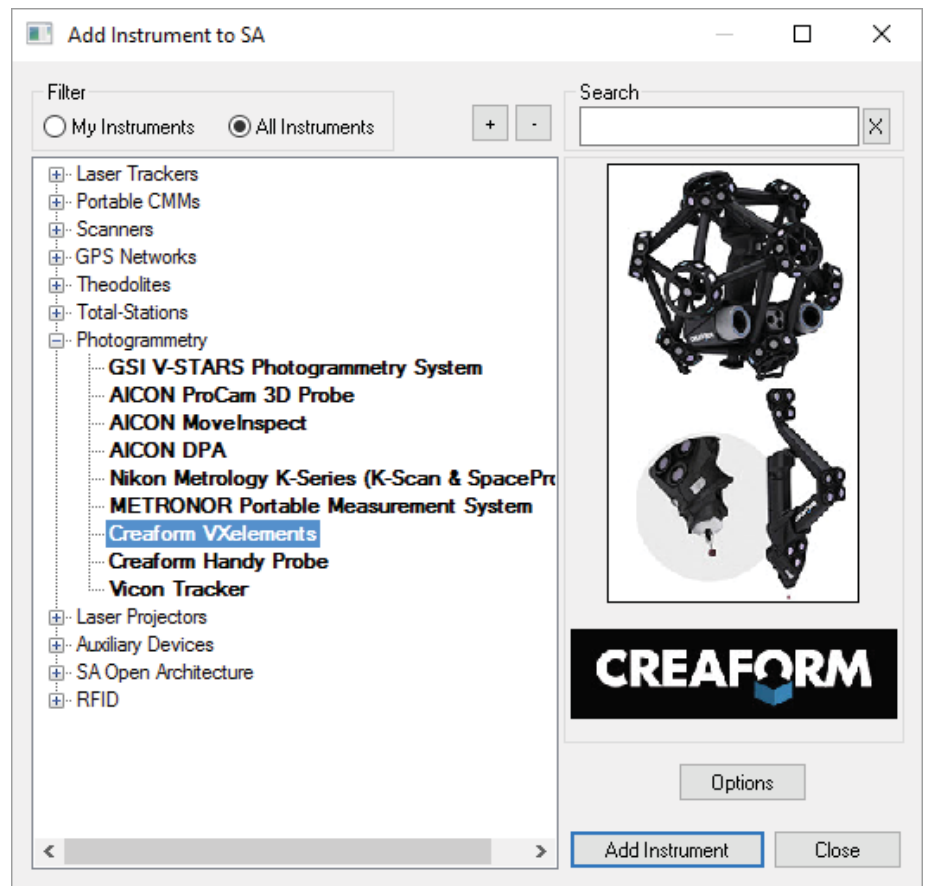## Creaform VXelements

This quick-start guide can be used as an introduction to basic operation of the Creaform system within SA. SA communicates directly with VXelements which is used in the background for data capture, so for initial setup and calibration of the Creaform system contact Creaform directly.

Starting the Interface

1. Select **Instrument > Add** and choose the Creaform VXelements Photogrammetry System from the Instrument List (Figure 17-9).

Figure 17-9. Adding a the Creaform VXelements System to SA

2. Start the instrument interface using **Instrument > Run Interface Module and Connect** or 🏃 . You can also pick the Creaform VXelements interface from the list of interfaces.

Starting the interface within SA will automatically start VXelements for you so it should not be running prior to connecting in SA (Figure 17-10).
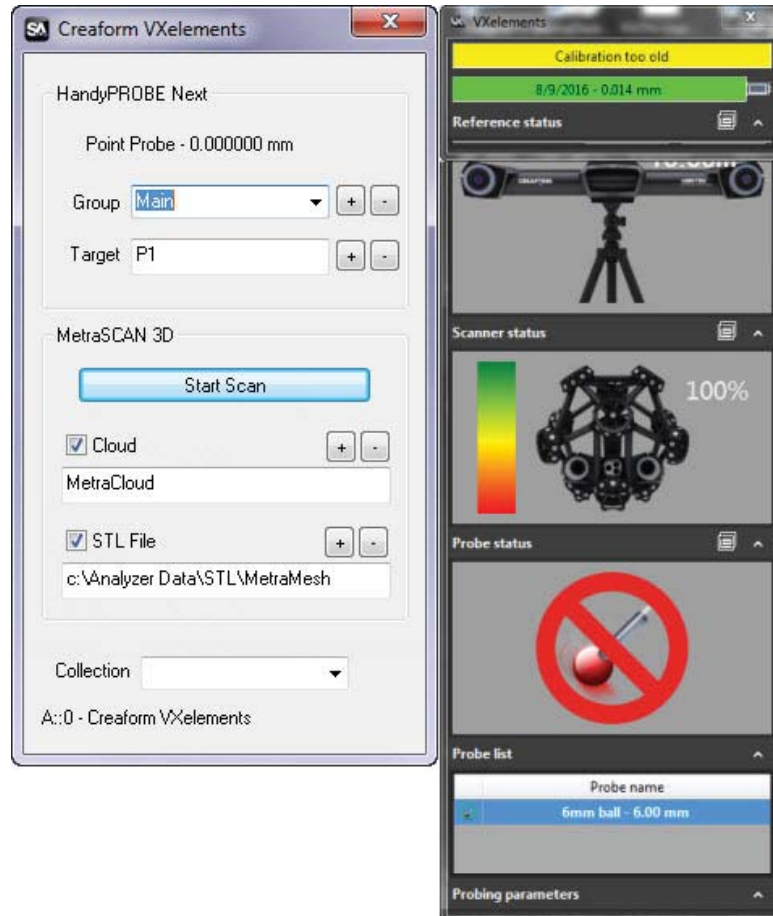

Figure 17-10. Starting VXelements

VXelements Interface

The Creaform VXelements interface is composed of two separate dialog controls. The first is SA's Creaform VXelements Interface which is used to transfer data to SA and controls naming for points and clouds

measured by the system. The second dialog is the VXelements control panel which should be familiar to Creaform users. This panel is used to display the system status and allows you to edit specific functions for the measurement process (Figure 17-11).
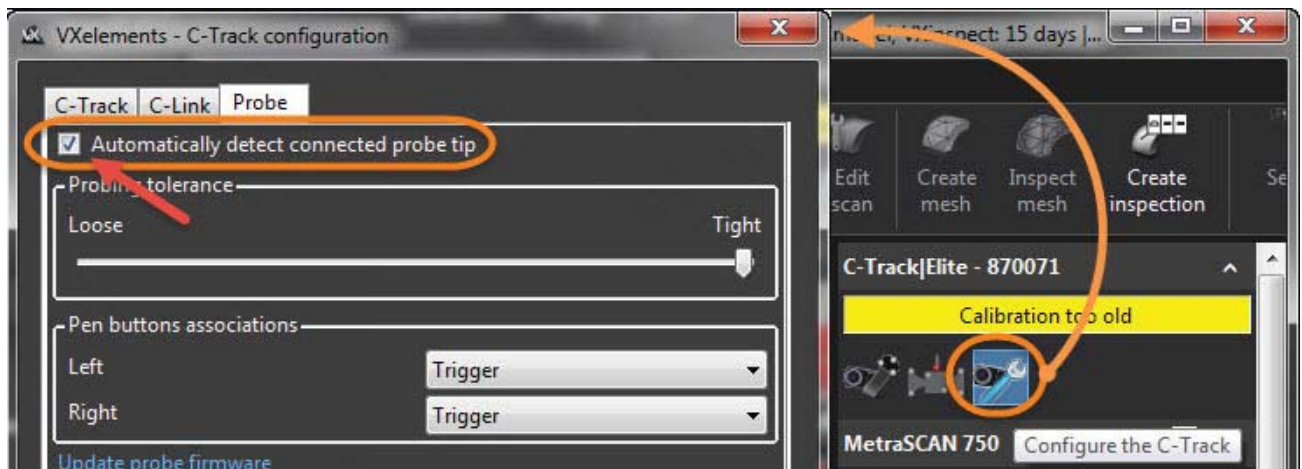

Figure 17-11. Creaform VXelements SA Interface.
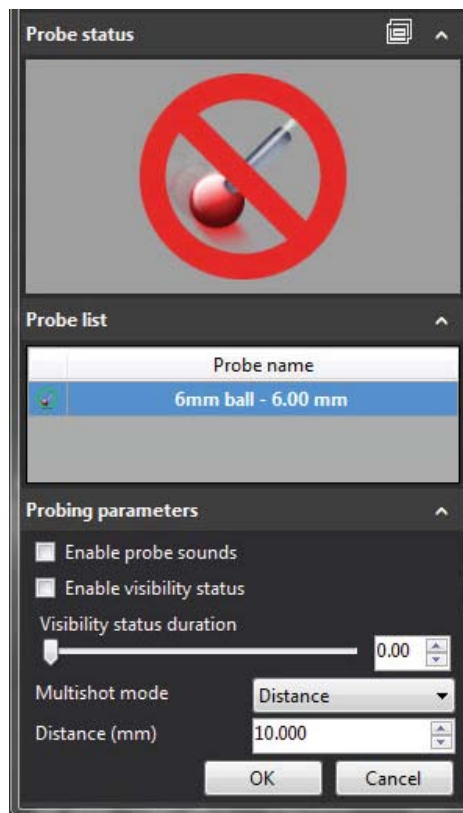
Probing with the Handyprobe Next

Probing mode is started automatically and points can be triggered immediately from the system using the button controls on the Handyprobe Next. Before measuring check the following:

1. Check the Probe List to be sure the correct probe is defined. The probe name and diameter is shown in both dialogs. Verify that the Automatic Probe Detection Check Box is checked within VXelements. This setting can be found here (Figure 17-12):

Figure 17-12. Automatic Probe Detection

2. Check the probing parameters within the VXelements control to be sure the measurement mode is set correctly. Single point measurements as well as spatial or temporal scans can be performed with the probe and the settings for those measurements are defined here (Figure 17-13).

Figure 17-13. HandyProbe Next Probing Controls

3. Check the collection, group and target names set within the SA interface
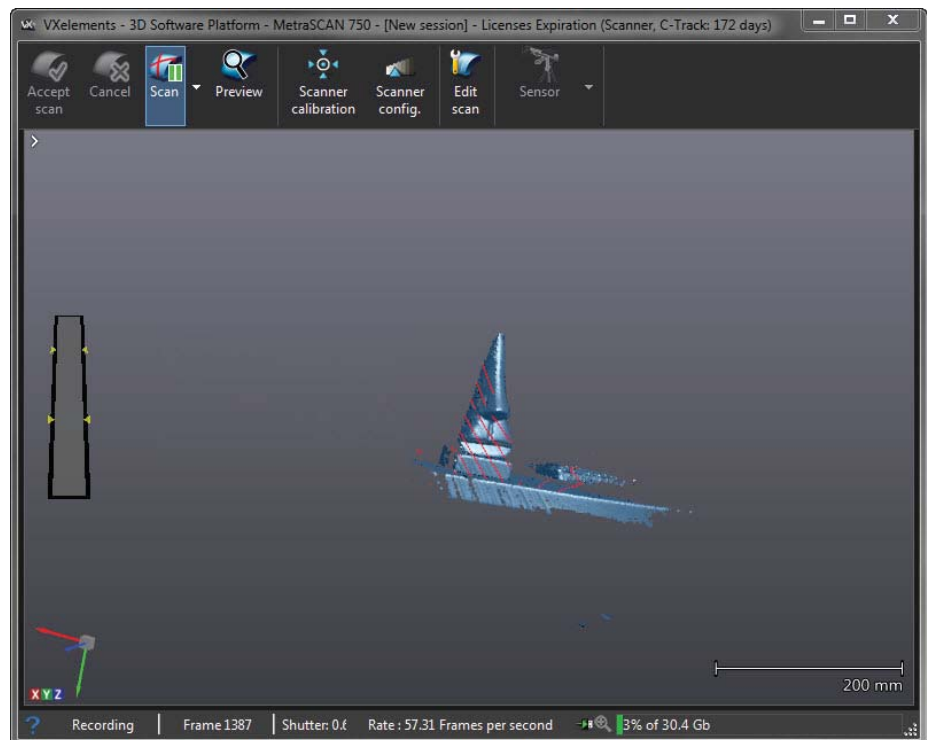
4. Start measuring.

The Handyprobe provides a set of convenient buttons that can be used for measurement control and toolkit navigation. Buttons work as follows:

- **Measure button.** This button is used to trigger a measurement. Long press will start a scan.

- **Check (Validate) button.** Short press = Navigate to Next Task in SA Toolkit (If you are in the Last Task, this will Stop Trapping.   Another hit will go back to the First Task.) Long press = Navigate to Previous Task in SA Toolkit.

- **'X' (Cancel) button.** Short press = Remove last measured point in SA. Long press = Stop Task (trapping measurements) in SA Toolkit
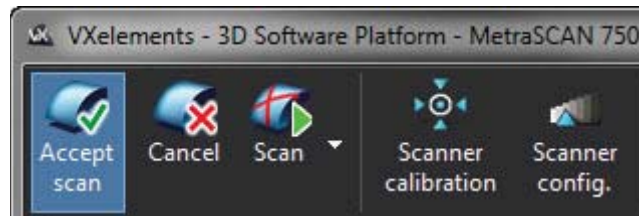
Scanning with the Metra Scan 3D

The live scanning process is performed within a separate VXelements window that is started by pressing the Start Scan button within the SA interface. The scanning operational sequence would go as follows:

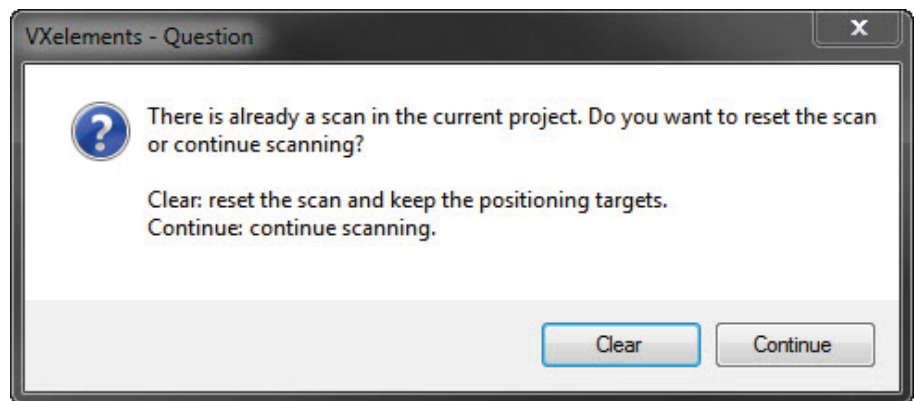1. Set the desired cloud name within the SA interface and press the Start Scan button (Figure 17-11).

Figure 17-14. VXelements scanning window

2. Scan the part

3. Press the Scan Pause Button (Figure 17-14) and then, if you are finished press the Accept scan button send the scan to SA (Figure 17-15).

Figure 17-15. Accepting the Scan

Scans are saved in VXelements while a session is in progress, which allows a scan to be accepted and then restarted. When you restart a scan you will be prompted to continue or start fresh (Figure 17-16). If you continue the new data is added to the prior scan and the full data set is then again sent to SA when you accept the scan.

Figure 17-16. Resuming a Scan

Accepting the scan does not send SA the raw cloud but instead triggers VXelements to process the scan data, creating a mesh. This mesh can then be transferred to SA in either of two ways.

- **Cloud.** When the cloud check box is checked in the interface and the scan is accepted, a cloud is sent directly to SA which defines the vertex points of that mesh.

- **STL File.** The interfaces also provides an option to save the mesh as an STL file. This STL file can then be imported into SA as a graphical mesh for greater visual clarity and rough query purposes. To import the STL, first build a frame on the instruments base and make it the working frame. Then use File>Import>STL file.