



10 May 2019

City of Ottawa  
O-Train Construction  
110 Laurier Avenue West,  
Ottawa, ON, K1P 1J1  
Mail Code: 23-10

Our Reference:	RTG-OTT-00-0-LET-0820
OLRT Reference:	OLR-RTG-00-0-LET-1385
OTC Reference:	OTT-RTG-RLET-0494

**Attention:** Michael Morgan  
Director, O-Train Construction Office

**Subject:** Substantial Completion

Dear Mr. Morgan:

In response to your letter OTT-RTG-RLET-0494, dated May 6, 2019, please refer to the attached, a detailed communication from OLRT-C as it pertains to the City's Opinion for Substantial Completion.

Should you have any questions or require additional information, please do not hesitate to contact us.

Regards,

**Peter Lauch, P. Eng.**  
CEO  
*Rideau Transit Group General Partnership*

cc.: Lorne Gray – OTC  
Rupert Holloway – OLRT-C  
Dwayne Mercer – RTG



OLRT Constructors  
1600 Carling Avenue,  
Suite 450.  
Ottawa, Ontario

Rideau Transit Group General Partnership  
1545 Carling Avenue, Suite 406  
Ottawa, ON  
K1Z 8P9

May 9, 2019  
Submitted Electronically

Our Ref. :	OLR-RTG-00-0-LET-1385
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Attention: Peter Lauch, CEO

Subject: Substantial Completion

Dear Mr. Lauch,

We write further to the City's May 6 letter regarding Substantial Completion ("SC").

The City's interpretation of SC is incorrect as it conflates the requirements of SC with those for Revenue Service Availability ("RSA"). The City incorrectly assumes that all components of the System must be ready for the public's use at SC. In fact, the Project Agreement ("PA") contemplates two stages of "completion". The first is SC, pursuant to which a substantial part of the System will be ready for use, with an allowance for defects provided that they are remediable for a prescribed amount. The second stage is RSA, pursuant to which the System will be ready to operate at a revenue service level, but with an allowance for minor defects, as defined in the PA. There is no expectation in the PA that the System will be complete and ready for use at the SC stage.

Contrary to the City's opinion in its May 6 letter, OLRT-C has satisfied the requirements of SC. Set out below are the PA requirements for SC, a summary of the City's incorrect assertions with respect to those requirements, and a point-by-point response to the selective and inaccurate information comprising the alleged deficiencies listed in the City's letter. OLRT-C has also responded to each of the items in the City's "Appendix A", a copy of which is enclosed.

### **The City's Incorrect Interpretation of SC**

The City interprets SC as OLRT-C having satisfied all requirements in the PA, such that "only Minor Deficiencies should remain outstanding." The City repeatedly asserts that "the components of the System must be ready for use by the public" and concludes its letter with the sweeping statement that it "cannot accept a System as Substantially Complete when that System is not ready for use and safe for the public."

The City's interpretation of the PA's requirements for SC is incorrect. The requirements of SC incorporate elements of the definition of substantial completion in the *Construction Act*. The *Construction Act* defines SC as when a "substantial part" of the improvement is ready for use and, where there is a known defect,



SC is achieved when the defect is capable of correction for a cost of less than about \$17.2 million.<sup>1</sup> Therefore, OLRT-C must only demonstrate that a "substantial part" of the Fixed Component (the Stations) and the "Vehicle Component" are ready for use, with any defects being remediable for less than \$17.2 million.

### **The Fixed Component is Substantially Complete**

OLRT-C has satisfied the requirements for SC of the Fixed Component. OLRT-C can repair all defects and make all corrections to the Fixed Component at a cost of less than \$17.2 million. The City admits that occupancy permits have been issued for the stations, which proves that they are ready for use. It is entitled to a certification of SC.

The City's repeated reliance on the definition of Minor Deficiencies is misplaced and irrelevant to SC. SC can be achieved notwithstanding that there may be Minor Deficiencies *and* other deficiencies. There is no requirement in the PA that only Minor Deficiencies can exist at SC. The distinction is that between SC and RSA, all non-Minor Deficiencies will be resolved but Minor Deficiencies may continue to exist. OLRT-C is entitled to repair Minor Deficiencies even after RSA. The definition of Minor Deficiencies has no bearing on whether the System is substantially complete. Notably, the City is aware that defects other than Minor Deficiencies may exist after SC but before RSA.

The only relevant conditions for SC are specified in the PA definition. Provided that a substantial part of the Fixed Component is ready for use subject to repair and correction of defects for less than \$17.2 million and OLRT-C has satisfied the testing conditions, the Fixed Component is SC. The definition of SC of the Fixed Component does not specify the types of defects, deficiencies or corrections that may be in need of repair or correction at SC.

The definition of "substantial performance" in the *Construction Act* is as follows:

- (a) when the improvement to be made under that contract or a substantial part thereof is ready for use or is being used for the purposes intended; and
- (b) when the improvement to be made under that contract is capable of completion or, where there is a known defect, correction, at a cost of not more than,
  - (i) 3 per cent of the first \$1,000,000 of the contract price,
  - (ii) 2 per cent of the next \$1,000,000 of the contract price, and
  - (iii) 1 per cent of the balance of the contract price.

In the context of the PA, the values in (b) are as follows:

2(1)(b)(i)	3% of 1st \$1,000,000	\$ 30,000
2(1)(b)(ii)	2% of next \$1,000,000	\$ 20,000
2(1)(b)(iii)	1% of balance	<u>\$ 17,165,487.22</u>
<b>Maximum allowance for "known defects"</b>		<b>\$ 17,215,487.22</b>



## The Vehicle Component

The City incorrectly states that the PA "requires all Vehicles to be ready for use as at Substantial Completion". The PA requires only that all of the Vehicles be delivered to the location designated by the City (in this case, the MSF) and that a substantial part thereof be ready for use. A substantial number of the Vehicles are ready, subject to corrections within the cost limit to remediate.

## Response to City's Alleged Deficiencies

### 1. Safety

To be clear, the System is safe. The City claims that many of the outstanding issues are not Minor Deficiencies because they materially impair safety. OLRT-C disagrees that there are deficiencies that materially impair safety. The Engineering Safety Assurance Case ("ESAC") describes in detail how the System is to be operated for Trial Running in order to be entirely safe.

The City's requirement for a complete ESAC at SC is impossible and inconsistent with railway custom or practice. The ESAC cannot be completed until after Trial Running. The final LRV Safety Case contains final certification for passenger use, which cannot be issued until successful completion of Trial Running. The current LRV Safety Case and the LRV Certification that has been issued are restricted to Trial Running, with the restriction to be removed following its successful completion. The LRV Certification for passenger use will be issued at the end of Trial Running and on the achievement of RSA. OLRT-C and Alstom will not allow the System to carry passengers until that date, and as such, a safety certificate will not be issued until then.

The caveats listed in the ESAC will be resolved prior to RSA. The ESAC was delivered prior to SC and any outstanding items, including the Security Certificates and EMC Test Reports, are now available.

In any event, the deficiencies identified by the City can be safely mitigated and will be resolved prior to RSA. Safety hazards can be mitigated with systems, procedures and the correct operation of both by people. In addition to the O&M Manuals, the ORD in the ESAC sets out how the railway can be used safely through the application of control measures and mitigations relating to any hazards not fully addressed prior to RSA. This is entirely consistent with railway custom and practice in jurisdictions where the European Committee for Electrotechnical Standardization suite of standards, including EN50126, EN50128 and EN50129, is in effect.

The City's assertion that the ESAC was submitted on April 24, 2019 is incorrect. The ESAC was submitted on April 18, 2019; some references were corrected and the ESAC was resubmitted April 24, 2019. In either case, the City had the prescribed 10 days for review, pursuant to Schedule 10, before SC.

Even before the ESAC was formally submitted on April 24, the City had ample time to review its contents. The City had two "walkthroughs" of the ESAC with a representative from OLRT-C and the Safety Auditor. Additionally, all parties — OLRT-C, RTG, the City, OCT, and the Safety Auditor — have attended weekly





Hazard Review Panels in which all safety-related hazards have been assessed as mitigated or have been analyzed to confirm that the hazard is tolerable on the basis of its severity or probability.

OLRT-C has demonstrated compliance with all safety requirements, a position shared by SEMP, OLRT-C Safety Assurance specialist consultant.

## 2. The Vehicle Component

Contrary to the City's opinion, OLRT-C has achieved SC of the Vehicle Component:

- (a) All 34 Vehicles are in service and available;
- (b) "SAT 3" testing is not a defined term in the PA. Notwithstanding this, all the Vehicle tests are complete (some with Minor Deficiencies), which is confirmed by the Alstom Compliance Matrix; and,
- (c) OLRT-C has complied with the testing and commissioning requirements in Schedule 15-2, Part 4 and Schedule 14.

In addition, the City incorrectly identifies "deficiencies" with 25 Vehicles. These are Minor Deficiencies, and OLRT-C has regularly discussed and reviewed these issues with the City. In particular:

- **Two-car consists:** 15 two car consists is not an SC requirement. As the City knows, all 34 Vehicles are being used for practice planning and operator training.
- **Brakes:** The braking issue identified by the City is not believed to be fleet-wide or systemic. Alstom has an action plan to resolve the issue with the hydraulic pressure units that have demonstrated issues prior to RSA.
- **Doors:** The City misunderstands the PA requirements for the "sensitive edge" of the doors. Article 3.20(f)(ii) of Schedule 15-2, Part 4 requires that the doors "recycle" if they come into contact with an object 19 mm round or 9.5 mm thick by 75 mm wide. A sensitive edge will not likely detect a "purse strap" or other similarly sized objects that are smaller than the prescribed dimensions, which is why the operator has access to the platform CCTV footage in the Vehicle's cab. In any event, the few sensitive edges that are not yet fully compliant within the PA requirements are being remedied by the door supplier on site at the MSF. All doors will operate according to the PA requirements prior to RSA.
- **Communications:** The communications issue will be resolved with a software update from the supplier prior to RSA.
- **Line Contactor:** Contrary to the City's assertion, the line contactors have not been replaced fleet-wide three times. A Vehicle can operate with two-thirds of the line contactors operational and the line contactors are replaced when they fail. The replacement of line contactors can be accomplished



within the daily servicing window such that there is no availability or reliability impact. In any event, the component supplier is examining the issue with Alstom.

- **Integration of Onboard Communication-Based Train Control System:** The "missions" programming is ongoing and will be available in manual mode fleet-wide prior to the commencement of Trial Running. The automatic mission application will be available prior to passenger service.
- **Vehicle Minimum Operating Standards:** The City misunderstands the purpose of the Vehicle Minimum Operating Standards ("VMOS"). VMOS is not a PA requirement. It is not applicable as a measure for whether a Vehicle is substantially complete – it is a maintenance requirement.

Contrary to the City's opinion, the System is substantially complete, as evidenced by the ESAC. All issues identified by the City are, at most, Minor Deficiencies.

### 3. Transit Operation Control Centre/System Control and Data Acquisition

A number of the issues identified by the City in relation to the Transit Operation Control Centre ("TOCC") /System Control and Data Acquisition have been resolved.

For instance, the ETEs are operational and every ETE has been successfully tested. The only element of functionality not available has been ETE connectivity to TOCC via PBX (which was due to a firewall configuration issue that has now been resolved). Communication via PSTN has been possible since February 2019. It should be noted that the delay to providing this functionality is due in part to City delays in actioning the configuration on its firewall. Now that the PBX issue is resolved, on May 10, 2019, the functionality to the TOCC will be audited and validated. The resolution of the firewall issue resolves the City's concerns regarding passenger counting and open data.

The other issues identified by the City have been resolved and are not a bar to SC:

- **Fire telephones:** OLRT-C has had several conversations with Ottawa Fire Services ("OFS") and Chief Sean Tracey about the issues discovered during testing. Poor voice quality concerns and the YCC/BCC disconnection issue have both been resolved. The source of the volume quality issues when three fire telephones are connected to the same amplifier have been identified. The root cause of the problem were the handsets, which are being exchanged on May 10, 2019. OLRT-C will then conduct validation testing. We understand from the OFS that it will accept this deficiency for the purpose of SC and Trial Running, provided that it is remedied prior to RSA.
- **Guideway Intrusion Detection System:** The issue identified by the City has been resolved and the GIDS has been properly calibrated. As agreed between OLRT-C and OCT, the Eastern above-ground stations were 'cut-in' live to the Transit Operation Control Centre/System Control on May 8, 2019.



- **Intrusion Access Control:** The CCTV integration with the IAC doors is complete. As stated in the SIT reports, the alarm triggers to SCADA are now defined. A small number of doors (<10%) remain to be tested for full functionality before RSA.
- **Passenger Announcement/Passenger Information Systems:** The systems' workstations have been setup, configured and are operational at the TOCC. OLRT-C's supplier, TG Baker, has provided OCT staff with training on the operation of the PA, PIS and PIDS on May 8, 2019. TG Baker will also complete the text programming for the PIDs and upload to the system by May 10, 2019.
- **Passenger Counting and Open Data:** The systems are functional but are not operational due to the delay in configuring the City's firewall as outlined above. The system is ready for testing now that the City's firewall issues have been resolved.
- **Closed Circuit Television:** The CCTV system is complete and has been fully commissioned. OLRT-C has resolved the issues on 40 of the 42 cameras identified by the City as being problematic. The system is operating in accordance with the specified parameters.
- **Alarm Management:** The City's summary of the SCADA alarms demonstrate that it is not managing the alarms correctly. Standing alarms were primarily the result of construction activities. Between February 28 and March 3, OLRT-C has demonstrated that the SCADA alarms can be managed with little effort by the supervisors at the TOCC and the OCT. OLRT-C has notified the supervisors by email that after the March 3 demonstration, it would be the TOCC's responsibility to monitor and manage the alarms. TOCC went live and communication was put in place to notify the TOCC when ongoing testing or configuration changes are taking place on the live system prior to the start of the task. Therefore, the City's summary has significant issues:
  - (a) The City's summary of the reported 1,768 outstanding alarms demonstrates that TOCC is ignoring its Alarm Managing Duties and not performing the SCADA monitoring tasks in accordance with the process demonstrated by OLRT-C. There should be about 200 outstanding alarms if the system is being monitored appropriately;
  - (b) Following a TVS door pressure test, all TVS Dampers in the downtown tunnel were closed by the TVS team. SCADA notified the operator of this issue with an alarm at each underground Station. Thereafter, all alarms were acknowledged and cleared, as OLRT-C instructed TOCC to command the TVS back to Default Normal Mode from the SCADA workstation at the BCC. A single Damper at Rideau Station failed and will be replaced to address the only outstanding alarm. Dormant faults, which will be minimal, will be identified as dampers and the TVS are cycled once per month in accordance with the ORD provided by the ESAC;
  - (c) OLRT-C has provided notified the TOCC of the ongoing Guideway Intrusion Detection System testing on the mainline. There are only 30 GIDCs. By reporting 164 outstanding





GIDS, the City has ignored the notices it has received about the testing of the alarms or TOCC has not acknowledged the alarms;

- (d) The "trip" identified by the City is false. The SCADA is reporting real Negative Ground Device alarms from the TPSS. T&C are currently working to minimize the alarm frequency, but the NGD alarms will always be part of the normal SCADA monitoring activity; and
- (e) Alarm Management was successfully demonstrated at the TOCC by OLRT-C on March 3 and March 20, 2019. The demonstration has shown that SCADA has the means to command, control and monitor all of the system and subsystems in a safe and efficient manner. Alarm Management can only be achieved with a trained and competent operator monitoring SCADA alarms regularly.

We note that as of May 8, 2019 the number of outstanding alarms were back to around 200, so the system is operating as intended, if it is used and managed properly.

OCT Controllers (Electric Rail Controllers) have access to all of the systems that allow the railways to operate, evidenced by the ongoing daily operations. Training has been provided to OCT on all systems. While OJT is ongoing, nothing is preventing Trial Running. All other outstanding systems, which are minor, are becoming available every day and all will be available prior to RSA.

#### 4. Communication-Based Train Control (CBTC)

The revenue software of the Integrated System has been tested and only requires installation and validation, which is scheduled for May 11, 2019. The final software will be available in sufficient time to allow schedules to be build. The "technical defects" identified by the City have been resolved. In any event, any of the issues are Minor Deficiencies. None will materially impair the City's ability to use the System, as set out below.

- **Zone Controller Functionality:** there have been recent issue with Zone Control failure, which were the result of infant mortality of certain hardware elements and a software defect. The hardware elements have been replaced. The software defect will be resolved by software release 5.04, which will be uploaded on May 11, 2019. Thales has conducted a RAMs analysis for the Train Control System, which has validated the design of the system as PA compliant (see Document 3CU 05018 0109 BCZZA, section 7.1.1).
- **Switch Failures:** This issue has been resolved. The switch failures were a result of the reduced levels of maintenance, which were reported and discussed on numerous occasions with the City. OLRT-C has reintroduced a maintenance regime, which has resulted in minimal switch failure. There is no underlying systemic problem as evidenced by the recent performance.
- **Yard Track Switch Movements:** This issue has been resolved. All Stage 1 Vehicles are monitored in the yard and communicate with the ATS. RTG has demonstrated that launching Vehicles in accordance with a timetable can be accomplished.





Contrary to the City's opinion, OLRT-C has demonstrated that it has complied with the testing requirements necessary to achieve SC. The testing of the CBTC is complete and a Safety Certificate for passenger service has been provided to the City.

#### 5. Stations

Notwithstanding that the City misinterprets the requirements for SC, the deficiencies identified by the City do not materially impair use of the Stations by the public or the City and are, at their highest, Minor Deficiencies:

- **Elevator licences:** The assertion that the elevators are not available is incorrect. TSSA certification has been provided for 55 out of 59 elevators. The TSSA has tested and confirmed the elevator phone connectivity to BCC. Once confirmation is received from OCT that it is ready to monitor the phone line 24 hours a day, 7 days a week, TSSA will conduct a final audit and they will be ready for final use. Four cars are pending certification: two will be certified by May 10, 2019 and the other two by May 24, 2019.
- **Escalator licences:** All 43 escalators are TSSA certified. The only remaining item is confirmation there will be continuous supervision of the SCADA workstation at the TOCC (to effect the remote stop function if required). Once confirmation is received, TSSA will provide the licences, as this feature has been already tested from TOCC with TSSA and BCS. The escalators are all ready for operation.
- **Safety Plans by OFS:** These have been approved. OLRT-C has completed all the inspections with OFS and has produced the firefighter copies, which were included in the ICP. OFS has not reported any issues during its numerous meetings with OLRT-C. OFS stated that it will provide final approval once all testing is complete. Furthermore, there are no comments on the Fire Safety Plans in E-Builder by OFS. Therefore, OLRT-C considers that the Fire Safety Plans have been reviewed and approved.
- **Fire Telephones:** OLRT-C has had several conversations with OFS and Chief Sean Tracey in regards to the issues found during the testing of the fire telephones, as referenced above. OLRT-C understands that OFS will accept the installation in its current condition for the purpose of SC and Trial Running.
- **Emergency Telephones:** Emergency telephones are operational and connected to the TOCC.
- **Mechanical and Electrical Testing:** All mechanical and electrical testing has been provided to the Electrical and Mechanical Engineer of Record in order to sign off the CCL. Additionally, all of the occupancy electrical and mechanical items have been verified with BCS inspectors through multiple site inspections.

The City's assertion that conditions associated with the occupancy permits must be satisfied before the Stations will be ready for use by the public omits critical information. The conditions are almost all minor in



nature. For example, the conditions refer to removing temporary fencing, tools and materials. The conditions placed on the non-public washrooms at Rideau and Parliament stations are expected to be lifted imminently. In any event, all conditions will be resolved before RSA.

#### 6. Winter Performance

OLRT-C understands that RTG conducted a detailed review of the suitability of the existing winter performance and maintenance vehicles and equipment. RTG has shared its preliminary updated snow management plans, snow removal procedure reviews and fleet improvement/augmentation recommendations with the City, include confirmation of the additional resources that RTM and Alstom Maintenance are set to procure.

OLRT-C further understands that the winter performance will be further formalized in the coming months, as agreed with OCT in a recent meeting. RTG will continue to update the City and will institute formal "readiness" meetings with the City starting in September 2019, to ensure the City is properly trained to ensure proper winter performance of the System.

OLRT-C has provided the City with an action plan for switch heater installation. All 26 switch heaters will be modified or repaired as required between May 13 to 17, 2019. The City was notified of this on April 18, 2019.

OLRT-C also understands that RTG provided the City with "over-the-shoulder" confirmation of non-revenue vehicles to support operations and maintenance, in satisfaction of the requirements in Schedule 15-2, Part 4, Non-revenue vehicles, including the OSC Maintenance Vehicle, Rail Crane Swingmaster, Ballast/Snow Removal Regulator and others, are custom build-for-purpose items and are tested and commissioned prior to delivery.

#### 7. Tunnel Ventilation Issues

Contrary to the City's assertion, the SATs and SITs reports do not require an approving professional's signature or seal. Article 20.8 of the PA requires:

Project Co shall ensure that all parts of the Design and Construction Works shall, as required by Applicable Law, be performed or reviewed by licensed or registered professional engineers and architects registered to practice in the Province of Ontario. Such architects and engineers shall certify and, if required by Applicable Law, sign and seal, **all designs, drawings and technical reports** confirming that they comply with all prevailing design standards and design practices for such work in the Province of Ontario, all other applicable standards, specifications and codes, and as otherwise required by Applicable Law. [Emphasis added]



The SATs and SITs are not designs, drawings or technical reports and as such, do not require a professional's signature or seal. Additionally, Good Industry Practice does not require a seal or signature. PEO guidelines dictate that the SATs and SITs reports must not be sealed by a Professional Engineer. The AHJ requirements, which is outlined in RFI-O-407, does not specify such requirement and would be otherwise irrelevant given the PEO Guidelines. Notwithstanding this, OLRT-C commit to obtaining the EoR's signature on all of these SATs and SITs prior to RSA.

Furthermore, CCLs are signed and sealed to demonstrate "Construction" conformance only; they are not signed again after construction based on evidence of the revised SATs and SITs reports.

8. Conclusion

OLRT-C therefore reiterates that it is entitled to a Certificate of SC. OLRT-C requests that the City reconsider its opinion in parallel with the Independent Certifier's review.

Sincerely,

A handwritten signature in black ink, appearing to be "R. Holloway", written over a horizontal line.

Rupert Holloway  
Project Director

Encls.



Appendix A

Item	Element	Source	PA Reference or Schedule	Description of Failure to Meet SC	Resp
1	Safety	ESAC	OLR-05-0-0000-REP-0054_2 Technical Compliance Report	15-2 Part 4 Article 9-No evidence of EMC tests conducted by sub-suppliers apart from Thales and Alstom.	EMC Final Report now available- submitted to the city on May 01st 2019 through doc control and email notification in e-builder with SUB-5134
2	Safety	ESAC	OLR-05-0-0000-REP-0014 Rev 0	Interface Hazard Analysis Report - document is not final	Updated doc ref - OLR-05-0-0000-REP-0059 1(Rev 1) issued in e-builder with SUB-5126 on Apr 26, 2019.
3	Safety	ESAC	OLR-05-0-0000-REP-0056 Rev 0	System RAM Analysis Report - document is not final	The document OLR-05-0-0000-REP-0059 Rev 1 was issued in e-builder wih SUB 5114 on Apr 18, 2019 - the ESAC articulates how a safe railway can be operated in its current condition for trial running. Where data is still outstanding- this will be supplied/completed before RSA
4	Safety	ESAC	OLR-05-0-0000-REP-0053 Rev 0	Safety Requirements Matrix - System - document is not final	The document OLR-05-0-0000-REP-0053 Rev 1 was issued in e-builder with SUB-5105 on Apr 17, 2019 The ESAC articulates how a safe railway can be operated in its current condition for trial running. Where data is still outstanding- this will be supplied/completed before RSA
5	Safety	ESAC	ESAC Reference	Station Safety Case has not been submitted	The deliverable that deals with station safety is the "Station Safety Justification Report" which is in the ESAC submitted in e-builder with SUB-5109 on Apr 22, 2019 . Document referred to is OLR-05-0-0000-REP-0064 - Stations - Safety Justification Report. This was loaded into 4P on 22nd Apr. here data is still outstanding- this will be supplied/completed before RSA.
6	Safety	ESAC	OLR-05-0-0000-REG-0004	Project Integrated Hazard Log - document is not final	The document to be referred to is OLR-05--0-0000-REG-0004 / Rev 3 - this is the most current version and will be updated as hazard are mitigated Where data is still outstanding- this will be supplied/completed before RSA
7	Safety	ESAC	ESAC reference	HAZOP Analysis and HRP Report - has not been submitted	This is the Project Integrated HazardLog referred to in above item 6
8	Safety	ESAC	REJ-05-0-0000- REP-0311	System Level Safety Case - document is not final	The document is in 4P, Where data is still outstanding- this will be supplied/completed before RSA
9	Safety	deficiency list	Testing Integration Review Outstanding	The ESAC is expected to include a review of the completeness of all the test results.	<ul style="list-style-type: none"><li>•The original intention of the TIR was to review both coverage and status of System Integration Testing before the project progressed into pre-trial running.</li><li>• Test coverage has been assessed by the SEMP Requirements and V&amp;V (RVV) team as evidenced within the Test Coverage Report (OLR-05-0-0000-REP-0048), Test Traceability Matrix (OLR-03-0-0000-REP-0352) and Use Case to Test Traceability Report (OLR-05-0-0000-REP-0074) that have been issued to the City of Ottawa as part of the ESAC, see SUB-5108 as of Apr 22, 2019</li><li>•The City of Ottawa has also provided input into the assessment of test coverage including through letter RTG-OLR-16-0-LET-0736.</li><li>• Status of System Integration Testing is reported by the T&amp;C Team with test results they generate reviewed by the SEMP RVV Team and test status tracked within Requirements and V&amp;V database.</li><li>• The Technical Compliance Matrix issued by the SEMP RVV Team each week tracks the completeness of T&amp;C testing against the PA with deficiencies raised to track test reports that have not yet been released.</li><li>• The project is currently conducting final System Integration Testing in parallel with multiple train movements building to full service simulation (effectively pre-Trial Running).</li></ul> <p>Given this extensive oversight and rigorous analysis provided by the SEMP RVV Team, we are satisfied the need for a formal TIR has been superseded. SEMP therefore suggest the value of holding a formal TIR has significantly diminished, hence tracking status of any remaining test reports and deficiencies to closure is the pragmatic equivalent way forward. current status of testing is provided by the TCL issued as part of the ESAC, reference OLR -16- 0-0000-TCL-0001</p>
10	Safety	deficiency list	OLR-05-0-0000-REP-0058_0 ORD.pd - Operating Restrictions	This document notes that as a signalling/TVS requirement, only 1 LRV is allowed in the MSF Connector Tunnel at one time	Correct- this is per design.
11	Safety	Compliance Matrix	Schedule 15-2 Part 1	After completion of Certification of Compliance with safety and security related Design criteria, Project Co shall prepare and submit Design Criteria Conformance Certificates of completed designs for acceptance by the City. The full total of 23 Security Certificates listed not provided at SC	All 23 Design and Construction Security Certificates were issued to the City with SUB -5139 on May 06, 2019 are now provided
12	Safety	Compliance Matrix	Schedule 15-2 Part 1	Project Co shall verify that all identified Fire/Life Safety and Security issues are resolved. Not all Safety and Security Issues are resolved - 8 items remain outstanding.	<p>The Compliance Matrix submitted to the City does not identify in Schedule 15-2 Part 1, 8 outstanding safety and security items. All Fire/Life Safety requirements were captured in the Fire Code Safety Reports and Fire Safety Plans which were submitted to the City as per design reviews performed at the FLS Working Group meetings. Also these documents wre revised lately to address the AHJ findings during the site visits and tests performed with AHJ. In addition, DCL were issued to confrim compliance to NFPA 130.</p> <p>On the security side, 30 design and construction certificates were submitted to the City with SUB- 4465 (Nov 20918), SUB-5133 (May 01, 2019) and SUB-5139 (May 6, 2019).</p> <p>It is not clear which 8 remaining outstanding items the City is refering to.</p>
13	Safety	Compliance Matrix	Schedule 15-2 Part 2	The Guideway shall be fenced or otherwise enclosed for security. See details in portion of NCR 837 addressing Guideway fencing deficiennces that are not resolved	<p>NCR-837- Answer was provided to the City (27-03-2019)</p> <p>-OLRT-C considers this topic is addressed and closed with the associated Threat and Vulnerability Assessment (TVA) certification (that stipulates that the installed ballerina fencing on structures, spanning 3-3.5 m from the centre-line of the track is adequate), combined with the installed segregating fencing on the Guideway. OLRT-C contends that PA requirements have been met and will be taking no further action with respect to this NCR. The TVA report has been provided and accepted.</p> <p>-OLRTC and the City attended a NCR meeting (27-02-2019) and OLRTC advised the City (Richard Holder;Eric Dube and Lorne Gray) regarding our position in regards this NCR. At that meeting the City committed to providing direction "on specific locations to be addressed". To date the City has not provided any direction.</p>
14	Safety	Compliance Matrix	Schedule 15-2 Part 5	Each DWA shall have fixed CCTV security coverage, PTZ cameras shall not be used for DWA. NCRs 868 and 874 identified gaps in camera coverage of DWA	Defect closed - can be evidenced by screenshot.

15	Safety	Compliance Matrix	Schedule 15-2 Part 5	Signage shall be placed in visible locations, free from obstructions. Special care shall be taken to ensure that signs are not obstructed by other signs, Design elements or items such as security cameras. NCRs 868 and 874 identified areas of obstruction.	Only 2 instances of interference remain (Parliament station) will be complete 10/5.
16	LRV	deficiency list	All vehicles	RTG is currently working on fleet wide campaigns, defects and deficiencies. For instance, IOS reports are frequently recorded for brakes, doors and communications issues, Additionally, the line contactor is being replaced in every vehicle. The cumulative effect is that RTG has not demonstrated that it has a fleet of vehicles ready for service that have 16 satisfied the requirements of the VMOS.	VMOS is a maintenance document owned by RTM, it has no relevance to SC.
17	LRV	deficiency list	Vehiele-OCS clearance envelope at the west end of the Tunney's test	This test has to be undertaken as there has been an incident of Vehicle/OCS contact at this location	OLRTC has performed OCS clearance of all the alignment up to Tunney's platform. The IFC design for OCS didn't go beyond the West side of Tunney's platform, however the City under letter OTT-RTG-LET-0166 directed OLRTC to install the OCS below the bridge and we finished the installation late 2018. There was an incident where an LRV attempted to move under the bridge and came into contact with the OCS. Following the incidnet the catenary height in this area has been adjusted to increase clearance to 4.1 m. Additioanly Thales have implemented a software fix such that there is now no need for any LRV to travel past the end of the platform to "gain position". The system is safe to use and there is no restrictions at this location. Please note that the direction to go west of Tunneys bridge is under VN-171 and letter OLR-RTG-03--1-LET-0839.
18	LRV	deficiency list	FDAS-CBTC SIT@ station, second vehicle finished dwell time	During FDAS-CBTC SIT, second vehicle on opposing track finished its programmed dwell time as a vehicle on fire approached it's platform.	This is covered by an operational restriction which iscontained in the ORD which forms part of the ESAC
19	LRV	deficiency list	High Speed Data Radio (HSDR) Type Test Reoort	HSDR Type Test Procedure has received but the Test Report has not received yet	Report was issued in e-builder with SUB-ALS-5147 on May 07, 2019
20	LRV	deficiency list	APU Failure investigation	Root cause analysis report not provided for APU failures	RTG have forwarded the CVS letter today, 7th May 2019, presented previously in RAMP
21	TOCC/ SCADA	Compliance Matrix	Schedule 15-2 Part 4, 2.3 (a) # 94398 in compliance matrix	Test Result for TPSS failure to validate normal and contingency operatioos with no degradation of performance is missing.	Test complete report to be issued 10/5
22	TOCC/ SCADA	Compliance Matrix	OLR-90-0-0000-CMP-0001-AH # 108442 in compliance matrix	PA-Schedule 8 - Energy Matters Target Letter not provided to City.	City agreed to the Energy matter requirement being supplied post RSA
23	TOCC/ SCADA	DCL	REJ-OLR-54-0-DCL-0233_0	The design confirmation letter for OCS Mainline Design does not indude the sub-contractors design shop drawings for Tunneys Pasture termination. Nor does it confirm structural integrity of the OCS system with respect to vertical and horizontal loading from for such items as wind, stagger and sag	OCS SIN-1444 drawing RES-54-0-0000-DRD-1301 refers to drawing RES-54-1-TUST-DRD-2201 and MVA-54-5017-DRS-5325. The details shop drawings are stamped a P.Eng please see attached drawings MVA-54-0-S017-PDS-5325_1 and MVA-54-0-S017-DRS-5325_1. Also for the reasons stated in item 17 we have reverted to the original IFC solution therefore this item is not longer an issue.
24	TOCC/ SCADA	DCL	Schedule 15-2 Part 4, article 2	DCLs and CCLs missing for each TPSS	All DCL and CCL have been provided to City with the following link: OLRT/Closeout/General/Reference / Supporting Documents/Compliance Letters
25	TOCC/ SCADA	CCL	Schedule 15-2 Part 4, article 9	CCL for EMI/EMC missing for system	High-low installation is part of OCS Mainline design package and REJ-OLR-54-0-CCL-0131. The EMC Consultant issued Final EMC Field Site Survey Letter confirming compliance with the requirements specified in the OLRT EMC Test and Measurement Plan Section 8.0. This letter is listed in Appendix 2, Section 7 - EMC.  Subsequently, the EMC Field Site Survey Report was issued to the City with SUB-5134, on May 01-2019
26	TOCC/ SCADA	CCL	REJ-OLR-53-1-CCL-0221_1 REJ-OLR-53-1-CCL-0222_1 REJ-OLR-53-3-CCL-0223_1 REJ-OLR-53-3-CCL-0224_1 REJ-OLR-53-4-CCL-0225_1 REJ-OLR-53-4-CCL-0226_1 REJ-OLR-53-5-CCL-0227_1 REJ-OLR-53-5-CCL-0228_1	The Construction Conformance letters for Communication Systems TPSS 1 to 9 are deficient due to restrictions and conditions for example: "EJV review of OLRTC SCADA deviations - It is noted that the wiring and terminations of the SCADA Marshalling Panels do not follow EJV design however conform to the design intent; It is further noted that no evidence has been made available from the vendor supporting Safely Integrity Level (SIL) 2 compliance as defined in IEC 61508 for the delivered solution. This letter is supported by and contingent on the successful completion of the Verification and Validation program carried out by OLRTC."	There are 10 SCADA/TPSS Local SITs and 10 SCADA/TPSS remote SITs. All are complete and submitted. Some have minor deficiencies that are related to test points, not to the design. RES-16-1-TP01-SIT-1R2103 RES-16-1-TP02-SIT-1R2102 RES-16-2-TP03-SIT-2R2101 RES-16-3-TP04-SIT-2R2100 RES-16-3-TP05-SIT-3R2099 RES-16-4-TP06-SIT-3R2098 RES-16-3-TP07-SIT-4R2097 RES-16-3-TP08-SIT-4R2096 RES-16-4-TP10-SIT-5R2031 RES-16-4-TP09-SIT-5P2095 RES-16-1-TP01-SIT-1R2112 RES-16-1-TP02-SIT-1R2111 RES-16-2-TP03-SIT-2R2110 RES-16-3-TP04-SIT-2R2109 RES-16-3-TP05-SIT-3R2108 RES-16-4-TP06-SIT-3R2107 RES-16-3-TP07-SIT-4R2106 RES-16-3-TP08-SIT-4R2105 RES-16-4-TP10-SIT-5R2104 RES-16-4-TP09-SIT-5R2032
27	TOCC/ SCADA		RES-16-1-TP03-SIT-1R1029	HOL Neutral Bond Testing (Baseline), TPSS3 has not been provided	Test complete and passed - report outstanding - report will be available 15/5

28	TOCC/ SCADA	CCL	REJ-OLR-53-1-CCL-0229 R1 to REJ-OLR-53-4-CCL-0242 R1 (14 letters)	Non-compliant design: No Safety Integrity level (SIL) 2 compliance verification in accordance with IEC 61508.	This has been reviewed by our specialist Systems Assurance Consultant, SEMP, they have deemd that the installation is equivalent to SIL2 in terms of reliability/availability. The data integrity "handshake" has been verified through exhaustive testing.
29	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-1R1030	OCS Electrical Connection Verification - Zone 1 Test Report is marked "Failed"	Test failed due to snow - "use as is" approved by EoR - re test to be scheduled
30	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-2R1031	OCS Electrical Connection Verification - Zone 2 Test Report is marked "Failed"	Test failed due to snow - "use as is" approved by EoR - re test to be scheduled
31	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-3R1032	OCS Electrical Connection Verification - Zone 3 Test Report is not marked "pass" & not approved by ERO also.	Test passed with minor deficiencies, EJV letter supports "Use as is" for Megger test, EOR sign off not required per PA
32	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-4R1033	OCS Electrical Connection Verification - Zone 4 Test Report is not marked "pass" & not approved by ERO	Test passed with minor deficiencies , EJV letter supports "Use as is" for Megger test, EOR sign off not required per PA
33	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-5R1029	OCS Electrical Connection Verification - Zone 5 (MSF) Test Report is not marked "pass" & approved by ERO	Test passed with minor deficiencies, EOR sign off not required per PA
34	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-1R1003	OCS Wayside Disconnect Switch, Zone 1 Test Report is not marked "pass" & not approved by ERO	Test passed, EOR sign off not required per PA
35	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-2R1004	OCS Wayside Disconnect Switch, Zone 2 Test Report is not marked "pass" & not approved by ERO	Test passed, EOR sign off not required per PA
36	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-5R1002	OCS Wayside Disconnect Switch, Zone 5 Test Report is not marked "pass" & not approved b ERO	Test passed with minor deficiencies, EOR sign off not required per PA
37	TOCC/ SCADA	SIT/SAT	RES-16-8-0000-SAT-5R1001	SAT Rail Sectioning Procedure Test Report MSF is approved by ERO but there are failures reported.	Test passed with minor deficiencies.
38	TOCC/ SCADA	SIT/SAT	OLR-16-8-0000-SAT-4R4036	Vehicle Envelope Clearance Zone 4 Test Report is marked "pass" & approved by ERO but there are failures reported.	Test passed and Signed by EOR. There are no failures listed in the report.
39	TOCC/ SCADA	SIT/SAT	OLR-16-8-0000-SAT-5R4035	Vehicle Envelope Clearance Zone 5 Test Report is marked "pass" & approved by ERO but there are failures reported.	Test is passed and Signed by EOR. There are two deficiencies listed in the report. These two deficiencies have now been corrected .
40	TOCC/ SCADA	SIT/SAT	OLR-16-8-0000-SAT-3R4037	Vehicle Envelope Clearance Zone 3 Test Report Is marked 'Failed" .	Test is passed (report November 2018 refers)
41	TOCC/ SCADA	SIT/SAT	OLR-16-8-0000-SAT-1R4039	Vehicle Envelope Clearance Zone 1 Test Report Is not marked "pass" & not approved by ERO	Test is passed (report November 2018 refers). All deficiencies are closed. EOR sign off not required per PA
42	TOCC/ SCADA	SIT/SAT	OLR-16-8-0000-SAT-2R4038	Vehicle Envelope Clearance Zone 2 Test Report Is not marked "pass" & not approved by ERO	Test passed with minor deficiencies, EOR sign off not required per PA
43	TOCC/ SCADA	SIT/SAT	OLR-16-4-0000-SAT-5R1011	SAT Test Report Track Switch Heater System (GAS) Test Report is marked "pass" but without ERO Approval	Test passed with minor deficiencies, EOR sign off not required per PA. Deficiencies are tracked in unifier and are being closed. Pricing was given for items that remain open as minor.
44	TOCC/ SCADA	SIT/SAT	Signage SIT	Zone 1 to 5 Operational Signage SITS have al failed	All five zones were re-tested and items closed. New reports will be submitted showing pass.
45	TOCC/ SCADA	SIT/SAT	Commissioning Manual System Integration Tests	53 SITs where the report is missing from Commissioning Manuals. 131 SITs where there are no signature from ERO of which 23 are marked fail, incomplete, retest, missing assessment or cover sheet (75 Communications systems, 22 Power Supply and Distribution, 21 TVS, 5 guideway and 8 system wide)	Commissioning Manuals by their nature are always be a work in progress as they provide a detailed record of the asset. The manual are substantially complete and whilst there are 31 SITs yet to uploaded into the manuals these SITs are not safety critical and are scheduled to be uploaded by RSAD. Post RSAD the manuals will continue to be updated as minor defects are closed
46	TOCC/ SCADA	deficiency list	GIDS incorrect sensor trigger causing EB on mainline - major	GIDS are unreliable in lthe field with nuisance triggers	Issues resolved. GIDs final configuration was completed on May 6, 2019. Alarm free train testing has since been fault free. May 8, 2019, GIDs and CBTC will begin communication interfacing between Blair and Hurdaman stations. Evidence will be in the form of no CBTC track isolation and train EB issues.
47	TOCC/ SCADA	deficiency list	Complete PBX integration to enable emergency telephones to ring through TOCC	Emergency telephones shall enable the user to communicate with the Transit Law personnel located in lthe TSCC by the push of a button and if there is an emergency sttuation. Via and PBX and PSTN. This is currently not possible	Issue resolved. Validation testing 10/5 (i.e. ETEL calls from OLRT to Transit Law).
48	TOCC/ SCADA	deficiency list	LRV CCTV live viewing of cameras at Transit Law	This function is not enabled	Live viewing of CCTV cameras is not required by the PA and as such will not be provided. The ability to view LRV CCTV via HSDR whilst an LRV is docked at a station will be delivered prior to RSAD.
49	TOCC/ SCADA	deficiency list	Key Management Plan	There is a requirement for a key management system to secure and manage keys	RTM have a developed a key management process
50	TOCC/ SCADA	deficiency list	TOCC/BCC System SIT: PA/PIDS Console	PA/PIDS console has been delivered to TOCC but not Installed. Following installation, this console needs to be tested.	PA / PIS workstation has been setup, configured and is operational, at the TOCC. City Sys PL-293 confirms consoles have been installed and location agreed by city. City Sys PL-258 states the testing with SCADA is complete. No formal testing on this workstation is required notwithstanding this TG Baker, OLRT's supplier will provide OCT staff training in the operation of this workstation.
51	TOCC/ SCADA	deficiency list	Intrusion access control	integration with CCTV not complete	CCTV integration with IAC doors has been completed. Alarm triggers to SCADA are now defined. Refer to completed SIT test reports.
52	TOCC/ SCADA	Compliance Matrix	15-2 Part 4, 24 (g)(i) D	NCR 727 is still outstanding for the generator connection point on the TPSS enclosures	NCR-727. This work has been substantially complete- (only installation of fuses remain) the completion of this work and the attendant inspection by ESA will be complete in mid May . Also please note that the City previously agreed that the resolution of this NCR would be classified as minor and not critical to resolve prior to SC (email received from the city on October 5th 2018 refers).
53	TOCC/ SCADA	Compliance Matrix	SchedlJe 15-2 Part 4, 2.5 (e ) (i) A Compliance matrix #94489	The battery shall be capable of supplying TPSS demand to support control powet for 8 hours and to support the failure made analysis. NCR 862 Is still outstanding.	This item is closed by evidenced in the CCL and DCL for the TPSS.



54	CBTC	Compliance Matrix	15-2 Part 1, 2.3 Operational Headways a)	The System shall be designed to reliably support a sustained operational Headway of 2 minutes or less wider typical operating conditions. This has not been demonstrated in the field by test	Thales have completed numerous tests that include reduced headways. Through simulator modelling we have demonstrated that headways of between 105s and 120s are possible. Thales CM (revision 3) indicates that they are compliant, and they have tested it in the field. (see OLRT_CuRS.133)
55	CBTC	Compliance Matrix	15-2 Part 1, 2.3 Operational Headways b)	The System shall be designed to reliably support a sustained operational Headway Of 15 minutes during a single Track outage. This has not been demonstrated in the field by test. Test must demonstrate both 15 minute headway, AND, the terminal to terminal trip times shall not be significantly increased. Not been demonstrated by simulation as performance analysis did not analyze failure modes.	RES-16-0-0000-SIT-OR30242 Test Case 4 Track Section Failure- demonstrates compliance
56	CBTC	Compliance Matrix	15-2 Part 1, 2.3 Operational Headways b)	The System shall be designed to reliably support a sustained operational Headway Of 15 minutes during a single Track outage. When track outage is due to a track switch that is reporting as out of position or "Disturbed". the Transt system is not able to continue operation under train control supervision to end destination platform.	Until the City implements an SOP or the Flank issue is resolved this test cannot be completed.
57	CBTC	Compliance Matrix	15-2 Part 1, 2.6 a) (ii) Operating Scenario 2 (Year 2031): minimum of 18,040 PPHPD	The system test for this operation needs to be performed and passed. The compliance evidence offered is an inadequate simulation document. Test needs to demonstrate sufficient headway and travel time with available vehicles	Test completed in AW0, LRV2 has proven that AW3 performance is such that the simulation is sufficient. Until passengers are on board AW3 loading cannot be achieved.
58	CBTC	Compliance Matrix	15-2 Part 1, 2.6 a) (ii) Operating Scenario 3 f) C)	"C. A minimum operational headway of the greater of 105 seconds or the minimum sustainable headway of the core system." This has not been demonstrated in the field by test.	Thales CM (revision 3) indicates that they are compliant, and they have tested it in the field.(see OLRT_CuRS.133) This test is for ultimate capacity, which may be achieved by extending the trains and platforms. It is therefore not possible to test with the current system. Furthermore, the requirement uses an undefined ‘minimum sustainable headway’ as an alternative measure.
59	CBTC	Compliance Matrix	15-2 Part 1, 2.7 Maximum Trip Times (ii) ATO mode	"The maximum terminal to terminal travel time during the peak period shall be as follows: (ii) ATO mode: 23 minutes including Dwell Time. " Peak period is to operate with passenger loaded trains. (AW213) - Only tested with empty trains.	Test completed in AW0, LRV2 has proven that AW3 performance is such that the simulation is sufficient. Until passengers are on board AW3 loading cannot be achieved. Test Report RES-16-8-0000-SIT-OR3216, Rev. 0 states that during the execution of the test it was agreed with the author of the test procedure that AW0 loaded train instead of AW3 was permitted. Also requirement 15-2 Part1, 2.7 b) ii) doesn't state that this time should be achieved with a loaded train.
60	CBTC	SIT/SAT	15-2 Part 4. 5.13 Testing (vii), (viii)	Operational testing of integrated system is not complete. Failed or incomplete for headway, Throughout, Service capacity tests.	PA makes no reference to throughput testing as such it is not a requirement for SC.
61	CBTC	SIT/SAT	15-2 Part 4. 5.13 Testing (vii), (viii)	253 CBTC Tests not passed successfully - many reports not included in Commissioning manual	Thales Safety Certificate for passenger service has been issued. All tests for Revenue Service have passed Note In the submitted Thales reports all tests are listed whether they have passed or failed but for the failed tests there is also a subsequent passed test record
62	CBTC	Other	15-2 Part 1, 10.3 RAMS, a) iii)	Reliability analysis required of switch system including switch control rack, relays, EPC, power distribution, cabling, machine, sensors, etc. No RAMS study provided, and impact of failures remains omitted from the system wide availability of the transit system.	The PA requirement says: The RAMS program outlined in this Article is intended to influence the reliability, availability and maintainability of Project elements and the System as a whole as part of an overall quality assurance program and is separate and distinct from the performance targets that may have been established in this Project Agreement to monitor service performance related to revenue operations.  All the elements are addressed in the RAMS Analysis report OLR-05-0-0000-REP-0056 rev 1 issued to the City with SUB- 5114 issued Apr 18, 2019. To be noted that these elements were also addressed in rev 0 of this report, issued to the City with SUB-4980 in Feb 2019.
63	CBTC	Other	15-2 Part 1, 10.3 RAMS, a) iii)	Zone controller systems have halted in the field during pre-trial testing with no known defined cause. Resolution of root cause and demonstration of sustainable reliable operation is needed.	These issues were the result of infant mortality in certain hardware elements (which have been replaced) together a software defect that will be resolved in the next software release 5.04 (being uploaded 11/5/19).
64	CBTC	Other	15-2 Part 1, 10.3 RAMS, a) iii)	Track switches report "Disturbed" with a high frequency of occurrence. Several times in a week. Resolution and demonstration of reliable operation needed.	Since OLRTC has been maintaining in accordance with the recommended regime, the switches have performed as expected. This will improve with regime in place.
65	CBTC	deficiency list	Thales TimeTable Compiler entry and exit trips.	Timetable Compiler - Entry routes direct LRV to stop at all out of service station during 'deadhead' run to first service platform. Exit routes direct LRV to stop at out of service platforms.	Software release 5.04 will resolve - being uploaded 11/5
66	CBTC	deficiency list	Wayside Signal lamps reporting invalid status, and holding VOBC Controlled trains.	Practice Running - several reports of wayside signals showing 'invalid', this causes LRV to EB, then require a reset of the route to recover. Need to determine cause.	Software release 5.04 will resolve - being uploaded 11/5
67	CBTC	deficiency list	Delayed Departure from platform	LRV departs platform late - delayed past depart schedule time (Dwell expiry) Automatic Door operation - Train door closure completed 2 seconds after depart time - delay departure by 3s, until system enables the depart button. Delay after Depart and DRS press. After the ERO presses the depart button "DRS" LRV delays for a further 3 seconds. 5-6 second delay in Auto doors. 3s with doors closed manually early. Requirement is zero (depart at dwell expiry)	Software release 5.04 will resolve - being uploaded 11/5
68	CBTC	deficiency list	ATS - Manual Reservation Areas	Manual reservation areas cannot be established across zone controller borders	A temporary operating requirement is in place to deal with this missing functionality - the software patch required to provide this functionality will be provided prior to RSAD. Note this imposes the requirement for a slightly amended process to apply an MRA and does not denude the operational efficacy of the railway.
69	CBTC	deficiency list	ATS - Anti- Bunching	Anti-bunching non-functional at STL, CYR, TRE	Software release 5.04 will resolve - being uploaded 11/5
70	CBTC	deficiency list	ATS - Line Assignment 7	Trains on line assignment 7 will not use BLA-W when BLA-E is occupied causing a back log of trains	Software release 5.04 will resolve - being uploaded 11/5

71	CBTC	deficiency list	ATS - Alarm screen icons	Alarm screen icons have not been activated	Software release 5.04 will resolve - being uploaded 11/5
72	TVS	ICL	REJ-OLR-52-0-ICL-0002	Integration Conformance Letter IVS (Mechanical & Electrical) - Multiple test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature. Several reoorts are incomplete, not submitted and are not passed Incomplete.	CL-0002 makes reference to the SIT and SAT reports listed below plus additional seven (7) SAT reports: 1. RES-16-5-SLSU-SAT-3R3013 R1 issued to the City with SUB-5130 on Apr 29, 2019 2. RES-16-5-SLSU-SAT-3R3017-1 & 2 Rev 0 was issued to the City in Oct 2018 in e-builder at the following location: Documents \05 Construction \02 Project Co Submittals Documents \01 Project Co Submittals \09 Testing & Commissioning \ Test Reports 3. RES-16-5-SLSU-SAT-3R3025 R1 Rev 0 was issued to the City in Oct 2018 in e-builder at the following location: Documents \05 Construction \02 Project Co Submittals Documents \01 Project Co Submittals \09 Testing & Commissioning \ Test Reports 4. RES-16-2-DWSU-SAT-2R3014 R1 signed was issued to the City "for information only" on May 06, 2019 as the unsigned report was issued for review with SUB-5121 on Apr 24, 2019. 5. RES-16-2-DWSU-SAT-2R3015 R1 signed was issued to the City "for information only" on May 06, 2019 as the unsigned report was issued for review with SUB-5121 on Apr 24, 2019. 6 RES-16-2-DWSU-SAT-2R3016 R1 signed was issued to the City "for information only" on May 06, 2019 as the unsigned report was issued for review with SUB-5121 on Apr 24, 2019. All necessary test reports required to support this ICL have been signed off by Revieweres and relevant EORs.
73	TVS	ICL	OLR-53-0-0000-ICL-0003	Integrated Conformance Letter SCADA to IVS - All Systems Integration Reports report lacks a Reviewed by signature and an Approved by the Engineer of Record signature. Several CCL require updates as well	ICL-0003 makes reference to SIT Procedures not SIT Reports. Some SIT procedures are issued by EOR and some are reviewed by EOR as per internal review process. The ICL makes reference to two (2) CCL: CCL-0251 and CCL-0175. Both CCL have no deficiencies. No updates are required
74	TVS	SIT/SAT	RES-16-5-SLSU-SAT-3R3021	TVS Mechanical SAT - St Laurent Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-3R3021 was issued to the City with SUB-5040 onMar 25, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off.
75	TVS	SIT/SAT	RES-16-2-DWSU-SAT-2R3022	TVS Mechanical SAT - Lyon Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3022 R1 was issued to the City "for information only" on May 06, 2019 as the unsigned repor was issued to the City with SUB-5096 on Apr 15, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
76	TVS	SIT/SAT	RES-16-2-DWSU-SAT-2R3026	TVS Electrical SAT - Lyon Station The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3026 was issued to the City with SUB-4936 City response: Reviewed as noted. Report front sheet has be updated with a 'Reviewed' signature and theEoR will sign the report off
77	TVS	SIT/SAT	RES-16-2-DESU-SAT-2R3023	TVS Mechanical SAT - Parliament Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3023 R1 was issued to the City "for information only" on May 06, 2019 as the unsigned report was issued to the City with SUB-5096 on Apr 15, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
78	TVS	SIT/SAT	RES-16-2-DESU-SAT-2R3027	TVS Electrical SAT - Parliament Station -The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3027 was issued to the City with SUB-4842in Nov, 2019. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
79	TVS	SIT/SAT	RES-16-2-RISU-SAT-2R3024	TVS Mechanical SAT - Rideau Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3024 R1 was issued to the City "for information only" on May 06, 2019 as the unsigned repor was issued to the City with SUB-5096 on Apr 15, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off.
80	TVS	SIT/SAT	RES-16-2-RISU-SAT-2R3028	TVS Electrical SAT - Rideau Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature - The test report is incomplete	SAT-2R3028 R1 was issued to the City with SUB-5146 on May 07, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off.
81	TVS	SIT/SAT	RES-16-2-WPTU-SAT-2R3041	TICP 1 SAT - West Portal - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature - There is no confirmation of test report status. Additional validation appears to have taken place after test date see page 9/14	SAT-2R3041 – was issued to the City with TRA-1938A on Oct 31, 2018.Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
82	TVS	SIT/SAT	RES-16-2-DWSU-SAT-2R3018	TICP 2 SAT - Lyon Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature - There is no confirmation of test report status. Deficiency Listed - TICP was tested on temporary stand and door problems existed	SAT-2R3018 was issued to the City with SUB-4727 in Oct 2018. Check mark will be added to pass box. Door was resolved Oct 5th 2018 as indicated in report. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
83	TVS	SIT/SAT	RES-16-2-DESU-SAT-2R3019	TICP 3 SAT- Parliament Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3019 was issued to the City with SUB-4845 in Nov 2018. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
84	TVS	SIT/SAT	RES-16-2-RISU-SAT-2R3020	TICP 4 SAT- Rideau Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3020 was issued to the City with SUB-4934. City response: Reviewed as noted. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
85	TVS	SIT/SAT	RES-16-2-EPTU-SAT-2R3040	TICP 5 SAT - East Portal - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SAT-2R3040 was issued to the City with SUB-5056 on Mar 29, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
86	TVS	SIT/SAT	RES-16-5-SLSU-SIT-3R30233	TVS PLC Local SIT - St Laurent Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-3R30233 was issued to the City with SUB-4855 in Nov 2018. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
87	TVS	SIT/SAT	RES-16-2-DWSU-SIT-2R30230	TVS PLC Local SIT - Lyon Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30230 was issued to the City with SUB-4860 in Dec 2018. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off



88	TVS	SIT/SAT	RES-16-2-DESU-SAT-2R30231	TVS PLC Local SIT - Parliament Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30231 was issued to the City with SUB-5058 on Apr 01, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off.
89	TVS	SIT/SAT	RES-16-2-RISU-SAT-2R30232	TVS PLC Local SIT - Rideau Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30232 was issued to the City with SUB-4860 in Dec 2018. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
90	TVS	SIT/SAT	RES-18-5-SLSU-SIT-3R30226	TVS SCADA Remote SIT - St Laurent Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30226 was issued to the City with SUB-5045 on Mar 26, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
91	TVS	SIT/SAT	RES-16-2-DWSU-SIT-2R30227	TVS SCADA Remote SIT - Lyon Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30227 was issued to the City with SUB-5045 on Mar 26, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
92	TVS	SIT/SAT	RES-16-2-DESU-SAT-2R30229	TVS SCADA Remote SIT - Parliament Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30229 was issued to the City with SUB-5045 on Mar 26, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
93	TVS	SIT/SAT	RES-16-2-RISU-SAT-2R30228	TVS SCADA Remote SIT - Rideau Station - The test report lacks a Reviewed by signature and an Approved by the Engineer of Record signature	SIT-2R30228 was issued to the City with SUB-5045 on Mar 26, 2019. Pending City response. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off.
94	TVS	SIT/SAT	RES-16-5-SLSU-SIT-3R3078	TVS Mechanical SIT & Smoke Test - St Laurent Station Test Report Status Incomplete . Test Case 8 - Piston Effect / Air Velocity Check Test, Test Case 9 - Pressure Wave, and Test Case 10 - Pressure Transient are Incomplete Test Case 4 - Acoustic Testing required revisions and alterations to the station emergency mode criteria.	SIT-3R3078 was issued to the City with SUB-5140 on May 07, 2019. Report front sheet has be updated with a 'Reviewed' signature and the Eor has signed the report off. For variation status see response to item 99 below. Note: test cases 8, 9 and 10 are not signed and will be verified during trial running.
95	TVS	SIT/SAT	RES-16-2-DWSU-SIT-2R3073	TVS Mechanical SIT & Smoke Test - Lyon Station - Test report status · Incomplete · For Test Case 4 -ACOUSTIC TESTING; Measured sound levels at the West Portal Jet-Fans slightly exceed the NC 70 criteria under the PA.	SIT-2R3073 was issued to the City with SUB-5140 on May 07, 2019. For variation status see response to item 99 below. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
96	TVS	SIT/SAT	RES-16-2-DESU-SIT-2R3074	TVS Mechanical SIT & Smoke Test - Parliament Station - Test report status - Incomplete - For Test Case 3 - ACOUSTIC TESTING; The measured sound levels for SVZ case 2-2 while using the PA criteria do not pass using the propose NC70 criteria. 96 A request for a Variation is pending.	SIT-2R3074 was issued to the City with SUB-5140 on May 07, 2019. For variation status see response to item 99 below. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off.
97	TVS	SIT/SAT	RES-16-2-RISU-SIT-2R3075	TVS Mechanical SIT & Smoke Test - Rideau Station -Test report status - Incomplete - For Test Case 4 -ACOUSTIC TESTING; Measured sound levels at the East Portal Jet-Fans slightly exceed the NC 70 criteria under the PA. A Request for a Variation is pending.	SIT-2R3075 was issued to the City with SUB-5140 on May 07, 2019. Report front sheet has be updated with a 'Reviewed' signature and the EoR will sign the report off
98	TVS	SIT/SAT	RES-18-4-0000-SIT-3R3225	TVS Mechanical SIT & Smoke Test - MSF Access Track . Not Submitted	Testing report was provided to the city through Doc control on May 05th 2019 SIT-5R3225 with SUB-5138. Correction to the SIT # was made and the SIT was resubmitted at Rev 0 again with SUB-5143. SUB-5138 is superseded. Procedure was updated and Report has been signed off by EoR
99	TVS	SIT/SAT	RES-16-8-0000-SIT-2R3079	TVS SIT - Segment 2 Tunnel - Incomplete - For Test Case 8 - ACOUSTIC TESTING; Measured sound levels at the Jet-Fans slightly exceed the NC 70 criteria under the PA. A request for a Variation Is pending. For Test Case 9, On-board pressure transient testing shall be completed during trial running session.	For test case #8 - The acoustic criteria variance was submitted as RFI RFI-P-PADI-1026 (OLR-OTT-16-0-RFI-0583) in Dec 2018. The City rejected the RFI as follows:  This PADI was not agreed to in principal at the working level prior to submission. "OTC does not agree to the proposed increased noise levels as it affects the enjoyment and use of the station. OTC is however open to discussions regarding changing maximum acceptable noise levels of the TVS". Rock Fortier, in the subsequent meetings, informed that the City is open to the consideration of the requested relaxation and would like to engage discussions on it face to face rather. The verdicts of the discussions were set in stages: -The City suggested that OFS to test P25 radios and FTEls with TVS in emergency mode. - OFS tested the FTEls' and P25 radios' audibility during TVS emergency mode with station fire alarm triggered. OFS did not address any particular concern in the audibility. -The City asked OFS if the TVS noise was acceptable to them, OFS diverted to OC Transpo to answer this as real emergency situation is far less than normal transit operation which is primarily handled by OC Transpo. -The City asked OC Transpo to test the ETEL with TVS emergency mode with station fire alarm triggered. After the test, OC Transpo asked OLRTC to add special warning stickers for the ETEls closest to the TVS fans. -The City understood that both OFS and OC Transpo have no concerns about the TVS noise, and asked OLRTC to share the dBA measurement results. As of now, the SIT reports is marked as "Incomplete" because the RFI was rejected and the discussion hasn't closed the loop.  During the site tour with the City on May 01, 2019, FN proposed to resubmit the RFI considering the facts described above. Rock Fortier suggested NOT to resubmit the RFI until he presents the rejected RFI to the CCB. If CCB agrees with the PA change, OLRT will issue a new RFI to ammend the PA requirement. For Test Case 9 - we agree this is to be conducted post SC. Note Report has been signed off by EoR.
100	TVS	SIT/SAT	RES-16-0-0000-SIT-0R3224	TVS SIT - End-to-End Tunnel - Not Submitted. This test validates smoke detectors l 100 TVS / TICP / CBTC integration for a coupled train.	We will re-test the missing functions of the TVS End-to-end SIT w/e 10/5 However functionality/safety is addressed in the ESAC's ORD



101	TVS	Other	REJ-52-5-0000-REP-0218	Tunnel Ventilation Analysis - St. Laurent Station -Pre-Final CFO Report - Reports need to be finalized and sealed	Although REP-0218 was issued at Rev C, the report is final and it was submitted to the City with SUB-5099 and is pending City's review. The report is signed by EOR.
102	TVS	CCL	REJ-OLR-42-5-CCL-0137 (Fire Protection)	St. Laurent Station - IFC Mechanical Design (HVAC and fire protection) - Letter notes waiting for spring stand pipe test, test was completed: letter should be revised	CCL-164 identifies two (2) outstanding letters and the stand pipe tests. The letter does not require revision. Completion of the stand pipe test and receipt of the letters validates the CCL.
103	TVS	CCL	REJ-OLR-56-2-CCL-0164	PS&D- Segment 2 Tunnel Embedded Requirements - Letter notes deficiency: letter should be revised	This deficiency has been completed. Photographic evidence available Updated CCL revised and issued May 8, 2019
104	TVS	CCL	REJ-OLR-52-2-CCL-0169	TVS - Mechanical - MSF Connector Track - IFC - Letter notes awaiting MSF Hot smoke test results letter should be revised based on approved SIT	CCL -0169 certification is pending completion of MSF hot smoke test. The letter does not require revision. Completion of MSF hot smoke test will validate the CCL. Test report issued 9/5/19
105	TVS	CCL	REJ-OLR-52-2-CCL-0168	TVS - Mechanical - St. Laurent Station - IFC Updates may be required by BCS final reports.	CCL -0168 has no deficiencies listed. The BCS permit has no conditional release due to outstanding report. This is an outdated comment.
106	TVS	CCL	REJ-OLR-56-2-CCL-0251	TVS Electrical Design (Lyon Parliament and Rideau) - Updates required by BCS final reports	CCL -0251 has no deficiencies listed. The BCS permit has no conditional release due to outstanding report. This is an outdated comment.
107	TVS	CCL	REJ-OLR-56-5-CCL-0175	TVS Electrical St Laurent - IFC - Updales may be required by BCS final reoorts	CCL -0175 has no deficiencies listed. The BCS permit has no conditional release due to outstanding report. This is an outdated comment.
108	TVS	Other	OLR-16-0-0000-MAN-0003_0	TVS Commissioning Manual - Commissioning Manual requires updating/resubmission with all required signatures i.e. FATs SITs SATs. Parliament Damper tests etc., missing submissions MSF+ End to End test and confirmed pass status on all tests	The manual is posted in e-builder at the following location: Documents \ 05 Construction \ 01 Contract Administration \ 15 Milestone Data \ RTG Drop Off \ Substantial completion \ 08 Commissioning Manuals on Apr 25, 2019. Will updated and re-issued after trial running.
109	TVS	CCL	REJ-OLR-42-5-CCL-0138 (HVAC)	St. Laurent Station - HVAC svstems - Updates required by BCS final reoorts	CCL -0138 has no deficiencies listed. The BCS permit has no conditional release due to outstanding HVAC report. This is an outdated comment.
110	TVS	CCL	REJ-OLR-42-2-CCL-0191 (HVAC)	Lyon Station - IFC Mechanical (HVAC) - Updates required by BCS final reports	CCL -0191 has no deficiencies listed. The BCS permit has no conditional release due to outstanding HVAC report. This is an outdated comment.
111	TVS	CCL	REJ-OLR-42-2-CCL-0194 (HVAC)	Parliament Station - IFC Mechanical design (HVAC) - Updates required by BCS final reports	CCL -0197 has no deficiencies listed. The BCS permit has no conditional release due to outstanding HVAC report. This is an outdated comment.
112	TVS	CCL	REJ-OLR-42-2-CCL-0197 (HVAC)	Rideau Station - IFC Mechanical design (HVAC) Updates required by BCS ftnal reports	CCL -0197 has no deficiencies listed. The BCS permit has no conditional release due to outstanding HVAC report. This is an outdated comment.
113	TVS	Other	REF-51-0-0000-REP-0176_ 2	ST.UGS.412 Evacuation of Persons with Disabilities from Stations - FCD - report needs to be sealed	The report is not a PA requirement nor a contractual deliverable; it has been developed as a guide to help the Project stakeholders with the approach to evacuation of persons with disabilities.The report is signed by qualified personne/, Jensen Hughes -Code Consultants.
114	TVS	DCL	REJ-OLR-52-2-DCL-0259	TVS Mechanical Segment 2 - Clarification - Report is Stamped Jan 10/19 however PLC mode tables changes occurred later.	This DCL was issued for the mechanical design package. The PLC is part of the electrical package.
115	System	Compliance Matrix	OLR-90-0-0000-CMP-0002_33	Demonstration of product compliance is either not documented. not performed, pending or not completed for 340 items of the PA	The city is aware of the status of the technical compliance matrix. It is uploaded on 4P on a weekly basis and a notification email is sent by RTG every Friday to the city and IC. We conducted design review workshops to cover all technical schedules, and we advised the city that the product compliance is mainly demonstrated through CCLs and testing (SAT/SIT). The compliance matrix provided to the city was baselined on April 12, 2019. At this time, the status has changed thanks to all testing reports issued since April 12. We believe that Product compliance is now completed and pending paperwork will be provided before RSAD .
116	Maintenance	SIT/SAT	Schedule 15-2 Part 4 Article 4 - 4.1 General (g)	"Project Co shall ensure that civil Infrastructure both new and existing, shall accommodate the worst case loading scenario for all Non-Revenue Vehicles' (RES-16-8-0000-SIT-OR7175 indicates that the OCS maintenance vehide and the ballast regulator exceed the vehicle dynamic envelope and therefore have interlerence issues with guideway and station infrastructure.	The OCS Maintenance Vehicle has never breached the vehicle dynamic envelope and there is no foundation for this statement. As the City is aware, the ballast regulator has been modified to avoid interference issues with guideway and station infrastructure
117	Maintenance	Compliance Matrix	Schedule 15-2 Part 4 Article 4 - 4.2 Non-Revenue Vehicle Types and Maintenance Tasks (a)	Project Co shall submit a list of non-revenue velides required for OLRT and their respective task descriptions to support revenue operations and maintenance of LRT infrastructure. " The List is not complete	With reference to Schedule 15-2 Part 4, RTG has provided the City with “over the shoulder” confirmations of non-revenue vehicles to support operations and maintenance. Non-revenue vehicles such as the OCS Maintenance Vehicle, Rail Crane Swingmaster, Ballast/Snow Removal Regulator, etc are custom built-for-purpose pieces of kit and are tested and commissioned prior to delivery. RTM and Alstom Maintenance are presently carrying out maintenance activities with owned or rented equipment in accordance with their maintenance plans. RTG will provide an official list of non-revenue vehicles required for OLRT and their respective task descriptions to support revenue operations and maintenance of LRT infrastructure by 15 May however this is not a SC prerequisite.
118	Maintenance	SIT/SAT	Schedule 14	SIT for portable generator is missing (Generator needs to be hooked up to each underground station and procedures customized where necessary)	This item is related with NCR-851- The answer has already provided - in the UGS due the fact we have dual feed accepted by AHJ (BCS) there is not requirement to provide a quick connection for a mobile generator. Please refer to Schedule 15-2 Part 5 article 5.4 (f).
119	TOCC/ SCADA	Compliance Matrix	SchedtAe 15-2 Part 4, 2.3 ( a ) # 94398 in compliance matrix	Test Result for TPSS failure to validate normal and contingency operations with no degradation of performance Is missing.	Duplicate item

120	TOCC/ SCADA	DCL	REJ-OLR-54-0-DCL-0233_0	The design confirmation letter for OCS Mainline Design does not include the sub-contractors design shop drawings for Tunneys Pasture termination. Nor does it confirm structural integrity of the OCS system with respect to vertical and horizontal loading from for such items as wind, stagger and sag	Duplicate item
121	TOCC/ SCADA	DCL	Schedule 15-2 Part 4, article 2	DCLs and CCLs missing for each TPSS	Duplicate item
122	TOCC/ SCADA	DCL	Schedule 15-2 Part 4, article 9	CCL for EMI/EMC missing for system	Duplicate item
123	TOCC/ SCADA	CCL	REJ-OLR-53-1-CCL-0221_1 REJ-OLR-53-1-CCL-0222_1 REJ-OLR-53-3-CCL-0223_1 REJ-OLR-53-3-CCL-0224_1 REJ-OLR-53-4-CCL-0225_1 REJ-OLR-53-4-CCL-0226_1 REJ-OLR-53-5-CCL-0227_1 REJ-OLR-53-5-CCL-0228_1	The Construction Conformance letters for Commucation Systems TPSS 1 to 9 are deficient due to restrictions and conditions for example: "EJV review of OLRTC SCADA deviations - It is noted that the wiring and terminations of the SCADA Marshalling Panels do not follow EJV design however conform to the design intent; It is further noted that no evidence has been made available from the vendor supporting Safety Integrity Level (SIL) 2 compliance as defined in IEC 61508 for the delivered solution. This letter is supported by and contingent on the successful completion of the Verification and Validation program carried out by OLRTC. "	Duplicate item
124	TOCC/ SCADA	SIT/SAT	RES-16-1-TP03-SIT-1R1029	HOL Neutral Bond Testing (Baselinee). TPSS3 has not been provided	Duplicate item
125	TOCC/ SCADA	CCL	REJ-OLR-53-1-CCL-0229 R1 to REJ-OLR-53-4-CCL-0242 R1 (14 letters)	Non-Compliant design: No Safety Integrity level (SIL) 2 compliance verification in accordance with IEC 61506.	Duplicate item
126	Stations	Compliance Matrix	Schedule 15-2 Part 5 article 1.16 (A) Design Principles - Accessibility Schedule 15-2 Part 5 article 2.4 (a) (i) Verticle Circulation - Elevators	Zero (0) of fifty-nine (59) elevators installed in the stations are available for use. Elevator licences have not been provided, which the City understands is due to incomplete work, outstanding defects, and incomplete inspections.	For the total of 59 elevators at this moment (07.05.2018) we have TSSA certification of 551. OLRTC can provide the certification of these units or the clean report from TSSA. Also please note that in order to get these units ready for public use OLRTC is seeking confirmation that there is supervision in Transit law 24/7 because the emergency call will be directed to this location. During the TSSA inspection we have confirmed the connectivity to BCC and once we receive the confirmation from the City TSSA will do spot checks of the phone connection (1 day) and the elevators can be used by the public.
127	Stations	Compliance Matrix	Schedule 15-2 Part 5 article 1.16 (A) Design Principles - Accessibility Schedule 15-2 Part 5 article 2.4 (a) (ii) Verticle Circulation - Escalators	Based on information received to date, twelve (12) of forty-three (43) escalators have been licensed. Further escalators may have been licensed, however, during a site visit on May 1, 2019, only four (4) escalators were observed to be working.	For the total of 43 escalators we have TSSA certification of all of them. OLRTC can provide the certification of this units or the clean report from TSSA. Please note that from having the clean report from TSSA it takes 1-2 week to get the original document (it is sent by mail). Also please note that in order to get these units ready for public use OLRTC is seeking confirmation that there is supervision in TOCC monitoring the SCADA workstation to be able to stop the unit remotely. This feature has been already tested from TOCC with TSSA and BCS.
128	Stations	Compliance Matrix	Schedule 15-2 Part 5 article 1.2 (d) (i) Overview - Emergency Planning	Approval of fire safety plans by Ottawa Fire Services (OFS) for all thirteen ( 13) stations have not been provided	OLRTC has completed all the inspections with OFS and produced the FFC (Fire fighter copies) inside of the ICP. OFS hasn't reported any issues or concerns re the provided FSPs in the numerous meeting convened for their review, OFS have stated that they will provide the approval once all the testing is completed- at this moment all the testing has been completed with the exception of the FTEL-which will be completed w/c 13/5. OLRTC considers that the FSP are reviewed and approved by OFS since no comments have been provided.
129	Stations	Compliance Matrix	Schedule 15-2-Part 4 article 6.3 (g) (i) - Performance Requirements - Telephone and Intercom System	Emergency telephones (ETEL) across all stations are not working. This functionaliiy is a critical feature in delivering a safe, secure transit sustems for out customers. To date we have been unable to use or test any of these phones from the field to the TOCC	Duplicate item
130	Stations	Compliance Matrix	Schedule 14 article 1.9 (a) - Commissionng - Guideway and Building System	Following our preliminary review of documentaion submitted at Substantial Completion, we note that a series of Commissioning Manuals provied show stations Mechanical and Electrical testing as not complete	All the mechanical and electrical testing has been provided to the Electrical and Mechanical EoR in order to sign off the CCL. Also all the occupancy electrical and mechanical items have been verified with BCS inspectors in multiple site inspections.