

# Ottawa Light Rail Commission

NADIA ZAARI  
on Wednesday, April 13, 2022



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OTTAWA LIGHT RAIL COMMISSION MEETING  
ALSTOM TRANSPORT CANADA INC.  
NADIA ZAARI  
APRIL 13, 2022

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--- Held via Zoom Videoconferencing, with all  
participants attending remotely, on the 13th day of  
April, 2022, 1:00 p.m. to 3:32 p.m.

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1 COMMISSION COUNSEL:

2

3 Christine Mainville, Co-Lead Counsel Member

4 Fraser Harland, Commission Counsel Member

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6 PARTICIPANTS:

7

8 Nadia Zaari,

9 Michael Valo, Esq. & Charles Powell, Esq.,

10 Glaholt Bowels LLP - Counsel for Nadia Zaari

11

12

13 ALSO PRESENT:

14

15 Carissa Stabbler, Stenographer/Transcriptionist

16 Chandani Joshi, Virtual Technician

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I N D E X

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WITNESS: NADIA ZAARI

1 -- Upon commencing at 1:05 p.m. --

2 NADIA ZAARI: AFFIRMED.

3 FRASER HARLAND: The purpose of today's  
4 interview is to obtain your evidence under oath or  
5 solemn declaration for use of the Commission's  
6 public hearings. This will be a collaborative  
7 interview, such that my co-counsel, Ms. Mainville,  
8 may intervene to ask certain questions. And if  
9 time permits, your counsel may also ask follow-up  
10 questions at the end of the interview.

11 The interview is being transcribed, and  
12 the Commission intends to enter this transcript  
13 into evidence at the Commission's public hearings,  
14 either at the hearings or by way of procedural  
15 order before the hearings commence.

16 And the transcript will be posted to  
17 the Commission's public website, along with any  
18 corrections made to it after it is entered into  
19 evidence.

20 The transcript, along with any  
21 corrections later made to it, will be shared with  
22 the Commission's participants and their counsel on  
23 a confidential basis before being entered into  
24 evidence.

25 And you'll be given the opportunity to

1 review your transcript and correct any typos or  
2 other errors before the transcript is shared with  
3 the participants or entered into evidence. Any  
4 non-typographical corrections made will be appended  
5 to the transcript.

6           And pursuant to Section 33(6) of the  
7 Ontario Public Inquiries Act, 2009, a witness at an  
8 inquiry shall be deemed to have objected to answer  
9 any question asked him or her upon the ground that  
10 his or her answer may tend to incriminate the  
11 witness or may tend to establish his or her  
12 liability to civil proceedings at the instance of  
13 the Crown or of any person, and no answer given by  
14 a witness at an inquiry shall be used or be  
15 receivable in evidence against him or her in any  
16 trial or other proceedings against him or her  
17 thereafter taking place, other than a prosecution  
18 for perjury in giving such evidence.

19           As required by Section 33(7) of that  
20 Act, you are hereby advised that you have the right  
21 to object to answer any question under Section 5 of  
22 the Canada Evidence Act.

23           So, Ms. Zaari, if we can just begin  
24 today by having you describe your role with Phase 1  
25 of the Ottawa LRT project, please.

1                   NADIA ZAARI: And, I'm sorry, you got  
2 cut off. Can you please repeat the question one  
3 more time?

4                   FRASER HARLAND: Yeah, no problem. I  
5 just wanted you to describe your role with the  
6 Ottawa LRT project, Phase 1 in particular.

7                   NADIA ZAARI: Okay. So I was involved  
8 in the Ottawa LRT project from December 2013 until  
9 September 2016 where I held two roles. My first  
10 role was in a capacity of deputy project manager,  
11 and then I moved on to the role of project manager  
12 for Alstom.

13                  FRASER HARLAND: And what were the  
14 approximate time frames of being deputy project  
15 manager and project manager?

16                  NADIA ZAARI: So from memory, it was  
17 from December 2013 up until, I would say, June or  
18 July 2015, deputy project manager.

19                  FRASER HARLAND: And then from June or  
20 July 2015 until September 2016 as project manager;  
21 is that right?

22                  NADIA ZAARI: That is correct.

23                  FRASER HARLAND: Can you describe in  
24 general terms the role of a deputy project manager?

25                  NADIA ZAARI: So as a deputy project

1 manager, I was assisting the project manager in all  
2 the internal activity, which means I had no  
3 interface to the customer or LRT.

4 I had transferred from France on to our  
5 U.S. site to assist with the transfer of technology  
6 into our U.S. site and assisting in the start-up of  
7 the manufacturing of the first train in the U.S.

8 FRASER HARLAND: Okay. And the U.S.  
9 site was in Hornell, New York; is that right?

10 NADIA ZAARI: That is correct.

11 FRASER HARLAND: Then could you  
12 describe the role of a project manager?

13 NADIA ZAARI: So a project manager role  
14 has more front-facing role and to the customer.  
15 Essentially overseeing the project execution and  
16 interacting with the customer, which was OLRTC.

17 FRASER HARLAND: Okay. Where were you  
18 based for this work? It sounds like for the deputy  
19 project manager work, you were based in New York.  
20 Did you stay in New York as project manager, or was  
21 that in Ottawa?

22 NADIA ZAARI: That is correct. I  
23 stayed in New York because we had parallel activity  
24 both in the site of Hornell in New York. So I was  
25 commuting. Three days in Ottawa, two days in



1 New York. I personally stayed on the U.S. soil.

2 FRASER HARLAND: Okay. You finished in  
3 September 2016. Are you still an employee of  
4 Alstom, or have you moved to a different company?

5 NADIA ZAARI: I am still an employee of  
6 Alstom in the U.S.

7 FRASER HARLAND: Okay. And working on  
8 different projects, I presume, since September of  
9 2016?

10 NADIA ZAARI: Absolutely. Completely  
11 different project non-related to Ottawa project.

12 FRASER HARLAND: Okay. Did you have  
13 any involvement with the procurement phase of the  
14 project?

15 NADIA ZAARI: Yes, early on, we had a  
16 sourcing team involved in the procurement, and I  
17 was participating to that as part of a deputy  
18 project manager role.

19 FRASER HARLAND: Okay. But, sorry --  
20 but you weren't involved in, I guess, the City's  
21 procurement of the LRT at that early stage?

22 NADIA ZAARI: No, I was not. Sorry,  
23 yeah, I misunderstood your question.

24 FRASER HARLAND: No, that's just fine.  
25 You didn't have any involvement in the negotiation

1 of the subcontract, Alstom's subcontract with  
2 OLRTC; is that right?

3 NADIA ZAARI: No, I was not. I arrived  
4 on the project, the contract was already executed  
5 and already a few months into the work.

6 FRASER HARLAND: Okay. Thanks. And  
7 before moving on, can you just briefly describe  
8 your experience, your educational experience and  
9 then your experience with Alstom.

10 NADIA ZAARI: Yes. So I am an engineer  
11 by trade. I joined Alstom a little bit more than  
12 15 years ago. I started in our headquarters, have  
13 done various role into project management as well  
14 as customer-facing role, such as customer director  
15 role.

16 One of my most significant experience  
17 back in France was when I was a project manager for  
18 light rail vehicle project for the City of Reims  
19 where I -- managing a scope for the signalling  
20 portion of the project.

21 And then I transferred in the U.S.  
22 about in December 2013 just to bring also my  
23 expertise and my knowledge and supporting the  
24 transfer of technology between our design centre  
25 and the manufacturing site in the U.S.

1 FRASER HARLAND: Thank you. So I just  
2 want to speak briefly about the subcontract. As  
3 part of your role, particularly as project manager,  
4 did you review Alstom's subcontract with OLRTC?

5 NADIA ZAARI: Yes, I did. It was the  
6 first document we're obligated to read when we join  
7 the project.

8 FRASER HARLAND: Okay. And the main  
9 deliverable under that subcontract was the design  
10 construction testing delivery of 34 LRVs; is that  
11 correct?

12 NADIA ZAARI: That is correct.

13 FRASER HARLAND: The subcontract also  
14 set the schedule that Alstom was to abide by and  
15 the main milestones; is that right?

16 NADIA ZAARI: That's correct. There  
17 was an appendix for that.

18 FRASER HARLAND: Okay. We'll come to  
19 the schedule a little bit later, but I want to  
20 cover a couple other things first.

21 So the train that was provided for the  
22 Ottawa LRT was called the Citadis Spirit; am I  
23 right about that?

24 NADIA ZAARI: That is correct.

25 FRASER HARLAND: Can you tell me how

1 this Citadis -- was it based on other models in  
2 Europe? Or what was -- how did Alstom come to use  
3 this design for the LRT in Ottawa?

4 NADIA ZAARI: So I will share with you  
5 what I know from secondhand. I was not involved in  
6 the choice of the name and what it was.

7 Alstom has a product called the Citadis  
8 that has been deployed in many cities in France and  
9 other part of the world.

10 This was -- the Citadis Spirit was the  
11 American -- North American version of the Citadis  
12 meeting some local requirement. So it was an  
13 adaptation of an existing product; hence the second  
14 name that was added to it to differentiate.

15 FRASER HARLAND: So there were, then,  
16 specific requirements based on North American  
17 standards that Alstom had to meet with this train  
18 model; is that right?

19 NADIA ZAARI: That is correct. And  
20 beyond American standards, there was also the  
21 length of the train that was a little bit longer.  
22 There were some specific related to that specific  
23 contract.

24 FRASER HARLAND: Did those standards  
25 pose challenges for Alstom that you're aware of?

1                   NADIA ZAARI: They were standards that  
2 the team had to get familiar with, which was done  
3 very early on in the project when I joined in.  
4 Felt the team had already had a good grasp of those  
5 standard, and they had to be incorporated as part  
6 of the design. So nothing significant that I can  
7 recall from memory. It was back in 2013.

8                   FRASER HARLAND: Were there any  
9 particular standards required by the City that you  
10 recall causing technical challenges for Alstom?

11                   NADIA ZAARI: So our contract was with  
12 OLRT. Didn't really know which was coming from the  
13 City, from OLRT, from something else. So I  
14 wouldn't be able to tell which one was coming from  
15 the City specifically. They were all in our  
16 contract with OLRT. We didn't have specific City  
17 requirements, specific OLRT. They were all one  
18 type of requirement. I wouldn't be able to say if  
19 the City ones are more stringent than others  
20 because I didn't know.

21                   FRASER HARLAND: So the requirements  
22 that OLRTC was requiring, were there any that were  
23 new and particularly challenging for Alstom in  
24 their design of the Ottawa LRT?

25                   NADIA ZAARI: And I'm doing this from

1 memory. Some that were challenging was the  
2 requirement on the steel that I recall from memory,  
3 the type of steel to be used. It was a very old  
4 type of standard that we didn't feel was used  
5 anymore in the industry. It was a very awkward  
6 standard. We didn't feel it was a good  
7 requirement, so we went and had a discussion  
8 including with the City. And that's the one where  
9 I recall being in a meeting with the City and  
10 saying, "We have an equivalent. We've used that in  
11 our past project. We've been successful, and we  
12 think this is what you should specify."

13           And we managed to reach approval. It  
14 took quite a number of years to get to converge,  
15 but that was the most specific one. The one about  
16 the steel to use for the -- on the frame.

17           FRASER HARLAND: Okay. I wonder if we  
18 can speak a bit about the relocation of  
19 manufacturing and testing to Ottawa.

20           So, originally, according to the  
21 subcontract, where were the first two LRVs going to  
22 be constructed?

23           NADIA ZAARI: So the subcontract I  
24 don't recall. I recall when I joined in the  
25 project, there was an agreement that had been done

1 in the first month of the project that the first  
2 two LRV would be build in Hornell, New York. And  
3 LRV 3 to 34 would be build in Ottawa. That was my  
4 hypothesis when I started the contract.

5 FRASER HARLAND: Was there ever, to  
6 your knowledge, an earlier plan that the LRVs would  
7 be built in the Alstom facility in Valenciennes,  
8 France?

9 NADIA ZAARI: Correct. I have heard  
10 about that, but that was prior to my arrival on the  
11 project.

12 FRASER HARLAND: Okay. So once you  
13 arrived, the plan was to build the first two LRVs  
14 in Hornell?

15 NADIA ZAARI: Correct.

16 FRASER HARLAND: Okay. And where were  
17 the vehicles ultimately constructed? Was that plan  
18 carried out, or what ended up actually happening?

19 NADIA ZAARI: The plan that ended up  
20 happening was only the first LRV was built in  
21 Hornell. The second one started in parallel in  
22 Ottawa.

23 FRASER HARLAND: Okay. Can you speak  
24 to why that plan changed and what the reasons  
25 behind that change might have been?

1                   NADIA ZAARI: When I arrived on the  
2 project in 2013, they had been already several  
3 months into the project with already some delay  
4 related to the designs and the choice to be made  
5 very early on in the phase of the project that  
6 didn't happen per plan.

7                   So there was already some number of  
8 month of delay. Can't recall exactly from memory,  
9 but there was some delay.

10                  So the schedule was getting already  
11 compressed. Then there was additional delay that  
12 tagged on about availability of CBTC design  
13 interface that added up to the delay.

14                  It came we were having multiple  
15 schedule exchange with OLRT without able to freeze  
16 a baseline. So I remember V1, V2, V3. I think we  
17 went up to V4.

18                  To the point that it had to change the  
19 manufacturing plant to still meet the end  
20 milestone. OLRT saw the front moving, but had no  
21 interest and no wish to move the end date.

22                  So we had to come with creative idea,  
23 and one of them was to start in parallel  
24 manufacturing of Train 1 and 2: One in Hornell and  
25 two in Ottawa. The decision came very late in the



1 project. From my recollection, I think 2015 or  
2 2016, so almost two years after I arrived on the  
3 project.

4 FRASER HARLAND: It was at that time  
5 that it was decided that that's where this LRV2  
6 would be in Ottawa?

7 NADIA ZAARI: Yeah. I think there was  
8 discussion before, but freezing a baseline of V5  
9 was much later because we had to discuss the test  
10 track. The first discussion were probably 2015,  
11 and it took probably a year to converge.

12 FRASER HARLAND: Okay. So I'm going to  
13 come back to the V5 schedule, but I just want to  
14 stay on the relocation of the manufacturing for a  
15 minute.

16 So how did that decision get made to  
17 your understanding? Was that OLRTC's idea?  
18 Alstom's idea? How did that decision ultimately  
19 get made?

20 NADIA ZAARI: So Alstom was recording  
21 all the delay event that was causing a slip to the  
22 right and was -- and I was not the PM early on. So  
23 I was just the deputy. So just secondhand  
24 information. I have more when I was facing the  
25 customer.

1                   But Alstom was recording the delay  
2 event about design frozen on time, CBTC interface,  
3 choices and design review being delayed,  
4 communicating to OLRT and OLRT rejecting schedule,  
5 not agreeing with pushing the date because those  
6 early delay event were having an impact on the end  
7 date, and kept on asking per the subcontract  
8 proposal for recovery. We had very often proposed  
9 a recovery schedule -- a recovery schedule.

10                   So that was part of the process to  
11 propose a recovery as to parallelize more  
12 activities and to do Train 1 and 2 in parallel at  
13 two different location.

14                   FRASER HARLAND: So, ultimately, it was  
15 largely a plan that was designed to save time; is  
16 that right? Is that fair? It was all about  
17 scheduling?

18                   NADIA ZAARI: It was all about  
19 recouping the delay from the front end while not  
20 moving the end date.

21                   FRASER HARLAND: Okay. And do you know  
22 if this would have had any financial consequences  
23 for either Alstom or OLRTC?

24                   NADIA ZAARI: I don't know about OLRTC  
25 because I was not getting preview to that -- their

1 financial. But on Alstom, yes, it had significant  
2 financial consequences.

3 FRASER HARLAND: Can you speak more to  
4 that?

5 NADIA ZAARI: So I'll try illustrate to  
6 something that is practical just giving an example.

7 So, for example, when we decided to  
8 start manufacturing of Train 2 in Ottawa, we had  
9 already routed all our supplier to deliver the  
10 parts for Train 1 and 2 in Hornell, and Train 3 and  
11 4 ongoing onward to Ottawa.

12 We had very late in the process made  
13 that decision, so we had lots of equipment and part  
14 sitting in our warehouse in Hornell for Train 2  
15 when they should be in Ottawa. So we had to  
16 organize what we call milk run, rent trucks, do  
17 daily trucks and ship. And it's a lot of volume of  
18 material and parts that had to be sent back.

19 And some parts were coming from Canada,  
20 so they had to send back. So that was a lot of  
21 logistic effort due to the late decision.

22 FRASER HARLAND: Okay. And so there  
23 was the manufacturing decision, and related to  
24 that, there was also a move of testing, if I  
25 understand that.

1                   So where was testing originally planned  
2 to be done to your understanding? And I'm talking  
3 about validation testing of the first two LRVs  
4 here.

5                   NADIA ZAARI: So originally the idea to  
6 test -- to validate, I'll use that word, which is  
7 more precise for the first two train, was to do a  
8 part of the validation in Hornell for whatever  
9 could be done in our facility. But then you need  
10 an extensive length of track, and this was going to  
11 be done in test centre -- U.S. test centre in  
12 Colorado. So train had to be shipped over there.  
13 We shipped them. We've done that before. Tested  
14 over there where we had an extensive length of  
15 track to do the testing.

16                  FRASER HARLAND: What actually ended up  
17 happening for validation testing? I understand  
18 that there was no testing done in Colorado; is that  
19 right?

20                  NADIA ZAARI: That is correct. As part  
21 of the V5 discussion, there was, again, an idea to  
22 save -- save time or limit the impact of the early  
23 delay by doing testing in Ottawa and saving on the  
24 shipment of the vehicle. So that was part of the  
25 discussion, and that's how V5 came up with the

1 vehicle validation in Ottawa and not shipping the  
2 vehicle elsewhere and saving shipping time.

3 FRASER HARLAND: Okay. And did you  
4 support these decisions around relocation of  
5 manufacturing and testing? Did they seem like a  
6 good idea to you at the time?

7 NADIA ZAARI: I'm thinking back from  
8 behind -- there were a change of plan. So a change  
9 of plan so late in the game didn't feel like a good  
10 idea, but didn't feel there was any other better  
11 idea at this time to meet the date that OLRT didn't  
12 want to change because of some triggering event  
13 that were -- they had and that they were key for  
14 them. So there was no flexibility in impacting  
15 those triggering events. So we had to come up with  
16 very creative ideas. I'll call them like that.

17 FRASER HARLAND: Okay. So you've  
18 mentioned the negotiation of a new baseline  
19 schedule, so I'd like to talk about that a little  
20 bit more. So there was -- sorry, before I do that,  
21 I'm just seeing my co-counsel here.

22 Christine, did you have -- no? Okay.

23 So the vehicle assembly went through --  
24 the vehicle assembly schedule, excuse me, went  
25 through multiple versions from V0 to V5. Do I have

1 that right?

2 NADIA ZAARI: That is correct.

3 FRASER HARLAND: Okay. What was your  
4 involvement in the negotiations of those schedules?

5 NADIA ZAARI: I was directly involved,  
6 I think, starting V3 from memory. V0, V1 were  
7 early on in the project. I was not there. So I  
8 think I picked up at V3, V4, and V5 was definitely  
9 me.

10 FRASER HARLAND: Okay. And you've  
11 touched on this a bit already, but can you explain  
12 again why the schedule was needing to be changed at  
13 this time?

14 NADIA ZAARI: There had been multiple  
15 early on delay on the project when I arrived. I  
16 was made aware already some delay and the design  
17 freeze with the City, the choice in terms of design  
18 and style of the vehicle. We call it design and  
19 style is the overall look of the vehicle, how many  
20 handrails you want inside, and all those design and  
21 style element that were supposed to be frozen very  
22 early on and that were not and took several months  
23 later to get a frozen design and style.

24 And another delay was the delay in the  
25 interface with the CBTC system that was not under

1 Alstom's scope of work was to be provided by  
2 another party. And this interface was not  
3 available as planned for the subcontract.

4 FRASER HARLAND: Okay. That other part  
5 is Thales; right?

6 NADIA ZAARI: That is correct.

7 FRASER HARLAND: I'll come to that  
8 interface, but to stay on the schedule, so the V5  
9 ended up having numerous different deadlines from  
10 what had been foreseen when the subcontract was  
11 negotiated; is that right?

12 NADIA ZAARI: That is correct.

13 FRASER HARLAND: Okay. But you're  
14 saying the revenue service deadline didn't change  
15 in V5? Did that stay the same?

16 NADIA ZAARI: Stayed the same. OLRT,  
17 despite our multiple request to move it to the  
18 right, was not willing to entertain any move to the  
19 right. There was a milestone -- from memory I say  
20 9 or 10. Every time we tried to say, "Hey, this  
21 will move, this will move." There was no way to  
22 entertain a discussion there. It had to stay the  
23 same.

24 FRASER HARLAND: So Alstom's  
25 perspective is the reason RSA date didn't change at

1 this time was because OLRTC was unwilling to make  
2 that change. Is that --

3 NADIA ZAARI: And when we say they were  
4 unwilling, there was probably other things  
5 involving other parties there. It was not maybe  
6 OLRT. I don't know. We were just discussing with  
7 OLRT. We were not getting -- privy to other  
8 discussion that OLRT were having with other  
9 partners and other things going on.

10 FRASER HARLAND: So what did Alstom  
11 have to do, then, to accelerate the schedule so  
12 that the RSA date would still be achievable if  
13 it -- if it could move? And I guess the relocation  
14 of manufacturing and testing is part of that, but  
15 what other things?

16 NADIA ZAARI: Yes. And I will explain  
17 in terms, but if it's too technical, please let me  
18 know.

19 So the Vehicle 1 and 2 were built with  
20 a certain gap between the start of the 1 and the  
21 start of the 2. They were not fully in parallel.  
22 There was some overlap. But at least we -- this is  
23 typical in a build of a vehicle -- that we ramp up.  
24 We validate the design, the assembly, and so that  
25 we don't reproduce the same issues on the second



1 one. So this is typical standard of our vehicle  
2 schedule. It's called a learning curve to go  
3 through.

4 And once the two were done, we would  
5 start validation. And then only after that  
6 number 3 would start. So which would give enough  
7 time to incorporate all the return of experience of  
8 building two trains before starting Train 3.

9 Because of the early delay, the start  
10 of Vehicle 1 and 2 started much later, so we didn't  
11 have that ability to reinject the return of  
12 experience of building Vehicle 1 and 2 into Vehicle  
13 3. They just went in series right away.

14 So what we did to facilitate the  
15 ramp-up in Ottawa is that we decided to do an early  
16 relocation to Ottawa and start building train  
17 earlier than initially planned, which required OLRT  
18 to make the building available earlier than  
19 originally planned, required us to install tooling,  
20 duplicate tooling, and do earlier to recover the  
21 early delays.

22 FRASER HARLAND: Okay. And so I guess,  
23 I mean, it would be fair to say that this schedule  
24 was compressed and would have removed any what we  
25 could call float in the schedule that there might

1 have been before; is that fair?

2 NADIA ZAARI: I don't recall when I  
3 joined the project to say, "Hey, there is float in  
4 the schedule."

5 FRASER HARLAND: Okay.

6 NADIA ZAARI: I recall joining the  
7 project, looking at the schedule, and saying,  
8 "Okay, it's a good schedule." But nothing out of  
9 the ordinary.

10 But then the early delay in the early  
11 phase of the project created a negative float.

12 FRASER HARLAND: Understood. And so, I  
13 mean, realistically, did Alstom think that the RSA  
14 date was achievable at this time?

15 NADIA ZAARI: At the time of  
16 subcontract signature?

17 FRASER HARLAND: No, sorry, at the time  
18 of the V5 schedule.

19 NADIA ZAARI: It presented a lot of  
20 risks that we shared with OLRT, and there was a  
21 common agreement that we're going to make it happen  
22 together as long as every party do their own part.

23 We have our part to build the vehicle,  
24 you have your part to make the MSF available, the  
25 test track. You have your part to make CBTC

1 equipment available. So each party had their own  
2 part to do to make the schedule a success.

3 FRASER HARLAND: Okay. And just to  
4 close out on the V5, who was your primary  
5 counterpart in contract negotiation on the OLRT  
6 side in the negotiation? Do you recall?

7 NADIA ZAARI: I have -- I draw a blank.  
8 I might need some help.

9 FRASER HARLAND: If I say Alex Turner,  
10 is that --

11 NADIA ZAARI: Yes, him. Correct.  
12 Sorry. I drew a blank.

13 FRASER HARLAND: That's fine. Did you  
14 have any interaction with Dr. Sharon Oakley (ph)  
15 when you were negotiating the schedule, do you  
16 recall, or it was all with Alex Turner?

17 NADIA ZAARI: No, I think she -- she  
18 came in after I left.

19 FRASER HARLAND: Okay.

20 CHRISTINE MAINVILLE: Could I just jump  
21 in, Fraser?

22 You indicated, Ms. Zaari, that the  
23 assembly of LRV3 and the rest of the fleet began  
24 earlier than was initially scheduled. Did I  
25 understand you correctly on that?

1                   NADIA ZAARI: So the LRV build in  
2 Ottawa started earlier than initially scheduled.

3                   CHRISTINE MAINVILLE: And why would  
4 that be? If there's been delay, how could it start  
5 earlier?

6                   NADIA ZAARI: Because LRV2 was supposed  
7 to start in Hornell, so what we said is instead of  
8 starting it in Hornell, start it in Ottawa. That  
9 way we do the learning curve in Ottawa earlier. We  
10 don't wait until LRV3.

11                   So the fact that it changed location of  
12 manufacturing site made it an earlier start in  
13 Ottawa.

14                   CHRISTINE MAINVILLE: I see. So it's  
15 just that assembly started earlier in Ottawa than  
16 planned, at least when the plan was to build the  
17 two first LRVs in Hornell. But it's not the case  
18 that LRV3 started to get built earlier?

19                   NADIA ZAARI: Correct.

20                   CHRISTINE MAINVILLE: It's just that --  
21 okay. So it's just because LRV2 was instead built  
22 in Ottawa that production model began earlier?

23                   NADIA ZAARI: That is correct. So the  
24 first LRV that we started building in Ottawa was 2  
25 instead of 3, and that made it earlier because of

1 that.

2 CHRISTINE MAINVILLE: Right. Okay. I  
3 think this is where my colleague is going, so I'll  
4 let him take over, but can you speak, then, to when  
5 that decision is made, to start earlier in Ottawa,  
6 what the state of the MSF is and whether there were  
7 delays at that point in the availability of the MSF  
8 for that production.

9 NADIA ZAARI: Yes. So in order to  
10 start building an LRV in Ottawa, there needed to be  
11 some pre-activity done.

12 One of them was the building needed to  
13 be hand over to us by a certain date so we can go  
14 and install our tooling, our office space, and  
15 settle before we can put manpower to assemble a  
16 vehicle. There was a date by which this was going  
17 to be done.

18 Initially, we were going to transfer  
19 all of our tooling from Hornell up into this new  
20 manufacturing site to install. But because we were  
21 doing the build in parallel, we did launch the  
22 duplication of tooling, and so we spent extra  
23 effort to build those sets of tooling and install  
24 it in Ottawa.

25 When we were handed over the MSF, it

1 was not in the shape that we expected. It was not  
2 in a shape that is suitable for vehicle assembly.  
3 It was still very much a construction site and made  
4 our start-up very difficult.

5 FRASER HARLAND: And you had  
6 mentioned -- so OLRTC agreed in the V5 schedule to  
7 move up the timeline that they would have the MSF  
8 ready for you? Is that what you had said?

9 NADIA ZAARI: Correct.

10 FRASER HARLAND: Okay. And you're  
11 saying that wasn't -- that didn't ultimately  
12 happen? Is that --

13 NADIA ZAARI: So I think devil is in  
14 the detail in what readiness means. Readiness for  
15 a construction company probably means I have walls,  
16 a roof, and a door, and a lock.

17 Readiness for us to assemble had a lot  
18 more than that. We had some requirement listed in  
19 the subcontract of what needed to be available.  
20 And obviously we cannot assemble a vehicle in the  
21 construction area.

22 And then we had other expectation that  
23 our team would not be wearing hard hat on our  
24 premises because it was an area fenced for Alstom  
25 to assemble the vehicle.

1                   And there were just all those little  
2 details that add up that made it more a  
3 construction site than actually vehicle assembly.  
4 It was called the, I remember, FVA, final vehicle  
5 assembly area.

6                   FRASER HARLAND: So do you recall when  
7 under the V5 it was supposed to be ready for Alstom  
8 to begin?

9                   NADIA ZAARI: I'm not 100 percent sure.  
10 I'm doing from memory, but I think it was July  
11 2015. I would need somebody to check.

12                  FRASER HARLAND: Okay. That's fine.  
13 What was the delay? When was it actually in the  
14 shape that you would have expected to do the train  
15 builds?

16                  NADIA ZAARI: I think in our V5, we  
17 recognized that the train -- the area was not  
18 really in a shape before, I think, October of 2015,  
19 so probably four months later, around that amount  
20 of month. I'm doing that by memory of course.

21                  FRASER HARLAND: So what were the  
22 implications for Alstom of this unexpected delay in  
23 the MSF?

24                  NADIA ZAARI: So the ramp-up was very  
25 slow. The -- what we call the takt time at which

1 we move the parts of the vehicle into the next  
2 station was slower.

3 We had challenges with, you know,  
4 storing the parts. Our warehouse was not really  
5 suited. We were accumulating a lot of dust from  
6 the construction. And so we spent a lot of time  
7 making sure the dust doesn't get in the way for  
8 assembling the vehicle.

9 We were having just basic logistic  
10 things where we had an area that was not secured.  
11 We had people walking by the street and coming,  
12 peeking in. And we're like, we can't have that  
13 happen if there's an accident.

14 So we had a lot of little details that  
15 we recorded along the line to have it fixed. We  
16 didn't have some of the area available until  
17 several months later. There was testing area.  
18 There was a water station area. There was a  
19 storage area.

20 So instead of getting all the area at  
21 once, we got it piecemeal.

22 FRASER HARLAND: And were you aware  
23 that the MSF was delayed, or did this come as a  
24 surprise? How did that --

25 NADIA ZAARI: So it came as a surprise



1 and not because we were having a team coming visit  
2 Ottawa and seeing the progress on a regular basis,  
3 where is it at.

4 Now, given it's construction, in the  
5 construction world, sometimes you just put 500  
6 people, and you can go very fast within a week. So  
7 we were surprised at the stage at where it was. I  
8 remember doing a visit in, I think, in May, in the  
9 spring, May or June, and we're like, "Oh, that's  
10 not going to be ready in July." But it's  
11 construction, so sometimes things can go very fast.

12 Where we really had issue and we  
13 realized it was going to be probably longer is we  
14 delivered our duplicated tooling, and the tooling  
15 was stored outside and was not moving in for weeks  
16 to the point that we had to take it back and go and  
17 store it elsewhere until the place was ready to  
18 receive our tooling.

19 FRASER HARLAND: Was there ever any  
20 consideration of continuing construction in Hornell  
21 given that the MSF wasn't ready? Was that a  
22 possibility?

23 NADIA ZAARI: It was way too late in  
24 the process, so we never just -- I mean, I don't  
25 recall entertaining any idea like that.

1 FRASER HARLAND: It was too late just  
2 because too many things had happened in terms of  
3 assuming it was going to be at the MSF? Is that  
4 what you mean?

5 NADIA ZAARI: Correct. And there's a  
6 whole logistic that goes underneath. There's more  
7 than 2,500 parts on a vehicle, separate parts.  
8 There's a lot of logistics in terms of supply  
9 chain, quality inspection.

10 And once we had set up in our system to  
11 reroute the parts in Ottawa, and it was all done,  
12 and our vendors were informed delivery and all  
13 this, it's very difficult to go back.

14 FRASER HARLAND: Okay. And I  
15 understand that in around January 2016, a site  
16 manager was appointed in the MSF. Does that sound  
17 correct to you?

18 NADIA ZAARI: I don't recall the date.  
19 I have a feeling it was earlier, but it's  
20 somewhere. There was a nomination done so --

21 FRASER HARLAND: I mean, the date is  
22 less important than, I guess, the -- what impact  
23 did the site manager have?

24 NADIA ZAARI: So the site manager  
25 started in Hornell for a few months before

1 relocating to Ottawa first because there was  
2 nowhere to sit in MSF because it was still a  
3 construction.

4 And second is because we wanted the  
5 site manager to get acquainted to the team in  
6 Hornell, seeing the design, the first LRV before  
7 relocating to Ottawa. This was all part of the  
8 transfer of technology, and we did that with  
9 multiple people, not only the site manager.

10 It was almost like you get trained in  
11 Hornell, and you get to see how it is done before  
12 moving over there.

13 So I remember him spending a couple of  
14 month in Hornell and then relocating to Ottawa. So  
15 he was hired before by Alstom.

16 FRASER HARLAND: And so if he had been  
17 hired earlier, would that have had an impact, or  
18 was it more just a construction issue with MSF?

19 NADIA ZAARI: So it was hired -- he was  
20 hired earlier. That was plan on ramping up people.  
21 You know, we had plan to ramp up people that were  
22 new, so they needed to get acquainted to the  
23 product, the design, and everything. So it was  
24 nothing special here.

25 There was no desk for him to sit in

1 Ottawa, and, anyway, there was nothing in Ottawa.  
2 So it made just sense for him to spend a couple --  
3 first month. I don't recall it being something odd  
4 or -- it was just the plan.

5 FRASER HARLAND: Can you tell me if  
6 Alstom had any challenges with finding sufficient  
7 personnel to work in the MSF? And I guess both  
8 sufficient in terms of the number of people, but  
9 also in terms of their skill set to do the work at  
10 the MSF.

11 NADIA ZAARI: So I don't recall that.  
12 I was part of the selection committee. Very early  
13 on, we put a request for proposal out on the market  
14 to hire an agency to identify candidate and do the  
15 recruitment for us.

16 I was part of the interview of five  
17 companies. We selected one company. And this  
18 company did pretty well. We had a staff-up plan,  
19 how many people we needed per weeks. We made some  
20 people come earlier. There was a lot of workforce  
21 that came from Canada were getting trained in the  
22 U.S. before going back and starting.

23 So I remember this being pretty smooth  
24 from an organization and finding the people.

25 FRASER HARLAND: Okay. And so you

1 had -- were there -- there were Alstom people  
2 relocated, but then there were also -- there was a  
3 Canadian workforce that was trained? Is that how  
4 it worked?

5 NADIA ZAARI: That is correct. So we  
6 had the staffing plan for MSF. It was a mix of  
7 people coming from Alstom, usually the manager  
8 position that were transferred from our other site  
9 to Canada to supervise. And then there was a mix  
10 of people that were hired by Alstom, become Alstom  
11 Canada employees that we trained by coming and  
12 spending a couple of months or Monday to Friday in  
13 our offices in Hornell. And then there was the  
14 workforce, which was essentially the workforce  
15 assembling the vehicle. They were temps. Some  
16 were employees, some were temps. There was a mix.

17 FRASER HARLAND: Did any temporary  
18 employees cause any challenges as far as you were  
19 concerned with the construction?

20 NADIA ZAARI: When I was there, I had  
21 zero concern. The temps and Alstom employees were  
22 treated the same way. And it's the same agency  
23 that was recruiting for us, so, no, absolutely no  
24 for me.

25 FRASER HARLAND: Just taking a step

1 back, can you tell me how the MSF compares to an  
2 Alstom facility like you would have worked at in  
3 Hornell or perhaps like the one in Valenciennes?  
4 What -- how were they the same? How were they  
5 different?

6 NADIA ZAARI: It's obviously different  
7 because the end purpose is not the same. The MSF  
8 is a maintenance and storage facility. The  
9 facility where we assemble our vehicles are  
10 factories. So the end use is very different.

11 However, the layout was built in a way  
12 to make it as efficient as possible for building  
13 assembly vehicle. So there was an area that was  
14 built only for the vehicle assembly. It was called  
15 the FVA. There was an area that was designed only  
16 for testing the vehicle, which is also what we have  
17 compared to our factory. We have different areas.  
18 And then there was an area that was a storage,  
19 which was an outdoor place.

20 So it had some similarity in certain  
21 way. It had some constraint also because it's a  
22 tight place in our factory. We have a lot more  
23 place. We have that luxury. So it required a lot  
24 of train moves to be able to utilize the space to  
25 the best possible.

1 FRASER HARLAND: So the issue at the  
2 MSF, would you say it was -- there was a challenge  
3 in terms of the design or just a challenge in terms  
4 of construction timing, or did both cause issues  
5 for --

6 NADIA ZAARI: So definitely the  
7 construction ongoing in parallel with the vehicle  
8 assembly created challenge. We don't have  
9 construction activities when we are building in our  
10 factory. So that created an additional constraint.

11 The other constraint, which we don't  
12 always have because our factory is usually of large  
13 size, is the train moves between the various  
14 position. Going from one position to a test  
15 position to a storage created additional  
16 difficulties.

17 So when I left the project, there was  
18 not too many train move because we had just  
19 finished two trains. But we could see already with  
20 two trains, oh, there's a lot of logistics involved  
21 and a lot of lost time for moving the trains. Now,  
22 I left after. I assume when you get 34 train, it  
23 becomes more complex.

24 FRASER HARLAND: Right. I want to come  
25 back to validation testing. To start, can you just

1 in your words explain what validation testing is?

2 NADIA ZAARI: So validation testing is  
3 what we do usually on the first one, two, three  
4 vehicle. We pick a number, small number, to  
5 validate that the vehicle performs in real life as  
6 designed per the requirement.

7 During that phase, we usually validate  
8 to find issues in the design and correct the  
9 design. And once this is done, then we start  
10 serial production.

11 FRASER HARLAND: Okay. Is it sometimes  
12 called type testing just so I --

13 NADIA ZAARI: Yes. Yes, I've seen it  
14 called type testing.

15 FRASER HARLAND: Okay. But, in  
16 general, the idea is that it would happen before  
17 other production and before other testing; is that  
18 right?

19 NADIA ZAARI: So it doesn't have to be  
20 fully completed before the serial test. I've seen  
21 different. Ideally, yes, but at least there needs  
22 to be some level of validation to be done before we  
23 start the serial test.

24 Some level, the most critical, the one  
25 that are most at risk of a design change, and we



1 test to find issue, not to find out that everything  
2 works per design. So there are some overlap. And  
3 this subcontract was built with some overlap, but  
4 not 100 percent overlap.

5 FRASER HARLAND: Okay. And you spoke  
6 to this already a little bit, but the early  
7 validation testing, did that happen in the Ottawa  
8 project?

9 NADIA ZAARI: So I left in September  
10 2016. This is right when the validation was  
11 supposed to start. And I know at that time, I  
12 think we had already started five or six vehicle.

13 FRASER HARLAND: Okay. And the  
14 original plan, though, would have been that some  
15 would have been validation testing had happened  
16 much earlier than that; is that fair?

17 NADIA ZAARI: That is correct.

18 FRASER HARLAND: Okay. And the delays,  
19 I know you've spoken to this, but the delays in  
20 validation testing, what were those just so we have  
21 that for --

22 NADIA ZAARI: So I don't know on the  
23 delay on validation testing because I was not  
24 there.

25 FRASER HARLAND: Right.

1                   NADIA ZAARI: It was starting -- for  
2 V5, it was starting right at the time when I left,  
3 September 2016. That's when the test track was  
4 supposed to be available.

5                   FRASER HARLAND: But, sorry, I guess to  
6 say -- I mean, can you just tell us -- and I know  
7 you've said some of this already, but tell us again  
8 why it is that validation didn't happen as early as  
9 it had originally been planned.

10                  NADIA ZAARI: So the validation of the  
11 train required two things, and I'm going to very  
12 simplify this is, first, you have at least one  
13 train completed, and, second, to have a test track  
14 available. Those were the two preconditions. I  
15 simplify -- oversimplify.

16                  So Train 1 was, of course, shifted to  
17 the right and became available at a certain date.  
18 I can't remember from the top of my head. I would  
19 say summer 2016. And test track was available only  
20 starting September 2016. I'm pretty much sure of  
21 this date. Yes.

22                  FRASER HARLAND: And ideally will  
23 validation testing on a prototype include at least  
24 some integration testing?

25                  NADIA ZAARI: Are you talking

1 integration testing of the vehicle or the system?

2 FRASER HARLAND: Well, would it involve  
3 any testing between the signalling system and the  
4 train, I guess?

5 NADIA ZAARI: So the way our validation  
6 was built is we would validate our train first. So  
7 our scope of work, once our train was validated,  
8 then OLRTC would bring in the CBTC supplier and do  
9 the vehicle system integration testing, which was  
10 out of Alstom's scope.

11 FRASER HARLAND: Right. But if  
12 Alstom's validation testing is delayed, then it  
13 would also delay the testing of the CBTC system as  
14 well; is that right?

15 NADIA ZAARI: Most likely unless they  
16 came up with creative way to do things in parallel.

17 FRASER HARLAND: Do you know if Thales,  
18 the CBTC provider, was aware -- was consulted about  
19 the relocation decision that happened? Do you have  
20 any awareness of that?

21 NADIA ZAARI: No, I don't know. They  
22 must have been. I don't see how OLRT wouldn't have  
23 had a discussion with them. I just don't recall a  
24 meeting with Thales and myself and discussing this  
25 topic with OLRT.

1 FRASER HARLAND: But it's fair to say  
2 that, you know, late validation testing is going to  
3 have an impact on their schedule and their testing;  
4 is that --

5 NADIA ZAARI: So, yes, and the reason  
6 why I know is because while we were completing the  
7 Vehicle 1 assembly, Thales was still doing design  
8 change into their own equipment, if that makes  
9 sense what I'm saying. It's before we do vehicle  
10 system integration testing, they have to validate  
11 their own system. And they were still doing design  
12 change to their system.

13 FRASER HARLAND: Okay.

14 MICHAEL VALO: I'm sorry to interrupt.  
15 I just want to make sure for the sake of the  
16 transcript that we're all aligned on what we're  
17 talking about here.

18 The signalling system comprises two  
19 components: One is on the train, and one is what  
20 they call wayside, not on the train. And in order  
21 to test the system, both have to be installed,  
22 right?

23 So there is a second and parallel path  
24 on the signalling side that would have to have been  
25 completed if you were going to test that system

1 whether or not there was equipment on the train.  
2 And that's the only piece I wanted to clarify  
3 because it goes to your question about whether or  
4 not vehicles impact signalling integration testing.

5 FRASER HARLAND: Okay. Well, I guess,  
6 maybe I'll -- just to make sure we are all  
7 understanding this, I mean, in the original plan,  
8 it's my understanding that Thales would have been  
9 involved in some testing either in Valenciennes or  
10 in Hornell. Does that make sense?

11 NADIA ZAARI: There was no scope of  
12 work for Alstom to support any activity in  
13 Valenciennes or Hornell with Thales.

14 FRASER HARLAND: Okay. But could OLRTC  
15 have, you know, taken Thales or contract with  
16 Thales for them to do some testing in one of those  
17 locations?

18 NADIA ZAARI: So the one time I  
19 remember is OLRTC approached us and say, "Can you  
20 quote for us time and effort to support Thales to  
21 do testing in Pueblo, Colorado?" Of course we  
22 never ended up quoting because in the meantime,  
23 there was a change of direction. But there was the  
24 scope of work to support was never in the original  
25 scope of work of the contract.

1 FRASER HARLAND: Okay. Understood.

2 CHRISTINE MAINVILLE: Can I just ask,  
3 then, in light of what Mr. Valo indicated, how can  
4 Thales perform its testing in Colorado if it  
5 doesn't have the wayside piece of the signalling  
6 system?

7 NADIA ZAARI: So Colorado is a testing  
8 facility when they test signalling system. They  
9 welcome signalling supplier to equip part of their  
10 test track temporarily with signalling system until  
11 the tests are done, and you take it off. They also  
12 have some permanent installation. So Thales would  
13 have had to work that out with them.

14 CHRISTINE MAINVILLE: Okay. And do you  
15 know whether once the plan changed to Ottawa  
16 whether Thales was going to do part of its own --  
17 I'm going to call it validation testing, but tell  
18 me if that's not the right term, on the test track  
19 or whether it was to be on the main line?

20 NADIA ZAARI: So when I was a PM, so up  
21 until September 2016, 100 percent of the  
22 conversation that we were having with Thales are  
23 about the design change at the vehicle level.  
24 Because there was so many design change, interface  
25 change that were causing what we call FMI, field

1 modification instruction, on the vehicle when we  
2 already had five vehicle assembled, then add a  
3 cable, change a cable, get me the onboard computer,  
4 that I recall the sole focus we were having at our  
5 level is to fix already what's on the train because  
6 what was delivered was not the final product.

7 I don't recall any discussion on the  
8 CBTC testing after on the test track. It might  
9 have happened after my time.

10 FRASER HARLAND: Maybe since you've  
11 raised this a few times, we can move to discussing  
12 the interface with Thales in a little bit more  
13 detail.

14 To start, I understand that Alstom  
15 didn't have a contractual relationship with Thales;  
16 is that right?

17 NADIA ZAARI: That is correct.

18 FRASER HARLAND: Was there any  
19 Memorandum of Understanding or other agreement  
20 between Alstom and Thales to your knowledge?

21 NADIA ZAARI: The only thing resides in  
22 the subcontract agreement. There was an appendix  
23 with an interface and who is doing what.

24 FRASER HARLAND: Okay. But that was in  
25 the contract with OLRTC?

1 NADIA ZAARI: That is correct.

2 FRASER HARLAND: And Thales had its own  
3 subcontract with OLRTC?

4 NADIA ZAARI: I never had access to  
5 that.

6 FRASER HARLAND: Okay. Do you know  
7 what previous experience Alstom had working with  
8 Thales systems?

9 NADIA ZAARI: So I personally didn't  
10 have any working with Thales. Thales is a  
11 signalling supplier. Alstom supplies also  
12 signalling equipment. So there must have been  
13 other interface there outside of the specifics of  
14 Ottawa, but me, no. Personally, no.

15 FRASER HARLAND: You don't know if this  
16 was the first time that an Alstom train worked with  
17 a Thales signalling system or if it had happened in  
18 the past?

19 NADIA ZAARI: Yeah, I personally don't  
20 know. It might be yes or no. I don't know.

21 FRASER HARLAND: Okay. And who was  
22 responsible for systems integration on the project  
23 to your knowledge?

24 NADIA ZAARI: To my knowledge, it was  
25 OLRT.



1 FRASER HARLAND: Okay. And do you know  
2 if they had a systems integrator in place?

3 NADIA ZAARI: Along the course of the  
4 project, they increased the size of their team by  
5 adding some people. So for me, yes. Was that  
6 sufficient or not? I wouldn't be able to say, but  
7 they increased their staffing.

8 FRASER HARLAND: So, to your knowledge,  
9 it was OLRTC was responsible. Did they subcontract  
10 the role to anyone, to SEMP, perhaps, S-E-M-P? Do  
11 you know anything about that?

12 NADIA ZAARI: I never heard about this  
13 company.

14 FRASER HARLAND: Okay. So what would  
15 you say OLRTC's approach to systems integration was  
16 particularly between Alstom and Thales?

17 NADIA ZAARI: The Alstom engineering  
18 team felt very often that OLRTC was pushing that  
19 system integration to Alstom. And pushing us to  
20 take the lead including answering direct to Thales,  
21 answering question, having meetings. And very  
22 early on, we put a stop to it because we didn't  
23 know -- we had no contractual relationship with  
24 Thales.

25 And that's where, I think, OLRTC

1 realized, and they staffed up their team. They  
2 even hired one dedicated person in their group who  
3 was managing the Thales interface and leading all  
4 the effort between Thales and Alstom.

5 FRASER HARLAND: Do you recall who that  
6 was?

7 NADIA ZAARI: Andrew something, which I  
8 understood stayed on the project and after went on  
9 to work for the City. And I would have to dig in  
10 my archives to find his last name.

11 FRASER HARLAND: In an ideal world,  
12 what should a systems integrator be doing on a  
13 project like this? What does it look like?

14 NADIA ZAARI: So I'm no expert in  
15 vehicle system integration, but from day one,  
16 considering the requirement in the subcontract that  
17 the document that OLRTC was to provide us, they  
18 should have had one person on staff probably before  
19 signing a contract with Thales before, making sure  
20 those documents were existing and everything in  
21 order to provide them to us on time.

22 We had the general feeling that  
23 Thales's contractual agreement with OLRT came much  
24 later and was not necessarily aligned with the  
25 requirement we had in our subcontract.

1 FRASER HARLAND: Okay. So let's talk  
2 about that. What was in Alstom's contract? What  
3 was Alstom's expectation in terms of what documents  
4 it would receive and when?

5 NADIA ZAARI: So from my memory, in the  
6 subcontract, there was a list of documents that  
7 were supposed to be frozen. I remember a document  
8 called the ICD which defined the interface between  
9 Thales's equipment and the train and number of  
10 cables coming in and out.

11 There was also requirement to have  
12 equipment delivered by a certain date so we can do  
13 the vehicle integration, mechanical integration,  
14 all this to build, design the vehicle to make sure  
15 we can integrate the Thales equipment. And that  
16 came very late in the process.

17 FRASER HARLAND: And according to the  
18 subcontract, were those supposed to be finalized or  
19 frozen designs? Is that --

20 NADIA ZAARI: That is correct.

21 FRASER HARLAND: And so what -- you  
22 said they came very late, so can you say more about  
23 that?

24 NADIA ZAARI: So through the various  
25 meeting that occurred between our engineering team

1 and the OLRT and Thales team, it came obvious to  
2 the engineering team that Thales was designing --  
3 was still designing their own system. It was not  
4 an off-the-shelf product, and so they were still  
5 designing and finalizing. And so the dates were  
6 never going to align.

7 So we had to make assumption to move  
8 forward and not to block the whole process while  
9 they were progressing so that we could align at a  
10 certain time.

11 FRASER HARLAND: So, in your opinion,  
12 was it a reasonable expectation that Thales would  
13 have a frozen interface to provide at the beginning  
14 of the contract?

15 NADIA ZAARI: I don't see why not.

16 FRASER HARLAND: Like, did they have  
17 the information that they needed from Alstom in  
18 order for that to happen?

19 NADIA ZAARI: So I don't know what  
20 happened in the pre-bid phase and what was given or  
21 not given, so I wouldn't be able to tell what they  
22 had. I would assume that this was done in the  
23 procurement phase, selecting the supplier and  
24 knowing. And everybody did a bid phase, so that  
25 information was available. But, again, I joined in

1 in December 2013, so I wouldn't be able to know.

2 FRASER HARLAND: Okay. So there's no  
3 requirement, then, for some sort of back and forth  
4 of specifications and documents between the train  
5 manufacturer and the signalling supplier  
6 necessarily?

7 NADIA ZAARI: It was not laid out like  
8 that in the subcontract. It ended up happening  
9 like that. I think the biggest issue is this  
10 back-and-forth lasted way too long.

11 FRASER HARLAND: What did this  
12 back-and-forth look like? How did that happen?

13 NADIA ZAARI: It was back and forth of  
14 documents and revision of document involving an  
15 interface. That's how it was materialized. It was  
16 3D files of equipment changing when we were well  
17 advanced in the design of the vehicle. Size of  
18 equipment to integrate, those kind of things that  
19 lasted way too long.

20 FRASER HARLAND: And OLRTC organized  
21 numerous interface meetings between Alstom and  
22 Thales; is that right?

23 NADIA ZAARI: There was a certain  
24 number of meeting, yes, organized by OLRTC.

25 FRASER HARLAND: Would you have

1 attended those meetings or --

2 NADIA ZAARI: I think I attended a  
3 couple. Most of the time, it was the engineering  
4 group. We had our contract management team  
5 attending most of them.

6 FRASER HARLAND: Do you recall Alstom  
7 expressing a concern at those meetings with not  
8 having a finalized CBTC specification?

9 NADIA ZAARI: Yes. There's multiple  
10 correspondence exchanged, notice of delay, minutes  
11 of -- every meeting was documented with minutes of  
12 meeting actions, and everything was well  
13 documented.

14 FRASER HARLAND: And what came out of  
15 those meetings? Were there agreements made between  
16 the parties that would then be implemented? Or how  
17 did Alstom use the information that came out of the  
18 meetings?

19 NADIA ZAARI: So most of the meeting  
20 that I recall were meeting where there were a set  
21 of action. Alstom, please provide this, or,  
22 Thales, please provide this, or OLRTC need that.  
23 It was a set of action to converge on the design.

24 FRASER HARLAND: Because I understand  
25 that at a certain point, Alstom decided to move

1 forward based on I think it was Version 2 of the  
2 ICD even though there had been discussion in the  
3 meetings about specifications that were being  
4 developed beyond that. Is that something -- does  
5 that ring a bell for you?

6 NADIA ZAARI: Yes, there was a point --  
7 and I don't know if it was Version 2, but there was  
8 a point where we said we cannot wait any longer.  
9 We are going to impact the rest. We've already  
10 been impact with the early design and style  
11 decision, so we're going to draw a line in the sand  
12 at a version, and whatever you're going to come  
13 after is going to be, you know, quoted effort,  
14 time, and we'll see what it comes to.

15 If it's something we can accommodate  
16 and without impact, we'll do it. If not, we'll  
17 have to discuss. And it was -- it was clearly  
18 expressed to OLRT, and OLRT agreed with proceeding  
19 like that.

20 FRASER HARLAND: So then I believe you  
21 submitted on behalf of Alstom a variation request  
22 in January 2016 after receiving Thales -- I think  
23 it was the Revision 3; is that correct?

24 NADIA ZAARI: Yeah, I recall there was  
25 a change order request submitted.

1 FRASER HARLAND: And what was the  
2 response from OLRTC?

3 NADIA ZAARI: Probably responded with a  
4 letter with, "No, we don't want to pay" and the  
5 usual.

6 FRASER HARLAND: So is it fair to say  
7 that OLRTC was expecting Alstom to continue moving  
8 forward based on the product of these meetings, but  
9 Alstom was saying, "We're just going to move  
10 forward based on the finalized document that we  
11 have"? Like, what was the disagreement?

12 NADIA ZAARI: The disagreement was  
13 mostly on the financial. OLRT did not have a good  
14 understanding of what engineering effort it was  
15 causing at this stage of the project. They were  
16 minimizing the consequences of a V3 because of not  
17 understanding of what it takes to design, build in  
18 a vehicle and all the processes underneath. And  
19 adding a cable looks simple, but there's a lot of  
20 things that go behind adding a cable when you're so  
21 advanced in the design and the production.

22 We had already -- when V3 came in, I  
23 think we already had three trains started  
24 production. So that would mean retrofitting the  
25 trains, doing the design modification, cutting it



1 in. It was just another churn that was not needed.

2 FRASER HARLAND: Was there ever any  
3 information coming from Alstom that would have been  
4 new to Thales and required Thales to make  
5 specifications? Do you have a recollection of  
6 that?

7 NADIA ZAARI: I don't. The only thing  
8 I recall is when that new version came in, the  
9 engineer came and were almost discouraged and said,  
10 "I can't believe we're getting a new version now."

11 And I asked back then, it's like, did  
12 we ask for something? No, it just came out. And  
13 the whole exercise after this new release was done  
14 is to minimize the amount of change between this  
15 version and the previous version. And we had to  
16 explain why it was not so minimum.

17 CHRISTINE MAINVILLE: Can I ask you,  
18 given that there were these workshops or  
19 face-to-face meetings between Thales and Alstom,  
20 why is it that there was this level of  
21 misunderstanding in terms of what was coming next?  
22 And I ask in part because you indicated that Alstom  
23 conveyed to OLRTC that it would proceed based on a  
24 version of the ICD that it had, that it had to draw  
25 a line in the sand. Would that not have been

1 conveyed to Thales directly given that there were  
2 meetings with Thales, and if not, why?

3 NADIA ZAARI: So I think drawing a line  
4 in the sand did not preclude from getting next  
5 version. I think just the content of the following  
6 version was much bigger than what had been  
7 discussed.

8 And, again, it's about expectation of  
9 the content of the change. For sure there was  
10 ideas from all parties that there's going to be a  
11 change. That the change came that late with that  
12 amount of change was probably the thing that was a  
13 surprise to the engineers. And, of course, it  
14 depends how you see the change. When -- on our  
15 side, we were seeing significant change. On the  
16 other side, they were seeing, oh, it's simple.

17 FRASER HARLAND: So you've discussed  
18 the schedule, but another issue, as I understand  
19 it, between Alstom and Thales was what was actually  
20 produced and the VOBC system. So can you tell us  
21 what Alstom's expectations about the VOBC system  
22 would have been?

23 NADIA ZAARI: So the VOBC stands for  
24 the vehicle on board computer. It's basically the  
25 brain of the CBTC system. And it's connected to

1 what we call peripherals, an antenna, a screen. I  
2 make it simple here. So a couple of peripheral  
3 around, a speed sensor for the wheels.

4 Very early on in the project, based on  
5 the subcontract that says VOBC, Delivery 1, we had  
6 issued to OLRT our expectation when those parts  
7 were going to be delivered because not all those  
8 parts are mounted at the same stage of the vehicle.  
9 The VOBC needs to be mounted very early on because  
10 it's near the driver cabin. So if all the doors  
11 are placed, we cannot get in with the VOBC. So it  
12 has to come.

13 A speed sensor, well, an antenna, we  
14 can put it on at the end. So we had specific  
15 location, and we have issued to OLRTC what we call  
16 the zero dollar purchase order, which is basically  
17 phasing out all the deliveries that we were  
18 expecting from OLRTC to come to our factory with a  
19 purchase order for receiving the parts for Train 1  
20 in Hornell and Train 32 to 34 in Ottawa.

21 Well, first, OLRTC, I think, just in  
22 the change of plans send the parts for the first  
23 two train in Hornell. So we had to reroute parts.  
24 And after the first two trains' parts were  
25 delivered, OLRTC approached us and say, "Oh, and by

1 the way, for the next delivery, the VOBC is going  
2 to come in bits and pieces, and you will have to  
3 assemble the bits and pieces."

4 FRASER HARLAND: So just to -- I want  
5 to hear more about that, but just to go back a  
6 second, did the VOBC for LRV1 and 2 not come in  
7 bits and pieces?

8 NADIA ZAARI: Did not.

9 FRASER HARLAND: Okay. So it was  
10 assembled as what we could call a plug and play  
11 system for the first two?

12 NADIA ZAARI: That's correct.

13 FRASER HARLAND: But following that,  
14 for LRVs 3 and following, you got what you're  
15 calling bits and pieces?

16 NADIA ZAARI: So we didn't get. We got  
17 a request or an information, "By the way, for the  
18 subsequent deliveries, you're going to get the VOBC  
19 in pieces, and you will have to assemble."

20 We went back to OLRT and asked why that  
21 was. OLRT explained to us that it was not in the  
22 scope of Thales to assemble it. Therefore, it was  
23 in our scope.

24 We pulled the contract, and we said,  
25 "It is not in our scope. It's a miss. You're the

1 system. You have to find a way."

2 And, by the way, VOBC is a safety  
3 system. We will not take liability for assembling  
4 bits and pieces of an onboard computer. So find a  
5 way, either you subcontract or Thales, but we need  
6 one full box, which they quickly understood. And  
7 it didn't last long. A few weeks, they realized  
8 that was the right way to do it. And so the  
9 subsequent delivery were delivered, like, Vehicle 1  
10 and 2.

11 FRASER HARLAND: Okay. So you did  
12 eventually get plug and play systems as -- is  
13 that -- to install?

14 NADIA ZAARI: Correct.

15 FRASER HARLAND: Okay.

16 NADIA ZAARI: At least for 3, 4, and 5,  
17 which I witnessed. After, I don't know.

18 FRASER HARLAND: Right.

19 NADIA ZAARI: I would assume they did  
20 the same.

21 FRASER HARLAND: And were you there for  
22 the project for any of the PICO testing that would  
23 have needed to be done on the LRVs related to the  
24 VOBC?

25 NADIA ZAARI: No.

1 FRASER HARLAND: Okay. Could some of  
2 these issues both related to the schedule and  
3 related to, you know, the parts actually provided  
4 been avoided if there had been a systems integrator  
5 in place from the start of the project do you  
6 think?

7 NADIA ZAARI: It would have definitely  
8 helped with that. There was another subsystem  
9 which we haven't talked about, but it's the same  
10 story. That was the radio system that was supposed  
11 to be made available to Alstom per a certain date.  
12 OLRT was not able to provide it. They made it very  
13 clear that the City was still procuring the items,  
14 and they had no control over it.

15 So, again, same methodology. We say,  
16 "Well, we will assume this volume and this for the  
17 radio, and when the system -- the radio system is  
18 defined, you tell us, and we'll analyze the impact  
19 and everything."

20 FRASER HARLAND: Eventually, I  
21 understand, that OLRTC put an individual named  
22 Jacques Bergeron in place to help. Was he in his  
23 role while you were still on the project?

24 NADIA ZAARI: Yes, he was.

25 FRASER HARLAND: Did he coming --

1 becoming involved make a difference as far as the  
2 interface went in your opinion?

3 NADIA ZAARI: To my opinion, he's the  
4 only reason why we made progress. He was a key  
5 person, key interface to the City, key interface to  
6 us. And without him, I don't think we would have  
7 gone that far.

8 FRASER HARLAND: Okay. And so if  
9 someone like him had been involved from the very  
10 start of the subcontract, what would the  
11 implications of that have been?

12 NADIA ZAARI: And this is what the team  
13 told me every time, "Well, we wish we had Jacques  
14 from day one. We wish we had Jacques from day  
15 one." It would have definitely maybe helped  
16 accelerate the design freeze, the design style  
17 early on because obviously I attended a couple of  
18 meetings when he was there and pushing for  
19 decision. Decision on, yes, I accept this design.  
20 This is what I want. All those decisions were  
21 taking a lot of time to freeze the design. And he  
22 was instrumental on pushing people, the various  
23 stakeholder, to get the design frozen and moving  
24 on.

25 FRASER HARLAND: Was there any risk

1 that the core systems integration that happened  
2 would create performance or reliability issues with  
3 the trains?

4 NADIA ZAARI: I don't recall us  
5 discussing that back then. The biggest risk we saw  
6 was the schedule back then. This was our main  
7 focus, the integration. The design freeze  
8 interface was taking way longer than initially  
9 planned.

10 FRASER HARLAND: Okay. I still have a  
11 number of questions, but, Madam Reporter, I'm going  
12 to suggest that -- well, if we can go off the  
13 record.

14 -- OFF THE RECORD DISCUSSION --

15 -- RECESSED AT 2:21 P.M. --

16 -- RESUMED AT 2:35 P.M. --

17 FRASER HARLAND: Ms. Zaari, I just have  
18 a couple last questions on the interfacing with  
19 Thales topic. I just wanted to make sure as  
20 project manager, were you aware of the content of  
21 OLRTC subcontract with Thales?

22 NADIA ZAARI: No, I was not.

23 FRASER HARLAND: And in your  
24 experience, is that normal for subcontractors to  
25 have no knowledge, or what does that usually look



1 like?

2 NADIA ZAARI: I was not surprised. It  
3 probably had some commercial information, and as  
4 Alstom is also provide signalling system, it would  
5 make sense that we're not getting privy to that.

6 FRASER HARLAND: What about for  
7 schedules, though? Does it make sense to you that  
8 the schedules that both parties would be on would  
9 be kept from the other?

10 NADIA ZAARI: At the end, it's the  
11 system integrator to decide. We were submitting  
12 our schedule monthly. How that got distributed to  
13 the CBTC supplier, the other parties in the  
14 consortium was up to OLRT's decision. It was not  
15 ours.

16 FRASER HARLAND: But would it be fair  
17 to say that Alstom would have benefitted from  
18 knowing what Thales's schedule was in terms of its  
19 own schedule planning?

20 NADIA ZAARI: Not so sure because the  
21 schedule from Thales, what OLRT was supposed to  
22 give us from Thales was laid out in the  
23 subcontract, so that's all we cared about --

24 FRASER HARLAND: Right.

25 NADIA ZAARI: -- is when we freeze the

1 interface and when we get the equipment. That's  
2 all we cared. What happened in between doesn't  
3 help us for building vehicle.

4 FRASER HARLAND: Okay. And from an  
5 engineering perspective, what would the best  
6 division of the scope of work have been between  
7 Alstom and Thales? Was that reflected in the  
8 subcontract, or was the division of work not very  
9 effective in your view?

10 NADIA ZAARI: No, it's -- I would say  
11 it's a standard division of work, nothing out of  
12 the ordinary. We, Alstom, sometimes are signalling  
13 supplier to a car builder, and it would be very  
14 similar to that. So it was really nothing out of  
15 the ordinary.

16 FRASER HARLAND: Okay. But the way it  
17 happened was out of the ordinary, but the  
18 subcontract itself wasn't; is that fair to say?

19 NADIA ZAARI: That is correct.

20 FRASER HARLAND: And you've touched on  
21 this, but can you just say again what impact the  
22 interfacing issues had on Alstom's manufacturing  
23 and on Alstom's schedule?

24 NADIA ZAARI: So there was two main  
25 interface that were expected at certain date in the

1 contract. The CBTC interface and the radio  
2 interface. Those interface essentially define how  
3 those equipment are interfacing electrically and  
4 mechanically to the vehicle. So we are talking  
5 about size of the equipment. We're talking about  
6 number of connection, number of cables.

7 By not knowing that at the date, we had  
8 to design without knowing how many cables were  
9 coming into the VOBC. And as soon as we say  
10 cables, we talk about number of brackets, size of  
11 the bracket, cable routing, space on the driver cab  
12 was also a topic with the radio. So it's just  
13 because it connects with everything electrically,  
14 mechanically, it has ramification to the entire  
15 vehicle design.

16 FRASER HARLAND: And was the  
17 interfacing issue resolved by the time you left the  
18 project or what was the status of it when you left  
19 the project?

20 NADIA ZAARI: So when I left the  
21 project, the interface with the CBTC was not  
22 resolved because we were having OLRTC sending  
23 Thales employees come and do modification on the  
24 VOBC right on the production line which caused the  
25 issue because they were not trained for EHS to

1 enter our area. So it was just creating an  
2 additional disruption. So there were still  
3 modification done on the VOBC. The VOBC talks from  
4 a software perspective to what we call the train  
5 control management system. So there was  
6 potentially implication with the software of the  
7 vehicle to be looked at. So I know this was still  
8 ongoing.

9 On the radio, when I left, I know a  
10 couple of weeks before somebody came up and  
11 delivered a box and handed me a box and, "Oh, by  
12 the way, this is the radio that will go in the  
13 vehicle." And it was the first time we were seeing  
14 it, a part, and it was, like, three years into the  
15 project.

16 FRASER HARLAND: Okay. They may be  
17 very different, but you had mentioned that you had  
18 experience on another signalling project, I think,  
19 in France. Is that what you had said at the  
20 outset?

21 NADIA ZAARI: That is correct.

22 FRASER HARLAND: Were there similar  
23 issues experienced in that project, or perhaps they  
24 were too different to compare?

25 NADIA ZAARI: So they were similar

1 project in the sense that it was a brand new line.  
2 We were delivering the vehicle, the infrastructure,  
3 the signalling. Everything was under Alstom.

4 FRASER HARLAND: Okay.

5 NADIA ZAARI: One unity, and Alstom was  
6 the consortium lead. And we were addressing direct  
7 with the city. So it was a different contractual  
8 scheme, but the scope of the project was putting a  
9 brand new line of a light rail vehicle, what I  
10 think was, like, 20 stations, something like that.

11 FRASER HARLAND: But Alstom provided  
12 the signalling in that project you said?

13 NADIA ZAARI: Yes, to a different  
14 technology, not CBTC, but another system.

15 FRASER HARLAND: Okay. And if Alstom  
16 is providing both systems, does that make things,  
17 at least from Alstom's perspective, more manageable  
18 or --

19 NADIA ZAARI: Definitely.

20 FRASER HARLAND: Okay. Can you just  
21 say a little more about that?

22 NADIA ZAARI: Yeah, definitely. So  
23 when it's Alstom providing our own system, we have  
24 already this information upfront. Our vehicle is  
25 very often predispositioned to welcome our own

1 system. So it facilitates the interface. And it  
2 doesn't last that long.

3 There's some tweaks to do at the  
4 beginning very early on because every vehicle,  
5 although they have a common platform, they have  
6 some specific for each customer, but it does  
7 facilitate a lot.

8 FRASER HARLAND: Thanks. I want to  
9 move on to discussing the Canadian content  
10 requirement in the subcontract as well as some of  
11 the suppliers that were used by Alstom.

12 So you're aware of the Canadian content  
13 requirement in the subcontract. Can you just  
14 describe what the requirement was for us?

15 NADIA ZAARI: So from memory, in our  
16 subcontract with OLRT, we had to provide a minimum  
17 of 25 percent content per LRV on this subcontract.

18 FRASER HARLAND: And is that just about  
19 parts, or is it about labour as well? How does  
20 that work?

21 NADIA ZAARI: So it was not specified  
22 how we would do it, but we would definitely do a  
23 mix of parts and labour. Usually parts on a  
24 vehicle account for 60, 70 percent of the cost of  
25 the vehicle and 30 percent comes from the labour.

1 So it would have been a mix.

2 FRASER HARLAND: Okay. And did this  
3 requirement pose challenges generally for Alstom?

4 NADIA ZAARI: So early on where we were  
5 doing our procurement activities, we made sure that  
6 every time we were launching a procurement on the  
7 market that we would get at least one Canadian  
8 supplier, one American supplier, and another  
9 supplier in a more low-cost country. And so we  
10 would make -- we do a business award based on the  
11 best choice economical for Canadian content and for  
12 the project and the quality now we're experiencing,  
13 and there was a process for that. And that's how  
14 we were planning to achieve the 25 percent.

15 FRASER HARLAND: Okay. But in the  
16 Ottawa project, did it involve a lot of new  
17 suppliers for Alstom that it hadn't worked with  
18 before?

19 NADIA ZAARI: I'm not sure what "a lot"  
20 means. It had a certain number of new supplier  
21 that we involved. There were some supplier where  
22 the parts that were procured were high tech, and we  
23 didn't want to take any risk. So we had a risk  
24 assessment every time we were doing a business  
25 award depending on the complexity of the part

1 whether to involve a new supplier or not.

2 FRASER HARLAND: Are you aware of  
3 Alstom wanting to build out its supply chain in  
4 North America not because of the subcontract but  
5 internally to Alstom to have a supply chain built  
6 out in North America that it could use for other  
7 projects?

8 NADIA ZAARI: So the supply chain team  
9 that we were using is a supply chain team we had in  
10 Hornell, procurement team. They were procuring  
11 parts for all our project for North America. So,  
12 yes, it was a global. We didn't have -- I mean,  
13 some people were dedicated to Ottawa, but it was  
14 part of global North American supply chain team.

15 FRASER HARLAND: Okay. Just to talk  
16 about a few specific parts of the train, do you  
17 recall who the bogie supplier was?

18 NADIA ZAARI: Yes, I do.

19 FRASER HARLAND: Who was that?

20 NADIA ZAARI: So the bogies for the  
21 first -- I don't know if it's two, three for the  
22 first couple of vehicles were made in our design  
23 centre excellence in France, a site called  
24 Le Creusot. Bogies are made by Alstom. We don't  
25 buy bogies from a supplier. So we make them. We



1 buy some part, but we assemble. It's a critical  
2 part of the vehicle.

3 And the subsequent one, and I cannot  
4 remember starting which number, I think bogie 10,  
5 was made in our Alstom site in Sorel-Tracy with a  
6 transfer of technology between the two site.

7 FRASER HARLAND: Okay. But would the  
8 Sorel-Tracy supplier have been using new  
9 sub-suppliers, I guess, within North America for  
10 Alstom?

11 NADIA ZAARI: So the idea was we  
12 validate the supplier base by building the first  
13 ones, so let's say the first ten. And we use the  
14 same supplier base for the subsequent one. That  
15 was the target unless a supplier goes bankrupt or  
16 whatever, and we don't have any alternative, or we  
17 need to change. But the idea is to use the same  
18 supplier for the whole chain.

19 I do remember we bought parts for North  
20 America. We ship them to our site in France. The  
21 bogie got assembled. We did a temporary import,  
22 and we shipped back the bogie once assembled and  
23 tested.

24 FRASER HARLAND: And I understand that  
25 Alstom experienced some significant delay in

1 manufacturing due to bogies; is that fair?

2 NADIA ZAARI: That is correct.

3 FRASER HARLAND: Can you tell us more  
4 about that and what the root cause of that delay  
5 may have been?

6 NADIA ZAARI: The root cause was shared  
7 in full transparency with OLRTC. The first main  
8 part of the bogie is what we call the frame and the  
9 bolster of the bogie. Those are made of steel.  
10 They're the critical part.

11 We had selected a supplier in, I  
12 believe, U.S. from memory that have experience in  
13 this type of part as they're casting parts and was  
14 facing a lot of difficulty to produce those parts  
15 because the design was rather complex. And we were  
16 not getting the quality that we wanted. So we were  
17 having a lot of issue producing ten bolster and  
18 only getting one that we would accept from a  
19 quality one. And that created some delays, and  
20 that's the first part we need to build a bogie.

21 FRASER HARLAND: You mentioned the  
22 complexity of the bogie. Was the bogie in Ottawa  
23 more complex than in other Alstom projects?

24 NADIA ZAARI: So I don't know all the  
25 bogies on all Alstom projects that are used. I

1 wouldn't think so. It was definitely complex for  
2 that supplier.

3 FRASER HARLAND: Okay. So the  
4 complexity caused some issues in terms of supply;  
5 is that right?

6 NADIA ZAARI: That is correct.

7 FRASER HARLAND: Did that same  
8 complexity cause any issues in terms of performance  
9 as far as you're aware?

10 NADIA ZAARI: No, because once we  
11 managed to help the supplier build those part, and  
12 we invested in an expert in steel that was -- who  
13 located the supplier to help them get there when it  
14 was ramping up, then we never heard about it. It  
15 was just the ramp-up of the supplier to produce  
16 that part that caused us some issue. I didn't have  
17 when I was there any issue afterwards.

18 FRASER HARLAND: What impacts did this  
19 have on Alstom's manufacturing schedule?

20 NADIA ZAARI: So the first bogie were  
21 manufactured in France, so we had to ship all the  
22 parts in France, which was part of a plan from day  
23 one. There was no change in that.

24 We wanted to have the bogie  
25 manufactured and assembled in that location because

1 of that typical experience and technical complexity  
2 of a bogie. And then they were going to ship back.

3 They were shipped back to Hornell and  
4 Ottawa much later than initially anticipated. So  
5 in order to not impact the rest, what we created is  
6 a -- the dummy bogies. They are bogies that are  
7 just for mechanical fit to put the car on it, but  
8 you cannot use it to roll, but at least allows you  
9 to move the vehicle while the bogies are coming.  
10 So it allows you to mitigate the delay of the  
11 bogie. This is something we do. So we went and  
12 manufactured some dummy bogies. It's like a  
13 replacement wheel from your car that you take in  
14 the back just to get you going for temporary time  
15 until the final wheel comes.

16 FRASER HARLAND: And do you know what  
17 the cause of the delay in those first bogies being  
18 shipped was?

19 NADIA ZAARI: It was the bolster and  
20 the frame originally, which is the first part.

21 FRASER HARLAND: And that was for the  
22 ones being shipped from France, but there was also  
23 delay for the bogies used from LRV3 onwards as  
24 well; right?

25 NADIA ZAARI: So -- and, again, I left

1 in 2016. There was delay, but less of. This time  
2 the delay was linked to the supplier having to  
3 produce and ramp-up in capacity and produce more  
4 bolster per month to sustain the takt time of the  
5 line. But it was not as significant as the first  
6 one.

7 And I think when I left, we had  
8 probably only one or two dummy bogies that we were  
9 using under the vehicle, so a lot less.

10 FRASER HARLAND: And then in terms of  
11 brakes, I understand that the brake supplier was  
12 Wabtec. Does that sound correct to you?

13 NADIA ZAARI: Yes, I think so. Yes.

14 FRASER HARLAND: Do you know if that  
15 was a new supplier for Alstom?

16 NADIA ZAARI: It was not. Wabtec is a  
17 supplier very well-known on the market and used for  
18 various project.

19 FRASER HARLAND: And while you were on  
20 the project, were there any challenges with the  
21 brakes that you recall?

22 NADIA ZAARI: So there -- there was  
23 some challenges in the sense that we do what we  
24 call a first article inspection, which we do with  
25 all our suppliers before they deliver the first

1 part. And I do recall that our quality team would  
2 go and try and do the first article inspection and  
3 would turn out no-go. So they had to go back a  
4 couple of time before we can get a go, which is --  
5 which gives clearance from a quality standpoint  
6 that the brakes are good to ship.

7 FRASER HARLAND: I understand that  
8 eventually there was a major retrofit done to  
9 replace calipers on the trains. Do you have any  
10 awareness of that?

11 NADIA ZAARI: So I think this happened  
12 post after I left.

13 FRASER HARLAND: After you left. Okay.

14 NADIA ZAARI: Yeah.

15 FRASER HARLAND: If it's after you  
16 left, maybe you can't speak to it, but would issues  
17 with a part like a brake like that be something  
18 that would be caught in validation testing?

19 NADIA ZAARI: So I don't know what type  
20 of issue, so it's hard for me to answer as I was  
21 not there.

22 FRASER HARLAND: No, that's fair. I  
23 don't want you to answer if you don't have the  
24 knowledge.

25 Can you recall Alstom experiencing any

1 other significant issues with suppliers while you  
2 were working on the project?

3 NADIA ZAARI: I do recall difficulty  
4 with the roof supplier, which is to the vehicle.  
5 It's like one of the foundation of the vehicle. So  
6 we have the under frame. The under frames were  
7 coming from one of the Alstom site. It's a  
8 critical part, so we decided to put in one of our  
9 Alstom factory.

10 The roof was made of aluminum, was  
11 deemed as more simple and less risky to have it  
12 manufactured by a new supplier, and we decided to  
13 manufacture those in Canada. Our Canadian  
14 supplier, and I don't remember the name, faced  
15 difficulties. They were expert in aluminum welding  
16 no doubt, but they had never manufactured a roof  
17 before of that size and of that type. They  
18 definitely had the experience. They just needed a  
19 little bit more hand-holding.

20 And, again, we dedicated and we hired a  
21 specific expert in aluminum welding to help the  
22 supplier get to the level of the product we were  
23 expecting. And that just created a little bit of  
24 delay on our side too.

25 FRASER HARLAND: Did these delays

1 affect the critical path of the vehicles while you  
2 were on the project?

3 NADIA ZAARI: So not to my recollection  
4 because those delays were caught very early on in  
5 the first LRV. So what we did in the factory in  
6 Hornell is we progressed the frame faster than the  
7 roof. And then when the roof came in, we put more  
8 resource over the weekend to catch up. Ultimately,  
9 the roof and the other frame have to progress at  
10 the same speed of assembly so that they are put on  
11 top of each other and boxed in. So we were able to  
12 mitigate that afterwards on LRV1. And after that,  
13 I never heard back about it.

14 FRASER HARLAND: What about with the  
15 bogies? Was there a critical path delay related to  
16 them?

17 NADIA ZAARI: Not when I was there. It  
18 was just extra pain for finding mitigation action  
19 and those dummy bogies and extra cost in  
20 fabricating those. So it was just extra things to  
21 do to mitigate the delay.

22 FRASER HARLAND: During your time on  
23 the project, were supply issues a main cause of  
24 delay for Alstom would you say?

25 NADIA ZAARI: So typical as any vehicle



1 build, the beginning, what we call the ramp-up, and  
2 we talked about the ramp-up for the factory.  
3 There's also a ramp-up for supplier. So every  
4 single supplier involved to supply parts have to  
5 ramp-up. And so we had put a task force to make  
6 sure all the suppliers were ramping up at the right  
7 speed with the right level of quality. So we had  
8 to create such task force.

9 I would say it's not unusual for  
10 vehicle build project to have that. So we did it.

11 FRASER HARLAND: How would the delay  
12 from supplier issues compare to delay that you  
13 faced from interfacing, for example?

14 NADIA ZAARI: So I think it's different  
15 in the sense that when you have -- so when you  
16 assemble a vehicle, there's some parts that you  
17 need to have to start. Like, if you don't have the  
18 under frame, you're not going to do anything. You  
19 can't move. You're stuck. So there are parts that  
20 are critical to the movement of the line.

21 However, there are parts that it's  
22 better if they're installed at this stage of the  
23 line, but they can be installed later on if we need  
24 to. And I give, I mean, simple example just to  
25 illustrate, you know, if we don't have the decals

1 that they want, well, not a big deal. If we don't  
2 have the seats, not a big deal.

3 So there are -- it depends on the type  
4 of parts. So we were monitoring specifically the  
5 one that were critical to us. And the other one we  
6 would just have mitigation plan.

7 So for me very different from the CBTC  
8 and the radio because this touches the design. And  
9 any design change on the vehicle at this stage go  
10 through a process of analyzing the design, making  
11 drawings updates, releasing the new parts or  
12 modified part in our supply chain, modifying a  
13 part. It's a much longer process. It's difficult  
14 to find ways to go around it and mitigate.

15 FRASER HARLAND: Okay. Do you know if  
16 Alstom had any issues with suppliers after the V5  
17 schedule had been negotiated?

18 NADIA ZAARI: So when I left, there was  
19 still some issue with supplier. Nothing was 100  
20 percent perfect. But I -- no suppliers stand in my  
21 head right now. It's just so long. It's six years  
22 ago. But definitely nothing was 100 percent  
23 perfect. It was the typical bumps. So we were --  
24 I left we were at Vehicle 5. I know because we had  
25 a little party for celebrating start of Vehicle 5.

1 FRASER HARLAND: Okay. And while you  
2 were still on the project, was it apparent to you  
3 that significant retrofits would be required for  
4 LRVs under construction?

5 NADIA ZAARI: Yes.

6 FRASER HARLAND: And why was that?

7 NADIA ZAARI: Because we had started to  
8 build early LRV2, 3 without having started really  
9 validation anything. And we know when we validate  
10 or do type test is to find issue and correct them.  
11 So by nature, a scheduled V5 meant retrofit.

12 FRASER HARLAND: Right. And that would  
13 have meant a more intensive retrofit campaign than  
14 would have been planned; is that right?

15 NADIA ZAARI: That is correct. And I  
16 do remember that we were conscious of that, so we  
17 reviewed and had set up a dedicated team for field  
18 retrofit.

19 FRASER HARLAND: Do you have any  
20 knowledge about the attempt to negotiate further  
21 amendments to the schedule after the V5 schedule  
22 was approved or --

23 NADIA ZAARI: Yes, I know because my  
24 successor in September had reached out to me and  
25 said the test track is not available. The

1 validation would slip to the right. I see no other  
2 option than pushing the end date. Can you tell me  
3 how you discussed V5 and how you come to an  
4 agreement because I need to push the dates and find  
5 options with OLRT.

6 FRASER HARLAND: The person who took  
7 over that position of project director after you  
8 was Arnaud Lacaze; is that right?

9 NADIA ZAARI: That is correct.

10 FRASER HARLAND: Okay. Do you have any  
11 other knowledge of his negotiations other than that  
12 correspondence that you had with him at that time?

13 NADIA ZAARI: Besides just a couple of  
14 phone calls, him telling me OLRTC is refusing all  
15 our schedule proposal, they are not recognizing  
16 that the test track is delayed, and they don't want  
17 to accept any change of dates.

18 FRASER HARLAND: Can I just have you  
19 describe generally what Alstom's relationship with  
20 OLRTC was while you were on the project?

21 NADIA ZAARI: So there was essentially  
22 three people at OLRT we were interfacing with and  
23 various -- not just me, various people of the  
24 Alstom team. Alex Turner, Jacques Bergeron, and  
25 Yihong Xie. Those were the three people

1 essentially we would have on a regular basis.

2 We would not have any interface with  
3 the rest except with the City when they came to  
4 validate a design and came and visit us under OLRTC  
5 leadership.

6 We would have monthly meeting where we  
7 would present our monthly report, progress status,  
8 you know, exchange on topic. Schedule was one of  
9 them.

10 The engineering team would have several  
11 engineering technical meeting. We had two  
12 technical lead, one more electrical, one more  
13 mechanical that would interface with OLRT. So we'd  
14 have separate meeting there.

15 And then when we become more present --  
16 OLRT was not at the MSF. Their office was not  
17 there, so we would not see them daily. But they  
18 would come once in a while to pay us a visit at  
19 MSF.

20 FRASER HARLAND: Would you describe it  
21 as a productive working relationship with OLRTC?

22 NADIA ZAARI: When Jacques Bergeron  
23 came in, it made a big difference. They were very  
24 productive. Yes, sometimes we agree to disagree.  
25 Especially when we were talking about commercial

1 items. But, overall, it was a good relation -- I  
2 feel it was a good relationship.

3 FRASER HARLAND: Okay. And how would  
4 you describe OLRTC as a project manager?

5 NADIA ZAARI: So we always felt they  
6 were probably a little bit short-staffed to address  
7 the other stakeholder that they had. We were not  
8 getting privy, but we'd see lots of people in  
9 Ottawa, and the City had a lot of people  
10 consultant. And they shared on occasion that they  
11 were struggling with all those people around and  
12 that had no knowledge about, you know, vehicle  
13 building and this type of procurement and yet had  
14 something to say in it.

15 So we had the feeling that it was  
16 difficult for them. And Jacques Bergeron was very  
17 good about, you know, I'll help you; you help me.  
18 So I felt that was with collaboration. But we were  
19 not really given privy to what they were doing the  
20 rest of the week and with other parties.

21 FRASER HARLAND: But it was your sense  
22 that they were underresourced for the project?

23 NADIA ZAARI: Yes, they were just  
24 everywhere.

25 FRASER HARLAND: What do you mean by

1 that?

2 NADIA ZAARI: Meaning everywhere is  
3 sometimes to find a meeting and time, we just had  
4 to struggle to find some time. So I just had the  
5 impression they were very busy.

6 FRASER HARLAND: Do you feel that they  
7 had the sufficient experience for running a project  
8 of this size?

9 NADIA ZAARI: So definitely Jacques  
10 Bergeron had the experience. Yihong Xie had the  
11 experience. I have nothing to say about them and  
12 their knowledge. Alex Turner was more like the  
13 contract side. He had also some vehicle  
14 experience. There were just not many of them.

15 FRASER HARLAND: And you mentioned  
16 OLRTC had numerous stakeholders that it was trying  
17 to manage. Did you feel that OLRTC paid sufficient  
18 attention to the vehicle part of the project while  
19 you were project manager?

20 NADIA ZAARI: I think so, but through a  
21 formal conversation, they would tell us what they  
22 were discussing with the other parties of the  
23 consortium and the construction piece. And they  
24 would share informally what was going on and where  
25 they were.

1                   But from the vehicle side, I think so.  
2 They eventually also hired an additional person who  
3 was coming every day doing a check in the factory.  
4 At the factory -- I call it a factory. It's a  
5 vehicle assembly line.

6                   We had asked them to put somebody in  
7 place as a site manager because they were not there  
8 on-site to handle all facility management issues.  
9 We'd come in, there was no air conditioning, the  
10 door does not work, all those facility management  
11 that were not in our scope of work. They  
12 ultimately hired somebody, so they staffed up  
13 progressively. And when we asked them, they did  
14 it.

15                  FRASER HARLAND: Okay. What about your  
16 relationship with Thales? Can you speak to that?

17                  NADIA ZAARI: So besides attending a  
18 couple of meetings and going once to their facility  
19 in Toronto, I had very limited personally  
20 interfaced with Thales. It was more the engineers.

21                  FRASER HARLAND: Okay. You've  
22 mentioned the interfacing delay with the radios.  
23 Was that -- that was the P25 radios or P25 radios  
24 is that --

25                  NADIA ZAARI: That's correct.



1 FRASER HARLAND: Okay. And when was  
2 that specification expected according to the  
3 subcontract?

4 NADIA ZAARI: Very early on in the  
5 first month of the project. We assumed it was  
6 radio existing and that it was a product of the  
7 shelf, and we would be given the specification, the  
8 volume, and model so we knew how to put it on the  
9 driver cabin. So I would say within a month or two  
10 within the subcontract that was what -- what was  
11 written from memory.

12 FRASER HARLAND: And what ended up  
13 happening with the radio? And I know you have  
14 already spoken to it a little bit, but if you can  
15 just tell us what the issue was there.

16 NADIA ZAARI: So when I join in the  
17 project, all the subcontract says is OLRT is to  
18 give the radio the same thing as CBTC. It didn't  
19 say who was the supplier behind. For us the  
20 supplier was OLRT. Where they got it from didn't  
21 really matter.

22 I found out very quickly that the radio  
23 was not something that OLRTC was buying themself.  
24 It was something that the City was procuring and  
25 was giving to OLRT, which then OLRT would give to

1 us. That was the scheme for whatever reason that  
2 was chosen.

3 So very quickly find out that OLRT had  
4 no control over the procurement or the availability  
5 of the radio. So we parked that topic pretty  
6 quickly, and we say, "Well, when it's available,  
7 when it's available." And they had told us that  
8 they were notifying the City about they needed to  
9 choose the radio, and this needs to happen quickly.  
10 But it was taking less space in our discussion  
11 because we realized OLRT had very little control  
12 about the availability of the interface and the  
13 volume.

14 FRASER HARLAND: And what were the  
15 implications of a late radio for the train  
16 construction?

17 NADIA ZAARI: So same thing, the radio  
18 has electrical and mechanical interface. So  
19 mechanically it needs to sit in the dashboard of  
20 the driver. Within that dashboard, there's  
21 multiple equipment. We needed to know the size of  
22 it and what shape just to keep a volume for it so  
23 when it comes in, it incorporates seamlessly. The  
24 microphone, where it was coming -- so all the  
25 mechanical integration was a question mark.

1                   So I think what we did, from memory, is  
2 lack of information, we say, well, we'll do it  
3 assuming when we provide the radio because in other  
4 project, we buy the radio, and we put our own radio  
5 that we procure from another supplier. And then  
6 when it comes, then if it change, we'll see what is  
7 the change.

8                   Same for the electrical connection, the  
9 radio is connected to an antenna cabling inside.  
10 So we did as if it was our own radio and crossed  
11 finger when it would come that it would not be too  
12 many changes.

13                   FRASER HARLAND: And then, I guess,  
14 were you no longer on the project when the ultimate  
15 radio was selected?

16                   NADIA ZAARI: I remember one thing, and  
17 I have that image that somebody showed up at MSF  
18 sent by the City with a package and say, "Hey, this  
19 is your radio." And I'm like, "Which radio?"  
20 "P25." I open up the box, and here's the product  
21 that we've been waiting since 2013. I'm like, it's  
22 never too late. I'll take it. And I left a couple  
23 of -- I give that to the engineer. I say, "We've  
24 got to figure this out." See if it fits or not,  
25 what we got to do to changes. And we already had,

1 like, five or six vehicles started.

2 FRASER HARLAND: And you said that was  
3 close to the time that you left the project that  
4 this --

5 NADIA ZAARI: That is correct.

6 FRASER HARLAND: Okay. And I  
7 understand that there were also issues with design  
8 and styling choices by the City that were late; is  
9 that true?

10 NADIA ZAARI: So I was not firsthand  
11 witness. That happened before I came in. But I  
12 happened to read the record of the letters that  
13 were sent by Alstom where Alstom had shared with  
14 OLRT and the City a key milestone when the design  
15 had to be -- only the design and style. So it's  
16 essentially the look and feel of the vehicle  
17 because those are dimensioning for the rest of the  
18 design. This is something we freeze very early on  
19 in the first few months of the project.

20 And it take -- took much longer to have  
21 OLRT, and OLRT claimed the City didn't come back to  
22 us in time. And then there was design change, and  
23 I remember the handrail, the bar where a passenger  
24 grabs on, the City wanted a lot more than initially  
25 was anticipated. And it took time to get how many,

1 where, where do you want a grabbing rail? We ended  
2 up having a variation order to offset the price  
3 difference, but it just took a lot of time early  
4 on.

5 FRASER HARLAND: Do you have an  
6 understanding of why it was taking so much time or  
7 so much longer than it would have in a normal  
8 project?

9 NADIA ZAARI: What OLRTC was telling us  
10 back then when we were asking the same question is  
11 the City is new in this procurement, and they have  
12 to make decision, and they have to involve many  
13 parties. And they didn't have necessarily the  
14 people. And just it took them more time to get  
15 themselves organized and be patient with them.

16 And that's the type of answer we got  
17 from OLRT. We never asked the City personally, at  
18 least not me.

19 FRASER HARLAND: And did the radio  
20 issues and the design and styling issues have an  
21 impact on the V5 schedule?

22 NADIA ZAARI: So the design and style,  
23 definitely, yes. The radio, no, because we assumed  
24 a certain radio, and we said we're going to assume  
25 this is going to be the radio, and it's going to be

1 like that, and we'll see after V5. Once you get us  
2 the right radio, we'll assess the impact.

3 FRASER HARLAND: Okay. So that would  
4 have gone to further schedule negotiation after V5  
5 based on the radio received?

6 NADIA ZAARI: That is correct.

7 FRASER HARLAND: To speak a little bit  
8 more about testing and commissioning, so there  
9 would have been some testing conducted of LRV1 and  
10 2 while you were on the project; is that correct,  
11 at least static testing?

12 NADIA ZAARI: That is correct.

13 FRASER HARLAND: What would have that  
14 looked like?

15 NADIA ZAARI: So for LRV1, we did some  
16 minimum testing in Hornell. It was very minimum.  
17 From my recollection, we did water testing. We  
18 also made sure we could move the train, and the  
19 train can move under its own power, so that --  
20 those are the basic baby steps testing that we do  
21 in a factory. And then we did the same after on  
22 LRV2.

23 There are minimum requirement of  
24 testing that we have to do before we go into the  
25 validation testing.

1 FRASER HARLAND: And validation testing  
2 had not started while you were still on the  
3 project, is that -- or had it?

4 NADIA ZAARI: So for me, validation  
5 testing truly starts when we get access to the test  
6 track, which had not. There was some level of  
7 testing minimum that was done before to prepare and  
8 everything, but minimum.

9 FRASER HARLAND: And the test track,  
10 was that something that you had expected earlier  
11 access to?

12 NADIA ZAARI: From my memory, the  
13 subcontract listed the test track available in  
14 September 2016, and this had never changed.

15 FRASER HARLAND: So that would have  
16 been just as you were leaving the project?

17 NADIA ZAARI: That is correct.

18 FRASER HARLAND: Do you know when it  
19 did become available, or is that not something that  
20 you're --

21 NADIA ZAARI: No, I don't know.

22 FRASER HARLAND: That wasn't really  
23 when you were there?

24 NADIA ZAARI: That is correct.

25 FRASER HARLAND: Okay. Is there any

1 other testing that happened while you were involved  
2 with the project?

3 NADIA ZAARI: So there are a set of  
4 testing, climatic chamber testing where we don't  
5 send the whole train. We send a portion of the  
6 train. This had started. We did the fire and  
7 smoke testing where we take a sample, so we mimic  
8 half of a vehicle, and we put it in a burn chamber,  
9 and we see when it burns. So there were some level  
10 of testing that was done, but it is not the  
11 validation testing. They're pieces of the  
12 testing -- the testing program.

13 FRASER HARLAND: And certainly no  
14 dynamic testing, I take it, if there was no test  
15 run?

16 NADIA ZAARI: There was some dynamic  
17 testing in a sense in Hornell. We moved the  
18 train -- so we have a much shorter track. So we  
19 move the train back and forth, back and forth. But  
20 it was minimum. It's not the size of a track that  
21 we had planned for validation testing. But just to  
22 see overall behaviour of the vehicle, low speed,  
23 basic first wheel turn on the vehicle that we do.

24 FRASER HARLAND: And so you didn't have  
25 any involvement in sort of assessing the



1 suitability of the track infrastructure or anything  
2 like that while you were on the project?

3 NADIA ZAARI: No, I was not. The only  
4 thing that I was surprised, and that was in summer  
5 2016 is if we were going to start validation  
6 testing in September 2016, there's a lot of  
7 pre-work to do before starting the validation  
8 testing, going and doing a tour of the track,  
9 verifying the clearance and all this. And it was  
10 not in the shape to do. That's where I got a hint  
11 that, oh, this is not going to happen in September.

12 FRASER HARLAND: I don't think I have  
13 any more questions for you at this point,  
14 Ms. Zaari, but I think my co-counsel,  
15 Ms. Mainville, may have a few more questions for  
16 you.

17 CHRISTINE MAINVILLE: Just on that, did  
18 you have an understanding of what the delay was to  
19 the test track?

20 NADIA ZAARI: When I left, absolutely  
21 no.

22 CHRISTINE MAINVILLE: You spoke about  
23 Alstom signalling system being -- at least in your  
24 other project -- being a different technology than  
25 the CBTC system. And I wonder, is the CBTC

1 technology specific to Thales?

2 NADIA ZAARI: No. Alstom has also a  
3 CBTC technology.

4 CHRISTINE MAINVILLE: Was there  
5 anything about Thales's system on this Ottawa  
6 project that was distinct, to your knowledge, or  
7 was it a standard Thales system?

8 NADIA ZAARI: So I'm not knowledgeable  
9 enough to qualify their system. The only comment  
10 that was made several time to me is that the yard,  
11 so the MSF was apparently required to operate with  
12 CBTC when usually in the yard we don't put CBTC.  
13 We put manual operations. So the engineering team  
14 were like, "Why is this so complex? Why are they  
15 putting also CBTC in the yard?" So that was the  
16 only comment the technical team made to me about  
17 the CBTC solution.

18 CHRISTINE MAINVILLE: Okay. Do you  
19 recall any provision made or discussion about  
20 Alstom having to perform the PICO testing of the  
21 components within Thales's VOBC rack?

22 NADIA ZAARI: So I do recall per our  
23 subcontract with OLRT there was a share of work  
24 between OLRT and Alstom that the CBTC supplier  
25 would do PICO test on the first two train, I think,

1 and they would teach us and show us and do -- and  
2 we would do it. It was laid out in the  
3 subcontract, so that's what was written, which is  
4 typical.

5 CHRISTINE MAINVILLE: And perhaps this  
6 was after your time, but do you recall any issues  
7 being raised about that or concerns on Alstom's  
8 part being raised about being the one responsible  
9 for those -- for that testing?

10 NADIA ZAARI: So I do recall for the  
11 first LRV at least that the CBTC supplier was ready  
12 to come do testing, and our engineers were  
13 questioning, "Well, on which design version are we  
14 testing? What's the reference point?" Which is  
15 typical. When we do test it's, again, a baseline,  
16 so there was back and forth. "Okay, you can come,  
17 but what are we really testing? This version or  
18 this version?" So I do recall that.

19 I do recall discussion with OLRTC  
20 telling us, "Hey, if you need Thales to come over  
21 for testing, you need to give me X weeks of notice  
22 because there's only one guy at Thales that is  
23 expert in doing that, and he's fully booked for  
24 other projects." So if I don't give them the  
25 proper notice, we're not going to get him. Those

1 are the two conversation I do recall.

2 CHRISTINE MAINVILLE: Do you have an  
3 understanding or did you have an understanding  
4 generally of what the testing and commissioning  
5 plan was overall, you know, in terms of whether it  
6 had been entirely devised by the time you left and  
7 what -- including the criteria?

8 NADIA ZAARI: Yes. So me, personally,  
9 no, I don't know the detail. But we had a  
10 validation, project validation manager. We had a  
11 test and commissioning manager. And we were  
12 sharing with OLRT our test and validation plan,  
13 what was the content, what subsystem and  
14 everything.

15 It included all the vehicle testing at  
16 our level, the PICO testing, but it did not include  
17 vehicle system integration with the wayside on the  
18 track. This was out of scope for Alstom. This  
19 is -- the wayside piece was not included. We were  
20 limited to the vehicle piece.

21 CHRISTINE MAINVILLE: So Alstom devised  
22 the testing and commissioning plan for the  
23 vehicles.

24 NADIA ZAARI: That was our scope of  
25 work.

1 CHRISTINE MAINVILLE: And then does  
2 that get approved typically by OLRTC?

3 NADIA ZAARI: Yes. So the subcontract  
4 was made, so it was already laid in an appendix of  
5 what it was, what it was going to be. So the basic  
6 foundation were there. All we had to do was be a  
7 little more precise on the test procedure, the  
8 steps and things like that. But a lot of it was  
9 already in the contract.

10 CHRISTINE MAINVILLE: Okay. And beyond  
11 the vehicle testing, I take it you weren't the  
12 person responsible for this anyway, but do you know  
13 whether it would -- whether the testing and  
14 commissioning manager for Alstom would have had  
15 some awareness of the broader plans for testing and  
16 conditioning and trial running?

17 NADIA ZAARI: So the test and  
18 commissioning manager was making sure to execute  
19 Alstom's scope of work, which was limited to the  
20 vehicle testing. At one point -- and that was  
21 discussed under my time with OLRT, so I can talk to  
22 it.

23 Once we're done with the vehicle  
24 testing, our part, there was going to be a  
25 hand-over to OLRT, and OLRT was going to do with

1 whoever they need because you have substation,  
2 other system on the line, whatever wayside, and do  
3 their own testing. So they would take over  
4 vehicle, do their testing, and then they would  
5 return the vehicle.

6 So when I left, we were discussing that  
7 principle and how to make it work.

8 CHRISTINE MAINVILLE: Okay. And so  
9 Alstom would be involved in those discussions or at  
10 least have some input?

11 NADIA ZAARI: Not necessarily. We give  
12 them -- they're the vehicle. They're the system  
13 integrator. We give them the vehicle. Of course  
14 if they want to do something with the vehicle and  
15 they aren't sure, they're more than welcome to ask  
16 question. But, I mean, it was not in our scope of  
17 work to define what needed to be done at system to  
18 validate the overall system.

19 So we give them the vehicle, and we  
20 provide some tech support if they have question,  
21 the vehicle behaved in a certain way. But that was  
22 what we discussed. What happened afterwards, I  
23 cannot talk to it.

24 CHRISTINE MAINVILLE: What about winter  
25 testing in terms of Alstom's scope, was there -- do

1 you recall what may have been provided for that?

2 NADIA ZAARI: So there was a  
3 requirement in the contract and to do some climatic  
4 test which are done in a climatic chamber. We  
5 selected a climatic chamber in Ottawa because of  
6 the size of the chamber. It's not fitting a full  
7 train. So I think the train is four module, from  
8 memory, so we would fit only one module and do the  
9 climatic test. So the climatic test chamber  
10 basically for snow, I don't know, wind, whatever we  
11 define. And I left it there in terms of definition  
12 of environment testing.

13 CHRISTINE MAINVILLE: Do you recall --  
14 I know you left not that long thereafter, but do  
15 you recall whether the Rideau sinkhole in 2016 had  
16 an impact on Alstom's work or project that would  
17 have impacted Alstom?

18 NADIA ZAARI: So I do recall that  
19 sinkhole because it was a day I was in Ottawa, and  
20 I wake up, and I read the news, and that's first  
21 page on the news. So, yes, I recall that event.

22 I mean, OLRT didn't need to inform us.  
23 It was in the news all over, so it was easy to know  
24 about.

25 We didn't have many discussion with

1 OLRT because the sinkhole happened, I think,  
2 downtown on the middle of the line, and that was  
3 not a portion of the line that we had planned to  
4 utilize for the test track.

5 So we had -- it's unfortunate, but for  
6 us because the test track is not on that path, we  
7 probably won't be impacted, but we did recognize  
8 that it was probably going to bring some turmoil in  
9 the construction team. And we got a little bit  
10 concerned if that construction team would be too  
11 focused on fixing the sinkhole and not finishing  
12 MSF, which had still a lot of work. So that's the  
13 only recollection I have for the sinkhole.

14 CHRISTINE MAINVILLE: And would you  
15 have been there to see any of those repercussions  
16 or whether that, in fact, materialized?

17 NADIA ZAARI: No.

18 CHRISTINE MAINVILLE: I just want to be  
19 clear on who oversaw the schedule for Alstom.  
20 Would that have been you as the project manager?

21 NADIA ZAARI: So me directly, I was  
22 reviewing daily schedule. We had a project  
23 scheduler also involved. I would review the  
24 schedule with OLRT. We had requirement to submit  
25 monthly the project schedule, and in additional, I



1 was personally providing to OLRT a weekly status  
2 update of where we are with the vehicle production.  
3 There was some kind of dashboard we had put in  
4 place so OLRT could fulfill their reporting  
5 requirement to somebody.

6 CHRISTINE MAINVILLE: And how would  
7 you -- well, let me put it this way. Would the  
8 engineers and workers have an awareness of the  
9 schedule, you know, like, how do you manage that  
10 ensuring the deadline is met?

11 NADIA ZAARI: So I'm assuming you're  
12 talking about the MSF.

13 CHRISTINE MAINVILLE: Just in terms of  
14 the -- meeting the RSA and the delivery of the  
15 vehicle generally.

16 NADIA ZAARI: Okay. I'll probably  
17 speak to the MSF because it's more concrete. So we  
18 had at the MSF live on the floor what we call  
19 visual management. There was the -- the schedule  
20 was on a big board, and every day we would have  
21 daily huddle with all the workers on the line and  
22 say, "This is what we got to do today. This is the  
23 plan." We would come at the end of the day. We  
24 would have two shifts.

25 When we change shift, we would share

1 what the previous team -- what hurdle they found,  
2 and if they could make it or advance faster. So  
3 this was done by visual management on the floor.

4 And on top of it, we would have OLRT  
5 representative comes, I think, every morning -- end  
6 of the morning to do a checkpoint of where the  
7 production line. And at least we did that for the  
8 entire time I was on the project. That was part of  
9 Alstom offering visibility to OLRT to keep them  
10 aware what was the status.

11 CHRISTINE MAINVILLE: And I think  
12 you've said this, but by the time you leave, the  
13 RSA date is still May 2018. And does Alstom still  
14 believe -- or did Alstom at that point in time  
15 believe that that could still be met?

16 NADIA ZAARI: So when I left the  
17 project, because of what happened on the -- what I  
18 witnessed from the test track, and I had my doubt  
19 this test track would be available, because of the  
20 state of the MSF that it was still one year later  
21 after we moved in still in a construction shape, we  
22 were having a lot of construction, I had doubt on  
23 that May 2018.

24 CHRISTINE MAINVILLE: You were focused  
25 on the test track, but am I right that for

1 integration testing -- for complete integration  
2 testing, you would need full access to the main  
3 line and the guideway?

4 NADIA ZAARI: So my recollection of the  
5 discussion was that for our own vehicle testing,  
6 our own scope of work, we should be able to  
7 validate the vehicle on the test track. I think it  
8 was 4 kilometres or double way. There were some  
9 requirement about what that test track needed to  
10 have. We would need to be able to reach certain  
11 speed, the curve of the -- there was a couple of  
12 elements there.

13 After that, it was more OLRT as the  
14 system integrator that needed the entire line to do  
15 the vehicle and the system integration testing, but  
16 that was not in our scope of work.

17 CHRISTINE MAINVILLE: And it would have  
18 been more significant, perhaps, for Thales than  
19 Alstom; is that fair?

20 NADIA ZAARI: That is correct.

21 CHRISTINE MAINVILLE: Okay. Those are  
22 my questions. I wonder --

23 FRASER HARLAND: I was just going to  
24 give Ms. Zaari an opportunity to raise anything or  
25 to ask you if there's anything that we haven't

1 covered today that you think is important for the  
2 Commission to know about.

3 NADIA ZAARI: I pretty much think we  
4 covered all the topic when I was there on the  
5 project.

6 FRASER HARLAND: Michael, anything from  
7 your end?

8 MICHAEL VALO: No, thanks. All good.

9 CHRISTINE MAINVILLE: We can go off  
10 record.

11

12 -- Adjourned at 3:32 p.m.

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1 REPORTER'S CERTIFICATE


2  
3 I, CARISSA STABBLER, Registered  
4 Professional Reporter, certify;

5  
6 That the foregoing proceedings were  
7 held remotely via Zoom videoconference at the time  
8 therein set forth, at which time the witness was  
9 put under oath by me;

10  
11 That the testimony of the witness  
12 and all objections made at the time of the  
13 examination were recorded stenographically by me  
14 and were thereafter transcribed;

15  
16 That the foregoing is a true and  
17 correct transcript of my shorthand notes so taken.

18  
19 Dated this 14th day of April 2022.

20  
21   
\_\_\_\_\_

22 NEESONS, A VERITEXT COMPANY

23 PER: CARISSA STABBLER, RPR

24 COURT REPORTER

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