From: < @exterionmedia.co.uk> Sent: 05 October 2017 14:06 To: < @@tfl.gov.uk> Cc:) < @@tfl.gov.uk>; < @@exterionmedia.co.uk>; < @@tfl.gov.uk>; < @@exterionmedia.co.uk>; < @@exterionmedia.co.uk>; < @@exterionmedia.co.uk>; < @@exterionmedia.co.uk> Subject: Re: Update on LED Bus Hi thanks for your email. I am away from the office today and will respond back to you
tomorrow Thanks
Sent from my iPhone
On 5 Oct 2017, at 13:28, Contract of a second and a seco
Hi Thank you for the data. I am now satisfied with all the points listed below. Is there any further update on your proposals on how the assessment of the trial will be carried out? Regards Transport for London 197 Blackfriars Road, 10Y4 London
SE1 8NJ
☑ @tfl.gov.uk
From: <u>mailto:</u>
Sent: 28 September 2017 14:22 To:; (ST);;;
 Cc: Subject: RE: Update on LED Bus Hi separation of the information that you required 1. The VPT5 test did not take place on the 25th due to an engine fault on the bus that morning. The test is rescheduled for the 9th October. 2. Attached are the calculations for the LCEB. Also copy of Email from Volvo. 3. N/a 4. N/a 5. The system has been tested and works 6. The ambient light tables are attached Kind Regards
From: [mailto: @tfl.gov.uk] Sent: 28 September 2017 10:05 To: (ST) < @TfL.gov.uk>; <

Hi

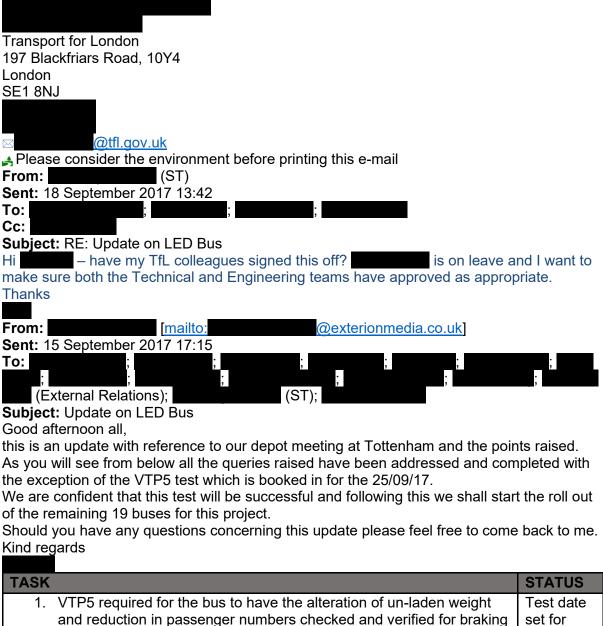
- 1. How did you get on with the VTP5 test scheduled for the 25th September? Could you confirm the previous passenger capacity and what the new capacity is please
- 2. Could you provide me with Volvo's calculations and any assumptions used to prove that the LCEB certificate is still valid please
- 3. No Comment
- 4. No comment

systems, etc

for the bus re-approved.

- 5. Has this system to manage the transition between electric drive mode and dieselelectric been tested?
- 6. I have not received these tables of ambient light (LUX) Vs LED brightness (LUX) including maximum and minimum levels. Please forward this to me.

Kind Regards



– Action: to raise form and Arriva London to submit and arrange

Retest set for 25/09/17. At this stage we are confident of a pass but unsure what the VTP5 will cover and whether any other tests will need to be done by set for

25/09/17

bus company. We are hoping that a VTP19can be issued to cover all buses of this type with the LED screen.	
 2. Un updated LCEB Certificate is required for the bus to take account of the emissions rating of the bus based on reduced passenger capacity due to the weight of the digital display increasing the unladen weight. Action: EM to request from Wright Bus. Volvo have confirmed that a new LCEB is not required as the Volvo bus 	Completed
exceeds the standard required of 87 passengers even with the reduction for weight. has completed calculations to prove the case. The bus even with	
 the LED on board weighs less than the current weight on the certificate. 3. The EMC picked up by the bus radio antenna showed a 10dB rise in background noise when the system was running which did not affect the radio operation but could be an issue to radio communications in low signal strength areas. The LED display system needs to be EMC tested as a whole system, cables need to be checked and extra shielding added with ferrites, not just one tile and be tested to the current standards. 	Completed
 Action: Hive to have whole system tested to the required standards with suitably shielded power/data cables EMC testing has been completed and a pass certificate issued. passed 02/09/17 	
Hive have fitted all requirements to current screen to bring it up to the EMC certificate standard. will perform an inspection on 15/09/17 to ensure the standard has been met in situ.	
 4. Volvo to be consulted about the advised battery voltage level where the digital display should be blanked or turned off to avoid excessive battery drain. Action: Exterion Media and Hive to consult Volvo to agree trigger voltage level has done this and Volvo have confirmed that the figure should be 23volts. They also stated that there is an integral safety device which will cut of any auxiliary equipment if the battery becomes too low. 	Completed
 5. LED display control system to be configured to allow the display to run when the bus is in running mode whether the engine is on or off, but shut down when the bus is turned off. Action: Hive to evaluate and design suitable modification to the control and monitoring system setup A pull down resistor will be fitted on 25/08 which will allow the screen to operate on hybrid when engine is not running and switch off when bus is parked up. 	Completed
 The switch inside the control panel on the upper deck is to be re- designated as an Engineers Switch for use by maintenance engineers when checking bus sub-systems only, not a driver's switch. Action: Hive to label and amend wiring diagram as appropriate. 	Completed
This has been completed	

	 7. All added wiring for the LED Display system to be clearly labelled 'Advertising Display Power or Data' at each connection point of the cables and with markers 10cm from each end of the cables. Action: Hive to label all interconnecting system cables s has been completed 	Completed
Hiv test	 The actual measured light output of the screen is to be given in Lux levels and mapped against the brightness reduction as the light sensor is subjected to different levels of ambient illumination. Action: Hive to map and publish the light output along with the maximum and minimum light levels achievable so that acceptable limits can be agreed and set for use in service. have provided output tables and have also carried out light meter ting to confirm the luminosity. 	Completed

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