

**Bilfinger Berger – Siemens – CAF Consortium**

**EDINBURGH TRAM NETWORK  
INFRACO CONTRACT**

**PERIOD REPORT No 2-6  
TO 12 SEPTEMBER 2009**

## **CONTENTS**

- 1 Executive Summary**
- 2 HSQE Management**
  - 2.1 Health & Safety
  - 2.2 Environment
  - 2.3 Any other Business
  - 2.4 Quality
- 3 Programme**
  - 3.1 Programme
  - 3.2 Look Ahead Programme
  - 3.3 Tramco Programme Status
- 4 Progress**
  - 4.1 Civil & Building Works
  - 4.2 E&M Systems
  - 4.3 Trams
  - 4.4 Systems Integration
  - 4.5 Testing, Commissioning and Start-up
- 5 Not Used**
- 6 Stakeholder and Third Party Issues**
- 7 Commercial**
  - 7.1 Milestones
  - 7.2 Change Management
- 8 Resources**
  - 8.1 Organisation Charts
- 9 Other Issues**
- 10 Appendices**
  - 10.1 KPI Report
  - 10.2 Programme Update
  - 10.3 Look-Ahead Programme
  - 10.4 Tram Programme
  - 10.5 RFI Register
  - 10.6 Civil Works Procurement Report
  - 10.7 Change Register
  - 10.8 Organisation Charts
  - 10.9 Development Workshops
  - 10.10 Design Issues and Concerns (Not Used)

Bilfinger Berger – Siemens – CAF Consortium

## 1 EXECUTIVE SUMMARY

68,000 hours were worked in period 2-5, of which 39,000 were site hours with no reportable accident.

The basis for progress measurement in this report is the Programme Rev 1 showing the agreed mitigated impact of the initial design slippage as 38 days (7 weeks 3 days) on the end date. The incorporation of design information from the current design issue programme, actual progress on site and known access dates after MUDFA completion delayed the original programme completion date to 31 October 2012.

Production of civil and building drawings in accordance with the original design is approximately 86% complete. In general earthworks, roads, track and structures drawings are available and drawings for the depot, substation and tramstops are being completed to support construction.

Civil drawings, revised to incorporate Siemens design (trackform including vibration isolation, OLE foundations, substations) are largely complete. Drawings are being prioritised to support construction.

System engineering design is finalised for OLE and traction power and approaching finalisation for track, depot equipment, signalling and other disciplines.

Tram manufacturing is progressing well.

Programmes for EOT Entitlement and Revision 2 have been submitted to *tie* indicating a delay for the completion of the programme to 20 January 2013 and 02 October 2012 respectively.

A total of 464 Changes have been notified to *tie* with a submitted estimated value of £71,199,000. 89 of these estimates have been agreed by issue of a tie Change Order in a total value of £4,602,000.

Virtually all construction works are impacted by external issues which require resolution through the change process of the contract.

Tie have referred 1) Financial aspects to EOT 1, 2) Hilton Hotel Car Park, 3) Carrick Knowe Bridge and 4) Gogarburn Bridge to Dispute Resolution Procedure (DRP).

These four issues in BSC's opinion are not resolving the overall global issues which would allow the Construction of the Project to move forward. Nevertheless, BSC are committed to working through the Dispute Resolution Procedure to find resolution to the issues that tie have referred to DRP.

**Bilfinger Berger – Siemens – CAF Consortium**

## **2 HSQE**

### **2.1 Health & Safety**

#### **2.1.1 Accidents, Incidents and Near Misses/Unsafe Conditions:**

##### **Period 2-5 to 2-6 records up to the 28 August 2009**

No reportable accidents recorded up to the date above.

##### **7 Infraco Near Misses/Unsafe Conditions Recorded in the Period:**

1. 27 July 2009 – Princes Street – lorry completed uploading of steel, as it pulled away water was noted rising through the road surface. The riggers from the lorry were suitable padded. Scottish Water was contacted, attended site and carried out water main repairs over night.
2. 31 July 2009 – Frederick St – Vital rail van reversing without banksman in a public place
3. 5 August 2009 – Frederick St – Lorry delivery of kerbs was being unloaded in a public place, operation stopped.
4. 17 August 2009 – Leith Walk Office – Smoke was observed within the Leith office, office evacuated and emergency services were called.
5. 18 August 2009 – Guided Bus way – Various unsafe practices/conditions observed during joint inspection
6. 24 August 2009 – Leith Depot – Loose slates fell into the depot parking area with no damage sustained
7. 28 August 2009 – Gogar Bridge – The outside beam was observed to be approximately 120mm offline from its original seating position.

##### **6 Accidents/Incidents Recorded:**

1. 23 July 2009 - haulage truck – hydraulic pipe failure in South St David Street, treated with spill kits. SEPA notified and satisfied with cleanup of spill.
2. 28 July 2009 - South St David St – lifting operation of mini excavator into skip. Mini excavator moved in slings. Investigation ongoing.
3. 29 July 2009 - diesel seepage discovered at Gogarburn, SEPA notified. Booms placed in burn 28 July 2009. BSC Environmental Response team attended site 30 July 2009 to stop flow into burn and discover source.
4. 31 July 2009 – Princes St – Scottish Water entered the site to repair a damaged water main and themselves damaged a electrical cable
5. 16 August 2009 – Princes St – 1” lead water pipe damaged at St Johns Church
6. 17 August 2009 – princes St – 1” water pipe damaged at St Johns Church

The AFR for period 2-5 is **0.14**.

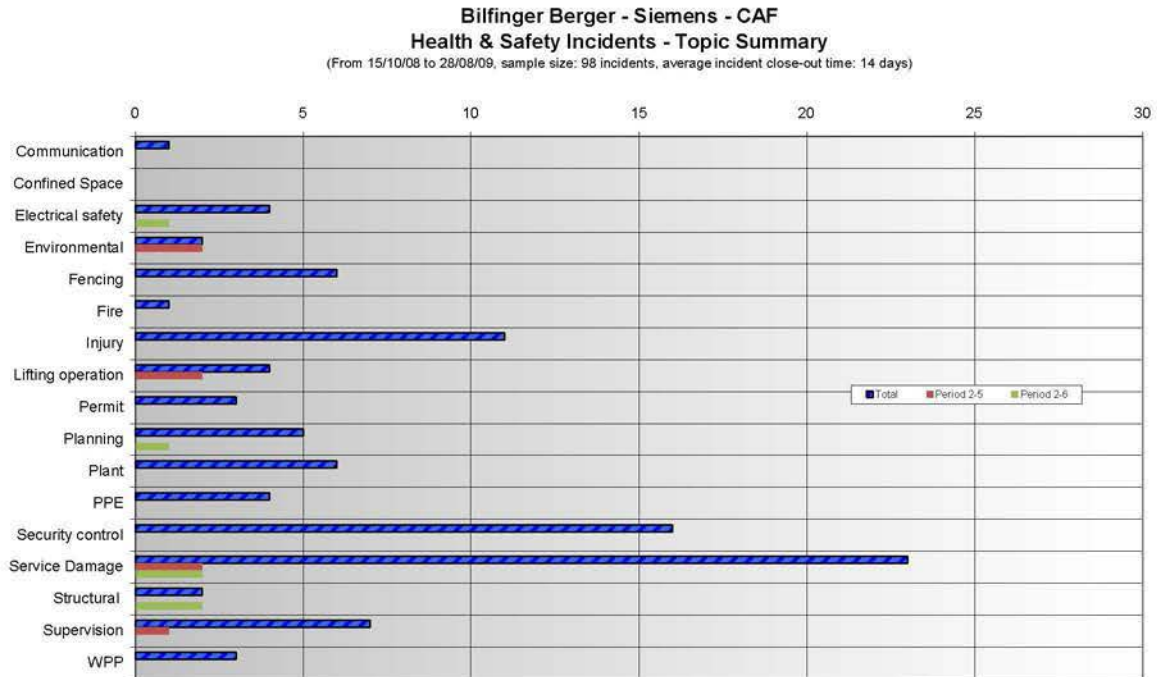
Total Hours worked in **Period 2-5:**

Total: 67,733

**Bilfinger Berger – Siemens – CAF Consortium**

Non site hours = 28,674  
Site Hours = 39,059

**2.1.3 Rolling Trend Analysis up to period 2-5 & 2-6 up till 28 August 2009 on safety related activities.**



**2.2 Environment**

**2.2.1** A full review and investigation is underway by BSC into the pollution incident at Gogarburn Section 7. Report of environmental spill given to tie on 19 August 2009 for information and review. SEPA has instigated that there will be no prosecution pending for this spill, however a letter will follow with regard the incident.

**Bilfinger Berger – Siemens – CAF Consortium**

**2.3 Any other business**

- 2.3.1 BSC produced a 100 best practice posters for the site, which have been well received
- 2.3.2 HSE have visited the site with generally good comments made about the management approach to health and safety and the general condition of the site and working practices. There were a couple of observations made on further development of culture and systems
- 2.3.3 HSE also interested in joining in the consultation with the workforce on 3 September 2009 at the consortium office.

KPI spreadsheet for Period 2-5 is attached at Appendix 1

**2.4 Quality**

**2.4.1 Quality Management System**

BSC now has in place an *'Interface Management Plan'*, which has been issued to **tie** for acceptance.

The following Inspection & Test Plans have been submitted to **tie** for acceptance over the last period:

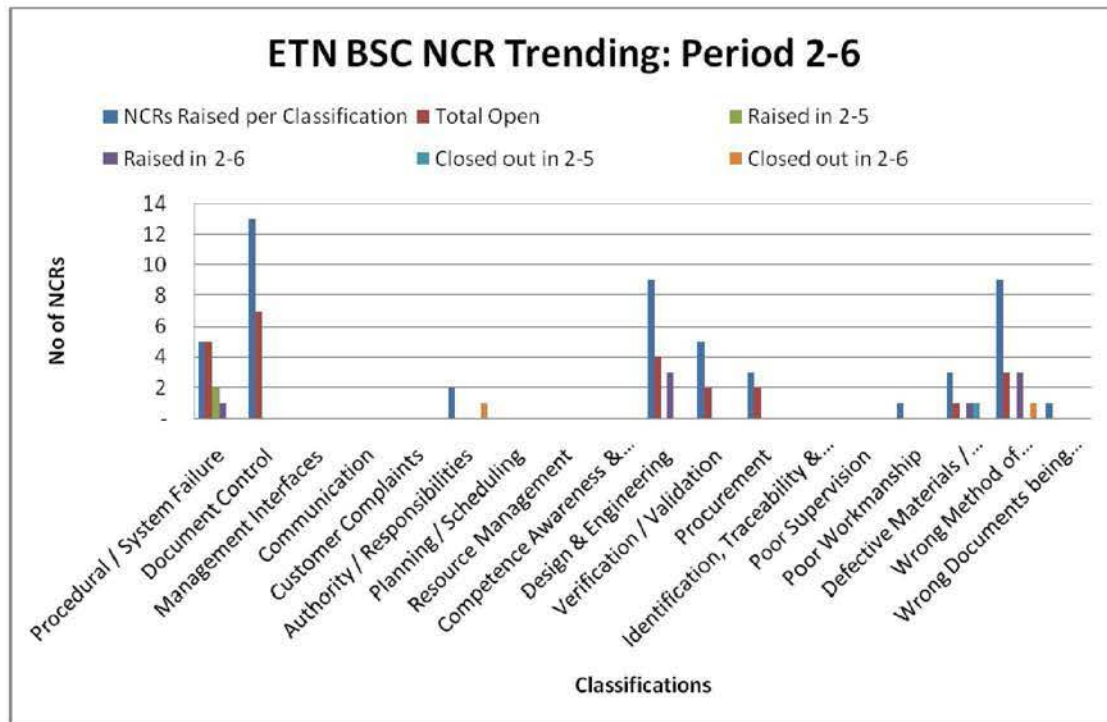
- 2 Issue - BSC Inspection & Test Plan No. 19 – Bridge Bearings Installation
- 1 Issue - BSC Inspection & Test Plan No. 015-1 – Tram Depot Concretes
- 4 Issue - BSC Inspection & Test Plan No. 37 – Road Pavements

**2.4.2 NCRs**

At the time of writing there are currently 21 'open' 'quality' NCRs from a total of 51 raised to date, 3 having been cancelled, and the remainder having been closed-out. Apart from 2 NCRs, all of the currently 'open' 'Quality' NCRs are 'overdue'. 5 NCRs were raised during the last period. 3 NCRs were closed during the last period.

The latest trending histogram for Quality NCRs is shown below.

**Bilfinger Berger – Siemens – CAF Consortium**



**2.4.3 Audits**

*tie* carried out a 'Notice of Change 1 – Clause 104' Audit on BSC on 19 August 2009, from which the closing meeting has still to be arranged. Peter McNay of Deloitte acted as Lead Auditor.

*tie* carried out a 'Gogarburn Bridge – ETN Clause 104' Audit on BSC on 20 August 2009, from which the closing meeting has still to be arranged. Peter McNay of Deloitte acted as Lead Auditor.

*tie* carried out a 'Carrick Knowe Bridge – ETN Clause 104' Audit on BSC on 21 August 2009, from which the closing meeting has still to be arranged. Peter McNay of Deloitte acted as Lead Auditor.

*tie* have scheduled a 'Russell Road Retaining Wall 4 – ETN Clause 104' Audit on BSC for 31 August 2009. Peter McNay of Deloitte will act as Lead Auditor and will be supported by Tom Cotter of *tie*.

*tie* have scheduled a 'Earthworks Section 5C and Section 7 – ETN Clause 104' Audit on BSC for 1 September 2009. Richard Garvey will act as Lead Auditor and will be supported by Andy Scott of *tie* and Donald Cook and Terry Callow of Donaldson Associates.

*tie* carried out a Systems Integration Audit on BSC on 28 August 2009, from which 7 findings were recorded; 1 major, 3 minor and 3 observations. Sheena Smith of *tie* acted as Lead Auditor.

**Bilfinger Berger – Siemens – CAF Consortium**

An Assessment Audit on Solway Steel (Structural Steelwork Supplier for Tram Depot Construction) is scheduled for 11 September 2009, to which *tie* have been invited.



**Bilfinger Berger – Siemens – CAF Consortium**

**3. PROGRAMME**

**3.1. Programme**

The programme at Appendix 10.2 to this report has the V31 mitigation programme incorporated. This programme has been accepted by tie in accordance with Clause 60.4 as the “Programme” (Rev 1) and is used as a baseline for reporting progress.

Progress achieved up to 04 September 2009 has then been recorded against the above baseline including inputting the latest IFC dates received from SDS (V48).

No IFC date has been received for the redesign of South Gyle Access Bridge (programme defaulting to 04 September 2009).

The Programme identifies completion of MUDFA works in each Intermediate Section and uses these dates as a start milestone for the INFRACO work. BSC have progressed (“progress to date”) the Programme in accordance with the Contract and the MUDFA completion dates have been extracted from MUDFA revision 8.0 programme.

It should be recognised that the Programme has only been progressed were noted in this report and does not include for all changes that we are aware of or have been notified to date e.g. dealing with abandoned services, misalignment issues etc.

The result is the following changes to Section Completion Dates:

	04 September 2009	07 August 2009	Programme
A	20 June 2011	20 May 2011	01 June 2010
B	06 September 2011	09 August 2011	01 July 2010
C	04 May 2012	25 April 2012	10 March 2011
D	31 October 2012	22 October 2012	06 September 2011

The critical path to the completion of the works now runs through Depot drainage, Depot track work, 5C track, 7A track, 5A track, 1C track, 1D track, 1D, 1A, 5A and 1A OHLE.

At a number of locations the construction sequence has been changed, from that originally considered, to suit current constraints. Presently the logic of the Programme remains unaltered from that envisaged at Contract Award. Therefore some inaccuracies occur when “progress to date” has been entered into the Programme.

Note – the links between the third party consents and the related activities present in the Programme have been deleted to enable a true analysis to be provided of the current situation.

### **Bilfinger Berger – Siemens – CAF Consortium**

As a result of events which have negatively impacted on the Programme the works have had to be resequenced in an attempt to mitigate the delays which are being incurred. Effectively the following constraints have been disregarded by the BSC construction team:

- Completion of MUDFA works in Intermediate Section 1D and the start of the INFRACO works.
- Completion of other sections of track work prior to commencing in Princes Street.

If the corresponding constraints are broken in the “progressed” Revision 1 Programme the Sectional Completion D does not change from that reported above because the critical path has changed in this period to that previously reported.

However, due to the vast growth in the scope of the works and the delays which have been suffered, the Revision 1 Programme no longer truly represents either the works to be constructed or their current state of production.

The EOT Entitlement programme and Revision 2 Programme shows section completion dates of 20 January 2013 and 02 October 2012 respectively. These programmes are data dated at the end of March 2009 which give a more accurate prediction of the anticipated completion of the works. However, further slippage will have occurred between their production and the date of this report (September 2009) e.g. the issue of the Rev 8 MUDFA programme and these projected completion dates could be up to 5 months later than originally published.

### **3.2 Look Ahead Programme**

The Look-Ahead Programme for the period September to December 2009 is an extract from the current Construction Programme updated with the latest IFC dates from the SDS V48 Programme. MUDFA activities are now scheduled in accordance with their programme Rev 08 received 05 May 08. Where MUDFA Works are ongoing, the Completion Milestones will continue to default to the report date unless planned completion dates are later. The programme has also been updated with progress of The Works recorded and assessed to 04 September 09.

#### **Section 1A**

MUDFA temporary works at Tower Bridge are complete and INFRACO works are currently scheduled to start on 7 Sept 09 pending resolution of Change. MUDFA Works on the remainder of Section 1A Newhaven to Casino were planned 10 June 2009 to 16 Dec 09, and at Lindsay Road were planned 6 July 2009 to 14 September 2009, but have not yet started, therefore INFRACO Works have been scheduled to commence on Lindsay Road 04 Jan 2010.

Existing Public Utilities in Lindsay Road are currently issued for tender. The proposed Traffic Management Scheme was accepted by CEC and Forth Ports Authority on 30 June 2009.

**Bilfinger Berger – Siemens – CAF Consortium**

**Section 1B - Leith Walk**

Tie and BSC are reviewing the Track Improvement Layer in respect of Traffic Management options to formalise an acceptable solution.

Detailed BT Works drawings indicate completion on 27 Dec 2009.

Works in this section are now planned to commence on 04 Jan 2010 after BT completion.

**Section 1C - Picardy Place to Princes Street**

A detailed construction schedule is being developed for this section in a similar format to 1D.

TM Scheme design is progressing as planned.

**Section 1C/D - Princes Street**

The MUDFA Works area between South St David Street and South St Andrew Street achieved final handover to the INFRACO on 19 Aug 09 following completion of the Gas Main diversion. Similarly, at The Mound a partial handover was achieved on 8 July 2009, and the full width of Princes Street on 22 July 09, but with ongoing BT Works in Hanover St. and The Mound advised until 19 October 2009, a late final handover is anticipated and this is being addressed where practicable to mitigate the delay.

At the Lothian Road junction the previously planned MUDFA Works completion date of 31 July 2009 slipped, achieving handover on 07 Aug 09. This delay added a further critical delay to the works.

An updated Plan of MUDFA/Utility operations and confirmation by *tie* of the MUDFA/Utility outstanding completion dates will assist with planning to further mitigate delay in these areas.

The Princes Street detailed Programme Revision E and Narrative was issued on 28 Aug 09 together with detailed programmes for Lothian Road, The Mound, and the Festival Fireworks Display. A planned Completion Date of 28 Nov 09 is programmed, but with multiple criticality. The programme narrative highlights the INFRACO's concerns. A planned Decision Date on 29 Oct 09, 4 weeks before Planned Completion, is scheduled for a review of the works status.

**Section 1D - Haymarket Junction to Shandwick Place**

INFRACO works on Haymarket Junction were originally planned to commence on 5 January 2009. Ongoing utility works currently delay the commencement of INFRACO works in this section. Handover to the INFRACO is now notified by *tie* to be 10 October 2009 extending to 27 November 2009 for switching of BT cables which allows INFRACO works to commence after the Christmas embargo. These works, as planned using the above dates, will be 52 weeks late to Programme Rev 1.

Following rejection of the previous Traffic Management proposal a further scheme utilising the crescents was approved on 27 July 2009. Pending completion of MUDFA ongoing gas main diversion works at Canon St and Atholl Crescent which is anticipated to take until the end of September, any

### **Bilfinger Berger – Siemens – CAF Consortium**

INFRACO works in this restricted area before the Christmas embargo would be limited..

The detailed draft Programme Revision 07 for the construction of Haymarket Junction from the viaduct through Shandwick Place to Lothian Road tie-in will need further revision when constraints are clarified.

#### **Section 2**

Package Contractor programme received.  
Awaiting agreement of Change.

#### **Section 5A**

Package Contractor programme received.  
Awaiting agreement of Change.

#### **Section 5B – Guided Busway**

A detailed draft Construction Programme has been developed for the Guided Busway taking into account OLE, Drainage, Trackform, and Design issues.

The INFRACO have been instructed to commence works on Carrick Knowe Bridge and a detailed programme is being finalised.

#### **Section 5C**

Gyle Tram Stop retaining Wall – Services exposed 28 Aug 09 – awaiting Scottish Power check of cables to confirm safe – may take 4wks. Programme will be updated when dates established.

S28 A8 Underpass is awaiting service diversions by INFRACO and Others. It is estimated that piling may be able to re-commence on phases 1 and 2 by the end of Oct 09.

#### **Section 6**

Works re-commenced in the depot area on 17 Aug 09.  
A Look-Ahead Programme was issued initially and the revised Section Programme should be received on 04 Sept 09.  
Foundation construction is planned to commence 31 Aug 09, with erection of structural Steelwork from 21 Sept 09. The remaining 35,000 m<sup>3</sup> of excavation will take place at a later stage.

#### **Section 7**

Bridge beams were erected on 25 Aug 09 and bridge construction is ongoing. Change items have been agreed for Culverts 1, 2, and 3. These works are now progressing.  
Other programme activities are delayed pending resolution of Change.

### **3.3 Tramco Programme Status**

Updated tram design, procurement, manufacturing, delivery and commissioning programme is attached as Appendix 10.4.

Bilfinger Berger – Siemens – CAF Consortium

## 4 PROGRESS

Programme update attached as Appendix 10.2.

### 4.1.1 Civil & Building Design

#### 4.1.1.1 Production IFC Design

Further to the meeting with **tie** on 18 June 2009 regarding different forms of reporting on design production, BSC are reporting on packages as per SDS Schedule.

#### Programme

Version 48 of the SDS programme was issued to BSC and **tie**. The programme identifies some slippage in certain activities.

BSC have requested management meeting with SDS to explain general slippage, resourcing constraints and how this is being managed moving forward.

#### Approvals

SDS is closing in on obtaining the final planning and technical approvals required. There has been a recent increase in the number of approvals required due to new instructions received, and as such, the percentages may indicate lower completion rates than last period.

SDS reporting progress as follows:

From a total of 229 planning and technical approvals:

*87 % are approved (199).*

*7 % are pending approval (17).*

*6 % are to be submitted (13).*

*Current status (today) is:*

*92% Planning Approvals granted.*

*85% Technical Approvals granted.*

The remaining outstanding approvals are either to be approved imminently, or have been subject to re-prioritisation and long standing changes, which has caused the original dates to slide significantly.

#### 4.1.1.2 Issues and Concerns

A weekly Design Changes Issues Meeting between BSC, SDS and **tie** has been set up to work through and seek resolution to Design Change Issues. This is positive and unblocking long outstanding changes; however, the following key issues are still to be resolved:

### Bilfinger Berger – Siemens – CAF Consortium

- Section 1C2 Technical Approval – Internal CEC Planning / Transport issues to be resolved. This was due to be resolved and approval granted by 7 July 2009 but is still outstanding. **tie** has been requested through Approvals Taskforce and Design Changes Meeting to assist in resolving this issue with CEC.
- CEC preference for Demarcation between Tramway and Roadway; Demarcation solution accepted by SDS. Commercial issue to be resolved between **tie** and BSC (SDS). SDS to provide additional information to support their argument. A technical meeting with **tie** will be arranged following submission of further information from SDS.
- CEC Transport request for relocation of OLE poles in Section 1A is deemed to be a change. SDS has provided additional information to support this argument. Meeting held between **tie**, CEC, BSC and SDS to discuss and resolve this issue. BSC are awaiting **tie** (and CEC) response. **tie** to follow up with CEC and Forth Ports to resolve this issue.
- Picardy Place (Section 1C2) – BSC await instruction from **tie** following submission of validated estimate from SDS.
- Proposed Cathedral Lane Substation Development – Awaiting scope of change and further information from **tie** to allow SDS to prepare budget estimate.
- Transdev comments - This is being worked through the ODR meetings with Tony Glazebrook. It has been accepted by **tie** that some comments will be a change if still deemed necessary by **tie** and will need to be instructed. BSC have provided response to ODR comments following meeting on 23 June 2009 and await instruction or comment from **tie**.
- Roseburn Viaduct – Information has been outstanding from Network Rail for over three months. All information was due by 24 July 2009 to keep to IFC date. **tie** procured their own survey to provide as built details to inform the SDS design as none were available from Network Rail. **tie** issued survey on 27 August 2009 to allow design to progress.

The following other issues need to be resolved as a matter of urgency:

- TRO Programme – SDS have withdrawn two of three outstanding changes and TRO works are progressing. However, **tie** are to advise on outstanding change (INTC 242, Presentation to the Public during September 2008) and meeting to be arranged to discuss this and further TRO changes. Information provided to **tie**. **tie** to advise when they will be in a position to attend a meeting.
- Resolution and finalisation of Forth Ports Agreement. Further changes have been intimated by **tie** which could further delay finalisation of Section 1A. **tie** to review with CEC and Forth Ports.

### Bilfinger Berger – Siemens – CAF Consortium

- RBS Gogarburn Tram Stop – BSC have assisted **tie** in finalising future proofing requirements for the RBS Tram Stop and await instruction from tie to progress this. This is one of the last major approvals issues that is still outstanding. A decision needs to be made by **tie** whether to proceed with a standard tram stop if RBS do not provide their requirements promptly. Instruction from **tie** still outstanding.
- Pre-Novation issues including Phase 1a / 1b interface and advertising consents to be resolved. A recent Tripartite Meeting has resolved a number of pre-novation issues; however Advertising Consents is still to be resolved. **tie** to advise.
- MUDFA Conflicts – Detailed Schedule required from **tie** highlighting all known utility conflicts where 1.2 metre cover has not been achieved. Draft schedule has now been issued by **tie**. A process needs to be developed and agreed as to how these conflicts will be addressed by **tie** to minimise impact on Infraco works. **tie** to advise.
- INTC 277 – Airport Canopy and Boundary Treatment. Design change is on hold until tie / BAA comments provided to allow design to be finalised. **tie** to follow up with BAA and advise.

#### 4.1.1.3 Extended Construction Support and Design Support

The proposed organisational chart for the upcoming month is attached in Appendix 10.8. Updated CVs to be provided to tie to support resources proposed for Extended Construction Support.

#### 4.1.1.4 Workshops

Development Workshop Tramstop held 4 August, 3 misalignments accepted. Minutes of meeting circulated and reviewed. Draft Workshop report reviewed by BSC now sent (27 Aug 2009) for review and comment by tie. Comments have been requested to be returned by 3 Sept.

Scope of Works prepared for SDS to provide Costs and time scale against for the agreed tram stop misalignment activities. The Scope of Works is being sent to SDS with covering letter by BSC Change Control.

Development Workshop Substations held 5 August, 3 misalignments accepted. Minutes of meeting circulated and reviewed. Draft Workshop report reviewed by BSC now sent (27 Aug 2009) for review and comment by tie. Comments have been requested to be returned by 3 Sept.

Scope of Works prepared for SDS to provide Costs and time scale against for the agreed tram stop misalignment activities. The Scope of Works is being sent to SDS with covering letter by BSC Change Control.

Development Workshop Earthing & Bonding held 11 August, 5 misalignments were accepted. Minutes of meeting circulated and reviewed. Draft Workshop report to be published.

### **Bilfinger Berger – Siemens – CAF Consortium**

Development Workshop Drainage held 25 August,  
4 misalignments were accepted. Minutes of meeting circulated and reviewed.  
Draft Workshop report to be published.

#### **Depot**

Depot building – site works are underway with the construction of the building column foundations scheduled to begin on Monday 31 August and steel frame erection scheduled for 21 Sept 09. Secondary Steel working drawings have been submitted by the specialist to SDS for review.

SDS are reviewing Siemens design documentation for The Wheel Lathe, the Tram Wash, and the Under Floor Lifting Plant and continuing with incorporation. OLE pole layout positions for the depot site have been confirmed. Trackform detailed design information is scheduled to be re-issued 4 Sept 09 incorporating rail type details for the tram wash area.

Bogie Turntable – SDS have been instructed to proceed with design integration.

Compressed air - Siemens' requirements are currently under review. The compressor station shall supply the washing plant and the fixed sanding equipment.

Automated Sand Filling Plant – the first interface meeting will take place on 3 September 09 between CAF, Siemens, BB, and SDS.

#### **Tram Stops**

Meetings held with Tram Stop Shelter supplier on 20 August, where BSC outlined the anticipated sequence of events and its expectations both technical and commercial. e.g. Detail integration design required, the requirement for a demonstration tram stop. The appointment of the selected Tram Stop Shelter supplier planned for 1 Sept, subject to final responses from suppliers.

#### **Substations**

The substation building unit supplier has yet to be formally appointed, this ideally needs to be completed to enable detailed integration design and the agreed misalignment designs to be completed.

#### **4.1.1.5 Request for Information (RFI)**

On status date 28 August 2009 – RFI summarise as follows:

RFIs open:	51 total
RFIs open and unanswered:	23
RFIs responded to but require further clarification:	28



**Bilfinger Berger – Siemens – CAF Consortium**

RFIs issued in August 09:	3
RFIs responded in August 09:	2
RFIs closed in August 09:	2

BSC to respond to tie regarding clarification and to arrange RFI meetings between *tie* and BSC to close out open RFIs on a regular basis.

#### **4.1.2 Procurement**

##### **4.1.2.1 Sub-Contractors**

A Sub-Contract Procurement Schedule, showing status at 2 September 2009, is attached as Appendix 10.6.

##### **Section 1A**

Section 1A has now been split into three areas, Newhaven to Ocean Terminal (1A1), Ocean Terminal to Port of Leith (1A2) and Port of Leith to Foot of the Walk (1A3).

BSC intend to sublet Section 1A1 and 1A2 to McKean and Company (Glasgow) Ltd. Final negotiations continue. Tie's Clause 28.2 was given on 14 August 2009. BBUK are now concluding the terms and conditions of McKean subcontract order. They were issued with a Letter of Intent on 4 August 2009.

BSC intend to extend Crummock's involvement down from Foot of the Walk to Port of Leith (1A3).

##### **Section 1B**

BSC have concluded the procurement process for Section 1B.

##### **Section 1C**

Crummock have submitted their price for 1C1 (MacDonald Road - London Road) and BSC are currently reviewing this. BSC's ability to conclude discussions with Crummock are restricted by the uncertainty over programme and access.

BSC are concluding terms and conditions with Mackenzie Construction Ltd over section 1C3 (Castle Street - Waverley Bridge).

It is BSC's current intention to self deliver the remaining works in Section 1C2 (London Road – Waverley Bridge) and a final strategy for carrying out the works is still to be agreed. This work is now not expected to start until January 2010 and a procurement process has now commenced.

##### **Section 1D**

### Bilfinger Berger – Siemens – CAF Consortium

Final negotiations are proceeding with MacKenzie to conclude a Sub-Contractor order.

#### Section 2A and 5A (Part)

Final negotiations are proceeding to conclude a Sub-Contractor order.

#### Section 5A (Part), 5B and 5C (Part)

BSC intend to sublet the remaining structures on Sections 5A, B and C to Expanded Ltd. Discussions continue over finalising programme and terms and conditions. A revised Letter of Intent was sent to Expanded Ltd on 29 May 2009 to allow for procurement and mobilisation which has been later extended to include the preparation and submission of Form C's

Smaller trade package quotations for the balance of the civils works in Section 5 have been received, e.g. piling to guided busway, ducting and drainage, others are currently under review.

#### Section 6

BSC are finalising the terms and conditions of the full Sub-Contractor order for Barr Ltd for the construction of the depot.

In the meantime Barr Ltd has been issued with a Limited Instruction to Proceed to progress any area of the depot where it is possible to do so.

A response from tie in respect of the Edinburgh Airport Limited Subcontractor Collateral Warranty prevents BBUK from concluding Barr's Sub-Contract.

#### Section 7A

Final negotiations with Farrans on the terms and conditions of a Sub-Contract order have been concluded.

A response from tie in respect of the Edinburgh Airport Limited Subcontractor Collateral Warranty prevents BSC from concluding Farrans Sub-Contract.

#### General

Procurement of relevant key Sub-Contractors (Major Civil Works Contractors, Piling Contractors, Ground Stabilisation Specialists) includes the requirement for provision of a Collateral Warranty, in accordance with Clause 28.7 of the Contract.

BSC may need to offer *tie*, in some instances, alternative wording for their Collateral Warranty agreement, as BSC have not as yet been able to conclude our negotiations with potential Sub-Contractors using the template in Schedule 8 Part F.

### Bilfinger Berger – Siemens – CAF Consortium

In respect of the Depot there is a separate requirement to provide a Collateral Warranty agreement to EAL. The wording of the Collateral Warranty agreement is not contained within the Schedule 8 Part F and therefore BSC have requested the wording from tie. This remains outstanding as at the end of the reporting period.

The length of time it has taken to either procure, negotiate and conclude any Sub-Contract has been affected by the complexity of the main contract negotiations and how BSC and *tie* require step down into the subcontract, the necessity to operate a complex milestone schedule which can be adversely affected by progress and change on site and the overall uncertainty on programme.

We have concluded the procurement process for the supply and erection of Tramstop Shelters and equipment and will forward details to tie in due course seeking approval of our nominated supplier.

#### 4.1.3 Materials

An order for the supply and delivery of the beams for Carricknowe bridge was placed on the 2 December 2008

#### 4.1.4 Long Lead Procurement Management

A Letter of Intent was issued to Fairfield Mabey to secure delivery of the beams for the Water of Leith Bridge.

**Bilfinger Berger – Siemens – CAF Consortium**

**4.1.5 Construction**

**Progress on site to 04 September 2009  
Reported against Revision 1 of the Programme  
Duration % Complete (workdays)**

Section	Planned Progress Programme Revision 1	Actual Progress to 04-09-2009	Completion Date Programme Revision 1	Anticipated Completion Date (Progressed Programme Revision 1)
1A	43%	0%	07/03/2011	04/05/2012
1B	50%	3%	05/11/2010	26/01/2012
1C	40%	1%	11/03/2011	30/04/2012
1D	53%	25%	17/09/2010	15/11/2011
2A	74%	8%	03/03/2010	10/05/2011
5A	50%	0%	20/12/2010	02/03/2012
5B	58%	19%	31/08/2010	03/11/2011
5C	56%	1%	20/09/2010	17/11/2011
6	63%	5%	01/06/2010	20/06/2011
7	58%	13%	05/10/2010	09/12/2011
<b>Construction</b>	<b>55%</b>	<b>8%</b>	Section C 10/03/2011 Section D 06/09/2011	Section C 04/05/2012 Section D 31/10/2012

**4.1.5.2 Section 1A Newhaven Road to Foot of the Walk**

**Lindsay Road Retaining Wall**

**Progress**

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009 anticipated completion will be 29 April 2010, 45 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 46 weeks.

**Issues and Concerns**

Changes from BDDI to IFC have not been agreed.

**Bilfinger Berger – Siemens – CAF Consortium**

MUDFA completion of service diversions will further delay the commencement of construction activities.

IFC scope of works will increase duration of construction activities.

**Trackwork - Lindsay Road to Ocean Terminal**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 17 Sept 2009 anticipated completion will be 9 May 2011, 46 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 14 weeks.

Issues and Concerns

Existing Public Utilities within re alignment of Lindsay Road have yet to be diverted.

IFC design incomplete for carriageway and track work construction.

Track work & carriageway changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

IFC scope of works will increase duration of construction activities.

**Trackwork - Ocean Terminal to Port of Leith**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 4 Oct 2010 anticipated completion will be 7 Oct 2011, 45 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 5 weeks.

Issues and Concerns

**Bilfinger Berger – Siemens – CAF Consortium**

IFC design incomplete for carriageway and track work construction.  
Track work & Carriageway Changes from BDDI to IFC have yet to be agreed.  
Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA Works incomplete.

IFC scope of works will increase duration of construction activities.

**Victoria Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 11 July 2011 anticipated completion will be 19 Aug 2011, 46 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 7 weeks.

Issues and Concerns

Change from BDDI to IFC has not been agreed.

IFC scope of works will increase duration of construction activities.

**Tower Place Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 23 Nov 2009 anticipated completion will be 13 Oct 2010, 47 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 33 weeks.

Issues and concerns

Changes from BDDI to IFC have not been agreed.

**Bilfinger Berger – Siemens – CAF Consortium**

Additional design information requested by Forth Ports may delay issue of Licence to commence construction.

IFC scope of works will increase duration of construction activities.

**Trackwork – Port of Leith to Bernard Street**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 12 July 2010 anticipated completion will be 8 Dec 2010, 46 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 15 weeks.

Issues and Concerns

IFC design incomplete for track work.

Re design of carriageway pavement incomplete

Track work & carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

IFC scope of works will increase duration of construction activities.

**Trackwork – Bernard Street to Foot of the Walk**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 11 Oct 2010 anticipated completion will be 18 July 2011, 41 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 11 weeks.

Issues and Concerns

**Bilfinger Berger – Siemens – CAF Consortium**

IFC design incomplete for track work

Re design of carriageway pavement incomplete

Track work & carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.  
MUDFA works incomplete.

Archaeological works are incomplete.

IFC scope of works will increase duration of construction activities.

**4.1.5.3 Section 1B Foot of Leith to McDonald Road**

**Trackwork – Foot of the Walk to Balfour Street**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009 anticipated completion will be 18 March 2011, 58 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 9 weeks.

Issues and Concerns

Re design of carriageway pavement incomplete

Track work & carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

Agreement is required on revised Traffic Management principle.

IFC scope of works will increase duration of construction activities.

**Trackwork Balfour Street to McDonald Road**

Progress



**Bilfinger Berger – Siemens – CAF Consortium**

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 7 March 2011 anticipated completion will be 18 Nov 2011, 56 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 2 weeks.

Issues and Concerns

Re design of carriageway pavement incomplete

Track work & carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

Agreement is required on revised Traffic Management principle.

IFC scope of works will increase duration of construction activities.

**4.1.5.4 Section 1C McDonald Road to Princes Street West**

**Trackwork McDonald Road to Picardy Place**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009 anticipated completion will be 26 Aug 2011, 45 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 4 weeks.

Issues and Concerns.

Re design of carriageway pavement incomplete

IFC design incomplete for track work

**Bilfinger Berger – Siemens – CAF Consortium**

Track work & carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

Agreement is required on revised Traffic Management principle.

IFC scope of works will increase duration of construction activities.

**Trackwork Picardy Place to St Andrew Square**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 13 Dec 2010 anticipated completion will be 11 Jan 2012, 43 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 10 weeks.

Issues and Concerns

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

IFC scope of works will increase duration of construction activities.

Re design of carriageway pavement incomplete

**Trackwork St Andrew Square to Waverly Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 26 July 2010 anticipated completion will be 25 Jan 2011, 45 weeks later than indicated on Programme (Rev 1)

**Bilfinger Berger – Siemens – CAF Consortium**

Current float on anticipated Section C Completion date of 4May 2012 is 52 weeks.

Issues and Concerns

IFC design incomplete for carriageway and trackwork construction.

Trackwork & Carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.  
MUDFA works incomplete.

Re design of carriageway pavement incomplete

IFC scope of works will increase duration of construction activities.

**Trackwork Waverly Bridge to Castle Street**

Progress

Duct and drainage installation has continued. OLE foundation and carriageway construction has continued. Track improvement layer and track installation has continued in the period. Surfacing and footway finishing activities have commenced in the period.

Assuming commencement on 23 March 2009 anticipated completion will be 15 Oct 2009, 11 weeks later than indicated on Programme (Rev 1). Based on BDDI work scope.

Activities are currently on programme, when monitored against Rev E of the construction programme which has a completion date of 28 Nov 2009.

Therefore the anticipated completion date will be 17 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 44 weeks.

Issues and Concerns

IFC design incomplete for carriageway and trackwork construction.

MUDFA works incomplete at the Mound

MUDFA/Utility works incomplete at Waverly Bridge

### **Bilfinger Berger – Siemens – CAF Consortium**

Revision E construction programme has numerous critical paths and no contingency allowance for any future unforeseen events.

No IFC details for track slab around Crawley tunnel

Traffic Control Change has yet to be agreed

TRO/TTRO issues have yet to be resolved.

#### **4.1.5.5 Section 1D Princes Street to Haymarket**

##### **Trackwork Castle Street to Lothian Road**

###### **Progress**

Duct and drainage installation has continued. OLE foundation and carriageway construction has continued. Track improvement layer and track installation has continued in the period. Surfacing and footway finishing activities have commenced in the period.

Assuming commencement on 23 March 2009 anticipated completion will be 22 Sept 2009, 11 weeks later than indicated on Programme (Rev 1). Based on BDDI work scope.

Activities are currently on programme, when monitored against Rev E of the construction programme which has a completion date of 28 Nov 2009.

Therefore the anticipated completion date will be 21 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 24 weeks.

###### **Issues and Concerns**

IFC design incomplete for carriageway and track work

Revision E construction programme has numerous critical paths and no contingency allowance for any future unforeseen events.

Traffic Control Change has yet to be agreed

TRO/TTRO issues have yet to be resolved.

##### **Trackwork Lothian Road to Haymarket**

**Bilfinger Berger – Siemens – CAF Consortium**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009 anticipated completion will be 17 May 2011, 36 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 0 weeks.

Issues and Concerns

Track work & carriageway Changes from BDDI to IFC have yet to be agreed.

Change estimates on Utility transferred by *tie* have not been agreed.

MUDFA works incomplete.

IFC design incomplete for track work

Re design of carriageway pavement incomplete

IFC scope of works will increase duration of construction activities.

**4.1.5.6 Section 2A Haymarket to Roseburn Junction**

**Haymarket Station Viaduct**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming recommencement on 14 Sept 2009 anticipated completion will be 23 March 2010, 53 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 28 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

**Trackwork Haymarket to Russell Road**

**Bilfinger Berger – Siemens – CAF Consortium**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 26 Oct 2009 anticipated completion will be 10 Dec 2010, 58 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 5 weeks.

Issues and Concerns

Track work changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for track work

IFC scope of works will increase duration of construction activities.

**4.1.5.7 Section 5A Roseburn Junction to Balgreen Road**

**Russell Road Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 16 June 2010, 63 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 21 weeks.

Issues and Concerns

Changes from BDDI to IFC are yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Russell Road Retaining Walls W3 & W4**

Progress

No activities carried out during period.

**Bilfinger Berger – Siemens – CAF Consortium**

Time lost in the period 4 weeks

Assuming commencement on 9 Nov 2009, anticipated completion will be 20 Jan 2011, 64 weeks later than indicated on Programme (Rev 1)

Current float on Section C Completion is 28 weeks.

Issues and Concerns

Changes from BDDI to IFC are yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Murrayfield Tram Stop Retaining Wall**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 9 Oct 2009, anticipated completion will be 22 July 2010, 60 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 39 weeks.

Issues and Concerns

No IFC drawings for construction.

Changes from BDDI to IFC are yet to be agreed.

**Trackwork Russell Road to Murrayfield Stadium**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 9 Oct 2009, anticipated completion will be 22 July 2010, 64 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 37 weeks.

Issues and Concerns

**Bilfinger Berger – Siemens – CAF Consortium**

IFC design incomplete for trackwork construction.

Track work Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Roseburn Street Viaduct**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 21 Jun2010, anticipated completion will be 29 July 2011, 63 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 16 weeks.

Issues and Concerns

IFC design incomplete

**Murrayfield Retaining Wall 21B**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sep 2009, anticipated completion will be 21 July 2010, 67 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 19 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Murrayfield Stadium Underpass**

Progress



**Bilfinger Berger – Siemens – CAF Consortium**

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 16 Nov 2009, anticipated completion will be 4 May 2010, 64 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 29 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Murrayfield Retaining Walls 21D**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 19 April 2010, anticipated completion will be 26 Oct 2010, 64 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 26 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Water of Leith Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 29 Oct 2010, anticipated completion will be 18 May 2011, 86 weeks later than indicated on Programme (Rev 1)

**Bilfinger Berger – Siemens – CAF Consortium**

Current float on anticipated Section C Completion date of 4 May 2012 is 26 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Baird Drive Retaining Wall**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 2 Feb 2010, 54 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 39 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Balgreen Bridges**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 17 May 2010, anticipated completion will be 1 April 2011, 63 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 39 weeks.

Issues and Concerns

Rail Bridge

**Bilfinger Berger – Siemens – CAF Consortium**

IFC drawings have yet to be issued.

Changes from BDDI to IFC have yet to be agreed.

Tram Bridge

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Trackwork Murrayfield Stadium to Balgreen Road**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 11 July 2011, anticipated completion will be 23 Feb 2012, 63 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 14 weeks.

Issues and Concerns

IFC design incomplete for trackwork

Trackwork Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**4.1.5.8 Section 5B Balgreen Road to Edinburgh Park Central**

**Trackwork Balgreen Road – Carrick Knowe**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming recommencement on 26 Oct 2009, anticipated completion will be 25 May 2010, 55 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 20 weeks.

**Bilfinger Berger – Siemens – CAF Consortium**

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC scope of works will increase duration of construction activities.

**Carrick Knowe Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming recommencement on 14 Sept 2009, anticipated completion will be 30 April 2010, 56 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 15 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Trackwork Carrick Knowe – South Gyle Access Bridge (Guided Busway)**

Progress

Preparation activities for OLE foundations has commenced in the period and piling for OLE work has commenced.

Anticipated completion is 5 May 2010, 57 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 12 weeks.

Issues and Concerns

**Bilfinger Berger – Siemens – CAF Consortium**

OLE design not yet issued IFC.

Trackwork design not yet issued IFC.

Drainage changes from BDDI to IFC have yet to be agreed.

OLE & Trackwork Changes from BDDI to IFC have yet to be agreed.

**Bankhead Retaining Wall**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 12 Oct 2009, 64 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 14 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

Commencement dependant on resolution of re design at South Gyle Access Bridge

IFC scope of works will increase duration of construction activities.

**South Gyle Access Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 12 April 2010, 64 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 1 week.

Issues and Concerns

Redesign has yet to be completed.

**Bilfinger Berger – Siemens – CAF Consortium**

Changes from BDDI to IFC have yet to be agreed.

**Trackwork South Gyle Access Bridge to Edinburgh Park**

Progress

Temporary fence erection has been completed

Time lost in the period 4 weeks

Assuming commencement on 23 Sept 2009, anticipated completion will be 10 March 2010, 57 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 26 weeks.

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC scope of works will increase duration of construction activities.

**Edinburgh Park Bridge**

Progress

No time lost in the period

Concreting of Diaphragms and deck has continued. Anticipated completion is 3 Feb 2010, 33 weeks later than indicated on Programme (Rev 1)

Current float on Section C Completion is 35 weeks.

Issues and Concerns

Earthworks changes under approach embankments from BDDI to IFC have yet to be agreed.

Structure changes from BDDI to IFC have yet to be agreed.

Soft spot changes have yet to be agreed.

**Track Work Edinburgh Park Station – Edinburgh Park Central**

**Bilfinger Berger – Siemens – CAF Consortium**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 22 Sept 2009, anticipated completion will be 18 Nov 2010, 58 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 41 weeks.

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC scope of works will increase duration of construction activities.

**4.1.5.9 Section 5C Edinburgh Park Central to Gogarburn**

**Trackwork Edinburgh Park Central – Gyle Centre**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 21 April 2010, 54 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 5 weeks.

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

**Bilfinger Berger – Siemens – CAF Consortium**

Utility changes Instructed by *tie* have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC scope of works will increase duration of construction activities.

**Gyle Tram Stop Retaining Wall**

Progress

Trial excavation to locate existing services has commenced during the period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 9 Oct 2009, 66 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 5 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Depot Access Bridge**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 30 Aug 2010, anticipated completion will be 22 Feb 2011, 55 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 20 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**A8 Underpass**



**Bilfinger Berger – Siemens – CAF Consortium**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Sept 2009, anticipated completion will be 20 Aug 2010, 54 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 20 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

Utility diversions are incomplete.

Scope of Utility protection measures have not been agreed

IFC scope of works will increase duration of construction activities.

**Trackwork Gyle Centre to Depot Stop**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 14 Feb 2011, anticipated completion will be 5 Oct 2011, 54 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 20 weeks.

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC scope of works will increase duration of construction activities.

**Bilfinger Berger – Siemens – CAF Consortium**

**Track Work Depot Stop – Gogarburn**

**Progress**

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 23 Nov 2009, anticipated completion will be 19 Jan 2011, 58 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section C Completion date of 4 May 2012 is 25 weeks.

**Issues and Concerns**

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**4.1.5.10 Section 6A Depot**

**Earthworks/Drainage**

No activities carried out during period.

Time lost in the period 4 weeks

Assuming recommencement on 14 Sept 2009, anticipated completion will be 8 Feb 2010, 63 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section A Completion date of 20 June 2011 is 0 weeks.

**Issues and Concerns**

Excavation for Depot Building will be disrupted pending resolution of change to earthworks in Sections 5 & 7.

**Trackwork**

**Progress**

No activities carried out during period.

**Bilfinger Berger – Siemens – CAF Consortium**

Time lost in the period 4 weeks

Assuming commencement on 25 Jan 2010, anticipated completion will be 17 Nov 2010, 50 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section A Completion date of 20 June 2011 is 1 week.

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

**Depot Building**

Progress

Preparation works for foundation works have commenced during the period. Steelwork fabrication has commenced and its erection is scheduled to commence on 21 Sept 2009.

Anticipated completion is 11 Nov 2010, 56 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section A Completion date of 20 June 2011 is 43 weeks.

Issues and Concerns

Numerous Changes from BDDI to IFC have yet to be agreed.

**Depot Substation**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 5 Nov 2009, anticipated completion will be 4 June 2010, 64 weeks later than indicated on Programme (Rev 1)

**Bilfinger Berger – Siemens – CAF Consortium**

Current float on anticipated Section A Completion date of 20 June 2011 is 59 weeks.

Issues and Concerns

Issued IFC drawings will be subject to further change

**Access Roads**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 16 Nov 2009, anticipated completion will be 29 Nov 2010, 64 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section A Completion date of 20 June 2011 is 14 weeks.

Issues and Concerns

Issued IFC drawings will be subject to further change

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**4.3.5.11 Section 7A Gogarburn to Edinburgh Airport**

**Gogarburn Culvert No 1**

Progress

Haul road construction and river diversion works commenced in the period. d.

Time lost in the period 2 weeks

Assuming recommencement on 24 Aug 2009, anticipated completion will be 20 Nov 2009, 44 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 6 Sept 2011 is 39 weeks.

Issues and Concerns

None

**Gogarburn Bridge**

**Bilfinger Berger – Siemens – CAF Consortium**

Progress

Construction of abutments to bearing shelf level has been completed and Bridge Deck beams have been placed in the period.

Time lost in the period 1 week. Deck construction suspended pending resolution of PC beam reinforcement issue.

Anticipated completion is 12 Jan 2010, 48 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 6 Sept 2011 is 28 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

Remedial measures to PC beams may further delay deck construction

IFC scope of works will increase duration of construction activities.

**Trackwork Gogarburn to Ingliston Park & Ride**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 26 May 2010, anticipated completion will be 7 April 2011, 50 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 8 Sept 2011 is 20 weeks.

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

IFC scope of works will increase duration of construction activities.

**Gogarburn Culvert No 2**

Progress

**Bilfinger Berger – Siemens – CAF Consortium**

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 11 Nov 09, anticipated completion will be 12 Feb 2010, 52 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 6 Sept 2011 is 54 weeks.

Issues and Concerns

None

**Gogarburn Culvert No 3**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 19 Nov 09, anticipated completion will be 11 March 2010, 52 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 6 Sept 2011 is 51 weeks.

Issues and Concerns

None

**Gogarburn Retaining Wall**

Progress

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 5 Nov 09, anticipated completion will be 12 March 2010, 52 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 6 Sept 2011 is 40 weeks.

**Bilfinger Berger – Siemens – CAF Consortium**

Issues and Concerns

Changes from BDDI to IFC have yet to be agreed.

MUDFA works are incomplete

**Trackwork Ingliston Park & Ride to Edinburgh Airport**

Progress

No activities carried out during period.

Time lost in the period 4 weeks

Assuming commencement on 23 June 2010, anticipated completion will be 5 May 2011, 52 weeks later than indicated on Programme (Rev 1)

Current float on anticipated Section B Completion date of 6 Sept 2011 is 20 weeks.

Issues and Concerns

Trackwork changes from BDDI to IFC have yet to be agreed.

Earthworks changes from BDDI to IFC have yet to be agreed.

Drainage changes from BDDI to IFC have yet to be agreed.

IFC design incomplete for trackwork construction.

IFC design incomplete for earthworks construction.

**4.2 E&M SYSTEMS**

**4.2.1 OLE (Overhead Line Equipment)**

**Design**

All detailed designs submitted and ROR comments raised responded to

**Approvals and Consents**

Information required by planning “informatives” to be submitted for Princes Street by 3 August 2009. Drafts discussed with tie/CEC prior to submission. Formal submission will be made upon agreement of potentially disputed position of pole adjacent to Frederick Street and the colour of the paint to be used (CEC remain undecided, even after BSC has offered all required alternatives and physical samples).

**Issues and Concerns**

### **Bilfinger Berger – Siemens – CAF Consortium**

As expressed in earlier tie/BSC monthly progress meetings and in view of the magnitude of the overall programme delay in the range of, or even exceeding, one full year, Siemens confirms having deliberately postponed the procurement of several equipment and materials, in order to mitigate the “cost-over-time” factors (extended storage, expiration of manufacturer warranties, obsolescence for high-tech items, risk of theft, loss or damage). This shall not be construed as concurrent delay, but as a deliberate management measure to reduce cost of delay. Siemens shall ensure that all items whose procurement is so postponed shall still be timely delivered before actually needed on the site, i.e., within the float of the subsequent installation activities as already delayed in the programme.

A similar approach applies to various installation subcontracts, deliberately not yet activated nor mobilized by Siemens, as a mitigation measure (not concurrent delay). Mobilization shall still be managed by Siemens without causing any critical path delay.

All above applies to all technical lots of Siemens, although for simplicity it shall only be reported here in OLE, as an introductory statement.

Delay on production of OLE poles for Princess Street due to lack of clear commitment from tie/ CEC regarding colour to be applied. Poles are currently at surface technology company for application of protection layers and paint. FAT is planned for 7 September 2009, installation of poles on Princess Street planned for week starting with 21 September 2009. Delay will cause additional effort and depending on details additional costs.

CEC have stated construction should not commence until full planning approval granted but have not defined acceptance criteria. Additional request made by CEC that OLE poles to be of uniform height whether with a lighting element or not, which is a new requirement not included in the ERs, and thus constitutes a Mandatory tie Change. Programme and cost impact being assessed.

BSC has received informal indications that CEC/ tie may not attend pole FAT. Concern is that any issues which could have been discussed with sound background information and pole manufacturer/ surface technology company and raised before shipment, will be raised after poles have been shipped to Edinburgh, potentially impacting programme and cost.

#### **Production**

Subcontractors for OLE materials supply have been defined. Installation sub-contract being retendered on the basis of including mitigation measures for further programme slippages and restrictions on access caused by others.

Production of tapered poles for Princess Street completed bar surface finish, awaiting tie/CEC decision on final colour (see above)

Material for building fixations has been ordered in advance to allow, if duly authorized by tie, its installation ahead of overall Civil Works and Trackwork.



**Bilfinger Berger – Siemens – CAF Consortium**

This would allow ensuring that such installation shall be kept away from the overall Programme's critical path.

**4.2.2 TPS (Traction Power Supply)****Design**

No major issues. Currently working on final close out of some last design details (harmonics study/ relay coordination study).

**Approvals and Consents**

Details of disconnecter cabinets to be submitted for approval.

**Issues and Concerns**

Same comments as in "OLE" above.

**Production**

Installation subcontractor tender requests re-issued to include mitigation of programme delays. See issues and concerns regarding material and production

All TPS FATs planned (all major DC switchgear components, 11kV AC switchgear, rectifier transformer, power cables) in accordance with documentation submitted to and accepted by tie earlier. *tie* has been given notice of the FAT dates and are requested to confirm their attendance

**4.2.3 TRW (Trackwork)****Design**

- Conclude final trackform design to overcome the Crawley Tunnel area in Princes Street
- Basic Design Rheda City Open Formation on Guided Busway Embankments Report is Level B approved by tie
- Detailed Design Drawing Rheda City Open Formation Sections on Guided Busway has been Level B approved by tie
- Basic Design Drawing Transition Welds Alumino Thermic Welds has been disapproved by tie with level C, will be resubmitted
- Detailed Design for all Section 1A Track Layout Drawings has been Level B approved by tie
- Detailed Design for all Section 1C Track Layout Drawings has been Level B approved by tie
- Detailed Design for all Section 1D Track Layout Drawings has been Level B approved by tie
- Detailed Design for all Section 2 Track Layout Drawings has been Level B approved by tie
- Detailed Design for all Section 5 Track Layout Drawings has been Level B approved by tie
- Detailed Design for all Section 6 Track Layout Drawings has been Level B approved by tie

**Bilfinger Berger – Siemens – CAF Consortium**

- Detailed Design for all Section 7 Track Layout Drawings has been Level B approved by tie
- Ground Borne Noise and Vibration Study Newhaven Road to Haymarket has been submitted to tie 13. August 2009
- Clarification process (from BSC to tie and vice-versa) is ongoing for all Record of Review comments issued by tie.
- Pending issuance of a tie Notice of Change, detailed design must be produced for floating slab track, that will be required in some onstreet locations (<2 km). See “Issues and Concerns” below.

**Approvals and Consents**

- Technical meeting was held with CEC, tie and BSC on 27 August 2009 with the target to reach consent with CEC about the proposed gully solution on the guided busway. CEC approved the proposed gully solution. A detailed design will be submitted in the first days of September.
- Technical meeting is scheduled for 02 September with tie, Siemens, BAM, VAE with the target to reach agreements on turnout details.

**Issues and Concerns**

- Still unresolved final trackform design to overcome the Crawley Tunnel area in Princes Street
- Need to re-synchronize detailed configuration and actual status of definition of which trackform shall apply in which exact line section. Changes have been introduced in parts of SDS Design at the request of third parties (mainly, planning authorities) but without consideration of any possible commercial impact on the project. A careful discussion with tie about such possible commercial impacts might force to renegotiate with the planning authorities the choice of other trackforms at specific locations.
- Changes in Design and Change Orders may influence the TRW programme
- Groundborne Noise & Vibration Issues may influence the TRW design and programme. A detailed field investigation has been conducted by a specialized consultant (D2S), full report has been submitted to tie. A tie Notice of Change is required to further proceed with the detailed engineering and with a construction Estimate.
- Ground conditions and utilities that cannot be / have not been relocated to lower levels may influence the TRW design and programme
- Un-clarified programme delay might cause problems with procurement of long-lead materials on time (e.g. switches)
- Wheel-rail interface concerns of tie at turnouts will be addressed in the aforementioned specialist meeting of 02 September.
- Markle Mains Quarry ballast is not yet approved. Also, design of ballast to slab track transition needs to be reviewed (minimum ballast depth).

**Bilfinger Berger – Siemens – CAF Consortium**

- Need to agree on derailment containment provision in a few locations (Notified Departure).
- Need to release more Sites for trackwork construction. Present rates of production are insufficient, given the degree of mobilization of our subcontractor BAM.

**Following design activities are planned within the reporting period**

- Issue Turnout Flangeway Study for flat-bottom rail and grooved rail turnouts
- Issue Basic Design Report Rheda City Open Formation Bridges
- Issue Detailed Design Rheda City Open Formation Details on Guided Busway, incl. final gully drainage solution agreed with CEC
- Issue Detailed Design Rheda City Open Formation Broomhouse Road Bridge on Guided Busway
- Issue Detailed Design Rheda City Open Formation Saughton Road Bridge on Guided Busway
- Issue Detailed Design Track Layout Drawings 055915, 055916, 055917, 055918, 055919
- Issue final proposed schedule of locations for floating slab, and request tie Notice of Change to proceed with detail design and construction Estimate.

**Production**

- Further TRW construction at Princes Street, although at lower than planned rates of progress due to still existing MUDFA obstructions and extra construction time in Civil Works due to the Track Improvement Layer.
- IT&V plans has been submitted to tie

**Following production activities are planned within the reporting period**

- Track Installation at Princes Street.
- Issue WPP, site mobilization and start construction in Guided Busway.

#### **4.2.4 DWE (Depot Workshop Equipment)**

**Design**

Design is further progressing.

tie's RORs Level B approval is obtained for the following design submittals:

- Washing Plant,
- Measuring Equipment,
- Lifting Plant and
- Service vehicles

### Bilfinger Berger – Siemens – CAF Consortium

Clarification process (from tie to BSC and vice-versa) to tie's RoR comments is ongoing.

Related SDS civil works detailed design (foundations, cableways, pits, etc.) follows the issuance of the Siemens detailed design of equipment.

Current progress includes preparation of detailed design of:

- Machines
- Storage equipment

all in support of procurement of long lead time items and to provide design input.

In order to finish these outstanding design submittals the topics mentioned under "Issues and Concerns" needs to be clarified.

Technical meetings with the tram maintenance for the performance requirements of the equipment are conducted and will be followed up.

### Approvals and Consents

Essentially, DWE shall not require Approvals nor Consents of external Approval Bodies, but only, the formal review by tie.

As regards such review by tie,

- Under floor Wheel Lathe design submittals handed over in October 2008.
- Crane Submittal handed over in January 2009.
- Lifting Plant Submittal handed over in January 2009.
- Washing Plant Submittal handed over in January 2009.
- Service Vehicle Submittal handed over in April 2009.
- Measuring Equipment Submittal handed over in May 2009.

Comments from **tie** have been received to the submittals of:

- Underfloor Wheel Lathe Submittal
- Crane Submittal
- Storage Loads
- Lifting Plant Submittal
- Washing Plant Submittal
- Service Vehicles

all have been answered and resubmitted except the service vehicles.

Further comments given with tie's ROR to the Measuring Equipment and Washing Plant latest Submittals will be answered after clarification on the comments have been completed.

### **Bilfinger Berger – Siemens – CAF Consortium**

A derogation proposal has been presented to substitute the original full-sized forklift vehicle by a smaller, motorized hand propelled pallet stager plus a bogie turntable.

#### **Issues and Concerns**

In order to finish these outstanding design submittals decisions are required regarding:

- acceptance of the above derogation proposal
- cancelation of ultrasonic cleaning bath and arc welding kit from BSC offer

Delays to Site availability.

#### **Production**

Procurement of long lead items is well underway. For other items, the same mitigation strategy as above for “OLE” applies.

Orders placed for underfloor wheel lathe, underfloor lifting plant, washing plant and crane.

#### **4.2.5 Signalling, Communication, SCADA, PIS, PA**

##### **Design**

###### Signalling

Responses provided to all *tie* design Records of Review (RORs) to detailed Design Rev. B; resubmissions in progress.

Loop development workshop report to be formally issued August 2009.

Alarms workshop held with tie/Transdev 25 June (covering all SIG, COM, SCA, PIS, PA functions). Outcome, including follow up clarifications to be issued early September 2009

###### SCADA, PIS, PA (RailCom Manager), PABX, Radio

All detailed designs have been submitted to tie, and all received ROR comments have been responded..

##### **Approvals and Consents**

Formal submissions for consent of PID, PA, PHP are awaiting confirmation of Tramstop furniture to enable a single submission. Ticket Vending Machine details which will be required to obtain consents (free issue from TEL) have not been provided

#### **Issues and Concerns**

**Bilfinger Berger – Siemens – CAF Consortium**

Delays to Site availability.

Same general comment as for OLE above (mitigation strategy in procurement).

**Production**

TPDS detector earth box equipment for all road junctions in Princes where MUDFA works have not prevented, (7 units) have been installed.

Motorized point machines have been manufactured and will be delivered in September 09, despite the non availability of the Site.

OTN (Optical Telecommunication Network) order placed.

All radio equipment required to be fitted on trams has been received by CAF.

Order placed with Chloride for supply of UPS (Uninterruptable Power Supply) equipment

**4.2.6 TLC (Traffic Light Control)**

**General**

BSC has presented to tie a detailed proposal, which exceeds the allocated Provisional Sum(s). tie s evaluating said proposal, and has requested a more detailed cost substantiation.

In order to mitigate possible impacts on the programme, and prior verbal agreement with tie, Siemens has presented separate partial proposals for (a) the immediate mobilization of a reduced TLC project management / technical team (whose participation in the design phase, and DAS/IDC checks, is urgently needed), and (b) for an initial stock of TLC materials and equipment, as might be needed on short notice for the work in the first locations.

Said partial proposals have been formally submitted to tie. An approval from tie is still awaited.

**Design**

No current issues, except those under “General” above.

**Approvals and Consents**

No current issues.

**Issues and Concerns**

No current issues, except those under “General” above.  
Delay to Site availability.

**Bilfinger Berger – Siemens – CAF Consortium**

**Production**

No current issues, except those under “General” above.

**4.2.7 HV/LV - Supply**

**Design**

Internal (to Infraco) and third party cable/duct routes confirmed.

**Approvals and Consents**

Third parties, outside LOD, way leaves are in progress.

**Issues and Concerns**

Clarification on approach in light of delays to preceding site works, specifically Gogar Depot. Same general comment (mitigation strategy in procurement) as for OLE above.

**Production**

See issues and concerns.

**4.3 TRAMS**

**4.3.1. Design**

Detailed design is finished except regarding the Bus tracker, equipment to be delivered by TIE.

Free issue equipment to CAF:

This definition refers to:

- TPDS, Radio supplied by Siemens
- Bus Tracker supplied by Tie

Regarding the Bus Tracker equipment and according to the customer, one set of equipment has been sent to CAF Irun. Nevertheless, no official information has been exchanged since December 2008.

**4.3.2 Procurement**

Procurement for the trams is going according to programme.

**4.3.2.1 Delivery**

In order to meet CAF’s programme, CAF needs all the materials been delivered when necessary according to CAF programme. This need includes

**Bilfinger Berger – Siemens – CAF Consortium**

Free Issue Equipment. Each material has its detailed delivery dates to meet the different manufacturing stages of each module of the tram and the information is delivered to each supplier..

Regarding Free Issue Equipment, if any material is not delivered as it is necessary to meet manufacturing purposes, CAF will evaluate the impact and will let the supplier know.

According to CAF manufacturing needs, all equipment for the first tram should be already available at CAF premises in Irun since mid April.

Bus tracker materials have not been delivered to CAF, except consoles for the driver's desk, although the customer has mentioned, on the 28 of July, that material for the first unit has been dispatched to CAF.

**4.3.3 Manufacturing**

CAF manufacturing process started at beginning of December 2008. The status is detailed on document "Estado fabricación Edimburgo 27\_07\_09". The first modules of the first unit will finished by the end of July and beginning of August

**4.3.4 Testing**

The first tram unit shall be fully ready for testing by mid September

CAF intends to install and test all systems on the different phases of the testing process (CAF premises, Test Track and Edinburgh Tram Network), including Free Issue Equipment delivered by Siemens (TPDS and Radio) and Bus Tracker (TIE).

Tests on CAF premises for the first full tram are planned for September and October 2009, some basic verification will be performed during some weeks of August 2009

Test Protocols for all system, including Free Issue Equipment, must be received by CAF in order to be sent to TIE for review

**4.4 SYSTEMS INTEGRATION****4.4.1 EMC****4.4.1.1 Earthing & Bonding**

Clarification of individual civil structures is ongoing.

Flicker Study has been prepared and submitted to tie and Scottish Power. E&B requirements for OLE foundations at reinforced earth constructions have been elaborated. Where it has not been practicable to timely incorporate them to SDS IFC Design (e.g. in Princes Street), they are being issued as CVI, incorporated into BSC's pre-pouring QC checklists, and shall be included in the final as-built drawings.



**Bilfinger Berger – Siemens – CAF Consortium**

#### **4.4.1.2 Stray Current**

Stray current corrosion study has been submitted and discussed at SCWP. Measurement of rail conductance at Princes Street has been carried out. Results are below the specified limits.

#### **4.4.1.3 Network Rail Immunisation**

Soil resistivity report has been revised according to tie's comments and been re-submitted. Level A No Objection has been received from tie on this version.

#### **4.4.2 System Assurance**

##### **4.4.2.1 Deliverables / Documents issued**

- HAZID Briefing documents for review –
  - ETN / NR EMC HAZID
  - System Interface HAZID
- Human Factors Integration (HFI) of Operational Control Centre (OCC) – Remit written and issued to potential suppliers
- System Hazard Log - Comments and updates on the Hazards have been received from Transdev in respect to Operational Risk Assessments (ORA's) and cross referencing to hazards in the hazard log Transdev ORA. Hazard Log has been updated accordingly.

##### **4.4.2.2 Activities completed**

- Immunisation –
  - Completed Site survey of Track side Location Cases to determine availability of space and cable condition for FETR Modification
  - Milestone completion meeting held with **tie** and agreement made on four milestones. BSC to submit invoice to **tie**.
- HFI (OCC) supplier selection process complete following scoping meetings and review of proposals. CCD Ergonomics selected and PO raised
- Hazard Log Handover and Hazard Review and Close out – meeting held with tie / Transdev to agree process for;
  - Handover of Hazard log from SDS to BSC
  - Reviewing SDS Hazard mitigations

**Bilfinger Berger – Siemens – CAF Consortium**

- Review of Hazard mitigations ongoing.
- Review of Case for Safety information
- Case for Safety Template – Issued for internal comments. Preparation of guidance for Sub-systems in respect to content and structure of the Case for Safety Documentation. No Comments received to date

**4.4.2.3 Activities Ongoing and Planned:**

- Hazard Log Management –
  - Operational Risk Assessments (ORA's). Transdev to continue to review ORA cross referenced to hazards in the hazard log.
  - Update and manage Hazard Log based on Hazard owner's responses (ongoing). Based on mitigation provided by the Hazard owner the tie PSCC will review the hazard, rank the hazards' residual risk and confirm the if the hazard has been controlled so Far As Is Reasonably Practicable (SFAIRP) (Target Date ongoing)
  - Progress Handover of Hazard Log from SDS / agree mitigation arguments in SDS Hazard Log. SDS to supply all hazard mitigation and close out arguments by 04 Sep 09. Meeting of PSCC Sub Committee planned for 30 Sep / 01 Oct to review and close out SDS owned hazards to allow formal handover of hazard log to BSC.
- DDAP Update – Document updated to tie RoR and issued informally. Not formally issued as it requires further work to reflect discussions not covered by RoR.
- HFI – Meetings planned with CCD (HFI supplier) at Ashby as a kick-off for HFI assessment of Control Centre.
- Continue to organise as part of the IDC process Hazard Analysis Work Shops as per Detailed Design Assurance Plan (DDAP). Briefing document has been issued for review .The objective is to ensure that a complete set of risks / hazards is has been identified and managed. Meetings being organised with Hazard Owners to review Hazards and confirm mitigation measures.
- Immunisation –
  - Issue Signalling site survey of NR assets to FETR Design suppliers
  - Manage appointed Contractor regarding support (Independent Review) for Siemens Stray Current Simulation

**Bilfinger Berger – Siemens – CAF Consortium**

- Design mitigation now being supplied with objective of being able to close hazards from a design perspective. Outstanding work is identify hazards associated with Tram Traction packs and telecoms in respect to Immunisation (Planned for September 09)
- Discussions ongoing with potential sub-contractors to provide design and installation for modifications to Network Rail Track Circuits in the Edinburgh area
- Organise follow up Hazard Workshop to address open issues identified during workshop in Edinburgh, Feb 09. Workshop planned for 29 Sep 09.
- See above. A presentation is planned to the Network Rail Infrastructure Systems Review Panel (ISRP) a 'Case For Safety' to demonstrate that the two work streams that we have undertaken above have minimised the risk to the Network Rail Infrastructure ALARP. This document is due in fourth quarter of 2009.

**4.4.2.4 Regular activities and attendances:**

- As well as the above a number of other activities are ongoing such as regular attendance at the following meetings; PSCC, PSCC Sub-Committee, Technical Coordination, Requirements Man, SCWP.

**4.4.3.1 General**

Following a review of the section design, it is proposed to reduce the number of development workshops to identify misalignments. These are as detailed below:

- Trackform (close out)
- Substations
- Cable ducts and Draw pits
- Power Supply
- Earthing and Bonding
- Depot
- Point and Switch Heating
- Tramstops
- Loop positions

**4.5 TESTING, COMMISSIONING AND START-UP**

A Siemens Testing & Commissioning Manager is expected to be nominated before the end of August. Initially working from Germany in the definition of the overall related plans and procedures, it is intended that he later joins full time the team in Edinburgh by the spring of 2010. The exact date could be accelerated or postponed, as a mitigation measure, depending on actual Programme progress

**Bilfinger Berger – Siemens – CAF Consortium**

**5 NOT USED**

**6 STAKEHOLDER AND THIRD PARTY ISSUES**

No further Discussions have been held on the subject to agree how *tie's* existing Stakeholder Management and Communications team can be best used to mutual advantage. BSC are willing in principle to contribute in kind or cost transfer to supplement this team, rather than duplicating resources to comply with the specific requirements of the Employer's Requirements as drafted.

**7 COMMERCIAL**

**7.1 Milestones**

Preliminary Milestones Achieved in the Period:

Month 17 Preliminaries (BB)  
Month 17 Preliminaries (S)

Maintenance Mobilisation Milestone BBUK

**Construction Milestones Achieved in the Period**

There were no construction milestones achieved in the period.

**Milestones Programmed but not Achieved**

Regular discussions take place now between *tie* and BSC on the subject of Milestones and the Milestones Programmed but not achieved are recorded elsewhere.

**7.2 CHANGE MANAGEMENT**

**7.2.1** The BSC Change Register is presented in Appendix 10.7.

464 Changes have been notified to 28 August 2009 - 56 by *tie* and 408 by Infraco.

45 of these Changes have been superseded by further Changes or withdrawn.

65 of these Changes have a delay only impact and will not require an Estimate (the impact of these is reflected in the EOT Entitlement Programme submitted to *tie* on 15 May 2009).

Therefore there are 354 Changes requiring Estimates.

Infraco has submitted to *tie* Estimates for 232 Changes for design only or for design and construction works.

**Bilfinger Berger – Siemens – CAF Consortium**

The total Consortium value of the submitted Estimates is £71,199,000 including £12,714,000 for non-scope work on Bernard Street and St Andrew Square.

89 of the 232 submitted Estimates have been partly agreed by issue of a tie Change Order (application of preliminary percentages requires to be amended as a result of agreement on the percentage addition for preliminaries – tie have responded to BSC letter in this regard and is under review). A total of 30 submitted Estimates have not been accepted in principle by tie. The value of Change Orders issued by tie is £4,602,000.

There are 122 remaining notified Changes for which Estimates are required. In addition, a further 34 construction Estimates need to be prepared for Changes for which a design only Estimate has been submitted to date.

Of the 122 outstanding Estimates, 32 have been accepted in principle by tie, 15 have been rejected and the remainder have neither been accepted nor rejected.

There are 15 Estimates proceeding through the internal Consortium Approvals Process.

A graphical pie chart is presented in Appendix 10.7.

A programme for preparation and/or submission of the outstanding Estimates has been prepared. Prioritisation is based on the latest intended construction sequence and assessed value of the Changes.

It should be noted that it is not possible to prepare 72 of the Estimates until the SDS Provider completes the corresponding design to an extent that allows BSC to prepare an Estimate. Prior to the completion of any SDS Design Change, the SDS Provider issues a design estimate, which is then validated by BSC and approved by tie.

Included in *tie's* Change Order Pro-forma; "Relief required from compliance with Infraco obligations under the contract", "Programme impact and required Extension of Time", "Impact on Performance" remain unresolved for a number of the Changes.

Main reasons for not issuing Change Orders are: Change not agreed in principle, Estimates not yet submitted, figures in estimates not agreed, Base Date Design Information not agreed.

With regards to matters corresponding to the SDS provider notices, *tie* has not accepted all SDS Provider's notices of extension of time and related impact. *tie* does not accept that these issues constitute a change.

The complexity, nature and amount of changes have overloaded the change mechanism included in the Infraco contract, because the Estimates cannot be submitted within the time frame requested in the contract and also due to the fact that the overall impact to the Programme from a given change cannot be assessed on an individual basis. It has been agreed between tie and BSC

### **Bilfinger Berger – Siemens – CAF Consortium**

that the estimates submitted by BSC will only deal with direct related effects (costs) of a given change. Time related effect will be assessed separately.

A series of high level management meetings with the aim of solving major outstanding issues (among others: Base Date Design Information, etc) have been held.

During the week of 29 June to 3 July 2009, tie and BSC participated in an informal “Without Prejudice” mediation workshop. No agreements pertaining to the issues discussed have been reached between tie and BSC.

Four issues have been referred to DRP within this reporting period:

- Financial aspects to EOT 1
- Hilton Hotel Car Park
- Carrick Knowe Bridge
- Gogarburn Bridge

These four issues in BSC’s opinion are not resolving the overall global issues which would allow the Construction of the Project to move forward. Nevertheless, BSC are committed to working through the Dispute Resolution Procedure to find resolution to the issues that tie have referred to DRP.

## **8 RESOURCES**

### **8.1 Organisation Charts**

Consortium and Systems organisation charts are included in this report.

See Appendix 10.8.

## **9 OTHER ISSUES**

No comments.

## **10 Appendices**

### **10.1 KPI Report**

## Contractor Period H.S. & E. Return



To be completed and returned to tie Ltd (Pauline Goldie [Pauline.goldie@tie.ltd.uk](mailto:Pauline.goldie@tie.ltd.uk)) by the Thursday of week 1 for each period (a period is 4 weeks, for dates of start and finish please contact Pauline)

### RETURN DATA

Contractor –

BSC

Date completed –

19<sup>th</sup> August 09

Year –

09/10

Period –

2-5

### PEOPLE DATA

Average number of direct employees on ETP –

115

Hours worked of direct employees on ETP –

22,320

Average number of subcontract / others inc visitors on ETP –

240

Hours worked of subcontract / others inc visitors on ETP –

45,413

Number of work sites –

4

### INCIDENT DATA (leave blank if none)

	DIRECT	SUBCON	M.O.P.
Fatal			
Major			
Over 3 day			
Dangerous Occurrence			
Reportable Disease			
Injury – Non RIDDOR			
Near Miss/ Unsafe Condition		3	
Service Damage		2	
RTA (in and around ETP)			
Positive intervention (if measured)			
Environmental Incident		2	

### ENFORCEMENT NOTICE / VISIT DATA

	NOTICE	VISIT
H.S.E Enforcement		
SEPA		4
Local Authority		
Other		

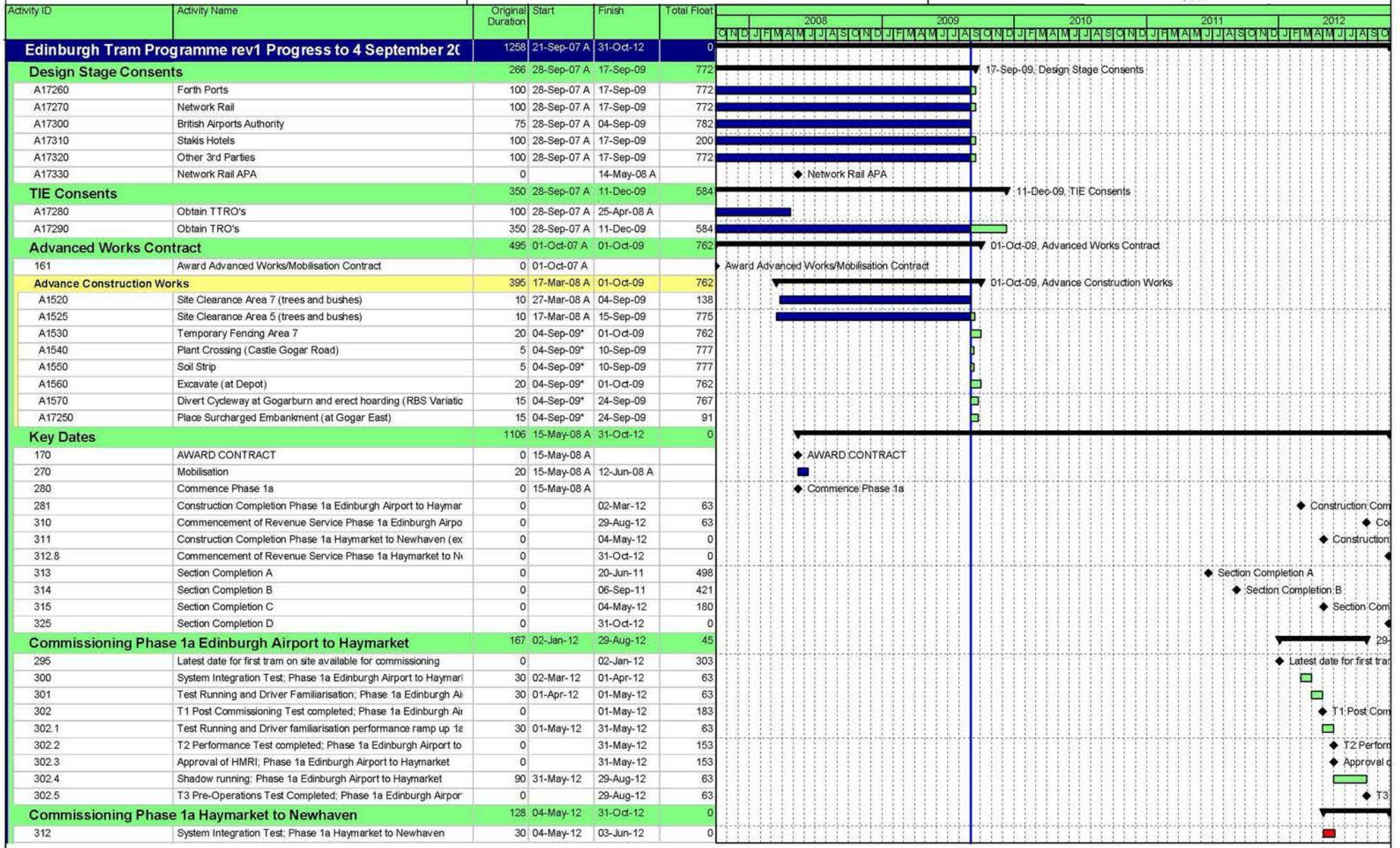
### CONTRACTOR AUDIT / INSPECTION DATA

	PLANNED	ACTUAL
Inspections	29	28
Audits	0	0

Please supply supporting data for all RIDDORs, Service Damages and ENF visits if not previously submitted – Rev0



## **10.2 Programme Update**



Date	Revision	Checked	Approved
01-Sep-09		scs	

■ Actual Work   
 ■ Critical Remaining Work   
  Summary  
 Remaining Work   
 ◆ Milestone   
 Change

CEC00624408\_0066

