

# Ottawa Light Rail Commission

Jacques Bergeron  
on Wednesday, April 27, 2022



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OTTAWA LIGHT RAIL COMMISSION  
OLRTC - JACQUES BERGERON  
APRIL 27, 2022

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--- Held via Zoom Videoconferencing, with all  
participants attending remotely, on the 27th day of  
April, 2022, 9:00 a.m. to 12:01 p.m.

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1 COMMISSION COUNSEL:

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3 Fraser Harland, Commission Counsel Member

4 Anthony Imbesi, Commission Counsel Member

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7 PARTICIPANTS:

8

9 Jacques Bergeron - OLRTC

10 Jean-Claude Killey, Esq. & Mannu Chowdhury, Esq.,

11 Paliare Roland Rosenberg Rothstein LLP - Counsel  
12 for Jacques Bergeron

13

14

15 ALSO PRESENT:

16

17 Carissa Stabbler, Stenographer/Transcriptionist

18 Ben Bilgen, Virtual Technician

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I N D E X

WITNESS: JACQUES BERGERON

I N D E X

INDEX OF EXHIBITS

NUMBER/DESCRIPTION

PAGE/LINE NO.

1: CV of Jacques Bergeron.

7:8

1 -- Upon commencing at 9:03 a.m. --

2 FRASER HARLAND: Good morning,  
3 everyone. As I said, my name is Fraser Harland,  
4 and I'm joined by Anthony Imbesi, both Commission  
5 Counsel. I'm going to explain how this interview  
6 will work to start, and then we'll proceed into a  
7 number of questions for Mr. Bergeron.

8 Before we do that actually, Madam  
9 Reporter, if we could have you affirm the witness  
10 just to start, that would be great. Thank you.

11 JACQUES BERGERON: AFFIRMED.

12 FRASER HARLAND: Thank you,  
13 Mr. Bergeron. So the purpose of today's interview  
14 is to obtain your evidence under oath or solemn  
15 declaration for use at the Commission's public  
16 hearings.

17 This will be a collaborative interview  
18 such that my co-counsel, Mr. Imbesi, may intervene  
19 to ask certain questions. If time permits, your  
20 counsel may also ask follow-up questions at the end  
21 of this interview.

22 This interview is being transcribed,  
23 and the Commission intends to enter this transcript  
24 into evidence at the Commission's public hearings,  
25 either at the hearings or by way of procedural

1 order before the hearings commence.

2 The transcript will be posted to the  
3 Commission's public website, along with any  
4 corrections made to it after it is entered into  
5 evidence. The transcript, along with any  
6 corrections later made to it, will be shared with  
7 the Commission's participants and their counsel on  
8 a confidential basis before being entered into  
9 evidence.

10 You'll be given the opportunity to  
11 review your transcript and correct any typos or  
12 other errors before the transcript is shared with  
13 the participants or entered into evidence. Any  
14 non-typographical corrections made will be appended  
15 to the transcript.

16 And pursuant to Section 33(6) of the  
17 Public Inquiries Act, 2009, a witness at an inquiry  
18 shall be deemed to have objected to answer any  
19 question asked him or her upon the ground that his  
20 or her answer may tend to incriminate the witness  
21 or may tend to establish his or her liability to  
22 civil proceedings at the instance of the Crown or  
23 of any person, and no answer given by a witness at  
24 an inquiry shall be used or be receivable in  
25 evidence against him or her in any trial or other

1 proceedings against him or her thereafter taking  
2 place, other than a prosecution for perjury in  
3 giving such evidence.

4 And as required by Section 33(7) of  
5 that act, you are hereby advised that you have the  
6 right to object to answer any question under  
7 Section 5 of the Canada Evidence Act.

8 So with that, we'll proceed into some  
9 questions for you, Mr. Bergeron. And if at any  
10 point you don't understand a question, please just  
11 let know, and I'm happy to rephrase or to repeat.

12 And if at any point you need a break,  
13 also just please let me know, and we can do that.  
14 I expect we'll take a break in any event part way  
15 through the interview.

16 So to start, I just want to -- I'll ask  
17 my colleague, Mr. Imbesi, to bring up the CV that  
18 we received from your counsel.

19 So, Mr. Bergeron, do you recognize this  
20 CV?

21 JACQUES BERGERON: Yes, I do.

22 FRASER HARLAND: And are the contents  
23 of the CV accurate? We can scroll through it  
24 briefly for you if you need.

25 JACQUES BERGERON: Hold on. Can you --

1 yes, okay, can you go back up a little bit? Stop  
2 there. Yes. Okay, yes, I received -- I  
3 acknowledge this is my CV.

4 FRASER HARLAND: Perfect. So, Madam  
5 Reporter, if we can mark this document as  
6 Exhibit 1, and we will send you a copy of the  
7 document after the interview.

8 EXHIBIT NO. 1: CV of Jacques Bergeron.

9 FRASER HARLAND: I see from your CV,  
10 Mr. Bergeron, that you are trained as a mechanical  
11 engineer?

12 JACQUES BERGERON: I am.

13 FRASER HARLAND: And it looks like you  
14 spent the majority of your career with Bombardier;  
15 is that right?

16 JACQUES BERGERON: That's correct.

17 FRASER HARLAND: Can you speak to some  
18 of your experience in managing rail projects in  
19 particular?

20 JACQUES BERGERON: Yes. I started in  
21 Bombardier in 1982 as a mechanical engineer and  
22 participated in numerous projects in numerous  
23 different capacity starting from engineering to --  
24 manufacturing, engineering to program management,  
25 quality insurance [sic].



1 I did, if my memory serves me right,  
2 about 18 different projects for authorities around  
3 the world, more specifically automated transport  
4 system in -- twice in Vancouver, once in Malaysia,  
5 once in China, once in JFK, New York, and the most  
6 recent one is obviously Ottawa as far as the fully  
7 automated system.

8 FRASER HARLAND: Were those previous  
9 automated systems rail systems as well, or were  
10 they other --

11 JACQUES BERGERON: Yes. No, they were  
12 rail systems.

13 FRASER HARLAND: And I see that the  
14 most recent professional experience listed on your  
15 CV is the director of integration for the Ottawa  
16 LRT project; is that right?

17 JACQUES BERGERON: That's correct.

18 FRASER HARLAND: Did you have prior  
19 integration experience prior to this experience  
20 with the LRT?

21 JACQUES BERGERON: (Technical issue)  
22 with the vehicles and signalling system --

23 THE REPORTER: Sorry, the witness was  
24 frozen, Mr. Harland.

25 FRASER HARLAND: Yeah, he was frozen

1 for me too. Apologies, Mr. Bergeron, but maybe if  
2 I could just ask the question again, is if you had  
3 prior integration experience. If you could give  
4 that answer again, please.

5 JACQUES BERGERON: Yes, I had previous,  
6 you know, experience in integration in basically  
7 all the automated system. Mostly the first one was  
8 in Ottawa and -- not Ottawa, but Vancouver if my  
9 memory serves me right in 1997, I think, and then  
10 there on, I almost exclusively worked in automated  
11 system.

12 FRASER HARLAND: Okay. And was -- the  
13 project in Vancouver, was that the SkyTrain system,  
14 or that's a different project out there?

15 JACQUES BERGERON: Yes, it's two phases  
16 of SkyTrain system. There was a repurchase of  
17 vehicles with a new or updated signalling system,  
18 and there's the -- there was the Millennium Line in  
19 2002, I think, in Vancouver, which was an extension  
20 with -- infrastructure extension to -- I don't  
21 remember exactly the scope geographically-wise,  
22 but, yes, it was Vancouver.

23 FRASER HARLAND: Okay. And returning  
24 to the LRT project in Ottawa, your CV says 2014 to  
25 2018. Do you recall specifically in 2014 when you

1 would have started with the project?

2 JACQUES BERGERON: Yeah, it was late  
3 January, early February of 2014.

4 FRASER HARLAND: Okay. And then in  
5 2018, do you recall when you would have left the  
6 project?

7 JACQUES BERGERON: Yes, at the end of  
8 August 2018.

9 FRASER HARLAND: Okay. Anthony, I  
10 think we can stop the share screen on the CV.  
11 Thank you.

12 So, Mr. Bergeron, could you explain to  
13 me just generally what your roles and  
14 responsibilities were as director of integration on  
15 Stage 1 of the Ottawa LRT project?

16 JACQUES BERGERON: My role was mostly  
17 the integration between Alstom and Thales, meaning  
18 the vehicle and the signalling system. Of course  
19 it kind of trickled down to other systems because  
20 they do interface with the operation of the vehicle  
21 such as the power, such as the intrusion systems,  
22 the CCTV camera system, so -- but the main part of  
23 my integration job was between Alstom and Thales.

24 FRASER HARLAND: Okay. Alstom and  
25 Thales, and that means the LRVs and the signalling

1 system; is that right?

2 JACQUES BERGERON: You're right.  
3 That's correct.

4 FRASER HARLAND: So can you tell me  
5 when -- when were you approached by OLRTC to step  
6 into this role?

7 JACQUES BERGERON: That was in November  
8 2013, if my memory serves me right. I had an  
9 ex-colleague that was on OLRT group, and they  
10 wanted to have somebody that had worked in that --  
11 in that capacity prior, and they didn't have  
12 anybody on their team right now, at that moment.

13 FRASER HARLAND: Okay. So I take it  
14 you weren't able to join immediately in November,  
15 but you came by the end of January; right?

16 JACQUES BERGERON: Yeah, that's right.  
17 I was -- I was the vice president of engineering  
18 for Nova Bus at the time, and by the time that I,  
19 you know, kind of made my decision and finally  
20 leave the Volvo group, it took about a couple of  
21 months.

22 FRASER HARLAND: Okay. And so when you  
23 arrived at OLRTC, the project had been ongoing for  
24 some time already; is that right?

25 JACQUES BERGERON: That's correct.

1 FRASER HARLAND: Do you know, is  
2 about -- the contracts were signed in March of  
3 2013, so we're looking at at least nine months; is  
4 that fair to say?

5 JACQUES BERGERON: That's fair to say.

6 FRASER HARLAND: Was there someone, to  
7 your knowledge, in a similar integration role  
8 before you came onto the project?

9 JACQUES BERGERON: I don't believe so.

10 FRASER HARLAND: Okay. So when you  
11 arrived at OLRTC, can you tell us a bit about what  
12 the status of things were, and what direction were  
13 you given by OLRTC about what the issues were and  
14 what needed to be done?

15 JACQUES BERGERON: Well, the -- when I  
16 arrived, you know, I was basically informed that we  
17 had, well, you know, Alstom as a train manufacturer  
18 and Thales as a signalling system supplier and that  
19 the information between them has already started to  
20 be shared, and but, you know, the real integration  
21 work hasn't started yet.

22 So there was, to my knowledge, not too  
23 many problems. One was physical, which was the  
24 VOBC, which is the vehicle onboard computer, that  
25 was still looking for a physical space to be

1 installed in the vehicle. And that was very --  
2 basically the very first task of integration that I  
3 tackled.

4 FRASER HARLAND: And just to  
5 understand -- I mean, what did OLRTC say that your  
6 sort of job was? Like, you would be finished doing  
7 what you needed to do when the systems were fully  
8 interfaced? Is that what you were being asked to  
9 do?

10 JACQUES BERGERON: Yes, basically that  
11 was it.

12 FRASER HARLAND: Okay. How did  
13 integration beyond the Thales-Alstom interface  
14 work? Was there someone more generally responsible  
15 for the sort of entire systems integration at  
16 OLRTC?

17 JACQUES BERGERON: Yes, the group at --  
18 you know, OLRT was formed by basically three  
19 companies, which was SNC, Dragados, and EllisDon.  
20 And the system, I'm going to say, procurement  
21 negotiations and spec was done by the vehicle  
22 engineering group from SNC-Lavalin based in  
23 Vancouver.

24 FRASER HARLAND: So SNC was responsible  
25 for the overall systems integration?

1 JACQUES BERGERON: Basically, yes.

2 FRASER HARLAND: Okay. And was there  
3 someone within SNC that you were coordinating with  
4 or sharing information with regarding the progress  
5 of the Thales-Alstom interface?

6 JACQUES BERGERON: Well, we were  
7 basically two directors in engineering in OLRT,  
8 Roger Schmidt, which was basically a -- I don't  
9 remember exactly if he was paid by Dragados or  
10 EllisDon. I think it was mostly Dragados.

11 But we shared all the information and  
12 advancement and scheduling on the infrastructure  
13 side with Mr. Schmidt and on the systems side with  
14 basically myself and a few other engineers that  
15 were working with me in Ottawa.

16 FRASER HARLAND: Okay. Thanks. So  
17 would you say when you arrived that OLRTC was  
18 already having challenges with integration? Were  
19 you being brought in to solve a problem  
20 essentially?

21 JACQUES BERGERON: I wouldn't call it  
22 challenges. I would call that the normal state of  
23 business to develop, you know, the interface and  
24 the systems to work in harmony within the entire  
25 system. I'm not going to say it was something

1 unusual about the state of the project at the time.

2 FRASER HARLAND: So did you feel like  
3 sufficient thought had been given to interfacing  
4 between Alstom and Thales from the beginning of the  
5 project?

6 JACQUES BERGERON: Yes, I would  
7 assume -- yes, it was fairly well coordinated at  
8 the time.

9 FRASER HARLAND: So you didn't feel  
10 like you were playing catch-up at all or that --

11 JACQUES BERGERON: No, not at all. Not  
12 at all, not at that stage anyway.

13 FRASER HARLAND: Was there a later  
14 stage that it did start to feel that way?

15 JACQUES BERGERON: Not really. You  
16 know, those projects are quite complex, and it's --  
17 you know, it's normal to start with a few -- well,  
18 quite a lot of unknowns as far as interface  
19 between, you know, the 19 systems that form a  
20 system of that capacity.

21 So there's quite a lot of information  
22 that needs to be shared, needs to be analyzed.  
23 And, you know, at the beginning, you start with the  
24 most, I'm going to say, significant system which,  
25 you know, the vehicle is one, the signalling system



1 is the other, and the power distribution are  
2 basically the first one you tackle. And after  
3 that, you move to other kind of communication  
4 systems and information system.

5 FRASER HARLAND: And so would it not  
6 have been better for someone like you to have been  
7 in that role from the very beginning of the  
8 project?

9 JACQUES BERGERON: Well, it's always  
10 nice to be there at the beginning, but, you know,  
11 nine months in, you know, a five-, six-year project  
12 is still quite very early in the system. So maybe  
13 but I don't -- I don't think it would have changed  
14 anything as far as the outcome of the project.

15 FRASER HARLAND: Okay. And did you  
16 feel like that was a -- your role was an  
17 appropriate job for one person? Did you feel like  
18 you had the resources and what you needed in order  
19 to fulfill your mandate?

20 JACQUES BERGERON: Yes, absolutely.

21 FRASER HARLAND: So I just want to know  
22 a little bit more about the state of play of things  
23 at the beginning of the project, and then we're  
24 going to get into, you know, how things progressed,  
25 but sort of a basic question, where did you work?

1 Where was the sort of physical location of your  
2 work? What did that look like?

3 JACQUES BERGERON: That was on Carling  
4 street in Ottawa.

5 FRASER HARLAND: Okay. And did you  
6 spend any time in the MSF, the maintenance and  
7 storage facility? Was being in that site part of  
8 your job?

9 JACQUES BERGERON: You know, we had  
10 meetings there, but it was not -- it was not my  
11 primary working space. And, of course, I spent  
12 quite a lot of time at the MSF but quite a lot of  
13 time in OTC's office as well, so...

14 FRASER HARLAND: What was the state of  
15 the trains when you arrived on the project? Where  
16 was the progress of that, of the vehicles?

17 JACQUES BERGERON: Yeah, the vehicles  
18 were in design phase at that time. There was  
19 nothing absolutely produced, so it was basically  
20 in -- I'm going to say in design.

21 The -- that vehicle by itself was  
22 produced maybe 1,500 times prior to Ottawa. It is  
23 a vehicle that is well known in the industry. So  
24 the design aspect of this from Alstom was to make  
25 the proper modification so it suits the Ottawa

1 system.

2 FRASER HARLAND: And the signalling  
3 system was in a design phase when you arrived as  
4 well, I assume?

5 JACQUES BERGERON: Yes, it was.

6 FRASER HARLAND: Were you -- were there  
7 delays already when you arrived? Was OLRTC saying,  
8 Things are already behind; we need to get things on  
9 track?

10 JACQUES BERGERON: No, not to my  
11 knowledge. It was basically straightforward when I  
12 arrived.

13 FRASER HARLAND: And at the beginning  
14 when you joined, what was your perception of the  
15 relationship between OLRTC and Alstom and between  
16 OLRTC and Thales?

17 JACQUES BERGERON: On those both  
18 accounts, their relations was very good, which  
19 is -- basically at the beginning of a project, it's  
20 what we call -- it's always the -- you know, in the  
21 first year, year and a half, it's the honeymoon  
22 type of relationship. Things go well. It's quite  
23 normal. So there was -- there was no issues at the  
24 time.

25 FRASER HARLAND: Okay. You mentioned

1 that these vehicles had been built several times  
2 previously. It's my understanding that the Citadis  
3 Spirit, which was the LRV in Ottawa, was different  
4 in important ways than other Citadis models that  
5 had been built in Europe.

6 Do you have a sense of how different  
7 the Citadis Spirit was from Citadis vehicles?

8 JACQUES BERGERON: Yes. It was --  
9 well, first of all, it has to be built for the  
10 climate, which is a cold environment in Ottawa, and  
11 then to be fitted with the -- all the equipment  
12 related to the signalling system and the automated  
13 control system that needed to be done by Alstom.

14 FRASER HARLAND: So would you consider  
15 this sort of a new design, new vehicle, or is this  
16 a proven system? How would you describe it?

17 JACQUES BERGERON: Well, I'm going to  
18 say that 75 percent of it is proven. You have  
19 systems that -- and it's always the case in almost  
20 every project is that you -- you're going to enter  
21 a phase of repurchasing different systems on the  
22 vehicle such as the air conditioning, the brake  
23 system, the door system, which needs, you know,  
24 minor adjustments and modification to the vehicle  
25 to fit those systems, but basically the fundamental

1 principle of the vehicle was basically the same as  
2 it was built in Europe.

3 FRASER HARLAND: Okay. And what about  
4 the Thales signalling system? Was that a new  
5 system or a proven system? What was your  
6 understanding of that?

7 JACQUES BERGERON: Well, it is a proven  
8 system as far as the architecture of it, but the  
9 physical, I'm going to say, packaging of the -- of  
10 the system needed to be designed so it fits the LRV  
11 vehicle from Alstom and --

12 FRASER HARLAND: So the physical  
13 packaging, you were talking there about the VOBC  
14 system in the train, not the wayside equipment  
15 obviously?

16 JACQUES BERGERON: No, no, no, no, just  
17 the VOBC. But, you know, the VOBC is one rack  
18 actually. It's two different racks, but you have a  
19 lot of other, I'm going to say, accessories that  
20 are connected to the VOBC just like the  
21 transmission antennas, the reading tags on the --  
22 underneath the vehicles and the -- all the  
23 connections to the propulsion and braking systems  
24 of the vehicle.

25 So, you know, you have accelerometers

1 to be fitted; you have all different sensors to be  
2 fitted on the vehicles. So it's a packaging, I'm  
3 going to say, engineering type of work that needs  
4 to be done.

5 FRASER HARLAND: So it was a proven  
6 system, but there were significant adaptations that  
7 needed to be made for the Alstom vehicles; is that  
8 fair?

9 JACQUES BERGERON: That's fair.

10 FRASER HARLAND: And to your knowledge,  
11 was this the first time that Alstom and Thales were  
12 integrating the systems together?

13 JACQUES BERGERON: I don't think it was  
14 the first time, but it was the first time for an  
15 LRV type of vehicle.

16 FRASER HARLAND: Okay. Because it was  
17 a first time and there were new elements and  
18 adaptations when you arrived on the project, were  
19 there challenges or any aspects of the interfacing  
20 that stood out to you right from the beginning?

21 JACQUES BERGERON: Like I said, it was  
22 the physical fitment of the VOBK rack. That was  
23 the main challenge. When I arrived, the VOBK racks  
24 were -- well, you know, one design option was to  
25 put it on the roof of the vehicle within a heated

1 box because, of course, those are computers, so  
2 they need to be kept at a kind of room temperature  
3 if I'm going to say so.

4 But, you know, because of the amount of  
5 time -- or not the amount of time but the  
6 connections that you need to have and verification  
7 on a -- I'm going to say a weekly, monthly basis to  
8 the VOBC, that was kind of unpractical to put it on  
9 the roof of the vehicle, so we worked with Alstom  
10 to basically spare some room in the conductor cabin  
11 to fit the VOBC racks.

12 FRASER HARLAND: Okay. We're going to  
13 talk -- we'll talk more about the racks in a bit,  
14 but I just want to close out a couple other  
15 questions.

16 The train operator, OC Transpo, was new  
17 to running an automatic train system like this as  
18 well. Did they have any involvement, that you're  
19 aware of, with the interfacing?

20 JACQUES BERGERON: No, not really. And  
21 this is basically the case for almost every  
22 authorities that we built a -- kind of a fully  
23 automated system. Those are very complex and need  
24 special qualifications and experience to deal with  
25 that. So the implication of OC Transpo in the

1 design of and integration of those systems were  
2 very minimal at best.

3 FRASER HARLAND: And when was it that  
4 OC Transpo did get involved then?

5 JACQUES BERGERON: Well, I don't recall  
6 them to get really involved in the design other  
7 than, you know, viewing the fact of, you know,  
8 where was all the accessories, the VOBC  
9 installation and everything that formed the system.  
10 But no, I'm going to say, technical implication in  
11 any of those part of the system I'm going to say.

12 FRASER HARLAND: And that's a -- you're  
13 saying that's a standard practice in other projects  
14 that you've seen as well, that the operator has no  
15 involvement at that stage?

16 JACQUES BERGERON: Yes. That's pretty  
17 much the same. It's been the same for everyone,  
18 maybe except Vancouver because they were basically  
19 one of the first to have for the Expo in 1982 [sic]  
20 that had an automated system.

21 But at that time, it was basically  
22 Alcatel at the time that did this, and so they gain  
23 probably more experience than anybody else in  
24 automated system. But other than that, the  
25 authorities do not get really involved in the --



1 I'm going to say the design, installation, and  
2 testing of the automated system.

3 FRASER HARLAND: So the involvement of  
4 the operator is quite late, and it's really only at  
5 the operation stage of the vehicle; is that --

6 JACQUES BERGERON: Yes, yes, it's how  
7 to operate it and how to -- you know, to react to  
8 different faults that we may get and what to do in  
9 this case but not in the design or installation of  
10 those systems. Those are very, very specific sets  
11 of tasks that you need to have.

12 FRASER HARLAND: Okay. I want to turn  
13 now to talk a bit about the contractual  
14 arrangements between OLRTC and Alstom and OLRTC and  
15 Thales. So I understand that Alstom and Thales  
16 each had a subcontract with OLRTC; is that right?

17 JACQUES BERGERON: That's correct.

18 FRASER HARLAND: And there was no  
19 contractual arrangement between -- directly between  
20 Alstom and Thales?

21 JACQUES BERGERON: No, not at all.

22 FRASER HARLAND: Okay. So typically on  
23 a project like this, would someone at OLRT review  
24 the subcontracts to assure that they aligned in  
25 terms of schedule and in terms of the requirements

1 that each party is meant to be fulfilling?

2 JACQUES BERGERON: Yes, they would be.

3 FRASER HARLAND: Do you know who would  
4 have done that for OLRT in this project?

5 JACQUES BERGERON: Well, we had, you  
6 know, a project manager that was dedicated for  
7 Alstom and Thales contractual side plus the  
8 procurement director that would be involved in  
9 the -- I'm going to say the contractual integration  
10 of those two parties.

11 FRASER HARLAND: Okay. Do you know who  
12 those individuals were? Just the positions. And  
13 it's fine if you don't, but...

14 JACQUES BERGERON: You know, for some  
15 reason this morning, I got a blank, but what was  
16 his name? Main, you know, project manager for  
17 those was Alex Turner. That was -- that was there  
18 before I arrived, and he was the ex-Bombardier as  
19 well, so...

20 FRASER HARLAND: Okay. And I assume  
21 given your timing and your -- when you arrived on  
22 the project, that you had no input or involvement  
23 with the negotiation of the subcontracts?

24 JACQUES BERGERON: No, I did not.

25 FRASER HARLAND: But did you, as

1 director of integration, review OLRT's subcontracts  
2 with Alstom and Thales?

3 JACQUES BERGERON: Well, of course I  
4 read the contracts and understood, you know, the  
5 level of implication of both companies within  
6 the -- you know, the final project which, you know,  
7 to my experience which I'm not -- excuse me, I'm  
8 not a lawyer, but that, you know, those two  
9 contracts were basically specific and quite  
10 correctly directed as, you know, whatever the  
11 interface between them might be, the end product  
12 has to be functional and safe.

13 And that was -- that was basically a  
14 good step regardless of, you know, their  
15 contractual issues they may have.

16 FRASER HARLAND: So I just want to make  
17 sure I understand what you just said. So you said  
18 they were specific, and there was sort of a focus  
19 on an end goal. Can you just maybe rephrase your  
20 last answer for us?

21 JACQUES BERGERON: Well, basically both  
22 parties had the obligation to work with -- you  
23 know, between themselves to make sure that the  
24 system work as specified and that the safety level  
25 was correct, you know, to protect the public.

1 FRASER HARLAND: Okay. And based on  
2 the contracts you're saying or just --

3 JACQUES BERGERON: Yeah, yeah, based on  
4 the contract. You know, both had the obligation to  
5 work together to make the system integration within  
6 the -- you know, the entire system to be  
7 functional.

8 FRASER HARLAND: Okay. And so when you  
9 first reviewed the contracts when you arrived on  
10 the project, was there anything that stood out to  
11 you or were there any -- did you have concerns  
12 about their alignment?

13 JACQUES BERGERON: No, not really, no.

14 FRASER HARLAND: Okay. So I want to  
15 speak to you a bit about the schedules in the  
16 contracts. It's my understanding that Alstom at  
17 least represented that they were expecting a  
18 finalized ICD document in April of 2013, so  
19 effectively from the beginning of the project.

20 Do you know anything about that, or is  
21 that your understanding?

22 JACQUES BERGERON: It is -- it is my  
23 understanding, and I know where that comes from.  
24 And to have a finalized, you know, ICD at 2014 is  
25 kind of, I'm going to say, a big dream. Never

1     been -- never seen something like that.

2             It is a very complex interface and to  
3     have -- and, you know, if you take a look at the  
4     documents dated in 2014, it's clearly said that it  
5     is a preliminary ICD. It's preliminary documents  
6     to set out the base of the interface between the  
7     two parties, but by no mean it would be final.

8             FRASER HARLAND: And you just said that  
9     you know where that comes from. What did you mean  
10    by that?

11            JACQUES BERGERON: Well, you know, I --  
12    it's not a secret that Alstom sued OLRT for  
13    lateness, and I was -- I was a witness in that --  
14    in that court case as well. And we saw, you know,  
15    documents that were said to be final in 2014 when,  
16    you know, the integration -- when the vehicle was  
17    not even finished to be designed and the suppliers  
18    to be fully on board, so that was completely  
19    erratic.

20            But to -- and Alstom knows it as well,  
21    but to make their points, they tried to do that, to  
22    say that the lateness that happened later in the  
23    project was not their fault, which is correct, I  
24    guess, but seeing that before, but by no mean, you  
25    know, the ICD integration between vehicles could

1 have been final in 2014.

2 FRASER HARLAND: Okay. So it's your  
3 view that it's not a realistic or achievable  
4 expectation that you have a finalized ICD that  
5 early in the project?

6 JACQUES BERGERON: Correct.

7 FRASER HARLAND: And just -- is that  
8 always true? Would it not be possible for a proven  
9 signalling system that -- you know, you have this  
10 box, you know it works, and you can just -- you can  
11 have an ICD and it -- you know, you basically say  
12 it's ready to go off the shelf, and we can -- I'm  
13 just trying to make sure I understand. Is that  
14 just never possible or --

15 JACQUES BERGERON: No, it's not -- it's  
16 never possible. It's not a plug-and-play just like  
17 we say in computer terms. It's not a plug-and-play  
18 system. There's too many interfaces to be  
19 developed, and, you know, there's lots of details.

20 And I can -- I can -- I can explain  
21 maybe one of them, if I can, as an example, is that  
22 the automated system works in, you know, the -- you  
23 have to know where the vehicle is at any time on  
24 the track, and that happens in three ways.

25 You have sets of accelerometers in the

1 vehicle that's going to tell you if the vehicle is  
2 accelerating, moving steadily to be able to know  
3 what travel the vehicle has done.

4 Plus you have a teethed wheel on the  
5 bogie, which is the set of wheels and motors  
6 underneath the car that counts the turn of each  
7 wheel on the vehicle. And finally, you have RFID  
8 tags that are positioned between the tracks that  
9 the vehicle reads when it cross over it.

10 So you have three systems that define  
11 the exact position of the train on the track, so  
12 there's a limit in where that -- those -- where  
13 we're talking tag readers that are installed on the  
14 vehicles, and there's a limited amount of distance  
15 that the cable can safely transmit their signal  
16 without any interference.

17 And this was one of the -- one of the  
18 interface that we had to work with between Alstom  
19 and Thales to make sure that those antennas are  
20 located correctly and that we have to minimize the  
21 length of the wire that connects those antennas to  
22 the VOBC. So that's only one of 119 different  
23 interface that needs to be settled, so it's  
24 quite -- it's quite complex.

25 FRASER HARLAND: Okay. So there's just

1 such a high level of complexity that to have  
2 something settled so early on is just not possible  
3 from your perspective?

4 JACQUES BERGERON: It is impossible in  
5 my perspective.

6 FRASER HARLAND: I'm not asking you to  
7 interpret the contract for us. That's for the  
8 lawyers, but if the contract said you'll have a  
9 finalized ICD in April 2013, is it your view that  
10 that was, you know, unreasonable and wasn't going  
11 to happen?

12 JACQUES BERGERON: Yeah, it was  
13 unreasonable. And I have another examples of, you  
14 know, system not related to the VOBC but to the  
15 radio system that Alstom said that they want to  
16 have the final radio to be given to them or the  
17 interface to be given to them in April 2014, which  
18 was completely impossible to do since, you know,  
19 Ottawa went out to the P25 system.

20 And it was in the early stage of  
21 development, and we couldn't get that information,  
22 but that's what Alstom put in this contract, but,  
23 you know, those are stuff that we can debate later.

24 They're -- excuse the expression, but  
25 fairly small details as far as the radio is



1 concerned, but, you know, you cannot give the  
2 physical and final information so early in the  
3 project.

4 FRASER HARLAND: Okay. But to be  
5 clear, OLRTC agreed to this contract as well?

6 JACQUES BERGERON: Yeah, I think  
7 there's a -- you know, at the time, I don't know  
8 who from OLRTC negotiated that, but I think it's  
9 just a -- you know, kind of an oversight of not  
10 knowing what kind of complexity and importance  
11 those arised, but, yes, it was in the contract.

12 FRASER HARLAND: And it's fair to say  
13 that Thales had a different expectation of timing?  
14 Was that how things appeared to you?

15 JACQUES BERGERON: I wouldn't say that  
16 they did. Of course for them, they're going to  
17 design their system a little bit faster than  
18 their -- than the vehicle is going to be designed.

19 So, yes, they might have -- we had some  
20 elements that were ready way before the vehicle was  
21 ready to be -- to be integrated, but that's  
22 their -- that's their system. They know better of  
23 them.

24 And I think they can do a full system  
25 within two years as opposed to a full system

1 within -- you know, railway system takes -- with  
2 the infrastructure, it takes five years or so.

3 FRASER HARLAND: And then just to  
4 finish on this point, is it fair to say that in an  
5 ideal world, you'd have someone with the expertise  
6 from the beginning of the project looking at two  
7 subcontracts like this to ensure that the timing is  
8 reasonable, the expectations are reasonable and  
9 setting that out, ensuring that that's there from  
10 the outset?

11 JACQUES BERGERON: I mean, in an ideal  
12 world maybe, but when you start a contract like  
13 this, the focus is much more on the supplier, the  
14 overall schedule, how your manpower is going to be  
15 available to do those.

16 There's some details that, you know,  
17 you're not going to catch up out of, I don't know,  
18 20,000 requirements in those type of contracts.  
19 There's a few that are not necessarily important.  
20 The most important ones are do you have the brain  
21 power, the manpower to bring a contract of that  
22 nature to fulfillment.

23 FRASER HARLAND: Okay. And is it your  
24 understanding that Alstom and Thales would have  
25 been unaware of the schedules set out in the

1 other's subcontract?

2 JACQUES BERGERON: No, I don't -- I  
3 don't -- I don't think so. I think they had a very  
4 good idea of what they needed to do and what the  
5 obligations or obligation the schedule of each of  
6 the parties were.

7 But on a very high-level system -- you  
8 know, we used to talk in program management a  
9 40,000-feet level. When you get to 10-feet level,  
10 there's lots of details that, yeah, could have been  
11 better than this, but this is basically normal.  
12 And I've seen that in every single contract that  
13 I've -- that I've worked on.

14 FRASER HARLAND: Okay. So we've talked  
15 a bit about schedule. I want to talk a bit more  
16 about the requirements of each party under the  
17 subcontracts.

18 So you told us that this was not a  
19 plug-and-play system, but I think -- was that what  
20 Alstom -- what was your sense of what Alstom was  
21 expecting from Thales in terms of the VOBC rack?

22 JACQUES BERGERON: Well, you have to  
23 understand that Alstom and Thales are competitors  
24 in this field. They both have signalling systems.  
25 They -- you know, Alstom has a signalling system

1 division. They also have automated system that  
2 goes into subway cars and whatnot.

3 And they have a very good idea how  
4 their own system works. So for them, it is kind of  
5 normal to say this is the way it's going to go;  
6 however, Thales has a -- of course not the same  
7 system design as Alstom would have.

8 So, yes, they could have expected that  
9 the Thales system would have been similar to  
10 theirs, but, you know, it's never the case.  
11 It's -- you know, when we -- when we talk in this  
12 thing, it's similar, but there's lots of  
13 differences between systems, and this is normal in  
14 the industry. Everybody has got their own way of  
15 doing the same outcome I'm going to say.

16 FRASER HARLAND: But did you see Alstom  
17 expecting, you know, a plug-and-play rack and  
18 Thales was expecting to be able to give, you know,  
19 an unassembled group of parts? Is that a fair  
20 description of the sort of difference in  
21 expectations?

22 JACQUES BERGERON: Well, I don't know  
23 if it's -- if it's fair to say that. You know, I'm  
24 thoroughly convinced that Alstom knew the systems  
25 that Thales would provide, but for program

1 management reason and scheduling reasons just in  
2 case that something happens in the future, they're  
3 going to say that they expected a plug-and-play.  
4 With the experience of Alstom, I don't believe this  
5 is true, but this is what they said.

6 FRASER HARLAND: Okay. So your view is  
7 that there wasn't an issue -- so you didn't see an  
8 issue in what was specified in the two subcontracts  
9 in this respect?

10 JACQUES BERGERON: No, I didn't.

11 FRASER HARLAND: So you don't see a  
12 contractual issue as much as a strategic choice on  
13 the part of Alstom is your -- is your view here?

14 JACQUES BERGERON: Yeah. I believe  
15 that, you know, we can -- we can play on terms, and  
16 like I said earlier, I'm not a lawyer, but, you  
17 know, you have to have something to work on when  
18 you design the vehicle.

19 And, you know, when they issue their  
20 ICD, they needed a reply from Thales to make sure  
21 that all the receiving ends of their, I'm going to  
22 say, integration work has something to work on  
23 early on in the project, which was done actually,  
24 that both preliminary ICD, one from Alstom and one  
25 from Thales were issued quite early in the project,

1 so we can start discussing the differences that  
2 happened in between the two systems.

3 FRASER HARLAND: Can you speak a little  
4 bit more about this issue of the physical location  
5 of the VOBC rack early in the project? Again, is  
6 that not something that could have been defined  
7 quite early, sort of Alstom saying this is the  
8 space you have and Thales being able to meet that?  
9 Why was that so difficult?

10 JACQUES BERGERON: Because the  
11 difficulty was mostly the size and the cooling of  
12 the VOBC rack. And, you know, we had an  
13 interference, I'm going to say, of -- don't laugh  
14 but 5 millimetres. We were missing 5 millimetres  
15 for installing the VOBC rack inside the conductor  
16 cabin. That would interfere with the door that  
17 give access to -- to the -- from the driver to go  
18 into his cabin.

19 And we did work with Alstom and Thales  
20 to make sure that we reposition stuff. And the  
21 main problem of the rack inside the cab area is  
22 mostly a collision interface, meaning that whatever  
23 your -- you hold a computer or any other type of  
24 material, it has to withstand movement in case of  
25 an accident so they don't detach themselves.

1           So the frame that put the -- that holds  
2 the -- all the elements of the VOBC has to be a  
3 little bit bigger, but at the end, we found those  
4 millimetres. And with slight modifications to the  
5 front nose of the vehicle, we were able to fit it  
6 in the cab. So that was basically the issue.

7           FRASER HARLAND: Would you say that  
8 there was an illogical or unnatural division of  
9 responsibility between Alstom and Thales as far as  
10 the rack and the testing of the rack goes?

11           JACQUES BERGERON: Well, there was --  
12 there was issues on testing of the racks because  
13 Thales asked Alstom to test the VOBC, were going to  
14 take a look at series testing, not the  
15 qualification testing because there's two types of  
16 testing, to make sure that in every car that you  
17 test, that all the connections are done correctly  
18 and the information flows normally.

19           And at one point, to test one of the  
20 connection, Alstom would have to remove one of the  
21 elements of the VOBC, and Alstom didn't want to  
22 take that responsibility.

23           FRASER HARLAND: And you think that's  
24 normal for a train manufacturer not to want to have  
25 to deal with the inside of the rack and to leave

1 that to Thales?

2 JACQUES BERGERON: Well, it is -- it is  
3 normal for a train manufacturer not to dismantle or  
4 disassemble any supplier element as far as  
5 responsibility is concerned.

6 FRASER HARLAND: So why would've the  
7 division of responsibilities been set out that way?  
8 Do you have a sense of that?

9 JACQUES BERGERON: I don't recall why.  
10 You know, the origin of this, I saw, you know, from  
11 the -- it was not necessarily being able to be seen  
12 early on because that came back later as part of  
13 the Thales testing specification.

14 So this is where it all started that  
15 you had to take an element -- I'm going to say a  
16 unit out to test the communication. You know, I  
17 was talking about the antenna earlier that picks up  
18 the tags between the tracks.

19 If you want to test the connection  
20 between those, you have to remove a rack and  
21 physically go and test the communication between  
22 those two ends of a wire without passing through  
23 the computer.

24 So that was a -- that was a main point  
25 of removing one of the elements in the rack, which



1 makes sense, but we turned out to be able to test  
2 it a different way to accommodate both parties, but  
3 that was not a design issue. That was a  
4 responsibility issue.

5 FRASER HARLAND: Right. And do you  
6 think some of these division of responsibility  
7 issues had to do with the parties trying to save  
8 costs on various things that they were responsible  
9 for? What might have been behind this?

10 JACQUES BERGERON: Yes, of course. I  
11 mean, if we -- if we -- if my memory serves me  
12 right, removing the rack takes about five minutes.  
13 It's very well done, and, you know, they're modular  
14 in design, but the -- at the end of the day, Alstom  
15 agreed to do that to that extent, and we paid them  
16 for that if my memory serves me right because it  
17 was kind of insignificant.

18 But I do understand, being a vital  
19 system, that Alstom didn't want to take the  
20 responsibility. But those were one of the first  
21 steps in the testing process, and if something  
22 occur, we would have seen the results in further  
23 tests down the test procedure if the reconnection  
24 after reinstalling that unit would be -- wrongly be  
25 done.

1 FRASER HARLAND: Is there anything from  
2 OLRTC's side in terms of how these responsibilities  
3 were divided that would have led things to be more  
4 cost-effective or --

5 JACQUES BERGERON: No, no, no, that  
6 came directly from Thales' testing specification,  
7 which we didn't -- we didn't see at -- a project  
8 signature and contract signature or very early  
9 in -- actually, it came quite late in the project,  
10 which is normal. I mean, you don't have, you know,  
11 test procedure until your design is complete and  
12 you know the full environment.

13 FRASER HARLAND: Okay. So maybe we  
14 could move on to have you speak a bit about the  
15 interface meetings that I understand took place  
16 between the parties.

17 So am I right that there were a number  
18 of interface meetings or workshops that OLRTC  
19 hosted between Alstom and Thales?

20 JACQUES BERGERON: Yes, that is  
21 correct.

22 FRASER HARLAND: Was it part of your  
23 role to organize these meetings, or how did that  
24 work?

25 JACQUES BERGERON: Yes, yes, it was

1 part of my job.

2 FRASER HARLAND: Okay. Were these  
3 kinds of meetings taking place before you arrived,  
4 or did --

5 JACQUES BERGERON: I don't know if they  
6 had meetings before I arrived to be frank with you.  
7 I know that we started when I arrived with the --  
8 like I said, the physical interface between the  
9 VOBC and the vehicle.

10 FRASER HARLAND: And when did these  
11 meetings take place?

12 JACQUES BERGERON: Oh, we had numerous  
13 meetings. I cannot recall, but we had --

14 FRASER HARLAND: I mean, I'm not asking  
15 for each specific date, but they started close to  
16 when you arrived, and did they go until you left?  
17 What did that look like?

18 JACQUES BERGERON: Yes, we started to  
19 have that when I arrived, and it was, like I said,  
20 a little bit iffy at the beginning because Alstom  
21 and Thales are competitors in the same market.

22 But, you know, the exchange of  
23 information was, I'm going to say, difficult to  
24 begin with, but as the time went out and the  
25 project moved in time, it became easier and easier.

1           And then we start to have meetings in  
2 locations -- in Alstom's locations and Thales'  
3 locations, and by the time -- I'm going to say by  
4 2016, Alstom and Thales would communicate on their  
5 own and keep me in the loop of what they exchange.

6           And those were not big decisions to  
7 make, but, you know, details of interfaces that  
8 they could deal between them without us having to  
9 interfere or intervene or direct them.

10           So it started very difficult as far as  
11 a -- I'm going to say cooperation viewpoint, but by  
12 2016, 2017, it went quite smoothly I'm going to  
13 say.

14           FRASER HARLAND: And you said that --  
15 so there may have been some reticence between the  
16 two parties for sharing information because of the  
17 competition between them? Was that your -- was  
18 that why, do you think?

19           JACQUES BERGERON: I think originally,  
20 yes, but at the end, it's -- you know, you want to  
21 make the vehicle, you know, work with the system  
22 and integrate it properly.

23           And because they don't have the same  
24 design of course, Thales would not share with  
25 Alstom their internal design of, you know, how the

1 computer calculates things, but as far as, you  
2 know, wiring connection and what information that  
3 you need, it became much more open.

4           And those are not proprietary  
5 information. You know you have to be able to  
6 connect with the TCMS, which is the train control  
7 and monitoring system, to pass some information  
8 about, you know, the speed of the vehicle, what's  
9 the braking rate they have, what's the acceleration  
10 rate they have and so on and so forth.

11           So those are not proprietary  
12 information, but how the Thales deal with that  
13 information is proprietary, but Alstom doesn't need  
14 to know that to be able to do this.

15           So, yeah, originally there was -- there  
16 was some, I'm going to say, hesitation about  
17 sharing information, but at the end, they  
18 understood that it doesn't affect preparatory  
19 information either side from Alstom or Thales.

20           FRASER HARLAND: Were there other  
21 reasons that you saw that might have explained this  
22 difficulty at the beginning in terms of sharing  
23 information between the two parties?

24           JACQUES BERGERON: No, I don't think  
25 so. I think it was mostly commercial issues.

1 FRASER HARLAND: And so can you explain  
2 just generally what the purpose of the interface  
3 meetings was? What did these meetings look like?  
4 What was -- what were you trying to get out of  
5 them?

6 JACQUES BERGERON: Well, basically we  
7 need to know exactly, you know, which signal per  
8 signal needs to be exchanged, where to find it on  
9 the vehicle and where to plug it and transfer it to  
10 the VOBC and in what form, what sequence, the  
11 timing of it.

12 Mostly everything works within about 50  
13 milliseconds, but if there's any issues about  
14 timing, these need to be discussed so -- and  
15 sometimes the design needs to be changed to  
16 accommodate this.

17 But in Alstom case, the most, I'm going  
18 to say, serious interface problem that we had was  
19 with the double-cut connections to the breakers on  
20 the vehicles, which Alstom -- I think they said we  
21 know what a double-cut connection is, but at the  
22 end of the day, they didn't.

23 It's a little bit to say what a double  
24 cut is, is that everybody is aware of, you know, a  
25 three-way light switch that you have two -- you can

1 operate a light in your house from two different  
2 locations. So you have basically three wires that  
3 are connected amongst the two light switch.

4 In Alstom case, this is how they manage  
5 their double cut, but on Thales side, they need  
6 four wires, and that at the end of the day, Alstom  
7 had to make a retrofit on their vehicles to add  
8 about 20 to 40 wires, depending on was that the  
9 main VOBC or the slave one.

10 So that came out -- this realization  
11 came out quite late for Alstom; however, it was in  
12 the ICD from Thales from the beginning, from the  
13 very first ICD that they issued.

14 And, you know, it did create -- of  
15 course, commercially speaking, Alstom was not happy  
16 about it, but there's nothing we could do.

17 FRASER HARLAND: Okay. But in very  
18 basic terms, the two parties are coming together.  
19 They're sort of refining things, making agreements  
20 between one another, and then they're supposed to  
21 take those away and implement them into their  
22 design and into their ICDs? Is that --

23 JACQUES BERGERON: Yes, that's fair to  
24 say. That's fair to say.

25 FRASER HARLAND: Okay. And the ICDs

1 and then I believe it's called a black box  
2 interface, BBI, are those the two main interfacing  
3 documents that are being discussed at these  
4 meetings?

5 JACQUES BERGERON: Yes. Yes.

6 FRASER HARLAND: Was it your  
7 understanding that the representatives from Alstom  
8 and Thales who came to these meetings had the  
9 ability to sort of bind the companies to what was  
10 discussed there, or were they just there to collect  
11 information, and then the binding effect would be  
12 through documents? Like, how did that look?

13 JACQUES BERGERON: Well, I specifically  
14 asked. You know, before we go -- of course the  
15 binding always -- as far as the final state will  
16 always be through documents, but I always ask to  
17 have somebody there that can make the decision on  
18 the spot that if we work in that direction, will it  
19 go to the end and not be stopped by someone else at  
20 a later date.

21 So I don't know if it makes sense.  
22 What I'm saying is that I don't want to endure --  
23 to say that we have a design, we found a solution,  
24 that both parties agrees to implement it and it  
25 won't change in the future.



1           So that was my requirements in front of  
2 those -- you know, the two parties is that somebody  
3 there, that we work together to find a solution for  
4 interfaces, that it won't be turned down later in  
5 the -- in the design process.

6           FRASER HARLAND: And so it was your  
7 understanding that the people who came did have  
8 that authority?

9           JACQUES BERGERON: Yes. Yes.

10          FRASER HARLAND: Who were the key  
11 representatives from Alstom and from Thales at  
12 these meetings generally?

13          JACQUES BERGERON: Well, one of them  
14 was Lowell Goudge from Alstom. And, you know,  
15 sometimes he even brought some design engineers  
16 from Valenciennes in France.

17                 And on the Thales side, it was -- jeez,  
18 I haven't talked to him in four years, so I  
19 don't -- I don't fully remember his name. What was  
20 his name? Very tall guy. Jeez, I don't remember  
21 his name.

22                 There was -- there was a -- kind of a  
23 chief engineer on the Thales side that, you know,  
24 work with us in all those interface meetings.

25          FRASER HARLAND: Okay. So agreements

1 are being made at these meetings, and then I  
2 understand that at some point, there was an issue  
3 where Alstom made the choice to say we haven't  
4 received a new finalized ICD, so we're going to use  
5 Version 2 -- I believe it was Version 2. You can  
6 tell me -- and we're working from that as our  
7 interface until we get another one. Do you recall  
8 an issue like that happening?

9 JACQUES BERGERON: Yeah, I don't know  
10 what version it was, but, yes, they did work on the  
11 Version 2, but as I explained, the double-cut  
12 situation they didn't understand, and that's what  
13 created the main big problem of, you know, having  
14 to retrofit those -- all the vehicles that were  
15 already built in that -- in that way.

16 But they did work under the document,  
17 but they didn't understand the schematics that were  
18 presented in those ICDs. Or I'm going to say it's  
19 a matter of interpretation, but, you know, it turns  
20 out to be the same.

21 They fully didn't understand that  
22 what -- what a double-cut connection is, and  
23 they -- I think they went to their own design  
24 saying their understanding, but it was not the  
25 case. So, yes, they worked on the right document,

1 but the interpretation of that document was wrong.

2 FRASER HARLAND: And there wasn't any  
3 issue of them working on a finalized document as  
4 there had been sort of new draft changes being  
5 approved and those later changes not being  
6 implemented? Do you recall that?

7 JACQUES BERGERON: Not really. You  
8 know, once we discovered, you know, the  
9 interpretation, after that everything moved pretty  
10 much straight forward. The problem was to actually  
11 find the time and the space to implement those  
12 modifications.

13 FRASER HARLAND: Okay. Because in  
14 January 2016, Alstom submitted a variation to  
15 account for differences between Version 2 and  
16 Version 3 of the ICD. Does that -- do you recall  
17 that at all or --

18 JACQUES BERGERON: Oh, boy. It's six  
19 years ago.

20 FRASER HARLAND: And I understand for  
21 sure.

22 JACQUES BERGERON: It's a -- you know,  
23 we had a lot of -- I'm going to say a lot of  
24 interface issues with -- contractual issues with  
25 Alstom throughout the contract, which is

1 basically -- I worked with Alstom on six or seven  
2 project, and this is their way of protecting  
3 themselves.

4 It is a type of program management that  
5 they have adopted. So we had a lot of them. To  
6 that specifically, yes, but at the end of the day,  
7 we kind of agreed that the ICD presented by Thales  
8 was quite clear, so, you know, they had to do it.

9 And we did at that time offer to  
10 monetary compensate for that at that time, but they  
11 didn't accept. They wanted more. So, you know,  
12 it's -- at that point, it became a negotiation  
13 issue more than a technical issue.

14 FRASER HARLAND: Okay. And were -- I  
15 understand the meetings were minuted. Were there  
16 expectations for the parties to implement changes  
17 based on the minutes coming out of the interface  
18 meetings?

19 JACQUES BERGERON: Not necessarily the  
20 minutes. I'm going to say -- like I said earlier,  
21 when the interface document, whatever it may be, a  
22 plan, a schedule, schematics or whatever were final  
23 and, you know, finally released, this is when I  
24 expect them to do the implementation.

25 The only thing they can do as far as

1 the minutes is -- what I would do and what I used  
2 to do is to get ready to be -- to implement that  
3 change as per the official minutes, but the final  
4 one -- because there's always, you know, sometimes  
5 changes that comes when the final document comes  
6 in. You don't want to be caught to be redoing  
7 things twice. So, yes, I expect them to get ready  
8 but not to implement it as the minutes are issued.

9 FRASER HARLAND: Okay. So the normal  
10 industry or engineering practice would be to wait  
11 until there's an actual ICD document to work from  
12 before actually implementing changes? Is that --

13 JACQUES BERGERON: Well, you know, ICD  
14 or, you know, it can be a -- like I said, a  
15 drawing, a schematic, anything that is done final  
16 because you cannot design per minutes of meetings  
17 really. You need drawings. You need schematics.  
18 You need more information.

19 But, yes, it is general practice that  
20 you have to wait for the official documents. I'm  
21 going to say the design documents that are final.

22 FRASER HARLAND: Okay. And you spoke  
23 about the double-cut connectors. Are there other  
24 design aspects of the interfacing that caused  
25 significant challenges that you recall?

1                   JACQUES BERGERON: Yeah -- well,  
2 significant, no, but the connection between two  
3 trains, you know, the way to make sure that we know  
4 where the active cab is was a challenge, but we --  
5 you know, we found a solution after three or four  
6 iterations to make sure that it works in all  
7 circumstances because you need to know where the  
8 front end of the vehicle is at all times and this  
9 distance. So those are 48 metres car. They can  
10 work in tandem as well, so that's 96 metres.

11                   In an automated system, you need to  
12 know exactly what is the train composed of and  
13 where's the front of it at all times in all types  
14 of communication because you can -- you know, you  
15 can -- you can connect those vehicle any which way  
16 because, you know, you have a main VOBC, I'm going  
17 to say, at the front. They are mostly at the end,  
18 but you have a slave one as well which can  
19 interface between each other.

20                   So when you couple two vehicles, then  
21 you have two main, two slaves. Who's taking the  
22 control of it? It's quite important to know.

23                   And, you know, we had, you know, issues  
24 on that to make sure that it works in all type of  
25 combinations when you connect two cars together,

1 but that was a much lesser issue than the  
2 double-cut ones.

3 FRASER HARLAND: And just on a  
4 practical level, when a new interfacing document  
5 like ICD, BBI or, as you said, design document was  
6 produced, was that sent through OLRT to -- from  
7 Alstom and Thales or vice versa?

8 JACQUES BERGERON: Yes, it always came  
9 through OLRT before we distribute it to the other  
10 parties.

11 FRASER HARLAND: And would you have  
12 been involved in that process, or was that someone  
13 else's responsibility?

14 JACQUES BERGERON: Yes. No, I was  
15 involved in this because we had to -- my team, we  
16 had to review that what was discussed in the  
17 minutes or in the meetings was reflected accurately  
18 in the -- in the design document.

19 FRASER HARLAND: And are you aware of  
20 any delays between receiving and sending out design  
21 documents in the process?

22 JACQUES BERGERON: Yes. Yes.  
23 Sometimes there's delays because we have to go back  
24 before the assurance because there's some mistakes.  
25 And I can't -- I can't recall specifically, but,

1 you know, it happens a few times.

2 FRASER HARLAND: So can you just  
3 explain that? Because you see it and then you see  
4 there's mistakes, so you're going back to that  
5 party before issuing it to the other? Is that what  
6 you mean or --

7 JACQUES BERGERON: That's what I mean,  
8 yes.

9 FRASER HARLAND: Okay. So is it fair  
10 to say that generally you'd want to get these  
11 documents from one party to the other as quickly as  
12 possible?

13 JACQUES BERGERON: Yes. Yes. And  
14 usually, you know, there was no issues. Usually it  
15 was a matter of days. You know, between two and  
16 three, four days it was shipped from the other  
17 side.

18 FRASER HARLAND: But you do recall that  
19 there were -- and I know you may not be able to  
20 give me specifics, but you do recall there were  
21 instances where there was more significant delay in  
22 getting --

23 JACQUES BERGERON: Yes. Yes.

24 FRASER HARLAND: When Alstom and Thales  
25 disagreed on scope of work or what needed to be



1 done, how is it that -- was it your role to decide  
2 who was going to do what?

3 JACQUES BERGERON: It was not my role  
4 to decide, and it has to go through program  
5 management, which is the contractual administration  
6 of those contracts. But, you know, I would -- I  
7 would -- obviously I would say which instance I  
8 want to -- for them to correct the situation, to  
9 minimize. Most of the time it's schedule, but it  
10 can be cost as well.

11 FRASER HARLAND: Okay. So in terms of  
12 making those recommendations, schedule and cost are  
13 the driving factors?

14 JACQUES BERGERON: Yes. Mostly  
15 schedule.

16 FRASER HARLAND: And did you end up  
17 feeling like you were sort of siding with Alstom or  
18 Thales more often than the other?

19 JACQUES BERGERON: No, I don't think  
20 so. For me, it was -- it was -- it was a question  
21 of functions. It's not a question of who supplies  
22 what. I want to make sure that the function is  
23 happening correctly, and if it is on Alstom side or  
24 Thales side, I don't -- I don't -- I don't really  
25 care to be frank with you.

1           You know, one thing that -- you know,  
2 we discussed the physical interface of the VOBC  
3 rack within the vehicle. You know, this was  
4 targeted directly to Thales to make sure that it  
5 fits in this environment. And I didn't want to  
6 have any discussion about it because that was more  
7 practical for everybody, and at the end of the day,  
8 they did it.

9           But, you know, no, I don't -- I don't  
10 care if it's Alstom or Thales that has to do the  
11 work. I just want to have the proper outcome for  
12 the project.

13           FRASER HARLAND: Is there ever a reason  
14 to prefer Thales from a safety perspective or  
15 Alstom for that matter?

16           JACQUES BERGERON: Well, yes, I mean,  
17 those systems are -- so for -- if Thales tells me  
18 that if we do it like where they will not be able  
19 to meet that specification, then I have to go in  
20 Thales's side because, you know, it's a safety  
21 issue.

22           But other than that, if it's schedule,  
23 if it's cost or whatever the excuse, that I -- I  
24 don't -- I don't really care to a certain extent.

25           FRASER HARLAND: Okay. Would you say

1 there were still ongoing issues in ICD integration  
2 at the time that you left the project?

3 JACQUES BERGERON: I don't think there  
4 was ICD issues. There were -- there were  
5 performance issues by the time I left.

6 Mostly -- the one that -- it's mostly  
7 always the case -- in automated system, it was the  
8 braking accuracy or the stopping accuracy of the  
9 train controlled by Thales.

10 You want to -- however, the  
11 specifications say you will stop within plus or  
12 minus 1 metre at the platform. This was met, but  
13 the way we got there had some kind of hiccups I'm  
14 going to say.

15 FRASER HARLAND: Can you just speak to  
16 that a little bit more? What was -- what were the  
17 problems there?

18 JACQUES BERGERON: The problem was  
19 mostly because of the amount of pulse that we have  
20 when we measure the wheel rotation, and you want to  
21 have a certain time to readjust when you get into a  
22 stopping distance at one point. You don't want to  
23 go kind of like this and then stop at the right  
24 place.

25 And you need some processing power, and

1 you need some information to achieve this smooth  
2 without any disruption for passenger. And Thales  
3 is, I'm going to say, very -- how can I say this?  
4 Pointy about their stopping accuracy. They have to  
5 be.

6 In Ottawa, we have platform doors, but  
7 in other systems such as Kuala Lumpur and JFK, when  
8 you have, you know, two sets of doors -- I'm sure  
9 everybody went to any airport and taking the train  
10 that you have the vehicle door that opens, and then  
11 you have another door that opens to have access to  
12 the platform. Those are platform doors. They have  
13 to -- when you're stopping, you have to align those  
14 correctly.

15 And the stopping accuracy in Ottawa  
16 however, you know, as far as plus or minus 1 metre  
17 was not a problem. It was kind of jerky, if I can  
18 express myself that way, to get to that stopping --  
19 that stopping point. You know, you had stop, no  
20 stop, stop, no stop until you reach that point.

21 And that was basically an issue on the  
22 communication between the brake control unit of the  
23 train and the TCMS which is the train control unit  
24 on the vehicle that were a little bit slow -- and  
25 this is, again, my memory -- was slow to transfer

1 that information to the VOBC because we had a  
2 teethed wheel that was -- it didn't have enough  
3 teat to measure it accurately.

4 FRASER HARLAND: Okay. And so those  
5 issues were still ongoing at the time you left the  
6 project?

7 JACQUES BERGERON: Yeah. They were  
8 not -- you know, it's not a safety issue. It's  
9 not -- it's more a comfort issue to get there. We  
10 saw that in Vancouver as well.

11 The first generation of vehicle, you  
12 know, you start to stop, and then it coast, and  
13 then it stops again. You know, you just have to  
14 take the train a couple of times to understand that  
15 this is how it stops, and then you can prepare for  
16 it. It's more comfort things, but it's not a  
17 safety issue.

18 FRASER HARLAND: Okay. From your  
19 perspective, the ICDs between Thales and Alstom had  
20 been fully integrated by the time you left the  
21 project?

22 JACQUES BERGERON: Oh, yes.  
23 Definitely, yes.

24 FRASER HARLAND: Okay.

25 JACQUES BERGERON: I'm not going to say

1 that all the modification that were the result of  
2 those ICD have been all completed in all the cars,  
3 but all the test units that we were testing, yes,  
4 they were correct.

5 FRASER HARLAND: Okay. I'm going to  
6 suggest we take a break until 10:40 now, and then  
7 we'll come back with some more questions.

8 JACQUES BERGERON: Okay.

9 -- RECESSED AT 10:27 A.M. --

10 -- RESUMED AT 10:40 A.M. --

11 FRASER HARLAND: Mr. Bergeron, if I  
12 could just take a step back and ask you how you  
13 would describe OLRTC's relationship with Alstom  
14 while you were on the project.

15 JACQUES BERGERON: The relationship has  
16 kind of evolved throughout the project when I was  
17 there. We had four project managers on the Alstom  
18 side throughout the project.

19 Originally, we had a very senior  
20 project manager, and he kind of quit to join  
21 Kawasaki. And then we had a -- I'm going to say a  
22 junior program manager. And after that, it came  
23 back to a more senior -- the last two or more  
24 senior ones, but I'm going to say that it was kind  
25 of up-and-down type of relationship.

1 FRASER HARLAND: And up and down  
2 because of the level of experience on OLRT's side,  
3 or was there something on Alstom's side? Why was  
4 it up and down?

5 JACQUES BERGERON: (Technical issue).

6 THE REPORTER: Sorry, the witness had  
7 cut out.

8 FRASER HARLAND: Yeah, apologies.  
9 You -- if you can just start from the beginning of  
10 your answer there to why the relationship was up  
11 and down.

12 JACQUES BERGERON: I'm going to say  
13 that it was more on the Alstom side, but the change  
14 of program manager (technical issue).

15 FRASER HARLAND: Looks like --

16 THE REPORTER: Sorry, the witness froze  
17 again.

18 JACQUES BERGERON: Is it back to normal  
19 now?

20 FRASER HARLAND: Yes.

21 JACQUES BERGERON: Okay. Yeah, it  
22 was -- the change of program manager is, you know,  
23 you develop a personal relationship with those  
24 program manager and a level of trust that builds,  
25 and when you -- when you get a new program manager,

1 you have to start on this all over again.

2 And, of course, they don't have the  
3 same personality, and it is -- you know, it is kind  
4 of up and down. That's why I'm saying up and down  
5 because it's -- you have to start all over again  
6 every time that there's a new program manager.

7 FRASER HARLAND: Did you feel like you  
8 were starting over again in terms of that  
9 relationship as well or just more --

10 JACQUES BERGERON: Yes, on my side as  
11 well as far as the program manager.

12 I want to go back to -- you know, you  
13 asked me if there was -- you know, main engineers  
14 on the Alstom and the Thales side, and I didn't  
15 remember the Thales one, which I did remember now.  
16 On the Alstom side, it was Lowell Goudge, and on  
17 Thales, it was Paul Dooyeweerd. Don't ask me to  
18 spell it. I don't remember. But those, you know,  
19 kind of develop some nice communication and  
20 teamwork between those two.

21 And then when -- if we come back to the  
22 program management, this is when -- you know, the  
23 influence of a program manager on the behaviour of  
24 everybody that works in the project is crucial.

25 And, yeah, having four of them, you had



1 to start all over, and the second one was a pretty  
2 good person but lack of experience. That was, I  
3 think, her first big project, and it was a little  
4 bit more difficult to deal with.

5 FRASER HARLAND: Was that Nadia Zaari?  
6 Is that --

7 JACQUES BERGERON: Yes. Yes.

8 ANTHONY IMBESI: Mr. Bergeron, if I  
9 just may jump in to ask you a question here, you  
10 had -- you had mentioned earlier that, you know, it  
11 was a provision of their subcontract, as you  
12 understood it, that both Thales and Alstom had to  
13 work together to get the job done, to get things  
14 integrated. Do you recall that?

15 JACQUES BERGERON: Yes, I do.

16 ANTHONY IMBESI: And so this sort of  
17 just ties into what you had just mentioned to us,  
18 but in your view, did both parties, Alstom and  
19 Thales, adhere to this obligation?

20 JACQUES BERGERON: I'm going to say  
21 yes. You know, you -- I don't -- I don't -- I  
22 don't see any actions from either part that say  
23 that, you know, they didn't -- they didn't adhere  
24 to that.

25 ANTHONY IMBESI: Okay. Did you ever

1 have any concerns that they wouldn't or couldn't  
2 adhere to that obligation?

3 JACQUES BERGERON: No, not really.

4 ANTHONY IMBESI: Thank you.

5 JACQUES BERGERON: You're welcome.

6 FRASER HARLAND: Was it your impression  
7 that Alstom welcomed your assistance as integration  
8 director?

9 JACQUES BERGERON: I would like to  
10 think yes so, on both sides actually.

11 FRASER HARLAND: Do you know if Alstom  
12 had expressed challenges with integration prior to  
13 your arrival? Do you know anything about that?

14 JACQUES BERGERON: No, no, not really.

15 FRASER HARLAND: How would you assess  
16 Alstom's performance during your time as director  
17 of integration?

18 JACQUES BERGERON: I think it was very  
19 well done. Alstom was very competent. They --  
20 technically very competent as well. And they're a  
21 very, very good, you know, train manufacturer.

22 They do have some internal problems  
23 just like -- you know, Alstom is composed on  
24 many -- well, many -- they have three or four  
25 different divisions inside their mass transit

1 build-up.

2           You know, they -- there's a train  
3 division. They have their propulsion division,  
4 they have their signalling division, they have  
5 their communication division, and those act almost  
6 independently from one another. And it's not  
7 because the propulsion comes from Alstom as opposed  
8 to, I'm going to say, GE or Toshiba or whatever,  
9 that it's going to be easier. They have their own  
10 structure to deal with.

11           So I know that internally they had some  
12 issues with the propulsion system, mostly the line  
13 contactors. That wasn't up to the task in our  
14 case.

15           But overall, I think that, you know,  
16 they performed very well. I learned -- and this I  
17 cannot -- I cannot say for sure at the end of  
18 the -- after I left, there was a lot of lateness in  
19 the project. I don't know why, and I'm surprised  
20 by it to be frank with you.

21           But by the time that I was there, I  
22 think they performed correctly just like as seen in  
23 any other project that I worked on with them or  
24 with Bombardier.

25           FRASER HARLAND: Okay. So if we can go

1 through some similar questions on the Thales side,  
2 how would you describe OLRTC's relationship with  
3 Thales?

4 JACQUES BERGERON: You froze. Can you  
5 repeat the question?

6 FRASER HARLAND: I just wanted to ask  
7 some similar questions with respect to Thales and  
8 ask how you would describe OLRTC's relationship  
9 with Thales.

10 JACQUES BERGERON: I think our  
11 relationship was very good. Thales is a very  
12 competent company as well. Their project manager  
13 on the Thales side, Michael Burns, was new to the  
14 business, so it took a little bit of time, I'm  
15 going to say, to mould him into a mass transit  
16 mentality.

17 There's quite a lot of details that  
18 needs to be ironed out, but overall, I think the  
19 relationship was very good. At least I enjoyed it.

20 FRASER HARLAND: And would you assess  
21 Thales's performance as strong during your time on  
22 the project as well?

23 JACQUES BERGERON: I assess it as very  
24 strong, yes.

25 FRASER HARLAND: And they also -- from

1 your perspective or at least you hoped that they  
2 welcomed your presence as systems integrator?

3 JACQUES BERGERON: I -- yes, I assume  
4 so. There was -- I think -- I mean, nonverbal and  
5 a feeling that we had in the meetings, I'm going to  
6 say, after 2016 it was very friendly and very  
7 cooperative. So, yes, I enjoyed it, and I assume  
8 that they did enjoy it as well.

9 FRASER HARLAND: And that was primarily  
10 you said with Lowell Goudge on Alstom's side, and  
11 can you remind me the name of the Thales side  
12 again?

13 JACQUES BERGERON: Yeah, it's tough.  
14 It's Paul Dooyeweerd. He's -- you know, the name  
15 is from the Netherlands, so don't ask me to spell  
16 it. I don't remember. But very, very competent.  
17 Those two were very competent people.

18 FRASER HARLAND: So you enjoyed  
19 productive relationships with both of them?

20 JACQUES BERGERON: I truly enjoyed the  
21 relationship that we had.

22 FRASER HARLAND: And what would you say  
23 the collaboration between Alstom and Thales was  
24 like? You know, you mentioned earlier that often  
25 there's a honeymoon period at the beginning of a

1 project. Did that disintegrate over time or --

2 JACQUES BERGERON: That was the -- that  
3 was the inverse with -- between Alstom and Thales.  
4 I think originally, as I say, they were treating  
5 each other as competitors, and they never talked to  
6 each other directly, and they were talking to each  
7 other via myself when we're talking about technical  
8 issues and via the project manager when you're  
9 talking about contractual issues.

10 But as the period -- the time went by,  
11 they started to, I'm going to say, establish a very  
12 good cooperation in between them, at least  
13 technically.

14 FRASER HARLAND: So I want to move on  
15 to talk a bit about testing. I assume that as  
16 director of integration, you would have been  
17 involved in and you stayed apprised of the testing  
18 that was going on at least as it related to the  
19 vehicles and the signalling?

20 JACQUES BERGERON: Yes.

21 FRASER HARLAND: Are you aware of --  
22 did -- the challenges with interfacing and some of  
23 the delays experienced through interfacing, did  
24 that have an impact on testing?

25 JACQUES BERGERON: Not really. We had

1 a few -- a few little things to deal with, but the  
2 lateness on testing and the challenge on testing  
3 was to actually have a system to test on. It  
4 didn't really involve Alstom or Thales technical  
5 issues per se.

6 FRASER HARLAND: So what system to  
7 test? What do you mean by that? Like, what --

8 JACQUES BERGERON: Well, you know, a  
9 system has to be complete or to a certain extent to  
10 be able to test, meaning that I need -- I need the  
11 track, I need the power, I need the communication  
12 system. I need -- I'm not going to say the Wi-Fi,  
13 but, you know, it's -- the control system of the  
14 train is radio-based, so all the wiring and  
15 connections to the control rooms has to be done in  
16 order to be able to test. If I don't have that,  
17 I -- you know, yeah, I can run on a track, but it's  
18 kind of worthless.

19 FRASER HARLAND: I understand that  
20 originally -- and this might have been before your  
21 time, but originally there had been a plan to  
22 manufacture two prototype LRVs in France, and then  
23 the plan was to do them in Hornell. And eventually  
24 one was done in Hornell, and one was done in  
25 Ottawa. Were you aware of those changes in plans

1 and manufacturing?

2 JACQUES BERGERON: Yes, I was. Yes, I  
3 was aware of it. Just to correct you, the original  
4 plan was to build two -- build and test two LRVs in  
5 Valenciennes in France and then build one in  
6 Hornell or -- this I don't recall if it's  
7 completely exact but then start production in  
8 Ottawa.

9 But for scheduling purposes, it was --  
10 and it was mostly because of transportation issues  
11 between Europe and Canada that the manufacturing of  
12 trains in Europe was abandoned, and there was -- we  
13 built one train in Hornell, and the second one was  
14 built in Ottawa. And that was a scheduling issue  
15 and not anything else.

16 FRASER HARLAND: Did doing that delay  
17 validation testing?

18 JACQUES BERGERON: No, not really. The  
19 change of the location for build a train didn't  
20 affect the testing. Like I said, what affect the  
21 testing was the availability of the test track in  
22 Ottawa, which was supposed to be 4 kilometres of  
23 dual track so we can test -- on one track, we can  
24 test the vehicle, and on the other side, we could  
25 test the control vehicle by Thales.



1           But, you know, if my memory serves me  
2 right -- and this is OLRT's, you know,  
3 responsibility -- we're supposed to have the track  
4 available in the late 2016, but we actually got a  
5 1 kilometre of track I think was in early 2017, so  
6 almost a six months' delay there, and we didn't  
7 have the full 4 kilometres of tracks available to  
8 us for testing. And that was the main point that  
9 slowed down the testing phase.

10           FRASER HARLAND: I guess I was just  
11 wondering because originally -- I mean, in France  
12 at least there would have been construction and  
13 validation testing done there. So you would have  
14 had validation testing done much earlier than could  
15 happen in Ottawa? Is that --

16           JACQUES BERGERON: Yeah, well, the  
17 validation would have been, you know, maybe save a  
18 couple of months because you couldn't test on the  
19 actual system that you're going to run on to.

20           So you test, you know, if your braking  
21 system is working, if your acceleration system is  
22 working. You can test communications, but, you  
23 know, everything else is test in shop, just like,  
24 you know, the lights, the doors, the air  
25 conditionings, everything else.

1           So you're not going to gain a whole lot  
2 to have a special test track to test since we  
3 couldn't install the Thales system in France. That  
4 wouldn't have -- maybe we're going to save a couple  
5 of months, but that's about it.

6           FRASER HARLAND: So there wouldn't have  
7 been any ability to do interfacing testing earlier  
8 if it had been done in --

9           JACQUES BERGERON: No, I don't -- I  
10 don't believe. Not at that time. I don't believe  
11 so.

12           FRASER HARLAND: So you've said there's  
13 delayed -- a delay of the track being ready. Do  
14 you know if there was also an issue in terms of  
15 access to the track for Alstom in terms of testing?

16           JACQUES BERGERON: That is funny  
17 because, you know, a consortium OLRT is built by  
18 SNC-Lavalin, which is mostly responsible for  
19 system. Dragados, that's responsible for the  
20 horizontal build, meaning the track and the tunnel,  
21 and EllisDon for the vertical construction.

22           And, you know, when we -- when we say  
23 we need something ready, we need it at 100 percent,  
24 and at one point, the access -- we had a small  
25 access tunnel from the MSF to the main track, and

1 we -- you know, construction was done and ready,  
2 you know, 99.9 percent, but we were missing 20  
3 metres of --

4 FRASER HARLAND: Sorry, Mr. Bergeron,  
5 you froze again on us there.

6 JACQUES BERGERON: Sorry. Where can I  
7 restart? Can you hear me now?

8 ANTHONY IMBESI: Perhaps if we could  
9 just go off record for a second.

10 -- OFF THE RECORD DISCUSSION --

11 ANTHONY IMBESI: If you can just  
12 explain your comments about the small tunnel and  
13 last 20 metres, and then we can take it from there.

14 JACQUES BERGERON: Okay. To have  
15 access to the main track, we had from the main --  
16 from the MSF, we had 800 metre long tunnel that  
17 goes underneath the CN tracks, and in the middle of  
18 it we were missing 20 metres of catenary wire, so  
19 no power. So that means that we couldn't get out  
20 to the main track, and that took a couple of months  
21 to solve as strange as it may sound.

22 So the access to the track was limited,  
23 and, you know, we had some, I'm going to say,  
24 drainage issue. We even had at one point a train  
25 that was frozen in the middle of that tunnel, and

1 we had to wait until the weather came a little bit  
2 better.

3 So, yes, we had some issues to get to  
4 the main track early on the project, and that was  
5 in early 2017, but after that, it was -- it was  
6 pretty good. However, we had only 1 kilometres of  
7 dual track. It was not enough to complete quite a  
8 lot of testing actually.

9 FRASER HARLAND: So from your  
10 perspective, was track availability the main  
11 impediment to progress on testing?

12 JACQUES BERGERON: Yes, it was not only  
13 on testing because we had to train the OTC drivers  
14 as well. So OTC was very accommodating to  
15 sometimes train their drivers at night while we  
16 were testing during the day, but, yes, the  
17 availability of the track was the main point that  
18 kind of slowed down the project.

19 FRASER HARLAND: And so in terms of  
20 access, there's this physical access issue, but it  
21 sounds like there's also sort of a time  
22 availability issue as well. Is that --

23 JACQUES BERGERON: Yes, yes, there is  
24 because now you have to -- you have three types of  
25 tests. You need to test the vehicle, you need to

1 test the Thales system, and then you need to train  
2 the OC Transpo drivers.

3 So when you don't have enough track,  
4 it's very difficult to manage all of those testing  
5 simultaneously when, you know, on a 4 kilometre  
6 track, it would have been kind of much easier and  
7 more effective way of testing.

8 FRASER HARLAND: And did that have an  
9 effect on finalizing the interface? Like, was  
10 there design and then testing and then more design,  
11 or how did that work?

12 JACQUES BERGERON: Yeah, there was --  
13 there's always -- once you start testing, there's  
14 always some modification that needs to happen, but  
15 those are kind of minor. It doesn't -- usually you  
16 find a problem on one interface, but you can test  
17 all the others, but, yes, it is normal to have some  
18 modification during testing.

19 FRASER HARLAND: And for SPICO testing,  
20 was there -- do you recall a disagreement between  
21 Alstom and Thales about who was responsible for  
22 that work?

23 JACQUES BERGERON: No, I think the --  
24 as we discussed earlier, there was no disagreement  
25 about who is doing what. The only problem was that

1 Alstom didn't want to remove one of the units of  
2 the VOBC to test the communication to the tag  
3 antennas, but once that solved, that we paid, you  
4 know, Alstom to do that. After that, the static  
5 PICO went basically flawlessly.

6 FRASER HARLAND: Okay.

7 ANTHONY IMBESI: Mr. Bergeron, was the  
8 track access the critical aspect that delayed the  
9 testing, or were there other aspects as well in  
10 terms of delays in design, supply chain issues that  
11 drove the delay?

12 JACQUES BERGERON: Well, we had a track  
13 gauge issue that, you know, in early -- late 2017,  
14 early 2018 we had a track gauge issue. To explain  
15 the track, centre to centre of the rails is 1,435  
16 millimetres. Alstom's document specified that the  
17 track tolerance would be minus 1 millimetres to  
18 plus 3 millimetres.

19 And that is corroborate by -- and it is  
20 normal. FRA, the Federal Railway Association,  
21 specify that for our type of tracks, it's plus or  
22 minus 1 millimetres. APTA, the American Public  
23 Transit Authority, also specify or suggest that it  
24 is minus 1 plus 3.

25 However, when we measure the track and

1 we start to get to a higher speed of testing, we  
2 notice that the vehicle was doing some climbing,  
3 and after measuring the track, we were at -- some  
4 places minus 6 millimetres, and this was a big  
5 issue that delayed, you know, kind of high speed  
6 testing.

7 FRASER HARLAND: You said SPICO testing  
8 went near flawlessly. What -- were there other  
9 types of testing that posed more challenges?

10 JACQUES BERGERON: Just like I said,  
11 the track -- the high-speed test was a little bit  
12 of a hiccup because of the track gauge issue, but,  
13 you know, when I was there, we were able to test  
14 the propulsion, the braking, the doors, and all the  
15 interaction between those, both, you know, from  
16 Alstom and Thales. They both worked actually  
17 pretty well.

18 FRASER HARLAND: So I just wanted to  
19 pick up on something you said earlier which was  
20 that you were a bit surprised by the delay in  
21 revenue service, but you're also speaking now of  
22 significant challenges with testing. So can you  
23 just explain why you were surprised?

24 JACQUES BERGERON: Well, I was  
25 surprised that the rate of production and retrofit

1 from Alstom's side has, I'm going to say, slowed  
2 down quite a lot after I left, and I don't know why  
3 because I wasn't there, but I heard that, you know,  
4 there was -- they were still working on Vehicle 31,  
5 32, 33, 34 when they were supposed to be done, you  
6 know, while I was there. So I was surprised that  
7 they slowed down that much.

8 FRASER HARLAND: And you're not able to  
9 speak to why that happened?

10 JACQUES BERGERON: I don't know. I  
11 wasn't there. I heard it. I was in contact with  
12 Mr. Manconi that basically took my position after I  
13 left, but that's about it. I don't know what  
14 happened truly.

15 FRASER HARLAND: Can you explain your  
16 understanding of the retrofit work that Alstom was  
17 doing while you were on the project? What did the  
18 retrofit work look like?

19 JACQUES BERGERON: Yeah, the -- it went  
20 fairly good. You know, we developed a plan to use  
21 the storage area of the MSF plus the MSF to tackle  
22 some modifications.

23 We had 10, 12 modifications to do. The  
24 biggest one was basically the brakes and the doors.  
25 I talked to you about the line contactor, which is



1 kind of an easy modification, but you need the  
2 parts, and it seems that the parts were the problem  
3 in that case, but -- and then there was the VOBC  
4 wire connection, those 40 wires that I was talking  
5 about that were kind of long to do.

6 But, yeah, it was progressing. We had  
7 a weekly meeting with Alstom to show the progress,  
8 and I'm not going to say it went -- you know, it  
9 went without hiccups, but for a modification  
10 process and task, it went pretty well when I was  
11 there anyway.

12 FRASER HARLAND: And I understand that  
13 at a certain point, OLRTC asked Alstom to divide  
14 its retrofits into three categories or three  
15 configurations. Do you recall that?

16 JACQUES BERGERON: Yeah, yeah, yeah,  
17 there was -- there was, you know, some that were,  
18 you know, absolutely necessary, and those were  
19 mostly Thales's ones, those that can affect the  
20 trial running, and then after that, the -- I'm  
21 going to say the operation, you know, commercial  
22 operation, and then after that something that can  
23 be done even after the service has begun. So those  
24 were the three different categories.

25 FRASER HARLAND: And you would have

1 witnessed or been involved mostly in the first  
2 category?

3 JACQUES BERGERON: Yeah, mostly, yes.

4 FRASER HARLAND: And that was -- you  
5 said those were mostly related to the Thales  
6 interface?

7 JACQUES BERGERON: Yeah, Thales and  
8 safety-wise, but there was no big safety issues  
9 other than, you know, making sure that the VOBCs  
10 and Thales work correctly.

11 The big issue was safety related but  
12 not immediately. We could run maybe a couple of  
13 years with the braking system that we had without  
14 any safety issue, but the rest were mostly -- you  
15 know, you had some cosmetic issues and some  
16 functionalities that wouldn't -- wouldn't be seen  
17 by passengers or the operator at that time.

18 FRASER HARLAND: Did the -- this  
19 retrofit campaign, did it mean that testing was  
20 being done on different vehicles in bits and pieces  
21 instead of sort of all at once or --

22 JACQUES BERGERON: Well, when we --  
23 when we test vehicle, we always have three or four  
24 different vehicles to test, and we test different  
25 things on different vehicles. This is normal

1 application. And, yes, we did have a vehicle that  
2 was dedicated to Thales. We had a few vehicles  
3 that were dedicated to Alstom.

4 So, yeah, it is -- it is normal and  
5 those dedication, but they can -- you know, when we  
6 say a vehicle, it doesn't mean that it's always  
7 going to be the same vehicle as the -- I'm going to  
8 say the status of evolution of the vehicle change.  
9 We can change vehicle just like, you know, for  
10 Thales we started with Vehicle 5, and after that,  
11 we moved to Vehicle 11 because it was the most  
12 current one especially for braking system related  
13 to the brake accuracy stopping that I was  
14 mentioning. So, yeah, it is normal that we have  
15 quite a lot of vehicles for testing.

16 FRASER HARLAND: And if some of the  
17 interfacing issues had been resolved earlier, could  
18 that have minimized the need for retrofits?

19 JACQUES BERGERON: Of course, of course  
20 but, you know, to give you an example -- I don't  
21 know if you know the Northeast Corridor high speed  
22 train that goes between Boston and New York,  
23 Washington.

24 You know, when we delivered all the --  
25 this is when I was at Bombardier. When we

1 delivered those vehicles, the complete fleet was  
2 delivered, and we still had 250,000 hours of  
3 retrofits to do.

4 And so it is -- yeah, we try to  
5 minimize that, but it's -- most of the time it's  
6 almost impossible because construction of trains is  
7 very custom. Every client wants his own things,  
8 his own design, and to fit in a schedule, it's --  
9 it's impossible to do everything before you  
10 actually start your true production.

11 FRASER HARLAND: And on that point of  
12 every customer wanting their own designs, was to  
13 your -- from your perspective, was there anything  
14 in particular demanded by Ottawa that created  
15 challenges or particular complexities?

16 JACQUES BERGERON: No, not really.

17 FRASER HARLAND: I want to talk a  
18 little bit about scheduling. We talked about that  
19 in the context of the contracts, but I know that  
20 schedules were renegotiated between Thales and  
21 Alstom as the project went on. Did you have any  
22 involvement in that process?

23 JACQUES BERGERON: No, I was the  
24 recipient of the changes basically, but I didn't  
25 really negotiate whatever Alstom and Thales was

1 actually doing, but, yes, we had a lot of -- a lot  
2 of revision on the original schedule.

3 FRASER HARLAND: So were you expected  
4 to try and work with the parties to meet those  
5 schedules, or what was the impact of the schedules  
6 on your work?

7 JACQUES BERGERON: Basically they  
8 didn't -- it didn't impact the work that I had done  
9 or to do basically, but, you know, when we -- when  
10 we -- as I explained earlier, when we had a choice  
11 to make who's going to -- who's going to do the  
12 change on their side, I was more concerned about  
13 the functionality and then the schedule and then,  
14 you know, cost and suggested to who's going to have  
15 to change on either side.

16 But, yeah, a schedule change, you live  
17 with it. You -- how do you say that? You are --  
18 you are affected by it, but there's nothing much  
19 you can do as opposed to keep on moving forward.

20 Is that unusual? No. On every project  
21 that I've seen, I've seen lots of changes and lots  
22 of schedule changes, and it's quite -- it's quite  
23 normal on projects like this.

24 FRASER HARLAND: Do you know who was  
25 responsible on OLRT's side for negotiating the

1 schedules with Alstom and Thales?

2 JACQUES BERGERON: Yeah, it was mostly,  
3 like I said, Alex Turner that was there as far as  
4 the program manager, and I'm sure that they  
5 negotiated that.

6 Most of the time, I have to say that,  
7 you know, the schedules arrive. They're not  
8 negotiable. It's basically -- excuse the French,  
9 but when we have a change in schedule, it's a fait  
10 accompli and, you know, you come to the point that  
11 you cannot, you know, catch up whatever problems  
12 that you have, and it's -- it comes as a fait  
13 accompli.

14 So as an example, you know, Alstom had  
15 two major problems. During the beginning of the  
16 manufacturing was with the roof extrusions that  
17 were done in Sweden, and the other one was the  
18 bogie casting that was a new supplier in the United  
19 States.

20 And, you know, in both of those cases,  
21 there was tooling issue in Sweden, and there was --  
22 how do you say that? Casting issues. You have  
23 porosity in the casting in the United States, so  
24 design -- change in design needed to happen to make  
25 the product correct and homogenous.

1           So that -- there's nothing you can  
2 really do more than, you know, proceed as fast as  
3 you can to those changes and change in tooling to  
4 produce the parts that you need.

5           So it's -- most of the time it's a fait  
6 accompli of whatever is going to happen.

7           FRASER HARLAND: I understand that  
8 there was -- with Alstom, there was a renegotiation  
9 of the schedule up to a Version 5 schedule, and  
10 then OLRTC refused to renegotiate the schedule  
11 further and was trying to hold Alstom to the  
12 revenue service date in the subcontract. Do you  
13 have any --

14           JACQUES BERGERON: I -- yes, I know of  
15 it. I know that, you know, OLRT tried to hold  
16 Alstom to schedule, you know, Revision 5, but, you  
17 know, I've seen -- there's a 9. So, you know, how  
18 it turned out to be, they tried to force Alstom to  
19 fix it. I didn't -- I didn't have anything to say  
20 about it, about the strategy towards that, but, you  
21 know, I've seen Revision 9 of the schedule, so...

22           FRASER HARLAND: And I also understand  
23 that there was an extension granted to Thales in  
24 terms of revenue service availability. So do you  
25 have any idea why --

1 JACQUES BERGERON: No, I don't. On  
2 this one, I don't -- you know, we had -- we had all  
3 the equipment from Thales. It was all ready to be  
4 installed, so it was in our warehouse. And I don't  
5 know about negotiation to extend Thales contract.  
6 That I really don't know.

7 FRASER HARLAND: Okay. Ultimately, the  
8 revenue service date of May 2018 was missed, of  
9 course; correct?

10 JACQUES BERGERON: Yeah, correct.

11 FRASER HARLAND: Do you have -- for  
12 you, you know, why did that happen? What was --  
13 what was the issue?

14 JACQUES BERGERON: Well, my -- the main  
15 issue was, like I said, the track availability.  
16 You know, we had -- we had some issues in the  
17 tunnels. We had two sinkholes. The -- basically  
18 the track -- I could see track construction on the  
19 west side of the city, on the east side of the  
20 city, but at one point the tunnel became a critical  
21 path, and we couldn't -- we couldn't complete the  
22 two and connect the track through the tunnel. So,  
23 you know, the main, main reason was the track  
24 availability.

25 FRASER HARLAND: And did you have any



1 sense that the contract with Thales and the  
2 contract with Alstom were being managed very  
3 separately and not coordinated? Do you have any  
4 knowledge of that?

5 JACQUES BERGERON: No. I always felt  
6 that those two were basically joined at the hip, if  
7 I can express myself that way. So they don't --  
8 they -- you know, we had -- we had the vehicle at  
9 the right time to put the VOBCs on and vice versa  
10 and have all the equipment on it. You know, all --  
11 I don't see any issue there to be frank with you.

12 FRASER HARLAND: Okay.

13 JACQUES BERGERON: Schedule-wise that  
14 means.

15 FRASER HARLAND: And on the commercial  
16 side, did you have any role in determining whether  
17 or not variations would be approved or that kind of  
18 thing?

19 JACQUES BERGERON: Well, I had very  
20 limited influence on this. There was -- they're  
21 going to ask me my opinion, and in the -- you know,  
22 like I said, the double-cut issue and the 40 wires  
23 that needs to be added to the vehicle, of course  
24 Alstom, you know, ask us to pay for this, but to my  
25 point, it was their interpretation of the

1 Alstom-Thales ICD, and it was not anybody's fault  
2 other than Alstom, but that was about the extent of  
3 my participation to the variation order.

4 FRASER HARLAND: Okay. If we can speak  
5 now a bit about training to the extent that you  
6 were involved. Did you have any involvement with  
7 the training for the use of the VOBC system by --

8 JACQUES BERGERON: No, not at all. The  
9 training -- training was handled by someone else.  
10 And, you know, the whole training on the VOBC, on  
11 the vehicle, on the operations, training for the  
12 OC Transpo drivers, I was completely removed from  
13 that.

14 FRASER HARLAND: Okay. How would you  
15 say that the trains were performing at the time  
16 that you left the project?

17 JACQUES BERGERON: I think they were  
18 performing very well within the -- within the  
19 confines of the specification. Of course we test  
20 and always -- basically I tested and approved for  
21 trial running all the vehicles that came out of  
22 production, and I, you know, tested every single  
23 one of them and make sure that propulsion, braking,  
24 doors -- I didn't test the air conditioning because  
25 that was a series test that Alstom do.

1                   But they presented me with the results  
2 of the series tests that were done on all the  
3 vehicles, and actually the performance was as per  
4 specified, and I signed on it on the car exterior  
5 book as well.

6                   FRASER HARLAND: So you said you left  
7 the project in August of 2018; is that -- that's  
8 right?

9                   JACQUES BERGERON: Yeah, the 31st of  
10 August 2018.

11                  FRASER HARLAND: And was there a change  
12 in other key management or leadership of OLRT  
13 around the same time?

14                  JACQUES BERGERON: Oh, boy. Now you  
15 ask -- I -- at that time, it was -- we had a few  
16 directors, but when I left, I think it was pretty  
17 stable, but, you know, we were at the end of the  
18 project, and the office on Carling street was about  
19 to get basically closed, and everything was  
20 transferred to the Bayview project or at the MSF,  
21 but management-wise, I don't -- I don't recall a  
22 big change in that direction.

23                  FRASER HARLAND: Okay. So you don't  
24 recall a new project director or new management  
25 in --

1 JACQUES BERGERON: I know that, you  
2 know, Matthew Slade moved in, but that was after I  
3 left, and I don't -- I don't know what are the  
4 circumstances that arise to that.

5 FRASER HARLAND: Okay. So your -- what  
6 led to your departure from the project?

7 JACQUES BERGERON: Retirement.

8 FRASER HARLAND: Okay. Was there  
9 anything else about what was going on at the  
10 project at the time or --

11 JACQUES BERGERON: No. I -- when I  
12 joined, my contract with SNC was running until the  
13 30th of June 2018. And my primary residence is in  
14 the South of Shore Montreal. So I was travelling  
15 Sunday night and Friday evening back to Montreal  
16 every weekend, and, you know, my wife agrees to  
17 that for a certain period of time for the contract  
18 time.

19 And when the time arrived, we hadn't  
20 finished testing at least to my satisfaction, I  
21 would say, and OLRT asked me if I could stay  
22 another three months until they find, you know,  
23 somebody to success to me.

24 And I agreed to extend that to the end  
25 of August with my wife's blessing, but that was

1 about the extent of the -- you know, the reason why  
2 I left the contract.

3 It's not because it was not going well.  
4 And I kept on -- in contact with Joe Manconi and  
5 the engineering group thereafter when they needed  
6 some information, some history and so on and so  
7 forth. So I stayed very cooperative, but I had to  
8 return home.

9 ANTHONY IMBESI: And you had said that  
10 your contract was till the end of May 2018. Was it  
11 the intention from the outset that you would be on  
12 board until following revenue service availability?

13 JACQUES BERGERON: Yeah. Well, you  
14 know, it was the 30th of June, not May but June,  
15 and, you know, at that time it was planned that,  
16 you know, we would be in revenue service, but, you  
17 know, it's a time as well that, you know, being  
18 four and a half years away from home. It was  
19 deemed to be, you know, correct but pushing the  
20 envelope a little bit.

21 FRASER HARLAND: Do you recall OLRT  
22 subcontracting any part of systems integration to  
23 any party? You had mentioned that SNC was  
24 responsible for it, but do you recall it being  
25 anyone else coming in as a subcontractor to assist

1 with systems integration?

2 JACQUES BERGERON: Design-wise, no. I  
3 know that the -- I don't remember the name of the  
4 firm that joined us in late 2017 to redo the  
5 functional analysis of the entire system, but that  
6 was -- that was not my decision or I don't know  
7 where that came from, but we didn't -- we didn't  
8 stop contract design phase, that's for sure.

9 FRASER HARLAND: So a company came in  
10 to do what exactly you mentioned?

11 JACQUES BERGERON: Well, to make sure  
12 that the functional analysis was done and that the  
13 system was safe to operate.

14 FRASER HARLAND: Do you know if this  
15 was SEMP?

16 JACQUES BERGERON: Yeah, that was SEMP.  
17 You're right.

18 FRASER HARLAND: Okay.

19 JACQUES BERGERON: I don't know why.  
20 By the way, this -- you know, this decision I  
21 wasn't part of. I don't know why, you know,  
22 they -- we end up with them. I discuss and  
23 participate with their project, but I actually  
24 don't know why this happened.

25 FRASER HARLAND: So you don't know why.

1 Do you think that they played a useful role or  
2 was -- do you have a sense of what they  
3 accomplished while they were there?

4 JACQUES BERGERON: Actually, no, I  
5 don't know why they were there. I don't know what  
6 was their added value. We didn't make any changes  
7 whatsoever. There was no change in design. There  
8 was no change in operation. There was no change in  
9 procedures. I don't know why basically.

10 FRASER HARLAND: So this wasn't --  
11 there wasn't any issue of you needed help? Were  
12 things not moving along at this time, and something  
13 needed to change from your perspective?

14 JACQUES BERGERON: Not at all. Not at  
15 all. Everything was -- you know, when they came  
16 in, everything was basically done, designed,  
17 sealed. We just had to, you know, true testing,  
18 make the adjustment that are needed, but it was  
19 after the fact, and basically I didn't need an  
20 integration, that's for sure. And actually, you  
21 know, it was an extra level of work that I didn't  
22 need -- didn't need it at the time.

23 FRASER HARLAND: I just want to come  
24 back to a couple other delay issues. It's my  
25 understanding that Alstom had delayed access to the

1 MSF. Is that anything you recall?

2 JACQUES BERGERON: Yes. Yes, I do  
3 recall that.

4 FRASER HARLAND: And did that have an  
5 impact on the interfacing or on --

6 JACQUES BERGERON: It didn't have any  
7 impact on the interfacing. It just had impact on  
8 the manufacturing.

9 FRASER HARLAND: Manufacturing. What's  
10 your view of the capability of the MSF for what it  
11 needed to do in terms of train construction?

12 JACQUES BERGERON: I think it's not --  
13 the MSF was -- the beauty of Alstom design was that  
14 it was a modular design, and they could build it in  
15 any facilities around the world. That's how they  
16 built it and designed it.

17 So, yeah, actually it worked fine  
18 because the design from Alstom was a modular design  
19 and could be assembled with, I'm going to say,  
20 minimal tooling. Still quite a lot of it, but they  
21 were prepared to do that. So it made it possible  
22 because of the design of the Alstom vehicle.

23 FRASER HARLAND: Okay. And you  
24 mentioned the sinkhole generally, but do you  
25 have -- were you aware of sort of specific issues



1 that caused for your work on the project?

2 JACQUES BERGERON: No, not really, no.  
3 I just know that I wanted to test the entire  
4 system, but by the time I left, it was not  
5 available, so...

6 ANTHONY IMBESI: In terms of the  
7 sinkhole, did that directly, in your view, cause  
8 delays to the track availability for testing?

9 JACQUES BERGERON: Of course that has a  
10 direct effect on the availability of the tunnel,  
11 completion of the tunnel, track installation, and  
12 not only track installation but all the wiring and  
13 system connections that we need to have from one  
14 end to the other.

15 FRASER HARLAND: You mentioned briefly  
16 the P25 radio as being an issue. Was that -- was  
17 that part of your mandate, or was it just something  
18 you were aware of that was causing another issue?

19 JACQUES BERGERON: Well, because I was,  
20 you know, kind of an integration and this was a  
21 vehicle issue, vehicle/rail related issue, I got --  
22 I got involved in it.

23 And, you know, with -- the P25 was  
24 supplied by Bell, and Bell didn't have any  
25 knowledge whatsoever of what mass transit

1 requirements were. And, you know, before we got to  
2 the proper configuration of radio to put, you know,  
3 in the dash of the vehicle, it took two years  
4 basically from the first time that I required the  
5 information to the first interface meeting that we  
6 had with Bell to discuss the design of the radio.  
7 It took two years.

8 FRASER HARLAND: Do you have a sense of  
9 what caused those delays?

10 JACQUES BERGERON: I think it's kind of  
11 a misunderstanding of what a mass transit system  
12 would need. You know, the very first meeting that  
13 I had -- and I don't remember his name -- was the  
14 guy in charge, a project manager for the P25 for  
15 the City of Ottawa.

16 And I said I need a radio to -- we were  
17 already late. That was in 2015. We were already  
18 late according to, you know, the contract that  
19 Alstom has demanded that, you know, all those  
20 interfaces can be frozen by April 2014.

21 And I said I desperately need the  
22 radio, and the person just put the radio on the  
23 table, said this is what you have -- because we had  
24 to buy it. This is what you have to buy.

25 You know, it doesn't suit our need

1 because you have, you know, dangling wire and --  
2 how do you say that? The microphone that are  
3 standing in front of the radio, and they're going  
4 to impend on the operation of the train because we  
5 have a lot of, I'm going to say, controls on the  
6 dash, and you don't want to have hanging wires in  
7 front of those controls especially, you know, track  
8 brakes and horn and those type of stuff.

9 I say, well, this is the way it is, and  
10 you have to deal with it. Said I cannot deal with  
11 it the way it is. It's not safe to install that in  
12 the vehicle, so we need to discuss with Bell. Then  
13 by the time that all that was solved, it was  
14 basically May of 2017.

15 FRASER HARLAND: We've spoken a bit  
16 about this already, but just so I understand, your  
17 role, of course, was focused largely on the  
18 Alstom-Thales interface, but there were many other  
19 systems to interface with.

20 So was there -- who was responsible for  
21 sort of the overall integration of the system?

22 JACQUES BERGERON: Well, basically, you  
23 know, SNC group on the system side, which was a  
24 subcontract of OLRT to the design issue to  
25 SNC-Lavalin engineering. They were the overall

1 responsible for the entire systems integration.

2 FRASER HARLAND: Okay. And were you  
3 liaising with them, or was there sort of a --

4 JACQUES BERGERON: Of course. Of  
5 course I was. Of course I was.

6 ANTHONY IMBESI: Do you recall -- do  
7 you recall there being any form of dispute as  
8 between OLRTC and the engineering joint venture as  
9 to who was responsible for the overall integration  
10 of the systems, particularly the rolling stock  
11 system and the signalling system?

12 JACQUES BERGERON: I do recall that  
13 there was an argument about who's going to do that,  
14 but, you know, I'm going to phrase it very simple.  
15 SNC-Lavalin, the -- what was the exact term you  
16 just mentioned, Mr. Imbesi?

17 ANTHONY IMBESI: I had referred to  
18 the -- well, OLRTC on one hand and then the  
19 engineering joint venture.

20 JACQUES BERGERON: Yeah, the  
21 engineering joint venture, okay. They say that  
22 they didn't have anything to do with Alstom or  
23 Thales as far as integration.

24 And I said, Well, I'm sorry but you do  
25 because, first of all, you need to interface the

1 tunnel to the size of the vehicle, and that's an  
2 integration.

3           And, you know, it was kind of stupid,  
4 but, you know, you have to provide the proper power  
5 distribution to those vehicles, and you have to  
6 provide the proper wiring so we can communicate the  
7 antennas, because the VOBC is a radio-based control  
8 system, and you have to provide the medium so we  
9 can communicate with those antennas and so on and  
10 so forth.

11           So, you know, that was kind of a bold  
12 claim. I don't know where it came from. I think  
13 it mostly came from Hatch, but I'm not sure. But,  
14 you know, at the end, that -- I let them deal,  
15 administratively speaking, on this side, but, yes,  
16 we did have a lot of exchange and, yes, they did  
17 provide interface with Thales and Alstom when  
18 needed. They couldn't do otherwise.

19           FRASER HARLAND: Do you recall any  
20 change in the integration standards that were being  
21 used during your time on the project?

22           JACQUES BERGERON: I don't understand  
23 what you mean by "integration standards." What do  
24 you have in mind?

25           FRASER HARLAND: Anthony, can you help

1 me out on that point there? I think there was a --

2 ANTHONY IMBESI: Yes. So, I mean, we  
3 had heard a suggestion that perhaps the integration  
4 standards changed somewhere in and around 2018 from  
5 an approach that was used primarily in the U.S. to  
6 a European approach called EN50126.

7 Do you have any knowledge about any  
8 change in the standards to which the integration  
9 was being measured against?

10 JACQUES BERGERON: No, that was -- in  
11 my knowledge, the EN regulation was always there.  
12 I mean, that's the one that I use between Alstom  
13 and Thales and the rest of the system even, the  
14 SCADA system. So I don't recall that this was a  
15 change. From SNC it might have been, but from my  
16 side, it wasn't.

17 ANTHONY IMBESI: Okay. And so you said  
18 that throughout the time that you were performing  
19 the integration role, you were applying it as  
20 against that standard?

21 JACQUES BERGERON: Yes.

22 FRASER HARLAND: I'm wondering if you  
23 can speak to us a bit about your understanding of  
24 the speed profiles that were used in the train.  
25 That would have been part of your interfacing work,

1 I imagine?

2 JACQUES BERGERON: Of course it was.  
3 Yeah, the speed profile was very important because  
4 we had a -- we had a time limit to -- in the  
5 project to go from, you know, Blair to Tunney's  
6 Pasture in 24 minutes. So the speed is quite very  
7 important, but most importantly the dwell time at  
8 every station was discussed and evaluated.

9 Of course we started with a forecast of  
10 passenger in and out at every station given within  
11 the contract by OC Transpo or the City of Ottawa,  
12 and, you know, we had to build the system so we can  
13 meet with those dwell times. We can meet 24  
14 minutes from one end to the other.

15 So the speed profile is controlled by  
16 Thales basically, and so we have to have the proper  
17 braking capacity and proper acceleration capacity  
18 to meet it, which we did actually.

19 FRASER HARLAND: And was there any --  
20 was there an ability to modify the speed based on  
21 track conditions?

22 JACQUES BERGERON: There's always  
23 possibility to change it. Those are -- those are,  
24 you know, coordinates that you can put in programs,  
25 but once you're in, I don't -- you know, I don't

1 see the need for it other than if you -- if you  
2 want to add, I don't know, more cars.

3 The most important point on an  
4 automated system is the headway for the guaranteed  
5 brake rates. You cannot get too close to any other  
6 train more than, you know, the capacity under --  
7 how do you say that? Not the full capacity but  
8 degraded mode capacity, that you have the distance  
9 to brake if anything should happen.

10 So this is about the only reason that I  
11 would say that you could change the speed profile  
12 of the system, if you add vehicles into the system  
13 affecting the dwell time and therefore affecting  
14 the guaranteed brake rates. So that's about the  
15 only reason I would see to do that.

16 FRASER HARLAND: Because -- it may have  
17 been after your time. I think it was, but there  
18 was a wheel flat issue that arose, and I think  
19 there's some suggestion that the reason that was  
20 happening is that there was a significant amount of  
21 emergency braking in -- when the track was slippery  
22 or in particularly inclement weather, and maybe  
23 that could have been mitigated by adjusting the  
24 speed profile. Is that -- does that make sense to  
25 you or can you --



1                   JACQUES BERGERON: That makes -- that  
2 makes a lot of sense. The problem is every  
3 authorities, you know, at least in North America  
4 and Europe have the leaf season. You know, when  
5 the leaves falls on the track, it creates an oily  
6 and mis-contacts, and everybody has to adjust their  
7 operation for that season.

8                   When the leaves falls and it rains, it  
9 creates -- because the leaves left -- leave kind of  
10 an oily residue on the track, and it affects the  
11 adherence of the wheel-rail interface, so it is  
12 something that needs to be addressed.

13                   However, I do remember that we did have  
14 a braking issue as far as the braking loop  
15 communication between the vehicle and Thales, and  
16 that was -- that was something that happened  
17 sporadically. It was not all the time.

18                   But, yes, at one point, we did generate  
19 a lot of flats. And the quality of the track, I  
20 have to say that when I left, it was still very  
21 rusty.

22                   I mean, you have to understand that by  
23 contract, we had to have the track delivered to the  
24 site by July of 2015. So by the time they were  
25 used in '17, '18, there was a lot of what we call

1 not rust but scale on top of the rail, which is not  
2 really good for the wheel-rail interface.

3 FRASER HARLAND: So just to follow up  
4 on a couple things you said, there were -- you said  
5 you were generating wheel flats. That was  
6 happening while you were still on the project?

7 JACQUES BERGERON: Yes. Yes.

8 FRASER HARLAND: So that was during the  
9 testing phase then, I guess?

10 JACQUES BERGERON: Yes, it was.

11 FRASER HARLAND: Okay. And what was  
12 the cause of that, as far as you understand?

13 JACQUES BERGERON: Well, there was a  
14 lot of -- there was a lot of cars on it. We had to  
15 clean the tracks first of all because we did -- we  
16 did -- originally, we used the track brakes of the  
17 vehicle to clean the track to make sure that the  
18 scale was out of it.

19 And then there was an Alstom algorithm  
20 that controls the motor bogies and the trailer  
21 bogies to brake, I'm going to say, in a harmonized,  
22 efficient manner.

23 Of course, the motor bogies can brake a  
24 little bit harder because they're heavier as  
25 opposed to the trailer bogie where there's no

1 motors on it, therefore a little bit lighter. And  
2 that was in the HPU issue.

3 And from what I understand, even after  
4 I left, they -- Alstom still had problem with the  
5 hydraulic power unit for the brake system that  
6 might have generate yet some more flats.

7 But I have to understand that, you  
8 know, however I'm concerned about the flats, it's  
9 not a safety issue because now you're braking to  
10 more than your capacity really. So it's on the  
11 safe side.

12 FRASER HARLAND: And in the simplest of  
13 terms, though, like, how do you -- what's the --  
14 how are wheel flats caused by particular types of  
15 braking? If you can just explain that as simply as  
16 possible to me.

17 JACQUES BERGERON: Well, basically you  
18 apply too much brake pressure on your -- on your  
19 caliper for the friction that you have between the  
20 wheels and the rail.

21 So, you know, the normal, I'm going to  
22 say, friction coefficient between wheel and rail is  
23 between .025 to .05 of U coefficient. As an  
24 example, if you take a tire on the asphalt, that  
25 coefficient will be .8.

1                   So you see that the beauty of the train  
2 is that it has very low friction that impedes its  
3 movement, so it's very efficient electrically, I  
4 mean, energy speaking, but when it comes to  
5 braking, you have to control this force on -- you  
6 know, to stop the wheel so you don't go over the  
7 friction coefficient that you have available to  
8 you.

9                   FRASER HARLAND: In your view, though,  
10 flats doesn't pose a safety issue?

11                  JACQUES BERGERON: No, not really.

12                  FRASER HARLAND: So is it more of a  
13 comfort issue or what -- like, what is the issue  
14 with --

15                  JACQUES BERGERON: It is a comfort, and  
16 it is a maintenance issue, and it is a noise issue.  
17 But, you know, everybody, every authority around  
18 the world has to deal with flat spots.

19                  I mean, you see it, and if you have a  
20 freight line near your house or wherever, if you  
21 stand by and you're going to, you know, hear a  
22 freight train pass and you're going to hear that  
23 boom, boom, boom, boom, boom, boom noise.

24                  Every train has flats on it because  
25 however very efficient, you know, the adhesion --

1 the lower adhesion it is, the control of the  
2 braking system is very, very touchy.

3 FRASER HARLAND: Okay. I think I've  
4 essentially come to the end of my questions. I did  
5 want to give you an opportunity, Mr. Bergeron, to  
6 tell us anything important that you think is good  
7 for the Commission to know that we may not have  
8 touched on. I don't know if there's anything that  
9 comes to mind for you.

10 JACQUES BERGERON: No, not really. The  
11 only thing I can say is that, you know, the  
12 project -- after 18 projects and 6, you know, fully  
13 automated ones, the project went basically the same  
14 as all the other project that I was work on.

15 You know, the lateness and the hiccups  
16 and the contractual issues between partners, those  
17 are kind of normal. If it's not one thing, it's  
18 another.

19 And, you know, I think, you know,  
20 dealing with Ottawa was one of the best project  
21 that I worked on really as far as communication,  
22 interfaces, and so the overall status of the  
23 project and the cooperation with everybody was one  
24 of the best that I worked on, and it was -- it was  
25 really, really nice to have it.

1           And I think we have a good product and  
2 as opposed to a car that you kind of -- vehicle, an  
3 automobile that you roll off the lot from a  
4 dealership and you say that you're going to have  
5 three, four years of, you know, maintenance-free  
6 problem, free running, mass transit is completely  
7 the opposite because of their custom side.

8           The first three, four years are going  
9 to be somewhat painful, and then after that, you're  
10 going to see the reliability, the availability  
11 climb. And this is the name of the game. Every  
12 project goes through the same phase, so it's not  
13 unusual. It's the -- it's the nature of the  
14 business.

15           FRASER HARLAND: Thank you for that.

16           Anthony, were there any final questions  
17 that you had for Mr. Bergeron?

18           ANTHONY IMBESI: Just a few questions  
19 for you, sir. Just to follow up on what we were  
20 talking about about the braking issues, do you  
21 recall whether Alstom raised any issues with you or  
22 with OLRTC regarding how the speed profiles might  
23 impact the performance of their trains?

24           JACQUES BERGERON: Not that I recall  
25 really. Not when I was there anyway.

1                   ANTHONY IMBESI: Okay. So there would  
2 have been nothing raised about the winter speed  
3 profiles in particular?

4                   JACQUES BERGERON: No, that -- I never  
5 heard that to be frank with you.

6                   ANTHONY IMBESI: Okay. And just one  
7 follow-up question: Are you aware, was any value  
8 engineering done to the trains or anything to do  
9 with the rolling stock in order to meet schedule?

10                  JACQUES BERGERON: I don't think so to  
11 be frank with you. Never heard of any value  
12 engineering done to meet schedule on the vehicle  
13 side.

14                  ANTHONY IMBESI: Thank you. Those are  
15 the questions that I had.

16                  JACQUES BERGERON: Okay.

17                  FRASER HARLAND: Mr. Chowdhury or  
18 Mr. Killey, did you have any follow-up for the  
19 witness?

20                  JEAN-CLAUDE KILLEY: Could you maybe  
21 give us just two minutes to caucus about that?

22                  FRASER HARLAND: Yeah, that's fine.

23                  JEAN-CLAUDE KILLEY: So we'll just go  
24 cameras off and call each other and come back into  
25 the Zoom.

1 FRASER HARLAND: Sure.

2 ANTHONY IMBESI: So perhaps we'll go  
3 off the record. Take a few minutes.

4 -- OFF THE RECORD DISCUSSION --

5 JEAN-CLAUDE KILLEY: We don't have  
6 anything. We're done.

7 FRASER HARLAND: Well, thank you to  
8 everyone and particularly Mr. Bergeron for your  
9 time today.

10 JACQUES BERGERON: No problem.

11 FRASER HARLAND: It's most appreciated.  
12 Thanks to everyone.

13 Madam Court Reporter, we will send you  
14 the one exhibit, and I hope everyone has a good  
15 day.

16 JACQUES BERGERON: Okay. Thank you  
17 very much everybody.

18

19 -- Adjourned at 12:01 p.m.

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1 REPORTER'S CERTIFICATE

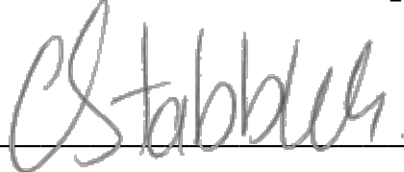
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5  
6 That the foregoing proceedings were  
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8 therein set forth, at which time the witness was  
9 put under oath by me;

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  
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24 COURT REPORTER

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