SCANNING REPORT

THE WORLD ABOVE 30MHZ

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Sun Setting on EDACS

As anyone who has visited a recycling center knows, the technology we use doesn't last forever. Hardware gets smaller. Computers run faster and can perform more complicated tasks. We learn better ways of doing things that make older methods obsolete. The same thing happens to radio systems. This month we take a look at the twilight of a common public safety trunking technology.

❖ Montgomery, Alabama

The City of Montgomery is the capital of Alabama and the county seat of Montgomery County. The County has about 230,000 residents with more than 200,000 of them living within the city limits.

The Montgomery Metro Communications Cooperative District (MMCCD) currently operates an Enhanced Digital Access Communications System (EDACS) for public safety communications. The system serves about 1,500 public safety personnel and an additional 900 municipal, university and support users.

❖ EDACS End of Life

EDACS technology has reached what providers call "end of life." The Public Safety and Professional Communications (PSPC) division of Harris Corporation, who sells and maintains EDACS, has announced that they will stop supporting the technology in 2017. Citing "advances in technology, regulatory changes and customer-driven initiatives," Harris decided to stop marketing and selling EDACS and focus their efforts elsewhere. Letters like the one quoted here went out to EDACS operators last year:

EDACS®

This letter is to restate what Harris has previously announced at the Florida User Group meeting late last year regarding Harris' plans to discontinue further manufacturing of EDACS site equipment with a last time to order date of December 30, 2011. As you are aware, the Land Mobile Radio (LMR) marketplace has been rapidly moving towards standards based protocols such as P25 and IP-based networks which require Harris to focus engineering resources to develop these new technologies. Support for EDACS will continue for 7 years or until December 2017.

This means those municipalities and organizations operating EDACS are no longer able to purchase new equipment from Harris, although parts and repair services are expected to be available for many years. With this kind of warning, EDACS users should be planning a migration strategy to new technology.

In January, MMCCD awarded Harris a $7.3 million contract to design and build an APCO Project 25 radio system that is expected to be operational this fall. This new system will provide a transition away from EDACS and into a standards-based network supported by several manufacturers.

❖ Project 25

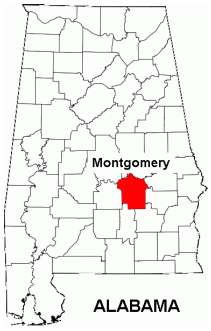
The Association of Public-safety Communications Officials (APCO) helped create a set of standards for digital radio communications under the name Project 25. These standards specify, in exacting detail, the signals and formats by which radios should communicate. The intent was to provide manufacturers with a common set of specifications that would allow equipment from multiple vendors to all work together.

Prior to P25, purchasers of radio systems would typically have to choose a particular manufacturer and stick with them, since one manufacturer's equipment would not work with any other. This "vendor lock-in" made systems more expensive than they would otherwise be in a competitive marketplace and slowed the implementation of new features and capabilities.

APCO identified additional concerns that drove the standards, including increasingly congested airwaves, the need for greater voice and data capability, reliable and secure communication, and the ability to interoperate with other agencies and jurisdictions.

❖ New Montgomery System

The new MMCCD system is a Harris product marketed as "P25IP," described as Project 25 to the power of Internet Protocol. The use of Project 25 standards follows the Federal government recommendation for public safety radio and will allow county personnel to communicate directly with other P25 systems.



The new network will make use of the existing repeater sites and will include a new site on the campus of Troy University to provide better coverage in the south and east areas of the county. In total, the new system will have five repeater sites: three operating as simulcast (simultaneous broadcast) and two sites with multiple independent channels. The underlying network will be based on Internet Protocol, the same digital protocol used to carry information across the World Wide Web.

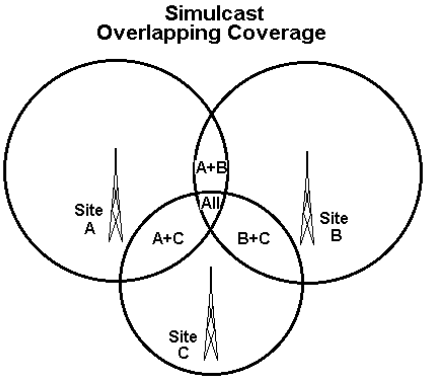
Public safety agencies in the county are scheduled to move to the new system in the fall, while other users may continue to use EDACS for at least two more years. MMCCD plans to move some of the current EDACS frequencies over to the new system while keeping enough to support those users who do not migrate. MMCCD is also expected to meet with adjoining jurisdictions to discuss having them join the new Project 25 system.

❖ Montgomery EDACS

The current Montgomery EDACS system carries voice in both analog and a proprietary digital format called *ProVoice*. Although Project 25 systems also carry voice in digital format using the same Improved Multi-Band Excitation (IMBE) vocoder (voice encoder) as ProVoice, the two formats are not compatible and there is no commercial scanner on the market that can monitor ProVoice transmissions.

Unfortunately for scanner listeners, ProVoice digital capability was added to the Montgomery EDACS system in 2003 and currently most of the police and fire transmissions are ProVoice digital. Even the County Sheriff dispatch can be either analog or digital, so much of the public safety activity is out of reach. Perhaps the transition to a Project 25 system will allow residents to once again hear what their public servants are doing.

The MMCCD EDACS has three subsystems. The first is made up of three repeater sites that all transmit the same information on the same frequency at the same moment in a method called *simulcast* (simultaneous broadcast). These three sites, all located within city limits, use the same 17 frequencies, and as with any EDACS system they must be programmed into a scanner in what is called Logical Channel Number (LCN) order:



LCN	Frequency
01	854.0125
02	855.4875
03	854.8375
04	856.7125
05	854.3375
06	855.8625
07	857.2875
08	857.0125
09	856.2375
10	856.7625
11	857.2375
12	854.5375
13	855.2125
14	855.7875
15	856.0125
16	856.3375
17	857.4375

The second subsystem is a five-channel repeater site located in the town of Red Level, south of Montgomery:

LCN	Frequency
01	856.2625
02	857.2625
03	858.2625
04	859.2625
05	860.2625

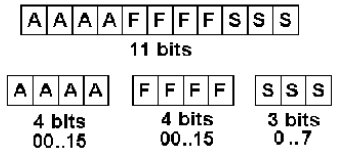
The third subsystem is another five-channel site in Montgomery:

LCN	Frequency
01	856.4625
02	856.9625
03	857.7375
04	858.9625
05	859.9875

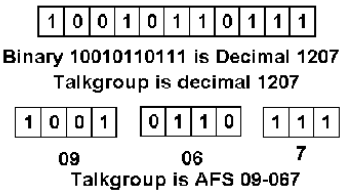
Talkgroups on the systems are as follows. Remember that many of the police and fire talkgroups are in ProVoice digital format and cannot be monitored on a regular scanner. Talkgroup identifiers in EDACS can either be a single decimal number or a segment number pair called Agency-Fleet-Subfleet (AFS). The first number of the AFS pair identifies the agency or department. The second number is the fleet and sub-fleet identifier for the individual talkgroup.

Dec.	AFS	Description
289	02-041	Montgomery County Sheriff (Dispatch)
290	02-042	Montgomery County Sheriff (Dispatch)
292	02-044	Montgomery County Sheriff Supervisors
295	02-047	Mutual Aid 3
302	02-056	Montgomery County Sheriff
303	02-057	Montgomery County Sheriff
305	02-061	Montgomery County Sheriff Investigators 1
306	02-062	Montgomery County Sheriff Investigators 2
307	02-063	Montgomery County Sheriff Investigators 3
321	02-081	Montgomery County Sheriff Warrant Service
322	02-082	Montgomery County Sheriff Legal Services
323	02-083	Montgomery County Sheriff Legal Services
338	02-102	Montgomery County Sheriff Special Operations Bureau
339	02-103	Montgomery County Sheriff
353	02-121	Montgomery County Sheriff Courthouse Security 1
354	02-122	Montgomery County Sheriff Courthouse Security 2
355	02-123	Montgomery County Sheriff Courthouse Security 3
369	02-141	Montgomery County Sheriff Detention Facility 1
370	02-142	Montgomery County Sheriff Detention Facility 2
371	02-143	Montgomery County Sheriff Detention Facility 3
375	02-147	Montgomery County Sheriff
401	03-021	Pike Road Volunteer Fire Department
402	03-022	Snowdoun Volunteer Fire Department
403	03-023	Waugh-Mount Meigs Volunteer Fire Department

EDACS
Agency - Fleet - Subfleet



Example:



404	03-024	Catoma Volunteer Fire Department
405	03-025	Pintlala Volunteer Fire Department
406	03-026	Rolling Hills Lakes Volunteer Fire Department
407	03-027	North Montgomery Volunteer Fire Department
408	03-030	South Montgomery County Volunteer Fire Department
417	03-041	Montgomery County Fire (Dispatch South)
418	03-042	Montgomery County Fire (Dispatch North)
419	03-043	Montgomery County Fire (Dispatch West)
420	03-044	Montgomery County Fire (Dispatch East)
449	03-081	Montgomery County Sheriff Train 1 Training 1
450	03-082	Montgomery County Sheriff Train 2 Training 2
451	03-083	Montgomery County Sheriff Train 3 Training 3
467	03-103	Montgomery County Sheriff
497	03-141	Montgomery County Schools Security 1
498	03-142	Montgomery County Schools Security 2
501	03-145	Montgomery County Schools Security 3
502	03-146	Montgomery County Schools Security 4
503	03-147	Montgomery County Health Department
610	04-122	Mutual Aid 1
796	06-034	Disaster 1
797	06-035	Disaster 2
798	06-036	State Law Enforcement (patched to 155.010 MHz)
799	06-037	Mutual Aid 4
1009	07-141	Troy University
1010	07-142	Troy University Maintenance 1
1011	07-143	Troy University Maintenance 2
1012	07-144	Troy University Maintenance 3
1013	07-145	Montgomery Police Housing Authority Police
1041	08-021	Montgomery Traffic Engineering 1

1042	08-022	Montgomery Traffic Engineering 2
1073	08-061	Montgomery Streets
1089	08-081	Montgomery Sanitation
1090	08-082	Montgomery Sanitation Administration
1096	08-090	Montgomery Building Inspectors
1296	10-020	Montgomery Police Channel 1 (Dispatch)
1297	10-021	Montgomery Police Channel 4 Unit-to-Unit
1313	10-041	Montgomery Police Channel 2 (Record Checks)
1314	10-042	Montgomery Police Channel 3 (Car-to-Car)
1315	10-043	Montgomery Police Channel 5 (Patrol Car-to-Car)
1316	10-044	Montgomery Police Channel 6 (Accident Investigators)
1317	10-045	Montgomery Police Channel 7 (Supervisors)
1318	10-046	Montgomery Police
1320	10-050	Montgomery Police
1329	10-061	Montgomery Police (Detective Division)
1330	10-062	Montgomery Police (Juvenile Division)
1331	10-063	Montgomery Police (Special Operations)
1334	10-066	Montgomery Police (Car-to-Car)
1335	10-067	Montgomery Police
1336	10-070	Montgomery Police
1337	10-071	Montgomery Police
1338	10-072	Montgomery Police
1354	10-092	Montgomery Police (Record Checks)
1362	10-102	Montgomery Police (Special Operations)
1394	10-142	Montgomery Police
1395	10-143	Montgomery Police
1396	10-144	Montgomery Police (Events)
1553	12-021	Montgomery Fire (Dispatch)
1554	12-022	Montgomery Fire (Fireground)
1555	12-023	Montgomery Fire
1556	12-024	Montgomery Fire
1557	12-025	Montgomery Fire
1558	12-026	Montgomery Fire
1559	12-027	Montgomery Emergency Medical Services
1619	12-103	Montgomery Fire Codes and Standards
1777	13-141	Mutual Aid 2
1808	14-020	Department of Public Safety All Call
1810	14-022	Department of Public Safety 1 (patched to 154.92 MHz)
1811	14-023	Department of Public Safety 2
1812	14-024	Department of Public Safety 3
1872	14-100	Alabama Highway Patrol All Call
1873	14-101	Alabama Highway Patrol 1
1874	14-102	Alabama Highway Patrol 2
1875	14-103	Alabama Highway Patrol 3
1916	14-154	Radio Technicians
1965	15-055	Capitol Police

Conventional (non-trunked) analog frequencies are also active in Montgomery County:

Frequency	Description
154.430	Montgomery Fire (Dispatch)
154.920	Department of Public Safety 2 (Base to Mobiles)
155.010	Alabama State Law Enforcement Mutual Aid
155.040	Alabama State Fire Mutual Aid
154.280	National Fire Network
155.295	Montgomery County Emergency Medical Services (Dispatch)
155.340	National Emergency Medical Services
155.445	Department of Public Safety 2 (Mobiles to Base)
155.475	National Law Enforcement Network
155.505	Department of Public Safety (Car-to-Car)
155.520	Montgomery Police Tactical (patched MA-1 on TRS)
158.790	Department of Public Safety 1 (Base to Mobiles)
159.030	Department of Public Safety 1 (Mobiles to Base)
453.850	Montgomery County Fire (Dispatch)
460.550	Montgomery Housing Authority
460.600	Montgomery County Fire (Dispatch South)

❖ Iowa

One of the largest EDACS operators in the midwestern United States is a private company called RACOM, based out of Marshalltown, Iowa. Their private trunked radio system operates in the 800 MHz band and was one of the first companies to host public safety agencies on a privately-funded radio network. Since 1994, more than 300 municipal, state, and federal agencies use the system for day-to-day operations.

Last summer RACOM released a plan that provides a roadmap for transition away from EDACS onto an APCO Project 25 network with all users and equipment upgraded by 2020. The first part of the plan calls for the installation of P25 controllers and repeater sites and a gateway that will interconnect EDACS with the new P25 equipment. A Harris EDACS IP Gateway can support up to 24 simultaneous conversations, whether individual or group calls, between EDACS and the new P25 system. This will allow old and new radios to operate at the same time during the transition period.

Despite the cost of such an upgrade, RACOM identifies a number of benefits that will come from the new network, including compliance with federal recommendations to use Project 25 and a common technology platform to interoperate with the statewide P25 networks in Illinois, Minnesota and Nebraska. RACOM expects the new technology to last up to 20 years and be available from several competing providers, giving them options for better pricing and support.

RACOM customers will need to purchase P25-capable radios, although many recent EDACS radios are already capable of operating on both EDACS and P25 networks.

❖ Florida SLERS

One of the largest EDACS systems in use for public safety is Florida's Statewide Law Enforcement Radio Network (SLERS). In 2000, Florida's Department of Management Services (DMS) formed a partnership with Com-Net Ericsson, then the vendor for EDACS. The partnership specified that Com-Net would build, operate and maintain the statewide network while Florida provided funding, planning, and management oversight. After a series of corporate purchases, Harris Corporation became the vendor and partner in 2009.

SLERS began operation in 2004 and now serves more than 7,500 law enforcement officers from two dozen different agencies. The system has more than 17,000 radios and covers 98% of the state from more than 200 repeater sites.

SLERS management anticipates that radio equipment has a limited lifetime, meaning that it will wear out or become obsolete after a certain amount of time. Specifically, they expect six years for handheld radios and eight years for vehicle-mounted units. Planning for the replacement of all 15,000 state-owned radios, at an average cost of $5,000 per unit, means an expenditure of $75 million. The repeater site radios and associated EDACS equipment would be another $25 million. Florida expects that at the time the radios and equipment are replaced, the new hardware will come with the capability of operating on Project 25 networks, allowing a transition away from the end-of-life EDACS technology.

❖ Walton County, Florida

Speaking of SLERS, a county in northwest Florida recently voted to spend $3.7 million to help make the transition onto the system. Walton County, located on the panhandle in an area local residents often call the "Redneck Rivera," is home to about 40,000 residents.

At the urging of the Sheriff, the county began the planning process to join the Statewide Law Enforcement Radio System. As with most jurisdictions, finding the money quickly became an issue. Small departments would have a difficult time affording new $5,000 radios for each of their members, and because Harris is the only vendor for SLERS equipment, there was no price competition or negotiation.

Some agencies also voiced concerns about adequate coverage, especially inside large buildings where calls from police or firefighters might have a hard time reaching the outside.

So far, the total cost of joining SLERS has reached $5.4 million, which includes the construction of three new repeater sites, located near DeFuniak Springs, Freeport and Peach Creek and the infrastructure to connect them to a dispatch center. It also includes new radios for all Sheriff's deputies and 60 new radios for several local fire departments.

The county is hoping to be on SLERS by the end of the year. In the meantime, check these conventional analog frequencies:

Frequency	Description
154.085	Walton County Fire (Dispatch North)
154.250	Walton County Fire (Dispatch South)
154.220	Argyle Volunteer Fire Department
154.190	Liberty Fire District (Dispatch)
155.295	Liberty Fire District (Fireground)
460.0250	DeFuniak Springs Police (Dispatch)
460.0500	Walton County Sheriff (Dispatch North)
460.2000	Walton County Sheriff (Dispatch South)
460.6250	Freeport Fire District
463.0000	Healthmark Regional Medical Center
463.0125	Sacred Heart Hospital
463.0750	County Medical Coordination (MED-4)

That's all for this month. As always, I welcome your electronic mail about EDACS, trunked radio, and scanning in general at *danveeneman@monitoringtimes.com*. More radio-related information is available on my website at **www.signalharbor.com**. Until next month, happy monitoring!