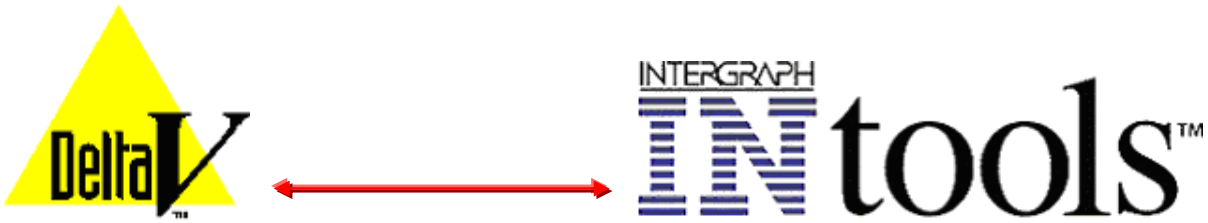
DeltaV-INtools Integration



This document explains how data can be exchanged between the DeltaV™ and INtools™ databases.

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Overview

The INtools™ (http://ppo.intergraph.com/intools/) instrumentation design and engineering software from Intergraph Corporation is widely used by engineering contractors and owner/operators. Projects that use INtools in combination with the DeltaV™ (http://www.easydeltav.com) digital automation system will benefit from the tight integration that has been developed between these two systems. This integration allows for the seamless exchange of I/O and instrumentation information between the configuration databases.

Some of the benefits that will be reaped from this easy transfer of information are:

- Reduced engineering hours - enter data once and re-use where needed
- Standardizes the way DeltaV-related data is captured in INtools so no time is spent on setting up the INtools database
- Increased project quality by ensuring data is consistent and reducing errors from duplicate manual entry
- Increased flexibility - easier and faster to propagate scope changes from one database to the other
- Reduced maintenance costs – easy to keep databases synchronized so that as built documentation is current

During the project design stage, it is a common practice to use data from the INtools system to configure I/O and instrument data in the DCS. However, during the plant operation stage, changes may be entered first into the DCS database and this data can be used to configure INtools. The DeltaV-INtools interface will provide for the transfer of data in either direction. The user can pre-view the data package and even compare the data to corresponding entries in the database. The user is not required to translate the data in any way. The interface performs the mapping between the XML schemas of the two databases.

The information that can be transferred spans both conventional I/O, including HART, and Fieldbus I/O systems. The INtools product has been enhanced to be 'DeltaV-aware'. This means that DeltaV terminology and I/O objects appear in INtools. INtools users can go to the Intergraph support site, log in, and download DeltaV I/O card definitions to jump start their instrument database, making initial data entry even easier and faster.

This integration capability is embedded directly into the DeltaV system architecture, thereby ensuring its commitment to ongoing enhancement and support.

On the INtools Side

The INtools Default Panel Manager library does not have the DeltaV I/O card definitions when shipped. These defintions must be downloaded after logging into the following WEB site : http://ppocrm.intergraph.com. The defintions are updated when new I/O objects are introduced into DeltaV. This allows the INtools library to be kept current with the latest DeltaV definitions. Once the defintions are imported, the DeltaV I/O card types will appear in the INtools Default Panel Manager, as if they were standard INtools panels.

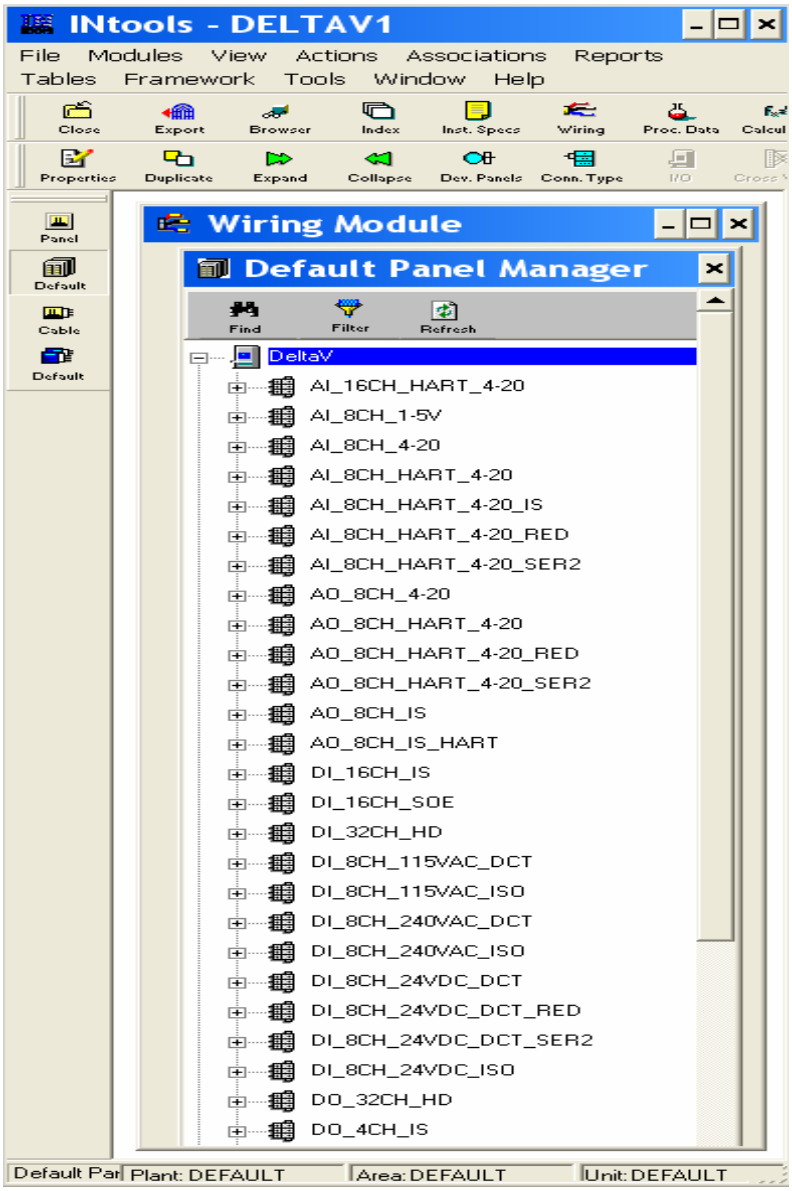

Fig. 1: DeltaV I/O definitions loaded into INtools

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After the DeltaV definitions are imported, they can be used as if they are standard INtools panels. The DeltaV I/O cards can be configured and the I/O channels can be bound to instrument tags. INtools will also allow the name of the DeltaV controller to be specified. If this controller does not exist in the DeltaV database then it will be created when the data is saved to DeltaV. INtools has detailed help available on how to correctly configure the DeltaV items.

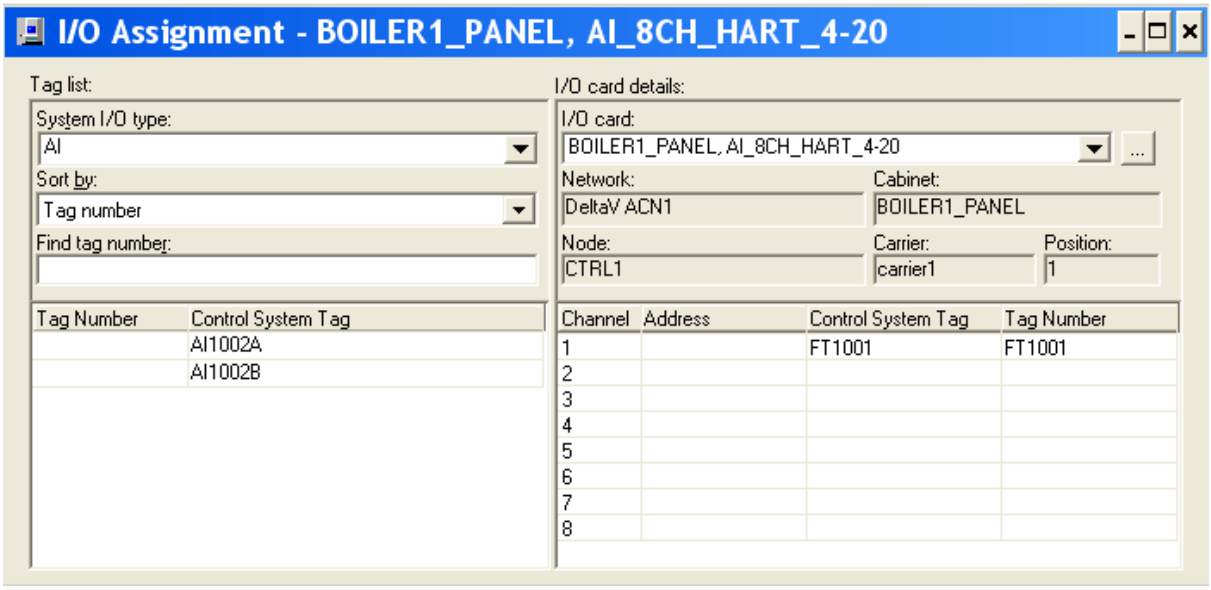


Fig. 2: A DeltaV I/O card being configured in INtools

From one menu in INtools all the relevant data from the various INtools configuration modules will be collected and exported into one file. The data for each DeltaV controller can be exported in a separate file.

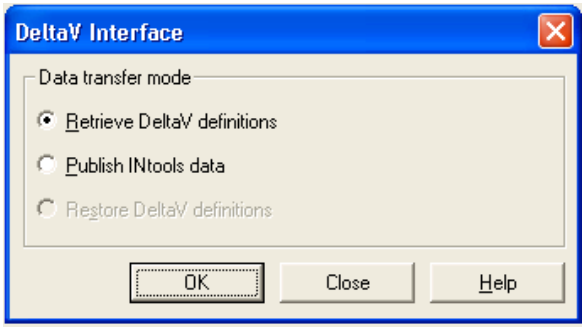
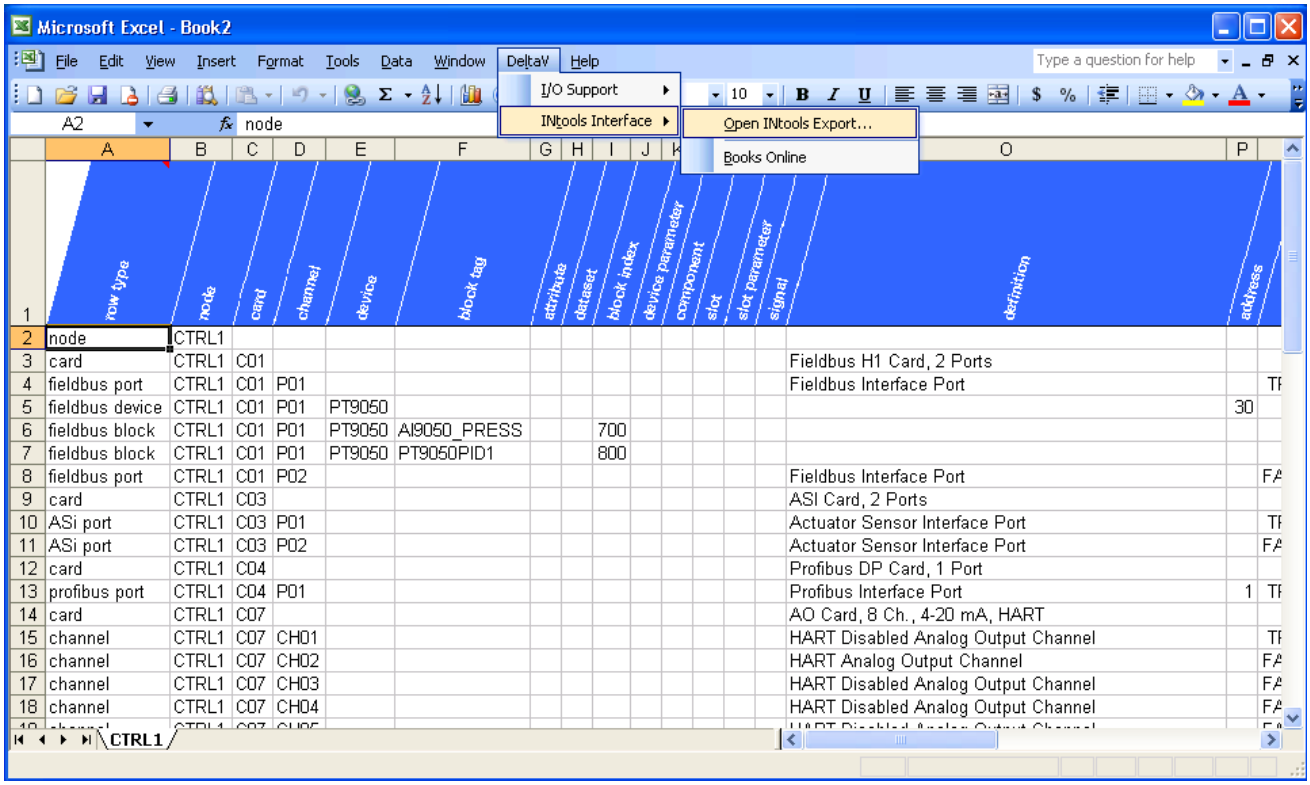


Fig. 3: Exporting INtools data to the DeltaV system!

On the DeltaV Side

An Excel add-in is provided with the DeltaV installation to process the INtools data. This add-in can load an export from INtools and save the data to the DeltaV database. The add-in detects and highlights errors in the data. It also compares the data in the spreadsheet to data that may already exist in the DeltaV database and highlights the differences.



	row type	node	card	channel	device	block tag	attribute	dataset	block index	device parameter	component	slot	slot parameter	signal	definition	address
2	node	CTRL1														
3	card	CTRL1	C01												Fieldbus H1 Card, 2 Ports	
4	fieldbus port	CTRL1	C01	P01											Fieldbus Interface Port	
5	fieldbus device	CTRL1	C01	P01	PT9050											30
6	fieldbus block	CTRL1	C01	P01	PT9050	AI9050_PRESS			700							
7	fieldbus block	CTRL1	C01	P01	PT9050	PT9050PID1			800							
8	fieldbus port	CTRL1	C01	P02											Fieldbus Interface Port	
9	card	CTRL1	C03												ASI Card, 2 Ports	
10	ASi port	CTRL1	C03	P01											Actuator Sensor Interface Port	
11	ASi port	CTRL1	C03	P02											Actuator Sensor Interface Port	
12	card	CTRL1	C04												Profibus DP Card, 1 Port	
13	profibus port	CTRL1	C04	P01											Profibus Interface Port	1
14	card	CTRL1	C07												AO Card, 8 Ch., 4-20 mA, HART	
15	channel	CTRL1	C07	CH01											HART Disabled Analog Output Channel	
16	channel	CTRL1	C07	CH02											HART Analog Output Channel	
17	channel	CTRL1	C07	CH03											HART Disabled Analog Output Channel	
18	channel	CTRL1	C07	CH04											HART Disabled Analog Output Channel	

Fig. 4 : INtools add-in for DeltaV

Types of Data Exchanged

DeltaV Controller name
I/O card binding to DeltaV controller
I/O channel types
Instrument tags and I/O binding
FOUNDATION™ Fieldbus devices and segments

Software Requirements

The minimum software versions required are:
DeltaV v7.3
INtools v6.0
Excel 2002