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**From:** Tony Glazebrook  
**Sent:** 02 February 2008 10:30  
**To:** David Crawley  
**Subject:** FW: SDS V&V Plan  
**Attachments:** UKPB1-#14993-v8-Verification\_and\_Validation\_Plan.DOC

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**From:** INTEG Solutions Ltd[SMTP:INTEG@BTINTERNET.COM]  
**Sent:** Saturday, February 02, 2008 10:28:35 AM  
**To:** Gavin Murray  
**Cc:** Tony Glazebrook; Roger Jones - Transdev; Tom Condie  
**Subject:** SDS V&V Plan  
**Auto forwarded by a Rule**

Gavin,

This email is to confirm the voice mail message I left last week.

As part of the work I'm doing with Wendy and Hongjian relating to the System Engineering audit of SDS, I have been presented with an updated SDS V&V Plan (doc ref: ULE90130-SW-SW-PPN-00005 V8, dated 17<sup>th</sup> January 2008). The document has been produced by Malcolm Currie although there are no further signatures to it. (Copy attached for ease of reference).

On reading the plan my attention was immediately drawn to the table under section 1.6 "References" on page 5. In particular item 7 of the table which relates to and states that Overall System Operational & Performance Requirements, tie ETN, Schedule 11 as "issued by tie". Reference is also made to this in section 1.5 "Applicable Standards & Specifications".

As you will recall Schedule 11 of the ITT for SDS, which was one of 6 (schedules 11 through 16), was tie's first pass at high level requirements for the Tramway and, as stated during the tendering process and since, were for the successful SDS candidate to develop into full system and subsystem requirements. The version of schedule 11 which went out with the ITT stated, erroneously in my view, that a base assumption was that the tramway should be designed such that "... 80% all trams services were to be delivered to timetable or no worse than 2 minutes late...". You will also recall that as part of the development of requirements the more realist target in the high 90%'s (98%) was defined and immediate SDS said that this was in their contract and therefore constituted a variation contract. It seems therefore from this latest V&V Plan that SDS is still likely to pursue such a claim and that discussions have not been had to resolve it.

Indeed in all other cases SDS has developed requirements in all other schedules to the ITT, as required under the contract. The above statement contained in the latest V&V Plan is even more intriguing as in one version of the SDS Operations & Performance Requirements Specification, note they have developed schedule 11 after all, they state a service performance figure of 99%.

Throughout the project there have been interesting discussions on dependability and performance of the tramway as to be designed and I still maintain that SDS did not understand the requirements to deliver the design to good systems engineering practice nor that an integrated design, as defined in the scope of services, meant that as well safety engineering activities, dependability (PRAMS) must be incorporated in each and every design iteration and verified/validated as part of design submissions. The Preliminary Design (PDP) clearly evidenced such omissions and whilst, as I recall, PDP close was only reached on the understanding that SDS would rectify the situation early in the Detailed Design Phase and thence forth maintain work to include such integration and to an acceptable system engineering approach. I must say that so far, the detailed design which I have reviewed may be Ok in some respects but with the exception of Supervisory Control & Communications, none as yet have made any attempt to demonstrate integration and overall I believe there has been no demonstration of achieving the 98% (or 99%) service dependability target or even demonstration that the design achieves any service dependability level at all.

I trust in light of this and other omissions found throughout the SDS services that tie are developing or have developed suitable evidence against which tie will withhold or not settle monies invoiced by SDS as part they core services.

If you wish further discussion please call me.

Regards  
Paul Alliot MSc, CMILT  
**Director**

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