour Ctrl+F12
Noise Contour Shift+F12
Move F11
Segment F10
Hide Segment
Hide Contour
Hide Noise Contour
Next Beam F7
Previous Beam Shift+F7
Advanced Calculator
Coordinate System
Cutting Plane
Instruments
Manipulator
Specimen Generation
View Type
Zoom Operator
Edit User rights...
Login...
Options...
Compute and Replace Focal Laws
Compute and Add Focal Laws
Replace Receivers Only
Compute And Draw Focal Laws
Import Laws...
Import Calculator Files...
Export Calculator Files...
Import Database File...
Export Database File...
Show Focal Laws
Calculator Information
Element Information
Material Manager...
Multi Channels
DGS Simulation Tool...

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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