

# THALES

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*Via E-mail*

**DATE:** 12 December 2017

**Letter Reference:** OLRT-THALES-0807

**Ref. Subcontract No. 507528-P002 for the Supply of Automatic Train Control Systems  
 Subcontracted Works for the Ottawa Light Rail Transit Project (“Subcontract”)**

**Reference:** OLRT-THALES-0806, Preliminary Variation Instruction Rejection, 28 Nov 2017  
 OLR-THA-00532, Acceleration, 22 November 2017  
 OLRT-THALES-0680, Schedule Mitigation Proposal, 10 April 2017

**Subject:** Acceleration Proposal

Frank,

Following Thales’ letter ref. OLRT-THALES-0806, Thales is pleased to provide herein its proposal for accelerated works. This acceleration proposal is foreseen to improve the completion dates of parts of the Subcontract Works, excluding MSF Yard, and minimize the impact of current delays incurred by OLRT and their Rolling Stock provider on the Subcontract Schedule.

At this time, Thales submit herewith a Subcontractor’s Variation pursuant to Sub-clause 14.14, which proposes a recovery plan to OLRT, exercising reasonable additional efforts and measures which will focus on minimizing the projected schedule delay and hopefully issue a CBTC Safety Case certification for the mainline by September 2018 and Handover to OLRT for their Trial Running.

Pursuant to Sub-clause 14.15 of the Subcontract, OLRT is kindly requested to issue a Subcontractor’s Variation Certificate to Thales to implement the following measures in item (1) below, and in consideration of other conditions and details as provided herein below:

**1- Description of Subcontractor’s Variation Scope and Conditions:**

**Additional measures:**

- Deploy a second site test team (two persons) to perform an additional 50 hours per week of guideway integration and SAT testing.
- Deploy a second vehicle DPICO test team (two persons) to execute parallel vehicle DPICO testing.
- Increase the number of software build releases to capture and address CBTC integration testing issues that will arise more quickly with the second SAT test team.

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- Additional, repeat DPICOs that are anticipated based on the production maturity level of the Alstom vehicles.

Thales field testing is entirely dependent upon OLRT, as the System Integrator, to facilitate and coordinate access to OLRT's infrastructure and vehicles as well as the completion of all CBTC subsystems installation and PICO. As such, any schedule improvement cannot be achieved by Thales without a corresponding increase in unobstructed access to the completed guideway and a streamlined access process.

This acceleration is dependent upon OLRT provision of appropriate and relevant resources, such as coordination and access to OLRT's infrastructure and vehicles as well as the completion of all CBTC subsystems installation and successful PICO.

Thales Acceleration proposal is predicated on full compliance of each condition and assumption listed below:

## **CONDITIONS:**

- Test hours are expressed as actual test hours net of preparation time for test coordination with driver and LRV available to commence testing on Mainline.
- OLRT shall provide Thales test teams guideway test hours for SAT testing of 100 hours per week (2 shifts). Ideally, two crews working daylight hours in separate guideway (zones).
- OLRT shall also provide additional guideway access for Integration testing, in parallel with SAT testing of up to 50 hours per week.
- OLRT shall provide Thales with the Golden vehicle for Automatic Speed Control (ASC) testing no later than January 2018.
- ASC vehicle testing of the golden vehicle requires access to the entire guideway for end-to-end testing with the dedicated vehicle. These test hours are in addition to the SAT, Integration and DPICO testing hours
- OLRT has Vehicle and Drivers to support 24/7 CBTC testing
- The Alstom maintenance program is in effect to provide repair / replacement services to support on-going CBTC 24/7 testing.
- The OCS is to be operational 24/7. Thales has made no allowance for CBTC testing disruption from other systems testing.
- OLRT has operational P25 radios or suitable alternative to be available prior to the start of CBTC testing in the tunnel sections of the guideway.
- All GIDS and Fire & Smoke Detection systems are installed, integrated and operational by 24 December 2017 as well as any other OLRT systems that interface with CBTC.
- OLRT to provide Thales with office space adjacent to YCC/BCC to facilitate efficient communication and coordination with OLRT Test & Commissioning (T&C) group.
- There can be no further SAT testing disruption attributable to ongoing OLRT construction activities.

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## ASSUMPTIONS:

- All OLRT infrastructure development necessary for CBTC integration and SAT testing is complete by 15 December 2017.
- All CBTC subsystems are installed in accordance with Thales procedures and successfully PICO'd by OLRT by 15 December 2017.
- OLRT to provide As-built and As-Installed Wayside and Central drawings no later than 24 December 2017
- The MSF Yard (Zone 5) is excluded from the scope of the Acceleration proposal as OLRT plans to proceed to Revenue Service without the Yard commissioned. The OLRT direction is in response to the ongoing RTG Phase 2 construction that prohibits CBTC testing until RTG has completed the expansion of the MSF Yard.
- As a post-Revenue Test & Commissioning acceptance of MSF Yard will require a further Variation Order to cover the "brownfield" testing inefficiency as well as separate and supplemental Safety Certificate.
- Thales assumes there will be a modification of entry and exit lines to account for non-controlled mode train operation in the MSF Yard (Zone 5) in Revenue Service until the MSF Yard (Zone 5) is commissioned. Drivers will need to operate in RM mode between handover platforms and pseudo platforms on access tracks.

## EXCLUSIONS:

- CBTC testing and commissioning in the MSF Yard
- No pinched loop test from UOttawa or validation prior to Thales completion of Maturity Level 3 (ML3) testing.
- No validation of LRV coupling compliance
- No Close-up maneuver testing
- No Automatic coupling testing
- Onboard PIS/PAS and Fire & Smoke potential Variation is not included

## 2- Dependencies

This Subcontractor's Variation is dependent upon Thales' receipt of all mainline zones access, trains availability and other dependencies from OLRT and others on the dates and in the manners as identified in item (1) above "Description of the Subcontractor's Variation".

In addition to above, if any of the conditions and/or assumptions included in item (1) above of this is not met by OLRT, Thales shall assess the schedule and cost impact for additional compensation by OLRT, and/or the acceleration measures will not bring the desire schedule improvement.

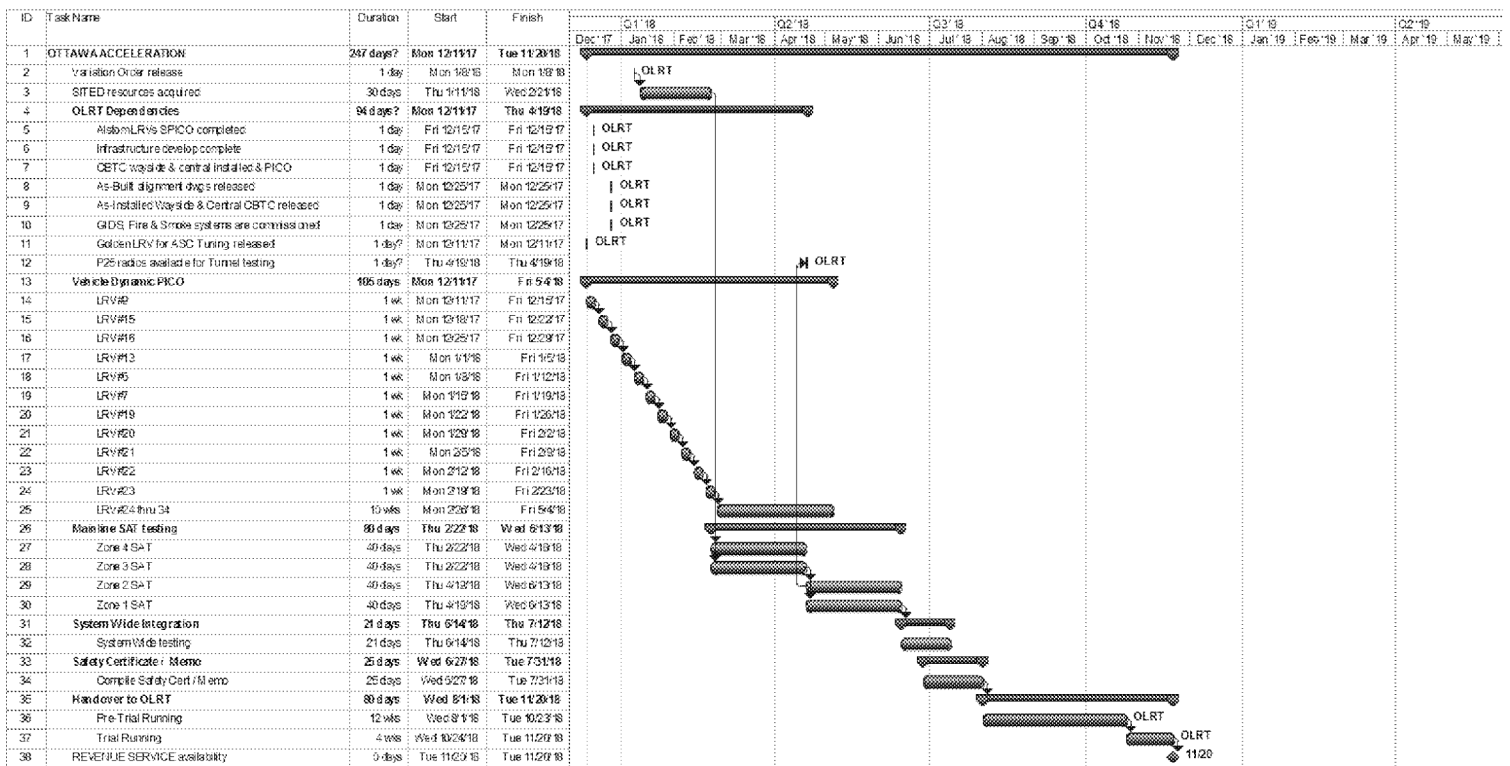


### 3- Assumptions and Exclusions

Assumptions and exclusions are identified in item (1) above "Description of the Subcontractor's Variation".

### 4- Schedule

Under the proposal, Thales objective shall be to support a Revenue Service Availability by November 2018, but some elements of the Subcontract Works will be completed post Revenue Service, which shall be subject for another Variation to capture the impact of working in brown field, as applicable. However, this Subcontractor's Variation shall not bear any kind of commitment to bind Thales to Revenue Service in November 2018, as the risks to this date remain high due to the uncertainty of Rolling Stock vehicles and OLRT's infrastructure development or other unforeseen events.



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## 5- Pricing

The following table indicates the applicable price(s) pertaining to this Subcontractor's Variation.

| Description                              | Price (CDN \$)    |
|--|-------------------|
| Schedule Mitigation – Additional efforts | Component pricing |

The Total firm lump sum Price for this Subcontractor's Variation is \$ Component pricing Canadian Dollars, exclusive of HST. All prices in this Subcontractor's Variation are indicated in Canadian Dollars.

## 6- Terms of Payment

OLRT shall pay Thales the Subcontractor's Variation Prices in accordance with the terms set out herein

Payment Milestone Plan:

| No. | Payment Milestone Description  | Payment Milestone Amount | Milestone Completion Date |
|-----|--------------------------------|--------------------------|---------------------------|
| 1   | Progress Payment #1 with VO    | Component pricing        | January 2018              |
| 2   | Progress Payment #2            |                          | May 2018                  |
| 3   | Issuance of Safety Certificate |                          | September 2018            |
| 4   | OLRT Trial Running complete    |                          | November 2018             |

Upon Thales' achievement of a payment milestone as set forth in the Payment Milestone Plan above, Thales will no later than the 25th of the month in which the payment milestone is achieved or such sum becomes due, deliver a payment application to OLRT in a form and substance reasonably acceptable to the OLRT.

OLRT shall pay Thales by Bank Transfer in respect of all amounts due by irrevocable bank transfer to Thales' designated account NET thirty (30) days of OLRT's receipt of Thales' complete payment application (invoice).

## 7- Terms and Conditions

Thales propose, through this Subcontractor's Variation, additional measures that will not be exercised without additional material expenditure to Thales, therefore, Thales will not implement any of these measures unless a Subcontractor's Variation Certificate has been approved by OLRT.

This Subcontractor's Variation proposal is submitted in accordance with Article 14 of the Subcontract. All Terms and Conditions are identical to those stated within the Subcontract except as otherwise stipulated within this Subcontractor's Variation.

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This Subcontractor's Variation should not prejudice nor waive any of Thales's rights to claim from OLRT additional time or/and costs to perform the Subcontract Works, in accordance with the Subcontract. Thales reserve it right for the Completion of the Subcontract Works on 30<sup>th</sup> March 2019 in accordance with the updated subcontract Schedule and submitted Extension of Time claim.

## **8- Delay Liquidated Damages**

The trigger date for Liquidated Damages Revenue Service shall be no earlier than 30<sup>th</sup> March 2019 to compensate for the delayed infrastructure development and vehicle availability. If there are additional delays that impact Thales test & commissioning then the Liquidated Damages date shall be revised to a later date.

Thales shall have no liability to OLRT with respect to any delay or Liquidated Damages prior to 30<sup>th</sup> March 2019.

## **9- Coming into Force**

Thales shall have no obligation to mobilize or to commence the performance of this Subcontractor's Variation Proposal, and shall have no liability whatsoever for failure to do so, until a Subcontractor's Variation Certificate has been issued no later than 9 January 2018 by OLRT to Thales, including pricing and all other particulars stated in this Subcontractor's Variation.

## **10- Limitation of Scope of Work**

Thales' scope of work for this Subcontractor's Variation is limited to what is identified within this Subcontractor's Variation (and attachments if applicable) and is exclusive of any other scope of work and does not include any costs or services that are deemed by Thales to be within the scope of work of OLRT and/or the vehicle supplier and/or any third party. Any other scope of work (that is not identified within this Subcontractor's Variation proposal) shall be the sole responsibility of the OLRT and/or vehicle supplier and/or third party without any burden to Thales.

## **11- Validity**

This Subcontractor's Variation Proposal (including its pricing) is valid only for the Variation to Thales' scope of work, schedule and the terms and conditions as identified within this Proposal. Thales reserves the right to revise or withdraw this Proposal in the case of ORLT's refusal to accept any part of this Subcontractor's Variation Proposal, and/or any further variations made by OLRT to Thales' scope of work and/or design documents, and/or technical specifications, and/or drawings, and/or schedule.

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This Proposal including any attachments (if applicable) shall cancel and supersede all prior offers, representations, statements and understandings whether oral or in writing.

Unless otherwise specified, this Subcontractor's Variation Request shall be valid until 15 January 2018, whereupon the Subcontractor's Variation and prices shall expire, or be subject to an upward adjustment at Thales' sole discretion.

Sincerely,



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