



SPIRE-AST-COM-001752

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Reference:

HP-ASED-FX-0596-03

Date:

Subject: Cryoharness – SPIRE overshield

Dear Eric,

With reference to the QPM Splinter meeting (Herschel Instrument Interface Open Points) on 17/07/03 (ref. HP-ASP-MN-3421) EADS Astrium would like to present further details of the Option 3 of the SPIRE overshield implementation within and outside of the CVV for your approval.

The following provides a summary of the scope of proposed implementation:

1. CVV internal double shielded cables:

- Double cable shields will be provided within the harness bundles C1 to C9 (CVV internal for:
 - o **all 12-ax cables**
 - o **all STP cable for bias lines**
- All other cables in the bundles C1 to C9 will not be changed
- All cables in the bundles C10 to C13 will not be changed

Page 1 of 7

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From:
Ref.: HP-ASED-FX-0596-03
Date:
-2-

2. Faraday interconnection (CVV external SH):

The method for interconnection has been reviewed at CASA together with ESA (Ref. HP-2-ASED-0440) and details are shown in Annex 2. This method allows that all Faraday contacts in the outer ring of each feedthrough connector can be connected to the inner shield. The outer shield will be connected to the backshell.

3. Faraday interconnection (SVM):

Within the SVM two layers of manganin braid will be superseded by two isolated aluminium wrapped overall shields. See Annex 3.

4. Faraday interconnection (CVV intern):

CVV internal no braided overall shield will be continued. The proposed design is to use double shielded 12-ax and double shielded "STP", which are both new cable types. The SST shielding requires welding, as for the normal single shielded cables. This method provides one shield jumper core per shield. Therefore not all Faraday cage contacts within the feedthrough connector could be served by those cores.

In order to connect all Faraday cage contacts it is proposed to daisy-chain all remaining contacts by single SST core AWG-38.

Please note that Astrium has already received the go-ahead for the cable type procurement by Alcatel and ESA, which has been initiated.

In summary, please confirm the following:

1. Please confirm that the proposed cables, to be double shielded, are those as identified above using the List prepared by ESA (see attached list in Annex 1)
2. Please confirm that the shown interconnection method (Annex 2) is acceptable for SPIRE.
3. Please confirm the Faraday interconnection methods, proposed above.

Please provide your response by 5th August 2003.

Kind regards

EADS ASTRIUM

A handwritten signature in black ink, appearing to read "i. V. W. Rühle".

i. V. W. Rühle

A handwritten signature in black ink, appearing to read "i. A. R. Hohn".

i. A. R. Hohn



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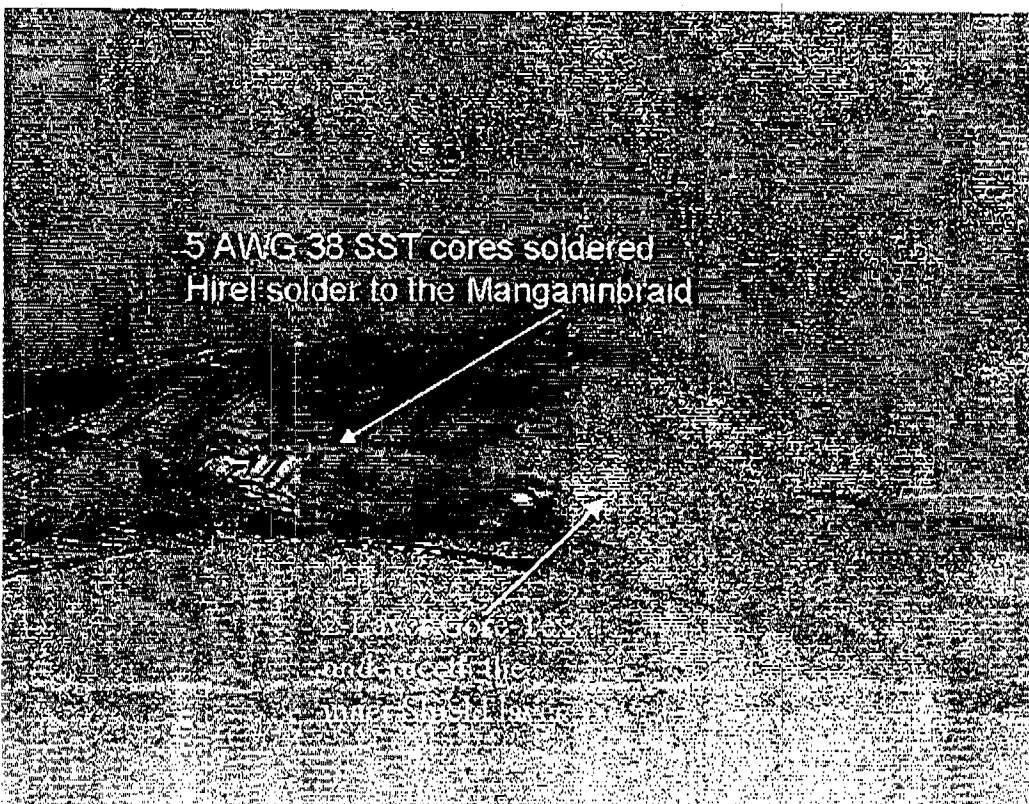
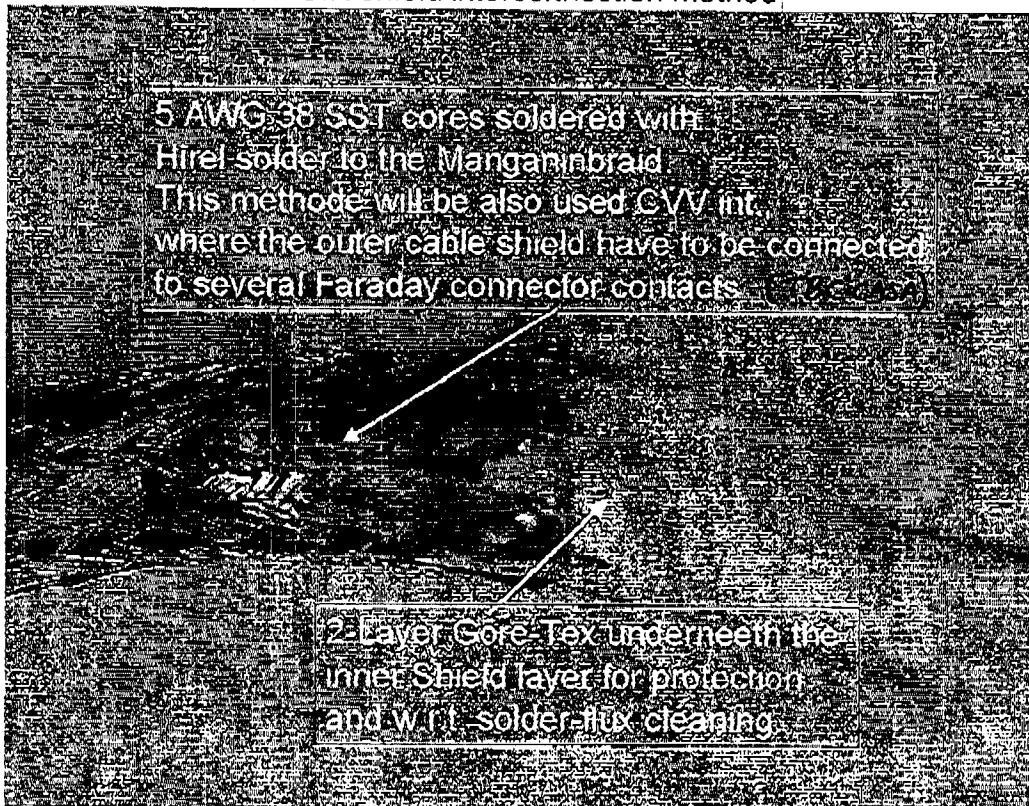
Harness side		Unit side		Unit/cont.	Signal	Wiring Type
Type	Manufacturer	Type	Manufacturer	name		
MOM 25 S * Glenair 507-T-15	Glenair	MOM25 P Filler 1A7/C18 000713 04	Crystek	FPU J3	PSW Signals	0
MOM 25 S * Glenair 507-T-15	Glenair	MOM25 P Filler 1A7/C18 000713 04	Crystek	FPU J1	PSW Signals	0
C10	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J19	FA - Cooler (P)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J21	FA - Speed. Sfm. (P)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J23	FB - Therm. (P)	0
C11	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J25	FD - BSM (P)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J27	FC - SMEC Launch (P)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J29	FG - SMEC Drive (P)	0
C12	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J20	FD - Cooler (R)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J22	FD - Speed. Sfm. (R)	1
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J24	FE - Therm. (R)	1
C13	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J26	FE - BSM (R)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J28	FF - SMEC Launch (R)	0
MOM 37 P * Glenair 507-T-15	Glenair	MOM37 S SPIRE 10200760-1	Crystek	FPU J30	FF - SMEC Drive (R)	0
				Total:		18

Harness Type	Design	Signals	Total
0100B-38	1 core (unshielded)	Doormat signals + 4 PTC lines	18
0210S-33	1 core (unshielded)	Greening	18
0410S-33	1 core (unshielded)	Doormat Bias + SMEC signals	31
0600B-30	1 core (unshielded)	Codes: BSM, SMEC, Therm., Speed. Sfm.	18
0210S-33	1 core (unshielded)	Codes: Speed. Sfm.	18
0340S-33	1 core (unshielded)	BSM	4
0240S-30	1 core (unshielded)	BSM & SMEC	24
0410S-30	1 core (unshielded)	BSM & Therm.	0



From:
 Ref.: HP-ASED-FX-0596-03
 Date:
 -5-

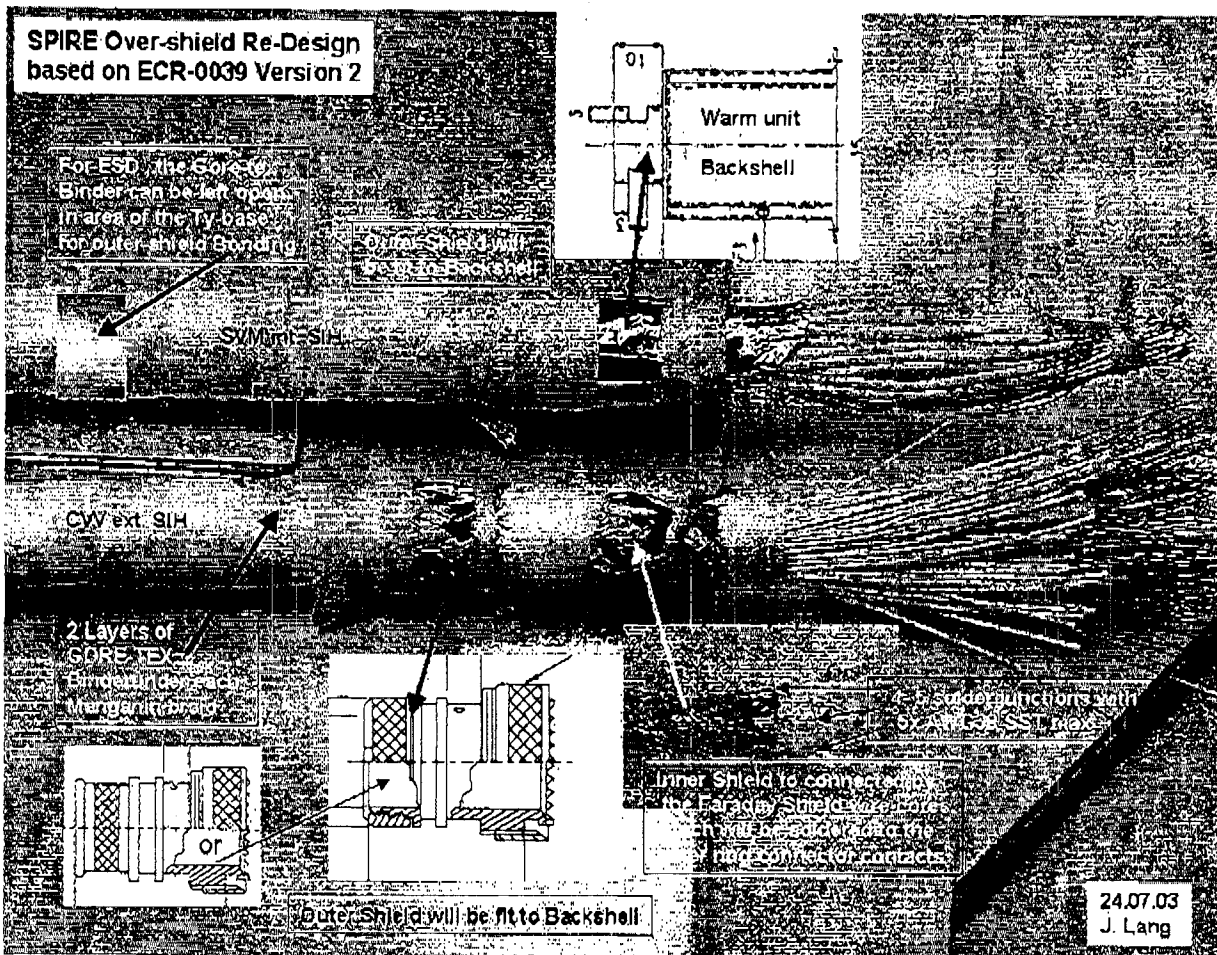
Annex 2: CVV Extern SIH shield interconnection method





From:
 Ref.: HP-ASED-FX-0596-03
 Date:
 -6-

Annex 3: SVM and CVV external SIH shield interconnection methods





From:
Ref.: HP-ASED-FX-0596-03
Date:
-7-

Annex 4:

