



CASE STUDY

Cobb County Embraces DiagnostX™ as a Proactive Maintenance Tool for Two-Way Radios

EXECUTIVE SUMMARY

COBB COUNTY GOVERNMENT

Industry: Public Safety

Location: Marietta, Georgia

Number of Radios: 5,000

CHALLENGE

- To determine if an issue exists with a particular radio or the land mobile radio (LMR) system
- Needed to simplify the radio maintenance process

SOLUTION

- Implemented the use of DiagnostX to pinpoint radios in jeopardy of failing before an emergency occurs

RESULTS

- Detects radios performing poorly before the user complains of a problem
- Reduced the cost of radio maintenance on an annual basis

Background

The Cobb County Department of Public Safety (DPS) was created by the County's Board of Commissioners in 1993. It has over 1,500 employees providing service to approximately 700,000 citizens.

The Department of Public Safety is responsible for nine divisions that report to the Director of Public Safety which include the Police Department, Fire and Emergency Services, 911 Emergency Communications, 800 MHz Radio System, Animal Control, the DPS Training Unit, Internal Affairs Unit, Administrative Division and the Public Safety Village. They currently have 5,000 radios in use on their LMR system.

“Our department would spend a great deal of time chasing down specific issues with the radio system that were not valid. DiagnostX revealed the problem was not with the system but with individual radios”

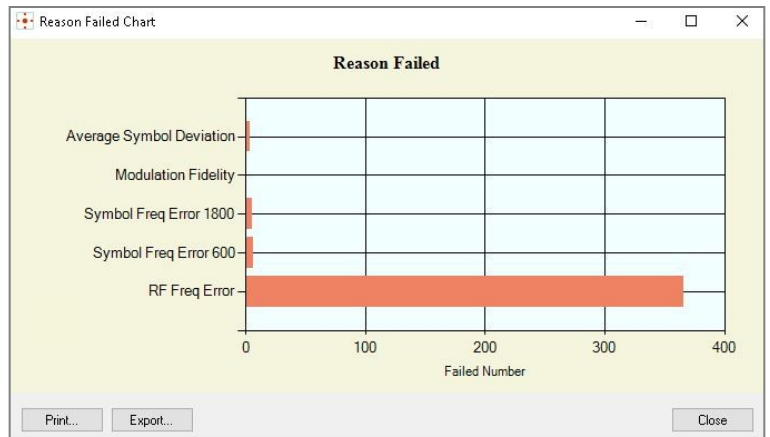
Tracy Roberts, former Radio System Manager, Cobb County Department of Public Safety

Challenge

Before using LocusUSA's DiagnostX System, the Cobb County Department of Public Safety used a manual process to determine if a radio was working properly or not. “We would either wait for an individual to complain of a problem; have the user bring their radio in for routine maintenances, or the radio system was providing poor coverage,” said Tracy Roberts, former Radio System Manager, Cobb County Department of Public Safety. All these processes were very time-consuming and costly to the department.

The Department of Public Safety needed to find a more proactive approach in determining radios that were experiencing a frequency error or were significantly out of alignment and bring only those radios in for immediate service, while the others could remain operational in the field.

Radio ID	Alias	RF Core Frequency Error (Hz)	Subcarrier Frequency Error (Hz)	Symbol Frequency Error (Hz)	Modulation Fidelity	Average Symbol Deviation (Percent)	Status	Date/Time
530054	530054	0	0	0	0.80%	0	NOT ENOUGH EVENTS	3/5/2018 11:31 AM
530055	530055	12	15	11	0.19%	1756	PASSED	3/5/2018 12:34 AM
530056	530056	263	23	13	0.19%	1758	PASSED	3/26/2018 9:25 AM
530057	530057	439	7	8	0.18%	1765	FAILED	3/27/2018 12:18 PM
530058	530058	13	25	17	0.17%	1763	FAILED	3/27/2018 12:45 AM
530059	530059	274	5	4	0.21%	1766	PASSED	3/6/2018 9:12 AM
530060	530060	240	19	13	0.18%	1762	PASSED	3/7/2018 2:58 AM
530061	530061	326	27	16	0.17%	1763	FAILED	3/26/2018 12:05 PM
530062	530062	134	16	16	0.20%	1762	PASSED	3/28/2018 4:12 AM
530063	530063	375	14	12	0.20%	1762	FAILED	3/27/2018 4:25 AM
530064	530064	0	0	0	0.80%	0	NOT ENOUGH EVENTS	3/5/2018 12:46 AM
530065	530065	375	14	10	0.18%	1760	FAILED	3/7/2018 12:53 PM
530066	530066	0	0	0	0.80%	0	NOT ENOUGH EVENTS	3/5/2018 12:51 PM
530067	530067	274	16	15	0.21%	1763	PASSED	3/26/2018 10:46 AM
530068	530068	139	16	25	0.22%	1762	PASSED	3/5/2018 4:02 AM
530069	530069	30	13	26	0.19%	1764	FAILED	3/4/2018 1:05 AM
530070	530070	145	17	18	0.18%	1764	PASSED	3/4/2018 12:10 PM
530071	530071	145	17	18	0.18%	1764	PASSED	3/4/2018 12:10 PM
530072	530072	0	0	0	0.80%	0	NOT SUITABLE	3/24/2018 3:38 AM
530073	530073	365	11	13	0.20%	1762	FAILED	3/4/2018 1:13 AM
530074	530074	393	8	25	0.20%	1777	FAILED	3/28/2018 9:10 AM
530075	530075	359	25	13	0.18%	1762	PASSED	3/28/2018 6:05 PM
530076	530076	0	0	0	0.80%	0	NOT ENOUGH EVENTS	3/5/2018 4:02 AM
530077	530077	388	12	15	0.22%	1761	PASSED	3/21/2018 6:23 AM
530078	530078	215	8	21	0.22%	1779	PASSED	3/22/2018 6:53 AM
530079	530079	19	19	28	0.19%	1765	PASSED	3/7/2018 11:10 AM
530080	530080	140	14	38	0.18%	1762	PASSED	3/28/2018 9:12 AM
530081	530081	30	13	25	0.18%	1769	PASSED	3/5/2018 4:19 PM
530082	530082	165	19	29	0.19%	1769	FAILED	3/2/2018 4:47 AM
530083	530083	145	16	16	0.16%	1765	PASSED	3/27/2018 7:42 AM
530084	530084	145	13	13	0.21%	1760	FAILED	3/26/2018 1:44 AM
530085	530085	19	19	38	0.22%	1764	PASSED	3/26/2018 9:16 AM
530086	530086	0	0	0	0.80%	0	NOT ENOUGH EVENTS	3/3/2018 1:56 AM



Solution

To meet these challenges, the Cobb County DPS installed DiagnostX. "You can see it actually grab the health of the radios, and identify the ones performing poorly on the network," stated Roberts. Initially, the County moved the single DiagnostX unit among their busiest sites, but after a couple of years, they installed five more units and networked them together, placing the original unit at the corrections facility. The networked system enabled them to collect radio transmissions from multiple sites system-wide and view all the results in one consolidated management console. It also eliminated the need to repeatedly move the standalone unit.

DiagnostX can detect problem radios by measuring their alignment characteristics and field performance long-range, over-the-air, 24/7 in real-time without any user intervention while the radios are deployed in the field. Once DiagnostX evaluates the active radios on the network it then indicates the operational characteristics of each as "Failed", "Passed" or "Never Received" in a report based on user-defined thresholds. One of Roberts' favorite features of DiagnostX is the status reports. "It is what we hang a lot of our response on because it determines which radios need to be brought in for immediate service due to alignment issues or broken parts inside the radio," she said. "The reports can be accessed remotely from any computer, which is a time saver."

When LocusUSA released a new generation of the DiagnostX, Roberts was eager to know more. The new platform had upgraded hardware and processors, as well as a substantial reduction in size. It also offered remote receivers for the networked system, instead of using full standalone units. A new graphic user interface gave more information and better reporting in an easy to read format. The County installed the upgraded system in 2017.

Results

"Our department would spend a great deal of time chasing down specific issues with the radio system that were not valid. DiagnostX revealed the problem was not with the system but with individual radios," said Roberts. "Right there, that's when I saw the most value in this worthy product."

By pre-identifying radio communication problems with the DiagnostX System, Cobb County Department of Public Safety has experienced a higher level of radio system performance and reduced annual maintenance costs. DiagnostX has proven to be a powerful proactive maintenance tool ensuring Cobb County's public safety personnel can feel confident their radios will work at any time.

About LocusUSA

LocusUSA is an engineering and software development company specializing in RF capture for radio analysis and location. The ability to capture and analyze the actual waveform of a radio transmission led to the development of DiagnostX. This patented technology measures the alignment and operating characteristics of a radio, long-range over-the-air in real-time without user intervention.

