

Operation Design Review Issue Tracker



Sec	Ref	Issue identified at ODR	Update and Action following meetings held 12 & 26 March 09	BSC/SDS further response post meeting 17 April 09	Transdev Response June 09	23rd June 2009 meeting notes (tie)	CEC notes post-meeting	BSC Comments 16-07-09	SDS Response	Status	Close Date	Action With	Current Status
1A	11-1.1	Ocean Terminal – The current design drawings (in particular the planning drawings for prior approval) do not show the required operational signage or point position indicators that will be required around the Ocean Terminal area	Location of point position indicators heads and operational signage along the route to be determined	Operational signage by Transdev. Planning drawings not for construction	(1)Operational signage is not being supplied by Transdev however we are willing to advise on the specification and positioning. (1)Which set of drawings show the location of all point position indicators as required. Siemens Sicas S7 show the location of point indicators at Haymarket, Newhaven, Ocean Terminal, Depot exit/entry and Airport. Drawings required for Shandwick place, Leith Walk, Edinburgh Park and York Place.	BSC/SDS to pursue	CEC have placed an informative on details of PPI and Tram Signage	SDS to confirm what Drawings the point position indicators are shown.	Drawing ULE90130-SW-SCC-00031 with key items details on ULE90130-SW-SCC-00030. Further developed drawing by Siemens is ETN-01-SIG-OCT.	Transfer		BSC	1) Operational signage being progressed with Siemens, awaiting submission 2) Requirement for PPI's have been agreed with Siemens. Assume that ducting drawings will be updated to accommodate. 3) CEC informative on PPI and tram signage therefore on transfer list
1A	11-1.2	Ocean Terminal – On planning drawing ULE90130-01-PLG-00053 v2 there is an OLE pole shown in the middle of a pedestrian crossing.	Confirm that OLE pole is not located on the pedestrian crossing	This is a design not operational issue and is covered by design review process.	On the basis this will be part of the IDC, roads approval including RSA and design review of Ocean Terminal this issue is closed		To be dealt with 1A3 TA when received			closed			reopened 16/11/09 - On OLE drawing D.1215-EL-Z1100-S103 v3 the position of OLE pole 100+866 looks to be in conflict with the position of the ped walkway on roads drawing ULE90130-01-HRL-0003 v3. OLE pole locations reviewed at IDR meeting 12/01/10, OLE pole has been moved out of ped crossing
1A	11-1.3	Constitution Street/Bernard Street Junction 13 – (drawing ULE90130-01-HRL-00034v1) Has the design of this junction in particular the phasing sequence taken into consideration a tram stopped at Bernard Street tramstop for at least 25 seconds (time allowed in modelling) after phase 2 is complete? Moving phase 5 (pedestrian crossing) to follow phase 2 (tram and vehicle heading south) would allow enough time for a tram to stop at Bernard St tramstop and depart before phase 3 starts therefore not causing any obstruction to vehicles turning south.	The phasing of the current drawing ULE90130-01-HRL-00034 revision 3 (IFC) is the same as revision 1. Can be assessed based on results from next phase of junction modelling	Any change in TLC requirement to be instructed.	On the basis that this will be reviewed if required based on the results of the next stage of junction modelling (as agreed by BSC at workshop 12/03/09) this issue will be closed.		To be reviewed by the Council on receipt of modelling outputs. Informative placed on final signal configurations.			closed	16/06/2009		
1A	11-1.4	Constitution Street – The area of pedestrian deterrent along the graveyard wall on the planning drawing ULE90130-01-PLG-00173 v4 is shown as 100x100 stone setts. The effectiveness of stone setts as pedestrian deterrent considering that stone setts are used in pedestrian areas throughout Edinburgh should be reconsidered.	If stone setts are laid unevenly this would be acceptable pedestrian deterrent surfacing. To be considered	This is site specific to this location and only method deemed acceptable by CEC Planning.	Drawing ULE90130-01-HRL-01109 now shows anti-pedestrian setts as per item 23 of appendix 11/1		PCC Anti-pedestrian paving is not acceptable for this location on planning grounds. Setts are a requirement here. Detail for 'anti-pedestrian setts' to be provided.			closed	16/06/2009		

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1A	11-2.1	Newhaven Tramstop – What is the overrun protection arrangement proposed for Newhaven tramstop at the terminating tracks? It is assumed that a short planted sand drag would be provided like the arrangement on Wolverhampton St Georges terminal Midland Metro (see figure 1). What is the basis for determination of the type of overrun protection arrangements to be proposed for this location? (RSP2 guideline 14)	SDS confirmed during the Preferred bidder technical/ due diligence/VE meeting for Trackform on the 20/11/2007, item 3.9 'SDS noted that buffers are no longer required and simple sand drag will be used as required.' Current drawing ULE90130-01-STP-00005 v3 shows an area for overrun, there isn't a design for a sand drag included. Confirm whether a sand drag is to be included in design or if not the rationale for any alternative approach	As previous, not shown in IFC design. Discussed with HMRI and deemed that a track overrun facility is satisfactory with no sand trap (or similar).	Rationale for design solution considering the risks required to support decision and input to evidence file	BSC/SDS to pursue	Proposed design to be submitted to CEC Roads as an Informative and Planning if there is any visible change to the approved prior approval design.	SDS to confirm design of overrun protection arrangement for Newhaven Tramstop provide proposed submission date.	Report detailing terminus facility issued to BSC.	closed		SDS	Arrestor bed design and rationale received in response to ICP RFI 22 July 09 - ULE90130-01-DRG-00795. Closed
1A	11-2.2	Newhaven Tramstop – Consideration should be given to enabling the passenger information display on the southern platform (nearest to Lindsay Road) to automatically inform the passengers which platform to use to board the tram. Operationally it is most likely that the northern platform will be the preferred platform therefore it will be beneficial if passengers have a way of knowing which platform to wait on before the tram arrives (BSC Scope).	Possible safety issue if people are waiting on the wrong platform and run in front of the tram to get to the correct platform.	Configuration requirements to be stated	This issue will be closed based on; (1) Hazard identified entered into hazard log (2) We are still expecting the design submission for the tramstop passenger information system, this issue can be considered again in review		No comment			Closed	16/06/2009		
1A	11-2.3	Newhaven Tramstop – During Princes Street closures some trams will be entering service from Newhaven after being stabled at Newhaven during the previous night. This requirement may need to be considered in the TPDS design (BSC Scope).	Design issue - Being raised through the Signalling and comms detailed design review process with Siemens	Configuration requirements to be stated	confirmed through design submission that download and upload of timetable etc can be carried out via USB or Ethernet connection		No comment			closed	16/06/2009		
1A	11-2.4	Ocean Drive – we believe that the hoarding along Ocean Drive will be retained at present but may be removed at a future date and a footpath constructed in conjunction with development of the area behind the hoarding. Consideration should be given to whether it may be beneficial to construct a footpath as part of the tram project as any future construction work near to the operational tramway may be subject to restrictions. The land at present is outside of the LOD.	This is a third party issue being dealt with by Alastair Sim (tie)			Action with tie	CEC will review this as part of the 1A3 technical approval once submitted.	No comment		closed	03/02/2010		CEC are addressing issue with landowners, hoarding to be moved and footpath constructed
1A	11-2.5	2.5. Has consideration been give to having a stop sign rather than a give way sign for vehicles coming out of Coatfield lane to encourage drivers to observe the full visibility before pulling out onto Constitution Street?	ULE90130-01-HRL-00009 v7 Road scheme layout and ULE90130-01-HRL- shows a stopline and stop signs at this junction.				No comment			Closed	12/03/2009		

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1A	11-2.6	Design Speed - There are locations where the design speed drops below the maximum nominal speed due to the track geometry. For example; from chainage 101300 to 101600 the speed varies between 25kph and 40kph. What would be the effect of increasing the speed in this and other section in order to maintain a more consistent operational speed? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE90130-SW-SPN-00001 V3 and hence related to passenger comfort rather than to safety. We would expect a schedule of the reasons for each design limit to be produced as part of the Health & Safety file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not compromised.	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions; geometric, sighting and third party requirements. Completion required prior to shadow running. Key Hazard, derailment through over speed and speed out of line with other road users.			SDS has in hand through their Hazard Log closure process	Concern, as raised by ICP, over tram slowing unexpectedly in on road sections could be hazard to other road users.	Covered by Hazard log close out process	Being addressed via hazard log process.	Transfer		BSC	This is not just a hazard log issue but also a performance issue. There is an operational requirement for maintaining a consistent speed without lots of speed changes, this seems not to be possible at a number of locations due to the cant deficiency requirement which has been set by the ER's for an exceptional limiting value of 75. Other UK systems have used higher values, the effect of increasing cant deficiency is passenger comfort. 1) Alignment at this stage is fixed 2) Schedule of speeds along the route and limiting factors is a requirement for the handover file. 3) Maximum cant deficiency that tram can tolerate is required. BSC chasing SDS for Hazard log closeout
1A	11-2.7	Foot of the Walk tramstop - How is it envisaged that the no overtaking at the tramstop bus restriction will be imposed?	Safety issue - to be incorporated into the risk register/hazard log	Operational issue - requirement of the driver training.	issue was in relation to bus drivers overtaking stationary trams, we believe this is a restriction imposed by the design has this been communicated to and accepted by the bus companies	Action with tie	No comment	No comment		Closed	16/11/2009	tie	Closed on basis that this will be dealt with on run up to testing & commissioning with bus operators.
1A	11-2.8	Foot of the Walk - Is there adequate frontage access on the platform looking west to allow for cleaning of the windows directly behind the shelter?	Design issue - to be confirmed	TBC - depends on method of cleaning		SDS said that there is no problem and that the customary window cleaner's long pole system will still be usable.	Designs submitted to date do not show the clearance from the shelter to the wall. Concern remains that there is not space to carry out cleaning. Issue raised at TA, comment #7373	SDS to confirm clearance between tramstop shelter and wall.	No glass panels to rear of shelter. Sufficient space to accommodate window cleaning.	Closed	16/11/2009	SDS	Closed on basis that there is sufficient space as stated in SDS's response
1A	11-2.9	Foot of the Walk - How have the Interchange requirements at this tramstop and in the surrounding area been incorporated into the design, e.g. integration of bus information with tram information, location of bus/tram information, bus tracker, passenger desire lines between services etc.	Passenger desire lines have been taken into consideration however the location and format of display of bus & tram information is still outstanding. A specification for each interchange point is required			Action with tie/TEL	CEC have placed an informative on the bus stop locations. Details of bus trackers and signage at the tramstop have not been confirmed.	No comment		open		Tel/CEC	On hold - modelling has shown that junction doesn't work therefore bus stop on Duke street to move to Great Junction street.
1A	11-2.10	Foot of the Walk - Will the lighting provision on the platforms be adequate to provide 30lux along each platform? Maybe additional or relocation of fixtures could be considered due to the location of this platform and due to its interchange requirements.	Lighting level drawings have been produced by SDS. Compliance with ER's to be confirmed	Lighting confirmed as adequate.	Good, however we cannot find the lighting level drawings which where referred to in workshop	SDS will verify that 30 Lux is the designed lighting level	CEC have placed an informative on tramstop lighting. Inconsistency of lighting levels noted in TA, comment #9902	SDS to demonstrate that lighting levels are adequate. Verify that 30 lux is the designed lighting level.	Average lighting level of 20 lux achieved at FotW in place of standard 25 lux average). Due to prohibition from attaching lighting points to east side property.	Transfer		SDS	On transfer list as being dealt with through CEC informative
1A	11-2.11	Bernard Street Tramstop - As this tramstop is shared with general traffic, particular consideration should be given to the edging design and materials to prevent vehicles damaging the platform edging. Drawing ULE90130-SW-STP-00011 shows edging detail for a platform where the track is shared with buses, confirm that this design will be used through Bernard Street tramstop.	Current drawings ULE90130-01-STP-00038 v5 & 39 v4 show the alternative edging detail as per drawing ULE90130-SW-STP-00011				Details have not been provided for the proposed rumble strip. Informative on tramstop materials.			Closed	12/03/2009		

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1A	11-5.1	The collection of communal bins along Constitution Street may have potential impact on the tram operations – procedures for refuse collection need to be addressed with CEC.	CEC to provide information on collection of communal waste. Trade waste may be an issue, this could be addressed in the TRO's	Locations have been considered. Operational issue (Transdev/BSC)	Please note action with CEC	Action with CEC	Bin locations have been considered as part of the TRO. CEC to look at collecting these off peak.	No comment		closed	03/02/2010		Once TRO's in place effect on tram will be reviewed before start of operations. There is no control on private bins therefore this will be addressed through enforcement
1B	02-1.1	Demarcation of the tram only area north of Leith Walk - in particular traffic turning left from Duke Street into Leith Walk may be encouraged to continue to follow the tracks into the tram only area rather than taking a sharper left turn following the road markings. The demarcation in this area is buff coloured asphalt with 'tram only' markings on the entry and also a white line around the edge. Better demarcation would be provided by using imprinted buff asphalt as this would provide a surface texture contrast as well as a colour contrast. Post meeting 21/08/08 it was agreed that the width of the white line should be increased from 150mm to 250mm to be consistent with the clearway white line marking, this would provide a clearer delineation to a bus/car driver. It was also agreed that further deterrent (e.g. kerb) would not be required as this would prevent traffic using the tram only lane in the event that the traffic lane is obstructed.	Use of imprinted asphalt and a 250mm white edging line has been confirmed to CEC from SDS.							Closed	12/03/2009		
1B	02-1.2	No warning signs are provided for drivers turning left from Duke Street that there is a tram only lane on Leith Walk. Further information is also required on the signage philosophy taken on all tram only areas.	Design issue linked to CEC approvals for section 1B. See CEC response			No standard sign exists for this unusual purpose. CEC said "Leave as designed by SDS"	Signs proposed by SDS deemed unsuitable. No sign to be provided. Could be reviewed once operational.	TEL to review prior to or as part of operational stage		Closed	23/06/2009	TEL	
1B	02-1.3	Leith Walk Crossover functionality - A tram terminating north of the crossover needs to be able to call the Manderston Street / Leith Walk junction before commencing the crossover move	Clarification to be provided		Not a tie action, transferred to signalling design submission review process.		Full signal controller configurations required including interface with crossovers and tram loops. CEC have an informative on this.			open		BSC	operational procedure for crossover manoeuvres sent to BSC. TG(tie) to organise meeting with JN & team (siemens) to discuss incorporation of requirements to enable no objection from ICP .
1B	02-1.4	Leith Walk Crossover functionality - How can the crossover be used as a turnback coming from the north direction if there is an incident which requires trams to be turned short. With the present design a police escort would be required to control the reverse movement of the tram across the Leith Walk/Manderston Street junction. Getting a police officer at short notice may be difficult and therefore in these situations the service would be severely disrupted unless an alternative design solution can be found.	Drawing ULE90130-01-TMG-00028 v6 shows a tram turnaround phase however it is not clear how this operates. Clarification to be provided	Operational issue (tie/Transdev)	Not a tie action, transferred to signalling design submission review process		Full signal controller configurations required including interface with crossovers and tram loops. CEC have an informative on this.			open		BSC	operational procedure for crossover manoeuvres sent to BSC. TG(tie) to organise meeting with JN & team (siemens) to discuss incorporation of requirements to enable no objection from ICP .
1B	02-2.1	Springfield Street Junction 17 and McDonald Road/Brunswick Road Junction 21 – Tram is in the same lane as the right turn phase, the traffic left and straight ahead phase obtains a green prior to the tram getting a proceed signal. If the tram is stopped at the junction it will seem to the tram passengers that the traffic lane is progressing quicker than the tram, this may have a negative impact on the trams reputation.	Drawings ULE90130-01-TMG-00029 v6 and ULE90130-01-TMG-00033 v6 show the straight ahead and left turn phase in the same stage as the tram proceed and right turn phase				No comment			Closed	12/03/2009		

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1B	02-2.2	Visibility of a vehicle turning left from Duke Street into Leith Walk to a tram driver heading north waiting on the Leith Walk stop line of that junction. It is difficult to assess from the drawing however it is felt that visibility may be partially restricted. Has consideration been given to visibility at this location, improvements to visibility could be made by providing additional aid to the driver to observe vehicles turning e.g. mirror.	To be assessed during testing & Commissioning			To be assessed by tie/TEL during T&C	CEC feel that visibility should be acceptable for general traffic as they are in the centre of the road. Any future requirement will need discussion with planning.	tie to assess with TEL during T&C		closed	23/06/2009	tie	
1B	02-2.3	Effect of collection of commercial bins along Leith Walk. Has this been considered in the design or is this an operational issue. If this is an operational issue what impact will this have; how frequent is collection, how long does it take and where are the bins located at present?	CEC to provide information on collection of communal waste. Trade waste may be an issue, this could be addressed in the TRO's	Locations have been considered. Operational issue (Transdev/CEC)	Please note action with CEC	Action with CEC	CEC have little control over commercial waste collection. This is being dealt with in the TRO and will be an enforcement issue.	No comment		closed	03/02/2010		Once TRO's in place effect on tram will be reviewed before start of operations. There is no control on private bins therefore this will be addressed through enforcement
1C	03-1.1	London Road Junction – At present the location of the bus lane and occupation of the bus stop on London Road can cause tail backs to the existing roundabout for right turns, assuming that this problem will also be present with the new junction design, the introduction of a yellow box in the tram lane areas should be considered to keep the tram lane clear.	Right turns on London Road into Blenheim Place which cause the tail backs are banned in the design. Can be reviewed during the testing and commissioning phase				No comment			Closed	12/03/2009		
1C	03-1.2	York Place/Elder Street Junction – At present there is queuing in the York Place right turn lane into Elder Street for St James Centre car park, mainly if the car park is full. This will impact on the trams ability to proceed along York Place if it is stuck behind queuing traffic. A potential solution is to remove the current separate bus lane providing a separate lane for right turns, a lane for straight ahead (bus and general traffic) and therefore keeping the tram lane tram only. The bus lane could then restart east of Elder Street junction.	Design issue - impact to be assessed at next phase of junction modelling	This has been previously proposal and rejected. Advice to date from CEC is that this is not acceptable in traffic terms. This is a CEC decision if they wish to compromise traffic operations in favour of tram at this location. Action to be tie/CEC for change.	Okay if tie/CEC accept action	CEC noted that the design has to be acceptable. (Post-meeting note: the design of this junction will be considered together with the Picardy Place design).	Modelling outputs highlight the problem at this junction. As such revised design to be investigated prior to 1C2 closeout. CEC to write to SDS.	CEC to provide comments to SDS as soon as possible		closed	16/11/2009	CEC	Closed on the basis that instruction has been sent to BSC to remove bus lane to enable tram to be on separate phase from right turning
1C	03-1.3	South St Andrew Street – It is not clear how access is provided and controlled from St Andrews Square into West Register Place and Meuse Lane. Currently there isn't signage or markings showing the permitted safe routes for vehicles along South St Andrews Street.	Issue still open on Road Safety Audit for 1C item B4.6.1. To be closed via RSA closeout	Access from Square.	Open issue with Road safety audit and CEC approvals		CEC await details and revised RSA. Informative placed on demarcation. CEC to propose asphalt surface for loading/access traffic lane.			closed	04/02/2010		design revised - see ULE90130-01-HRL-00018 v11
1C	03-2.1	Annandale Street/Montgomery Street Junction 23 – Although the reason for a stop line in between the 2 yellow boxes is understood, a tram would be unable to stop on the line and clear the yellow box junction. In order to avoid this situation confirmation is required that the signalling logic will prevent the tram signal going to stop before the tram clears this junction	Traffic signalling logic to be confirmed	Confirm logic requirement so it can be configured.	Please confirm if the signal logic is configured so that a tram will not be stopped on the yellow box junction at the stop line in front of signal heads U and S	Action with tie	Full signal controller configurations required including interface with tram loops. CEC have an informative on this.	No comment		Open		BSC	Why is the stopline and tram signal head (phase S) required? TG (tie to raise with JN (siemens)
1C	03-2.2	St Andrew Square – Further details required of the materials and finishing proposed for St Andrews Square.	Design to be finalised	This is not an operational issue - contrasting materials and markers used as per previous discussions. Materials are shown on drawings and within Appendix 11/1.	Agree that the materials in isolation are not an operational issue however the tram environment, demarcation, markings and how these are perceived by tram drivers and members of the public is of operational interest, hence the question as of time of review this was not clear.	Drawing submitted to CEC for approval showed yellow marker blocks - shown on the roads drawings	CEC require further visibility of this proposal once specific items are selected.	SDS to submit final design for approval.	Design to be submitted, as noted by BSC.	closed	12/01/2010		Final design has been submitted, no further comments

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1C	03-2.3	Tram path marking – What material is proposed to mark the tramway path and how will the tram path markings be incorporated into the different purposed surfacing; as an example the yellow dots shown in the drawings for St Andrews Square integrated with granite setts. The same issue could be raised for all sections, therefore it would be preferred if the response covered materials used throughout the system. Has consideration also been given to whether the tram path marking in some areas are also for the benefit of pedestrians, and in these location providing a marking which can be perceived by the visually impaired, for example a slightly raised surface.	system wide design issue - to be finalised	Discussions have been to use markers set on to the setts. Contrasting colours for setts also to be used.	Await design submission	Drawing submitted to CEC for approval showed yellow marker blocks - shown on the roads drawings	CEC require further visibility of this proposal once specific items are selected.	SDS to submit final design for approval.	Design to be submitted, as noted by BSC.	closed	12/01/2010		Final design has been submitted, proposal is for yellow block markers in setted area, this will require planning approval however no issue from operational perspective
1C	03-2.4	Pedestrian Crossing south end of South St Andrews Street – Will the pedestrian crossing always show a green man unless a tram demand is requested.	ULE90130-01-TMG-0085 v4 shows that the pedestrian phase G always has a green phase unless there is a tram phase K or M				Full signal controller configurations required including interface with tram loops. CEC have an informative on this.			Closed	12/03/2009		
1D	01-1.1	Haymarket Tramstop tram only area - there is potential for a driver to stray into the tram only area, careful consideration is required to the demarcation of this and similar areas to discourage drivers from entering. In particular vehicles coming from Morrison Street may follow the tram tracks into the tram only area especially if the driver is unfamiliar with the area. Further consideration should be given to the driver's approach to the tram only area.	Recent submission of drawings to be reviewed	This issue has been discussed with RDWG in past. Geometry requires that this conflict arises, and mitigation as currently proposed is on drawings.	Transdev accept that there is little more that can be done to mitigate the risk		CEC have requested improvements to demarcation in this area at TA and closeout. Awaiting revised design.			Closed	16/06/2009		revised kerb line and surfacing improves demarcation
1D	01-1.2	Insufficient advance warning to drivers that Shandwick Place is shut.	Additional sign at Coates Place shown on drawing ULE90130-01-HRL-01253 v3				No comment			Closed	12/03/2009		
1D	01-1.3	Crossover operation with Manor Place / Shandwick Place junction – A tram terminating at Shandwick Place tramstop needs to be able to call the Manor Place / Shandwick Place junction before commencing the crossover move. Also an additional tram signal head is required for the pedestrian crossing west of the tramstop for these crossover moves.	Design Issue - clarification to be provided	Revised requirement to be instructed	Not a tie action, transferred to signalling design submission review process		Full signal controller configurations required including interface with crossovers and tram loops. CEC have an informative on this.			open		BSC	operational procedure for crossover manoeuvres sent to BSC. TG(tie) to organise meeting with JN & team (siemens) to discuss incorporation of requirements to unable no objection from ICP .
1D	01-1.4	Crossover at Shandwick Place – How can the crossover be used as a turnback coming from the east direction if there is an incident west of Shandwick Place which requires trams to be turned short. With the present design a police escort would be required to control the reverse movement of the tram from the tram and bus lane into the crossover. Getting a police officer at short notice may be difficult and therefore in these situations the service would have to terminate at York Place unless an alternative design solution can be found.	Design Issue - clarification to be provided	Revised requirement to be instructed	Transferred to signalling design submission review process		Full signal controller configurations required including interface with crossovers and tram loops. CEC have an informative on this.			open		BSC	operational procedure for crossover manoeuvres sent to BSC. Awaiting response. TG(tie) to organise meeting with JN & team (siemens) to discuss incorporation of requirements to unable no objection from ICP .
1D	01-2.1	Taxi rank in the area at the front of the station - further information is required as to how this will be signed, controlled and managed.	How this will be managed is still to be determined	Not BSC scope	Yes, action with CEC	Action with CEC	Prior to tram this stance was private and not licensed by CEC. The proposal is to adopt this area and licence the stance. Enforcement to be assessed.	No comment		closed	16/11/2009	CEC	Closed based on CEC comment

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1D	01-2.2	Is the centre OLE pole on the tram only area at Haymarket viaduct at risk from being hit by a vehicle straying into the tram only area?	Technical approval is required for all OLE foundations, an audit of ole poles and risk of collision is being carried out. Output of the audit to be forwarded to TSL	Yes - already discussed and approved.	okay from size of foundation seen on Princes Street integrity of the foundation is not an issue!! It is a possibility that the pole will be hit however as long as pole replacement and RSP2 clause (180) has been taken into consideration this issue can be closed. RSP2 requirement raised in ROR for OLE Principle overall system description.		Informative placed on OLE design. Details yet to be issued.			closed			
1D	01-2.3	Bus stop at Atholl Crescent Westbound – The bus box deliberately blocking the junction as a control measure to prevent cars exiting round a bus when it is in the stop – Will bus drivers adhere to stopping in the box as it is counter intuitive for the bus driver to block junctions. Further information is required detailing the alternative solutions which have been considered and the design assessment leading to this arrangement being the preferred solution.	Item raised also on Road Safety Audit for 1C item B6.1.2. Check status of RSA and latest drawings	This was done deliberately in agreement with CEC to avoid cars exiting the roadway and potentially "blindly" passing a stopped bus and conflicting with an on-coming tram.	Will close on basis that this has been picked up by the road safety audit and will be closed out through that process		Awaiting revised safety audit before closing this out.			closed			
1D	01-2.4	Cycle/tramway interface - At Rutland Place corner is the RSP2 guideline of a minimum 1m from rail to kerb clearance achieved where cycle lanes cannot be provided?	ULE90130-01-HRL-00022 v6 shows the kerb line has moved increasing the clearance between the rail and the kerb				Design revised following TA comments. Closed			Closed	12/03/2009		
1D	01-2.5	Cycle/tramway interface - What risks are associated with cyclists sharing the tram, taxis and bus lane along Princes Street?	Hazard log entry however could also be a performance risk for trams behind cyclist using the straight ahead lane shared with the tram.	CEC decision - TRO can restrict this if required.	Agree to close as risk is covered by Hazard log ref 833		Unclear which bus lane is referred to. Following TA as much mitigation has been provided as possible.			Closed	16/06/2009		
2A	08-1.1	Haymarket city bound platform – As this is a major interchange point careful consideration needs to be given to the location and provision of bus and tram information on passenger information screens. We suggest that an additional information display is placed at the east of the platform which would allow passengers emerging from the station intending to use public transport to head into the city to see whether it would be better to catch a tram at the platform or cross the road and catch a bus. It would also prevent congregation of passengers around the information displays located near the shelters in the middle of the platform.	A specification for each interchange tramstop is required detailing requirement for any additional passenger information displays			Action with TEL	Aside from the issue of PIDs, details of this tramstop have not been revised following comments raised at TA. Revised design needs to address these CEC comments which have been tabled with SDS several times already.	No comment		closed			TEL report 'Passenger Flow at Haymarket interchange Interim Report' 08/12/09 circulated to BSC for comment. Final report to be raised at PSCC for endorsement. Closed on basis covered by 08-2.2
2A	08-1.2	Demarcation of the tram only section prior to Haymarket yard Turnback - there is a concern that vehicles may stray into the tram only area and enter the segregated section, if the trackform in this section is ballasted (BSC proposal) then this would cause major disruption to the service. The current drawings show that this area is embedded concrete with a kerb line with no entry signs and tram only markings. We suggest using pedestrian deterrent paving to demarcate the pedestrian section from the segregated tramway will help to deter pedestrians and also stray vehicles.	Clarification to be provided of footway and surfacing in this area	Any change from previously issued designs to be instructed.	(1)From BSC 'location of designated trackforms' drawing the transition from Rheda City C/D to direct fixation is west of the tram only section. It also seems from the road scheme layout plan that this tram only area will be a crossing point for pedestrians. Is this correct? (2)What is the surfacing being applied to the Rheda City track in the tram only area. (3)Has consideration been given to deter pedestrian from the transition between Rheda City and Direct fixation	CEC said that pedestrian deterrent paving IS required - plus tie had been told that it will be. SDS to confirm that this is indeed the case.	Pedestrian/vehicular deterrent paving is required. Additional pedestrian crossing has been added since TA increasing the risk of pedestrians crossing here.	SDS to review with CEC and advise impact on design and justification if deemed a change.	In process of being reviewed with full response to follow.	Open		BSC	Still unclear how the interface between the road and pedestrian area works with the Rheda City trackform - difference in levels, kerb line. Pedestrian deterrent required.

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2A	08-1.3	Haymarket Yards Turnback signalling is currently being developed by BSC therefore none of the current drawings shown any signalling in this area. From the drawings we have estimated that there is approximately 40m from the toe of the switch to the start of the tram only area and therefore end of junction 91 (entrance to Haymarket station car park). Trams will regularly have to stop at these points to wait for the route to clear prior to terminating in the sidings. A tram stopped prior to these set of points may block the junction. Confirm the distance between the switch toe and the end of junction 91. We suggest that if the distance isn't adequate then trams could be held at junction 91 stop line until the route is clear rather than at prior to the points. The junction design may need to be reconsidered to take into consideration the operational functionality of the Haymarket Yards signalling configuration.	Design issue taken forward through signalling detailed design review process with Siemens		Issued raised in ROR for SICAS S7 interlocking		Full signal controller configurations required including interface with crossovers and tram loops. CEC have an informative on this.			open			closed 16/06/2009, reopened following meeting on Haymarket Yards junction 91 on 26th Feb 2010. Current option and alternative proposals discussed.
2A	08-1.4	Roseburn delta junction landscaping – we note that the planting mix within the delta contains Corylus Avellana (Hazel) and Tilia X Europaea (Common Lime), the common lime can grow to 60-90ft. We suggest that the vegetation within this area is kept at a low level to protect visibility. This comment has been made previously ROR on Haymarket yards section 2 prior approval documentation	Also possible issue with rail adhesion. Reasoning for large trees in this area to be clarified	This is a change, as approvals granted, and will require resubmittal to CEC.	If 1b built intervisibility across this junction will be required if the system is to operate on line of sight	Notwithstanding the CEC desire, this is a potential safety and operability issue. SDS design to be amended to show massive trees replaced by appropriate low-level planting scheme. BSC/SDS to notify tie of the costs of this change.	Note that any change to landscaping will require an update of the Landscape Habitat Management Plan and should be done in consultation with Planning.	BSC will provide estimate to tie. Have requested estimate for SDS and will validate prior to issue to tie for consideration	closed	03/02/2010		Not a tie change location of vegetation will be assessed during testing and commissioning and on an ongoing basis during operation. If any trees are found to restricting sight line so that driver cannot drive by line of sight the vegetation will be pruned and if required removed - operational safety issue. Any changes to landscaping will require approvals	
2A	08-1.5	Crew relief facility – we suggest providing adequate external lighting at the crew relief facility and also a CCTV camera. These are requested due to concerns for staff security particularly those carrying money using the crew relief facility.	Crew security covered by entry in hazard log	Change to be instructed if required. Additional submittals to NWR and CEC potentially.	Will be closed if Hazard log entry ref 292 amended to include security of staff at the crew relief facility as well as on tramstops.	A letter will be sent to BSC asking for a quote for this.	No comment	Letter to be sent to BSC requesting quote for additional requirements.		Open		BSC	Drawing ULE90130-02-STP-00029 v1 shows adequate external lighting and 2 CCTV cameras. At present CCTV cameras are not part of Siemens design therefore images will not go back to the central control room. One camera would be sufficient.
2A	08-2.1	There are locations where the design speed drops below the maximum nominal speed due to the track geometry (excluding locations through tight curves or tramstops). For example; at chainage 200530 the speed drops from 60kph to 40kph. What would be the effect of increasing the design speed in this section in order to maintain a consistent operational speed? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE90130-SW-SPN-00001 V3. We would expect a schedule of the reasons for each design limit to be produced as part of the H&S file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not compromised.	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions; geometric, sighting and third party requirements. Completion required prior to shadow running.			SDS has in hand through their Hazard Log closure process	No comment	Covered by Hazard log close out process	Being addressed via hazard log process.	Transfer		BSC	1) Operational signage being progressed with Siemens, awaiting submission 2) Requirement for PPI's have been agreed with Siemens. Assume that ducting drawings will be updated to accommodate. 3) CEC informative on PPI and tram signage therefore on transfer list BSC chasing SDS for Hazard log closeout

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2A	08-2.2	Haymarket city bound platform – The city bound platform is going to be a very busy platform as it is shared between both buses and tram, therefore careful consideration need to be given to the shelter(s) location and configuration with people getting on and off buses/trams and passenger flows around platform. What passenger occupancy levels and movements have been taken into consideration?	A retrospective designers risk assessment to be produced	SDS design in line with requirements and discussions with CEC/tie.	A retrospective designers risk assessment to be produced as agreed by BSC at ODR workshop 12/03/09	SDS said that this is an area of tight physical constraints and that no other layout is possible without something else changing - which so far has proved to be unacceptable. Hence, SDS will issue their completed design, following which tie will arrange a discussion meeting to review the design and determine the final outcome.	Aside from the issue of PIDs, details of this tramstop have not been revised following comments raised at TA. Revised design needs to address these CEC comments which have been tabled with SDS several times already.	SDS to submit design and Tie to comment on design submitted.		Open		BSC	Dealt with through ICP's RFI013 TEL report 'Passenger Flow at Haymarket interchange Interim Report' 08/12/09 circulated to BSc for comment. Report suggests an additional PID at the east end of the the eastbound platform. Final report to be raised at PSCC for endorsement.
2A	08-2.3	Haymarket Yards Turnback OLE - two section insulators are shown either end of Haymarket Yards siding. We would like to understand the rationale for providing these section insulators and under what circumstances would the siding need to be isolated. From an operational perspective we can only think of requiring isolation in this location in order to access the tram roof/pantograph area during service hours if the tram cannot be safely moved back to the depot.	section insulators are retained in BSC design - no objection				No comment			closed	12/03/2009		
2A	08-2.4	Haymarket Yards Turnback siding lighting – what is the lighting provision proposed at Haymarket Yards Turnback? The planning drawing ULE90130-02-PLG-00022 v2 shows light combined with OLE poles on the siding road. The lighting layout plans ULE90130-02-LTG-00002 v3 however don't show this provision	Overspill lighting from road assumed to be sufficient however if a tram is in the siding one side would be in shadow. Current design to be considered in relation to the type of operations and maintenance activities that might be carried out		(1)Requirement for lighting needs to be considered holistically with requirements for signalling design in this area. If remote resetting for signalling interlocking is accepted then adequate lighting and a cctv camera will be required. (2)Also if siding is to be used to park a failed tram lighting should be provided so that a technician can safely work on both sides of the tram with adequate lighting	SDS to explain why the quoted lighting levels in the Prior and Technical approval packs are different. Following this explanation, tie /TEL will determine the next steps - including whether a quote will be required to change what has been designed.	Maintenance requirements of such lighting to be considered. If these are not to be maintained by CEC they should be fed from a private supply.	SDS to explain differing lighting levels. Then tie action to determine the next step.	closed	16/11/2009	SDS	Drawing ULE90130-02-LTG-00002 v5 shows lanterns on top of OLE columns in siding - closed	
2A	08-2.5	Crew relief facility – we suggest that the crew relief facility is a preferred option for proving a back-up point in case the control room is evacuated or isn't functional.	Location of emergency back-up is Lothian Bus, Annandale Street				No comment			Closed	12/03/2009		
2A	08-2.6	Vehicle access to the lower road running parallel to Haymarket Viaduct – will vehicles be allowed access to this section particularly operational/maintenance vehicles (substation and crew relief). Will parking spaces be provided or at least not restricted for operational/maintenance vehicles outside this area.	Provision for operational or maintenance parking to be determined	No - access road is for access. This is to be blocked off as creates conflict with tramway / stop / cabinets.	Believe that the issue is misunderstood, we are looking for access and parking provision via the car park, no conflict with tramway, tramstop or cabinets	tie will clarify	No comment	No comment		closed	07/01/2010		This can be addressed at a later date prior to operations
2A	08-2.7	Confirm the location of the NR separation fence along section 2, is this on the LOD?	Discussed at DAS meeting 21/10/08 and ODR review meeting 30/10/08. SDS confirmed that the fence line is on LOD				No comment			Closed	12/03/2009		
2A	08-2.8	Are cross drains being provided at transition points between the concrete slab track forms and the ballasted track forms (BSC proposal for this section). These will prevent water running off the concrete slab or rail groove into the ballast bed which will cause deterioration of the substructure	To be taken forward through review of trackwork submissions from Siemens		issue being raised through review of trackform transition design submissions		Any changes to the drainage design to be resubmitted to CEC along with required approvals where connections made to existing drainage.			closed	04/01/2010		issue raised on IDR meetings, being incorporated into design.

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2A	08-6.1	Maintenance access – we note the gate in the wire fence at Haymarket Yards Turnback which will be a useful for maintainers accessing the sidings with tools and equipment. Suggest that provision is made in the TRO's to allow operational & maintenance vehicles to park in this area.	The gate is shown on the planning drawing ULE90130-02-PLG-00022. Instruction required to BSC to provide a drop kerb/lay-by for parking of maintenance/operational vehicles	BSC to be instructed in line with other late changes to TROs.	Action with tie	<i>tie will clarify</i>	Exemptions to be included when TROs are scheduled. Lay-by/dropped kerb not seen as practical by CEC.	No comment		closed	03/02/2010		To be discussed with Siemens Maintenance. Exemption in TRO for 'tram maintenance vehicles' To note - Accommodation drawings don't show a fence/gate in this area
5A	10-1.1	Network Rail turning head east of Balgreen – Following an access point joint risk review workshop on the 7th May 2008, Transdev were asked to carry out a risk assessment of the turning head based on information discussed in the workshop. The risk assessment was endorsed by PSCC on the 5th August 2008. One of the assumptions made in the risk assessment was that lighting would be provided. Drawing ULE90130-05-HRL-0504 v2 (traffic signs and road markings) shows provision of a telephone and security gate as briefed in the workshop however drawing ULE90130-05-LTG-0004 v3 (lighting layout plan) doesn't show any lighting provision (note that both drawings are dated 27/06/08). Please confirm that it is the intention to provide lighting at this turning head as specified in approved assessment.	ULE90130-05-LTG-0004 v4 doesn't show any lighting provision. Confirm that lighting isn't provided at this location. Confirmation required that NR has approved this layout as unlit.	The draft risk assessment was issued informally to SDS (KS) on 8th May 2008. There was not an action on SDS at this time to incorporate any of these requirements, nor was lighting mentioned in the risk assessment. BSC/SDS to be instructed in line with ODR review meeting.	Item 1 of Balgreen Access Points Assessment states as one of it's assumptions 'Lighting is to be provided at the turning point' therefore provision of lighting wasn't a recommendation. Since this assessment we have discovered that lighting is not shown on the drawing.	<i>As previously agreed by all parties (including HMRI) as being required, this is an essential risk mitigation requirement. Hence, SDS must include lighting in their design.</i>	CEC require confirmation when the design of this access road is accepted by all parties.	SDS to include lighting in design. This is an essential Risk Mitigation requirement and must be included.	SDS awaits formal instruction to incorporate risk assessment assumptions into permanent works.	closed	09/02/2010	SDS	ICP response to RFO 009 states that designer risk assessment is required. BSC response that lighting is to be provided ref 25.1.2011/B/4819. Closed
5A	10-1.2	Murrayfield Tramstop - As the operator will be required to implement congestion management on match/event days, a pedestrian flow study is expected to verify that the final design does not impose any additional risk to passengers and can be managed effectively by the operator.	To be reviewed once final design of Murrayfield tramstop available			<i>tie will review the offered design</i>	CEC have not received the design for technical approval/comment. SDS maintain that this will not be issued for CEC technical approval. CEC concerns are not only to ensure that lighting & drainage are acceptable, but that safety considerations have been addressed appropriately.	Design has already been through the CEC planning process. This design does not need to be submitted for technical approval / comment. tie to advise if further review is necessary.		closed			Transdev & CEC held a meeting with Lothian Borders Police regards Murrayfield Tramstop design. Issues from meeting documented and forwarded to BSC/SDS via PSCC. Awaiting response from BSC/SDS. Meeting held 15/02/2009, BSC agreed to instruct SDS to incorporate requirements into design, sketch produced. Closed on basis that this will be incorporated into design.
5A	10-1.3	Murrayfield Tramstop - Future drawings should show locations of ticket machines, CCTV cameras, help points proposals for turnstiles and expected passenger flows.	To be reviewed once final design of Murrayfield tramstop available	Requirements to be instructed prior to anything additional being shown.	Still awaiting design drawings to review	<i>tie will review the offered design</i>	CEC have not received the design for technical approval/comment. SDS maintain that this will not be issued for CEC technical approval. CEC concerns are not only to ensure that lighting & drainage are acceptable, but that safety considerations have been addressed appropriately.	Design has already been through the CEC planning process. This design does not need to be submitted for technical approval / comment. tie to advise if further review is necessary.		closed			Transdev & CEC held a meeting with Lothian Borders Police regards Murrayfield Tramstop design. Issues from meeting documented and forwarded to BSC/SDS via PSCC. Awaiting response from BSC/SDS. Meeting held 15/02/2009, BSC agreed to instruct SDS to incorporate requirements into design, sketch produced. Closed on basis that this will be incorporated into design.
5A	10-2.1	Haymarket Depot access road automated sliding security gate – Drawing ULE90130-05-HRL-00001 v5 shows an automated sliding security gate at the access to Haymarket Depot. Please confirm how the control and status (open/closed) of the security gate will be integrated into the traffic control of junction 200? Confirm that a vehicle accessing the depot will not get a green phase from the traffic controller unless the gate is open? Confirm that a tram will be able to get a proceed signal if the gate is open to ensure that if the gate is faulty and cannot be closed that the tram signal is not at stop even if the vehicle phase is on red.	Confirmed that the security gate controlled by First Scot Rail (Haymarket Depot) is not interlocked with the junction control				No comment			closed	26/03/2009		

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5A	10-2.2	Tram path delineation – the planning drawings (issued for prior approval) show a tram path delineation for maintenance access. The tram path is derived from the DKE plus a minimum appropriate clearance; please confirm what clearance has been applied to the DKE along the segregated running sections to define the tram path? Also please confirm what minimum clearance has been adopted in the design between a safe walkway and the tram DKE?	Clarify the minimum clearance adopted between the DKE and a safe walkway. Clarify the minimum clearance added to the DKE to derive the tram path.	Safe walkway clearance is 430mm from the lineside path which is 700mm (with the exception of localised pinch pints).	Noted		No comment			Closed	16/06/2009		
5A	10-2.3	Murrayfield Tramstop – We are aware of a Scotrail request for an access gate at Murrayfield tramstop, please confirm whether this is being provided? If the gate is to be provided then consideration will need to be given to security arrangements and implications for crowd management on event days.	To be reviewed once final design of Murrayfield tramstop available	The existing steps at the back of the Stop are to be retained for access to the ScotRail Depot, However SDS have not been instructed to provide a gate from these on to the Stop. This will alter the retaining wall and stop design and will need to be instructed.		tie will review the offered design	CEC believe no access is required to the tramstop. If this is not the case CEC need to be told.	CEC technical approval is not required. Design has already been through the planning process.		closed	19/11/2009		No gate - no issues. Closed
5A	10-2.4	Russell Road Retaining Wall W3 – We note that the lineside walkway is shown on the planning drawing ULE90130-05-PLG-00213 v2 as restricted at Russell Road retaining wall W3; however on the structures planning drawing ULE90130-05-PLG-00219 v4 the cross-section view shows a clearance of 1180mm between the DKE and the parapet. Other drawings have shown safe walkways of 700mm with a minimum distance of 430mm between the DKE. Please confirm where along the W3 retaining wall the lineside walkway is restricted?	Confirm where along the retaining wall W3 the access is restricted	See IFC package for exact clearances - e.g. ULE90130-05-RTW-00014	Reviewed general arrangement drawings for W3A, W3B and W3C, note that B & C are on hold. Assume that restriction starts at W3A as shown on ULE90130-05-RTW-00014 and continues throughout W3B and W3		No comment		Closed	16/06/2009			
5A	10-2.5	Safe walking routes - Please supply the strategy adopted for providing safe walking routes along the segregated section including; minimum walkway widths, surfacing, clearance from DKE, restricted access areas, warning signage and pedestrian deterrence measures.	Details of minimum walkway widths and minimum clearances from DKE to be provided	Standard maintenance walkway width of 700mm with a clearance of 430mm from DKE, with local reductions at isolated obstacles. Presence of pedestrian deterrent paving indicated on tramstop IFC drawings. Surface finish shown on planning drawings.	Noted. Which set of drawings shown where the areas of restricted access or limited clearance are? A spreadsheet or table with chainages would be acceptable. Please also supply details of the warning signage.	BSC to clarify	CEC have an informative on warning signs and signs prohibiting pedestrian access on the tramway. Details to be provided.	SDS to provide details of the signage . SDS to provide Chainages spreadsheet detailing the areas of restricted access or limited clearances.	Details to be forwarded.	open		BSC	BSC (SN) to discuss with SDS
5A	10-2.6	Balgreen Road Bridge – We note that planning drawings ULE90130-05-PLG-00283 v2 and ULE90130-05-PLG-00281 v2 do not show a safe walkway therefore please confirm whether this structure is limited clearance.	Confirm if Balgreen Road Bridge is restricted access	Limited clearance indicated on structures IFC drawings	ULE90130-05-BRG-00168 show location of limited clearance signs		No comment			Closed	16/06/2009		
5A	10-2.7	Safe Walkway - On Roseburn Street Viaduct and Water of Leith Bridge the safe walkway is surfaced with green tarmac – Please confirm that this approach to surfacing has been used consistently on all safe walkways on structures along the segregated section throughout the system.	ULE90130-05-BRG-00085 v3 details green coloured surfacing to denote walkway. ULE90130-05-BRG-00751 v4 details green coloured surfacing to denote walkway. Confirm if green coloured surfacing to denote safe walkways on structures is to be adopted system wide	Maintenance walkways are of green tarmac across bridge structures and compacted self binding gravel at other locations	Noted.		No comment			Closed	16/06/2009		

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5A	10-2.8	Restricted Access/limited clearance – What is proposed prior to the areas of restricted access/limited clearance regards warning signage and pedestrian deterrence.	Review signage specification		cannot find signage specification, please supply reference	BSC to clarify	CEC have an informative on warning signs and signs prohibiting pedestrian access on the tramway. Details to be provided.	SDS to provide details of the signage . SDS to provide Chainages spreadsheet detailing the areas of restricted access or limited clearances.	Details to be forwarded.	open		BSC	BSC (SN) to discuss with SDS
5A	10-2.9	In a sighting review with Transdev on the 13/08/2007 (ULE90130-02-MIN-00013 item 3.2) it was noted that the sightlines at chainage 510200 (Haymarket Depot) needed to be considered in more detail once the access road and retaining wall design had been developed. Please confirm this has been considered in the developed design and whether there are any sightline conflicts in this area.	Geometric sighting review to be issued. Further sighting review to be carried out during testing and commissioning.	Item closed - operational phase issue	(1) Geometric sighting issues as part of design to be issued as agreed in ODR workshop 26/03/09. (2) Further sighting review to be carried out during testing and commissioning.	BSC to clarify item (1)	No comment	SDS to provide geometric sighting review to BSC	Sighting review scrolls being issued to BSC under formal cover.	open		BSC	Sighting review scrolls issued do not demonstrate that a comprehensive sighting review on the design has been carried out. The sighting scrolls consisted of layout plans marked up with speed information however there is no narrative or output to suggest where issues may be present or have been mitigated by the design. BSC (SN) to discuss with SDS
5A	10-2.10	There are locations where the design speed drops below the maximum nominal speed due to the track geometry (excluding locations through tight curves or tramstops). For example; from chainage 510000 to 51069 the speed varies between 20kph and 60kph. What would be the effect of increasing the speed in this section in order to maintain a more consistent operational speed? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE90130-SW-SPN-00001 V3 and hence related to passenger comfort rather than to safety. We would expect a schedule of the reasons for each design limit to be produced as part of the Health & Safety file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not compromised.	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions; geometric, sighting and third party requirements. Completion required prior to shadow running.			SDS has in hand through their Hazard Log closure process	No comment	Covered by Hazard log close out process	Being addressed via hazard log process.	Transfer		BSC	This is not just a hazard log issue but also a performance issue. There is an operational requirement for maintaining a consistent speed without lots of speed changes, this seems not to be possible at a number of locations due to the cant deficiency requirement which has been set by the ER's for an exceptional limiting value of 75. Other UK systems have used higher values, the effect of increasing cant deficiency is passenger comfort. 1) Alignment at this stage is fixed 2) Schedule of speeds along the route and limiting factors is a requirement for the handover file. 3) Maximum cant deficiency that tram can tolerate is required BSC chasing SDS for Hazard log closeout

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5B	06-2.1	Pedestrian/cyclist uncontrolled crossings - Cyclist fatality or serious injury is a real issue on tramways at uncontrolled crossings. What consideration has been given in the design process to encourage cyclists to control their speed, dismount or proceed with caution at an uncontrolled crossing? Some cyclists may tend to approach and cross the tramway at a speed which prevents them from sufficiently observing if a tram is approaching. Also there is the possibility that if the cyclist is a regular user of the crossing and typically doesn't have to stop due to the presence of a tram then complacency may also be an issue. A consistent approach at all uncontrolled crossing should be adopted which considers: <ul style="list-style-type: none"> • The direction the cyclist will be facing when crossing the tramway, should be facing the tram on the nearside if the crossing is not at 90°. The crossing angle can be manipulated by the use of chicanes. • Signage (tram look both ways signs, cyclist dismount) on approach to crossings. • Markings (SLOW) on approach to crossings. • Other measures which will encourage cyclist to modify their behaviour on 	Closed via hazard log entry, specific uncontrolled crossings to be used to assess risk and mitigation measures				Any changes to the design to be resubmitted to CEC for approval.			Transfer			
5B	06-2.2	Balgreen access gates – Confirm there will be adequate clearance between the gate and the DKE when the gates are left open. Additional information on the design of the gates, locking and securing arrangements would be useful in order to formulate operational procedures with NR.	Confirm that gates are to NR specification, and clearance from DKE has been considered in design	Confirmed	noted		Different details are shown across different disciplines in the design. Maintenance responsibilities for gates and items behind gates to be confirmed. Informative on details.			closed	16/06/2009		
5B	06-2.3	Confirm whether the crossover at Balgreen will be retained even if the additional sidings is removed, this would be preferred by the operator as it will provide greater operational flexibility.	Not retained				No comment			closed	26/03/2009		
5B	06-5.2	Operational speeds over Carrick Knowe under bridge to be assessed during testing and commissioning.	To note				No comment			Closed	26/03/2009		
5B	06-6.1	Determine the access points for a road rail vehicle along the segregated route. Having a number of access points along the segregated route provides a number of benefits; reduces the amount of travelling time to and from the work site (short possession times) and maximises maintenance flexibility. At road signalled junctions, road rail vehicles are required to obey road signals unless piloted by a tram driver. Otherwise the road rail vehicle can only proceed by applying NRSWA code of practice	To Note				No comment			closed	26/03/2009		

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5C	09-1.1	A8 Underpass pedestrian deterrent – The current drawings do not show any pedestrian deterrent prior to the A8 underpass. We assume that the A8 underpass will be designated an area of restricted access (also see item 2.1) however please confirm? We suggest that any pedestrian deterrent provided should be positioned near the Gyle Tramstop prior to the cutting to deter the public from entering the underpass from the Gyle tramstop side. In case a tram needs to be evacuated within the underpass we propose to use the access walkway towards the Gyle Centre tramstop. Therefore any pedestrian deterrent must still allow access in emergencies if required.	Provide details of pedestrian deterrent prior to A8 underpass	Limited clearance signage will be placed to both sides of the structure portals. No desire line through structure, therefore not deemed necessary to install pedestrian deterrent paving to either end of this structure.	Noted, however we thought this was restricted access to the public not limited clearance. Which IFC drawing show location of the signage on the structure portals	Correct "Pedestrians barred" sign needed at each end. SDS to correct their design. Noted that deliberations on the proposed new Gogar interchange station might change the design anyway - but that this is a separate issue and is outwit the ambit of this meeting.	CEC have an informative on warning signs and signs prohibiting pedestrian access on the tramway. Details to be provided.	SDS to correct design, Add 'Pedestrians Barred' signs & reissue drawings.	700mm safe walkway provided to each cess, with 430mm clearance from the design DKE in accordance with RSPG guidance. Pedestrian deterrent paving provided at north end of Gyle tramstop. Therefore no signage at	closed	19/11/2009	SDS	Under the A8 should be restricted access to unauthorised persons. Signage can be added later. Closed
5C	09-1.2	A8 underpass drainage - Drainage drawing ULE90130-05-00024 v5 is not consistent with A8 underpass drainage drawing ULE90130-05-BRG-00552 v2. Please provide further detail of the drainage provided along and leading up to the A8 underpass, in particular showing rodding points for the carrier drain and access points for cleaning of the drainage channels.	ULE90130-05-DNE-00024 v7 and ULE90130-05-BRG-00552 v2 appear inconsistent. Confirm drainage is consistent	Drainage within structure is per structure drawings. Connections at manholes match between Structures/ Drainage design. Design issue not operational	okay		Conflict remains between DNE and BRG drawings. These have never been submitted in one review to CEC. Coordinated design required.			closed			Closed - will be covered by IDR/IDC process
5C	09-1.3	Gogar Castle access crossing – we suggest that the proposed trees shown on the landscape drawing (ULE90130-05-LDS-00026 v9) on the south east side of the access road are either removed or moved south sufficiently to avoid the visibility of cars on the stop line being obscured to a tram driver travelling westbound. Transdev carried out an initial assessment of the Gogar vehicular crossings during a site visit on August 4th 2008. This issue has also been raised on the Stage 2 Road Safety Audit ref B5.1.2.	Confirm close out of issue by Road Safety Audit	Planting locations were considered with regard to sighting. The result of this process is the final design.	Has road safety audit been closed out		Audit has not been closed out. Additional planting has been added within the sightlines. Sightlines shown incorrectly on roads GA.			closed	19/11/2009		Will be reassessed during T&C and will be monitored during operations as part of crossing assessments. Closed
5C	09-1.4	Gogar Castle crossing - It is suggested that lighting is provided at this crossing, the sighting is poor in this location due to the alignment and surroundings landscaping (cottage, fence, vegetation). If the crossing is lit it will draw attention to the presence of the tramway to approaching vehicle drivers and also tram drivers to the approaching unsignalled crossing. Transdev carried out an initial assessment of the Gogar vehicular crossings during a site visit on August 4th 2008. At a sighting review meeting attended by Transdev on the 13/08/07 (ULE90130-02-MIN-00001 ref 3.8 there was an action to check that the lighting proposal was adequate.	ULE90130-05-HRL-00026 v6 shows yellow box over junction, ULE90130-05-HRL-00566 v4 and ULE90130-05-LT-00026 v4 show illuminated 'stop' and 'tram' signs. Believe that requirement for lighting at this crossing was discussed at the RDWG as cars coming off the A8 from a well lit road into a dark spot could reduce driver perception . Confirm lighting arrangements	No specific lighting provided to vehicle crossing point - not raised as an issue in RSA.	Transdev advise that this crossing is lit as per assessment	SDS has in hand through their Hazard Log closure process	This issue was raised by the safety auditor (5C - B8.2.1) and has not been addressed at Closeout. Lighting to be added to design.	Covered by Hazard log close out process	Being addressed via hazard log process.	open		BSC	This is not a specific hazard log issue. RSA recommends that an appropriate level of lighting at this location should be provided. BSC (SN) to discuss with SDS

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5C	09-1.5	Edinburgh Park Pedestrian Crossings - We would like to see the design risk assessment that was carried out for the two pedestrian crossings showing the rationale for provision of lighting, signage and general pedestrian protection strategies along the route. Transdev carried out an operational assessment of the Edinburgh Park Crossings on the 30th July 2008. The recommendation from the assessment included the following points for consideration: Provision of appropriate lighting following a lighting assessment at the official crossings in Edinburgh Park to assist tram drivers and to provide an indication that the crossing is an official crossing, hopefully encouraging use. At a sighting review meeting attended by Transdev on the 13/08/07 (ULE90130-02-MIN-00001 ref 3.5) there was an action to check that the lighting design considers and avoids 'dark spots' in this vicinity. Provision of standard tramway signage at appropriate points if this is not currently the intention. Extension of low lying vegetation, such as ivy, along the entire line of the tramway at this location to provide a physical reminder to pedestrians and encourage use of the official crossings. Provision of signage to remind owners to keep their dogs on leads; this will also be to the	ULE90130-05-HRL-00561 v4 shows standard tramway signage and tactile paving prior to the pedestrian crossing points. Confirm lighting provision and coverage for the 2 pedestrian crossings at the northeast of Edinburgh Park Central tramstop.	See DCR0102 - there is an outstanding change estimate associated with incorporating Transdev comments in Edinburgh Park. The design in the is area, including pedestrian flows, lighting and landscaping has been micro-managed by tie and SDS in conjunction with NEL, with attendance and buy-in from CEC Transport and Planning.	Transdev advise that recommendations as per assessment are incorporated into the design	BSC to progress the change	Operational Assessment incorporated into technical approval. Not addressed to date. Confirmation required that hazards have been addressed.	tie to advise/instruct BSC on change estimate submitted.		closed	12/01/2010		Not a specific hazard log issue Designers response to RSA B8.2.1 states that revised lighting design covers the crossing points
5C	09-1.6	Gyle Tramstop - The footpath that runs parallel along the back of the tramstop is at a higher level than the tramstop. The top of the pedestrian parapet on the retaining wall is at the same level as the top of the tramstop canopy therefore there is a potential risk of someone climbing onto the top of the canopy. Further deterrent in this location to prevent this occurrence is required.	design issue - to be reviewed	Localised increase in parapet height to the rear of the platform shelter was considered during the design phase. This was rejected by CEC Planning. Amendment to the consented proposal may require re-application for prior/technical approval. This would require instruction.	Transdev advise that the risk of someone accessing the top of the tramstop shelter canopy is designed out	Noted that four different designs have been seen. CEC Roads want 1.4m high wall. Agreed that the mesh fence additionally provided for in the SDS design behind this wall should be an adequate overall mitigation against climbing. Hence, go with 1.4m high wall and the mesh fence.	Roads requirement of a 1.4m barrier is due to the adjacent cycleway. Any revised design will require resubmitting to CEC Transport and Planning.	SDS to confirm 1.4m high wall and mesh fence at tramstop has been included in the design.	Current Structures/Tra mstop IFC drawings detail 1.4m railing. Appendix 4/1 to be re-issued detailing 1.4m high railing with mesh infill panels.	closed	19/11/2009	SDS	drawing ULE90130-05-STP-00065 v3 shows 1.4m guard rail. Closed
5C	09-1.7	Gyle tramstop - The two CCTV cameras proposed for the tramstop are located one on each platform but both are on the east end. This means that the view of the help point on the Airport bound platform is restricted as the help point is located to the west of the shelter. Moving one of the camera to the west end of the platform will still provide adequate coverage of the main passenger flows from the west but also provide improved all round coverage of the tramstop and footpaths.	Confirm location of CCTV cameras at the Gyle tramstop	CCTV located at diagonally opposite corners of tramstop.	okay		No comment			closed	16/06/2009		
5C	09-2.1	We would like to know what areas of the tramway along section 5C are restricted access for the public and therefore the design rationale for these areas regarding provision of pedestrian deterrent.	Areas of restricted access to be identified	Sections without adjacent footways are restricted access. Area through Edinburgh Park has been required to maintain an open aspect by tie, hence granite sett delineation of tramway.	Assume there is no limited clearance and restricted access under A8 underpass only		CEC have an informative on warning signs and signs prohibiting pedestrian access on the tramway. Details to be provided.			Closed	16/06/2009		
5C	09-2.2	Confirm the track form along this section (BSC proposal rather than SDS design).	BSC have submitted location of designated track forms revision B				CEC are yet to receive details of proposed trackform - Informative			closed	26/03/2009		

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5C	09-2.3	A8 underpass lighting – In a meeting on 14th April 2008 with the ICP, SDS stated that they had undertaken a qualitative assessment concluding that lighting of the A8 underpass wasn't required. Transdev would like a copy of this assessment in order to inform operational reviews of driving conditions and evacuation procedures approaching and along the underpass.	Lighting requirement will be reassessed with Gogar Interchange				No comment			closed	26/03/2009		
5C	09-2.4	Along Edinburgh Park the planning drawings show that the tramway will be delineated by granite setts however the designers response to the stage 2 road safety audit (B7.1.6) makes reference to a low height kick rail. Please confirm the demarcation of the tramway in this location.	Delineation along Edinburgh Park to be confirmed	Tramway delineation is granite setts. Kick rail provision is used in limited locations to the far side of the footway and therefore is not tramway delineation.	(1) Granite setts for delineation - okay (2) not sure where kick rail will be used, please explain further or reference drawing	BSC to clarify	Reference to Kick rail removed from designer's response. Will be reviewed when closing out 5C audit.	SDS to clarify the areas in which the 'Kick rail' will be provided.	Detailed on Roads series drawings.	closed	19/11/2009	SDS	can't find any reference to kick rail on the road series drawing available. Assume that not being provided and reference to it in road safety audit was incorrect. Closed
5C	09-2.5	Gogarburn Tramstop - Maintenance and cleaning requirements need to be considered in the design to minimise the requirement for permits to work or isolation, suggest referring to Transdev's 'Work On or Near the Tramway' procedure.	To be reviewed once final design of Gogarburn tramstop available			Action with TEL	Details of this tramstop have not yet been submitted.	No comment		closed	19/11/2009	TEL	Gogarburn tramstop is now exemplar design therefore closed
5C	09-2.6	Gogarburn Tramstop - We believe that RBS have an expectation to use the tramstop CCTV cameras for security purposes, confirm that a feed will be provided to RBS but control of tramstop cameras will only be from Gogar depot control room.	To be reviewed once final design of Gogarburn tramstop available			Action with TEL	Details of this tramstop have not yet been submitted.	No comment		closed	19/11/2009	TEL	Gogarburn tramstop is now exemplar design therefore closed
5C	09-2.7	Gogarburn Tramstop - There may be potential for the public to use Gogar Church access road as a drop off point for this tramstop increasing usage of the crossing (observation).	To be reviewed once final design of Gogarburn tramstop available			Action with TEL	Details of this tramstop have not yet been submitted.	No comment		closed	19/11/2009	TEL	Gogarburn tramstop is now exemplar design therefore closed
5C	09-2.8	Gogarburn Tramstop - The visibility between trams travelling eastbound and the access road may be restricted by the proposed wall design on the outbound platform. Please confirm that a sighting study will be conducted to determine if any restrictions on visibility are imposed by the proposed tramstop structure.	To be reviewed once final design of Gogarburn tramstop available			Action with TEL	Details of this tramstop have not yet been submitted.	No comment		closed	19/11/2009	TEL	Gogarburn tramstop is now exemplar design therefore closed
5C	09-2.9	Gyle Tramstop - The Airport bound tramstop there appears to be a gap between the back of the shelter and the retaining wall. This will restrict access for shelter cleaning, would it be possible to provide a canopy in this location without glass panels along the retaining wall side.	ULE90130-05-STP-00067 v2 states that rear glass panel not to be used				No comment			closed	26/03/2009		
7A	12-1.1	Gogar Farm Road crossing – Ensure that the landscaping which mainly consist of trees within the vicinity of the junction is outside of the visibility splays and sufficiently far enough to prevent future growth encroaching.	To be reviewed once final design of Gogar Farm Road crossing available			Action with TEL	Design not yet reviewed, awaiting design of Gogarburn Tramstop.	No comment		closed	19/11/2009		ULE90130-07-LDS-00003 v6 shows landscaping back from visibility lines. Will be assessed during T&C. Closed
7A	12-1.2	Gogar Farm Road Crossing - It is suggested that goal posts are provided at this location given the potential for use of the crossing by high vehicles, in connection with farming and, potentially, construction activities. Transdev carried out an initial assessment of the Gogar vehicular crossings during a site visit on August 4th 2008.	Goal posts only used if wire is substandard height				No comment			closed	26/03/2009		

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7A	12-1.3	Eastfield Avenue junction – lighting drawing ULE90130-07-LTG-0008 v1 shows that the existing lighting on the road will be removed. If the lighting were to be retained this would improve the visibility of the tramway to the pedestrians/cyclists using the crossing and also help increase driver awareness on the approach. The Road Safety Audit for section 7A recommends retaining the existing lighting to prevent deterring pedestrians from using the dark pedestrian crossing in favour of the road crossing (no footpath).	Post meeting: ULE90130-07-LTG-0008 v4 shows lighting on both road and ped/cyclist crossing				No comment			closed	26/03/2009		
7A	12-1.4	The location of point position indicators at the airport crossover are not shown on the planning drawings ULE90130-07-PLG-00074 v2.	Confirm drawings series where the locations of point position indicator are shown	Not a planning issue.	May not be a planning issue but currently there isn't a set of drawings which show the location of point position indicators. Siemens Sicas S7 show the location of point indicators at Haymarket, Newhaven, Ocean Terminal, Depot exit/entry and Airport. Drawings required for Shandwick place, Leith Walk, Edinburgh Park and York Place.	BSC to clarify	CEC have placed an informative on details of PPI and Tram Signage	SDS to confirm what Drawings the point position indicators are shown.	Drawing ULE90130-SW-SCC-00372 with key items details on ULE90130-SW-SCC-00030. Further developed drawing by Siemens is ETN-07-SIG-AIR.	closed	19/11/2009	SDS	Requirement for PPI's have been agreed with Siemens. Assume that ducting drawings will be updated to accommodate. Closed
7A	12-1.5	Airport tramstop - Future drawings should show how and where the CCTV camera(s) and lighting will be integrated into the tramstop canopy.	To be reviewed once final design of Airport Tramstop available			Action with TEL	Design not yet reviewed.	No comment		Open		BSC	awaiting final tramstop design. BSC to present airport designs for review once drawings go to planning
7A	12-1.6	Airport tramstop - Future drawings should show the integrations of the OLE arrangement at the north end of the platform in relation to the canopies and kiosk building.	To be reviewed once final design of Airport Tramstop available			Action with TEL	Design not yet reviewed.	No comment		Open		BSC	ACC drawing shows relocated OLE poles east of the kiosk however they are shown as located in the tramstop arrestor area. Confirmation required that this doesn't effect the functionality of the arrestor bed.
7A	12-1.7	Airport Tramstop - Future drawings should show the arrangements for vehicle overrun protection (e.g. sand drag, large planters etc).	To be reviewed once final design of Airport Tramstop available			BSC/SDS to pursue	Proposed design to be submitted to CEC Roads as an Informative and Planning if there is any visible change to the approved prior approval design.	SDS to confirm design and submission date of Airport Tramstop tram overrun protection arrangements.	Report detailing terminus facility issued to BSC.	Open		SDS	awaiting final tramstop design. BSC to present airport designs for review once drawings go to planning
7A	12-1.8	Airport Tramstop - Pedestrian deterrent at the south end of the platform will be required however the design should still allow emergency evacuation from this point if required.	To be reviewed once final design of Airport Tramstop available			Action with TEL	Design not yet reviewed.	No comment		Open		TEL	awaiting final tramstop design. BSC to present airport designs for review once drawings go to planning
7A	12-2.1	The footpath connection between Gogarburn tramstop to RBS road-bridge - there may be a risk of pedestrians attempting to cross the A8 rather than using the over bridge. CEC may want to consider whether additional pedestrian deterrent is required at this location.	To be considered			Action with tie	Design not yet reviewed, awaiting design of Gogarburn Tramstop.	No comment		Open		CEC	

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7A	12-2.2	Design Speed - There are locations where the design speed drops below the maximum nominal speed due to the track geometry. For example; from chainage 710010 to 710400 the speed varies between 15kph and 25kph which seems slow even considering the alignment. What would be the effect of increasing the speed in this and other sections in order to maintain a more consistent operational speed and potentially reduce run-times? This is assuming that the constraint on increasing the design speed is the limit to cant deficiency as specified in Track Alignment Criteria ULE90130-SW-SPN-00001 V3 and hence related to passenger comfort rather than to safety. We would expect a schedule of the reasons for each design limit to be produced as part of the Health & Safety file so that future changes can be evaluated. The Operator can then make a decision about increasing speed by compromising on some of the alignment criteria, so long as safety is not compromised.	A schedule of all the operational speeds and associated limiting factors to be produced for the whole route, this will include all restrictions; geometric, sighting and third party requirements. Completion required prior to shadow running.			SDS has in hand through their Hazard Log closure process	No comment	Covered by Hazard log close out process	Being addressed via hazard log process.	Transfer		BSC	This is not just a hazard log issue but also a performance issue. There is an operational requirement for maintaining a consistent speed without lots of speed changes, this seems not to be possible at a number of locations due to the cant deficiency requirement which has been set by the ER's for an exceptional limiting value of 75. Other UK systems have used higher values, the effect of increasing cant deficiency is passenger comfort. 1) Alignment at this stage is fixed 2) Schedule of speeds along the route and limiting factors is a requirement for the handover file. 3) Maximum cant deficiency that tram can tolerate is required BSC chasing SDS for Hazard log closeout
7A	12-2.3	Airport Tramstop - There are no bins shown on the platform but there are bins shown in the kiosk area – could a couple of additional bins be located along the platform also?	To be reviewed once final design of Airport Tramstop available			Action with TEL	Design not yet reviewed.	No comment		Open		BSC	awaiting final tramstop design. BSC to present airport designs for review once drawings go to planning
7A	12-2.4	Airport Tramstop - Location of the electronic cabinet – assuming that the tramstop electronic equipment will be located inside the 'stop equipment room' in the kiosk area – is there sufficient space for a technician to work inside the room or will additional floor space outside the room be required? If additional floor space is required maybe consider moving this to a location away from pedestrian flows.	The 'stop equipment cabinet' was not intended to house comms equipment.				Design not yet reviewed. This issue appears to remain.			closed	26/03/2009		
6	07-1.1	We consider that there may be an opportunity to reduce the number of section insulators and electrical sections shown on drawing ULE90130-06-OLE-00001. Transdev/tie are happy to discuss the isolation requirements and depot functionality with BSC.	Issue taken forward in Siemens OLE design submission and tie review process	Electrical sections have been reviewed as part of OCL electrical sectioning design submission			No comment			closed	16/06/2009		
6	07-1.2	There are 3 OLE poles in the middle of the stabling area shown on drawing ULE90130-06-OLE-00001 (v8), these OLE poles are shown located in the stabling area cross walkways. In order to ensure that the pathways are adequate for staff and any equipment we suggest that the width of the walkway is increased or the walkway is relocated, perhaps split to be across each set of stabling berths.	Discussed at section 6 DAS meeting 29/10/08, confirmed by SDS that walkway extends across whole of area between trams.				No comment			closed	26/03/2009		
6	07-1.3	Goal posts are required on both sides of the tramway crossing on the depot access road to prevent high vehicles conflicting with the OLE; this is a critical location within the depot for tram movements.	Discussed at section 6 DAS meeting 29/10/08, confirmed by SDS that wire height was 6.5m therefore shouldn't conflict with any high vehicles.				No comment			closed	26/03/2009		
6	07-1.4	Adequate walking routes are required to access the point locations for manual operation both from the building and from a tram stopped in advance of the points. All manual depot points should have a non slip platform for standing on when operating the mechanism. Transdev are happy to discuss the requirements with BSC.	Discussed at section 6 DAS meeting 29/10/08, SDS confirmed that all point machines would have flush hardwood surface with anti slip finish. Walking routes would be via ballast.				No comment			closed	26/03/2009		

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6	07-1.5	We suggest that to ensure appropriate lighting is provided at the tram gates on the east depot entrance and exit, consideration should be given to providing adequate lighting along the route from the tram gate to west of the over bridge. Operational crew will be using this route frequently to operate points and close the depot gates after and prior to service (ER section 29.8).	Discussed at section 6 DAS meeting 29/10/08, SDS confirmed that gates and route would not be lit separately, the CCTV camera at the gate is specified for low lighting conditions and lighting levels at roundabout (50lux) should spill over and provide appropriate lighting levels for operational duties.				No comment			closed	26/03/2009		
6	07-1.6	SDS's previous response to ROR (12/12/2007) stated that if a need for a disabled toilet is identified on the ground floor then one can be installed in the infirmary. There is a possibility that the administration staff working on the ground floor may not be able bodied, an accessible toilet should therefore be installed.	Confirmed that infirmary now has a disabled toilet				No comment			closed	26/03/2009		
6	07-1.7(1)	Removing the internal walls between the male and female locker rooms and mess room; this would create a larger open plan space which would provide greater flexibility.	Discussed at depot workshop 25/02/09, SDS to confirm design cost for change				No comment			open		BSC	Status changed from transfer to open as the depot workshop forum for ODR issues has ceased. Change costs received by tie from SDS. Tie have queried how existing design allows for 'flexibility in the division to allow for long term changes in the proportions'. BSC to respond
6	07-1.7(2)	Further consideration to be given to number of tables & chairs to be provided in mess room area; number currently shown may be excessive.	Discussed at depot workshop 25/02/09, furniture type and number to be confirmed				No comment			closed	09/03/2010	BSC	Status changed from transfer to open as the depot workshop forum for ODR issues has ceased. Furniture specification to be provided by BB for all rooms. Can be reviewed once proposal submitted, drawing only shows indication not actual number and style, not critical issue therefore closed.
6	07-1.7(3)	Opening up the space near the control room between the visitor area, foyer, and vending areas by removing the internal door and partition walls.	Discussed at section 6 DAS meeting, not feasible as these walls are firewalls therefore fire strategy would need to be revisited.				No comment			closed	26/03/2009		
6	07-1.7(4)	Changing the accessible toilet near the control room to a CCTV viewing suite.	Would be difficult due to the current plumbing design, however other options for a cctv viewing suite are available see 1.8				No comment			closed	26/03/2009		
6	07-1.7(5)	Provision of an opening window between the control room and the visitor viewing area.	Discussed at depot workshop 25/02/09, SDS to confirm design cost for change				No comment			open		BSC	Status changed from transfer to open as the depot workshop forum for ODR issues has ceased. Change costs received by tie from SDS. Control room area layout has been subject to a HF study, see CCD report section 5.10. BSC (SN) to discuss with SDS
6	07-1.7(6)	Provision of an opening window between the control room and the day roster planning room.	Discussed at depot workshop 25/02/09, SDS to confirm design cost for change				No comment			open		BSC	Status changed from transfer to open as the depot workshop forum for ODR issues has ceased. Change costs received by tie from SDS. Control room area layout has been subject to a HF study, see CCD report section 5.10. BSC (SN) to discuss with SDS

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6	07-1.8	A private office is required to view CCTV images by third parties (police etc) in order to comply with data protection legislation. The ideal location for this would be a small room near the control room. Propose changing the accessible toilet near the control room into a CCTV viewing suite. There is another accessible toilet between the female and male toilets which is in a good overall location for both administration and control room staff.	Current options include utilising cash office or if data can be accessed securely via depot LAN then any office can be utilised.	Any new requirement to be instructed	Location of CCTV viewing equipment being taken forward through BSC design submissions for central data recorder		No comment			closed	19/11/2009		cash office will be used for CCTV viewing suite, this has been agreed with Siemens
6	07-1.9	Drawing ULE90130-06-DEP-00260 should show provision for power and water services at the bogies wash point as specified by ER section 29.8.	Discussed at section 6 DAS, SDS confirmed that there is power and water provision inside of depot building for bogie wash point. To be confirmed			BSC to clarify	No comment	SDS to confirm that there is power and water points provided in the design for the bogie wash point.	The Electrical and Water supplies to jet wash to be taken from inside the depot. This will be shown for the next issue accordingly- by discipline	Open		SDS	Email sent to Dave Lowe BSC (SN) to discuss with SDS
6	07-1.10	It is important that the workshop layout facilitates the movement of a bogie from a tram on the tram lift to the bogie wash point then to the bogie drop off point via the crane. This movement must be possible with a tram on the tram lift. We suggest that the location of the bogie drop off point may need to be moved further east (east of the section insulator) and extended slightly into the workshops to facilitate this movement. We understand that BSC are having internal discussions on this topic.	Discussed at depot workshop 25/02/09, CAF are in discussion with tie regarding a bogie turntable				No comment			closed	19/11/2009		A bogie turntable is being installed to facilitate the movement of the bogie. Closed
6	07-1.11	There is an opportunity to improve the general CCTV coverage around depot external site by relocating the CCTV camera at the west depot exit/entrance tram gate. The camera at the south east corner of the building should provide adequate coverage of the tram gate. The camera could be relocated to the east or west of the stabling area to look down the sides of the tram and also cover the north perimeter fence when trams are in the stabling area. It would be preferential to have CCTV cameras looking both west and east of the stabling area (see also 2.15).	Discussed at depot workshop 25/02/09. Coverage study to be produced for review	Any specific requirements to be clearly documented and instructed.	Responded to RFI 233	Response sent to BSC over 1 week prior to the date of this meeting	No comment	Siemens (Michael Wilken) to confirm who RFI 233 was submitted to, and if and when BSC have responded to it.		closed	03/02/2010		Location of external cameras have been agreed in principle with Siemens 6th August 2009. Drawing ULE90130-06-DEP-00260 v6 shows cameras in agreed locations
6	07-1.12	Fire alarm & security layout drawings ULE90130-06-DEP-00248, 00249 & 00250 show 10 internal CCTV cameras; around and in the control room/cash room, staff entrance hall, visitor and management entrance hall, outside the stores and reception area. Please discuss the rationale for providing these cameras in relation to the depot security strategy. We suggest that cameras around the control room may not be required as this is intrusive and doesn't help promote a healthy working environment. The camera outside the stores may have some benefit as a deterrent to thieves. The camera in the reception may only be required if the depot access and security system doesn't include an intercom/video link at the visitors door. We suggest that the cameras in the entrance halls may also not be required, as this is intrusive and doesn't help promote a healthy working	Discussed at depot workshop 25/02/09. Requirement for internal camera to be reviewed	Any specific requirements to be clearly documented and instructed.	Responded to RFI 233	Response sent to BSC over 1 week prior to the date of this meeting	No comment	Siemens (Michael Wilken) to confirm who RFI 233 was submitted to, and if and when BSC have responded to it.		Open		BSC	removal of internal cameras have been agreed with Siemens 6th August 2009. Details of access security systems (BB scope) still required. ETL (SS) to discuss with AS (tie)

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6	07-1.13	1.13. **Drawing ULE90130-06-DEP-00247 v1 (first floor small power layout) shows the location of sockets and data outlets within the first floor rooms. Transdev would like the opportunity to discuss the location of the sockets and outlets prior to the drawing being issued for construction. We suggest that some of the outlets in the open plan office would be better placed on the floor rather than along the walls to provide flexibility when arranging furniture and workspaces.	Discussed at section 6 DAS meeting 29/10/08, not feasible as the floor isn't floating.				No comment			closed	26/03/2009		
6	07-1.14	It is important that all meeting rooms and private offices are sound proofed as much as possible to prevent conversations being heard outside of these rooms. On drawing ULE90130-06-DEP-00019 acoustic ceiling tiles are shown in the control room, roster planning room, training rooms and meeting room. Suggest that the private offices on the 1st floor and on the ground floor also include acoustic ceiling tiles.	Discussed at section 6 DAS 29/10/08, SDS confirmed that sound proofing would be provided for meeting rooms and GM office, however may not be possible for glass fronted offices.				No comment			closed	26/03/2009		
6	07-2.1	We would like to discuss with BSC their proposal for depot manual points and mechanical indication. Although mechanical indication of detection as specified by the ER's would mean a lesser requirement for visual or manual inspection of the lie of facing points by drivers prior to proceeding over them, there is a stronger preference for a reliable and ergonomic manual point mechanism which is fully trailable (no damage to mechanism and switch rail reset) and can be set up to be sprung or bi-stable.	Discussed at depot workshop 25/02/09,				No comment			open		BSC	Status changed from transfer to open. Contec manual points are proposed for the depot. Design has been progressing satisfactorily. Mechanical point indicator design to be submitted formally for review.
6	07-2.2	Utilisation of sanding carts within the current depot site layout – sanding of the trams is in the CAF maintenance scope, has thought been given to the logistics of replenishment of the sand boxes on the trams. We understand that BSC are addressing this internally. Issue to consider are: <ul style="list-style-type: none"> • Accessibility of sand carts in and around the depot (through internal doors of 1m width and along walkways) if sanding is not restricted to one location. • Ensuring there is enough room for the sand carts to be operated • Accessibility to both sides of the tram • Will the tram have a visual indication of the sand box level, this will influence whether sanding is required every night or just on indication. • Whether sanding is to be carried out on return of the trams to the depot from service or at another time prior to release into service. Logistics involved of moving the sand cart to the trams or moving the trams to the sand cart. 	Discussed at depot workshop 25/02/09, to be discussed at ODR workshop. Information from CAF required before issue can be progressed further; indication of sand box level, time taken to fill box from empty, estimate of time taken to replenish tram.	CAF has submitted a preliminary design proposal for a fixed sanding plant			No comment			closed	16/06/2009		

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6	07-2.3	We would like to confirm the number of lockers which are being provided. The drawing ULE90130-06-DEP-00005(v8) shows '90 2+2 lockers' and '70 2+2 lockers' can you confirm whether this equates to 320 lockers? We understand that interleaved lockers were specified for the 1st floor locker rooms. How many lockers are provided in the ground floor locker rooms this is not shown on the drawing, consideration should be given to the additional locker space required by technicians/cleaners.	Discussed at section 6 DAS 29/10/08, SDS confirmed numbers as 320 on 1st floor and interleaved proposed in procurement spec.				No comment			closed	23/03/2009		
6	07-2.4	Drawings show that walkways are only provided on one side of tram – in theory this is okay for cleaner access to the tram for internal cleaning however if the tram wash isn't functional due to a fault or cold weather, access to both sides of the tram will be required to hand wash the trams. Also during tram prep access to both sides of the tram may be required. We suggest providing a smaller 1m walkway down the other side of the tram for this purpose as specified in ER's section 29.8. We are looking for a simple walkway that would be reasonable for walking on, and ramped up to meet the cross-walkways.	Discussed at section 6 DAS, SDS confirmed the walkway would be ballast. Requirement for additional 1m walking surface (e.g. gravel) as suggested to be reviewed			Action with tie	No comment	No comment		open		BSC	Current design shows ballasted trackform with concrete walkway done one side of each tram berth with ballast on other side. ER's 28.9 states - 'Adequate provision shall be made to allow cleaning personnel to move around tram berths. Set between the stabling road shall be access paths alternating at least 1m and 2m wide with service points to provide facilities for tram cleaning and minor maintenancne on 2m width paths.' BSC (SN) to discuss with SDS
6	07-2.5	In the previous depot ROR (12/12/2007) the risk of a vehicle coming down the south embankment from the A8 onto tram line was highlighted. Does the current design include a road safety barrier? A risk assessment should be included as part of the design process showing the validation of the road restraint standards used as required by applicable Dft or Transport Scotland guidance.	Discussed at section 6 DAS 29/10/08, SDS confirmed that a road restraint was now included in design.				No comment			closed	23/03/2009		
6	07-2.6	A depot building and site services plan is to be provided detailing the provision and functionality of heating, ventilation, extraction, water, power, fire strategy and security services within the depot.	Detailed in Depot Requirements specification ULE90130-SW-SW-SPN-00057 v2				No comment			closed	23/03/2009		
6	07-2.7	The current heating and ventilation drawings do not have keys therefore it is unclear what HVAC equipment is being provided in each room. Confirm heating, ventilation and air conditioning arrangements for the ground and first floor rooms.	ULE90130-06-DEP-00303 v5 shows a key for heating design.				No comment			closed	23/03/2009		
6	07-2.8	Confirm the location of insulated block joints and that a tram stopping at normal locations required by operations e.g. to set points, will not bridge the IBJ.	OLE requirements are to be marked on track drawings	Design issue, covered by design reviews	Raised in ROR for special trackforms		No comment			Transfer		BSC	Also raised in ROR for depot track layout. Awaiting response on ROR's
6	07-2.9	Detailed proposals are required for the electrical and safety Interlocking scheme for depot OLE and workshop equipment and live line indication.	Discussed at depot workshop 25/02/09, Siemens to follow up				No comment			closed	12/01/2010		Safety interlock system design submitted for review, any comments will be captured in ROR
6	07-2.10	Confirm the drainage layout design and strategy for the depot site. The available drawing ULE90130-06-DEP-00480 v1 is stamped 'work in progress' however it does not show the bogie wash point linked into the depot drainage system.	ULE90130-06-DEP-00460 v3 shows connection of the bogie wash point to the foul water drain				No comment			closed	23/03/2009		
6	07-2.11	Confirm whether any of the depot pits will have drainage facilities or will the drainage points shown at the depot workshop entrances be sufficient to prevent the pits collecting rain water (ER section 29.12).	Depot pits will have sump facilities, drainage via portable pumps, discussed at depot workshop 25/02/09				No comment			closed	23/03/2009		

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6	07-2.12	We suggest that a PA facility around depot building and site would be extremely useful for all parties working within the depot site. This has been provided in the depot at Croydon tramway and is used regularly by the control room there to contact operational staff, technicians and managers.	Discussed at depot workshop 25/02/09. There is no requirement for Depot PA in BSC contract, TSL to provide spec for what system needs to achieve, tie to progress with TSL in separate discussion if required		Discussed at operational meeting attended by Transdev, tie, Siemens maintenance and CAF maintenance. Agreed that depot PA would be a useful facility and that proposal to have the PA through the PABX would be a better option than another zone on the infrastructure PA system. change would be instructed by tie		No comment			Open		tie	Change request to be submitted by tie if required.
6	07-2.13	The depot building layout drawings do not show a dedicated computer server room for Infracore/Tramco/operator. Is it therefore the intention that the computer servers will be located in the equipment room?	Discussed at Comms Depot Workshop, TSL to provide Siemens with requirements for space.		Noted		No comment			closed	19/11/2009		computer servers will be located in the equipment room. Closed
6	07-2.14	We suggest that in order for the tram maintainer to carry out fleet checks of the pantograph or roof it would be useful to have a CCTV camera within the depot site that can be occasionally positioned to view the tram roof/pantographs on one of the tram entrance roads or on the tram wash road. Would it be possible with the current configuration of external cameras, the intention being that this provision would utilise the existing cameras rather than requiring a dedicated camera?	Discussed at depot workshop 25/02/09, no current requirement	Clear requirement to be stated if required	Suggestion made by Transdev however it is for CAF to state if this would be useful, closed for ODR		No comment			Closed	16/06/2009		
6	07-2.15	An electrical services plan is to be provided to include details of the services within the depot which will be fed from the UPS(s) and also the standby generator connection.	Discussed in depot workshop 25/02/09. For UPS see detailed design submission Control Centre UPS	Design issue	(1) UPS - dealt with through review of control room UPS - okay (2) Which services are fed from the standby generator connection		No comment			closed	19/11/2009		Discussed in depot workshop 14/10/09 that for generator supply there will be a switch between essential and non-essential supply. Closed
6	07-2.16(1)	Video link to reception and control room at the visitor entrance door rather than staff entrance door.	Discuss at Depot Workshop	Clear requirement to be stated if required	Drawing ULE90130-06-DEP-00248 v4 shows the video link at the staff entrance this should be relocated to the visitor entrance	Response sent to BSC over 1 week prior to the date of this meeting	No comment	Siemens (Michael Wilken) to confirm if and when BSC have responded.		Open		BSC	Still awaiting design of depot access security systems to be submitted (BB scope) ETL (SS) to discuss with AS (tie)
6	07-2.16(2)	At the staff halt provide intercom at the gate rather than in the shelter and a card reader as per other pedestrian gate.	Discuss at Depot Workshop	Clear requirement to be stated if required	Drawing ULE90130-06-STP-00001 shows that there is a card and pin with intercom entrance system		No comment			closed	16/06/2009		
6	07-2.16(3)	The object/person detector at tram gates (ER requirement), may not be necessary; CCTV and locking gates after run-in/out should be adequate.	Discussed at DAS meeting 29/10/08, SDS confirmed that CCTV is the object detector.				No comment			closed	23/06/2009		
6	07-2.16(4)	Access control to the equipment room	Discuss at Depot Workshop	see 141			No comment			open		BSC	Still awaiting design of depot access security systems to be submitted (BB scope) ETL (SS) to discuss with AS (tie)
6	07-2.16(3)	CCTV camera with a view between the trams on the stabling road and also north perimeter fence (see also 1.11)	refer to 1.11				No comment			closed	23/03/2009		
6	07-2.16(3)	Review requirement for internal CCTV cameras (see also 1.12)	refer to 1.12				No comment			closed	23/03/2009		
6	07-2.16(3)	Door key suiting	Discuss at Depot Workshop	Actions given at Depot Workshop			No comment			closed	19/11/2009		At a previous depot workshop it was confirmed that depot key suiting would be European locks which could be exchanged prior to handover. Closed
6	07-2.17	The current revision of the depot track vertical and longitudinal alignment drawings are out of date (ULE90130-06-TAL/TVA revision 3)	ULE90130-06-TAL-00001 v5 & 00002 v4 are current				No comment			closed	23/03/2009		

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6	07-2.18	The ground floor layout design shows separate stores for Tramco and Infraco. Transdev require access to a small area of the stores mainly for storage of tram/infrastructure/depot cleaning equipment and consumables, point bars, spare radios, spare ticket machines, batteries, marketing information, tram boards, operational signs, incident response equipment etc. Would BSC consider either having general stores for use by everyone working in the depot or allocating a small area in one of the light stores for the operator's use?	Discussed at depot workshop 25/03/09				No comment			closed	19/11/2009		Not a design issue. Closed
6	07-2.19	Is there a risk with the fork lift truck driving over the tram wash sump covers in order to access the swarf bins?	Following details of Tramwash design to be reviewed			BSC to clarify	No comment	SDS to clarify whether they have included tram wash and sump covers in the depot drawings.	The current PB Ltd design layout for the Tram Wash- as proposed in our drawings, will be superseded by the new approved design by WESURAIL, with the tanks and plant room located at the western end of the building, with no implication on a fork lift route.	closed	19/11/2009	SDS	closed based on SDS response
6	07-2.20	Allocation of services and equipment between the power energy centre, UPS room and switch rooms, could additional internal depot space be created by relocating more of the services and equipment into the power energy centre?	Discussed at section 6 DAS meeting 29/10/08. SDS/tie conformed that changes to allocation would be unfeasible at this stage.				No comment			closed	23/03/2009		