



Telecom Regulatory Policy CRTC 2009-40

Ottawa, 2 February 2009

Implementation of wireless Phase II E9-1-1 service

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In this decision, the Commission approves the consensus recommendations of the CRTC Interconnection Steering Committee's Emergency Services Working Group (ESWG) regarding the technical and operational requirements for the implementation of wireless Phase II enhanced 9-1-1 (E9-1-1) service, which will provide substantial public safety improvements. The Commission also makes determinations regarding the following issues: prerequisite requirements of public safety answering points; implementation time frames; responsibility for implementation costs; public consultations; and requirements for subscriber notification.

The ESWG is requested to develop a rollout schedule for the deployment of wireless Phase II Stage 1 E9-1-1 service and to file a report on its findings regarding the deployment of wireless Phase II Stage 2 features. All wireless service providers are to complete their respective implementation of wireless Phase II Stage 1 E9-1-1 service by 1 February 2010, wherever wireline E9-1-1 service is available across Canada.

Introduction

1. In Telecom Decision 2003-53, the Commission mandated all Canadian wireless service providers (WSPs) to implement a form of wireless enhanced 9-1-1 (E9-1-1) service whereby the telephone number and cell site/sector information of wireless E9-1-1 callers would automatically be conveyed to the E9-1-1 call centre, also known as the public safety answering point (PSAP). The Commission required the WSPs to provide this service in all areas where E9-1-1 service is available for 9-1-1 calls made from conventional wireline telephones, and to notify their customers regarding the availability and limitations of their particular wireless E9-1-1 service.
2. Within North America, the wireless industry has adopted a phased approach to the provision of cell phone caller location information to PSAPs. The level of information required by Telecom Decision 2003-53 is referred to as Phase I. Phase II, which has not yet been widely implemented in Canada and is the subject of this decision, provides PSAPs with Phase I information plus more accurate longitudinal and latitudinal (X,Y) information regarding the location of wireless E9-1-1 callers.
3. In March 2008, the Commission requested the Emergency Services Working Group (ESWG) of the CRTC Interconnection Steering Committee (CISC) to examine and report on the implementation of Phase II. As part of that request, the Commission asked Bell Mobility Inc. (Bell Mobility) and the City of Toronto to provide information on the results of a trial they had been conducting which was intended to test the use of cell phone location information technology primarily to provide various commercial services, but also to provide wireless Phase II E9-1-1 service.

4. On 31 October 2008, the ESWG filed with the Commission Report ESRE0046, entitled *Technical and Operational Requirements of Wireless Phase II E9-1-1 Implementation* (the ESWG Report), in which it detailed the technical and operational requirements of its recommended approach to the automatic provision to PSAPs of the cell phone location of wireless E9-1-1 callers. The ESWG Report identified items upon which the working group members had agreed, as well as two items for which consensus could not be reached (i.e. requisite level of PSAP readiness and Phase II implementation time frames). It also noted two policy issues considered as being beyond CISC's mandate, but nonetheless requiring Commission consideration (i.e. implementation funding and the need for further public consultation). The ESWG members who made written contributions to the ESWG are listed in the Appendix to this decision.
5. The ESWG Report is available on the Commission's website at www.crtc.gc.ca.

Issues

6. The Commission has identified the following issues to be addressed in its determinations:
 - I. Should the Commission approve the ESWG Report consensus items?
 - II. What is the requisite level of PSAP readiness?
 - III. What are the time frames for Phase II implementation?
 - IV. How should implementation be funded?
 - V. Is further public consultation necessary?
 - VI. What are the requirements for subscriber notification?
 - VII. Are the Commission's determinations consistent with the Policy Direction?¹

I. Should the Commission approve the ESWG Report consensus items?

7. The ESWG reached consensus on recommendations to the Commission regarding the following items:
 - preservation and use of wireless Phase I E9-1-1 voice routing as the basis for wireless Phase II E9-1-1 call handling capabilities;
 - assignment of a unique class of service identifier for wireless Phase II E9-1-1 calls;
 - absence of filtering of wireless E9-1-1 data provided to PSAPs by either Canadian wireless carriers (the wireless carriers) or incumbent local exchange

¹ *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, P.C. 2006-1534, 14 December 2006

carriers (ILECs) with which they are interconnected for the provision of wireless E9-1-1 caller information to the PSAPs;

- automatic enabling of cell phone Global Positioning System (GPS) functionality where GPS technology is being used;
 - use of the mobile location protocol (MLP) interface standard for the transfer of data between wireless carriers and ILECs;
 - transmission of X,Y coordinates by wireless carriers and ILECs in the MLP defined format, using World Geodetic System 1984 map projection datum;
 - provision of continuous wireless carrier call centre support to PSAPs, wherever wireless Phase II E9-1-1 call location information is available;
 - setting threshold values for specific location system parameters that provide PSAPs a caller's wireless Phase II E9-1-1 location information;
 - deployment of wireless Phase II E9-1-1 features in two stages:
 - Stage 1 – Provision of X,Y coordinate information and location system parameters that PSAPs use to determine a caller's location.
 - Stage 2 – Provision of mid-call location updates, plus provision of wireless Phase II E9-1-1 service for roamers and unsubscribed handsets, to be deployed as technology solutions become available.
8. Having considered the ESWG Report, the Commission **approves** the consensus recommendations as set out therein.
9. The Commission notes that, while ESWG members could not reach consensus on when the implementation of Phase II should be completed, they did recommend the deployment of wireless Phase II Stage 1 E9-1-1 capability in Canada. The Commission is satisfied that the implementation of Stage 1 involves no technical impediments and that it offers substantial public safety improvements. The Commission considers that the improved accuracy that implementation will afford PSAPs in determining the location of 9-1-1 callers will enable emergency service personnel to respond more quickly and effectively to many emergency situations. Moreover, the Commission notes that an equivalent service is currently deployed in the United States.
10. In light of the above, the Commission directs the WSPs to deploy wireless Phase II Stage 1 E9-1-1 service wherever wireline E9-1-1 service is available across Canada.

II. What is the requisite level of PSAP readiness?

11. In its ESWG submissions, the Canadian Wireless Telecommunications Association (CWTA) stated that wireless carriers should only be required to implement Phase II service in areas where PSAPs have the equipment required to automatically display X,Y coordinate data as locations on a map. The CWTA argued that using the data to manually plot locations on a

paper map is more time-consuming and less accurate than using fully automated systems, and that wireless carriers should not be required to invest large amounts of capital to provide location information that will not be fully utilized.

12. The PSAPs argued that it is not necessary for them to have automatic mapping capabilities in order to make use of the X,Y location information. They noted that PSAP locations across Canada receive different levels of funding, meaning some have less sophisticated tools than others, but that those without automatic mapping capabilities have developed creative and innovative means to work with the data they are provided. The PSAPs concluded that wireless carriers should not be permitted to narrowly define what systems PSAPs should deploy or how they should make use of potentially life-saving X,Y coordinate data.
13. The Commission considers that making the use of automatic mapping software a prerequisite for the use of X,Y location data would require many PSAPs to make wholesale changes to their systems, potentially posing major funding issues and leading to delays. Moreover, while the Commission encourages PSAPs to use automatic mapping software to the extent feasible, it is satisfied that any electronic mapping technologies that enable PSAP personnel to quickly input a caller's X,Y coordinates to generate a map location, including Internet provided mapping programs, are sufficient to provide life-saving benefits to the PSAPs and emergency responders.
14. The Commission therefore **denies** the CWTA's request to create a prerequisite that PSAPs implement automatic mapping software before the wireless carriers are required to provide X,Y location information to them.

III. What are the time frames for Phase II implementation?

15. The CWTA, the participating ILECs, and Rogers Wireless Inc. submitted that it was premature to comment on Phase II implementation time frames. However, the CWTA added that wireless Phase II E9-1-1 service should be deployed in accordance with a rollout schedule, in the same manner that wireless number portability was rolled out across Canada.
16. The PSAPs submitted that the rollout of Phase II Stage 1 capabilities should commence in the second quarter of 2009 and be completed by the end of 2009, to be followed by the rollout of Phase II Stage 2 capabilities commencing in the first quarter of 2010, with completion by the end of 2010. The CWTA submitted that these dates were not achievable.
17. The Commission shares the ESWG's view that the deployment of Stage 1 over a specified rollout period would provide for a more manageable and cost-effective implementation. The Commission also considers that it is in the public interest that Stage 1 be implemented as quickly as is reasonably feasible, given the potentially life-saving improvements it affords in terms of the speed and accuracy of emergency responses to wireless E9-1-1 calls. Having considered the submissions of ESWG members, the Commission is satisfied that it would be reasonable for ILEC and WSP rollout activities associated with Stage 1 to commence shortly after the date of this decision and be completed by 1 February 2010, wherever wireline E9-1-1 service is available across Canada.
18. The Commission requests the ESWG to develop a rollout schedule for the wireless carriers' deployment of wireless Phase II Stage 1 E9-1-1 service wherever wireline E9-1-1 service is

available across Canada, and to file this schedule for Commission approval within three months of the date of this decision. The Commission considers that in developing the rollout schedule, the ESWG should establish criteria to prioritize deployment in the various PSAP serving areas. The rollout schedule should indicate the sequence of deployment and the dates by which the service will be available in each area. The Commission requests the PSAPs to participate in the development of the rollout schedule in order to help ensure that it reasonably accommodates their preferred deployment dates as well as those of the wireless carriers and ILECs.

19. The Commission notes that, as a result of the recent advanced wireless services spectrum auction, there will be several new WSPs entering the marketplace within the next several years. The Commission considers that it would be in the public interest for these new entrants to deploy wireless Phase II Stage 1 E9-1-1 service with no greater delays than are being afforded the existing WSPs.
20. In light of the above considerations, the Commission makes the following determinations.
 1. All ILECs are to file proposed revised wireless E9-1-1 tariffs within three months of the date of this decision.
 2. All ILECs are to complete their respective implementation of wireless Phase II Stage 1 E9-1-1 service within six months of the date of this decision, wherever wireline E9-1-1 service is available across Canada.
 3. All WSPs are to complete their respective implementation of wireless Phase II Stage 1 E9-1-1 services by 1 February 2010, wherever wireline E9-1-1 service is available across Canada.
 4. When a new WSP enters the market, at the time of service launch it must support wireless Phase II Stage 1 E9-1-1 service where it has been implemented.
21. The Commission notes that the ESWG Report stated that it is necessary to investigate the implementation of the wireless Phase II Stage 2 E9-1-1 features that were not included in Stage 1 of the deployment. The ESWG indicated that it would continue to investigate solutions for the future implementation of wireless Phase II Stage 2 E9-1-1 features.
22. The Commission considers that wireless Phase II Stage 2 E9-1-1 features would provide further significant benefits to PSAPs and consumers, and should be implemented as soon as technological solutions are available. To this end, the Commission requests that the ESWG file a report within six months of the date of this decision on its findings regarding the deployment of wireless Phase II Stage 2 E9-1-1 features. Upon review of this report, the Commission will specify the Stage 2 implementation requirements and time frames.

IV. How should implementation be funded?

23. The CWTA argued that when a public service such as wireless E9-1-1 is to be provided, it is appropriate to question whether the costs of providing the service should be borne by the general public or by the body of telecommunications subscribers. The CWTA took the position that it should be the former. More specifically, it argued that the costs of

implementing wireless Phase II E9-1-1 service should be recoverable from the recent advanced wireless services spectrum auction proceeds.

24. In support of its position, the CWTA submitted that the wireless carriers will have to make significant investments to provide X,Y location information and that, were the industry to be required to self-fund these investments, the availability of resources could impose a restraint on timely deployment. Finally, the CWTA submitted that since the 9-1-1 rates that the wireless carriers charge to their subscribers are not subject to Commission approval, these carriers have no guarantee of earning a positive rate of return.
25. The PSAPs supported the existing cost recovery regime whereby the relevant carriers are responsible for the recovery of their costs of providing wireless E9-1-1 service and the PSAPs are responsible for the recovery of theirs. The PSAPs noted that they will incur additional costs in order to receive and make use of the Phase II location data to be provided by the wireless carriers. They argued that they will have to find the means to recover these additional costs themselves and that a requirement for them to also cover the wireless carriers' costs would dramatically limit the deployment of wireless Phase II E9-1-1 service to only those communities with a substantial property tax base.
26. In addition, the PSAPs argued that the wireless carriers have used the safety aspects of cellular services in marketing such services to cell phone customers and that, in their view, these customers would be willing to pay a small incremental amount in order to receive the additional safety benefits of wireless Phase II E9-1-1 service. Finally, the PSAPs submitted that, if the wireless carriers wish to dispute the continued use of the existing funding regime, they should file cost studies with the Commission to identify the incremental implementation costs to be recovered by their 9-1-1 rates.
27. The Commission notes that the wireless industry has been responsible for the recovery of its own costs for the implementation of wireless Phase I E9-1-1 service, as it was for the previous wireless 9-1-1 service. Consistent with this funding regime, WSPs have for years been charging their subscribers a 9-1-1 service fee which the Commission expects is generating revenues sufficient to fully recover the associated costs.
28. The Commission notes that wireless carriers have deployed or are planning to deploy location determination technology in their networks for purposes of offering a number of revenue-generating services. The Commission notes that the same technology platforms and X,Y coordinate data can be used to provide both commercial location determination services and the wireless Phase II E9-1-1 information required by PSAPs.
29. The Commission further considers that the costs of providing wireless Phase II E9-1-1 service are appropriately considered to be incremental to the costs of providing commercial location determination services. The Commission considers that, either through revenue generation from new services or through the 9-1-1 fees charged to subscribers on their bills, wireless carriers have the means to recover such incremental costs.
30. In light of the above, the Commission is not persuaded that it would be appropriate to alter the current cost recovery regime. Accordingly, as is the case for all other wireless network and service costs, the Commission determines that WSPs are responsible for their own costs associated with implementing wireless Phase II E9-1-1 service. The Commission notes that

this determination does not preclude WSPs from pursuing alternative funding sources that lie beyond the Commission's jurisdiction.

V. Is further public consultation necessary?

31. The CWTA requested that further public consultation be held once the ESWG Report had been submitted to the Commission. The PSAPs did not support the need for public consultation, arguing that the imminent need for wireless Phase II E9-1-1 service has already been identified by the emergency services community and the public, and that public consultation would merely provide further support for this view while adding further delay.
32. Having considered the record before it, and given its determinations set out in previous sections of this decision as well as the pressing public safety issues to be addressed by the implementation of wireless Phase II E9-1-1 service, the Commission concludes that further consultation beyond that provided for in this decision would not be in the public interest.

VI. What are the requirements for subscriber notification?

33. The Commission notes that in Telecom Decision 2003-53 it required WSPs to provide information on the availability, characteristics, and limitations of their E9-1-1 services.
34. The Commission considers that implementation of wireless Phase II E9-1-1 service will greatly reduce, but not eliminate, the limitations of the current wireless E9-1-1 service. The Commission notes that the limitations will, in part, be particular to each wireless network depending on the type of location technology and the capabilities of the handsets being used. For example, where a WSP is using GPS location determination technology, the handset used must have GPS capability. The Commission considers that it is vital for wireless customers to know and understand the limitations of wireless E9-1-1 service in advance of an emergency situation.
35. Accordingly, the Commission requires that, on or before implementation of wireless Phase II Stage 1 E9-1-1 service in a given area, all WSPs are to provide updated notification to customers on the availability, characteristics, and limitations of their wireless E9-1-1 service and handsets, with further notifications thereafter to all new customers at the time of service initiation and annually commencing on or before 1 July 2010. These notifications are to be prominently displayed in clear, legible print on customers' bills and other notification documents. Further, 60 days prior to the date of their first notification, all WSPs are required to file with the Commission, for information and consultation purposes, the proposed content of that notification.

VII. Are the Commission's determinations consistent with the Policy Direction?

36. The Commission considers that the purpose of the regulatory measures taken in this decision is to enhance public safety through the implementation of improvements to wireless E9-1-1 service, which purpose is consistent with paragraphs 7(a), 7(b), and 7(h) of the *Telecommunications Act*. Further, the Commission considers that market forces alone cannot be relied upon for the timely implementation of these improvements and that the regulatory measures being taken interfere minimally with the operation of those forces and are efficient and proportionate to their purpose. Accordingly, the Commission is satisfied that its

determinations are consistent with the Policy Direction.

Secretary General

Related document

- *Conditions of service for wireless competitive local exchange carriers and for emergency services offered by wireless service providers, Telecom Decision CRTC 2003-53, 12 August 2003, as amended by Telecom Decision CRTC 2003-53-1, 25 September 2003*

This document is available in alternative format upon request, and may also be examined in PDF format or in HTML at the following Internet site: <http://www.crtc.gc.ca>

Appendix

The following ESGW members made written contributions to the ESGW:

- The CWTA
- The ILECs provided collective contributions submitted on behalf of: Bell Aliant Regional Communications, Limited Partnership; Bell Canada; MTS Allstream Inc.; Saskatchewan Telecommunications; and TELUS Communications Company
- The PSAPs provided collective contributions submitted on behalf of: Operational Communications Centre National Support Services (OCCNSS)/(RCMP); British Columbia 9-1-1 Service Providers Association (BCSPA); Alberta E9-1-1 Advisory Association (AEAA); Sask911, Ministry of Corrections, Public Safety and Policing; Winnipeg Police Service; City of Brandon Protective Services; Ontario 9-1-1 Advisory Board (OAB); Association des Centres d'urgence du Québec (ACUQ); NB 911 Services/Services d'urgence N-B 911, Department of Public Safety/Sécurité publique; Nova Scotia 911 Cost Recovery Fee Committee; and 911 Administration Office, Province of Prince Edward Island
- Rogers Wireless Inc.