
Region of Ottawa-Carleton
Year 2000 Program

“Region of Ottawa-Carleton/
Ottawa-Carleton Regional Police Service
9-1-1 Documentary Audit”

Executive Summary



Presented to
9-1-1 Management Board
October 8, 1999

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**Region of Ottawa-Carleton/Ottawa-Carleton Regional Police Service
(OCRPS) 9-1-1 Documentary Audit
Executive Summary**

In 1997, the Region of Ottawa-Carleton established a Year 2000 Program office to assess and identify the impact of the century date rollover prior to, on, or after 01 January 2000 on various systems (embedded, business and facilities) used by the Region. Amongst the Region's computer-based systems at risk for potential Year 2000 related problems is the 9-1-1 system. The Year 2000 Program has declared the continued operation of the 9-1-1 system the highest priority system for regional government.

In March 1999, the 9-1-1 Management Board, which oversees the 9-1-1 Service spanning across Ottawa-Carleton, asked the Region to undertake a review of all 9-1-1 system components, to identify potential Year 2000 problems and recommend corrective measures to ensure the continuity of the 9-1-1 Service.

This comprehensive review encompassed two parts: first, the development of a strategy for testing the system on an end-to-end basis and second, a review of the twenty local partners' state of Year 2000 readiness and associated contingency plans.

Initially, end-to-end testing of the 9-1-1 System was to be conducted in co-operation with Bell Canada at the local Stentor laboratory. Unfortunately, after confirming that some of Bell's components used at the Region were different than those at the Stentor laboratory, Bell Canada determined that the Region's entire 9-1-1 environment could not easily be replicated for testing. This testing initiative was therefore abandoned.

Consequently, Bell Canada opted to conduct 9-1-1 Year 2000 testing with the Toronto Police Service (please refer to Attachment 1 for more information). Although the Region was invited to participate in this verification exercise, it became necessary to adopt a different test strategy approach, which consisted of the following elements:

- Conduct an analysis to compare both the Region and the Toronto infrastructures in an attempt to match as closely as possible the components, in order to maximise the ability to make use of their test results;
- Explore the possibility of achieving compliance by comparison of common components between both Police Services;
- Gather results of testing done, either internally or externally by business partners and other organisations using the 9-1-1 system, and analyse them to determine if this data could be used to assess the readiness of the Region's 9-1-1 system;

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- Conduct a detailed documentary audit of all the components of the 9-1-1 infrastructure within Ottawa-Carleton.

As a result of this new approach, the Year 2000 Program established the 9-1-1 Year 2000 Test Group during the Spring of 1999, to oversee and steer efforts of the 9-1-1 test activities and report results to the Region's Emergency Measures Unit. A Test Co-ordinator was appointed by the Year 2000 Program Office to conduct the documentary audit.

Although the 9-1-1 system is comprised of data interchange between computers and the use of the regular telephone system, the 9-1-1 Year 2000 Test Group recognised early on, that the capability of receiving and responding to emergency calls (police, fire truck and/or ambulance) using the voice system took precedence over the transmission of data via computers. Although the data portion of the system is important, it was not deemed mandatory to the provision of the service.

Objectives

The objectives of the documentary audit were:

- to provide a detailed inventory of the Ottawa-Carleton Regional Police Service (OCRPS) 9-1-1 system components;
- to represent graphically the interconnectivity of these 9-1-1 components;
- to review OCRPS components and make recommendations for addressing any Year 2000 related risks.

Approach

The 9-1-1 Year 2000 Test Group adopted a test strategy consisting of the following two approaches:

- The testing of the OCRPS 9-1-1 system components and a documentary audit; and
- A review of Year 2000 preparedness of local 9-1-1 partners. Please note that a separate document is being released to the 9-1-1 Management Board on October 8, 1999 to cover findings related to this approach.

Scope

The scope of the 9-1-1 documentary audit includes the Ottawa-Carleton Regional Police Service (OCRPS) 9-1-1 infrastructure and the external suppliers that support its operation, namely Bell Canada, Bell Mobility, Versaterm and Ericsson.

It is important to note that the documentary audit does not address components found within the local 9-1-1 partners' organisation. This information is addressed in a separate report entitled: "Review of 9-1-1 Local Partners" also released on October 8, 1999 to the 9-1-1 Management Board.

9-1-1 System Overview

The Region of Ottawa-Carleton/Ottawa-Carleton Regional Police Service (OCRPS) 9-1-1 Service is a complex system comprised of telecommunications devices and state-of-the-art technology. To assess the Year 2000 risk factor of the system, it was deemed critical to understand the overall operations of the 9-1-1 Service and how it is supported technically.

The 9-1-1 system can best be defined as being comprised of six key segments:

1. Bell Canada off and on-premise equipment,
2. Computer Aided Dispatch (CAD) System,
3. Ericsson Trunked Radio Frequency (RF) Digital Network,
4. Radio Frequency (RF) Gateway,
5. Bell Mobility Cellular Digital Packet Data (CDPD) Network, and
6. Mobile Workstations.

N.B. A graphical representation of the 9-1-1 system is provided as attachment 2.

Recommendations to the Ottawa-Carleton Regional Police Service (OCRPS)

1. OCRPS to explore the possibility of obtaining secondary stand-by CANI interface boards (main boards) at 474 Elgin for backup purposes.
2. OCRPS Communication Centre's Standing Operating Procedures (SOP) to contain step-by-step procedures, such as the Bell Canada contact and phone number to be called should the Centrex Service be required.
3. OCRPS to identify three resources at a minimum within OCRPS who can authorise Bell Canada to activate the Centrex Service.

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4. OCRPS to test the Centrex UCD service at the backup centre at 111 Lisgar. A CANI failure could be simulated and the current SOP could be verified during this exercise.
 5. OCRPS Communication Centre's SOP to contain step-by-step instructions identifying where the spare parts are located and how to replace a TIM.
 6. OCRPS to verify the applicability of the existing "card-based procedures" and review them on a regular basis and make changes as necessary.
 7. OCRPS to follow-up with Versaterm to ensure an appropriate written response is received on the Year 2000 compliance of the CAD server and workstation software, the RF Gateway software and the MDT software.
 8. OCRPS to upgrade the CAD Workstations to the latest Microsoft NT 4.0 patch.
 9. OCRPS to ensure that Ericsson has completed the following upgrades:
 - C3 Maestro Dispatch Consoles
 - MOM PC NT 4.0 Hardware and Software
 - Interface Module Software Upgrades to current revision
 - Uplink GETC software upgrades to current revision
 - PRS Y2K Site Controller Software
 - IMC Manager microcomputer with the latest Windows NT 4.0 patch
 - PRS Y2K System Manager Software
 10. OCRPS to investigate the CAD Link to determine if it is an external device or a software module residing on the RF Gateway. If the CAD Link is an external device, OCRPS should ensure that both the microcomputer and software are Year 2000 compliant.
 11. OCRPS to ensure the latest version of Reflection is installed on the ANI/ALI Data Warehouse microcomputer.

Statement of Year 2000 related risk

Based on this comprehensive review of all OCRPS 9-1-1 System components, it is our opinion that the Year 2000 related risk for the 9-1-1 System is low. It should be noted that OCRPS is in the process of upgrading a number of components and one outstanding issue is to obtain the test results from Ericsson Communications Canada to determine if additional upgrades are required.

Attachment 1- Metro Toronto Police/Bell Canada 9-1-1 Verification Exercise

In addition to identifying all components of the Region of Ottawa-Carleton and the Ottawa-Carleton Regional Police Service (OCRPS) 9-1-1 system, an important aspect of this documentary audit was to participate in the Toronto Police Service and Bell Canada 9-1-1 verification exercise, on 29 June 1999.

During the verification exercise, the 9-1-1 backup centre in Toronto was utilised to receive 9-1-1 calls. All calls originated from the Stentor Resource Centre in Ottawa, where several members of the Region/OCRPS were active participants.

During the test, OCRPS Communications call-takers were dialling 9-1-1 on a “closed” network in Ottawa, with the calls being answered by Toronto Police Communications call-takers, and then routed to answering points in Toronto and Ottawa, to simulate secondary Public Safety Answering Points such as ambulance and fire services.

This day long testing of the Ontario 9-1-1 Public Emergency Response System (PERS) verified 9-1-1 system features using a variety of strategic dates, including:

Critical rollover dates that were tested:

- 09-09-1999 to 10-09-1999
- 31-12-1999 to 01-01-2000
- 28-02-2000 to 29-02-2000
- 29-02-2000 to 01-03-2000
- 31-12-2000 to 01-01-2001

Critical rollover date that was not tested:

- 08-09-1999 to 09-09-1999

This rollover date could not be tested as personnel in Toronto set the PBX time to 11:50 a.m. as opposed to 11:50 p.m. Time could not be regressed to conduct testing on the ALI computer.

Functional tests that were conducted:

For each critical date tested, a total of nine functional tests were conducted. A copy of the test procedure used to conduct testing can be found at Appendix 7.

In each of the tests, the date rollover was successful, and system features operated as designed. No calls were “dropped”, no features were lost, and the 9-1-1 system operated flawlessly. This has been the only end-to-end testing of the 9-1-1 system conducted within Ontario, and the event was attended by over 20 emergency service operations and government agencies from across Ontario. Attending representatives observed the system functions first hand so that they could be assured of the continued functionality of the 9-1-1 system beyond 2000. The following was observed:

Attachment 1- Metro Toronto Police/Bell Canada 9-1-1 Verification Exercise (cont.)

- Voice was maintained through all date rollovers,
- All calls were still active after the date rollovers,
- Calls waiting were all transferred successfully,
- Calls left in queue did not get lost,
- All dates rolled over as anticipated, and
- ALI was generated on CAD workstations.

Although OCRPS utilises components that differ from those tested in Toronto (such as CANI and TIM), both organisations share the same ALI data residing in the ALI computer and both have similar PBXs. As these two components handle dates, OCRPS felt this was a worthwhile verification exercise that demonstrated these two major Bell components did not have any Year 2000 issues.

The Toronto Police Service has since issued a public news release on 02 July 1999 and the OCRPS released a similar news release on 14 July 1999. A copy of each of the news releases can be found at Appendix 8.

In addition to the press releases, Bell Canada confirmed they would publish a test report following the testing conducted in Toronto. At the time this report was written, the Region was advised the Year 2000 test report would be released as part of the next Bell Canada 9-1-1 Year 2000 bulletin in September 1999. This bulletin is distributed to all 9-1-1 agencies and interested parties. Upon receiving the test report, a copy will be added to this documentary audit report.