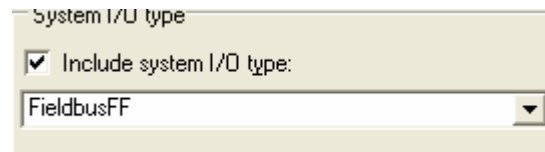


**Intergraph SmartPlant Instrumentation (SPI) V7, V2007
and Foundation Fieldbus**

- This document describes the issues and limitation that the SPI user is facing in V7 and V2007 with Foundation Fieldbus. Some of these issues are reported as TR (Trouble Report/Request) and other as CR (Customer Request).

CS Tag and Auto Create CS Tag:

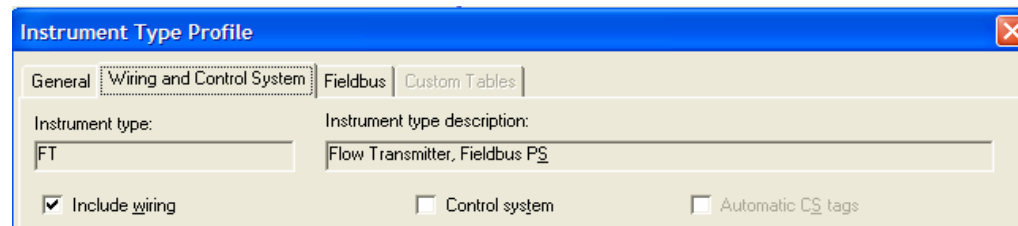
The SPI user has the option of checking Control System and Auto-Create CS Tag in the instrument index profile. These 2 check boxes should be grayed-out if the user select the IO type as FieldbusFF because all Control System tags are related to the VFD Tags (Virtual Field Device Tags). [SR# 1-64265146](#)



System I/O type

Include system I/O type:

FieldbusFF



Instrument Type Profile

General | **Wiring and Control System** | Fieldbus | Custom Tables

Instrument type: FT

Instrument type description: Flow Transmitter, Fieldbus PS

Include wiring Control system Automatic CS tags

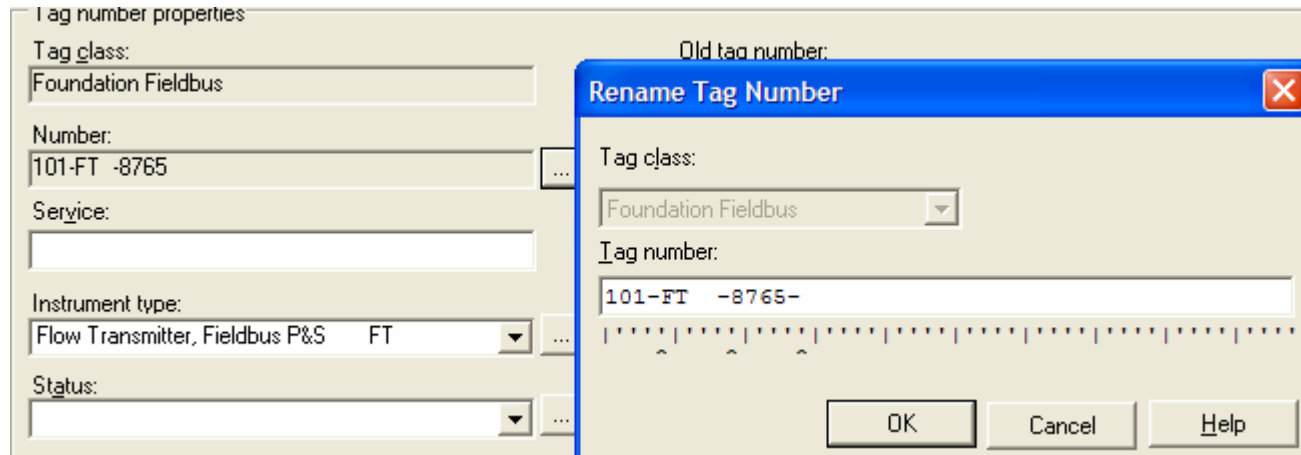
Function Block Assignment:

The instrument type profile allows the SPI user to associate a function block but the function block association will not apply if the user selects **Apply All Profiles** in the instrument index browser view. If this can be fixed and considered as a high priority it will save a lot of time because the user can associate function blocks in a batch mode. Better yet, add another option in the short-cut menu to apply Fieldbus Data or Apply Fieldbus Function Block. [SR# 1-65529741](#)

Tag Number Activities	70FE 0015	FIELD BUS LOOP	FE
Loop Number Activities	70FT 0009	FIELD BUS LOOP	FT
Open Supporting Table...	70FT 0011	FIELD BUS LOOP	FT
Count Records...	70FT 0012	FIELD BUS LOOP	FT
Apply Profile	70FT 0015	FIELD BUS LOOP	FT
Generate Process Data Sheet	70FT 3000	SIS LOOP	FT
Maintenance			VFD
I/O Assignment...			VFD
Device Panel Connection...			VFD
Field Value Changes...			VFD
Save Displayed Style			FV
Framework	70FV 0011	FIELD BUS LOOP	FV
	70FV 0012	FIELD BUS LOOP	FV
	70FV 0015	FIELD BUS LOOP	FV
	70FY 0009	FIELD BUS LOOP	FY
	70FY 0011	FIELD BUS LOOP	FY
	70FY 0012	FIELD BUS LOOP	FY

Tag Classification:

Allow the change from **Foundation Fieldbus** to **Conventional** for instrument tags. According to Intergraph this feature will be available in SPI2007, SP5. Can this option be available for SPI7??



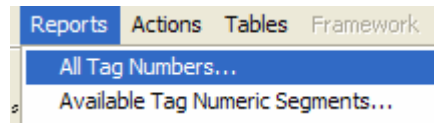
A suggestion to turn on the different tag classifications either by Domain Administrator (Nezar Faitouri, OSI) or by the DCS Interface (John Dressel, Fluor). This is to eliminate the confusion for the SPI user especially with HART instrumentation

VFD Tags (Virtual Field Device Tags):

1. Eliminate VFD tags from showing in the instrument index standard browser and the old tag number browser. Currently the user must filter the view to eliminate these VFD tags.

Field Name	Operator	Value	Logical
Tag Class	<>	Foundation/Profibus PA virtual tag	

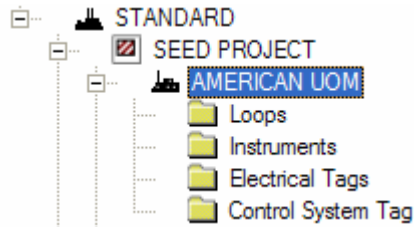
2. Eliminate VFD tags from showing in the All Tag Number Report (Instrument Index Report).



3. SPI does not validate unit assignment for VFD tags. At least a message by SPI will help flag the user if the user is not in the correct unit based on the Fieldbus index tag and give the user a choice between creating or not creating the VFD tag.

4. VFD tag naming Convention (V2007 and future) to relate back to the Instrument Index Fieldbus Tag Number that the VFD tag will be associated with. Maybe split the VFD naming convention into the different categories: VFD for Fieldbus, VFD for Hart and VFD for Profibus by creating new Tag Classifications. This could help as a batch creation for VFD tags. [SR# 1-65613461](#)

5. A report or a browser view to show the Fieldbus index tag, function block, VFD tag, P&ID and PAU for both the Fieldbus index tag and the VFD tag. The PAU for both tags to confirm that the VFD tags are created in the correct PAU (PAU that the Fieldbus index tag is assigned to).
6. Adding a new folder in the Domain Explorer – under the unit level for VFD tag list instead showing them in the Instruments folder.



7. VFD Tag Property screen editable fields, since line number is available, the Equipment number should be available as well or eliminate both. Maybe, for all editable fields on the VFD tag property screen , an automatic copy from the fieldbus index tag data will help.

Tag Number Properties

General | Power Supply | Custom Tables

Loop data

Loop number: 101-F-8765 Loop service: Associate...
New Loop...

Tag number properties

Tag class: Foundation/Profibus PA virtual tag Old tag number: Note...

Number: 101-FT-8765 Internal loop order: 1

Service: Equipment: ...

Instrument type: VIRTUAL FIELD DEVICE VFD Line: ...

Status: P&ID: ...

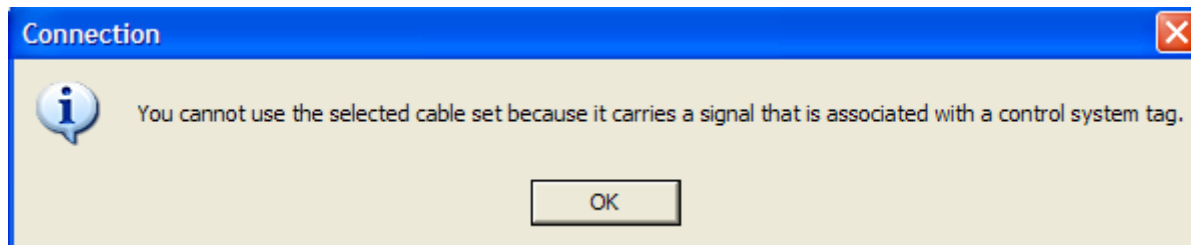
Location: Manufacturer: ...

8. Make the copy option on the CS tag property screen for a VFD tag to copy the Alarm information from the Fieldbus index tag. Also, allow the DCS range information to be copied automatically from the Fieldbus index tag.

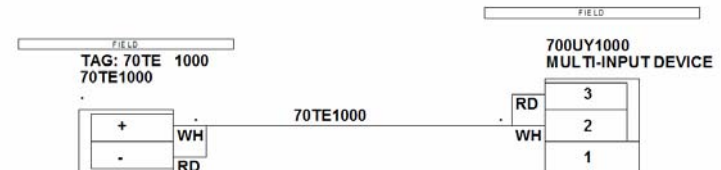
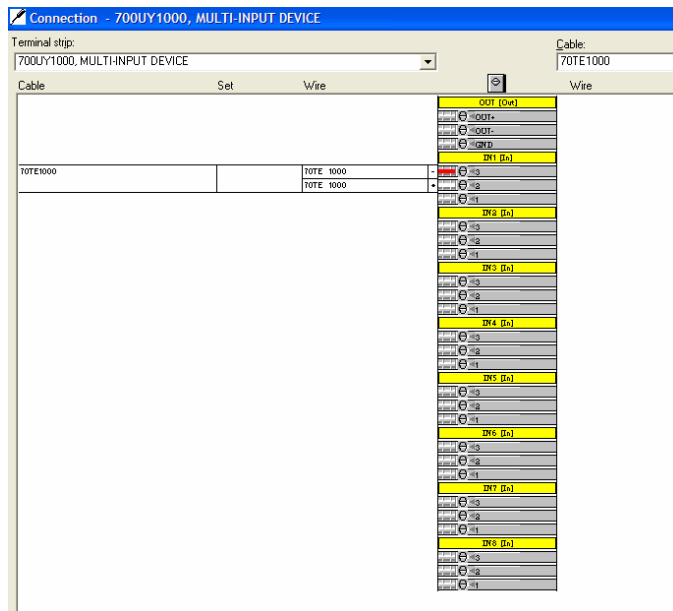
The screenshot shows the 'Control System Tag Properties' dialog box with the 'Alarm and Range' tab selected. The 'Control system tag' field contains '70FT0009'. The 'DCS range' section has empty text boxes for 'Min:', 'Max:', and 'Unit of measure:'. The 'Alarm' section has empty text boxes for 'Low-Low:', 'Low:', 'High:', and 'High-High:', and a 'Unit of measure:' dropdown menu. A checkbox labeled 'Copy alarm data from process data' is present and unchecked. Navigation buttons '< Previous' and 'Next >' are visible. At the bottom are 'OK', 'Cancel', and 'Help' buttons.

Multi-Input Devices (848T and 848L):

1. Solve the CS tag message when connecting cables to the multi-input device. The user must delete the created CS tags for the instruments that needs to be connected to the multi-input device then make the connection **or** make the connection wire by wire if the CS tags are not deleted. This issue is still an open issue for SPI7, SP9 and SPI2007, SP4.



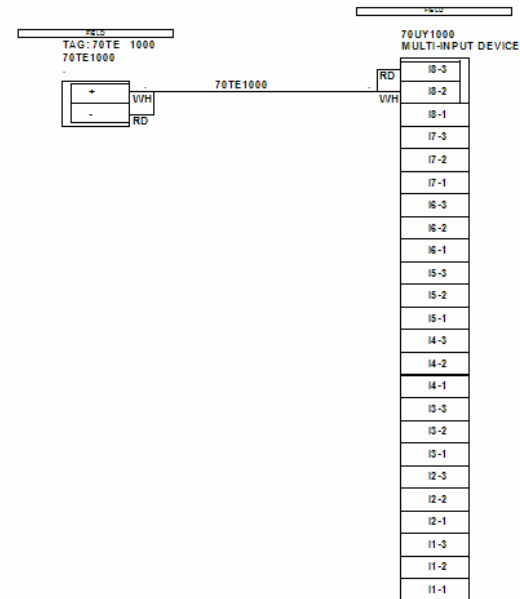
2. Allow all inputs or outputs for Multi-Input devices to show on Segment drawings and Loop drawings using the SmartPlant report generator. Right now, only connected inputs or outputs will show on these drawings. As a work around, the user creates the multi-input device with 1 input and 1 output and label the terminals with the input or the output number. Maybe add this option as a user preference under SmartPlant Report – ESL, Fieldbus Loop and Segment Wiring.



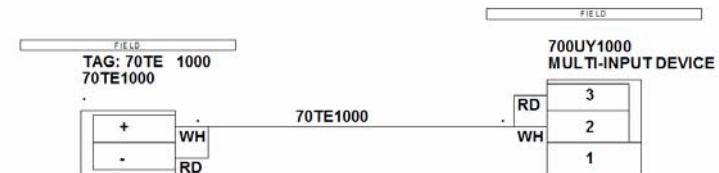
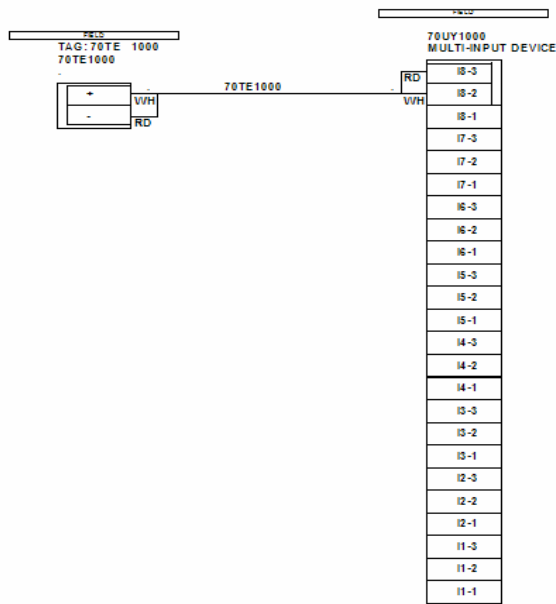
Connection - 70UY1000, MULTI-INPUT DEVICE

Terminal strip: 70UY1000, MULTI-INPUT DEVICE Cable: 70TE1000

Cable	Set	Wire	Wire	Set
			OOT (Ow)	
			OOT+	
			OOT-	
			IGND	
			DI (In)	
70TE1000		70TE 1000	18-3	
		70TE 1000	18-2	
			18-1	
			17-3	
			17-2	
			17-1	
			16-3	
			16-2	
			16-1	
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			11-2	
			11-1	



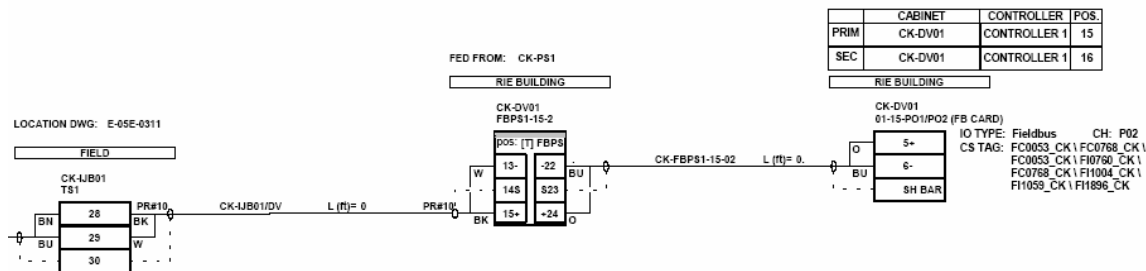
3. The SmartPlant Report generator treats the Multi-Input Device terminals as Field Device terminals. This is causing the input or the output numbers not to appear on any drawing that is available to be generated for Multi-Input Devices. Having SmartPlant Report generator to treat these terminals as Apparatus terminals will allow the input or the output numbers to appear on the drawings.



Fieldbus Segment Validation Report:

Foundation Fieldbus segments require 2 terminators (Resistors), one in the field on the far end fieldbus brick (fieldbus JB) and the other in the controller. For DeltaV, Yokogawa CS3000 and Honeywell Experian, the terminator is internal to the fieldbus power conditioner (the power conditioner is a wiring equipment that connects between the field connections and the fieldbus IO strip). SPI7 and SPI2007 validation report will fail using this design. SPI does not validate the terminator in the power conditioner, SPI required the terminator to be on the fieldbus IO strip.

[CR# PB65208](#). According to Intergraph, this is schedules to be fixed or implemented in V2008, can this also be considered in V7 and V2007 in the new patches especially SPI Interfaces with these DCS vendors????



Browsers and/or Reports:

1. Add the Segment Name (Group Name) as part of the instrument index standard browser so the SPI user can generate one browser report for Fieldbus instruments and Non Fieldbus instruments. Currently, SPI users must use a UDF to track the segment name so the user can generate one report instead of multiple reports.
2. A browser or a report to show the Tag Number, Multi-Input Device name/number and the Channel Number on the Multi-Input Device that the instrument is connected to. Currently, the SPI user must use a UDF to track this information.
3. Allow the Comparison option to be available for the Fieldbus Standard Browser. Currently, this is the only browser that the user can track changes for fieldbus tags and segment association
[SR# 1-56792311](#).

Rule Manager:

For V2007, Maybe the Rule Manager can help eliminate a lot of these issues and limitations especially with the Copy features (Data transfer between the Fieldbus index tag and the VFD tag)

Do and Do Not Do:

1. In V7 and V2007, Do not change the I/O type in the index browser from FieldbusFF to a Conventional (AI, AO). This will not update the tag classification from Foundation Fieldbus to Conventional.

70FE 0012			Conventional
70FE 0015			Conventional
70FT 0009	FieldbusFF		Foundation Fieldbus
70FT 0011	AI	Analog Input	Foundation Fieldbus
70FT 0012	AO	Analog Output	Foundation Fieldbus
70FT 0015	DI	Digital Input	Foundation Fieldbus
70FT 3000			Conventional
70FT0009	DO	Digital Output	Foundation/Profibus PA virt
70FT0011	FieldbusFF	Foundation	Foundation/Profibus PA virt
70FT0012	HART AI	HART Analog Input	Foundation/Profibus PA virt
70FT0015			Foundation/Profibus PA virt

2. In V7, Do not change the I/O type in the index browser from a Conventional (AI, AO) to FieldbusFF. This will not change the tag classification from Conventional to Foundation Fieldbus.

3. In V2007, Do change the I/O type in the index browser from Conventional to FieldbusFF. This will update the tag classification from Conventional to Foundation Fieldbus.
4. Always assign a function block to the fieldbus instrument types before creating any fieldbus tag in the SPI database, this will help the SPI user to have a function block to be associated automatically during the creation of the tag.
5. Always make sure you are connected/logged-in the correct unit when creating VFD tags.
6. Do not make all of your fieldbus connections for a segment (Field to DCS) then associate the segment to the home run cables. Always, associate the segment while you are making the connections (Field to DCS) especially if different segments are connected to a strip (junction box or a marshaling strip). [SR #: 1-25973801](#)

