VisualSoft Suite User Manual

Visual3D-Inspector 11.0

Published: 21 February 2023

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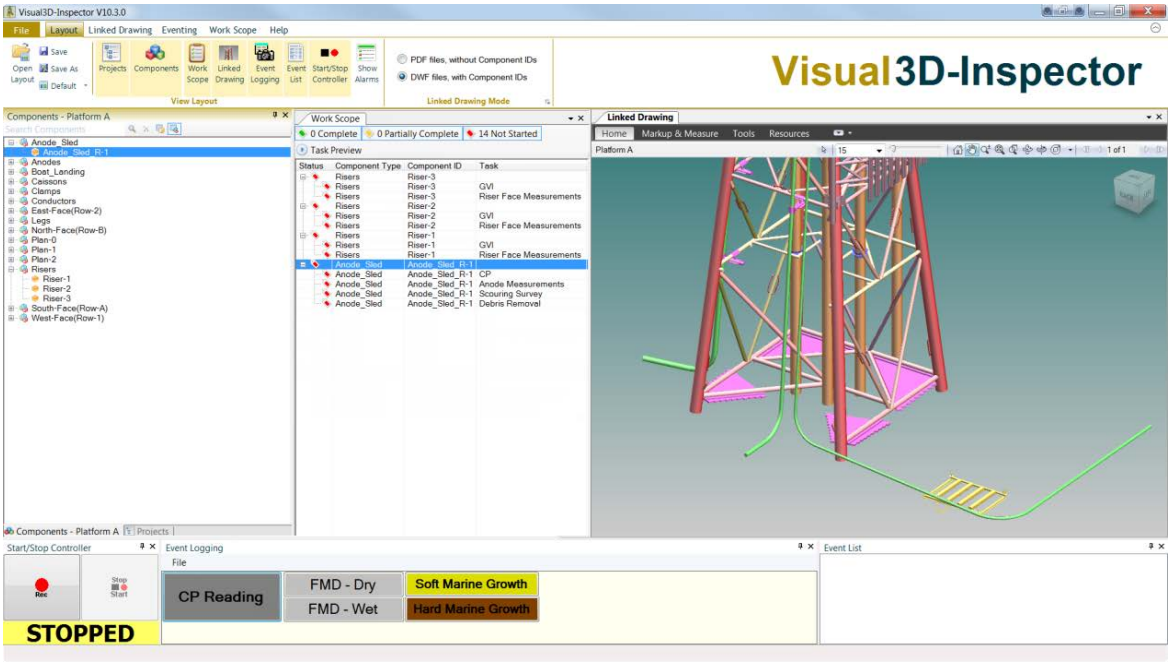
1.1 Visual3D-Inspector Introduction

Visual3D-Inspector is a single screen with tools needed for structure inspection, allowing you to control video recording and inspection data recording from one place.



Video and other data can be linked to drawings. This could be drawings of structures such as jackets and wellheads shown in that video and data, or it might be documents relating to the specification or reporting of the project.

Three different types of "**Linked Drawing**" can be used:

- **Adobe PDF Files**, with one or more pages. Logged data is linked to the PDF using a page number, or even a specific zoomed-in area of a page. Select the page you want and zoom to the full page or a smaller part of it, then save that as a "**Linked view**".

- **Autodesk 3D DWF CAD files** using **Linked views**. These are usually drawings of whole jackets, platforms or other structures, or they may be field layout drawings showing multiple pipelines. Logged data can be linked to the 3D drawing in the same way as for 2D PDF drawings. You can zoom and rotate the 3D drawing to the relevant place (a view of an Anode, or other component) and then save that as a "**Linked view**".

- **Autodesk 3D DWF CAD files**, using **embedded Component ID** data. These are usually drawings of whole jackets, platforms or other structures, or they may be field layout drawings showing multiple pipelines. Logged data is linked to the 3D drawing using individual Component IDs to identify a specific anode, bracing, weld, flange etc. These Component ID tags are added to the different parts of the drawing before it is exported from AutoCAD to the DWF file format. The Component IDs in the drawing can be mapped to the Project and its Sub-Projects. This can be done automatically if

the names of sub-projects match the names of Component IDs, or you can may them manually selecting which IDs link to which Sub-Projects.

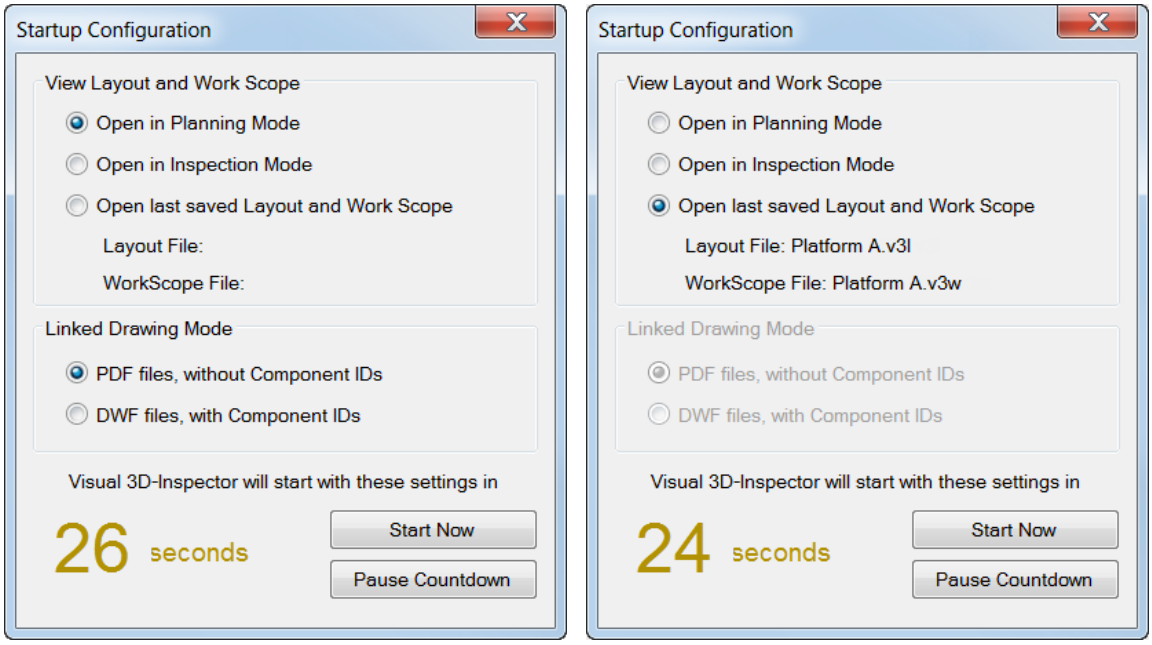
Work Scopes let you to build lists of Components that you need to inspect and then add the different **Inspection Tasks** needed for each component. These Work Scope items link to a list of Projects which synchronise with the video recorder and with the editing and playback systems. An **Event Logging** tablet provides buttons for recording and describing whatever you see and measure during the inspection.

Video recording can be remotely controlled using **Visual3D-Inspector**, with simple start and stop buttons plus a third combined stop/start button allowing a one-click file change.

Visual3D-Inspector integrates with other VisualSoft Suite applications so that the system may be scaled from one user with one PC all the way up to a suite of programs and computers with multiple operators, and multiple ROVs or divers.

1.2 Startup Configuration

When you run Visual3D-Inspector you will see a Startup Configuration window like the examples shown below.

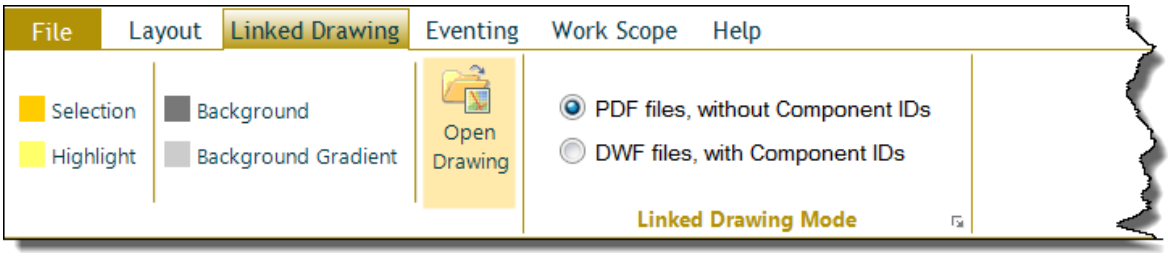


You can select the window layout and Work Scope type as either **Planning Mode** or **Inspection Mode**. In Planning Mode you will have windows needed for opening drawings, creating a Project hierarchy and planning a Work Scope. In Inspection Mode you will also have windows for remote control of video recording and for logging an inspection event data and observations.

You can select the Linked Drawing mode to use either simple **PDF files** or Autodesk 3D **DWF files** (which need to contain Component ID tags).

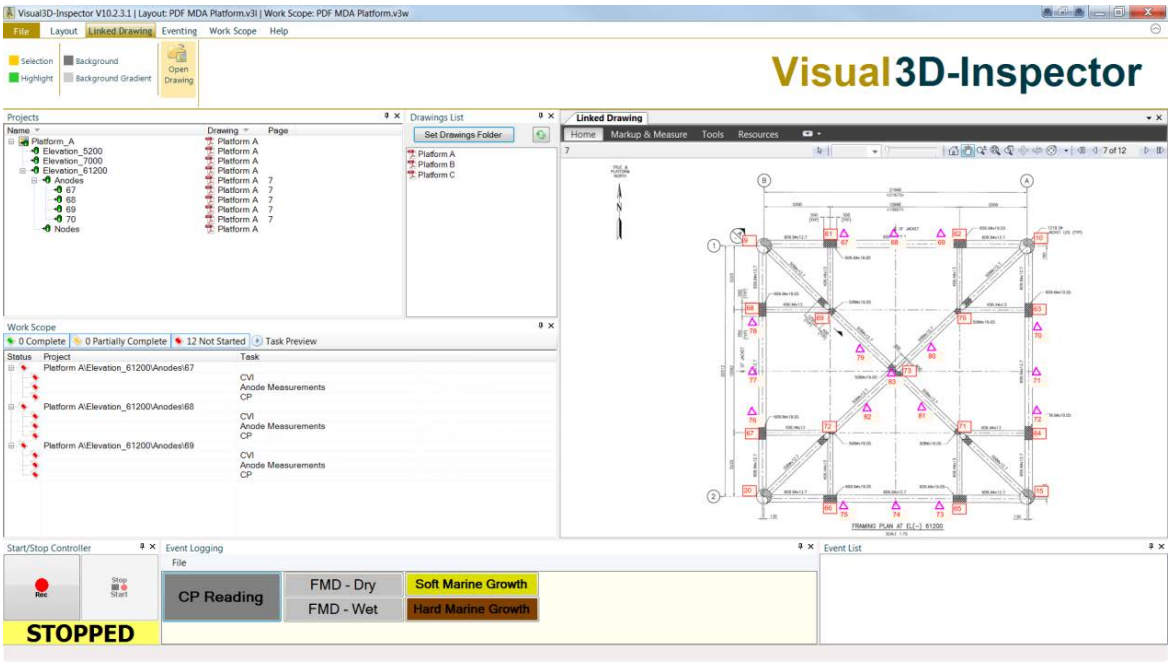
If you have previously saved a Layout and a Work Scope, the window will offer these as the default option. If you chose that option, the Linked Drawing mode will not be available because it is already saved in the Layout and Wok Scope files.

After the application has started you can change the Linked Drawing mode using options on the Linked Drawing ribbon. Note that changing the mode will remove all current Projects, Work Scopes and Drawings so make sure that you have saved all your work before you change the mode.



1.3 Getting Started in PDF Mode

After you have selected which type of Linked Drawing you want to use, you are ready to start creating Projects and Work Scopes to plan and carry out the necessary Inspection Tasks. How you do this varies depending on which type of drawing you chose, so be sure that you are reading the correct instructions for either "PDF Mode" or "DWF Mode".



The following topics will guide you through the process of Getting Started in PDF Mode:

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PDF Mode: Open a Drawing 9

PDF Mode: Create a Project 10 and PDF Mode: Create Sub-Projects 10

PDF Mode: Link to Drawing Views 11

PDF Mode: Basic Work Scope 11 and PDF Mode: Inspection Tasks 11

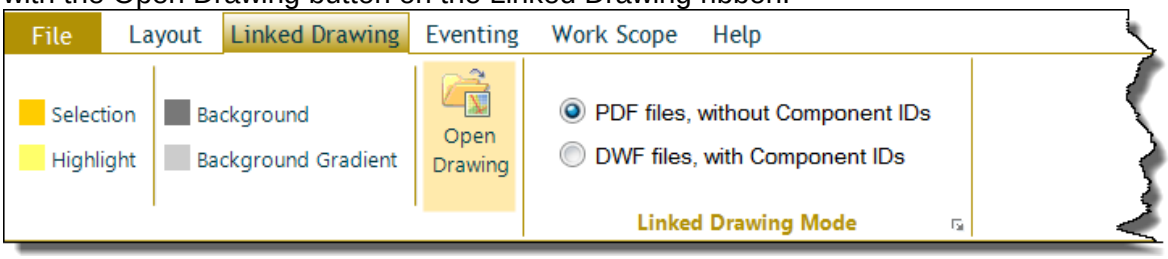
1.3.1 Working with PDF Drawings

PDF drawings for use in Visual3D-Inspector might be scanned images of old drawings, replacing the traditional printed drawings that inspection engineers have been using for many years. Alternatively they may be newly created files exported from CAD programs, drawing packages etc.

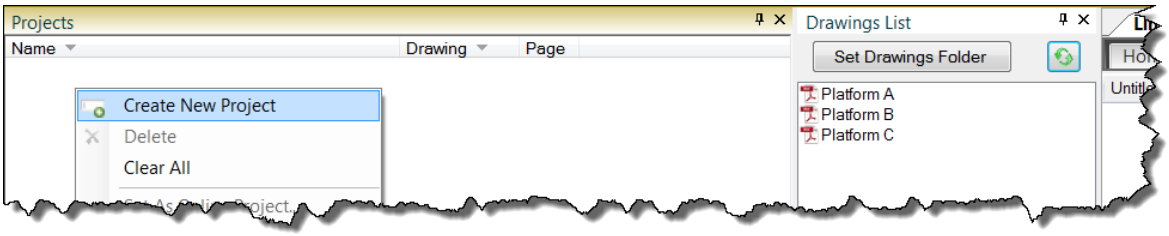
In **PDF mode** the pages or zoomed-in areas of pages of the PDF are linked to Projects or Sub-Projects in the Projects list window. In PDF mode you will see a **Drawings window** where you can select a folder containing PDF drawing files which will be listed in this window. These files can be dragged and dropped onto Projects or Sub-Projects to link individual drawing files to different parts of the Project hierarchy.

1.3.2 PDF Mode: Open a Drawing

If you are working with PDFs the first thing to consider is whether you need one PDF or more files to represent the structure(s) that you plan to inspect. If you have only one PDF, perhaps with different pages for different parts of a structure, then you should start with the Open Drawing button on the Linked Drawing ribbon.



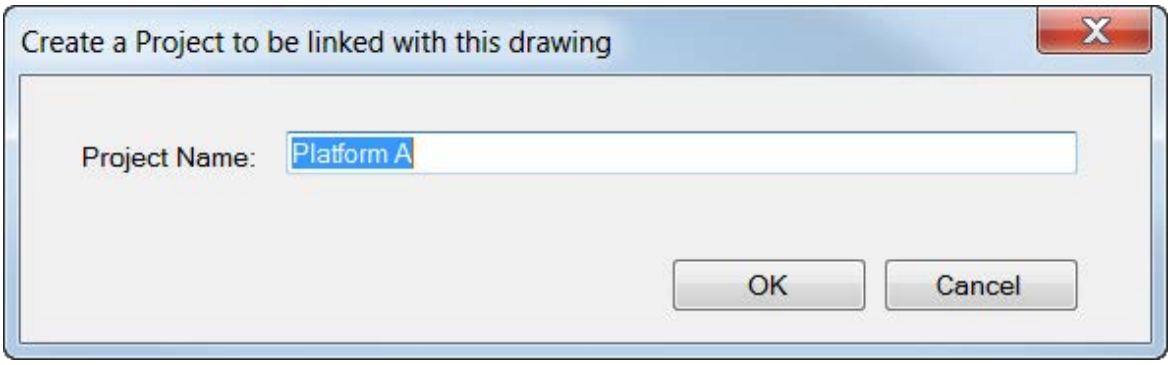
If you need multiple PDF files for a Project (perhaps using different files for each elevation of a jacket), you should put them all in one folder, and then select that folder using the tool at the top of the Drawing List window. You will then see a list of all of the PDF files. In this case, you should create a new Project using the right-click menu in the Projects window.



To open a PDF file that is in the Drawings Folder, right-click on it and select Open Drawing.

1.3.3 PDF Mode: Use or Create a Project

When you open a drawing file you will be asked to create a Project to link with it. The default name is the same as the drawing file name, but you can change this if you want.

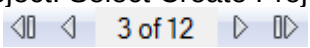


If you already have a Project in the Projects window, and want to use it instead of creating a new one, click Cancel. If you want to use an existing Project you need to link it to the newly opened drawing. Right-click on the Project and select Assign current drawing.

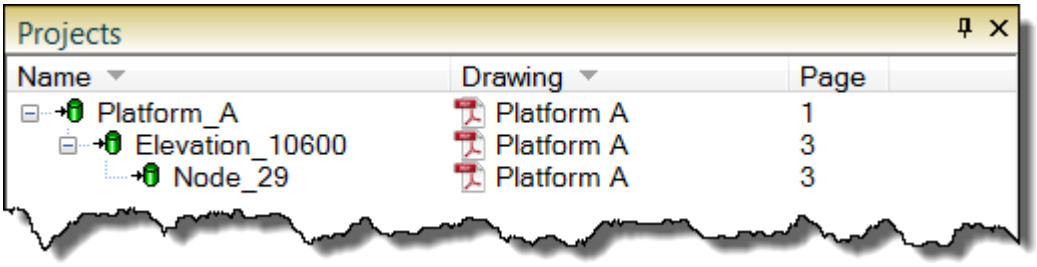
One option for using existing Projects might be that you have already created a Project and Sub-Project hierarchy using VisualArchive. In this case you may want to get the list of Projects from VisualArchive by right-clicking in the Projects window. This will get a list of all Projects which have online (green) status in VisualArchive.

Typically a Project will represent one Platform or Jacket, one Template or Wellhead, or any other single structure. These structures consist of multiple component parts such as bracings, elevations, faces, anodes, welds etc. These smaller components will be represented by Sub-Projects of the main Project.

1.3.4 PDF Mode: Create Sub-Projects

In PDF mode, Sub-Projects are created by right-clicking on a Project, or on an existing Sub-Project. Select Create Project from the pop-up menu. Using the page selector buttons 

at the top of the Linked Drawing window, step through the PDF file and decide what Sub-Projects you need to create in order to capture all of the components that you need to inspect. For each component, create a Sub-Project. You may want to group things according to different elevation levels, different faces, or different component types.



1.3.5 PDF Mode: Link to Drawing Views

As you add each Sub-Project you can link it to a specific zoomed in area of a page in the PDF file. Pan and zoom in the drawing window to get the view that you want, then right-click on the Sub-Project and select "**Link current view**". The next time that you click on that Sub-Project the same linked view will be displayed.

1.3.6 PDF Mode: Basic Work Scope

When you have created the required hierarchy of Sub-Projects, you can then start to create Work Scopes to plan your inspection operations.

A Work Scope is made up of three types of information:

1. A list of things that need to be inspected (for example anodes or legs).

2. The types of inspection tasks needed for each of those things (for example CP for anodes, or wall thickness measurements for legs).

3. The order in which all of these inspection tasks will be done.

A typical inspection campaign may use many different Work Scopes - for different ROVs or divers, different days, different equipment, and so on. **Visual3D-Inspector** lets you build and save many different Work Scopes to suit the way that you want to work.

When working with PDF files create a basic Work Scope (of components to be inspected) using either of the following methods:

- Drag and drop from the **Projects** list to the Work Scope list

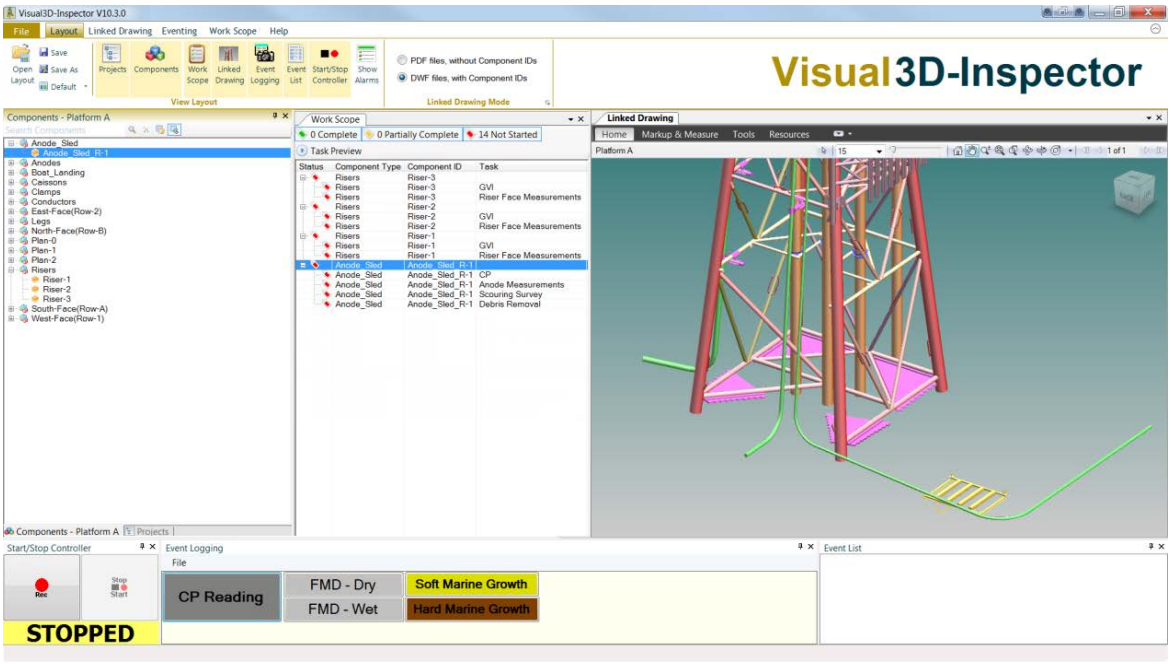
- Right-click in the **Projects** list and add to the Work Scope using the pop-up menu.

1.3.7 PDF Mode: Inspection Tasks

After you have created a basic Work Scope of Projects, Sub-Projects or Components – in other words the "things to be inspected" – you are ready to start adding specific **Inspection Tasks** to each of those Components. This works the same way for both PDF mode and DWF mode and is described in Getting Started: Inspection Tasks 18.

1.4 Getting Started in DWF Mode

After you have selected which type of Linked Drawing you want to use, you are ready to start creating Projects and Work Scopes to plan and carry out the necessary Inspection Tasks. How you do this varies depending on which type of drawing you chose, so be sure that you are reading the correct instructions for either "PDF Mode" or "DWF Mode".



The following topics will guide you through the process of Getting Started in DWF Mode:

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DWF Mode: Create a Project 14 and DWF Mode: Create Sub-Projects 15

DWF Mode: Basic Work Scope 15 and DWF Mode: Inspection Tasks 16

1.4.1 Working with 3D DWF Drawings and Component IDs

The 3D drawings used by **Visual3D-Inspector** in DWF mode can be created in AutoCAD and exported as **3D DWF** files. Each component of a structure should be assigned an **Component ID** in AutoCAD using Extended Entity Data (XDATA) properties. If a component is attached to another (for example an anode on a horizontal member) then it can also be assigned a **Parent ID**. In this way the drawing itself provides all of the information needed in **Visual3D-Inspector** to create a hierarchic view of the structure components.

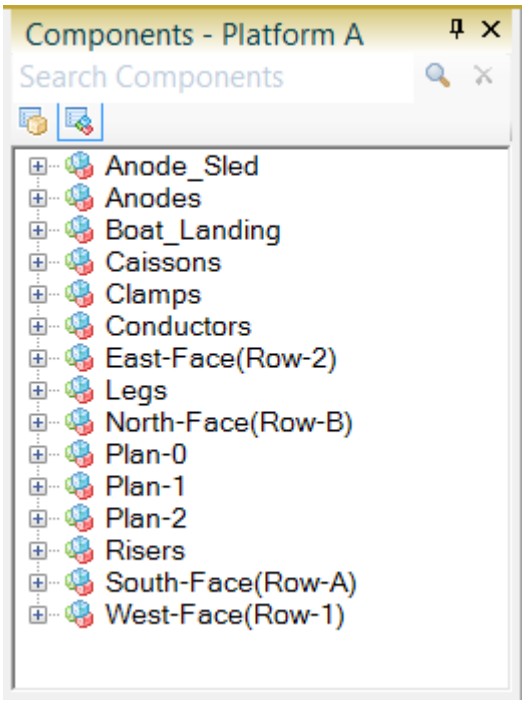
It is recommended that the drawing should also be colour coded to differentiate the various types of component so that when the drawing is used during or after an inspection survey it is quick and easy to locate key features such as anodes, riser clamps, valves or flanges.

VisualSoft can provide an add-on tool 40 for AutoCAD (developed by Wish Software) which simplifies the creation of the **DWF** file, and makes sure that it is formatted for use in **Visual3D-Inspector**. Even if the drawing itself is only two dimensional, it must be exported in the 3D DWF file format.

In **DWF mode**, you will see a **Components window** instead of the Drawings window. The Components window lists all of the Component ID tags contained in the currently open DWF file. This Components list is built automatically when the **DWF** file is opened in Visual3D-Inspector. In this mode the selection of what to inspect and when to start video recording can be controlled by right-clicking on a component in the 3D drawing. The pop-up menu allows you to start recording immediately, or you can build a **Work Scope** 33 to be followed later. This Work Scope sequence can be previewed in the drawing, highlighting each selected component or view in turn to check that the sequence is logical and efficient. If you want to change the sequence you can drag and drop to reorder the Work Scope list.

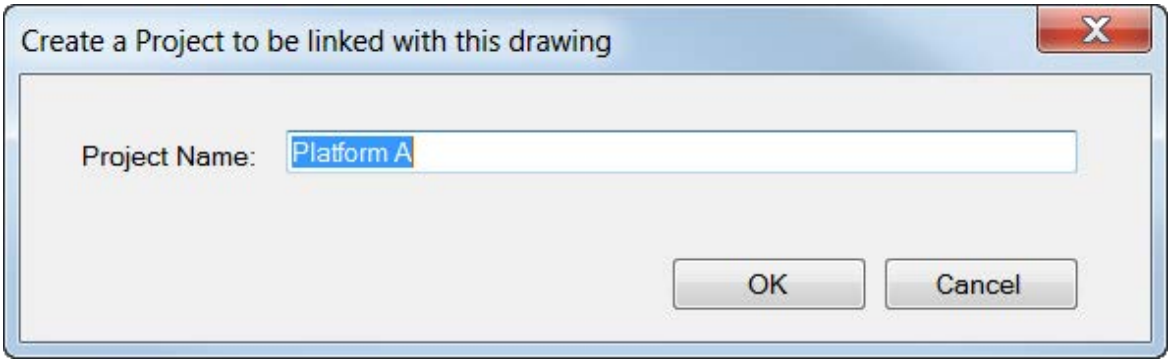
1.4.2 DWF Mode: Open a Drawing

When you open a **3D DWF** file the Component ID tags inside it will be read, and they will be shown as a list in the **Components** window. These components can be used later to create Sub-Projects and Work Scope items.



1.4.3 DWF Mode: Create a Project

When you open a drawing file you will be asked to create a Project to link with it. The default name is the same as the drawing file name, but you can change this if you want.



If you already have a Project in the Projects window, and want to use that instead of creating a new one, click on Cancel. If you want to use an existing Project you need to link it to the newly opened drawing. Right-click on the Project and select Assign current drawing.

Typically a Project will represent one Platform or Jacket, one Template or Wellhead, or any other single structure. These structures consist of multiple component parts such as

bracings, elevations, faces, anodes, welds etc. These smaller components will be represented by Sub-Projects of the main Project.

1.4.4 DWF Mode: Create Sub-Projects

In DWF mode, Sub-Project are created automatically as you add Components to a basic Work Scope, so it is often not necessary to add the Sub-Projects yourself. If you do want to add Components as Sub-Projects without also adding them to a Work Scope, you can do that using either of the following methods:

- Drag items from the **Components list** and drop them onto existing Projects or Sub-Projects in the Projects list. You can drag individual items, or whole groups.
- Right-click on **Components in the drawing** and add to the Projects list using the pop-up menu.

1.4.5 DWF Mode: Basic Work Scope

When you have created the required hierarchy of Sub-Projects, you can then start to create Work Scopes to plan your inspection operations.

A Work Scope is made up of three types of information:

1. A list of things that need to be inspected (for example anodes or legs).
2. The types of inspection tasks needed for each of those things (for example CP for anodes, or wall thickness measurements for legs).
3. The order in which all of these inspection tasks will be done.

A typical inspection campaign may use many different Work Scopes - for different ROVs or divers, different days, different equipment, and so on. **Visual3D-Inspector** lets you build and save many different Work Scopes to suit the way that you want to work.

When working with DWF files you can create a basic Work Scope (of things to be inspected) using either of the following methods:

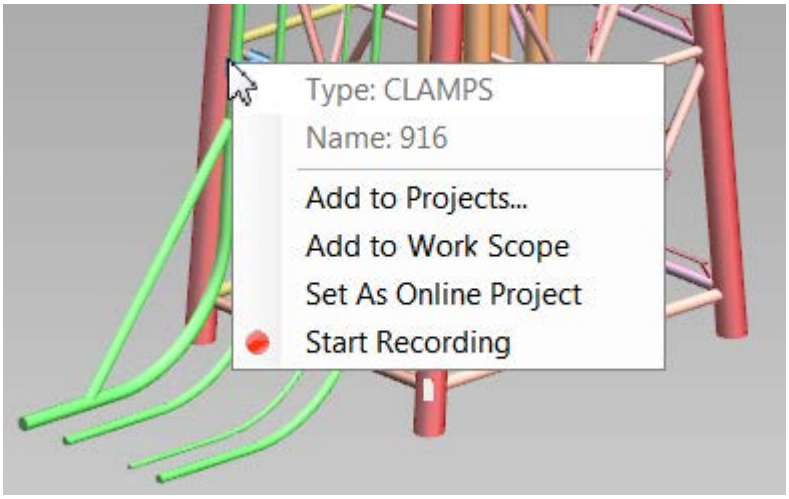
- Drag and drop from the **Components list** to the Work Scope list. You can drag individual items, or whole groups such as all of the risers, or all anodes.
- Right-click on **Components in the drawing** and add to the Work Scope using the pop-up menu.

(As soon as you add a Component to a Work Scope, it is automatically also added to the list of Projects and Sub-Projects.)

1.4.6 DWF Mode: Inspection Tasks

After you have created a basic Work Scope of Projects, Sub-Projects or Components – in other words the "things to be inspected" – you are ready to start adding specific **Inspection Tasks** to each of those Components. This works the same way for both PDF mode and DWF mode and is described in Getting Started: Inspection Tasks 18.

1.4.7 Quick Start – Immediate Recording



As soon as you have opened a 3D DWF file 14 you can start recording video. If time is short you are not forced to pre-plan your inspection tasks. To start recording video and link it to a particular component, just right-click on that component in the Linked Drawing view and select **Start Recording**. This will automatically create the necessary entries in the Work Scope and Project lists so that the recording can be managed in the offline system.

1.5 Getting Started: Inspection Tasks

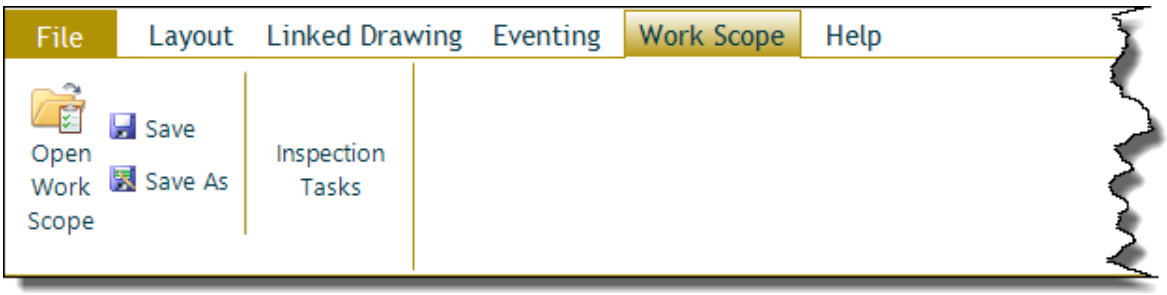
Inspection Tasks are standard operations such as General Visual Inspection (GVI), or taking CP readings, or measuring and describing marine growth, and so on. **Visual3D-Inspector** already includes a list of the most common Inspection Tasks but you can also add your own Inspection Tasks to the pre-defined list. Tasks such as GVI, CP surveys, Marine Growth surveys of Flooded Member Detection are common in most inspection campaigns and these tasks will be performed on many components of a structure. Usually more than one of these tasks will be performed for a particular component of a structure.

At the planning stage, you can select and configure a list of tasks, and decide how you want to use that list. You may want to add each task to the relevant components in advance and save it as part of a Work Scope, or you you may prefer to have the system ask you what type of task you are doing each time that you start recording video.

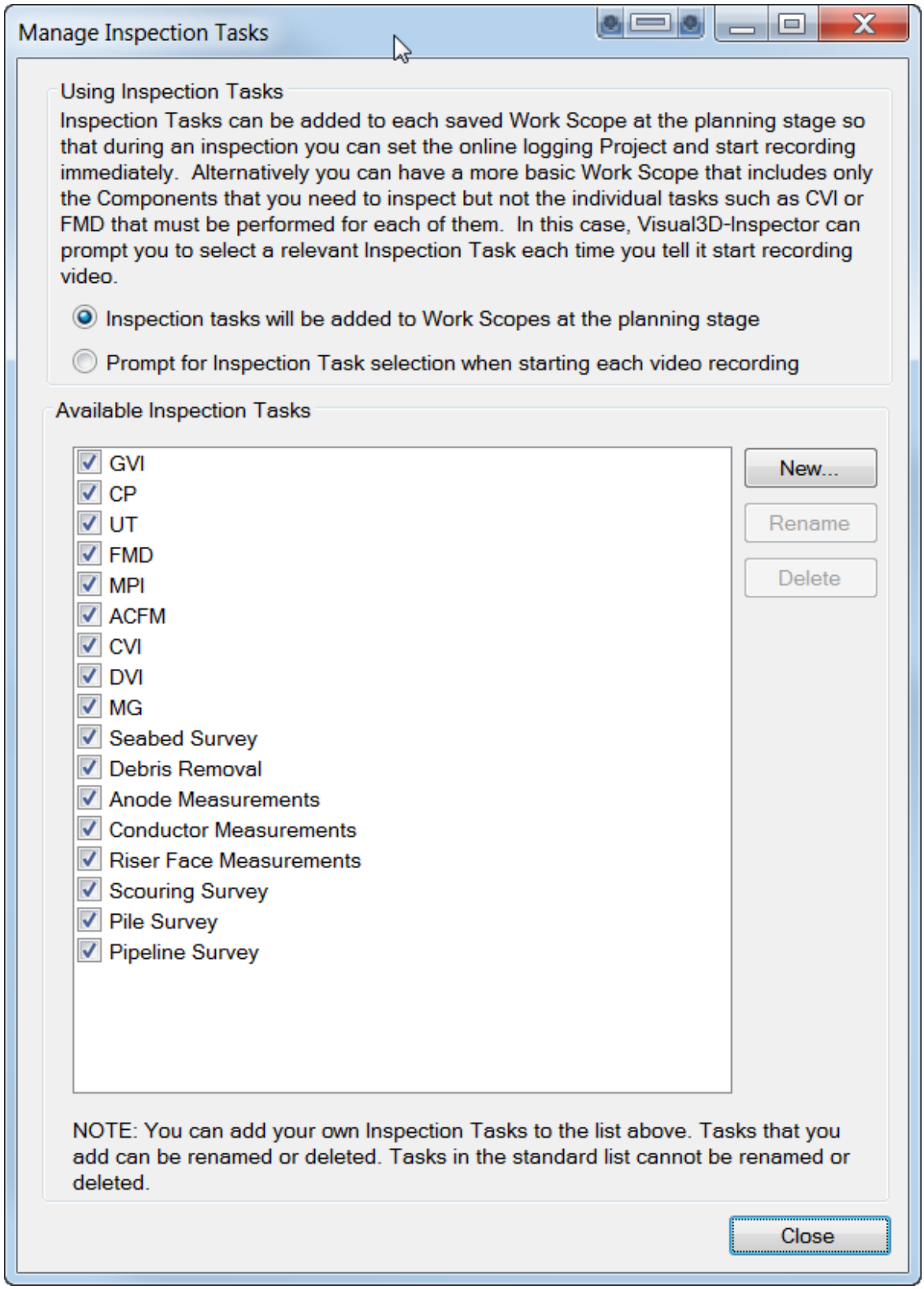
1.5.1 Manage Inspection Tasks

For each project or inspection campaign, you will usually have a set of Inspection Tasks that will be performed on different types of component. Not all of the tasks will be performed on every component but you will probably know that during a particular project you will need to carry out various types of inspection task. For example you may or may not perform CP readings, you may or may not perform FMD tests and you may or may not take Wall Thickness measurements.

To configure a list of Inspection Tasks for the current project click the “Inspection Tasks” button on the Work Scope ribbon.



This will open the window shown below.



Select how you want to use Inspection Tasks. You can either add them while you are planning an inspection campaign, and save them as part of a Work Scope, or you can

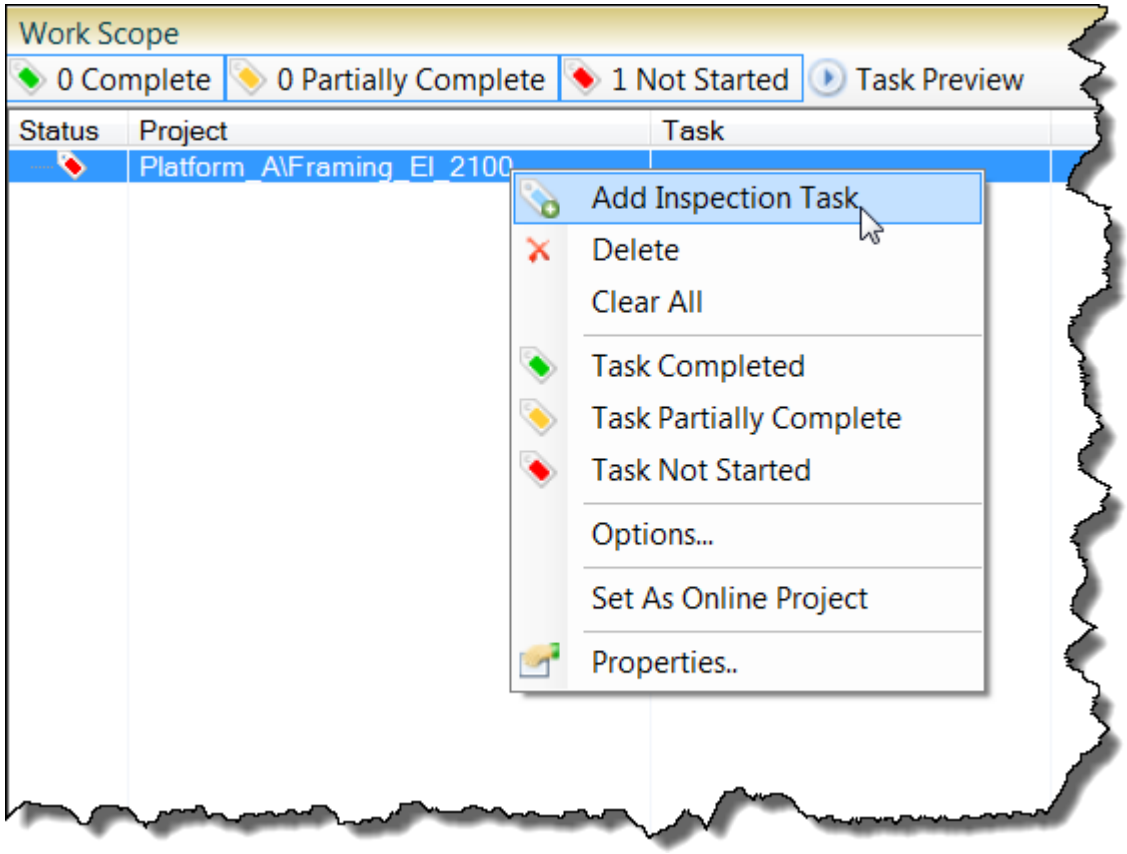
tell Visual3D-Inspector to prompt you to chose a task each time you tell it to start video recording.

The standard list of Inspection Tasks includes most of the common types of inspection, but you may want to add your own tasks to the list. You can add to the list of Inspection Tasks using the “New” button. Tasks that you add can be edited later: you can rename or delete them by clicking on them in the list and then clicking the buttons to the right. Tasks that are part of the standard list cannot be renamed or deleted.

If there are things in the list that you know you don't need, turn them off so that the list is shorter when you use it to build Work Scopes or start recording.

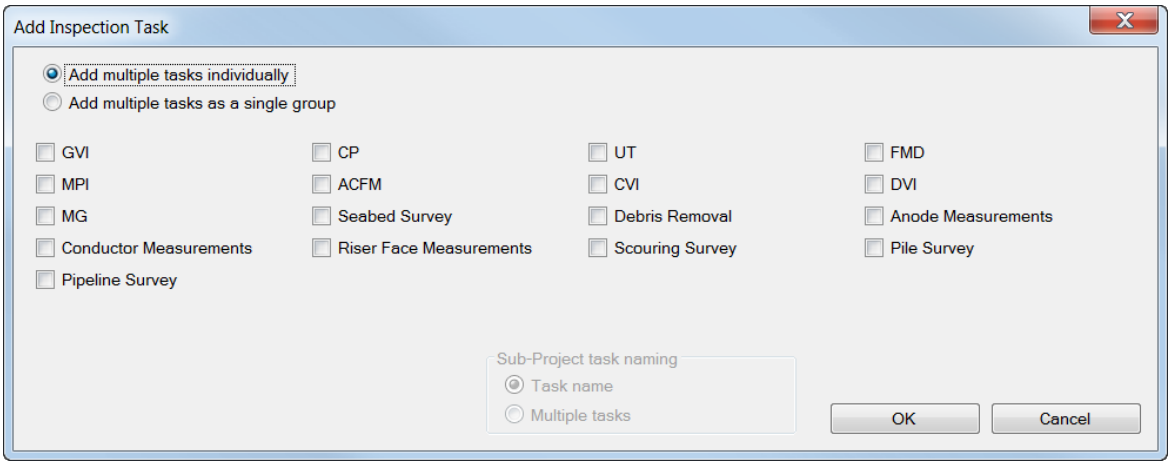
1.5.2 Add Inspection Tasks to a Work Scope

After you have created a basic Work Scope with a list of components that you need to inspect, you can then add individual Inspection Tasks to each of those components. Right-click on a component or project item in the Work Scope list, and select "Add Inspection Task".

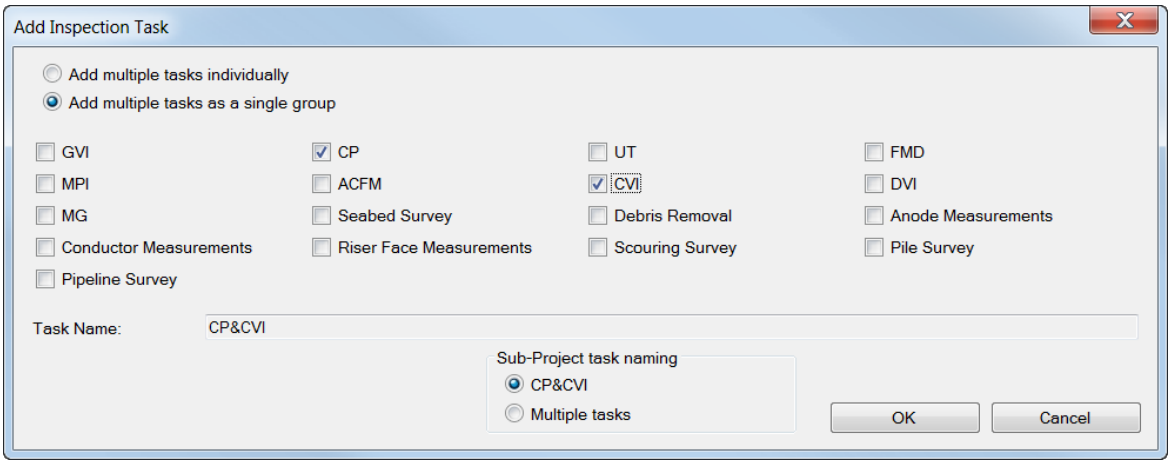


This will open a window with a list of Inspection Tasks. Select one or more tasks to be added to the chosen component, then click OK. You can either add each task as a separate item, or you can add a group of tasks as just one row in the Work Scope. How you do should do this will depend on how you plan to run your inspection. In most cases it is likely that you will do one thing at a time, and will probably want different video files

for each different Inspection Task. In that case choose the option to have them added as separate rows in the Work Scope.

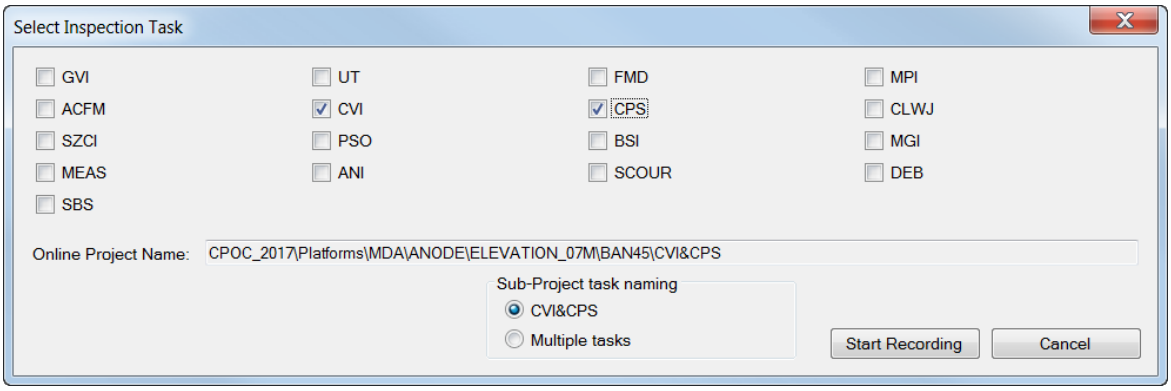


If you chose to add more than one task as a single group, then the task names are joined to form a single Sub-Project task (for example CP&CVI in the example below). If the task name becomes too long it will be changed to just "Multiple Tasks" and the individual tasks will be listed in the Sub-Project's comments section. If you want to do this anyway, even for short task names, you can do so using the choice at the bottom of the window.



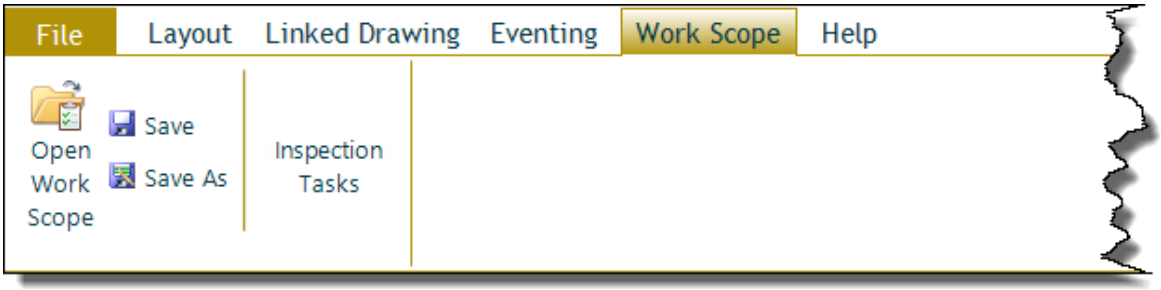
1.5.3 Select Inspection Tasks for Recording

If you chose not to add Inspection Tasks to your Work Scope, and instead want Visual3D-Inspector to prompt for a task 18 each time that you start recording then when you click the button to start recording you will see the window shown below.



The tasks that you select will be used to create a Sub-Project folder name which will be sent to VisualDVR, and which will later be used in VisualEdit and VisualReview. If the list of tasks is too long, Visual3D-Inspector will create a Sub-Project named “Multiple Tasks”. The properties of that Sub-Project will show which tasks were included. Even if the list of tasks is short, you can choose to override the concatenated name with the "Multiple Tasks" option.

1.6 Using Work Scopes

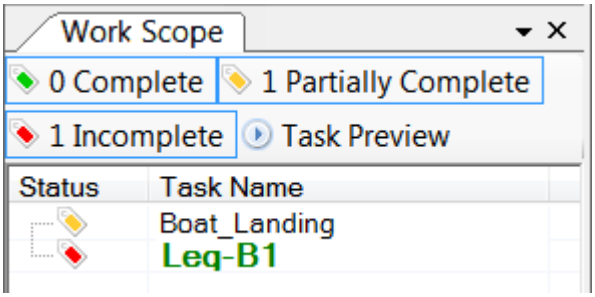


Visual3D-Inspector allows you to plan your Work Scope in advance. You can build lists of components to be inspected and then add Inspection Tasks (such as GVI, CP, etc.) to each of those components. Work Scope files can be saved for re-use later, whether that is just a few hours or days later, or a couple of years later for the next inspection of the same structure.

How you build a basic Work Scope of components and Project items is slightly different depending on whether you are using PDF drawings or DWF drawings. With PDF files, you can drag and drop from a Projects list, and with DWF files you can drag and drop from a Components list or you can right click in the drawing itself. For more details, see PDF Mode: Basic Work Scope 11 and DWF Mode: Basic Work Scope 15.

Items in the Work Scope can be reordered using drag and drop. Click on a row in the list and drag it up or down before letting go of the mouse button.

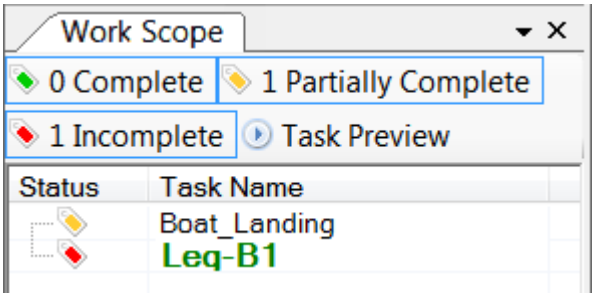
1.6.1 Preview Work Scope Tasks



If you click the **Task Preview** button at the top of the Work Scope task list the software will step through the list highlighting and zooming in in the Linked Drawing to show the items selected in the Work Scope. This allows you to check that your planned sequence is logical and check for example that you are not wasting ROV time by jumping from one side of a structure then back again. It also allows you to check that what you are planning is not likely to endanger the ROV or its tether.

1.6.2 Work Scope Task Status

When you stop a video recording you will be prompted to set the status of the recorded task as Complete, Partially complete, or Incomplete. This status information is shown in the Work Scope list green, yellow and red labels, and the list can be filtered based on this status.



Tasks and components shown in the Work Scope list can be filtered according to their status. The top of the Work Scope list shows how many tasks there are of each type. In the simple example shown here there are no complete tasks, and one each in the Partially Complete and Incomplete categories.

To hide all tasks that are complete, click on the Complete button at the top. This will hide those tasks in the Work Scope list and in DWF mode it will also hide the matching components in the linked DWF drawing.

1.7 Video and Data Recording

Video is recorded using **VisualDVR** which can have between one and four video cameras connected to a single unit, and which can record standard or high definition video in a variety of different recording formats. Details of VisualDVR can be found in the main VisualSoft help file, or in a PDF user manual on each VisualSoft PC. You can find the User Manual by going to Start, Programs, VisualSoft Suite, Help.

Video files that are recorded by VisualDVR must be associated with a "Project" which is used to link the video data to the drawings and events used in Visual3D-Inspector. Video recordings can be remote controlled from Visual3D-Inspector: You can select the logging Project, start and stop recording, and when you stop recording you can flag Work Scope task as being fully or partially complete.

While recording video you can also record other data, readings, measurements and observations.

1.7.1 Set the Online Project

Before you start recording video you must select and set the online recording project:

- In PDF mode you can set the online project by right-clicking on an item in the Projects list or the Work Scope.
- In DWF mode this can be done in the same way, using a right-click in the Work Scope, or it can by done using a right-click on a component in the Linked Drawing, or on an item in the Components List.

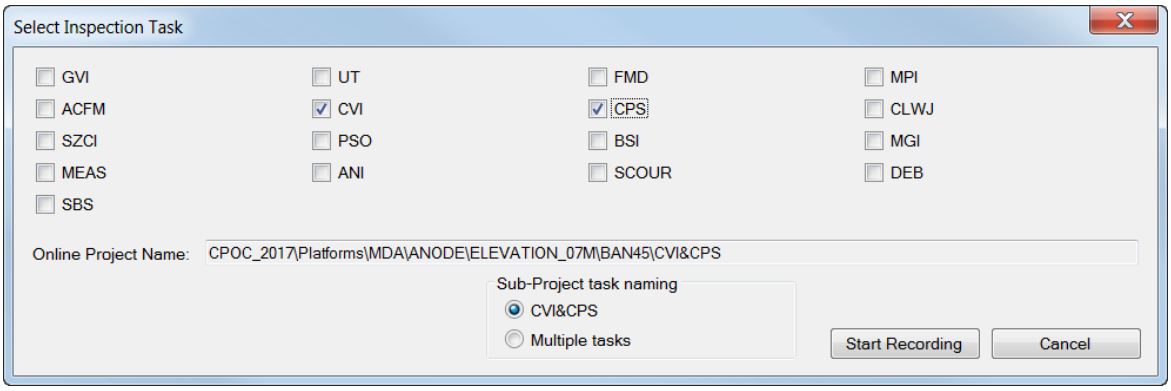
1.7.2 Start Recording

You can start video recording using the large red **Rec** button on the Video Controller 38.

If you are using DWF mode you can also right-click on the relevant component in the Linked Drawing.

If you chose the option to pre-plan 18 all of your Inspection Tasks, recording will begin as soon as you click the red "Rec" button.

If you chose not to add Inspection Tasks to your Work Scope, and instead want Visual3D-Inspector to prompt for a task 18 each time that you start recording then when you click the button to start recording you will see the window shown below.



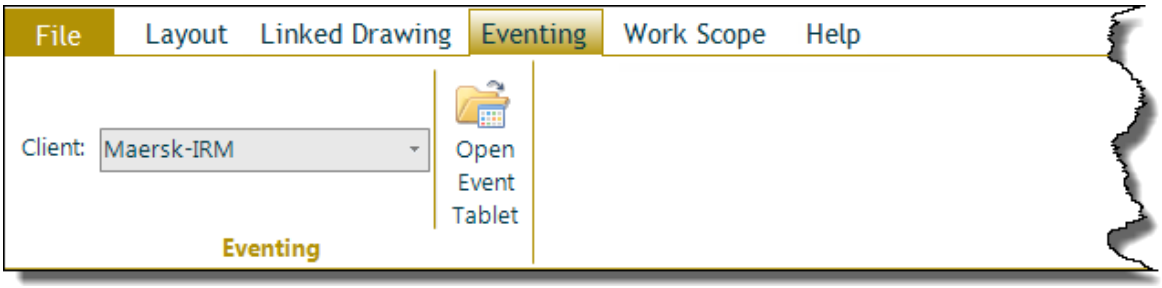
The tasks that you select will be used to create a Sub-Project folder name which will be sent to VisualDVR, and which will later be used in VisualEdit and VisualReview. If the list of tasks is too long, Visual3D-Inspector will create a Sub-Project named “Multiple Tasks”. The properties of that Sub-Project will show which tasks were included. Even if the list of tasks is short, you can choose to override the concatenated name with the "Multiple Tasks" option.

1.7.3 Data Recording and Events

Visual3D-Inspector lets you to record information about what you see on the video and also lets you add details of any readings or measurements that you make. The software includes a variety of ready-made and commonly used client configurations, and there is also a tool that allows you to create your own fully customised configuration.

Selecting a Client Configuration

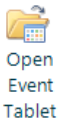
To use an existing Client configuration, select it from the drop down list in the Eventing section of the ribbon toolbar.



Creating a Client Configuration

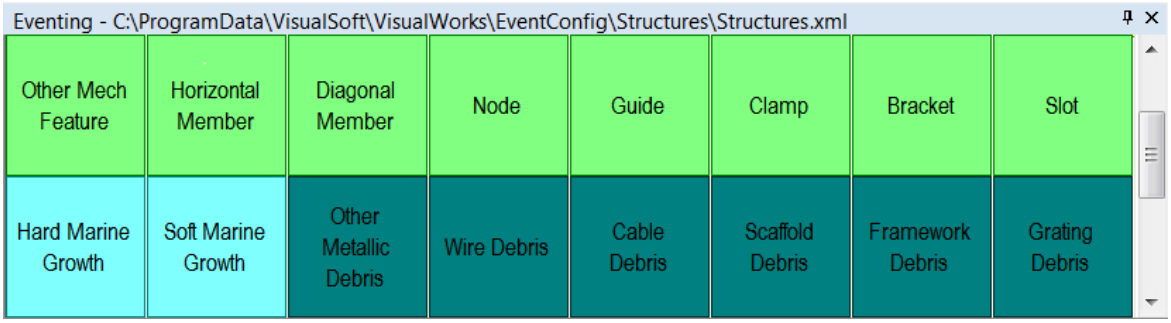
To create a new Client configuration for data recording and event logging, use the VisualEvent Config Editor, which you will find by clicking on Start, Programs, VisualSoft Suite, Tools. Details of how to use this are provided in a separate User Manual which you can download from our website, or if you email our support team we can send it to you.

Using the Logging Tablet



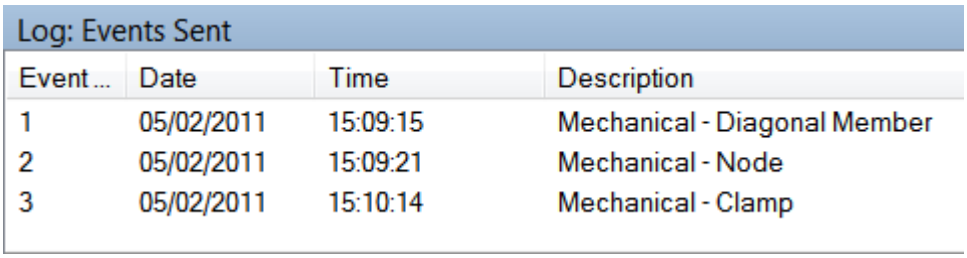
After a Client configuration has been selected you can then select a Tablet of logging buttons which will be displayed in **Visual3D-Inspector**.

The picture below shows an example of some simple logging buttons.



When you click a button in the Eventing Tablet the time and details of that “event” are sent to the video recorder, and are logged alongside the video file. The time that is recorded is the moment at which you click the Tablet button. Depending on the chosen configuration you might be asked to enter more details such as marine growth percentage and type, or CP stab values. This is done using a Wizard with a sequence of questions that is defined, and turned on or off as part of the Client configuration file and the Tablet definition

All logged events are displayed in the Event Log window, as shown below. The columns displayed will vary from one Client configuration to another and may be as simple or complex as you want.



Creating or Editing a Logging Tablet

The event logging tablet can be created and edited using the VisualEventLogger program. Details of this can be found in a separate User Manual which you can download

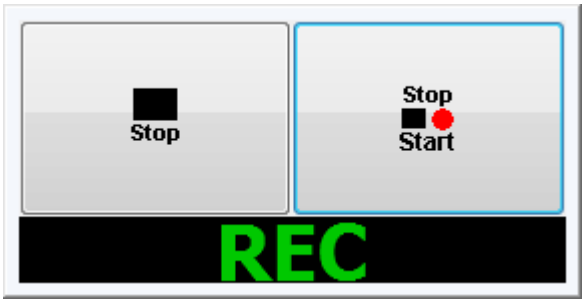
from our website or which our support team can email to you. Please see the contact details on the final page of this User Manual.

Using the Standalone VisualEventLogger Software

The **VisualEventLogger** logging program provides another similar way of recording your observations and inspection data. It is more normally used for pipeline inspection than for structure inspection, but the choice is yours. The **VisualEventLogger** can be run on the same PC as **Visual3D-Inspector**, on the **VisualDVR** PC or on any other networked PC.

VisualEventLogger can use the same logging tablet as **Visual3D-Inspector** but also has configurable keyboard shortcuts, and the option of a smaller, yet also configurable, toolbar.

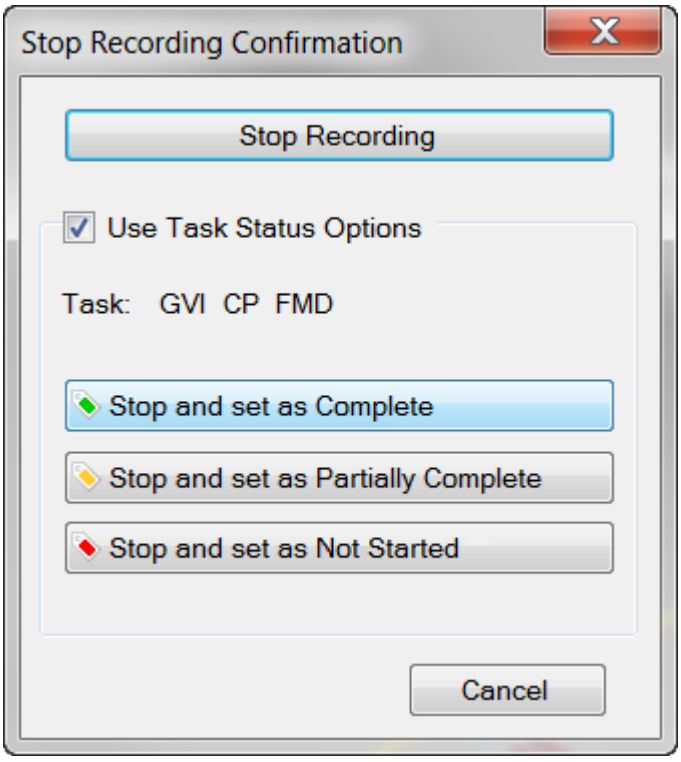
1.7.4 Stop Recording



To stop recording click on the large **Stop** button on the Video Controller. When you stop a recording you will be prompted to set the status of the recorded task as Complete, Partially complete, or Incomplete.

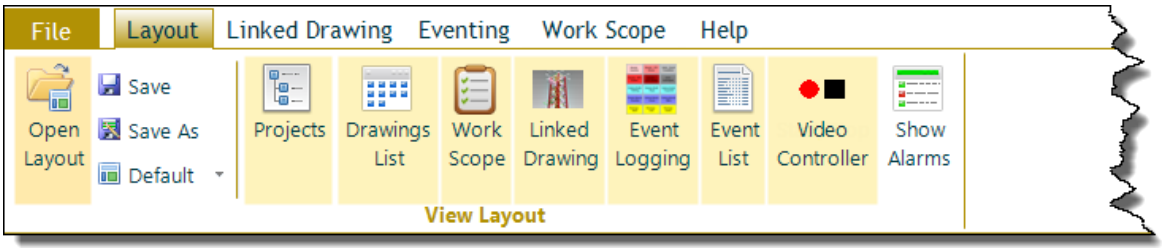
1.7.5 Task Completion Status

When you stop recording, you will be asked to confirm that you definitely want to stop and you may also be prompted to set the “Task Status” for the relevant Task or Component. This “Task Status” option allows you to indicate whether or not a task has been fully completed, and the option can be turned on or off in the confirmation window.



1.8 Windows and Window Layouts

You can arrange the windows in Visual3D-Inspector in any way you like. Each view, list or toolbar can be dragged wherever you like: You can open it in its own separate window 31, snap it side by side 29 with another window, snap it above or below 30 another window or make it appear as a tab 30 sharing the same space as another window.



To open and close individual windows, just click the buttons in the Layout ribbon bar. Open windows are shown by a yellow background to the button. Closed windows are shown by a white background to the button. In the example above, the button on the far right shows that the Alarms window is closed.

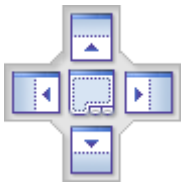
The window layout can be saved and then reopened later, so you can configure different layouts for different types of task, or just different layouts to suit the personal preferences of different operators. To restore the default layout of the windows just click the “Default” button.

1.8.1 Moving a Window

To pick up a window, left-click at the top of it and hold down the left mouse button. Move the mouse around the screen while holding down the left mouse button. As you move around the screen you will see a blue box appear on screen indicating a preview of how your window will appear if you drop it at this location.

When the cursor is away from the centre of any other window you will see a blue square showing how the window would be placed as a free-floating window. As you move the cursor over the central area of any other window you will see a **Drop-Target** appear. The Drop-Target has five possible drop areas:

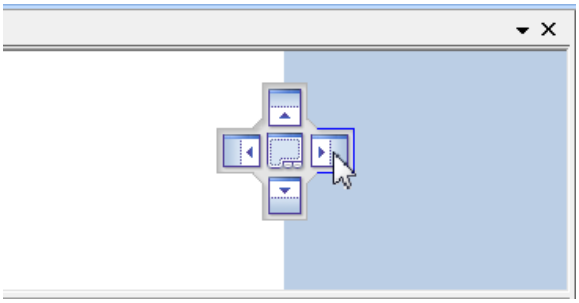
The Drop Target



If you release the mouse button while over the central area of the **Drop-Target** your window will be added as an extra tab, sharing the same space as the target window.

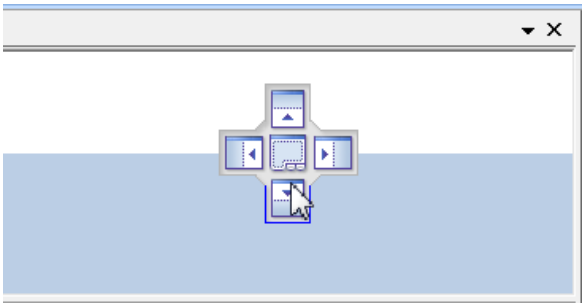
If you release the button while over one of the four arrowed areas of the **Drop-Target**, your window will be placed beside, above or below the target window, with the original space of the target window being divided equally between them. A blue rectangle will show a preview of the area which will be used for the window that you are moving.

Dock side by side with another window



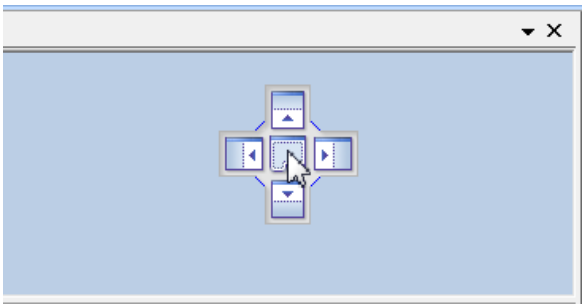
To arrange two windows side by side, click and drag one window over another until the Drop-Target appears. As you move the mouse over the left and right targets, you will see a rectangle covering one half (left or right) of the window that you are dragging over. Release the mouse when the blue rectangle is in the half where you want your window to be placed.

Dock above or below another window



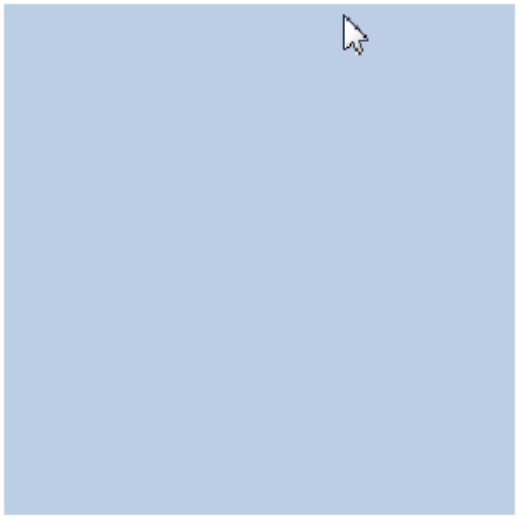
To arrange two one above the other, click and drag one window over another until the Drop-Target appears. As you move the mouse over the upper and lower targets, you will see a rectangle covering one half (top or bottom) of the window that you are dragging over. Release the mouse when the blue rectangle is in the half where you want your window to be placed.

Dock over another window as a tabbed view

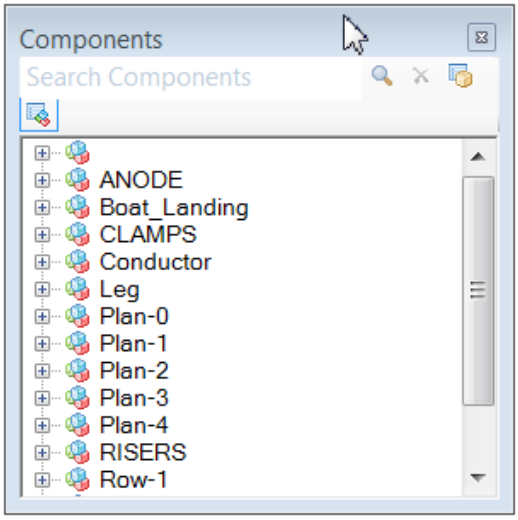


To arrange two or more windows to share the same space, creating a tabbed view, drag over another window until the pop-up Drop-Target appears, and release the mouse over the central square.

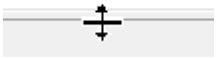
Move to a Floating Window



To open a list or other view in its own window, click on its title bar or tab and drag it until you see a blue square appear on the screen as shown in the example on the left below. When the rectangle appears release the mouse and you will see the view that you were moving will now have its own window (with the normal title bar and close button) that you can move around and place as you want.



Resizing a Window



To resize a window hold down the left mouse button over one of the edges of the window. When you see the Resize Handle appear, keep the button held down and drag the window edge to where you want it, then let go.

1.8.2 Projects Window

The Projects window shows a list of Projects and Sub-Projects. Typically in Visual3d_Inspector you will have only one Project at a time, and it will have multiple Sub-Projects. This list or hierarchy of Projects and Sub-Projects may be created semi-automatically when adding components of a DWF drawing to a Work Scope, or it may be created more manually.

Open or close the Projects window using the button on the Layout ribbon.

For information about creating a Project hierarchy see the following topics:

PDF Mode: Create a Project 10 and PDF Mode: Create Sub-Projects 10

DWF Mode: Create a Project 14 and DWF Mode: Create Sub-Projects 15

1.8.3 Drawing List Window

When working in PDF mode, the Drawing List shows any PDF file in a selected folder. These PDF drawings can be linked to one or more Projects or Sub-Projects.

Open or close the Drawings List using the button on the Layout ribbon.

See Getting Started in PDF Mode 8.

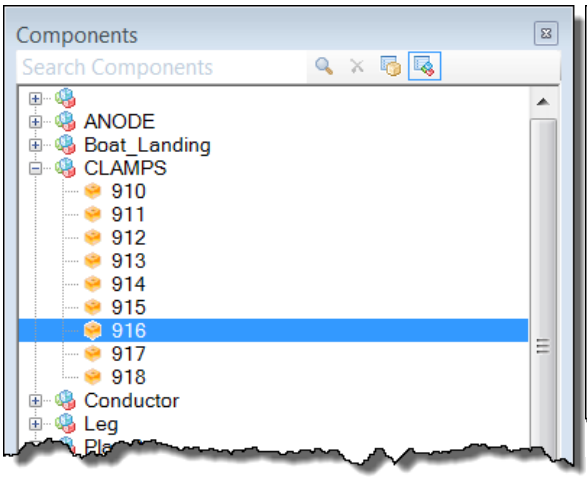
1.8.4 Components List Window

When working in DWF mode, the Components List shows all of the Component ID tags in the current DWF file.

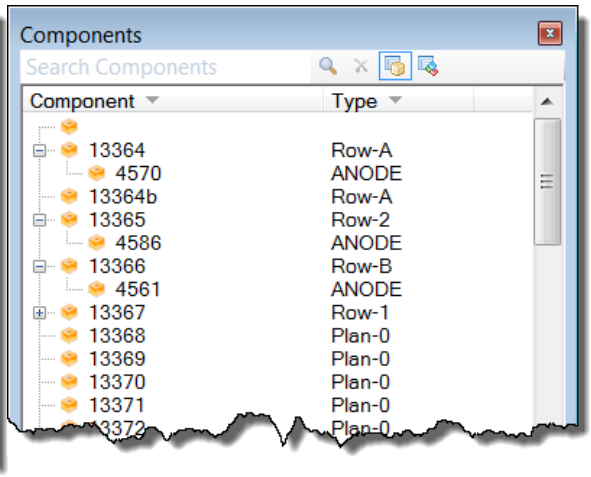
Open or close the Components List using the button on the Layout ribbon.

When a DWF drawing file is opened a list of its components is displayed in the Components window as shown below. Use the list to check that components are correctly identified: you should be able to tell which components are which and what other component they are attached to. When you click a component in the drawing it should be highlighted in the list, and if you click an item in the list it should be highlighted in the drawing. There are two views, selected using the buttons at the top:

Grouped by Type



List view

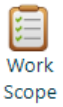


1.8.5 Work Scope Window

A Work Scope is made up of three types of information:

1. A list of things that need to be inspected (for example anodes or legs).
2. The types of inspection tasks needed for each of those things (for example CP for anodes, or wall thickness measurements for legs).
3. The order in which all of these inspection tasks will be done.

A typical inspection campaign may use many different Work Scopes - for different ROVs or divers, different days, different equipment, and so on. **Visual3D-Inspector** lets you build and save many different Work Scopes to suit the way that you want to work.



Open or close the Work Scope window using the button on the Layout ribbon.

1.8.6 Linked Document Window

Video and other data can be linked to drawings. This could be drawings of structures such as jackets and wellheads shown in that video and data, or it might be documents relating to the specification or reporting of the project.

Three different types of "**Linked Drawing**" can be used:

- **Adobe PDF Files**, with one or more pages. Logged data is linked to the PDF using a page number, or even a specific zoomed-in area of a page. Select the page you want and zoom to the full page or a smaller part of it, then save that as a "**Linked view**".

- **Autodesk 3D DWF CAD files** using **Linked views**. These are usually drawings of whole jackets, platforms or other structures, or they may be field layout drawings showing multiple pipelines. Logged data can be linked to the 3D drawing in the same way as for 2D PDF drawings. You can zoom and rotate the 3D drawing to the relevant place (a view of an Anode, or other component) and then save that as a "**Linked view**".

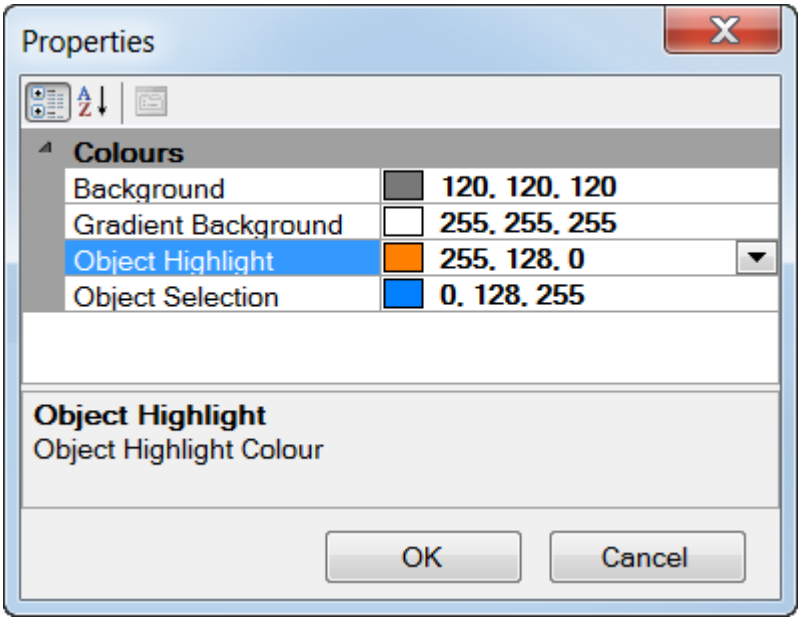
- **Autodesk 3D DWF CAD files**, using **embedded Component ID** data. These are usually drawings of whole jackets, platforms or other structures, or they may be field layout drawings showing multiple pipelines. Logged data is linked to the 3D drawing using individual Component IDs to identify a specific anode, bracing, weld, flange etc. These Component ID tags are added to the different parts of the drawing before it is exported from AutoCAD to the DWF file format. The Component IDs in the drawing can be mapped to the Project and its Sub-Projects. This can be done automatically if the names of sub-projects match the names of Component IDs, or you can may them manually selecting which IDs link to which Sub-Projects.

Open or close the Linked Document window using the button on the Layout ribbon.

Colour in the Linked Drawing View

When working with DWF files, some of the colours used in the Linked Document view can be changed. The colours of the actual Components shown in a 3D DWF drawing are set using **AutoCAD** before the drawing is exported as a DWF file but the background of the viewer and the colours used when you move and click the mouse in the window can be changed in **Visual3D-Inspector**.

To change the colours, right-click in the Linked Document window and select Options.



Object Highlight & Object Selection Colours

When you click to select an object in the 3D DWF or click on an item in the Project or Work Scope task list you will see that component change to the **Object Selection** colour.

As you move the mouse cursor around a 3D DWF drawing you will notice that the component under the cursor changes colour. This colour is the **Object Highlight** colour and you can change it using the buttons on the ribbon bar.

You should try to set the Highlight and Selection colours to something which is not already used in the 3D drawing.

Background Colours

The 3D DWF view has a two-tone background colour. The **Background** colour is used at the top of the window and is shaded gradually into the **Gradient Background** colour used at the bottom of the window.

Moving Around a Linked Drawing

The Linked Drawing view has a toolbar and keyboard shortcuts which allow you to pan and zoom. In the case of 3D DWF drawings you can also tilt and rotate the drawing.

Tool	Name	Shortcut	Description and usage
	Select	A	Enables the Select tool. When using DWF drawings, click in the drawing to select a component.
10	Zoom Scale 1:XX		Select larger numbers to zoom out
	Zoom Slider		Slide to the right to zoom out
	Home	Home	Restore the default “Home” view & scale
	Pan	H	Click and drag to move the drawing
	Zoom	Q	Click in the drawing and slide the mouse up to zoom in, down to zoom out
	Fit to Window	F	Keeps the current view angle and zooms in or out to fit the whole drawing
	Zoom Rectangle	R	Click and drag a rectangle in the drawing to zoom in
	Orbit	B	Click and move to rotate in three dimensions. (DWF mode only.)
	Turntable	E	Click and move sideways to rotate, up or down to tilt. (DWF mode only.)
	Navigation Wheels	Ctrl+Shift+I	(DWF mode only.) See the Autodesk Design Review Help

Tool	Name	Shortcut	Description and usage
TIP:	If you find the Orbit control difficult to use, try the Turntable instead.		
TIP:	You can also zoom in and out by rotating your mouse wheel.		
TIP:	With Windows 7 these buttons may occasionally disappear. If this happens, go to the Windows Control Panel and open the System settings. Click on Advanced System Settings in the list on the left, and then select the Advanced tab. In the Performance section of the window click the Settings button and then select the Visual Effects tab. Disable the top item “Animate controls and elements inside windows”.		

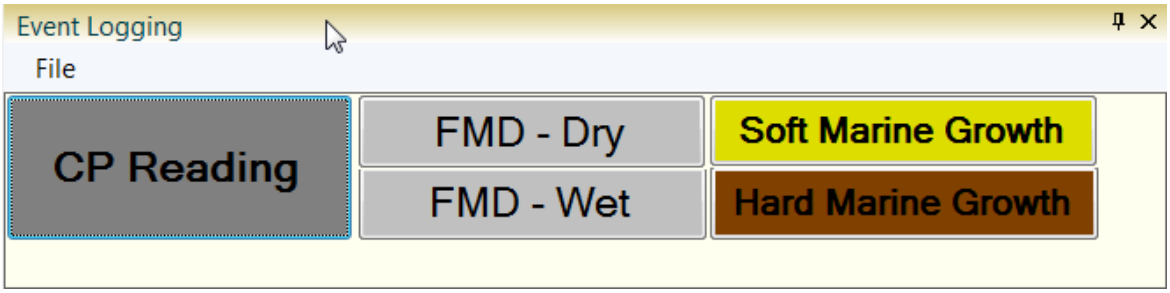
Many other tool and options are available in the Linked Drawing view, and full details of these can be found in Autodesk’s own Design Review documentation. You will be able to find this installed on your PC by going to Start, Programs, Autodesk.

1.8.7 Event Logging Window

The Event Logging window shows a tablet of buttons that you can use to log "events" or "observations" to describe what you see in the video or to record specific data and readouts from CP probes, wall thickness measurements and so on. The buttons on the tablet are fully configurable so that you can control what they log when you click them, how many buttons there are, where they are, what size and colour they are, and what the text on them says.

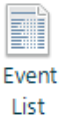
See Recording Inspection Data and Observed Events 25.

Open or close the Event Logging window using the button on the Layout ribbon.



1.8.8 Event List Window

While recording video you can use the Event Logging Window 37 to record information about what you see and any measurements or readings that you take. This logged "event" information will be shown in the Event List, showing anything that you have recently logged. (Note that if you close and restart Visual3D-Inspector then the list of recently logged events will be cleared, but the event data will already have been safely logged with the video that was being recorded at the time of logging.)



Open or close the Event List window using the button on the Layout ribbon.

Log: Events Sent

Event ...	Date	Time	Description
1	05/02/2011	15:09:15	Mechanical - Diagonal Member
2	05/02/2011	15:09:21	Mechanical - Node
3	05/02/2011	15:10:14	Mechanical - Clamp

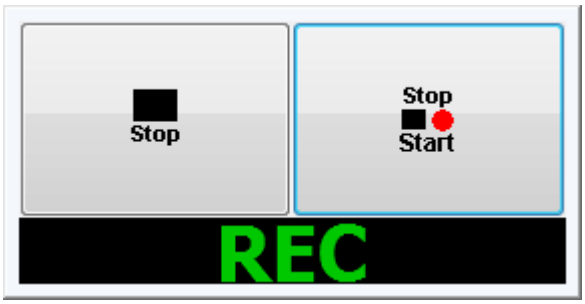
1.8.9 Video Controller Window

Video recording in VisualDVR can be controlled remotely from Visual3D-Inspector.

Open or close the Video Controller window using the button on the Layout ribbon.

You can start video recording using the large red **Rec** button on the Video Controller.

If you are using DWF mode you can also right-click on the relevant component in the Linked Drawing.



To stop recording click on the large **Stop** button on the Video Controller. When you stop a recording you will be prompted to set the status of the recorded task as Complete, Partially complete, or Incomplete.

For the first five seconds after a recording starts you are not able to stop it. This is avoid complications if there are multiple computers recording different data or different cameras.

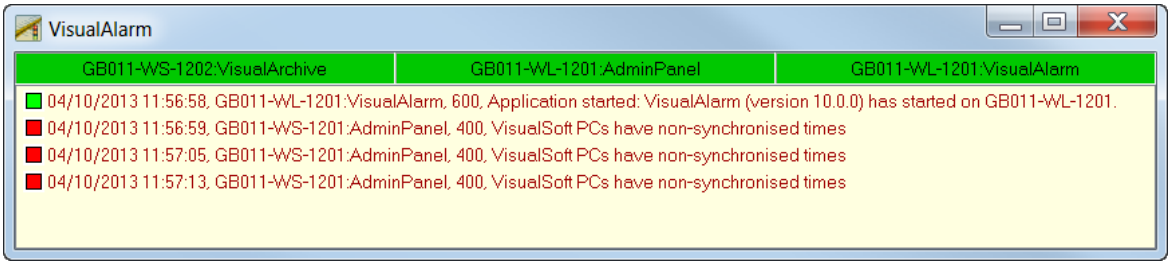
The Stop/Start button allows you to make a break in the recording without losing any video. It will close one video file, and immediately create a new one, doing this in between two frames of video so that nothing is lost.

The Video Controller displays the status of the **VisualDVR** recording software, using real-time feedback from the recorder.

1.8.10 Alarms Window

Open or close the Alarms window using the button on the Layout ribbon.

VisualAlarm displays errors, warnings and status messages from applications in the **VisualSoft** suite.



VisualAlarm is integrated into many **VisualSoft** applications including **VisualDVR** and **VisualArchive**. It can also be run as a standalone application on a remote PC to provide extra monitoring of system status. **VisualAlarm** shows the status of all PCs on the **VisualSoft** network. Most importantly it shows the Recording Status of VisualDVRs – these should all show as (Recording) when online.

There will be a status bar for each **VisualSoft** application running on the network:

A **Green** bar indicates that the relevant application is working OK

An **Orange** bar indicates that there is a warning. Look in the text panel to read the warning and check if it is important.

A **Red** bar indicates that there is a more serious problem. Look in the text panel to read the warning.

Below the coloured bars are colour coded messages which explain why a bar above may have turned orange or red. Each message has a small square box of the relevant colour, and then the UTC date and time when the message or alarm was published.

If you do not understand a warning message, please do not ignore it!
Contact us for help – by phone or email. See Contact Details 54.

1.9 AutoCAD Add-On for Visual3D-Inspector

Wish Software have created a "Visual 3D Inspector" add-on for AutoCAD which can be used to assign Component Types and ID numbers to AutoCAD 3D Solids and Blocks as is required for use in Visual3D-Inspector. Note that the add-on does not create these 3D Structures; it is only used for adding the Type and ID information to existing 3D Solids and Blocks.

This information is then exported to DWF for use in Visual3D-Inspector.

Minimum Requirements

Visual3D Inspector requires any of the following Autodesk products:

- Autodesk AutoCAD 2011-2017
- Autodesk Map 3D 2011-2017
- Autodesk Civil 3D 2011-2017
- Autodesk Mechanical 2011-2017

The machine specifications for Visual 3D Inspector follow those of the underlying AutoCAD platform.

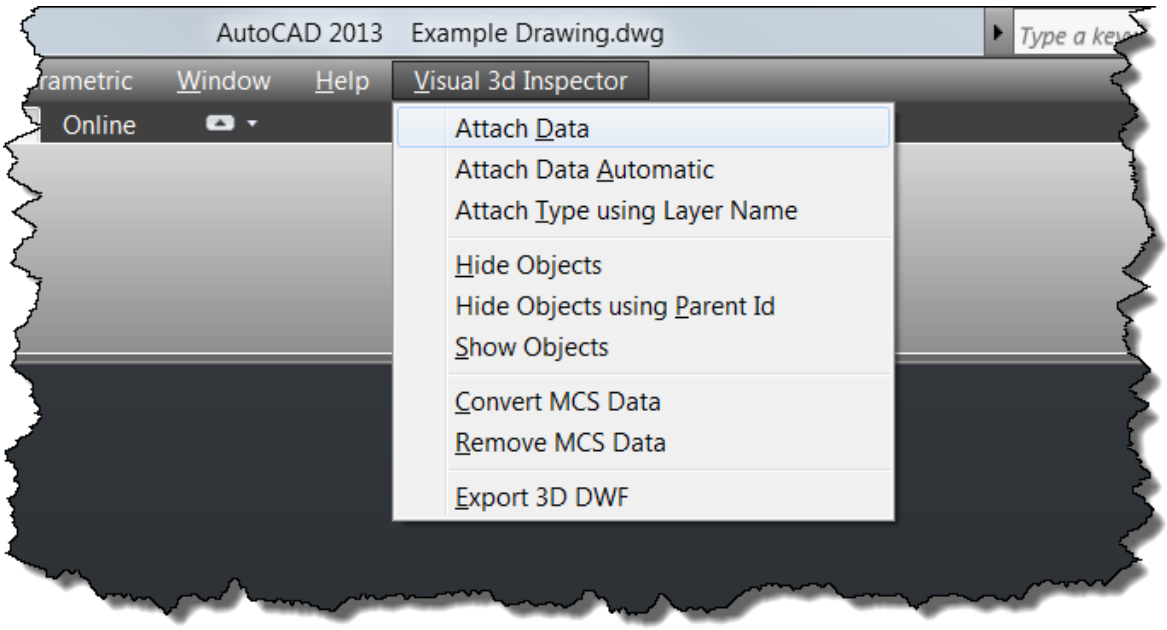
See here for the current AutoCAD minimum system requirements.

Software Installation

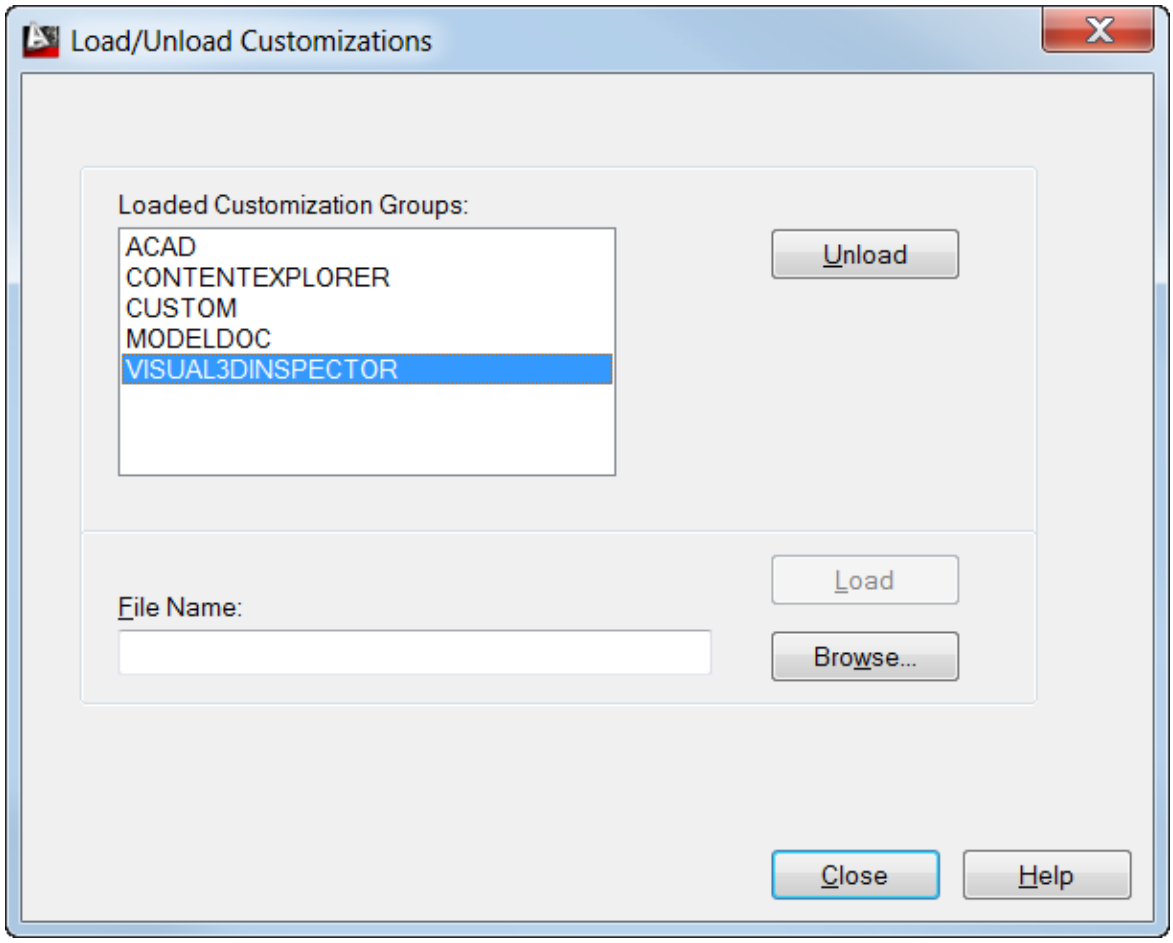
AutoCAD is now available as a native 64-bit application for Windows XP, Windows Vista and Windows 7 64-bit operating systems. There are separate Visual 3D Inspector installs for each AutoCAD platform. Please contact VisualSoft 54 for the necessary installer.

1.9.1 Add-on Menu

The AutoCAD add-on for Visual3D-Inspector, will add a new menu in AutoCAD.



If the "Visual 3D Inspector" menu does not show in AutoCAD after you install the add-on, type MENULOAD at the AutoCAD command line, unload the VISUAL3DINSPECTOR menu and then restart AutoCAD.

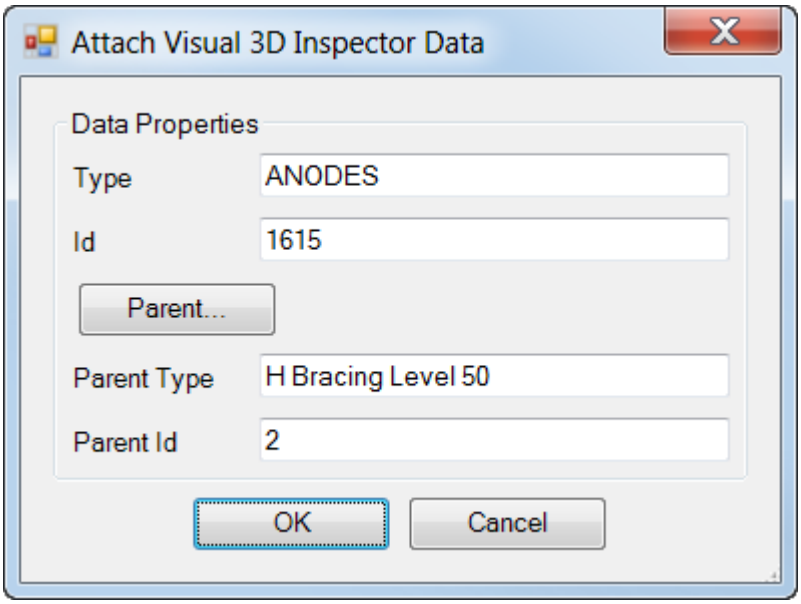


1.9.2 Add-On Commands

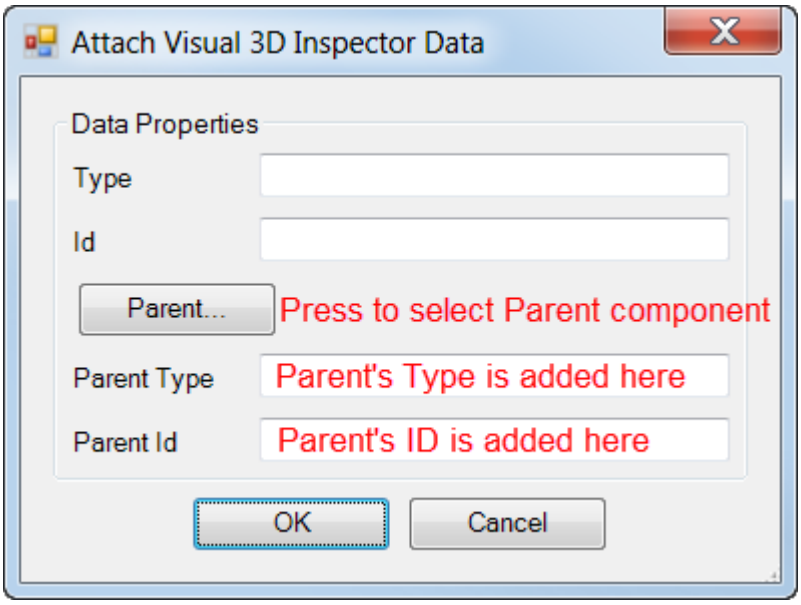
Attach Data

Attach Data is used to assign Visual3D-Inspector ID data to a selected 3D Solid or Block entity.

Run the **Attach Data** command and select the required 3D Solid or Block entity to attach data to. Enter the required Type value and unique ID for the object.

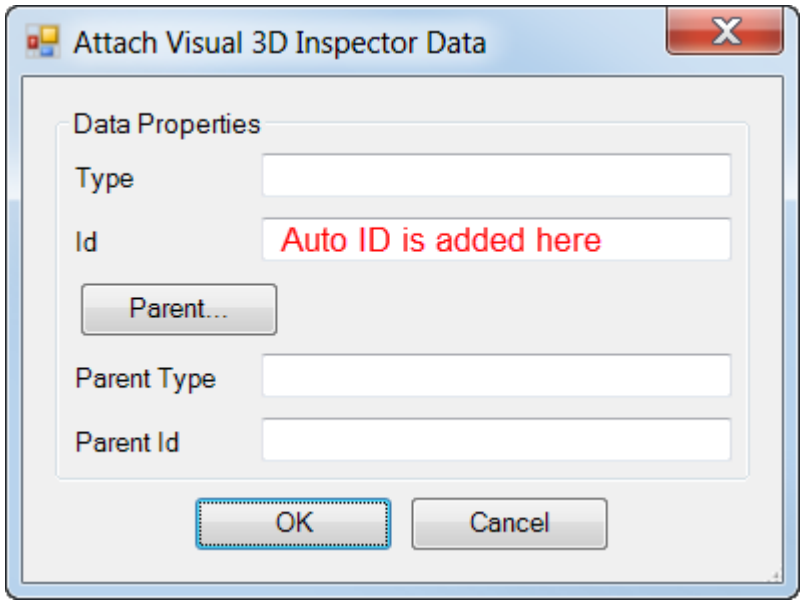


If the component is a part of another object (for instance, an Anode attached to a Platform member), use the Parent button to select the parent entity of the object. If the selected parent entity already has an assigned Type and ID then this will be added to the current component.



Attach Data Automatic

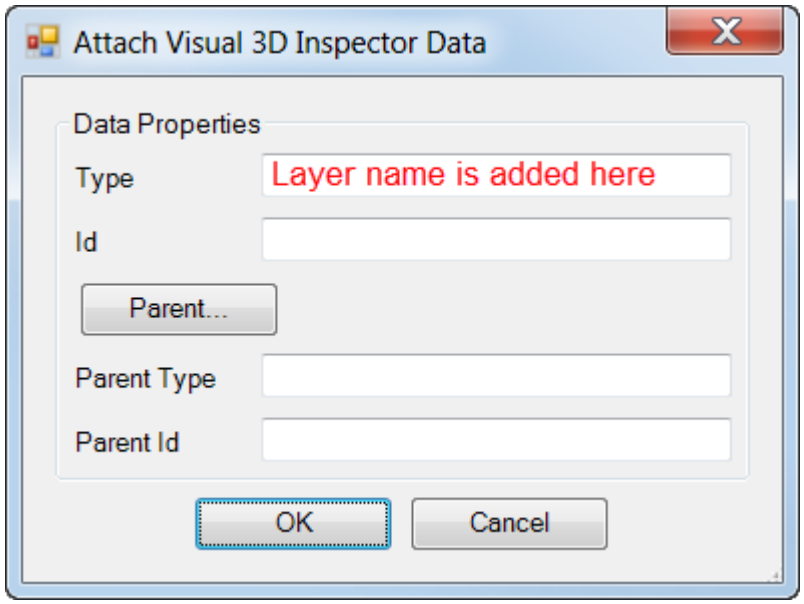
Attach Data Automatic is used to assign Visual3D-Inspector ID data to all 3D Solid or Block entities within the drawing. The command creates a unique ID value for each object.



This command should be used with Attach Type using Layer Name 44.

Attach Type using Layer Name

Attach Type Using Layer Name is used to assign Visual3D-Inspector Type data to all 3D Solid or Block entities within the drawing by using the name of the Layer that the object is drawn on. The command assigns the relevant Layer name to the Type field for each object.



This command should be used with Attach Data Automatic 43.

Hide Objects

Hide Objects turns off the display of all objects that already have Type and ID data assigned. This lets you clearly see which entities still need to have data attached to them.

See also Hide Objects using Parent ID 45 and Show Objects 45.

Hide Objects using Parent ID

Hide Objects using Parent turns off the display of all objects that have Visual3D-Inspector data attached to them and also have a Parent object linked to them. This allows you to clearly see which entities still need to have Parent Data attached to them.

See also Hide Objects 45 and Show Objects 45.

Show Objects

Show Objects turns on the display of all previously hidden objects.

Convert MCS Data

If you have a drawing that has previously been used with the MCS software, you can use **Convert MCS Data** to change existing MCS object information into data that is compatible with Visual3D-Inspector.

Remove MCS Data

If you have a drawing that has previously been used with the MCS software, and you do not want to use the MCS information, you can use **Remove MCS Data** to clean the drawing before assigning Visual3D-Inspector ID and Type data.

Export 3D DWF

After you have assigned ID and Type data to all of the components in your drawing, use **Export 3D DWF** to output your 3D AutoCAD DWG file to a DWF file which includes the ID, Type, Parent ID and Parent Type information ready for use in Visual3D-Inspector.

1.10 Linked Drawings in VisualEdit & VisualReview

After the video and other data that you record using **Visual3D-Inspector** has been copied to an offline storage disk by either **VisualArchive** or **VisualDVR**, you can view it using **VisualReview** or **VisualEdit**. In **VisualEdit** you will also be able to make changes to the logged data.

VisualEdit and **VisualReview** use the same **Drawing View** as **Visual3D-Inspector**, but here it is called a "Linked Document" because you can use it for more than just the inspection drawings used by Visual3D-Inspector. In VisualEdit you might also use this same window for ROV offset diagrams, specification documents or notes.

Video and other data can be linked to drawings. This could be drawings of structures such as jackets and wellheads shown in that video and data, or it might be documents relating to the specification or reporting of the project.

Three different types of "**Linked Drawing**" can be used:

- **Adobe PDF Files**, with one or more pages. Logged data is linked to the PDF using a page number, or even a specific zoomed-in area of a page. Select the page you want and zoom to the full page or a smaller part of it, then save that as a "**Linked view**".

- **Autodesk 3D DWF CAD files** using **Linked views**. These are usually drawings of whole jackets, platforms or other structures, or they may be field layout drawings showing multiple pipelines. Logged data can be linked to the 3D drawing in the same way as for 2D PDF drawings. You can zoom and rotate the 3D drawing to the relevant place (a view of an Anode, or other component) and then save that as a "**Linked view**".

- **Autodesk 3D DWF CAD files**, using **embedded Component ID** data. These are usually drawings of whole jackets, platforms or other structures, or they may be field layout drawings showing multiple pipelines. Logged data is linked to the 3D drawing using individual Component IDs to identify a specific anode, bracing, weld, flange etc. These Component ID tags are added to the different parts of the drawing before it is exported from AutoCAD to the DWF file format. The Component IDs in the drawing can be mapped to the Project and its Sub-Projects. This can be done automatically if the names of sub-projects match the names of Component IDs, or you can may them manually selecting which IDs link to which Sub-Projects.

For an inspection project you can load video and other data in the normal way using the Project Tree, and then import and display the Linked Drawing. Alternatively, if you are working with DWF files with Component IDs, then after the Linked Drawing has been imported into the Project you can right-click on the different components in the drawing to load video and data.

Display the Linked Document view


Linked Document

Use the Linked Document button to open or close a window to display PDF or DWF drawings. This is the same as the one in **Visual3D-Inspector**, except for the menus which will show “offline” operations instead of “online” operations.

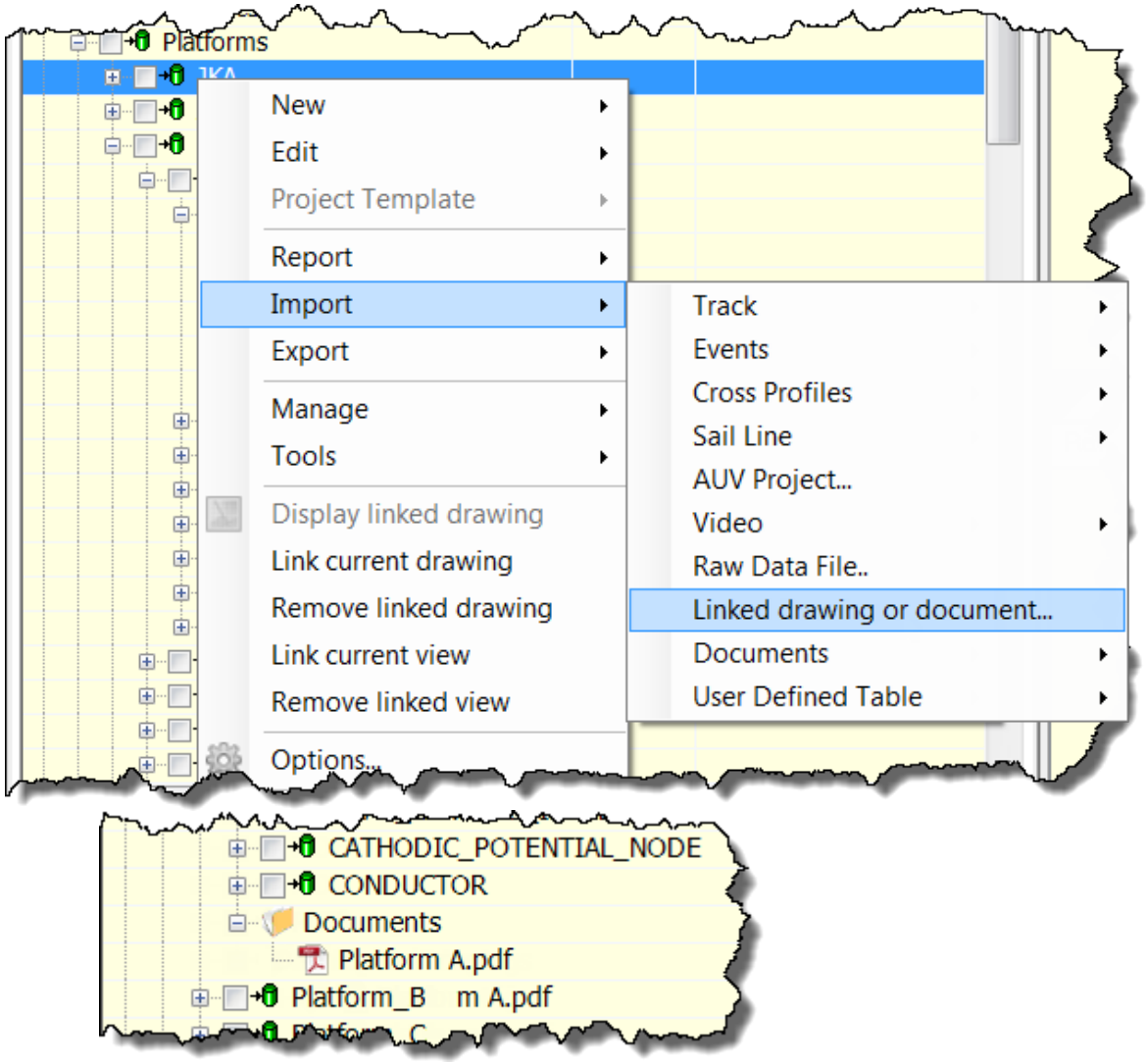
Display a list of DWF and PDF documents


Drawings List

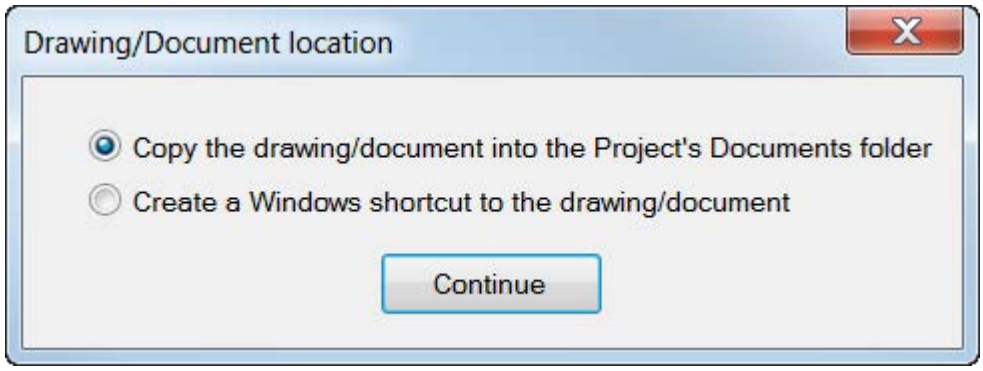
Use the Drawings List button to open or close a list of all DWF and PDF documents in the VisualSoft area of the current offline disk drive.

1.10.1 Import a Drawing

If the Project or Sub-Project that you are working in does not yet have a drawing linked to it, you can import one by right-clicking on that Project or Sub-Project to open the Import menu. Normally you should import the same drawing file that was used online when recording video and data in Visual3D-Inspector. When you import a drawing it will be placed in the Documents folder of the Project or Sub-Project. If the Documents folder does not yet exist it will be created automatically.



When you import a drawing you will be given a choice to either copy the file into the Documents folder, or to create a Windows shortcut to it. We recommend copying the file into the Project's Documents folder.

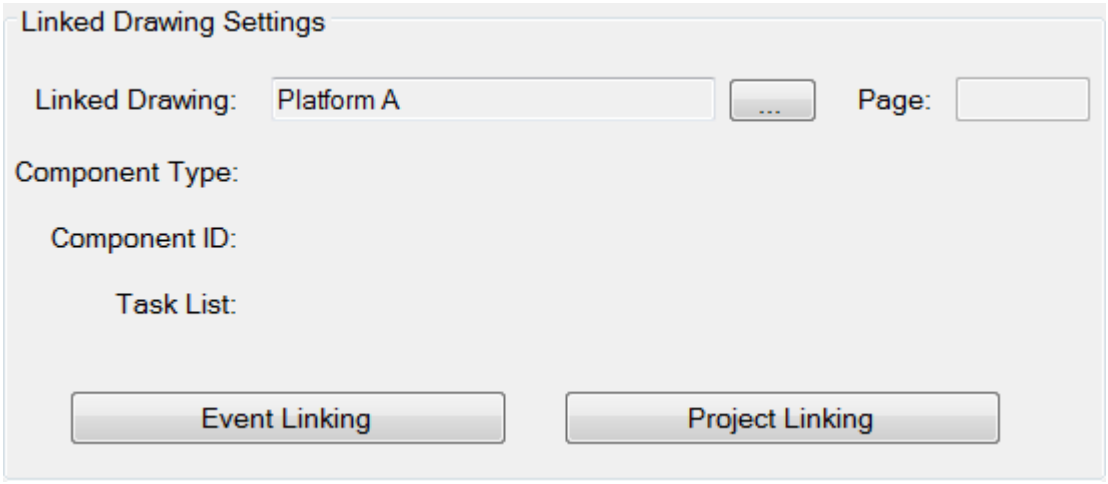


It is possible to import more than one drawing into a Project, so if changes have been made you can import an updated file, or you may have multiple drawings for different purposes.

1.10.2 Link a Drawing to a Project or Sub-Project

When you import a drawing file into a Project or Sub-Project, it will be automatically linked to that Project or Sub-Project. Sometimes you might want to change that link to use a different drawing file, for example maybe an updated version of the drawing.

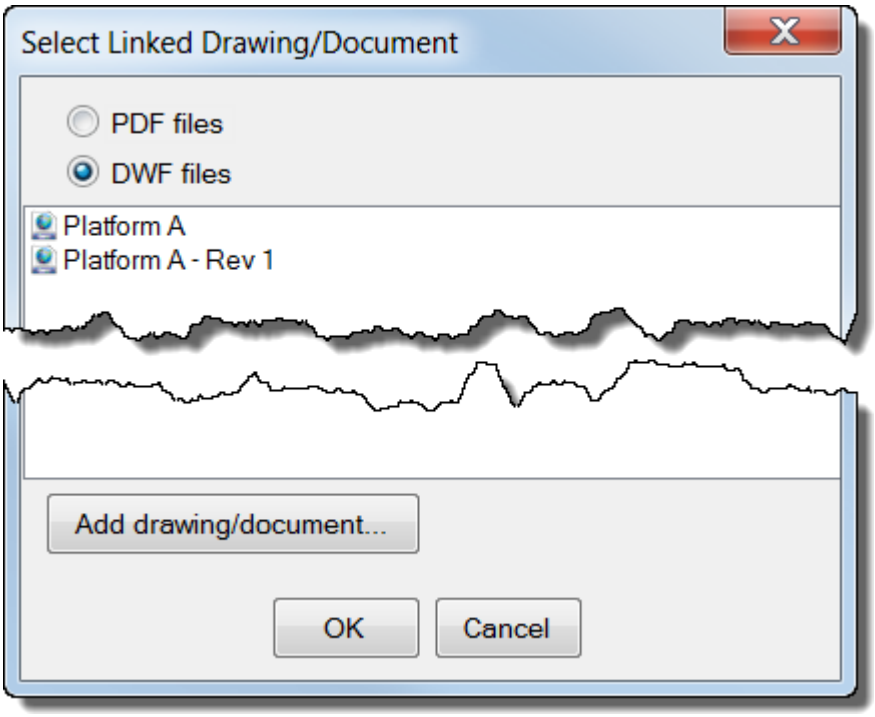
To do this, right-click on the selected Project or Sub-Project, and open the Properties. In the top right you will see the Linked Drawing Settings.



If you click the browse button, 

you will see a list of all PDF or DWF files inside the current Project.

Change the drawing type at the top to show either PDF files or DWF files. You can add extra drawings using the button at the bottom of the list.



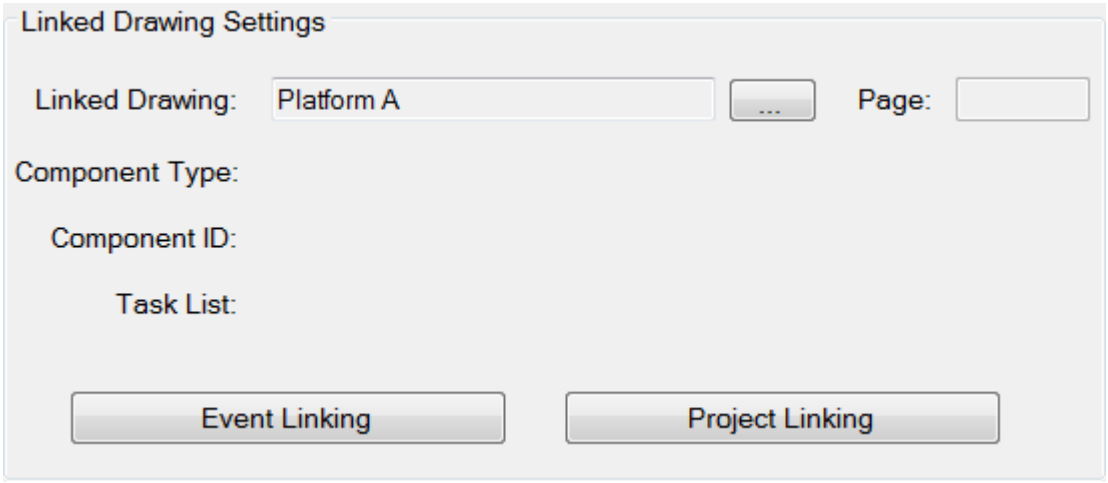
Select the drawing that you want to link to the Project or Sub-Project.

1.10.3 Link Inspection Events to a DWF Drawing

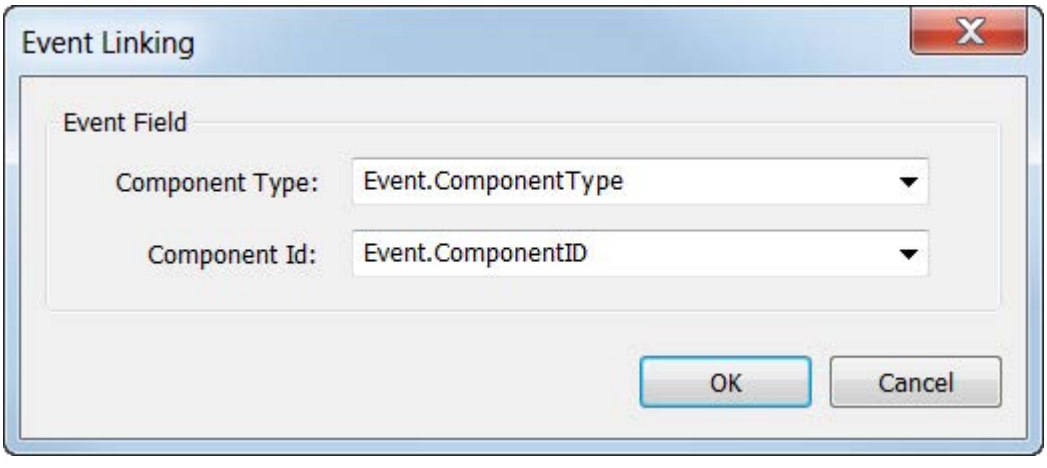
If you want more precision that just linking a particular Component ID to a whole Sub-Project, you can link to individual event records.

To do this you must use an Eventing configuration that includes columns for the Component Type, and the Component ID, and make sure that these columns contain text that matches the Component Types, and the Component IDs in the linked 3D DWF CAD file.

Right-click on the Project or Sub-Project and open the Properties.



Click the button for Event Linking, and select the column names in the event table that hold the text matching the Component Types, and the Component IDs in the linked DWF file.

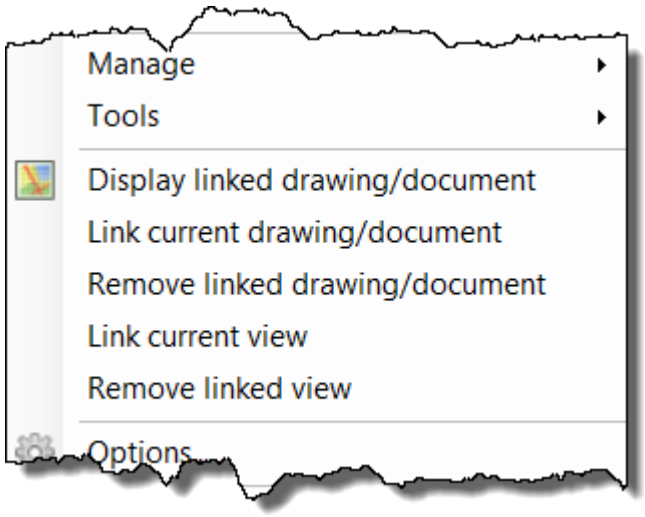


When you click on an event in the Event list, the drawing will show the relevant component type. Note that individual events cannot be linked to saved views, only to the default view of a component.

1.10.4 Display a Linked Drawing

If you load data using the Project Tree the Linked drawing associated with that data will load and display automatically.

If you want to display the drawing or document associated with a project, without first loading the data, make sure that you have the Linked Document window open , and then right-click on the Project or Sub-Project and select **Display linked drawing/document**.



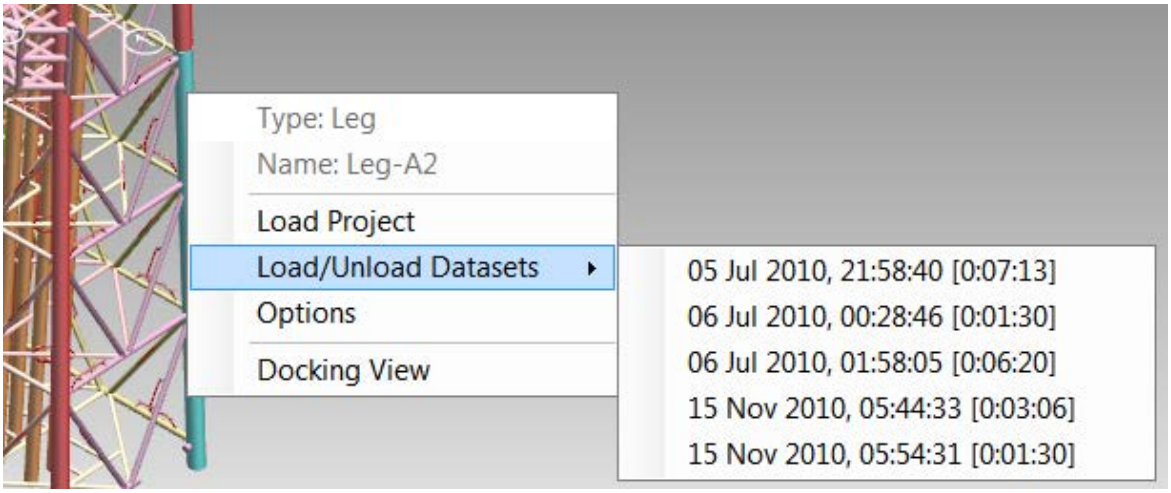
1.10.5 Load Video & Data Using a DWF

If you are working with DWF CAD files with embedded Component IDs, then you can use the drawing to load data and video in VisualEdit or VisualReview.

If you right-click on part of a 3D DWF in the Linked Drawing view, a pop-up menu will open if the selected component has any video or other data associated with it. This requires the Component ID tags that are in a 3D DWF, it is therefore not possible to do this with PDF files.

The pop-up menu shows the Type and Name of the selected component so you can check that you are in the correct place before you load the data.

Select **Load Project** to load all video and data associated with the chosen component, or select an individual Dataset if you know the date and time of the particular inspection that you want to view. Each dataset shows the start time of that recording, and also the duration of the recording.



2 Contact Details

Forum Subsea Technologies has offices in many parts of the world. The VisualSoft team is mostly based in Aberdeen in the UK, but we also have regional sales staff and some support services in other parts of the world.

The following pages have details of how to contact either our sales team or our support team, by telephone, email or by post.

2.1 Contact Details – Support

Website: f-e-t.com/visualsoft

Most support questions are most easily answered by email:

Using email gives our support team time to think about your problem before they reply, and time to test the software if necessary. If your question is urgent, do not hesitate to telephone us, but even then it may be best to send an email before you call, even if only a few minutes before you call. Sending us an email will allow you to include screen captures, data files and other things that may make it easier for us to quickly and accurately understand your problems.

Support Email (recommended)	visualsoft.support@f-e-t.com
Phone: UK & Global, during UK office hours	+44 (0) 1224 744 000

Phone: UK & Global, outside UK office hours Available for clients with a valid support contract. Operates from 17:00 until 08:30 UK time each night Monday to Thursday, and all through the weekend from 17:00 Friday evening until 08:30 Monday morning.	+44 (0) 1224 363 999
Phone: USA, 24/7 During Houston office hours this will connect you to our US team. At other times, or if the US team is busy, it diverts to the UK team.	+1 713 454 7091

2.2 Contact Details – Sales

Website: f-e-t.com/visualsoft

For address and telephone/fax details, please select the appropriate office for your region:

Aberdeen, UK	FET – VisualSoft Cumberland House Endeavour Drive Arnhall Business Park Westhill Aberdeenshire AB32 6UF UK
Sales and rental enquiries:	visualsoft.sales@f-e-t.com
Telephone:	+44 (0) 1224 744 000

Houston, USA	FET – VisualSoft 10344 Sam Houston Park Drive, Suite 300 Houston TX 77064 USA
Telephone:	+1 713 329 8273

Singapore	FET – VisualSoft Asia Pacific Rental Service
Email	visualsoft.sales@f-e-t.com
Telephone:	+65 9643 7433 / +65 9230 8138

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