Location Intelligence
Infrastructure Asset Management

# Confirm®

## Confirm Mapping Link API

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# Specifications

The following sections outline all the Specifications that exist within the Confirm functionality.

## In this section

Confirm Mapping Link API 6

# Confirm Mapping Link API

### Introduction

This document provides details on how the Confirm Product may be interfaced to a “spatial visualisation tool”, such as a Geographic Information System (GIS), or Computer Aided Design package (CAD). In the remainder of this document, the term GIS is used to refer to all kinds of visualisation methods.

The overall requirement of the interface is to provide seamless links between Asset Details in Confirm and their location as represented within the GIS. Selections of assets may be made by a number of means within Confirm which may be communicated to the GIS for further processing or display. Alternatively selections of assets may be made in the GIS by a number of means for further processing or display within Confirm.

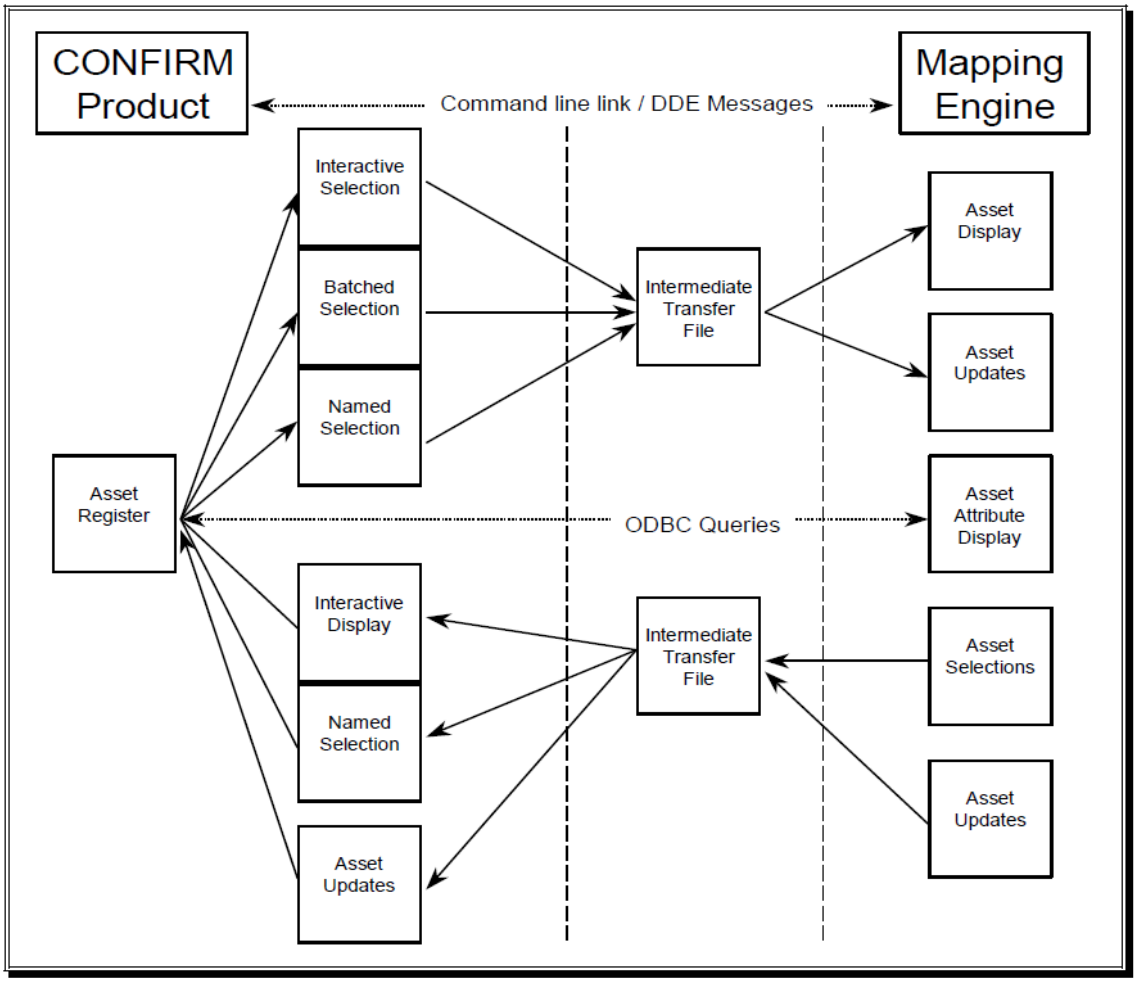
### Glossary of DDE Terminology

As the terminology for DDE messaging between applications is open to interpretation, the following terminology is offered as clarification in this document.

| | |
|---|---|
| DDE Message | A communication that takes place between two open Windows Applications |
| Client | The application sending the DDE message |
| Server | The application receiving the DDE message |
| Message Set | {Application} {Topic} {Command} - the minimum DDE message set. |
| Application | The name an application declares for itself under DDE |
| Topic | The type of communication that is taking place between the applications |
| Command | The 'command' passed between 'applications', within a 'topic' |

## OUTLINE REQUIREMENTS

### GIS Interface in Context




The interface is generally achieved by one of two methods. The first involves either the Confirm system or the GIS acting as a client or server application to each other passing details of asset selections for further processing using a combination of Dynamic Data Exchange (DDE), or Command Line Parameters, and intermediate transfer files.

The second method of interfacing is achieved by providing direct access to attribute data within the Confirm system by means of ODBC or other database specific drivers. This interface requires no intervention on the part of Confirm and is handled entirely by the GIS.

The interface may also be used to transfer attribute data from the Confirm system to the GIS, to provide direct access to this data from within the GIS. Although this requirement is not always desirable or possible, the additional functionality in relation to the GIS has also been documented.

## DETAILED REQUIREMENTS

### The GIS as a server

The GIS may be called as a server to display the location of assets selected from within Confirm. Assets may be selected in Confirm in one of three ways, but in all cases the GIS would process the selection in the same way.

### Outline Process

- Selection of Assets made in Confirm (interactive, batch or named selection)
- Asset details written to transfer file
- Command Line / DDE command issued to GIS to take focus
- GIS takes focus
- GIS retrieves details from transfer file
- GIS displays assets

### Transfer and display process

It is assumed that the GIS application will already have been loaded before transfers to and from it may take place. Focus will be transferred from Confirm to the GIS by means of a DDE command or via Command line parameters.

If the GIS cannot support DDE / Command Line parameters, it is assumed that the operator will transfer focus to the GIS by means of task switching according to the user interface / desktop in operation, e.g. [ALT][TAB] in MS-Windows. The operator will then need to click the appropriate tool button within the GIS to activate the process.

The GIS will locate map objects according to the unique Asset IDs contained in the transfer file. If the GIS fails to locate an object for one or more Asset IDs contained in the transfer file, a warning message to this effect should be displayed.

The GIS might provide three means of viewing the selected assets.

- If one asset was selected, the GIS might centre the map object at the current zoom
- If multiple assets were selected, the GIS might zoom to the extents of each map object
- For multiple assets two further functions might step forwards and backwards through the selected map objects, centering each at the current zoom

### Attribute Update / Refresh

Where it is desirable or possible to store attribute data within the GIS, this information may be extracted from the transfer file in a similar means to the 'selection' methods explained above.

In fact the only difference between a transfer and display will be that a different DDE / Command Line command will have been issued by Confirm.

### Creating / Linking Asset to Map Objects

Regardless of whether attribute data is transferred, the GIS might provide options for linking Asset IDs with new or existing objects. The following techniques are suggested.

- Create spot points - In this situation it is assumed that new spot point assets have had their geography captured already in which case the GIS may automatically create a defined symbol at the known co-ordinates.
- Draw new - In this situation the Asset ID may be selected and a new object created using the drawing tools provided within the GIS.
- Merge with existing - In this situation the Asset ID may be selected and merged with an existing object.

### Confirm as a server

Confirm may be called as a server to display the attribute data for assets selected from within GIS. Assets may be selected within the GIS in a number of ways. Confirm will process the selection in one of three ways according to the command it receives.

### Outline Process

- Selection of Assets made in GIS (any technique supported by GIS)
- Asset details written to transfer file
- DDE command issued to Confirm to take focus
- Confirm takes focus
- Confirm retrieves details from transfer file
- Confirm acts on the assets supplied

### Display Asset Details

In this situation any number of unique Asset IDs will have been written to the transfer file, by the GIS. Confirm will then retrieve the asset details along with other associated attributes and display these details in an interactive forms based manner.

### Save as Named Selection

Confirm provides a means to save a selection of assets as a 'Named Selection' whereby other parts of Confirm may further process the selection.

### Update Asset Co-ordinates

The Confirm asset register provides a means by which Asset Co-ordinates (Xs and Ys) may be stored. Three sets of co-ordinates exist comprising East/North corner, West/South corner and a centroid. The GIS would write these details to the transfer file so that they may then be further processed by Confirm.

### Confirm Asset Selection Screen

This facility may be used where the GIS currently has focus and the operator intends to pass focus back to Confirm so that an asset selection may be made as described in the GIS as a server section above.

## MULTIPLE LAYER SUPPORT

### Overview

It is good practice in GIS or CAD to split up data into multiple Layers (according to the type of Asset), and possibly Drawings (according to geography). The following examples are given to clarify:

- in Street Lighting; Signs, Bollards and Pillars might be stored on separate map Layers
- in Property; there might be a Drawing for each Building, and then different Layers to represent the Walls, Windows, Heating, Plumbing and other infrastructure assets

The GIS server application should be able to locate the assets that were selected in Confirm with the minimum of user intervention. It is anticipated that some means of deriving the Layer and/or Drawing for selected Assets will therefore need to be provided.

### Attributes

It is recommended that the following attributes are used by the GIS to help identify the Drawing/Layer for an Asset:

- Feature Group Code - to determine Layer
- Site Code - to determine Drawing

**Note:** These need only be used where applicable - e.g. if there is only one Drawing (seamless map) then the Site Code would not be used. Similarly, if it is felt that there would be minimal overhead in searching all Layers to locate a particular Asset, then Feature Group need not be used.

### Lookup Tables

It is anticipated that the Drawing/Layer names will not be directly derivable from the Site/Feature Group codes. It is assumed there may be more Feature Groups than there are Layers. Facilities to maintain lookup tables that provide a Drawing file name for a Site, and/or a Layer name for a Feature Group must be provided within the GIS server application.

These facilities should be integrated with the other interface functions as closely as possible, for example:

- if a new Site/Feature Group code is encountered then the user should be prompted for the Drawing/Layer name, and internal lookup tables updated automatically.
- if an Asset is not found on the specified Drawing/Layer then the user should be given the option to search others or treat the Asset as a new one.
- when digitising assets, the Drawing/Layer should be automatically selected as appropriate
- some facility to validate that conventions are being followed should be provided (e.g. check that all Litter Bins are on the Street Furniture Layer and occur on no other Layer)

**Note:** It is possible for the Feature Group or Site of an existing asset to change, albeit relatively rarely.

## TRANSFER FILES

### File Format

The transfer file will be a '.TXT', tab delimited ASCII text file. Column names are always included as the first line of each file. The name of the transfer file would normally be passed as a parameter in the DDE message / Command line. File names should be configurable during installation, and not hard-coded.

The Asset ID field described in the tables provides the single, unique key to identify the Confirm asset.

**File Contents**

The data contained in each of the transfer files is defined in this section.

Selected Assets from the GIS to Confirm

| Field name | Data Type | Size | Comments |
|---|---|---|---|
| Asset ID | ASCII | 20 | See note above in Section 6.1 |
| Centroid Easting | Numeric | 8.2 | |
| Centroid Northing | Numeric | 8.2 | |
| Extent Easting 1 | Numeric | 8.2 | |
| Extent Nothing 1 | Numeric | 8.2 | |
| Extent Easting 2 | Numeric | 8.2 | |
| Extent Northing 2 | Numeric | 8.2 | |

**Note:** No significance is attached to the order of Extent 1 and Extent 2.

Where the file is being used for selection purposes only, then all columns, apart from the Asset ID, will be ignored by Confirm.

The Primary Measurement is not currently used, and is included for future possible enhancements to the interface.

**Selected Assets from Confirm to the GIS**

| Field name | Data Type | Size | Comments |
|---|---|---|---|
| Asset ID | ASCII | 20 | See note above |
| Site Name | ASCII | 40 | |
| Plot Number | Numeric | 8.2 | |
| Feature ID | ASCII | 20 | |
| Feature Location | ASCII | 255 | May be truncated |
| Feature Type name | ASCII | 30 | |
| Primary Measurement | Numeric | 8.2 | |
| Unit of Measurement | ASCII | 15 | |
| Centroid Easting | Numeric | 8.2 | |
| Centroid Northing | Numeric | 8.2 | |
| Site Code | ASCII | 10 | |
| Feature Group Code | ASCII | 4 | |

The Site Code and Plot Number combination is unique, and would be used to obtain data from the Confirm database using ODBC.

Not all of the above data needs to be stored in the GIS, although it should be temporarily available to help identify Assets during the digitising process. As a minimum, the Asset ID, Plot Number and Site Code should be permanently stored in the GIS. The Feature Group code should also be recorded where multiple layer support is provided.

### Display Linear Events in the GIS

The following file format is used specifically to support the DynaSegCommand. The first four fields will always be as follows:.

| Field name | Data Type | Size | Comments |
|---|---|---|---|
| Asset ID | ASCII | 20 | See note above |
| Start Chainage | Numeric | 8.2 | |
| End Chainage | Numeric | 8.2 | |
| Offset | Numeric | 8.2 | The number of meters by which the linear event should be offset to the Right (negative offset indicates Left) |

All of the other fields in the file should be loaded into the GIS to allow the user to thematically map the data using one of the other attributes supplied by Confirm.

## DDE / COMMAND LINE MESSAGES

### GIS as the Server

### Application

For DDE, the name of the GIS server application for DDE purposes must be specified, for example 'WINMAP'. Confirm will be configured to use this application name during installation.

For Command Line operation, the full path name of the GIS server application for Command Line purposes must be specified, for example 'c:\program files\WINMAP\WINMAP.exe'. Confirm will be configured to use this application during installation.

The “LinkType” local setting needs to be set to “EXE” for the command line interface to be enabled.

### Topic

The topic for DDE messages between Confirm and the GIS must be specified, for example, ‘System’. Confirm will be configured to use this topic name during installation.

The Topic is not used for the Command Line interface.

### Commands

The GIS may implement any of the following commands:

| Command Identifier | What the GIS Should do | Parameter 1 | Parameter 2 | Parameter 3 |
|---|---|---|---|---|
| SelectCommand | Take focus and highlight the assets listed in the file | Transfer file name | | |
| UpdateCommand | Update the attributes associated with the supplied assets and prompt the user to digitise any assets that are not found on the map | Transfer file name | | |
| XYCommand | Zoom to the specified X,Y (in the local coordinate | X coordinate | Y coordinate | Text to display |

| Command Identifier | What the GIS Should do | Parameter 1 | Parameter 2 | Parameter 3 |
|---|---|---|---|---|
| | system) and display the text annotation | | | |
| DeleteCommand | Delete the specified assets from the map | Transfer file name | | |
| DynaSegCommand | Display the linear events specified in the dynaseg file | DynaSeg file name | Feature Group of the source assets | |

The various parameters may be included in the command if required using placeholders (%1, %2, etc.). If this is not possible, then the file name and other parameters should be general configurable settings for the GIS server application and it will not be possible to utilise the XYCommand.

Only the SelectCommand is mandatory. Confirm will not attempt to issue the other commands if they are not implemented.

**Confirm as a Server**

**Application**

The name of the Confirm application for DDE purposes will be ‘Confirm’. This may need to be overridden if it conflicts with other applications, so should not be hard-coded into the GIS server.

**Topic**

The topic for DDE messages from a GIS application will always be 'System'.

**Commands**

The following commands are accepted. The Confirm Import file name should be supplied in place of the ‘%1’. If no file name is specified, then Confirm will look for a default file name, that may be specified during installation. Note that the commands are not case sensitive.

| | DDE Command sent |
|---|---|
| Show Asset details for selection made within the GIS | [ShowFeatures(“%1”)] |
| Save selected Assets as a Named Selection in Confirm | [SaveAsNamedSelection(“%1”)] |
| Transfer Coordinate details for Assets selected in the GIS | [UpdateFeatureXY(“%1”)] |
| Show interactive Asset selection screen in Confirm | [SelectFeatures] |
| Flag the selected assets as “Dead” within Confirm | [DeleteFeatures(“%1”)] |