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LIVERPOOL STREET SC

SHENFIELD IECC C

**IECC SCALABLE
EXTERNAL TD COMMUNICATIONS
SPECIFICATION**

A02LIV-IECC-ECS-001

VERSION BG1BG2

Controlled Copy No.

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ISSUE and AMENDMENT RECORD

Version	Prod	Chk	Date	Details of change
AY1	■	■	11/06/2015	Initial issue of document, produced from the following documents: Berth Attribute Tables: A02LIV-3201D-Q-BA4 Version ACW1 A02LIV-3206D-Q-BA5 Version ADU5 ECS Port Allocations: A02LIV-3201D-Q-ECS3 Version AGJ1 There are no design or data changes in this version.
AY2	■	■	11/06/2015	Updates for Crossrail Stage 2 Brentwood Turnback and recovery of Spare Links 1, 3, 4 and 5.
BG1	■	■	28/06/2016	Updates for migration to IECC Upgraded Workstation system for Stage 4 of Crossrail Northeast Project; CEG Ports reallocated for UGW, berths removed in line with UGW requirements and ECS, Workstation & DIS references removed.
BG2	■	■	15/12/2016	Updated for 'copy-through' of updates for Anglia TD Renewals Project versions DR1 & DR2 (Sections 1.4, 2.4, 2.6.2, 4.1, 4.2, 5 (new), 6.4 & 8.4).

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RESONATE GROUP LTD	Name	Signature	Date
Produced			15/12/2016
Checked			15/12/2016

This document has been accepted, on behalf of Network Rail by:

Print name	Signature	Date

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1 INTRODUCTION

1.1 Document Overview

This document defines the system configuration for the external Train Descriptor (TD) and other system communications associated with Shenfield Integrated Electronic Control Centre (IECC) C. The following information is supplied for each link:

- Link Characteristics
- TD berths transmitted and received
- Signalling items transmitted and received (where appropriate)
- Subsystems which will be informed of changes in remote link status

1.2 Abbreviations

ARS	Automatic Routesetting Subsystem
CEG	Combined External Communications and Gateway Subsystem
IDPM	IECC Data Preparation Manual
IECC	Integrated Electronic Control Centre
SMART	Signal Monitoring and Reporting of Trains
TD	Train Descriptor

1.3 Related Documents

IECC Application Contents Manual.	NR/SP/SIG/10040 Issue 8
IDPM 1302 External Communications Reference	SAO-IEC-HD-56 Issue 4.1

1.4 IECC Scalable Conversion

The table below defines how the CEG ports in IECC Classic data are allocated to physical ports on IECC Scalable hardware. CEG channels 1 to 14 are located on port server A1, whilst channels 15 to 28 are on port server B1. The inter-unit links (on CEG channels 29 and 30) communicate via Ethernet using IP addresses and are therefore not allocated to port servers like the other CEG channels.

Link Name	IECC Scalable		IECC Classic
	Port Server No.	Port Server Physical Port	CEG Port No.
SMART PC 1	A1	1	1
Stratford IECC	A1	2	2
Colchester PSB (Channel 1)	A1	6	6
Stratford IECC	A1	7	7
Southend Victoria Shunter's TD	A1	8	8
SMART PC 2	B1	1	15
Colchester PSB (Channel 2)	B1	6	20

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2 OVERVIEW

2.1 All Berths known to the IECC

The following is a complete list of all berths within Shenfield IECC C.

0447	0449	0451	0453	0455	0457	0459	0461	0463	0465
0467	0469	0471	0473	0475	0477	0478	0479	0480	0481
0482	0483	0484	0485	0486	0487	0488	0489	0490	0491
0492	0493	0494	0495	0496	0497	0498	0499	0500	0501
0502	0503	0504	0505	0506	0507	0508	0509	0510	0511
0512	0513	0514	0515	0516	0517	0518	0519	0521	0522
0523	0524	0525	0527	0528	0529	0530	0533	0534	0535
0536	0537	0538	0539	0540	0541	0542	0543	0544	0545
0547	0549	0550	0551	0552	0553	0554	0555	0556	0557
0558	0559	0560	0562	0564	0566	0568	0569	0570	0571
0572	0573	0574	0575	0576	0577	0578	0579	0580	0581
0582	0583	0584	0585	0586	0587	0588	0589	0591	0592
0593	0594	0595	0596	0597	0598	0599	0602	0603	0604
0605	0606	0607	0608	0609	0610	0611	0612	0613	0614
0615	0616	0618	0619	0620	0621	0622	0623	0624	0625
0626	0627	0628	0629	0630	0631	0634	0636	0638	0639
0640	0642	0644	0646	0648	0649	0650	0651	0652	0654
0658	0660	0662	0664	0666	0692	0694	0696	0708	5132
5134	5137	5139	5146	5157	5165	5167	5170	A136	A138
A668	A670	A672	A674	B136	B138	B668	B670	B672	B674
BURN	C668	C670	C672	C674					DB01
DB02	DB03	DNSG	DNSN	DNSS					
	FLSK		LSUE	LSUM				R136	R138
R447	R449								
	R668	R670	R672	R674	R708				
5140	5150	5151			SMGF	SMS1	SMS2		
			UPSG	UPSN	UPSS				
WDNS	WUPS								
0669	0671	0675	0677	0679	0683	0685	0687	0691	0693
0695	0697	0701	0703	0705	0710	0711	0712	0713	0714
0715	0716	0717	0718	0722	0723	0724	0725	0726	0727
0729	0730	0731	0732	0733	0734	0735	0736	0737	0739
0740	0741	0742	0747	0751	0753	0755	0756	0758	0759
0760	0761	0762	0763	0764	0765	0766	0767	0769	0770
0771	0772	0773	0778	0779	0781	0782	0784	0785	0786
0787	0788	0789	0790	0791	0792	0793	0794	0796	0799
0800	0801	0803	0804	0805	0806	0807	0810	0812	0814
0815	0816	0817	0818	0819	0820	0822	0823	0824	0825
0826	0827	0828	0829	0830	0832	0834	0836	0837	0844
0846	0848	0850	0854	0856	0858	0860	0862	0864	0868
0872	0874	0876	0878	0896	0898	5185	5186	5188	5189
5193	5202	5203	CRES						
			DEPO	DMLS	GYNE	LSUC	MSDG		
	R896	R898	RDMA	SHAL	UMAP		USDG	YDRD	

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Stratford IECC B Fringe Berths

0415	0417	0419	0421	0423	0425	0427	0429	0431	0433
0435	0437	0439	0441	0442	0443	0444	0445	0446	0448
0452	0454	0456	0458	0460	0462	0464	0466	0470	0472
0474	0476								

Colchester PSB Fringe Berths

0882	0884	1004	1005	1006	1007	1008	1009	1010	1011
1020	1021	1022	1023	1027	1028	1030	1033	1034	1035
1036	1039	1040	1046	1047	1048	1051	1054	1055	1056
1057	1058	1059	1063	1065	1067	1069	1071	1072	1074
1076	1080	1083	1085	4006	4009	4010	4013	DMAP	P6AR

STIN

2.2 Berths from Stratford IECC B

The following berths belong to TD Area **STW2**:

0415	0417	0419	0421	0423	0425	0427	0429	0431	0433
0435	0437	0439	0441	0442	0443	0444	0445	0446	0447
0448	0449	0452	0454	0456	0458	0460	0462	0464	0466
0470	0472	0474	0476						

2.3 Berths from Colchester PSB

The following berths belong to TD Area **COLC**:

0882	0884	1004	1005	1006	1007	1008	1009	1010	1011
1020	1021	1022	1023	1027	1028	1030	1033	1034	1035
1036	1039	1040	1046	1047	1048	1051	1054	1055	1056
1057	1058	1059	1063	1065	1067	1069	1071	1072	1074
1076	1080	1083	1085	4006	4009	4010	4013	DMAP	P6AR

STIN

2.4 Berths from Southend Victoria Shunter's Fringe TD

The following berths belong to TD Area **SDCS**:

0629	0631	0666	A668	A670	A672	A674	5165	5167	5170
------	------	------	------	------	------	------	------	------	------

2.5 Initial Train Describer Descriptions

The following berths require initial descriptions interposed (berth on the left, description on the right):

{DB01	TRTS}	{DB02	TRTF}	{DB03	TRTC}
-------	-------	-------	-------	-------	-------

2.6 Early Transmission and ARS Strike-in Berths

Any berth that is updated by a remote system, whose update needs to be known to ARS or the Middleware, is an Early Transmission Berth. The berths required by ARS (for strike-in purposes) used to be separately listed, but this is no longer done due to a code fault; now any such berth is included in the early transmission berth list (as the berths in the Middleware list are sent to ARS anyway).

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2.6.1 ARS Strike-In Berths

Included in the Early Transmission Berths.

2.6.2 Early Transmission Berths

0415	0417	0419	0421	0423	0425	0427	0429	0431	0433
0435	0437	0439	0441	0442	0443	0444	0445	0446	0447
0448	0449	0452	0454	0456	0458	0460	0462	0464	0466
0470	0472	0474	0476	0629	0631	0666	A668	A670	A672
A674	5165	5167	5170						
0882	0884	1004	1005	1006	1007	1008	1009	1010	1011
1020	1021	1022	1023	1027	1028	1030	1033	1034	1035
1036	1039	1040	1046	1047	1048	1051	1054	1055	1056
1057	1058	1059	1063	1065	1067	1069	1071	1072	1074
1076	1080	1083	1085	4006	4009	4010	4013	DMAP	P6AR
STIN									

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3 LINK TO COLCHESTER PSB

3.1 Overview

This remote system link operates from CEG ports 6 and 20. It is the link to Colchester PSB with TD type initialisation.

3.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	6 & 20	Baud Rate	1200
Physical Name	P6	Time-Out Period (secs)	2
Area	COLC	Message Retry Count	3
Protocol	BR1810	Message Retry Field Flag	Set

3.3 Berths

Changes in the contents of the following berths will be transmitted to Colchester PSB:

0669	0671	0675	0677	0679	0683	0685	0687	0691	0693
0695	0697	0701	0703	0705	0710	0711	0712	0713	0714
0715	0716	0717	0718	0722	0723	0724	0725	0726	0727
0729	0730	0731	0732	0733	0734	0735	0736	0737	0739
0740	0741	0742	0747	0751	0753	0755	0756	0758	0759
0760	0761	0762	0763	0764	0765	0766	0767	0769	0770
0771	0772	0773	0778	0779	0781	0782	0784	0785	0786
0787	0788	0789	0790	0791	0792	0793	0794	0796	0799
0800	0801	0803	0804	0805	0806	0807	0810	0812	0814
0815	0816	0817	0818	0819	0820	0822	0823	0824	0825
0826	0827	0828	0829	0830	0832	0834	0836	0837	0844
0846	0848	0850	0854	0856	0858	0860	0862	0864	0868
0872	0874	0876	0878	0882	0884	0896	0898	1005	4009
5185	5186	5188	5189	5193	5202	5203	CRES	R896	R898

SHAL

The following berth undergoes a TD name translation before being transmitted to Colchester PSB. This is listed below with the value on the right being the transmitted name and the value on the left being the name used within the IECC:

{0679	L679}	{0691	L691}	{0820	L820}	{0878	L878}
-------	-------	-------	-------	-------	-------	-------	-------

Changes in the contents of the following berths will be received from Colchester PSB:

0882	0884	1004	1005	1006	1007	1008	1009	1010	1011
1020	1021	1022	1023	1027	1028	1030	1033	1034	1035
1036	1039	1040	1046	1047	1048	1051	1054	1055	1056
1057	1058	1059	1063	1065	1067	1069	1071	1072	1074
1076	1080	1083	1085	4006	4009	4010	4013	DMAP	P6AR

STIN

3.4 Link Status

Changes in the status of this remote link are sent to the Middleware.

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4 LINK TO STRATFORD IECC B

4.1 Overview

This remote system link operates from CEG port 27. It is the link to Stratford IECC B with TD type initialisation.

4.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	27	Baud Rate	1200
Physical Name	P2P7	Time-Out Period (secs)	2
Area	STW2	Message Retry Count	3
Protocol	BR1810	Message Retry Field Flag	Set

4.3 Berths

Changes in the contents of the following berths will be transmitted to Stratford IECC B:

0451	0453	0455	0457	0459	0461	0463	0465	0467	0469
0471	0473	0475	0477	0478	0479	0480	0481	0482	0483
0484	0485	0486	0487	0488	0489	0490	0491	0492	0493
0494	0495	0496	0497	0498	0499	0500	0501	0502	0503
0504	0506	0508	0510	0512	0514	0516	0518	0522	0524
0598									

Changes in the contents of the following berths will be received from Stratford IECC B:

0415	0417	0419	0421	0423	0425	0427	0429	0431	0433
0435	0437	0439	0441	0442	0443	0444	0445	0446	0447
0448	0449	0452	0454	0456	0458	0460	0462	0464	0466
0470	0472	0474	0476						

4.4 Link Status

Changes in the status of this remote link are sent to the Middleware.

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5 LINK TO SOUTHEND VICTORIA SHUNTER'S FRINGE

5.1 Overview

This remote system link operates from ECS port 8. It is the link to Southend Victoria Shunter's Fringe with TD type initialisation.

5.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	8	Baud Rate	1200
Physical Name	P8	Time-Out Period (secs)	2
Area	SDCS	Message Retry Count	3
Protocol	BR1810	Message Retry Field Flag	Set

5.3 Berths

Changes in the contents of the following berths will be transmitted to Southend Victoria Shunter's Fringe TD:

0619	0621	0623	0625	0627	0629	0631	0652	0662	0664
0666	5165	5167	5170	A668	A670	A672	A674	B668	B670
B672	B674	C668	C670	C672	C674	DNSN	DNSS	F668	F670
F672	F674	R668	R670	R672	R674	UPSN	UPSS		

Changes in the contents of the following berths will be received from Southend Victoria Shunter's Fringe TD:

0629	0631	0666	A668	A670	A672	A674	5165	5167	5170
------	------	------	------	------	------	------	------	------	------

5.4 Signalling Items

Address 00-07

BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S625	S627	S629	S631	S662	S666	S668	S670
S672	S674	S5165	S5167	S5170	R629AS	R629P1*	R629P2*
R629P3*	R629P4*	R631AS	R631P1*	R631P2*	R631P3*	R631P4*	R631FS
R666AM	R666BM	R666CS	R668AM	R668BM	R668CS	R670AM	R670BM
R670CS	R672AM	R672BM	R672CS	R674AS	R674BM	R674CM	R674DS
R5165B	R5165C	R5165D	R5165E	R5167A	R5170B	LS666TRS	LS668TRS
LS670TRS	LS672TRS	LS674TRS	LS5165TS	LS5167TS	LS5170TS	LARS12S	LARS34S
S664	R627AM	R5165A	R5167B	R5170A	-	-	-

The following table details the meshed routes (indicated by a * in the above table). The meshed route is set when any of the individual route items are set.

Meshed Route Name	Individual Route Items constituting the Meshed Route	
R629P1	R629BM	R629BC
R629P2	R629CM	R629CC
R629P3	R629DM	R629DC
R629P4	R629EM	R629EC
R631P1	R631BM	R631BC
R631P2	R631CM	R631CC
R631P3	R631DM	R631DC

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Meshed Route Name	Individual Route Items constituting the Meshed Route	
R631P4	R631EM	R631EC

5.5 Link Status

Changes in the status of this remote link are sent to the Middleware.

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6 INTER-UNIT LINK 1

6.1 Overview

This CEG-CEG remote system link operates from CEG port 29. It is the link between the CEG Master and Standby Units and uses **TD** type initialisation.

6.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	29	Baud Rate	19200 (#1)
Physical Name	PT	Time-Out Period (secs)	1
Area	ECSL	Message Retry Count	8
Protocol	BR1810	Message Retry Field Flag	Set

#1 – In IECC Scalable, this link is provided over Ethernet; Baud Rate specified here only for inclusion in IECC data, which is still in IECC Classic format.

6.3 Berths

Changes in the contents of **ALL** berths known to the IECC are transmitted from the Master CEG computer unit to the Standby CEG computer unit (these berths are therefore shown in both the **SEND** and **RECEIVE** sections in the CEG data).

6.4 Signalling Items

Note: The total number of required berths + S-Class items on this link and the Interlinks exceeds the IECC limit of 2048. Therefore, S-Class items have been rationalised in order to bring the number back down below 2048.

Changes on the status of the following signalling items will be transmitted by the Master CEG unit to the Standby CEG unit and vice-versa.

Address 00 - 0F

BITS 1	BITS 2	BITS 3	BITS 4	BITS 5	BITS 6	BITS 7	BITS 8
R713AM	R713BM	R715AS	R71523*	R715CM	R723AM	R713BM	R725AM
R725BM	R758AM	R758BM	R762AM	-S664	R770AM	R770BM	R772AM
R772BM	R772CM	-R627AM	R5185BS	R5186AS	-R5165A	R629AS	R629P1*
R629P2*	R629P3*	R629P4*	R631AS	R631P1*	R631P2*	R631P3*	R631P4*
R631FS	R666AM	R666BM	R666CS	R668AM	R668BM	R668CS	R670AM
R670BM	R670CS	R672AM	R672BM	R672CS	R674AS	R674BM	R674CM
R674DS	-R5167B	R5165B	R5165C	R5165D	R5165E	R5167A	-R5170A
-LARS12S	R5170B	R491AM	R491BM	R491CM	R491DM	R491EM	R493P3*
R493P2*	R493P1*	R493DS	R495AM	R495MD*	R495CS	R495DS	R497AM
R497MD*	R497CS	R497DS	R499AM	R499BM	R499CM	R501AM	R501BM
R501CS	R501DM	R503AM	R503BM	R503CM	R503DS	R507AM	R507BM
R516AM	R516BS	R516CS	R518AM	R518BS	R522MU*	R522BS	R522CM
R524LU*	R524MU*	R524CS	R524DM	R528P4*	R528P5*	R530P4*	R530P5*
R534AM	R534P2*	R536AM	R536BM	R53834*	R538BM	R552AM	R552BM
R55452*	R5133A	R5133B	R5133C	R5135A	R5135B	R5135C	R5136A
R5136B	R5137A	R5137B	R5138A	R5138B	R5139A	-LARS34S	R5140A

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Address 10 – 1F

BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R5140B	R517AM	R517BM	R519AM	R519BM	R533AM	R533BM	R535AM
R535BM	R560AM	R560BM	R572AM	R572BM	R574AM	R574BM	R735AM
R735BM	R737AM	R737BM	R786AM	R786BM	R788AM	R788BM	-
R48991*	R489BM	R512AM	R512BM	R671AM	R671BM	R685AM	R685BM
R687AM	R687BM	R724AM	R724BM	R726AM	R726BM	R791AM	R791BM
R793AM	R793BM	R844AM	R844BM	R846AM	R846BM	R819AM	R819BM
-	R82537*	R825CM	R825DS	R825ES	R827AM	R827BM	R827CS
R827DS	R829AM	R829BS	R829CS	R862AM	R862BM	R872AM	R872BM
R874AM	R874BM	R874CM	R876AM	R876BM	R876CM	-	R878BM
R878CM	R878DM	R882AM	R882BM	R597AM	R597BM	R599AM	R599BM
R636AM	R636BM	R638AM	R638BM	R761P4*	R761BM	R761CM	R761P1*
R763P4*	R763BM	R763CM	R763P1*	R765AM	R765BM	R76979*	R76981*
R773AM	R471AM	R810AM	R810BM	R812AM	R812BM	R814AM	R814BM
R816AM	R816BM	R818P4*	R820P3*	R820P4*	R475AM	R824P1*	R824P2*
R502AM	R826P1*	R826P2*	R82822*	R82820*	R830AM	R830BM	R549AM
R549BM	R551AM	R598AM	R553AM	R553BM	R553CM	R555AM	R555BM

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BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R555CM	R557AM	R557BM	R559AM	R559BM	R592AM	R592BM	R594AM
-	R596AM	R596BM	R596CM	R596DM	R602AM	R602BM	R602CM
R602DM	R604AM	R604BM	R5150A	R5150B	R5150C	R5150D	S471
R5157B	S711	S713	S715	S717	S723	S725	S727
S756	S758	S760	S762	S764	S766	S770	S772
S778	S5185	S5186	S5188	S625	S627	S629	S631
S662	S666	S668	S670	S672	S674	S5165	S5167
S5170	S491	S493	S495	S497	S499	S501	S503
S507	S509	S511	S516	S518	S522	S524	S528
S530	S534	S536	S538	S540	S542	S552	S554
S5133	S5135	S5137	S5139	S502	S5132	S5134	S5136
S5138	S5140	S505	S517	S550	S515	S519	S529
S533	S543	S558	S572	S556	S560	S574	S584
S535	S735	S737	S753	S784	S786	S788	S794
S489	S506	S512	S514	S510	S712	S714	S716
S718	S724	S726	S730	S736	S740	S671	S675

Address 30 – 3F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S677	S679	S685	S687	S691	S697	S701	S791
S793	S803	S807	S844	S846	S854	S856	S817
S819	S825	S827	S829	S837	S862	S864	S872
S874	S876	S878	S882	S884	S823	S868	S5202
S581	S595	S597	S599	S618	S636	S638	S759
S761	S763	S765	S769	S771	S773	S779	S781
S810	S812	S814	S816	S820	S822	S824	S826
S828	S830	S767	S818	S896	S5189	S549	S551
S553	S555	S557	S559	S569	S592	S594	S602
S604	S596	S692	S694	S696	S708	S639	S649
S651	S5157	S5146	S5148	S5150	LS557TRS	LS594TRS	LS559TRS
LS592TRS	LS553TRS	LS555TRS	LS708TRS	LS765TRS	LS810TRS	LS812TRS	LS814TRS
LS816TRS	LS868TRS	LS495TRS	LS497TRS	LS499TRS	LS501TRS	LS503TRS	LS516TRS
LS518TRS	LS522TRS	LS524TRS	LS5136TS	LS5138TS	LS666TRS	LS668TRS	LS670TRS
LS672TRS	LS674TRS	LS5165TS	LS5167TS	LS5170TS	LS758TRS	S447	S449

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S475 S477 S498 S570 S583 S611 S613 S487

Address 40

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S634	S648	S652	S683	S751	S796	S799	S598

The following table details the meshed routes (indicated by a * in the above tables). The meshed route is set when any of the individual route items are set.

Meshed Route Name	Individual Route Items constituting the Meshed Route			
R48991	R489AM	R489AW		
R493P1	R493CM	R493CC		
R493P2	R493BM	R493BC		
R493P3	R493AM	R493AC		
R495MD	R495BM	R495BW		
R497MD	R497BM	R497BW		
R522MU	R522AM	R522AW		
R524LU	R524AM	R524AC		
R524MU	R524BM	R524BW		
R528P4	R528AM	R528AW		
R528P5	R528BM	R528BW		
R530P4	R530AM	R534AW		
R530P5	R530BM	R530BW		
R534P2	R534BM	R534BW		
R53834	R538AM	R538AW		
R55452	R554AM	R554AW		
R629P1	R629BM	R629BC		
R629P2	R629CM	R629CC		
R629P3	R629DM	R629DC		
R629P4	R629EM	R629EC		
R631P1	R631BM	R631BC		
R631P2	R631CM	R631CC		
R631P3	R631DM	R631DC		
R631P4	R631EM	R631EC		
R71523	R715BM	R715BS		
R761P1	R761DM	R761DC		
R761P4	R761A1M	R761A1C	R761A2M	R761A2C
R763P1	R763DM	R761DC		
R763P4	R763A1M	R763A1C	R763A2M	R763A2C
R76979	R769AM	R769AS		
R76981	R769BM	R769BS		
R818P4	R818A1M	R818A1C	R818A2M	R818A2C
R820P3	R820AM	R820AS		
R820P4	R820BM	R820BC		
R824P1	R824BM	R824BC		
R824P2	R824CM	R824CS		
R82537	R825BM	R825BS		
R826P1	R826BM	R826BC		
R826P2	R826CM	R826CS		
R82820	R828BM	R828BS		
R82822	R828AM	R828AS		

6.5 Link Status

Changes in the status of this remote link are sent to the Middleware.

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7 LINK TO SMART LINK 1

7.1 Overview

This remote system link operates from CEG port 1. It is the link to SMART Link 1 with **ETB** type initialisation.

7.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	1	Baud Rate	9600
Physical Name	P1	Time-Out Period (secs)	2
Area	SPC1	Message Retry Count	3
Protocol	BR1810	Message Retry Field Flag	Set

7.3 Berths

Changes in the contents of **ALL** berths known to Shenfield IECC C will be transmitted to SMART Link 1 **EXCEPT** for the following berths:

DB01	DB02	DB03		LSUE	LSUM				
1004	1007	1009	1011	1020	1021	1022	1023	1027	1028
1030	1033	1034	1035	1036	1039	1040	1046	1047	1048
1051	1054	1055	1056	1057	1058	1059	1063	1065	1067
1069	1071	1072	1074	1076	1080	1083	1085	4006	4010
4013		DMLS	P6AR	RDMA	STIN	UMAP		DMAP	

All relevant berths shall be transmitted to SMART Link 1 when the link is initialised i.e. all the relevant berths should be contained within the SENDSTART section.

Changes in the contents of the following berth will be received from SMART Link 1:

None

7.4 Signalling Items

Note: The total number of required berths + S-Class items on this link and the Interlinks exceeds the IECC limit of 2048. Therefore, S-Class items have been rationalised in order to bring the number back down below 2048.

Changes on the status of the signalling items known to Shenfield IECC C will be transmitted to SMART Link 1 as S-Class messages:

Address 00 - 0F

BITS 1	BITS 2	BITS 3	BITS 4	BITS 5	BITS 6	BITS 7	BITS 8
R713AM	R713BM	R715AS	R71523*	R715CM	R723AM	R713BM	R725AM
R725BM	R758AM	R758BM	R762AM	-	R770AM	R770BM	R772AM
R772BM	R772CM	-	R5185BS	R5186AS	-	R629AS	R629P1*
R629P2*	R629P3*	R629P4*	R631AS	R631P1*	R631P2*	R631P3*	R631P4*
R631FS	R666AM	R666BM	R666CS	R668AM	R668BM	R668CS	R670AM
R670BM	R670CS	R672AM	R672BM	R672CS	R674AS	R674BM	R674CM
R674DS	-	R5165B	R5165C	R5165D	R5165E	R5167A	-
-	R5170B	R491AM	R491BM	R491CM	R491DM	R491EM	R493P3*
R493P2*	R493P1*	R493DS	R495AM	R495MD*	R495CS	R495DS	R497AM
R497MD*	R497CS	R497DS	R499AM	R499BM	R499CM	R501AM	R501BM

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BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R501CS	R501DM	R503AM	R503BM	R503CM	R503DS	R507AM	R507BM
R516AM	R516BS	R516CS	R518AM	R518BS	R522MU*	R522BS	R522CM
R524LU*	R524MU*	R524CS	R524DM	R528P4*	R528P5*	R530P4*	R530P5*
R534AM	R534P2*	R536AM	R536BM	R53834*	R538BM	R552AM	R552BM
R55452*	R5133A	R5133B	R5133C	R5135A	R5135B	R5135C	R5136A
R5136B	R5137A	R5137B	R5138A	R5138B	R5139A	-	R5140A

Address 10 – 1F

BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R5140B	R517AM	R517BM	R519AM	R519BM	R533AM	R533BM	R535AM
R535BM	R560AM	R560BM	R572AM	R572BM	R574AM	R574BM	R735AM
R735BM	R737AM	R737BM	R786AM	R786BM	R788AM	R788BM	-
R48991*	R489BM	R512AM	R512BM	R671AM	R671BM	R685AM	R685BM
R687AM	R687BM	R724AM	R724BM	R726AM	R726BM	R791AM	R791BM
R793AM	R793BM	R844AM	R844BM	R846AM	R846BM	R819AM	R819BM
-	R82537*	R825CM	R825DS	R825ES	R827AM	R827BM	R827CS
R827DS	R829AM	R829BS	R829CS	R862AM	R862BM	R872AM	R872BM
R874AM	R874BM	R874CM	R876AM	R876BM	R876CM	-	R878BM
R878CM	R878DM	R882AM	R882BM	R597AM	R597BM	R599AM	R599BM
R636AM	R636BM	R638AM	R638BM	R761P4*	R761BM	R761CM	R761P1*
R763P4*	R763BM	R763CM	R763P1*	R765AM	R765BM	R76979*	R76981*
R773AM	R471AM	R810AM	R810BM	R812AM	R812BM	R814AM	R814BM
R816AM	R816BM	R818P4*	R820P3*	R820P4*	R475AM	R824P1*	R824P2*
R502AM	R826P1*	R826P2*	R82822*	R82820*	R830AM	R830BM	R549AM
R549BM	R551AM	R598AM	R553AM	R553BM	R553CM	R555AM	R555BM

Address 20 - 2F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R555CM	R557AM	R557BM	R559AM	R559BM	R592AM	R592BM	R594AM
-	R596AM	R596BM	R596CM	R596DM	R602AM	R602BM	R602CM
R602DM	R604AM	R604BM	R5150A	R5150B	R5150C	R5150D	S471
R5157B	S711	S713	S715	S717	S723	S725	S727
S756	S758	S760	S762	S764	S766	S770	S772
S778	S5185	S5186	S5188	S625	S627	S629	S631
S662	S666	S668	S670	S672	S674	S5165	S5167
S5170	S491	S493	S495	S497	S499	S501	S503
S507	S509	S511	S516	S518	S522	S524	S528
S530	S534	S536	S538	S540	S542	S552	S554
S5133	S5135	S5137	S5139	S502	S5132	S5134	S5136
S5138	S5140	S505	S517	S550	S515	S519	S529
S533	S543	S558	S572	S556	S560	S574	S584
S535	S735	S737	S753	S784	S786	S788	S794
S489	S506	S512	S514	S510	S712	S714	S716
S718	S724	S726	S730	S736	S740	S671	S675

Address 30 – 3F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S677	S679	S685	S687	S691	S697	S701	S791
S793	S803	S807	S844	S846	S854	S856	S817
S819	S825	S827	S829	S837	S862	S864	S872
S874	S876	S878	S882	S884	S823	S868	S5202
S581	S595	S597	S599	S618	S636	S638	S759
S761	S763	S765	S769	S771	S773	S779	S781
S810	S812	S814	S816	S820	S822	S824	S826
S828	S830	S767	S818	S896	S5189	S549	S551

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BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S553	S555	S557	S559	S569	S592	S594	S602
S604	S596	S692	S694	S696	S708	S639	S649
S651	S5157	S5146	S5148	S5150	LS557TRS	LS594TRS	LS559TRS
LS592TRS	LS553TRS	LS555TRS	LS708TRS	LS765TRS	LS810TRS	LS812TRS	LS814TRS
LS816TRS	LS868TRS	LS495TRS	LS497TRS	LS499TRS	LS501TRS	LS503TRS	LS516TRS
LS518TRS	LS522TRS	LS524TRS	LS5136TS	LS5138TS	LS666TRS	LS668TRS	LS670TRS
LS672TRS	LS674TRS	LS5165TS	LS5167TS	LS5170TS	LS758TRS	S447	S449
S475	S477	S498	S570	S583	S611	S613	S487

Address 40

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S634	S648	S652	S683	S751	S796	S799	S598

The following table details the meshed routes (indicated by a * in the above tables). The meshed route is set when any of the individual route items are set.

Meshed Route Name	Individual Route Items constituting the Meshed Route			
R48991	R489AM	R489AW		
R493P1	R493CM	R493CC		
R493P2	R493BM	R493BC		
R493P3	R493AM	R493AC		
R495MD	R495BM	R495BW		
R497MD	R497BM	R497BW		
R522MU	R522AM	R522AW		
R524LU	R524AM	R524AC		
R524MU	R524BM	R524BW		
R528P4	R528AM	R528AW		
R528P5	R528BM	R528BW		
R530P4	R530AM	R534AW		
R530P5	R530BM	R530BW		
R534P2	R534BM	R534BW		
R53834	R538AM	R538AW		
R55452	R554AM	R554AW		
R629P1	R629BM	R629BC		
R629P2	R629CM	R629CC		
R629P3	R629DM	R629DC		
R629P4	R629EM	R629EC		
R631P1	R631BM	R631BC		
R631P2	R631CM	R631CC		
R631P3	R631DM	R631DC		
R631P4	R631EM	R631EC		
R71523	R715BM	R715BS		
R761P1	R761DM	R761DC		
R761P4	R761A1M	R761A1C	R761A2M	R761A2C
R763P1	R763DM	R761DC		
R763P4	R763A1M	R763A1C	R763A2M	R763A2C
R76979	R769AM	R769AS		
R76981	R769BM	R769BS		
R818P4	R818A1M	R818A1C	R818A2M	R818A2C
R820P3	R820AM	R820AS		
R820P4	R820BM	R820BC		
R824P1	R824BM	R824BC		
R824P2	R824CM	R824CS		
R82537	R825BM	R825BS		

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Meshed Route Name	Individual Route Items constituting the Meshed Route			
R826P1	R826BM	R826BC		
R826P2	R826CM	R826CS		
R82820	R828BM	R828BS		
R82822	R828AM	R828AS		

7.5 Link Status

Changes in the status of this remote link are sent to the Middleware.

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8 INTER-UNIT LINK 2

8.1 Overview

This CEG-CEG remote system link operates from CEG port 30. It is the link between the CEG Master and Standby Units and uses **TD** type initialisation.

8.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	30	Baud Rate	19200 (#1)
Physical Name	PU	Time-Out Period (secs)	1
Area	ECSL	Message Retry Count	8
Protocol	BR1810	Message Retry Field Flag	Set

#1 – In IECC Scalable, this link is provided over Ethernet; Baud Rate specified here only for inclusion in IECC data, which is still in IECC Classic format.

8.3 Berths

Changes in the contents of **ALL** berths known to the IECC are transmitted from the Master CEG computer unit to the Standby CEG computer unit (these berths are therefore shown in both the **SEND** and **RECEIVE** sections in the CEG data).

8.4 Signalling Items

Note: The total number of required berths + S-Class items on this link and the Interlinks exceeds the IECC limit of 2048. Therefore, S-Class items have been rationalised in order to bring the number back down below 2048.

Changes on the status of the following signalling items will be transmitted by the Master CEG unit to the Standby CEG unit and vice-versa.

Address 00 - 0F

BITS 1	BITS 2	BITS 3	BITS 4	BITS 5	BITS 6	BITS 7	BITS 8
R713AM	R713BM	R715AS	R71523*	R715CM	R723AM	R713BM	R725AM
R725BM	R758AM	R758BM	R762AM	-S664	R770AM	R770BM	R772AM
R772BM	R772CM	-R627AM	R5185BS	R5186AS	-R5165A	R629AS	R629P1*
R629P2*	R629P3*	R629P4*	R631AS	R631P1*	R631P2*	R631P3*	R631P4*
R631FS	R666AM	R666BM	R666CS	R668AM	R668BM	R668CS	R670AM
R670BM	R670CS	R672AM	R672BM	R672CS	R674AS	R674BM	R674CM
R674DS	-R5167B	R5165B	R5165C	R5165D	R5165E	R5167A	-R5170A
-LARS12S	R5170B	R491AM	R491BM	R491CM	R491DM	R491EM	R493P3*
R493P2*	R493P1*	R493DS	R495AM	R495MD*	R495CS	R495DS	R497AM
R497MD*	R497CS	R497DS	R499AM	R499BM	R499CM	R501AM	R501BM
R501CS	R501DM	R503AM	R503BM	R503CM	R503DS	R507AM	R507BM
R516AM	R516BS	R516CS	R518AM	R518BS	R522MU*	R522BS	R522CM
R524LU*	R524MU*	R524CS	R524DM	R528P4*	R528P5*	R530P4*	R530P5*
R534AM	R534P2*	R536AM	R536BM	R53834*	R538BM	R552AM	R552BM
R55452*	R5133A	R5133B	R5133C	R5135A	R5135B	R5135C	R5136A
R5136B	R5137A	R5137B	R5138A	R5138B	R5139A	-LARS34S	R5140A

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Address 10 – 1F

BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R5140B	R517AM	R517BM	R519AM	R519BM	R533AM	R533BM	R535AM
R535BM	R560AM	R560BM	R572AM	R572BM	R574AM	R574BM	R735AM
R735BM	R737AM	R737BM	R786AM	R786BM	R788AM	R788BM	-
R48991*	R489BM	R512AM	R512BM	R671AM	R671BM	R685AM	R685BM
R687AM	R687BM	R724AM	R724BM	R726AM	R726BM	R791AM	R791BM
R793AM	R793BM	R844AM	R844BM	R846AM	R846BM	R819AM	R819BM
-	R82537*	R825CM	R825DS	R825ES	R827AM	R827BM	R827CS
R827DS	R829AM	R829BS	R829CS	R862AM	R862BM	R872AM	R872BM
R874AM	R874BM	R874CM	R876AM	R876BM	R876CM	-	R878BM
R878CM	R878DM	R882AM	R882BM	R597AM	R597BM	R599AM	R599BM
R636AM	R636BM	R638AM	R638BM	R761P4*	R761BM	R761CM	R761P1*
R763P4*	R763BM	R763CM	R763P1*	R765AM	R765BM	R76979*	R76981*
R773AM	R471AM	R810AM	R810BM	R812AM	R812BM	R814AM	R814BM
R816AM	R816BM	R818P4*	R820P3*	R820P4*	R475AM	R824P1*	R824P2*
R502AM	R826P1*	R826P2*	R82822*	R82820*	R830AM	R830BM	R549AM
R549BM	R551AM	R598AM	R553AM	R553BM	R553CM	R555AM	R555BM

Address 20 - 2F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R555CM	R557AM	R557BM	R559AM	R559BM	R592AM	R592BM	R594AM
-	R596AM	R596BM	R596CM	R596DM	R602AM	R602BM	R602CM
R602DM	R604AM	R604BM	R5150A	R5150B	R5150C	R5150D	S471
R5157B	S711	S713	S715	S717	S723	S725	S727
S756	S758	S760	S762	S764	S766	S770	S772
S778	S5185	S5186	S5188	S625	S627	S629	S631
S662	S666	S668	S670	S672	S674	S5165	S5167
S5170	S491	S493	S495	S497	S499	S501	S503
S507	S509	S511	S516	S518	S522	S524	S528
S530	S534	S536	S538	S540	S542	S552	S554
S5133	S5135	S5137	S5139	S502	S5132	S5134	S5136
S5138	S5140	S505	S517	S550	S515	S519	S529
S533	S543	S558	S572	S556	S560	S574	S584
S535	S735	S737	S753	S784	S786	S788	S794
S489	S506	S512	S514	S510	S712	S714	S716
S718	S724	S726	S730	S736	S740	S671	S675

Address 30 – 3F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S677	S679	S685	S687	S691	S697	S701	S791
S793	S803	S807	S844	S846	S854	S856	S817
S819	S825	S827	S829	S837	S862	S864	S872
S874	S876	S878	S882	S884	S823	S868	S5202
S581	S595	S597	S599	S618	S636	S638	S759
S761	S763	S765	S769	S771	S773	S779	S781
S810	S812	S814	S816	S820	S822	S824	S826
S828	S830	S767	S818	S896	S5189	S549	S551
S553	S555	S557	S559	S569	S592	S594	S602
S604	S596	S692	S694	S696	S708	S639	S649
S651	S5157	S5146	S5148	S5150	LS557TRS	LS594TRS	LS559TRS
LS592TRS	LS553TRS	LS555TRS	LS708TRS	LS765TRS	LS810TRS	LS812TRS	LS814TRS
LS816TRS	LS868TRS	LS495TRS	LS497TRS	LS499TRS	LS501TRS	LS503TRS	LS516TRS
LS518TRS	LS522TRS	LS524TRS	LS5136TS	LS5138TS	LS666TRS	LS668TRS	LS670TRS
LS672TRS	LS674TRS	LS5165TS	LS5167TS	LS5170TS	LS758TRS	S447	S449

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S475 S477 S498 S570 S583 S611 S613 S487

Address 40

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S634	S648	S652	S683	S751	S796	S799	S598

The following table details the meshed routes (indicated by a * in the above tables). The meshed route is set when any of the individual route items are set.

Meshed Route Name	Individual Route Items constituting the Meshed Route			
R48991	R489AM	R489AW		
R493P1	R493CM	R493CC		
R493P2	R493BM	R493BC		
R493P3	R493AM	R493AC		
R495MD	R495BM	R495BW		
R497MD	R497BM	R497BW		
R522MU	R522AM	R522AW		
R524LU	R524AM	R524AC		
R524MU	R524BM	R524BW		
R528P4	R528AM	R528AW		
R528P5	R528BM	R528BW		
R530P4	R530AM	R534AW		
R530P5	R530BM	R530BW		
R534P2	R534BM	R534BW		
R53834	R538AM	R538AW		
R55452	R554AM	R554AW		
R629P1	R629BM	R629BC		
R629P2	R629CM	R629CC		
R629P3	R629DM	R629DC		
R629P4	R629EM	R629EC		
R631P1	R631BM	R631BC		
R631P2	R631CM	R631CC		
R631P3	R631DM	R631DC		
R631P4	R631EM	R631EC		
R71523	R715BM	R715BS		
R761P1	R761DM	R761DC		
R761P4	R761A1M	R761A1C	R761A2M	R761A2C
R763P1	R763DM	R761DC		
R763P4	R763A1M	R763A1C	R763A2M	R763A2C
R76979	R769AM	R769AS		
R76981	R769BM	R769BS		
R818P4	R818A1M	R818A1C	R818A2M	R818A2C
R820P3	R820AM	R820AS		
R820P4	R820BM	R820BC		
R824P1	R824BM	R824BC		
R824P2	R824CM	R824CS		
R82537	R825BM	R825BS		
R826P1	R826BM	R826BC		
R826P2	R826CM	R826CS		
R82820	R828BM	R828BS		
R82822	R828AM	R828AS		

8.5 Link Status

Changes in the status of this remote link are sent to the Middleware.

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9 LINK TO SMART LINK 2

9.1 Overview

This remote system link operates from CEG port 15. It is the link to SMART Link 2 with **ETB** type initialisation.

9.2 Link Characteristics

LINK CHARACTERISTICS			
Port(s)	15	Baud Rate	9600
Physical Name	PF	Time-Out Period (secs)	2
Area	SPC2	Message Retry Count	3
Protocol	BR1810	Message Retry Field Flag	Set

9.3 Berths

Changes in the contents of **ALL** berths known to Shenfield IECC C will be transmitted to SMART Link 1 **EXCEPT** for the following berths:

DB01	DB02	DB03		LSUE	LSUM				
1004	1007	1009	1011	1020	1021	1022	1023	1027	1028
1030	1033	1034	1035	1036	1039	1040	1046	1047	1048
1051	1054	1055	1056	1057	1058	1059	1063	1065	1067
1069	1071	1072	1074	1076	1080	1083	1085	4006	4010
4013		DMLS	P6AR	RDMA	STIN	UMAP		DMAP	

All relevant berths shall be transmitted to SMART Link 2 when the link is initialised i.e. all the relevant berths should be contained within the SENDSTART section.

Changes in the contents of the following berth will be received from SMART Link 2:

None

9.4 Signalling Items

Note: The total number of required berths + S-Class items on this link and the Interlinks exceeds the IECC limit of 2048. Therefore, S-Class items have been rationalised in order to bring the number back down below 2048.

Changes on the status of the signalling items known to Shenfield IECC C will be transmitted to SMART Link 2 as S-Class messages:

Address 00 - 0F

BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R713AM	R713BM	R715AS	R71523*	R715CM	R723AM	R713BM	R725AM
R725BM	R758AM	R758BM	R762AM	-	R770AM	R770BM	R772AM
R772BM	R772CM	-	R5185BS	R5186AS	-	R629AS	R629P1*
R629P2*	R629P3*	R629P4*	R631AS	R631P1*	R631P2*	R631P3*	R631P4*
R631FS	R666AM	R666BM	R666CS	R668AM	R668BM	R668CS	R670AM
R670BM	R670CS	R672AM	R672BM	R672CS	R674AS	R674BM	R674CM
R674DS	-	R5165B	R5165C	R5165D	R5165E	R5167A	-
-	R5170B	R491AM	R491BM	R491CM	R491DM	R491EM	R493P3*
R493P2*	R493P1*	R493DS	R495AM	R495MD*	R495CS	R495DS	R497AM
R497MD*	R497CS	R497DS	R499AM	R499BM	R499CM	R501AM	R501BM

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BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R501CS	R501DM	R503AM	R503BM	R503CM	R503DS	R507AM	R507BM
R516AM	R516BS	R516CS	R518AM	R518BS	R522MU*	R522BS	R522CM
R524LU*	R524MU*	R524CS	R524DM	R528P4*	R528P5*	R530P4*	R530P5*
R534AM	R534P2*	R536AM	R536BM	R53834*	R538BM	R552AM	R552BM
R55452*	R5133A	R5133B	R5133C	R5135A	R5135B	R5135C	R5136A
R5136B	R5137A	R5137B	R5138A	R5138B	R5139A	-	R5140A

Address 10 – 1F

BIT 1	BIT 2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R5140B	R517AM	R517BM	R519AM	R519BM	R533AM	R533BM	R535AM
R535BM	R560AM	R560BM	R572AM	R572BM	R574AM	R574BM	R735AM
R735BM	R737AM	R737BM	R786AM	R786BM	R788AM	R788BM	-
R48991*	R489BM	R512AM	R512BM	R671AM	R671BM	R685AM	R685BM
R687AM	R687BM	R724AM	R724BM	R726AM	R726BM	R791AM	R791BM
R793AM	R793BM	R844AM	R844BM	R846AM	R846BM	R819AM	R819BM
-	R82537*	R825CM	R825DS	R825ES	R827AM	R827BM	R827CS
R827DS	R829AM	R829BS	R829CS	R862AM	R862BM	R872AM	R872BM
R874AM	R874BM	R874CM	R876AM	R876BM	R876CM	-	R878BM
R878CM	R878DM	R882AM	R882BM	R597AM	R597BM	R599AM	R599BM
R636AM	R636BM	R638AM	R638BM	R761P4*	R761BM	R761CM	R761P1*
R763P4*	R763BM	R763CM	R763P1*	R765AM	R765BM	R76979*	R76981*
R773AM	R471AM	R810AM	R810BM	R812AM	R812BM	R814AM	R814BM
R816AM	R816BM	R818P4*	R820P3*	R820P4*	R475AM	R824P1*	R824P2*
R502AM	R826P1*	R826P2*	R82822*	R82820*	R830AM	R830BM	R549AM
R549BM	R551AM	R598AM	R553AM	R553BM	R553CM	R555AM	R555BM

Address 20 - 2F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
R555CM	R557AM	R557BM	R559AM	R559BM	R592AM	R592BM	R594AM
-	R596AM	R596BM	R596CM	R596DM	R602AM	R602BM	R602CM
R602DM	R604AM	R604BM	R5150A	R5150B	R5150C	R5150D	S471
R5157B	S711	S713	S715	S717	S723	S725	S727
S756	S758	S760	S762	S764	S766	S770	S772
S778	S5185	S5186	S5188	S625	S627	S629	S631
S662	S666	S668	S670	S672	S674	S5165	S5167
S5170	S491	S493	S495	S497	S499	S501	S503
S507	S509	S511	S516	S518	S522	S524	S528
S530	S534	S536	S538	S540	S542	S552	S554
S5133	S5135	S5137	S5139	S502	S5132	S5134	S5136
S5138	S5140	S505	S517	S550	S515	S519	S529
S533	S543	S558	S572	S556	S560	S574	S584
S535	S735	S737	S753	S784	S786	S788	S794
S489	S506	S512	S514	S510	S712	S714	S716
S718	S724	S726	S730	S736	S740	S671	S675

Address 30 – 3F

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S677	S679	S685	S687	S691	S697	S701	S791
S793	S803	S807	S844	S846	S854	S856	S817
S819	S825	S827	S829	S837	S862	S864	S872
S874	S876	S878	S882	S884	S823	S868	S5202
S581	S595	S597	S599	S618	S636	S638	S759
S761	S763	S765	S769	S771	S773	S779	S781
S810	S812	S814	S816	S820	S822	S824	S826
S828	S830	S767	S818	S896	S5189	S549	S551

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BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S553	S555	S557	S559	S569	S592	S594	S602
S604	S596	S692	S694	S696	S708	S639	S649
S651	S5157	S5146	S5148	S5150	LS557TRS	LS594TRS	LS559TRS
LS592TRS	LS553TRS	LS555TRS	LS708TRS	LS765TRS	LS810TRS	LS812TRS	LS814TRS
LS816TRS	LS868TRS	LS495TRS	LS497TRS	LS499TRS	LS501TRS	LS503TRS	LS516TRS
LS518TRS	LS522TRS	LS524TRS	LS5136TS	LS5138TS	LS666TRS	LS668TRS	LS670TRS
LS672TRS	LS674TRS	LS5165TS	LS5167TS	LS5170TS	LS758TRS	S447	S449
S475	S477	S498	S570	S583	S611	S613	S487

Address 40

BIT1	BIT2	BIT 3	BIT 4	BIT 5	BIT 6	BIT 7	BIT 8
S634	S648	S652	S683	S751	S796	S799	S598

The following table details the meshed routes (indicated by a * in the above tables). The meshed route is set when any of the individual route items are set.

Meshed Route Name	Individual Route Items constituting the Meshed Route			
R48991	R489AM	R489AW		
R493P1	R493CM	R493CC		
R493P2	R493BM	R493BC		
R493P3	R493AM	R493AC		
R495MD	R495BM	R495BW		
R497MD	R497BM	R497BW		
R522MU	R522AM	R522AW		
R524LU	R524AM	R524AC		
R524MU	R524BM	R524BW		
R528P4	R528AM	R528AW		
R528P5	R528BM	R528BW		
R530P4	R530AM	R534AW		
R530P5	R530BM	R530BW		
R534P2	R534BM	R534BW		
R53834	R538AM	R538AW		
R55452	R554AM	R554AW		
R629P1	R629BM	R629BC		
R629P2	R629CM	R629CC		
R629P3	R629DM	R629DC		
R629P4	R629EM	R629EC		
R631P1	R631BM	R631BC		
R631P2	R631CM	R631CC		
R631P3	R631DM	R631DC		
R631P4	R631EM	R631EC		
R71523	R715BM	R715BS		
R761P1	R761DM	R761DC		
R761P4	R761A1M	R761A1C	R761A2M	R761A2C
R763P1	R763DM	R761DC		
R763P4	R763A1M	R763A1C	R763A2M	R763A2C
R76979	R769AM	R769AS		
R76981	R769BM	R769BS		
R818P4	R818A1M	R818A1C	R818A2M	R818A2C
R820P3	R820AM	R820AS		
R820P4	R820BM	R820BC		
R824P1	R824BM	R824BC		
R824P2	R824CM	R824CS		
R82537	R825BM	R825BS		

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Meshed Route Name	Individual Route Items constituting the Meshed Route			
R826P1	R826BM	R826BC		
R826P2	R826CM	R826CS		
R82820	R828BM	R828BS		
R82822	R828AM	R828AS		

9.5 Link Status

Changes in the status of this remote link are sent to the Middleware.

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