

MPSCS



Michigan's Public Safety Communications System (MPSCS) is Michigan's statewide public safety communications system. The system provides interoperable communications to over 1200 public safety agencies all over the state of Michigan and integrates with other counties and states that share our border. The system began construction in 1997 and was completed in 2002. The MPSCS was constructed in five phases and consisted of 181 towers geographically spread around the state to meet the coverage demands of the contract. The system allows for 97% all weather mobile coverage throughout Michigan. This statewide system provides interoperable communications during planned and unplanned events and disasters in Michigan. The MPSCS features state-of-the-art, digital, trunked technology. The system is Project 25 compliant and is recognized as being one of the world's premier public safety two-way radio communications systems.

Interoperability is the ability of the public safety service and support providers – law enforcement, firefighters, EMS, emergency management, the public utilities, transportation, and others- to communicate with staff from other responding agencies, to exchange voice and/or data communications on demand and in real-time.

AUGUST, 2011

An overview of items that have occurred within the MPSCS since 9/11.

AGENCIES - ORGANIZATIONS THAT PROVIDE PUBLIC SAFETY AND SUPPORT SERVICES

The MPSCS have added 4427 Talkgroups since 9/11.

Talk Groups are assigned groups on a trunked radio system that share a number of frequencies seamlessly for private conversations.

31 patches have been implemented. A patch is a circuitry that patches together 2 or more audio signals at a communication or dispatch center.

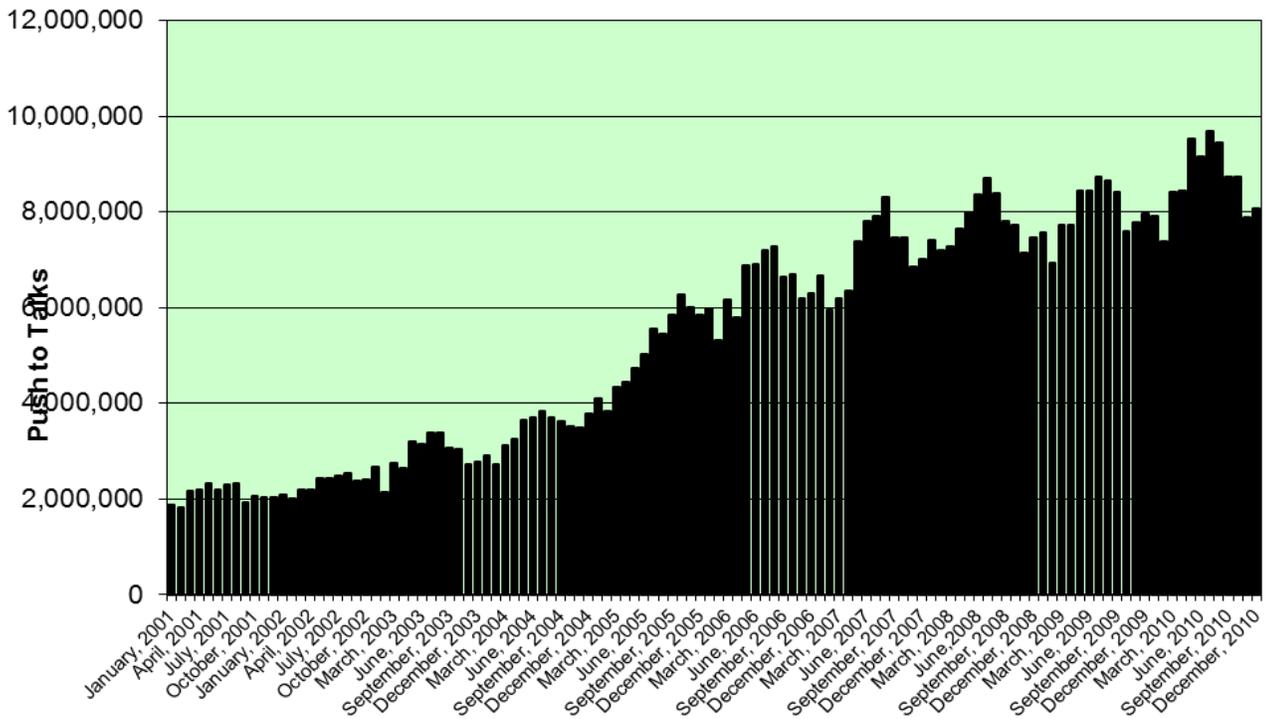
There are 5 Pending Integrations. This is the process of integrating local jurisdiction sub-systems into the state system.

We have added 32 - 800 MHz channels with 4 proposed in the next 2 months to bring it to 36.

Radio channels are an assigned band of radio frequencies in the 800 radio public safety band frequency spectrum that blends traditional two-way radio technology and computer-controlled transmitters.

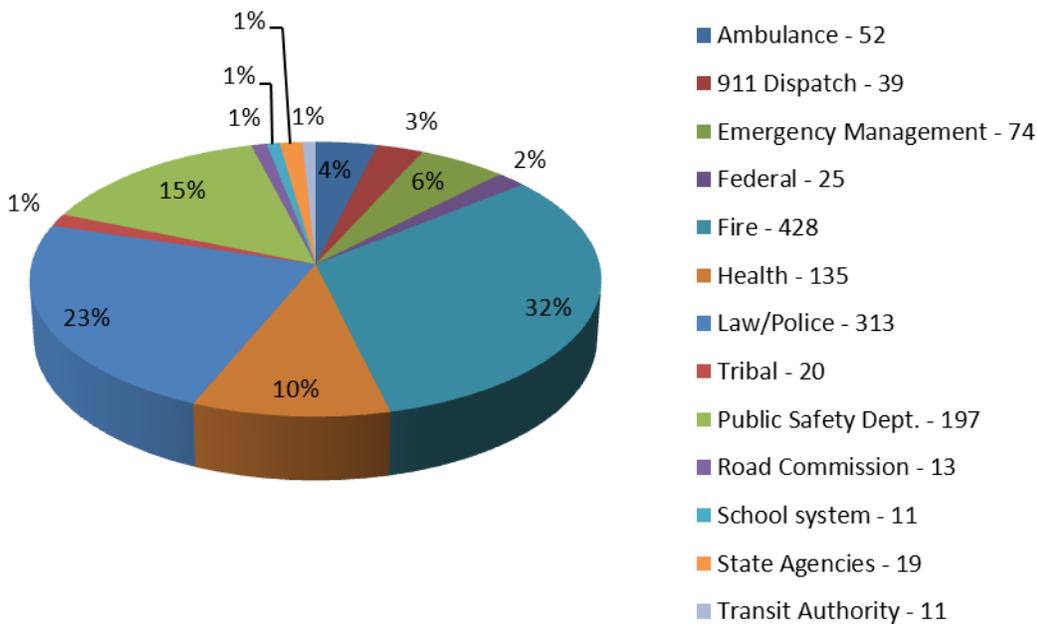
The MPSCS went from 1.9 million/month in 2001 Push-To-Talks (PTT's) to 8,508,127 million/month in April 2011. A Push-To-Talk is a method of conversing on 2 way radios using a momentary button to switch from voice reception mode to transmit mode.

MPSCS PTT January 2001 - December 2010



| AGENCY TYPE | #AGENCY |
|-------------------------------|-------------|
| Ambulance | 52 |
| 911 Dispatch | 39 |
| Emergency Management Division | 74 |
| Fed | 25 |
| Fire | 428 |
| Health | 135 |
| Law /Police | 313 |
| Tribal | 20 |
| Public Safety Dept. | 197 |
| Road Commissions | 13 |
| School system | 11 |
| State Agencies | 19 |
| Transit Authority | <u>11</u> |
| Total: | 1337 |

AGENCIES TOTAL = 1337



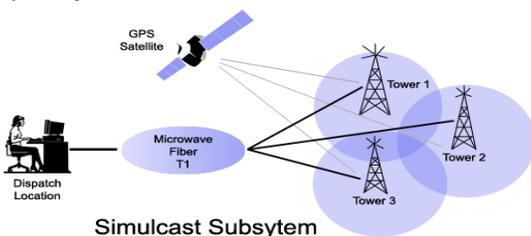
INFRASTRUCTURE - THE PHYSICAL STRUCTURE AND FACILITIES NEEDED TO OPERATE THE MPSCS INTEROPERABLE SYSTEMS

Local jurisdictions have added 62 Tower Sites since 9/11 for a total of 242. Tower sites are the physical location of tall structures designed to support antennas and telecommunications devices.

There have been 38 Dispatch Centers added to the system supporting 165 positions. This is the facility that receives calls for help and coordinates emergency personnel response. Currently, local, county and state agencies are on the MPSCS system, with a federal dispatch proposal in the works.

9 Simulcast Sub-systems have been constructed.

These are a grouping of towers that broadcast the same transmission on the same frequency from multiple towers to allow for larger coverage area without the need for a large number of channels, resulting in spectral efficiency. This is a good solution for public safety agencies with many impenetrable buildings, and limited frequency resources.



Within these Sub-systems, 58 additional towers have been erected.

RADIOS - THE WIRELESS TRANSMISSION OF SOUND AND VOICE

The MPSCS have added 48,583 radios to the system. These radios enable responders to communicate through the transmission and reception of electromagnetic waves.

187 Consoles have been added. This is a software-based radio dispatch control center computer which allows for dispatch centers to communicate with emergency personnel.

380 Mobile Data computers have been added to the system.

These are computers that allow public transit vehicles to communicate with central dispatch or databases through wireless data transmission, such as the State Police Law Enforcement Information Network.

Tower Co-Locations by Agency – Co-Location is the sharing of towers for public safety purposes between agencies. Limited amount of space, and cost savings make this a desirable option.

Federal 22

State 64

County 62

148

Platform Software Upgrades: the system has undergone major enhancements and upgrades to keep up with and exceed national standards.

We are on the 7th system release since going live at version 2.03 (APCO compliant) in 1997:

5.0 (APCO 25 compliant) in 1999

6.0 2002

6.1 (very short time) in 2003

6.2 2003

6.5 2006

6.9 2008

7.9 2011

7.11 projected for 3/12

EVENTS - A PUBLIC OR PRIVATE OCCURRENCE REQUIRING INTEROPERABLE COMMUNICATIONS

INTEROPERABLE COMMUNICATIONS FOR EVENTS

There have been over 7,000 Events since 9/11 using an MPSCS Event Talkgroup for interoperable communications. These include unplanned emergencies, such as the East Coast Black Out, and planned events such as the Super Bowl in Detroit in 2006.

- **Un-Planned Emergencies where First Responders have used the MPSCS**

Statewide coverage supporting the MI National Guard deployment to MI airports during 9/11

East Coast Black-out, 2003

Riots of Benton Harbor, 2003

Environmental Cleanups - Enbridge Oil Spill, 2010

I-96 Pile up, 2005

Floods, multiple, such as the record flooding in 2009

Wildfires, multiple each year, such as the Thousand Acre fire in Grayling 2008

- **Planned Events using the MPSCS system**

- MIS –Nascar, 2006 to current
 - All Star Baseball Game, 2005
 - Super Bowl, Detroit, 2006
 - NCAA Tournament, 2009
 - Stanley Cup

- **Ongoing**

- NOAA weather support with EMD for tornados, flooding and natural disasters
 - DEA and FBI surveillance & arrests
 - Customs and Border Protection lock downs, sweeps and security
 - Coordination of Pandemic medical supplies delivery
 - Multijurisdictional transport of prisoners
 - Lost persons search and rescue
 - Michigan’s nuclear plant emergency communications with local communities and State EMD
 - We have many co-located Fire and Police stations operating on a local communities VHF or UHF frequencies.
 - Coast Guard is installing a major network on our towers by the lakes to provide search & rescue for ships on coastal waters

ADDITIONAL INFORMATION

Interoperability (patches) with Wisconsin, Ohio, Indiana, and Canada (RCMP)
UASI (Urban Area Security Initiative) Projects

Multiple manufacturers have been tested and in use on the MPSCS all using the P25 standard ensuring interoperability with multiple vendor options.

Subscriber Manufacturers: Motorola, Kenwood, EF Johnson, Tait, and Harris