FIRELEC Migration Solution

RS3™ > CHARMs
Discrete Inputs/Outputs

RIA (RS3 Interface Adapters)

FMS-RS3FIM-DVC-1

Summary

1. INTRODUCTION

The purpose of this document is to guide the user of a FIM series I/Os RS3™ system within the safe, efficient and easy way to migrate toward DeltaV™ Electronic Marshalling.

FIRELEC has developed a migration solution "**FMS-RS3FIM-DVC-1**" allowing to protect the existing wiring investment as the user converts from an existing RS3™ system (FIM-series I/Os) to the DeltaV™ CHARM I/O architecture.

The **FMS-RS3FIM-DVC-1** solution is a set of migration adapters installed in place of existing FIM electronic modules onto Input/Output termination panels.

On the front of the RIAs, D-SUB connectors are used for connecting existing I/Os to the CHARM using dedicated shielded cables with D-SUB connectors at one end and labelled wires or suitable connectors (matching with the type of CHARM terminal block) at the other end.

1.1. KEY ADVANTAGES OF THE FMS-RS3FIM-DVC-1 SOLUTION

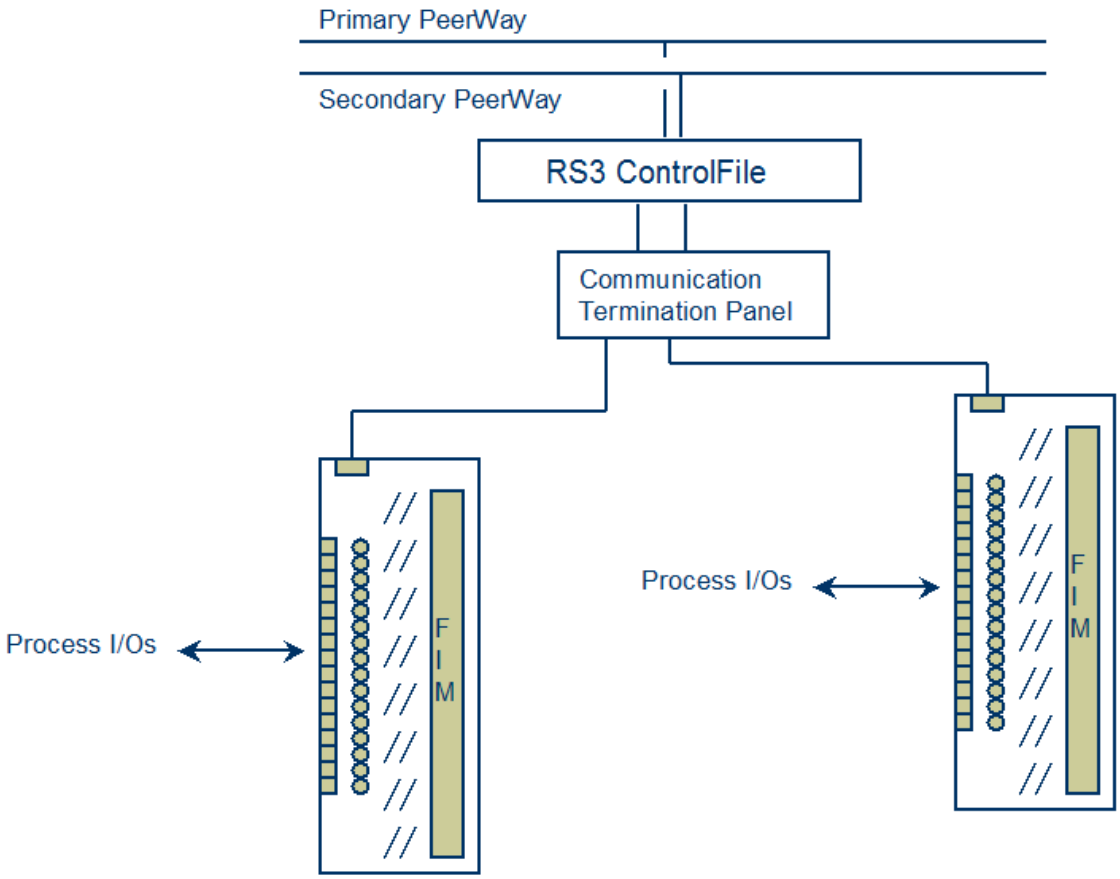
FMS-RS3FIM-DVC-1 solution protect your wiring investment as you convert from the RS3™ FIM series system to the DeltaV™ Electronic Marshalling of Emerson Process Management with following advantages :

- **FMS-RS3FIM-DVC-1** is a pre-engineered marshalling solution ready to work without any technical rework or limitation regarding existing capabilities of the RS3™ system to be migrated.
- The system migration can be done gradually, step by step with reduced risk for the process unit
- As the instrument wiring is not disturbed, the instrument checkout during start-up is reduced to the minimum
- The DeltaV™ system's configuration allows for the engineering conversion to be done efficiently. The speed at which **FMS-RS3FIM-DVC-1** solution can be implemented ensures to reduce the process downtime to the minimum.
- All existing documentations (electrical schemes, loop drawings, maintenance procedures, ...) remain unchanged as the existing I/O panels are kept in place.

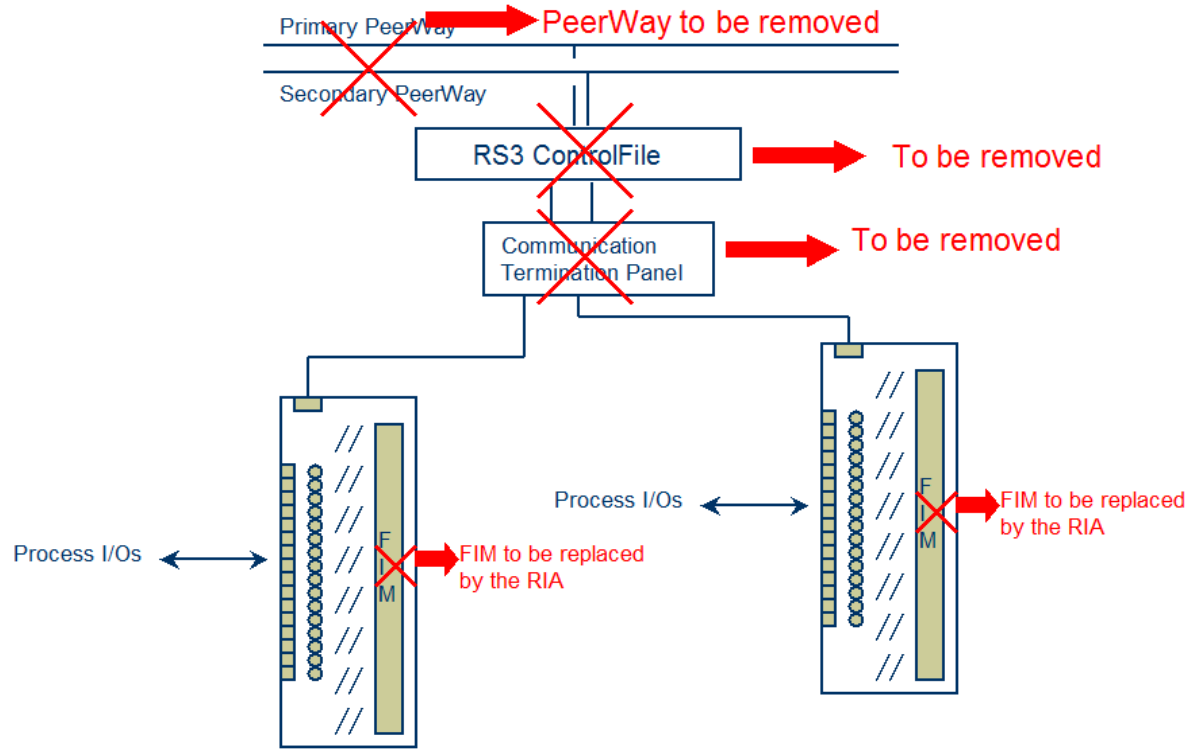
1.2. DESCRIPTION OF THE "FMS-RS3FIM-DVC-1" SOLUTION

1.2.1. Principle of migration

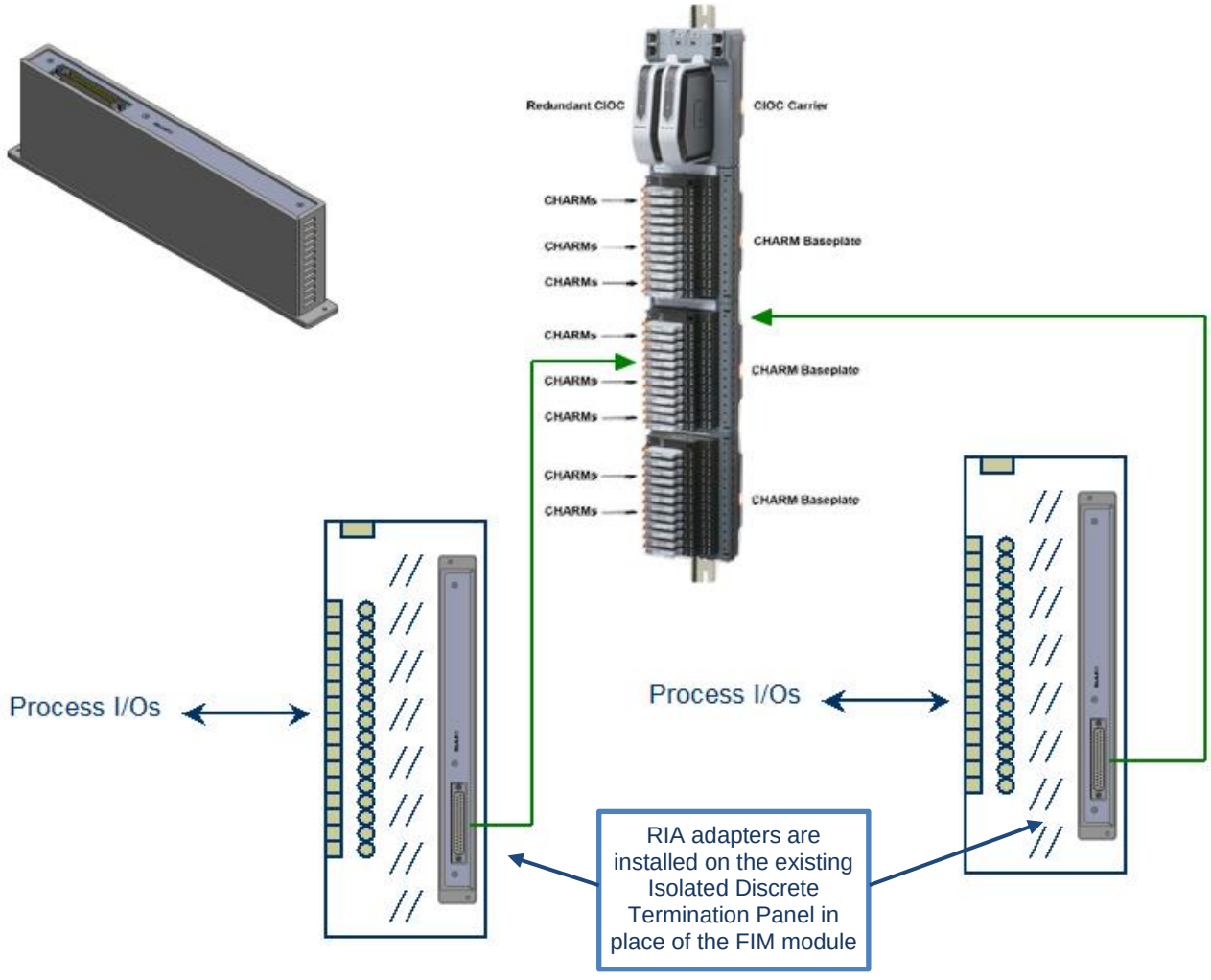
1.2.2. Existing RS3 architecture



1.2.3. Existing RS3 Hardware to be removed



1.2.4. New DeltaV™ architecture



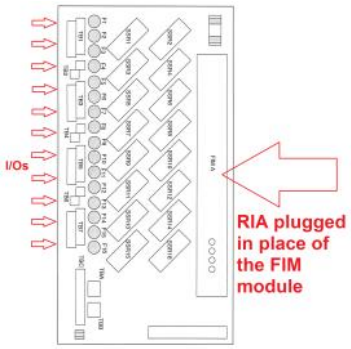
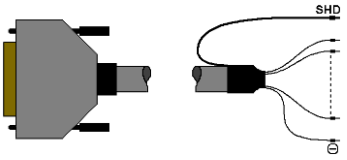
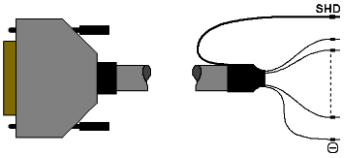
2. DISCRETE INPUTS/OUTPUTS

2.1. EXISTING RS3 PANEL TO BE KEPT : ISOLATED DISCRETE TERMINATION PANEL (A / B)

2.1.1. MDIO Type : 01984-4121-000X (Panel A) : 16 DI /DO (CH1 - CH16)

Panel A with I/O distribution as follow : Channels 1 to 16 : DI or DO

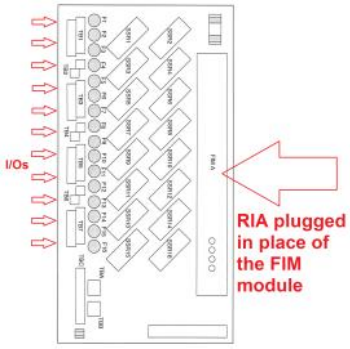
New DeltaV™ architecture - FMS-RS3FIM-DVC-1-DIDO1-A1

Process I/O	Adapter	Cables	CHARM I/O
Panel to be kept : **Panel A**	**RIA-DIDO-05-1**	**CBL-1996 and CBL-1998**	**2 x CHARM I/O Carrier**
Panel A 01984-4121-000X 01984-4383-0002 Equipped with 16 DI or DO modules (channels 1 - 16)	Each channel is configured by internal jumpers as DI or DO according to the Panel A modules arrangement.	Detail of the cable See cable section on www.firelec.com	DI and DO CHARM's are installed in the CHARM I/O Carrier according to the Panel A modules arrangement. CHARM references : **SE4301T01** : Discrete Input NAMUR **SE4302T01** : DO 24V DC High-Side
		**CH 1 to 12 : CBL-1996** *CBL-SUBD15FSHD/14W/1996*  **CH 13 to 16 : CBL-1998** *CBL-SUBD15FSHD/6W/1998* 	 All Channels use a common return externally connected*****  All Channels use a common return externally connected*****

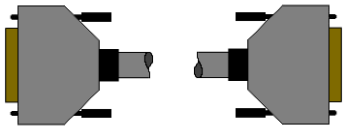
*** The terminal 2 of each channel must be externally connected to the common return of the Firelec cable.**

New DeltaV™ architecture - FMS-RS3FIM-DVC-1-DIDO1-A2

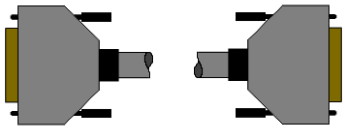
Process I/O	Adapter	Cables	CHARM I/O
Panel to be kept : **Panel A** Panel A 01984-4121-000X 01984-4383-0002 Equipped with 16 DI or DO modules (channels 1 - 16)	**RIA-DIDO-05-1** Each channel is configured by internal jumpers as DI or DO according to the Panel A modules arrangement.	**2 x CBL-2002** Detail of the cable See cable section on www.firelec.com	**2 x CHARM I/O Carrier** **Equipped with TP-FM02-05** DI and DO CHARM's are installed in the CHARM I/O Carrier according to the Panel A modules arrangement. CHARM references : **SE4301T01** : Discrete Input NAMUR **SE4302T01** : DO 24V DC High-Side



CH 1 to 12 : CBL-2002
CBL-SUBD15FSHD/SUBD15F/2002



CH 13 to 16 : CBL-2002
CBL-SUBD15FSHD/SUBD15F/2002

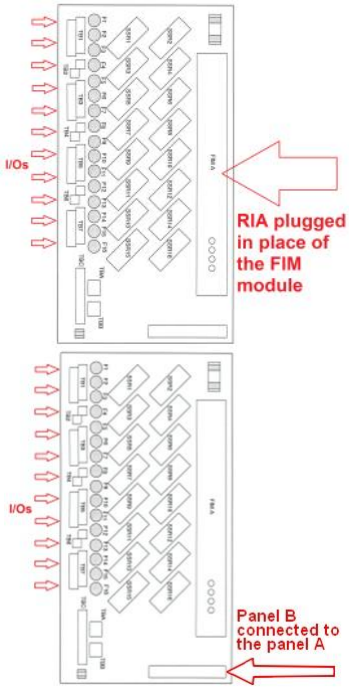


2.1.2. MDIO Type : 01984-4121-000X (Panel A) : 16 DI /DO (CH1 - CH16) and 01984-4124-000X (Panel B) : 16DI (CH17 - CH32)

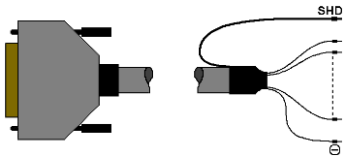
Panel A with I/O distribution as follow : Channels 1 to 16 : DI or DO
Panel B with I/O distribution as follow : Channels 17 to 32 : DI

New DeltaV™ architecture - FMS-RS3FIM-DVC-1-DIDO2-A1

Process I/O	Adapter	Cables	CHARM I/O
Panel to be kept : **Panel A and Panel B** Panel A : 01984-4121-000X 01984-4383-0002 Equipped with 16 DI or DO modules (channels 1 - 16) Panel B : 01984-4124-000X 01984-4383-0002 Equipped with 16 DI modules (channels 17 - 32)	**RIA-DIDO-05-1** Adapter installed on existing Isolated Discrete Termination Panel A in place of the FIM module For CH1 to CH16, each channel is configured by internal jumpers as DI or DO according to the Panel A modules arrangement.	**2 x CBL-1996 and CBL-1997** Detail of the cable See cable section on www.firelec.com	**3 x CHARM I/O Carrier** For CH1 to CH16, DI and DO CHARM's are installed in the CHARM I/O Carrier according to the Panel A modules arrangement. For CH17 to CH32, DI modules are installed. CHARM references : **SE4301T01** : Discrete Input NAMUR **SE4302T01** : DO 24V DC High-Side

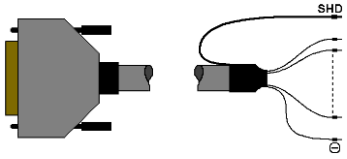


CH 1 to 12 : CBL-1996
CBL-SUBD15FSHD/14W/1996



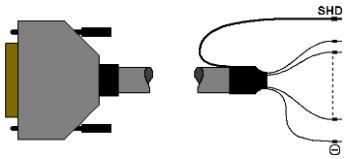
All Channels use a common return externally connected*

CH 13 to 24 : CBL-1996
CBL-SUBD15FSHD/14W/1996



All Channels use a common return externally connected*

CH 25 to 32 : CBL-1997
CBL-SUBD15FSHD/10W/1997

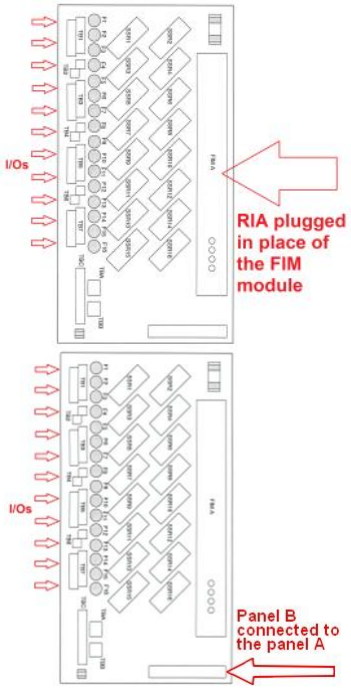


All Channels use a common return externally connected*

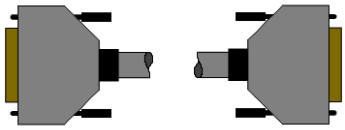
*** The terminal 2 of each channel must be externally connected to the common return of the Firelec cable.**

New DeltaV™ architecture - FMS-RS3FIM-DVC-1-DIDO2-A2

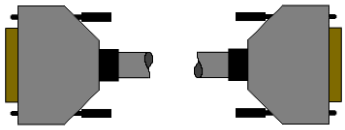
Process I/O	Adapter	Cables	CHARM I/O
Panel to be kept : **Panel A and Panel B** Panel A : 01984-4121-000X 01984-4383-0002 Equipped with 16 DI or DO modules (channels 1 - 16) Panel B : 01984-4124-000X 01984-4383-0002 Equipped with 16 DI modules (channels 17 - 32)	**RIA-DIDO-05-1** Adapter installed on existing Isolated Discrete Termination Panel A in place of the FIM module For CH1 to CH16, each channel is configured by internal jumpers as DI or DO according to the Panel A modules arrangement.	**3 x CBL-2002** Detail of the cable See cable section on www.firelec.com	**3 x CHARM I/O Carrier Equipped with TP-FM02-05** For CH1 to CH16, DI and DO CHARM's are installed in the CHARM I/O Carrier according to the Panel A modules arrangement. For CH17 to CH32, DI modules are installed. CHARM references : **SE4301T01** : Discrete Input NAMUR **SE4302T01** : DO 24V DC High-Side



CH 1 to 12 : CBL-2002
CBL-SUBD15FSHD/SUBD15F/2002



CH 13 to 24 : CBL-2002
CBL-SUBD15FSHD/SUBD15F/2002



CH 25 to 32 : CBL-2002
CBL-SUBD15FSHD/SUBD15F/2002