



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 situation 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”

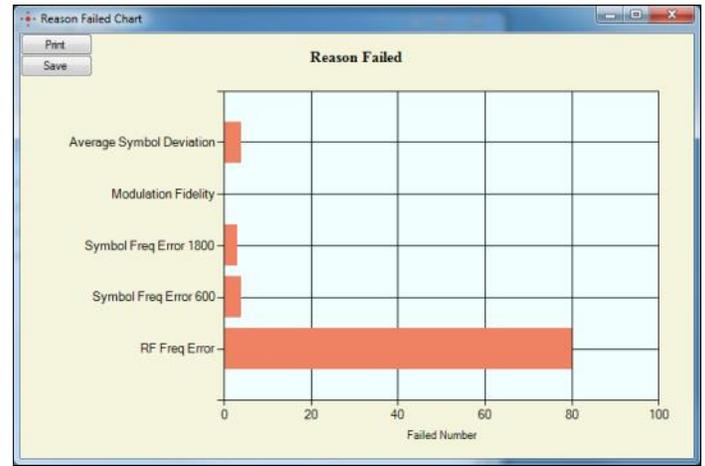
Tracy Roberts, former Radio System Manager, Cobb County Department of Public Safety

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	Status	RF Frequency Error	Symbol Frequency Error	Symbol Frequency Error 1800	Modulation Fidelity	Average Symbol Deviation (Avg)	Status	Date/Time
12218	12218	Failed	401	30	81	0.13%	1712	Failed	5/24/2017 9:37 AM
12221	12221	Failed	421	29	85	0.17%	1714	Failed	5/2/2017 9:53 AM
12232	12232	Passed	-75	-20	-55	0.13%	1742	Passed	5/15/2017 11:42 AM
12225	12225	Failed	354	30	42	0.22%	1795	Failed	6/16/2017 9:36 AM
12226	12226	Passed	-161	-18	-57	0.10%	1743	Passed	5/16/2017 2:47 PM
12227	12227	Failed	317	28	79	0.27%	1718	Failed	5/15/2017 11:33 AM
12238	12238	Failed	114	88	166	0.17%	2026	Failed	6/6/2017 3:29 PM
12239	12239	Failed	1374	22	43	0.15%	1795	Failed	5/23/2017 11:06 AM
12230	12230	Passed	-339	-17	-48	0.13%	1744	Passed	5/17/2017 12:45 PM
12232	12232	Failed	477	32	45	0.22%	1769	Failed	6/25/2017 2:08 PM
12233	12233	Failed	357	33	89	0.10%	1701	Failed	6/6/2017 3:31 PM
12234	12234	Failed	375	28	72	0.27%	1723	Failed	5/15/2017 10:40 AM
12235	12235	Passed	249	-24	-72	0.08%	1729	Passed	6/6/2017 10:07 AM
12237	12237	Passed	-26	-26	-49	0.15%	1731	Passed	5/16/2017 3:29 PM
12238	12238	Passed	338	-19	-54	0.23%	1748	Passed	5/24/2017 8:16 AM
12240	12240	Not Enough	0	0	0	0.00%	0	Not Enough Even	3/28/2017 2:26 PM
12241	12241	Passed	-70	-27	-69	0.32%	1734	Passed	5/11/2017 1:44 PM
12242	12242	Failed	502	-28	-84	0.22%	1716	Failed	5/17/2017 1:49 AM
12274	12274	Passed	-48	-20	-55	0.17%	1742	Passed	5/11/2017 3:45 PM
12276	12276	Passed	-151	-37	-93	0.03%	1688	Passed	6/15/2017 10:29 AM
12279	12279	Not Enough	0	0	0	0.00%	0	Not Enough Even	6/14/2017 5:05 PM
12281	12281	Passed	-165	-37	-118	0.10%	1696	Passed	6/14/2017 4:57 PM
12282	12282	Not Enough	0	0	0	0.00%	0	Not Enough Even	6/14/2017 5:13 PM
12283	12283	Not Suitable	0	0	0	0.00%	0	Not Suitable	5/15/2017 10:29 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 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 really 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 (radio frequency) 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, over-the-air (OTA) in real-time without user intervention.