Submission of

[Provincial council of the municipal sector]

Of

CUPE

Canadian Union of
Public Employees

Establishment of a regulatory framework for next generation 9-1-1 in Canada CRTC 2016-116

May 20 2016

PREAMBLE

1. The Provincial Council of the municipal sector (CPSM) of the Canadian Union of Public Employees (CUPE) represents almost 32,000 municipal employees in Québec. About 1000 of them answer emergency calls in Public Safety Answering Points (PSAP) managed by municipalities. These primary centres are, as their name indicates, the first to receive calls to 9-1-1. They then transfer them either to first responders or to secondary call centres that distribute calls to certain emergency services.

2. Our members are the first to respond to 9-1-1 calls in a number of the Province's larger cities – notably Montréal, Laval, Longueuil, and Lévis as well as in the majority of the municipalities in Lanaudière, the Laurentians and the Montérégie.

3. In the social affairs sector, CUPE also represents agents in Emergency Call Centres in Eastern Québec (CAUREQ). CAUREQ is a non-profit organization (NPO) that offers primary and secondary PSAP services as well as health-communication centre services for the regions of Bas-Saint-Laurent, Gaspésie, Îles-de-la-Madeleine and the Côte-Nord.

4. Through this submission, CPSM and CUPE local 5038 representing CAUREQ's workers (CAUREQ's unionized workers) hope to contribute to the "establishment of a regulatory framework for next-generation 9-1-1 in Canada" (CRTC 2016-116)[1] which is, above all, in the public interest. -

5. Canadians must have full-time access to reliable and effective next-generation 9-1-1 (NG9-1-1) services because, in critical situations, fast action can mean the difference between life and death.

6. In its public consultation, the Canadian Radio-television and Telecommunications Commission (the CRTC or the Commission) expected to focus primarily on strategic or technical questions that underpin next-generation 9-1-1, but it indicated that it nevertheless wanted to obtain the viewpoint of the PSAPs:

   > "Although PSAPs' systems do not fall under the Commission's jurisdiction, the Commission will need to take into account PSAP NG9-1-1 migration plans and the NG9-1-1 services they expect to support, in its determinations[2]."

7. It is in this spirit that the expertise of our members has been put to good use, in the following pages, to answer some of the questions raised by the Commission.

[1] CRTC, Establishment of a regulatory framework for next-generation *9-1-1 in Canada*, Telecom Notice of Consultation 2016-116, Ottawa, March 29, 2016.
[2] *Ibid*, para. 28.

INTRODUCTION

8. In the Telecom Notice of Consultation CRTC 2016-116, the Commission says it will initiate:

> "… a proceeding to establish a regulatory framework for the provision of NG9-1-1 which will support the continued provision of effective 9-1-1 services and that will realize maximum benefits for Canadians[3]." [Our underlining]

9. The CPSM and CAUREQ's unionised workers share the Commission's opinion that the migration to NG9-1-1 must happen to the benefit of Canadians. Beyond the flashy functionality that this technology can bring – like the possibility of reaching emergency services thanks to social media or to send them live videos – the essence of this public service consists of providing access to help quickly and in all circumstances.

10. That is why we believe, as does the *Coalition pour le service 9-1-1 au Québec* (the Coalition), that a citizen-awareness campaign needs to take place in order to limit public expectations regarding the variety of communication methods of access to NG9-1-1. Although the means of communication have certainly increased, the resources needed to offer a service as essential as 9-1-1 are limited. In our opinion it is better to have them take the calls on a limited number of reliable and accessible means of communication rather than scattering the focus of the PSAP agents. We must not lose sight of the goal: to offer an effective emergency response service that saves lives and preserves health.

11. The PSAP agents, whom we represent, are not opposed to modernizing 9-1-1. They are simply aware of the importance of their work and the responsibilities that it comprises.

12. The workers who work in the PSAPs are already doing tasks with highly-complex mental demands. They are hand-picked, undergo 100 hours of mandatory training in Québec and control a vast array of equipment that helps them support police, firefighters or paramedics in responding to emergency calls:

> "The agent must know how to ask the right questions, to decode the implied, help the individual to clarify their request, to prioritize the emergency, to obtain information necessary for the safety and effectiveness of those who will intervene at the event site and transfer the information to them[4]."

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[3] CRTC, Establishment of a regulatory framework for next-generation *9-1-1 in Canada*, Telecom Notice of Consultation 2016-116, Ottawa, March 29, 2016, par. 28.

[4] Claire Thivierge, *Agents on 9-1-1 calls: Clarifying the gray areas of a demanding job*, in Prévention au travail, Journal of the CSST and the IRSST, Spring 2012, volume 25, nº 2, pages 24 to 26: http://www.irsst.qc.ca/prevention-au-travail/media/documents/fr/prev/V25_02/24-26.pdf.

13. The Commission must ensure that this essential work for Canadian society not be unnecessarily burdened by available technology. Some means of communication or types of information may serve as a follow-up to the submission or to the study, without being necessary to the initial deployment of emergency personnel. In the following pages, CPSM AND CAUREQ's unionized workers try to put things into perspective in order to inform the Commission in its decisions.

ANSWERS TO QUESTIONS FROM THE COMMISSION

Q.1: PSAPs offering NG9-1-1 will not only continue to receive and process 9-1-1 voice calls using existing 9-1-1 services, but may also interact with Canadians using new NG9-1-1 services, namely new methods of communication, such as text or multimedia messaging services, social media and telematics (for example automatic collision notification systems in vehicles, medical alert systems, sensors and various types of alarms).

a) What new means of communication with PSAP 9-1-1 operators should be supported in the future?

14. CPSM and CAUREQ's unionized workers believe that text messages ought to be the only supplementary communication means implemented to allow the public at large to contact PSAPs in the future.

15. As the Commission itself has noted in its Telecom Notice of Consultation CRTC 2016-116:

- Canadians are abandoning wireline telephone voice services in favour of mobile services and their behaviour is changing in relation to emergency services:

  "… it is currently estimated that 70% of 9-1-1 calls in the United States are now being made from mobile devices. Similar trends are being reported by PSAPs in Canada[5]."

- Today, Canadians are using data services more than voice services on their wireless mobile devices:

[5] CRTC, Establishment of a regulatory framework for next-generation *9-1-1 in Canada*, Telecom Notice of Consultation 2016-116, Ottawa, March 29, 2016, para. 26.

"In fact, some wireless service providers currently offer data-only plans with no voice services, revealing that some Canadians are increasingly reliant on data services[6].

16. In this context, CPSM and CAUREQ's unionized workers believe that the Commission must offer all citizens the possibility of contacting PSAPs by text message in order to ensure health and security to the largest possible number.

17. Of all the communications means envisaged by the Commission, we believe that text messaging is the only complementary service to voice telephone which has real public interest. It can make it possible to save the lives of people who do not have access to a telephone or who are unable – for whatever the reason – to make a voice call to 9-1-1.

18. On the other hand, we are far from convinced that it would make much sense to allow citizens to contact 9-1-1 directly through social media. In fact, one might question the usefulness of being able to connect with 9-1-1 through one's Facebook account when it is possible to do so through a text message service equally available on the Internet…

19. From our point of view, the multiplication of points of contact with 9-1-1 is not desirable. It risks causing a cacophony that would be difficult to manage without the support of supplementary resources in the PSAPs. But, they already have limited means[7] and their budgets will be under even greater pressure with the introduction of NG9-1-1. Consequently, CPSM and CAUREQ's unionized workers are concerned about the ability of PSAPs to manage a panoply of communication means that, in addition, risk changing over time. In fact, who can say if Facebook and Twitter will be as popular in 10 or 20 years? What about the technological adjustments that will be constantly required to adapt the PSAP systems upon the creation of new social media?

20. That is without taking into account the possible emergence of psychosocial risk factors in the organization of the PSAP's work (quantitative and qualitative overload, conflict or role ambiguity[8], etc.) if 9-1-1 agents are required to monitor incoming 9-1-1 calls on several means of communication simultaneously or if existing staffing is insufficient.

21. We must not lose sight of the fact that PSAPs' purpose is to receive and deal with calls coming from individuals in distress. In our opinion, for this basic service to be efficient, it is more important to inform citizens so that they will reflexively use good means of communication – limited but reliable and accessible means like telephone and text messaging – rather than multiplying the ways of contacting 9-1-1 to respond to their presumed wishes.

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[6] *Ibid*, para. 27.

[7] Coalition for 9-1-1 service in Québec, *the Coalition's collective response for 9-1-1 service in Québec, in answer to the request for information addressed to PSAP 9-1-1*, May 9, 2016, para. 29.

[8] Denis Harrisson and Vanessa Béland-Ouellette, Working conditions in call centres: CUPE's unionized workers*, École des sciences de la gestion de l'UQAM, SCFP – Service aux collectivités de l'UQAM,* 2011.

c) In what time frame should it be implemented (for example, in the short term [1 to 3 years], medium term [3 to 5 years] or long term [5 to 10 years])?

22. As was mentioned previously, the Canadian population is already prepared to use text messages to communicate with 9-1-1 services. However, considering that it will still take time to implement NG9-1-1 in Canada and that PSAPs do not all seem to have the same level of preparation[9], we believe that it would be unrealistic to expect the implementation of text-message 9-1-1 calls earlier than 3-5 years.

23. On the one hand, the shift to NG9-1-1 has not yet begun and, on the other hand, it will take place in several stages[10]. The Coalition for 9-1-1 service in Québec indicated to the Commission that to its knowledge, up to now:

> "… No Québec PSAP has begun the planning for its transition to NG9-1-1 services. These are not currently defined by either the network suppliers or by the Commission, nor by any standard. In fact, they really do not exist anywhere in the world, to our knowledge[11]."

24. For its part, the Emergency Services Working Group (ESWG) believes that this transition to NG9-1-1 is comparable to the switchover from analog broadcasting to digital broadcasting. It is foreseeable that this will take place over a number of years. There will be many challenges to overcome before it can take form, since NG9-1-1's essential technical and operational details will not be known before the end of 2016[12].

25. So, without knowing the standards, it is impossible for Québec's municipalities to make the required budgetary decisions for the purchase of the equipment required to manage text messages to 9-1-1 on a large scale. Current installations allow the management of text messages from individuals with hearing difficulties or speech impediments[13], but they cannot be used to deal with a heavy influx of emergency communications. So, it will take a number of years for the technological changes, necessary to receive text messages, to be put in place.

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[9] In fact, according to answers to the Commission's questions, which we have consulted, no PSAP has begun the transition to NG9-1-1. See the *Coalition pour le 9-1-1 au Québec*, Government of New Brunswick, Cities or Police Services of Brandon, Hearst, Ottawa, Thunder Bay, Windsor, Winnipeg, etc.

[10] CISC, Progress Made in Canada and Abroad *regarding the implementation of next-generation 9-1-1 service (NG9-1-1),* Progress Report prepared by ESWG, January 21, 2016, p.6.

[11] Coalition for 9-1-1 service in Québec, *the Coalition's collective response for 9-1-1 service in Québec, in answer to the request for information addressed to PSAP 9-1-1*, May 9, 2016, para. 25.

[12] CISC, Progress Made in Canada and Abroad *regarding the implementation of next-generation 9-1-1 service (NG9-1-1),* Progress Report prepared by ESWG, January 21, 2016, p. 9.

[13] CRTC, CISC's Emergency Services Working Group – Consensus report regarding Text Messaging with 9-1-1 trial and service implementation *,* Telecom Decision 2013-22, Ottawa, January 24, 2013.

d) What are the expected benefits and challenges of the proposed means of communication and how can these challenges be addressed?

26. Among the advantages of text messaging, is its complementarity in relation to the telephone. This means of communication also allows persons who are victims of family violence to discreetly obtain help without putting their lives in further danger. Text messages could also make it possible, for individuals having breathing problems or accident victims who are unable to speak, to contact PSAPs.

27. Furthermore, individuals who do not subscribe to a telephone service are becoming more and more numerous[14]. Access to 9-1-1 by a text message will thus make it possible for them to contact PSAPs in emergency situations.

28. However, the Commission must take into account the fact that text messaging does not allow PSAP agents to determine a situation's degree of urgency as quickly as by telephone.

29. On the one hand, written communication is colder than a voice exchange. The 9-1-1 agent cannot judge the timber of the caller's voice nor can they use the non-verbal aspect of the communication (silences, ambient noise, etc.) to evaluate the gravity of a situation. On the other hand, a person who has recourse to 9-1-1 text messaging can continue to write while the PSAP agent is responding to them, which can slow down the understanding of the situation or make it more difficult to decode.

30. The Commission should also know that it is impossible to apply, by text message, the techniques usually used by PSAP agents to quickly obtain critical information on the caller's location, for example. It is all the more problematic since only messages sent by a cell phone are locatable using triangulation, and this only because PSAP has the appropriate equipment. The use of a computer to send a text message would therefore make locating of the caller impossible, just as it will for VoIP calls.

31. CPSM and CAUREQ's unionized workers therefore recommend to the Commission to put the emphasis, in its NG9-1-1 regulations, on the fact that voice calls should remain the favoured means of communication in emergency situations. The possibility of using text messages to contact a PSAP must exist throughout the country, but as an alternative when it is impossible or dangerous to make a voice call.

32. A public information campaign, to indicate clearly that a telephone call remains the first choice in emergency situations, must accompany the coming into effect of the new functionalities of NG9-1-1. It must also specify that only calls made by land-line or cellular telephones (voice calls, text messages) make it possible to locate the caller.

[14] CRTC, Establishment of a regulatory framework for next-generation *9-1-1 in Canada*, Telecom Notice of Consultation 2016-116, Ottawa, March 29, 2016, para. 27.

33. Furthermore, although the Commission had instructed incumbent local exchange carriers (ILECs) and wireless operators (WO) to modify their networks, in order to offer 9-1-1 service by text message to some clients, by January 2014[15], our members noted that the level of service varies considerably from one PSAP to another. Thus, some Québec municipalities have new software allowing 9-1-1 to be received by text message and be responded to quickly while others have to content themselves with a rudimentary system making it impossible to handle a single call effectively. .

34. CPSM and CAUREQ's unionized workers are concerned about what will happen if a tragedy such as the Dawson College one, in Montréal, should happen again, once NG9-1-1 is in place. How will they deal with the almost simultaneous arrival of dozens of emergency phone calls and text messages in a PSAP where the equipment has not been brought up to date?

35. In addition, at the present time, it is impossible to transfer a text message from one PSAP to another. For that to become possible, a technical and simultaneous updating of all PSAPs is necessary as well as the use of compatible systems for the transfer of calling cards with acknowledgment of receipt.

36. CPSM and CAUREQ's unionized workers are aware that the Commission does not have authority over Québec's PSAPs, which are the responsibility of municipalities. Nevertheless, common sense would dictate that the rollout of 9-1-1 service via text message should take place in cooperation with all emergency service stakeholders, including PSAPs. In our opinion that involves informing them, sufficiently in advance, of the availability of next-generation functionalities so that budgets for equipment modernization can be voted on in time.

37. In the absence of a national coordination committee, could the Commission not play a role in the dissemination of information, by preparing an orientation document (comprising a schedule and technical specifications) for PSAPs? A public version of this roadmap – redacted of all sensitive technical information – could be published on the Commission's website for citizens who can require an updating of their PSAP, knowing the timelines.

[15] CRTC, CISC's Emergency Services Working Group – Consensus report regarding Text Messaging with 9-1-1 trial and service implementation , Telecom Decision 2013-22, Ottawa, January 24, 2013.

Q.2: NG9-1-1-capable PSAPs may also be in a position to receive additional forms of information that could assist in providing the required emergency services, for example images, video clips, streaming videos, personal information entered by the user[31], building schematics and medical records.

a) what additional types of information should NG9-1-1 networks and, where relevant, TSP's originating networks be capable of supporting?

38. CPSM and CAUREQ's unionized workers believe that no information proposed by the Commission is necessary for the PSAP agents to be able to determine the urgency of a situation and to send the necessary service required to respond to it, except perhaps supplementary location information supplied by the caller.

39. We recognize however that some data routed to PSAPs could help police, firefighters or paramedics to plan their interventions or to solve a crime:

- building plan
- photo of a license plate
- photo or a video of a crime scene
- photo or video of a fire
- medical file
- etc.

40. If the Commission chooses this path, we believe that the interpretation of this supplemental information should however be reserved to specialists in the field in question. The 9-1-1 agents could relay the information but they are not in a position, for example, to interpret a medical file or to identify from a photo any danger for the firefighters on the scene of a fire. That is without counting the time it would take to authenticate the material received…

41. Furthermore, should the Commission allow streaming videos to be sent to the PSAPs, a videoconference with the 9-1-1 agents would have to be banned since 9-1-1 call centres must absolutely not be identified[16]. Some PSAPs even ask their agents to never publicly mention that they work for 9-1-1 services[17], in order to protect their activities.

[16] Québec, *Rules covering standards, specifications, and quality criteria applicable to 9-1-1 emergency centres and to certain secondary emergency call centres,* art. 3.

[17] this is particularly the case in the *Régie intermunicipale de police Thérèse-de Blainville.*

d) What are the expected benefits and difficulties of the proposed additional forms of information and in what way could the difficulties be addressed?

42. CPSM and CAUREQ's unionized workers believe that the technical possibility of sending data of all sorts to PSAPs brings undeniable advantages for investigations or interventions led by firefighters, police and paramedics.

43. However, from the PSAP agents' point of view, we believe the advantages are limited to the obtaining of supplementary information that could eventually serve to identify the site of an accident or a crime, if the geo-positioning of the call does not work or if the caller does not end up specifying where he is located. In this type of situation, the information entered by the user himself and appearing on the calling card, like his work address or an allergy, could be relevant.

44. Considering the complexity of the work done by the 9-1-1 agents, any other type of information would be superfluous and could be harmful to the rapid sharing among the appropriate emergency workers. The Commission must remember that human beings have a limited ability to deal with data in a simultaneous way.

45. That being said, 9-1-1 agents are not opposed to being asked to be involved in receiving other information, such as photos, videos, medical files etc. in addition to emergency calls. On the other hand it would require the PSAPs having the necessary human resources to deal with it and to have the hierarchy of required tasks determined, in order to maintain the efficiency of the call-answer service and the distribution of emergency personnel[18]. It would seem to us that standardized training to deal with these new data would be necessary.

46. If images, plans and medical files are to be received by PSAP agents, it would also be necessary to clarify just how far their responsibility goes with regard to the actions to take following the receipt and what their obligations would be with regard to respecting privacy.

47. One might also wonder what the (immediate or subsequent) impact would be – on the health and safety of the PSAP agents – of seeing videos of violent events, since it is already proven that they are subject to a level of intense stress that can lead to musculoskeletal problems and psychological distress. As a study of Québec's PSAP agents, conducted by the *Robert Sauvé research Institute on workplace health and safety (IRSST)* mentioned:

> "The results indicated that the presence of elevated stress, in experienced agents was shown by a significant loss in cardiac rhythm variability (CRV), and that this variability is

[18] Article 3 of the *Rules covering standards, specifications, and quality criteria applicable to 9-1-1 emergency centres and to certain secondary emergency call centers* provides that PSAPs must maintain – at all times – at least two 9-1-1 agents on the job to answer emergency calls. This measure aims to assure the public that there will be somebody to answer their calls in virtually every case, but this will not be sufficient, from our point of view if, in addition to the emergency call, the receipt and transfer of pertinent data to on-site stakeholders is added.

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entirely recovered after the work (Toulouse and coll., 2011). Stress brought about by elevated psycho-social risks has been analyzed by studying workload (quantity of calls and tasks to be accomplished in a given period), cognitive load (complexity of calls handled), and emotional and psychological loads. Stronger sensations from workload or from call complexity is correlated to increases in the intensity of neck-shoulder pains, while lower back pains increased with the accentuation of negative emotions. Increases in workload, cognitive load or emotional load are closely tied to difficulties in the handling of calls of a dramatic nature during emergency situations[19]."

48. The same study mentioned that for PSAP agents in Québec:

> "Prevalence rates of psychological distress and of professional burnout are respectively 50% and 49%. Physical risks are caused by inappropriate workplace design/layout (e.g. work surface, positioning of keyboard or screens, chair) and postural constraints. For psychosocial risks, 70% of the agents are exposed to high psychological stress, 90% present with an effort/recognition imbalance[20]…"

49. Furthermore, the Commission must be aware that the ability for everyone to send information linked to an emergency call to PSAP could bring some citizens to put themselves in danger: For example, approaching too close to a vehicle in order to photograph a license plate.

50. This public-security issue, as well as the PSAPs' computer infrastructure security, must be part of the Commission's consideration on the types of information for which transmission should be authorized within NG9-1-1. Currently, in most of the PSAPs that deal with Québec police, firewalls block content coming from outside.

51. It thus serves no purpose to encourage the population to use technology to send various information, relating to an emergency situation, if the PSAPs are technically unable to receive it. That is why we believe that the transition to NG9-1-1 must be coordinated on a national scale and must provide a public information campaign on the appropriate means to use to contact emergency services.

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[19] Georges Toulouse, Louise St-Arnaud and Marième Pelletier, Musculoskeletal difficulties and psychological health. *A support approach for the taking and distribution of 9-1-1 emergency call activities*, IRSST, 2015, p.2: http://www.irsst.qc.ca/media/documents/PubIRSST/R-868.pdf.

[20] Georges Toulouse et al., *A study to help in the reduction of Musculoskeletal and psychological health difficulties in municipal public-safety 9-1-1 emergency call centres*, IRSST, 2011, p.1: http://www.irsst.qc.ca/media/documents/PubIRSST/R-720.pdf.

Q.4: There are currently several 9-1-1 networks in Canada. In moving to NG9-1-1 explain, with supporting rationale and evidence, in your opinion:

a) should there be one national NG9-1-1 network in Canada, or a series of interconnected NG9-1-1 networks. If more than one network is proposed, what territory should each network cover, what policies or arrangements would be appropriate to govern the interconnection of the NG9-1-1 networks, and who would oversee the establishment and implementation of these policies or arrangements?

52. CPSM and CAUREQ's unionized workers believe there should be several interconnected NG9-1-1 networks, for a number of reasons. The first is that the current 9-1-1 infrastructure network is already in part under IP protocol and shared among the various networks of Bell Canada, CityWest Telephone Corporation, MTS Inc., Norouestel Inc., Saskatchewan Telecommunications, Telus Communications and TBayTel[21]. As ESWG explained in its January 2016 progress report:

> "The transition from analog/digital networks to IP interconnection constitutes the first step in PSAP 9-1-1 services anywhere in North America. As ESWG indicated, IP interconnection to supply PSAPs with two-way data transmission was the basic requirement for the implementation of text service to 9-1-1 and the updating of the in-call location function. The implementation of IP technology, undertaken in 2012, has progressed steadily and it is expected that it will finish at the beginning of 2016 for the vast majority of PSAPs and organizations.
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> The major suppliers of advanced 9-1-1 platforms, Bell/Bell Aliant (Ontario, Québec, PEI Nova Scotia and New Brunswick), SaskTel (Saskatchewan), TELUS (Alberta and British Columbia) and MTS (Manitoba), continue to work with the PSAPs to implement IP interconnection for two-way data transmission[22]. [our underlining]

53. To initiate a single national NG9-1-1 network would thus involve difficulties and additional costs since current 9-1-1 network suppliers and PSAP have already begun to adapt their installations to NG9-1-1[23].

[21] CRTC, Establishment of a regulatory framework for next-generation *9-1-1 in Canada*, Telecom Notice of Consultation 2016-116, Ottawa, March 29, 2016, para. 14.

[22] CISC, Progress Made in Canada and Abroad *regarding the implementation of next-generation 9-1-1 service (NG9-1-1),* Progress Report prepared by ESWG, January 21, 2016, p.11.

[23] In 2013, the investigator Tim Denton in his "A Report on Matters Related to Emergency 9-1-1" prepared for the CRTC, already affirmed, in para. 158: "One could argue that the transition has already started with the rollout of a text messaging service for hearing- or speech-impaired persons. In addition, the incumbent telephone companies are in the process of planning the replacement of PSAP data circuits with IP technology to support the wireless text messaging to 9-1-1 service and the wireless in-call location update feature, and as a first step in preparation for NG 9-1-1"

In the CRTC Telecom Regulatory Policy 2016-165, dealing with the reliability of 9-1-1 networks, the Commission also noted that:

> "MTS stated that it has developed a comprehensive plan to upgrade its 9-1-1 network to support NG9-1-1 services, which will resolve the geo-redundancy issue in its 9-1-1 network[24]." [our underlining]

54. During the proceedings that led to this regulatory policy, a stakeholder also indicated that "…The levels of geo--redundancy and resiliency of the 9-1-1 networks vary depending on the 9-1-1 network provider[25]." In spite of everything, the Commission determined that MTS was the only 9-1-1 network provider to encounter a reliability problem meriting a regulatory intervention on its part[26].

55. This reinforces our idea that it is better to have several interconnected 9-1-1 networks than a single one, since the financial burden and the responsibility for reliability of service are thus spread among several companies. This avoids having possible deficiencies being generalized across the entire system and reduces the risk of one incident paralyzing the entire 9-1-1 system, even temporarily. On the other hand the Commission, in our opinion, would come into conflict with the instructions of the Governor in Council [27] to support competitive market forces, if it chose to have a single national network.

56. The important thing for the CRTC is to ensure that its regulations require all NG9-1-1 network suppliers to use a neutral technology comprising the same technical parameters of security and reliability. On this topic, since NENA's i3 standard has been approved we understand that the Commission will follow the guidance of ESWG and NENA who must respectively study the necessary architecture for NG9-1-1 (ESInet, and others) and develop the standard's technical and operational details between now and next year[28].

57. The Commission must also require suppliers to take advantage of the transition to NG9-1-1 to establish or improve the redundancy of their 9-1-1 networks. This redundancy must be present throughout the country in order to ensure the connection of all emergency calls, at all times. During the Dawson College attack, in Montréal, in 2006, 9-1-1 calls were lost due to a lack of redundancy in the network of the day. The technological architecture was subsequently doubled to avoid the recurrence of a similar problem.

58. As regards the size of the networks, our interpretations suggest that problems could be associated with the fact that they are too fragmented[29]. NENA, for its part, supports wider networks since the legislation

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[24] CRTC, *Questions relevant to the reliability and resilience of 9-1-1 networks,* Telecom Regulatory Policy 2016-165, Ottawa, May 2, 2016, para. 36.

[25] *CRTC, Questions relevant to the reliability and resilience of 9-1-1 networks,* Telecom Regulatory Policy 2016-165, Ottawa, May 2, 2016, para.34.

[26] *Ibid*, para. 37 to 39.

[27] Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives (SOR/2006-355).

[28] Progress Made in Canada and Abroad *regarding the implementation of next-generation 9-1-1 service (NG9-1-1),* Progress Report prepared by ESWG, January 21, 2016, p.9 and ESWG, *Address the Technical and Operational Aspects of the NENA i3 Architecture – ESInet and Core Component Considerations*, ESTF0082, February 11, 2016.

[29] See FCC inquiry into an outage in 2014: https://apps.fcc.gov/edocs_public/attachmatch/DA-14-676A1_Rcd.pdf.

allows it[30], but basically, the i3 standard contains no specification on network size[31]. In reality, that is probably what has led to models seeming to adapt to local architecture (there are many ESInet networks when several advanced 9-1-1 network providers coexisted before; a single ESInet network when there has only been one)[32]. And, with the system evolving, it seems appropriate to us that it be based on existing networks.

59. In much the same way, CPSM and CAUREQ's unionized workers believe that the NG9-1-1 regulatory framework established by the Commission should not have negative effects on other elements of the emergency call response system, like PSAP. They fill a fundamental role by screening calls for frontline services. To use a sporting metaphor, these are, in a way, the goaltenders for the police, the firefighters and the paramedics. So, we believe that PSAP agents would be more helpful than ever by making it possible for citizens and other stakeholders (telematics systems, for example) to transmit more information via NG9-1-1.

60. Therefore, the Commission should rule out the possibility of creating a NG9-1-1 network architecture that supports the use of a single, national, public-security call center or a few provincial PSAPs. On the one hand, this option would resemble the service currently offered by the centralized 9-1-1 call centres of VoIP providers. But, basic 911 service causes additional delays in the handling of emergency calls because it does not allow quick locating of the caller, but also because it is offered only in English most of the time.

61. When VoIP emergency calls are transferred to the appropriate PSAP, our members notice, in fact, that time is often lost because the names of Francophone places are often misunderstood or mispronounced by operators who do not speak or sufficiently understand French. The possibility that NG9-1-1 would permit the implementation of a single national 9-1-1 call center brings with it the risk of people, using one of Canada's official languages, not getting all the desired help they need when they most need it. This situation is unacceptable in that it does not comply with the Official Languages Act and public safety – Francophones throughout the country have the right to emergency services as efficient as those offered to Anglophones.

[30] "Some states do not have the ability or authority to establish a statewide ESInet", in NENA, *Next Generation 9-1-1 Transition Policy Implementation Handbook,* June 2011, p. 16: https://c.ymcdn.com/sites/www.nena.org/resource/resmgr/ngpp/ng911_transition_policy_hand.pdf.

[31] NENA, *NENA Baseline Next Generation 9-1-1 Description*: http://c.ymcdn.com/sites/www.nena.org/resource/resmgr/Docs/NENA_Baseline_NG9-1-1.pdf.

[32] Byron L. Smith, NG911 – Deployments in U.S.A., Presented to EU Emergency Services Workshops, April 16, 2013.

62. Should the Commission move ahead with a similar solution NG9-1-1, it must show that the new National PSAP will be 100% technically reliable and in a position to offer, minimally, service that is:

    - perfectly bilingual (French and English);
    - as effective in one language as in the other.

63. On the other hand, the too-large territorial groupings under the responsibility of a single call center, as is the case in British Columbia, seem to invite dissatisfaction, as shown in this submission by an individual, received by the Commission.

> "My suggestion to improve 9-1-1? Return to the localized dispatchers to the areas the 9-1-1 calls are from. IE: All areas in BC are answered at centralized dispatch in Kamloops, or Kelowna, or wherever it is - call from anywhere else and too much time is wasted trying to explain where something is happening because the non-local dispatchers have no local knowledge of the area or landmarks and such, they just have a map in front of them[33]."

64. It must be said that geography occupies a major place in the training of PSAP agents. In Québec, out of a five-week long training, 20% of the time can be devoted to familiarization with the territory covered. Some police forces even offer a full day of tracking to new agents to be sure that they can locate certain important regional places that are not indicated on the maps[34].

65. Demographic realities (large immigrant populations, local expressions, popular names given to certain places, municipalities having identical or similar names etc.) also constitute a barrier to understanding calls made to 9-1-1 if the agent does not know the region.

[33] David Van Unen, *Submission to the CRTC as part of the Notice of Consultation CRTC 2016-116*, submission nº 11

[34] For example, no map mentions the presence, at LaPrairie, on the South Shore of Montréal, of the "Pit à Langlois". It is a flooded quarry, inaccessible by road, which constitutes a clear danger for all who venture there.

b) What entities should be permitted to route traffic, directly or indirectly, to NG9-1-1 network providers for transmission over such networks? Such entities may include TSPs (for example telecommunications companies or resellers) PSAPs (e.g. Canadians or Americans) or any other service provider that may support an NG9-1-1 capability in the future (e.g. providers of telematics, over-the-top text messaging and social media services).

66. In the opinion of CPSM and CAUREQ's unionized workers, only the PSAPs, telecommunication (TSP) and telematics service providers should be authorized to route traffic to the Next Generation 9-1-1 network suppliers.

67. TSPs must have this authorization to rapidly send all emergency phone calls or text messages (by cell or Internet) to the PSAPs. However, social media, as previously explained, should not have direct access to the NG9-1-1 networks.

68. As for telematics services – like those that are installed in vehicles – they could have priority access to NG9-1-1 networks, on condition that they be *only* directed to a PSAP, as are voice calls and text messages.

69. Contrary to what one might believe, this type of service does not communicate only emergencies. For example, it often happens that they contact 9-1-1 to report the tracking of a stolen vehicle. But, this type of call, if it were directed directly to an emergency service, risks hampering real rescue operations.

70. That is why we believe that it must be analyzed by a PSAP agent to determine if it is a real emergency, as well as what first-line service to send. In some cases the procedures in place can also require that the 9-1-1 agent confirms the caller's location, failing which the emergency services is not provided. That is the case for ambulances in Montréal, in particular.

Q.11: What reporting requirements should the Commission implement throughout the transition to NG9-1-1 services and afterwards? Identify the information that ought to be reported and the frequency of reporting.

71. The Commission should require the Emergency Services Working Group (ESWG) of the CRTC Interconnection Steering Committee (CISC) to continue to supply progress reports on the transition to NG9-1-1 services.

72. ESWG already produces a progress report each year, but the reports need to be more frequent (every 3 to 6 months) as work on defining the NG9-1-1 implementation standards progresses. They should also be more detailed and include a technical roadmap as well as a schedule. The PSAPs will thus be better able to prepare their technological update and to request the necessary budgets, from the relevant authorities, on time.

73. Furthermore, CPSM and CAUREQ's unionized workers want to support the *Coalition pour le service 9-1-1 au Québec* (the Coalition) to see that the reports, and any other document produced as part of the changeover to NG9-1-1, be published in the two national languages. This transition that involves all of the country's citizens is complex and it merits the full attention of the deciders, whether they be Anglophones or Francophones:

> "A full understanding of the decisions and the reports on the evolution of the service, as well as the use of a common terminology, **helps** to advance the transition to NG9-1-1. How does one understand new concepts and make decisions that are costly for the decision-makers (including the funding of preparatory studies) when no official information document exists, in French, in Canada?"[35]

74. As the Coalition mentioned, the Commission had the ESWG progress reports for this matter (CRTC 2016-116) translated. This initiative is appreciated and should be renewed for all documents required from any party involved in NG9-1-1.

75. The Commission is master of its procedures[36] and this is not the first time it has required the translation of documents. During the "Let's Talk TV" consultation in summer 2014, it asked all the major companies involved to furnish translated versions of their submissions:

[35] Coalition for 9-1-1 service in Québec, *the Coalition's collective response for 9-1-1 service in Québec, in answer to the request for information addressed to PSAP 9-1-1*, May 9, 2016, para. 33.

[36] Canadian Radio-television and Telecommunication Commission Rules of Practice and Procedure SOR/2010 - 277

"Given the unique character of the Let's Talk TV proceedings, and to ensure that the conversation with Canadians continues, the Commission also **expects** from Bell Media Inc., Bragg Communications Inc., Cogeco Inc., Corus Entertainment Inc., Québecor Inc., Rogers Communications Inc., Shaw Communications Inc., Société Radio-Canada and TELUS Communications, that if the parties choose to file submissions as part of the proceedings, they file a translated version of their main submission in the other official language[37]…"

76. In addition, the CRTC is the initiator of CISC and its working groups[38], including ESWG:

"68. CISC was established by the Commission to assist in developing information, procedures and guidelines, and technical solutions that may be required in various aspects of the Commission's regulatory activities; initially in 1996 in support of introducing local competition in Canada.

69. CISC is composed of a Steering Committee, which is chaired by Commission staff, and a number of working groups. CISC is an open public forum where any interested party can participate in the various working groups. One such group is the Emergency Services Working Group (ESWG).[39]."

77. Commission staff also bring administrative support to ESWG for, among other things, the publication of its reports on its website[40]. In our opinion it is thus completely normal that the CRTC translate ESWG documents as it does for all of its communications.

78. Finally, it should be remembered that the Commission is a Federal institution that is subject to the Official Languages Act. As such[41], it must:

"… ensure that positive measures are taken to enhance the vitality of the English and French linguistic minority communities in Canada, to support their development and to promote the full recognition and use of both English and French in Canadian society[42]."

79. A good way to recognize the place of French in Canada would be to offer Francophones information in their language, particularly when it is information dealing with the implementation of emergency services such as NG9-1-1

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[37] CRTC, *Let's Talk TV – changes to procedure,* Notice of Consultation 2014-190-1, Ottawa, June 20, 2014.
[38] "CISC is made up of a steering committee, working groups, and special committees whose mandate and structure are defined by the Commission", in CRTC, *Telecom Commission letter addressed to Chris Kellett (CRTC Emergency Services Working Group (ESWG)),* Ottawa, November 6, 2014: http://www.crtc.gc.ca/eng/archive/2014/lt141106a.htm.
[39] Timothy Denton, *A Report on Matters Related to Emergency 911,* report prepared for the Canadian Radio-Television and Telecommunications Commission, July 5, 2013, para. 68 and 69.
[40] CRTC, *C ISC Administrative Guidelines – Appendix 9*: http://www.crtc.gc.ca/cisc/eng/cag13.htm#A9.
[41] *Official Languages Act*, art. 41.
[42] CRTC, The CRTC and Official Languages Minority Communities: http://www.crtc.gc.ca/eng/5000/lo_ol/olm-lom.htm.

80. As for reports to be supplied after the coming into force of NG9-1-1, CPSM and CAUREQ's unionized workers believe that the Commission should continue to require 9-1-1 network suppliers to report outages by ensuring that "… any 9-1-1 calls not delivered to the primary PSAP's demarcation point[43] (are reported)." Following its consultation on 9-1-1 network reliability, the Commission decided to require such reports annually, starting June 1, 2016.

81. However, we believe that as part of NG9-1-1, these reports should be extended to cover text messages and all additional information covered under the regulations (medical files, photos, videos, etc.) that do not get through to the primary PSAP.

82. It would also be appropriate to have 9-1-1 providers report outages more frequently during the two years following the implementation of the next generation networks – say, every three to six months – in order to check the reliability of the new system.

CONCLUSION / SUMMARY

83. To sum up, CPSM and CAUREQ's unionized workers believe that text messages are complementary to telephone calls and that there is real public interest in having them added to ways of reaching 9-1-1.

84. On the other hand, the Commission must avoid a multiplication in points of contact for 9-1-1 services, even if next-generation technology permits it, since it risks imposing too heavy a load on public-safety call centres.

85. In our opinion, it would be better to limit the means of communicating with PSAPs to telephone calls and text messages while educating the public about the advantages and limitations of each method.

86. Furthermore, CPSM and CAUREQ's unionized workers hope that the deployment of 9-1-1 text messaging will happen in cooperation with the PSAPs so that they have the time to free up the necessary budgets for the upgrading of their systems.

87. As for the additional information that could be sent to PSAPs through NG9-1-1 (photos, videos, medical files, etc.), we recognize that it will be useful for interventions and inquiries. However, from a PSAP agent's point of view, the majority of this information will be superfluous and could even compromise the rapid allocation of personnel. The PSAPs could still be the contact point for the additional information sent to the 9-1-1s, if they have the necessary human resources and budgets to handle it.

88. On the technical side, CPSM and CAUREQ's unionized workers believe, on the one hand, that several NG9-1-1 networks are better than a single one, in part because that spreads the financial load among

[43] CRTC, *Matters related to the reliability and resiliency of the 9-1-1 networks*, Regulatory Policy 2016-165, Ottawa, May 2, 2016, para. 95.

various companies. The Commission should therefore support interconnected networks, because that would reduce, on the other hand, the risk of seeing the entire system affected by one outage.

89. We also believe that the Commission should set aside the possibility of regulating in a way to favour the use of a single national call center or of a few provincial PSAPs to receive all 9-1-1 calls. Rather, we believe that the Commission should establish a gradual implementation of NG9-1-1s that respects municipal budgets and the rate of technology acquisition by the PSAPs, in order to maintain the quality of this essential service from one end of the country to the other.

90. We wish to appear at the public hearing.

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