

INVESTIGATION & AUDIT

THE PERFORMANCE OF THE SDS PROVIDER

SCOPE

1. Executive Summary

1.1 It was a condition precedent to the Infraco Contract that the Infraco entered into a novation agreement with tie and the SDS Provider which inter alia obligated the Infraco to procure that the SDS Provider carry out and complete the SDS Agreement by carrying out all required management activities. Moreover, the Infraco are prevented from amending the SDS Agreement without tie's approval. All as provided inter alia Clause 11 of the Infraco Contract.

1.2 The Infraco carried out a Due Diligence of the SDS design in February 2008 and SDS provided a report on Infraco's Proposals for Civils Works on 27 March 2008.

1.3 The relevance of these reports is recognised in Clause 3.4.1 of the Schedule Part 4 to the Infraco Contract, which provides:

The Design prepared by the SDS Provider will not (other than amendments arising from the normal development and completion of designs) in terms of design principle, shape, form and/or specification be amended from the drawings forming the Base Date Design Information (except in respect of Value Engineering identified in Appendices C or D to this Schedule Part 4).

1.4 The Appendix hereto gives a detailed explanation of the Infraco Provisions which can be summarised as:

- the scope of the Infraco Works includes all aspects of design (excluding utilities design);
- the Infraco is obliged to achieve complete system integration under the Infraco Contract;
- in order for the Infraco to obtain a Permit to Commence Works, the Infraco must identify the necessary third party approvals and controls (including in relation to safety and Roads Authority);
- the Review Procedure (Schedule Part 14) envisages an integrated design and the delivery of Design Assurance Statements for each design package;
- the Employer's Requirements are very clear that system integration (spanning all elements of the Infraco Works, including design) is a fundamental part of the Infraco Contract;
- delivery of an integrated and assured design forms part of the necessary requirements in order to submit the Case for Safety under ROGS; and

- under the SDS Agreement (and SDS Novation Agreement), the SDS Provider is required to perform its design obligations in order to feed in to the Infraco's responsibilities in relation to design integration.

1.5 Any Design Deliverable has to be capable of forming part of A Design Assurance Statement. The SDS Provider's obligations to deliver a compliant design are achieved on delivery of Issued for Construction Drawings which are defined as:

those Deliverables necessary for Infraco to commence construction of the relevant part of the Infraco Works and as shown on the Design Delivery Programme which have been fully approved by all Approval Bodies and in accordance with the Review Procedure.

1.6 Those Deliverable referred to can be summarised as:

- drawings and specifications;
- a written statement of the design philosophy, explaining why it is a good, best value, design and certifying that all;
- Consents, including but not limited to Design Consents, obtained from Approval Bodies and Third Parties; and
- Confirmation that:
 - i. appropriate CEC informatives have been concluded;
 - ii. interdisciplinary checks have been carried out; and
 - iii. elements of design are integrated.

1.7 Both the Infraco and SDS owe **tie** a duty of care on which **tie** are entitled to rely.

1.7 During the course of carrying out the Design since May 2008 the following circumstances have arisen:

1.7.1 The Infraco SDS has substantially failed to meet the Design Delivery Programme

1.7.2 The Infraco have made [] separate claims that the Design prepared or being prepared by SDS is in breach of those terms set out in 1.5 above.

1.7.3 The SDS Provider is claiming substantial additional payment in relation to providing their services after May 2008.

1.7.4 Such claims are not detailed and may refer in all or part to additional services provided to the Infraco or an Infraco Party.

1.7.5 It is admitted by the Infraco and the SDS Provider that they have entered into another agreement. The Infraco and SDS have refused to disclose the said Agreement.

The Investigation

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As a consequence of the foregoing tie wish to instigate an Independent Investigation on the following issues:

- 2.1** In relation to each alleged BSC Change Instruction
- a How did the Instruction arise?
 - b Was the instruction issued properly, timeously and clearly by BSC?
 - c Did SDS comply properly, timeously and clearly the instruction?
 - d Was the instruction intended to achieve best value for **tie**?
 - e Was the instruction executed in manner expected of an experienced designer?
 - f Did SDS provide competent information for approval?
 - g Did other Infraco Parties delay SDS?
- 2 Has Infraco Parties delayed providing design details to SDS?
- 3 If so give details
- 4 Have Infraco monitored SDS's compliance with the Design Programme?
- 5 Have Infraco complained of lack of progress by SDS?
- 6 Can SDS substantiate amounts claimed bt reference to time sheets?
- 7 Would an experienced designer caused the same level of cost claimed by SDS?
- 8 Is there an Agreement, other than the Novated Agreements between Infraco and SDS?
- 2.2** Why has the Design been delayed?
- 2.3** Have either one or both the Infraco and SDS Provider failed in their duty of care to **tie** and if so how?
- 2.4** Has the delivery of the Design been delayed by any of the following circumstances?
- 2.4.1** Failure by Infraco to provide the SDS with Infraco Design requirements in accordance with the Consents Programme and Schedule Part 14.
 - 2.4.2** The quality or content of the Design
 - 2.4.3** Failure to meet the Employer's Requirements.

- 2.4.4 Instruction by Infraco.
- 2.5 Have Infraco complained of the lack of performance by the SDS Provider and applied Liquidated Damages?
- 2.6 Can SDS substantiate their claims for additional payment?

Appendix - Infraco Contract

The following obligations under the Infraco Contract are relevant in understanding the Infraco's design responsibilities:

Infraco Contract (main body)

- **"Infraco Works"** - is defined widely with reference to all work elements necessary to deliver the whole Edinburgh Tram Network ("**ETN**"), in accordance with the Infraco Contract and the Employer's Requirements ("**ERS**"). This includes design production.
- **Clause 7.1** - *"the Infraco... accepts full responsibility and agrees to carry out and complete the Infraco Works fully and faithfully in accordance with this Agreement."*
- **Clause 7.3.2** - the Infraco is obliged to carry out and complete the Infraco Works *"so as to enable the ETN to be designed, constructed, installed, tested and commissioned, and thereafter operated and maintained;"*
- **Clause 7.3.14** - the Infraco is obliged to carry out and complete the Infraco Works *"so as to ensure that the design of the ETN is buildable and maintainable;"*
- **Clause 8.1.6** - the Infraco is obliged to ensure that certain key elements of the system integration of the Infraco Works are implemented, including *"safety assurances and the Case for Safety are achieved at the issue of a Certificate of Sectional Completion".* The Case for Safety is defined as *"all necessary documentation, information and other requirements for the issue of a safety certificate or safety authorisation.."* by the Office of the Rail Regulation pursuant to ROGS.
- **Clause 8.5** - *"The Infraco shall be responsible for ensuring that all elements of design (which form part of the Infraco Works) relative to the ETN are compatible with system integration and the Infraco shall make qualified personnel available to ensure system integration throughout the Term."* The Infraco's obligation in relation to full system integration is therefore not only applicable on handback/expiry - it refers throughout the full Term of the Infraco Contract.
- **Clause 10** - sets out the Parties' responsibilities with regard to the development and finalisation of the Deliverables (i.e. all documents in relation to the Infraco Works, specifically including "designs" and "drawings"). The Deliverables are reviewed and approved in accordance with the Review Procedure (contained in Schedule Part 14). [*see below for more on Schedule Part 14].

- **Clause 10.9** - Deliverables need to fulfil the requirements of the Infraco Contract and meet the needs of the Approval Bodies,¹ failing which, the Infraco is obliged to amend the Deliverable (at its own cost, unless the Approval Bodies' requirements are: inconsistent with or additional to the Infraco Proposals/ERs; not reasonable; or not reasonably foreseeable).
- **Clause 11.3** - the Infraco is obliged to "*procure that the SDS Provider shall carry out and complete the SDS Services in accordance with the SDS Agreement*".² [*see below for more on the provisions of the SDS Agreement].
- **Clause 11.4** - the Infraco is obliged to "*carry out all management activities in order to manage the performance of the SDS Services and... the Infraco shall be wholly liable for the performance of the SDS Services*".
- **Clause 17.8** - the Infraco is obliged to "*take account of any comments from **tie** in relation to operational issues when refining its Design,³ Maintenance Plans, standards, procedures, and safety documentation in accordance with [the ERs] and when ensuring system integration in accordance with Clause 8*".
- **Clause 19.3** - the Infraco is obliged to "*obtain and maintain all Design Stage Consents... required for the performance and completion of the Infraco Works*". "Design Stage Consents" are defined by reference to a table of Consents (including planning, traffic management, drainage and design consultation) and "*any further consents that the SDS Provider is responsible for obtaining under the SDS Agreement*" which are not Construction and Maintenance Consents.⁴

Schedule Part 3 (Code of Construction Practice ("CoCP"))

- The Permit to Commence Works procedure as specified under paragraph 3 of the CoCP states that each Permit to Commence Works Form (to be submitted by the Infraco in order to obtain a Permit to Commence Works from **tie** on a particular Work Site) shall "*identify the necessary licences, third party approvals and notifications that have been obtained / granted to enable the works to be undertaken, together with the specific control measures that require to be implemented under the Infraco's safety management system*".⁵ This requirement covers design approvals/consents which require to be obtained.

¹ "Approval Bodies" is defined widely, including: any government agency or department, official or public statutory person, CEC, utilities, planning authorities, EAL, NR, and other third parties who are to issue or provide Consents which may be required for the design, construction, installation, testing, commissioning, completion, opening, operation, maintenance, use or modification of the ETN.

² "SDS Services" under the Infraco Contract excludes utilities design.

³ "Design" means any design of the ETN.

⁴ "Construction and Maintenance Stage Consent" is defined by reference to a table of Consents (including building warrants and service commencement certificates) and "any further Consents required to enable the construction of a design which has been fully consented" excluding **tie** Consents (traffic regulation orders and other statutory consents (not Design Stage Consents)).

⁵ The Infraco is required to implement a safety management system in accordance with OHSAS 19001 or HSG65.

Schedule Part 4 (*Pricing*)

- Schedule Part 4 makes certain provisions in relation to how the design (and changes to the design) may impact upon the Contract Price.⁶ It is clear from Schedule Part 4 that "design" is envisaged as part of the Infraco's scope. For example, Appendix A2 (Preliminaries and General Items) includes lines for "Contractor's Requirements - Contractor's Design" costs (e.g. "A810.06 - develop, complete and design of all outstanding structural works - Item Code B3"), albeit that there is a zero unit rate against such line.
- (Note there is no reference to design integration in Schedule Part 4).

Schedule Part 14 (*Review Procedure*)

- Under the agreed Review Procedure, the Infraco is obliged to submit any Deliverable which is required to be reviewed, approved, agreed or consented to, as appropriate. Paragraph 3.1 of the Review Procedure states that Design Deliverables will be reviewed using the Design Management Plan (as may be updated by **tie**) which is contained in Part C. It is also expressly stated that compliance with the Review Procedure is additional to obtaining approval from the Approval Bodies (paragraph 8.2).
- **Paragraph 10.4** - clarification that any modification to the scope of the Infraco Works arising from the development of the detailed Design or from the co-ordination or integration of the Design is not a **tie** Change and does not give rise to a Compensation Event or Relief Event (subject to the Infraco's rights under Schedule Part 4 (*Pricing*) and the SDS Novation Agreement). Irrespective of the fact that this provision includes the Infraco's preservation of its pricing entitlements, this aligns with the understanding and agreement that the Infraco is responsible for the integration of the Design.
- **Part C, Design Management Plan** - para 2.1.3 expresses the reasons why an effective detailed design is critical to the success of the ETN as:
 - allowing the Infraco to construct and maintain the works within the constraints of the Infraco Contract;
 - delivering a wide range of statutory and non-statutory approvals;
 - achieving system safety to the requirements of safety legislation via the ICP;⁷ and
 - provides a design which complies with the requirements of the Parliamentary Acts.
- **Paragraph 2.1.5** - states that certain design elements will be produced directly by Infraco, including "all necessary system integration activity, including integration of the tram vehicle into the system."
- **Paragraph 2.2.1.3** - The Design Review Process includes a "**tie-led 4-week Design Review process**" the purpose of which "*is to review selected design packages for the effective*

⁶ This subject is outside the scope of this paper, however, has been the subject of previous advice notes.

⁷ "ICP" is defined in Schedule Part 14 as: "*The Independent Competent Person, as defined in the ROGS regulations; a person independent of the project appointed by tie to signify his non-objection to the overall tram system's construction, operation and maintenance.*"

integration of design elements to create an operationally acceptable tram system." This is further explained at **paragraph 2.7.1**, the purpose being to:

"take selected packages of submitted design and review them for the fit of the design with stated requirements. It is primarily concerned with providing assurance that tie can demonstrate to the Independent Competent Person that the requirements of ROGS are being met. It does so by addressing the design as an effective integration of design elements to create an operational tram system which meets the requirements."

It is further stated (in bold) that: **"The design review is not an approval process and does not does not dilute the accountability of SDS/Infraco/Tramco for good-quality, fit-for-purpose design and securing approval for that design."**

- **Paragraph 2.8.1** - provides for the provision of an associated Design Assurance Statement ("DAS") along with each design package. The DAS will detail how the design complies with statutory, stated and best-practice requirements. No further detail of what the DAS needs to be is expressed in this Schedule. The Infraco has produced a process (BSC IDR/IDC and DAS processes) which fits within the Infraco's recently completed suite of System Assurance documents, in which it is stated that DAS are produced to cover all design (and not just that by the SDS Provider).
- **Paragraph 2.9.2** - confirmation that the *"Infraco is the principal party in respect of design"* and *"Where the term 'SDS/Infraco/Tramco' is used it is intended to refer to a process managed by Infraco in respect of these novated arrangements."*

2. SDS Novation Agreement

When the Infraco Contract was signed, the SDS Agreement was novated to the Infraco by the SDS Novation Agreement. Following novation the Infraco is obliged to perform all the duties and discharge all the obligations of **tie** under the SDS Agreement (clause 6.1 of the SDS Novation Agreement). Under the Infraco Contract (as noted above), the Infraco must procure that SDS performs the SDS Services in accordance with the SDS Agreement. Note that the SDS Novation Agreement amends certain provisions of the SDS Agreement which are effective following novation. It does not amend any of the provisions which are referred to in this Note.

3. SDS Agreement

The "Services" which the SDS Provider is obliged to provide under the SDS Agreement (and which the Infraco is obliged to procure under the Infraco Contract⁸) are set out in Schedule 1 (*Scope of Services*) to the SDS Agreement.

Essentially, the SDS Provider is obliged to *"undertake all design and produce the Deliverables necessary to enable the ETN to be procured, constructed, tested and commissioned... and then operated and maintained"* (clause 3.2). The SDS Provider is obliged to approach the Services *"in a structured manner, using a recognised 'V' life cycle model with regard to the integration of design engineering, systems engineering and safety engineering activities"* (paragraph 2.2 of Schedule 1).

The SDS Provider must ensure that *"all elements of the design relative to the ETN are compatible with system integration"* and it must *"make qualified personnel available to support the Client in the*

⁸ Excluding the utilities design.

discharge of its responsibilities to ensure system integration." (clause 3.26) (Note that, following novation, "the Client" is the Infraco).

4. Employer's Requirements

The Employer's Requirements support, and expand upon (in terms of detail), the provisions in the Infraco Contract in relation to the delivery by the Infraco of (a) a complete design and (b) successful system integration. The following provisions are key:

- **Section 3.6.1:**
 - *"The Infraco shall be responsible for the complete design of the ETN including the achievement of full compliance with the ERs."*
 - *The Infraco is responsible for achieving the "Deliverables necessary to enable the ETN to be... constructed, tested and commissioned and brought into commercial service and consistent with the requirements for ...Case for Safety..."*
 - *The Infraco is obliged to approach the design services "in a structured manner using a recognised 'V' life cycle model with regard to the integration of design engineering, systems engineering and safety engineering activities."*⁹
- **Section 3.6.2** - states that the Infraco is obliged to *"undertake such supplementary analysis that will allow further development of the Case for Safety concurrent with any design undertaken to prove that the ETN is acceptably safe;"* i.e. the development of the Case for Safety is alongside the design (and not subsequent to its full completion).
- **Section 25.1** - example of Tramstops, in relation to which it is stated that the *"emphasis on this co-ordination shall ensure an integrated design approach within the urban environment."*
- **Section 17.2.5** - the ERs set out health and safety requirements, including the submission by the Infraco of a system safety management plan ("**SSMP**"). The SSMP is required to *"define the process, activities and requirements for the preparation of a "case for safety" at the relevant design stage."*
- **Section 17.2.6** - this section of the ERs sets out the requirements in relation to ROGS. Relevant for the design phase, the Infraco is obliged to:
 - design and execute the Infraco Works using safety management and procedures to demonstrate that the ETN is safe to introduce into service as defined by the Safety Management System under ROGS;
 - develop the Case for Safety to the satisfaction of the Competent Person and the Project Safety Certification Committee;
 - undertake all Infraco Works in accordance with **tie**'s written safety verification scheme requirements.¹⁰

⁹ This mirrors the provision at clause 3.26 of the SDS Agreement.

¹⁰ **tie** to advise what these safety verification scheme requirements are (if relevant).

- **Section 37** - sets out the requirements in relation to System Integration in further detail, supplementing the obligation in clause 8 of the Infraco Contract. The key points are:
 - the Infraco shall provide **tie** with a "totally integrated ETN with all systems, subsystems and interfaces working efficiently and harmoniously together as one and able to be operated and maintained in full compliance with the requirements of the ETN and appropriate Consents."
 - the Infraco's system integration responsibility "shall exist throughout all phases of the Infraco Works" (i.e. including the design phase).¹¹
 - "System Integration" is defined as including : "the collation, identification, recording and management of all elements of the Infraco Works, including but not limited to, the project management, design, procurement, manufacturing, factory testing, delivery, offloading, erection, construction, equipping, testing, commissioning, system acceptance testing, shadow running, operation and maintenance of the ETN" (section 37.2).
 - "System Integration is a fundamental project requirement and shall include the efficient and effective leadership of the system engineering and associated processes, coordination of the processes for the design, implementation and bringing the Edinburgh Tram Network into public service, complete technical direction and configuration management of the existing system design and system and subsystem interfaces to facilitate the Infraco Works" (section 37.3).
 - The Infraco is responsible for managing all activities required to ensure that the ETN is "successfully integrated with the equipment and substations being provided by the Infraco Parties and others... [which] over-arching role shall include... undertaking a design co-ordination system and subsystem development function between contracts" (section 37.4).

5. Infraco Proposals (Schedule Part 30)

The Infraco Proposals do not contain any specific proposals in relation to the delivery of an assured and/or integrated design.

The section dealing with the Civils element of the Infraco Works identifies certain requirements for the Development and Finalisation of SDS Design, broken down by each Section of the ETN route.

6. The Railway and Other Guided Systems (Safety) Regulations 2006 ("ROGS")

ROGS are the statutory requirements with which **tie** must comply (and with which the Infraco must comply pursuant to the Infraco Contract and ERs) in order to ensure that the tramway is commissioned and operated legally.

Pursuant to ROGS, **tie** must:

¹¹ This reflects the statement in the introduction to this section: "A tramway has many constituent parts and therefore integration is a crucial factor when designing, implementing and operating a successful tramway."

- establish and maintain a safety management system, in accordance with Regulation 6 and Schedule 1 of ROGS, which includes the control of all categories of risks relating to the design of the infrastructure (where capable of creating a significant safety risk);
- establish a written safety verification scheme which meets the requirements of Schedule 4 (Regulation 6(4)(a));
- appoint a competent person to undertake the safety verification and ensure that he does so (Regulation 6(4)(b)); and
- hold a current safety certificate (which to obtain requires evidence: (a) that the safety management system has been met; and (b) of the provisions adopted to meet the requirements that are necessary to ensure safe operation of the tramway, as set out in paragraph 5 of Schedule 2 of ROGS (Regulation 7(4)) i.e. the application for the current safety certificate is the "Case for Safety" as defined in the Infraco Contract.

Methods which have been adopted in order to ensure that the necessary Case for Safety is prepared, including:

- Safety Assurance Plan - lays out how the Infraco will achieve the Case for Safety;
- Safety Verification Plan - lays out how **tie** will verify that:
 - the Infraco has achieved its obligations under the Case for Safety and Safety Assurance Plan,
 - the design measures have addressed the original hazards (through design or other controls);
 - the design has been constructed in accordance with the design requirements (including system integration); and
 - the testing and commissioning arrangements have taken place to validate the design and construction requirements.
- Infraco Requirements Management and Validation and Verification sets of processes - designed to provide verifiable evidence to allow the Infraco to rely on such information when considering if the Case for Safety has been made;
- ICP's Request for Opinion, Request for Information, and Advice of possible Non-Compliance - the ways by which **tie** asks the ICP for an opinion; the ICP asks for further information; or the ICP advises that there is a potential problem; and
- Programme Safety Certification Committee - chaired by **tie** to monitor and control the process in relation to key safety risks and hazards and how they are closed out.

The integration and assurance of the design of the ETN plays an integral part of the process which **tie** has developed, and to which the Infraco has committed pursuant to the Infraco Contract, in order to satisfy the requisite requirements of ROGS and achieve the certification in order to operate the tramway.