

APPENDIX D

2013

ESINet Steering Committee Report to the 130th General Assembly

Technical Standards Subcommittee INFRASTRUCTURE EVALUATION

An examination of the readiness of the state's current technology infrastructure to support a statewide emergency services internet protocol network for Next Generation 9-1-1 Services.

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PURPOSE

Technical-Standards Subcommittee

- Examine the readiness of the state's current technology infrastructure for a statewide emergency services internet protocol network. Recommend technical approach to support Next Gen 911
- Consider using public internet connections with virtual private network (VPN) using encryption versus a publicly owned infrastructure for connectivity. Advantages and disadvantages and construction and operations cost of each. Recommend a best approach.
- **Sec. 5507.021.** Not later than January 1, 2014, and in accordance with Chapter 119. of the Revised Code, the statewide emergency services internet protocol network steering committee shall adopt rules that establish technical and operational standards for public safety answering points eligible to receive disbursements under section 5507.55 of the Revised Code. The rules shall incorporate industry standards and best practices for wireless 9-1-1 services.

"NG911 architecture relies on the ESInet to deliver voice, video, text, and data "calls" to the PSAP. There are at least three fundamental approaches to interconnecting PSAPs via an ESInet. First, the ESInet can serve as a dedicated network used solely for 911 calls and related communications, likely using Multi-Protocol Label Switching (MPLS) facilities offered by commercial service providers. Under the second approach, the network can be shared with other governmental or not-for-profit services. Examples of this approach include the use of a statewide IP network or the US-UCAN network that re-uses the Internet2 leased fiber infrastructure currently used to connect universities with each other. A third approach is to dispense with the ESInet altogether and interconnect PSAPs via the public Internet, possibly using Virtual Private Networks (VPNs). This approach has no additional costs beyond access link charges." FCC Whitepaper

EXISTING TECHNOLOGY INFRASTRUCTURE

Within Ohio there are several technology initiatives serving state and local government agencies that can be leveraged to support the development of an enterprise level Emergency Services Internet Protocol Network. The State of Ohio Department of Administrative Services Office of Information Technology (OIT), the Ohio Academic Resources Network (OARnet), the Multi-Agency Radio Communications System (MARCS), the Location Based Response System (LBRS) and the Ohio Middle Mile Consortium (OMMC) each provide significant opportunity to coordinate activities to support state and regional ESINet implementations to further the development of Next Generation 9-1-1 services within the state.

REFERENCE Statewide Communications Interoperability Plan – County Communications Infrastructure – County Communications Capability Database – Long-Term Objectives 2, 3, 4 & 5.

OHIO OFFICE OF INFORMATION TECHNOLOGY

The DAS Office of Information Technology delivers statewide information technology and telecommunication services to state government agencies, boards and commissions as well as policy and standards development, lifecycle investment planning and privacy and security management.

Infrastructure Services

Infrastructure Services operates the IT infrastructure, which includes hardware, software and telecommunications for the state. The division consists of the following business units:

- **Enterprise Open Systems (EOS)** provides a shared IT infrastructure and resources through offering an array of traditional datacenter services across UNIX and Windows/Open platforms.
- **Enterprise Shared Services (ESS)** focuses on efficient use of technologies in support of enterprise and multi-agency initiatives by providing services that include electronic forms filing, secure data interchange and exchange, e-Payment engine, business intelligence and reporting, collaborative tools, GIS, and [Ohio Geographically Referenced Information Program \(OGRIP\)](#) services.
- [Multi-Agency Radio Communications System \(MARCS\)](#) provides statewide voice and data communications for public safety first responders. The data communication service provides the backbone for our state-level law enforcement's Computer Aided Dispatch suites and in-car mobile computer terminals for the State Highway Patrol, the Department of Natural Resources, and the Ohio Emergency Management Agency.
- **Unified Network Services (UNS)** is a provider of voice and data solutions to state and local governments, functions as the state's Internet service provider, and administers [Telecommunication Contract Services](#).

The **Office of Information Security & Privacy** works with internal and external agency customers to lead the creation, implementation and management of enterprise efforts for information assurance, security, privacy and risk management.

OIT Telecommunications

Network Contract Management Services procures computer network-delivered information services, including but not limited to, voice, data, and video cloud services for state and local government. The unit assists DAS in superintending service providers' contracted services under ORC 125.04. By combining all the service needs of Ohio's public agencies, Network Contracts lowers or avoids rising costs of telecommunications and cloud computing delivery for governments, schools, libraries, and higher education institutions.

Procurement

Any agency interested in procuring a new telecommunications service should review the following information to learn how OIT can assist them in this process.

Procurement Methods - OH*IP Procurement NextGen Services

Agencies have the right to buy telecommunications utilities at tariff rates or under OIT contracts. There are advantages to contracted services, as outlined below.

Tariffed Services

Rates and charges established in tariff and can be changed by service provider with regulatory approval.

Service dependent on tariff language:

- Criteria based on what is important to vendor & regulatory agency
- Credits given for outages

Service compliance managed by filing complaints.

Contracted Services

Rates and charges established in contract and expire at the end of the term. Rates are normally ½ of tariff rates.

Service negotiated in contract with a service level agreement:

- Criteria based on what's important to the customer
- Credits and penalties are based on what is important to the customer and can be negotiated

DAS Network Contract Management Services

Following are the responsibilities of the OIT Telecommunications Contract Management team.

- Consultation on telecommunications needs and participate in IT planning
- Provide technical expertise for procurement process to OIT and customers
- Develop service level agreements with performance measurements/penalties for contracts
- Work with legal counsel in development of contract language
- Negotiate contracts with vendors
- Monitor contract compliance and take appropriate actions upon non-compliance
- When possible, maintain a database of all expenditures from each contract
- Report all performance measurements
- Liaison between the vendor and management

Contracts by Service

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- [ATM](#)
 - [Cloud Services](#)
 - [Conferencing](#)
 - [Data Center](#)
 - [Dedicated Transport](#)
 - [Ethernet](#)
 - [Hosted Interactive Voice Response](#)
 - [Internet](#)
 - [ISDN](#)
 - [Long Distance](#)
 - [Managed Services](#)
 - [Paging](#)
 - [Software as a Service \(SaaS\)](#)
 - [Voice](#)
 - [Voice over IP \(VoIP\)](#)
 - [Wireless Communications](#)
 - [Wireless Management Service](#)

Ohio Academic Resources Network - OARNET

The **Ohio Academic Resources Network (OARnet)** is a 100 Gbps network. OARnet was created in 1987 through legislation by the Ohio General Assembly [O.R.C., section 3333.04(V)]. OARnet was founded to provide Ohio researchers with access to the high performance computing resources.

Demand for statewide connectivity and increased bandwidth led to the acquisition of dark fiber to create a highly scalable, fiber-optic infrastructure in November 2004. The new network was referred to as the Third Frontier Network and, later, OSCnet. Today, OARnet blankets the state, providing connectivity to Ohio's colleges and universities, K-12 schools, public broadcasting stations, academic medical centers, and state, federal and partnering research organizations.

In 2007 the Ohio Broadband Council and Broadband Ohio Network were established [EO 2007 24S] to extend the reach of Ohio's broadband resources, further Ohio's leadership in network innovation and improve technology access for all citizens throughout the state. OARnet operates as the backbone for the Broadband Ohio Network, carrying the *NextGen*¹ Network traffic for state and local government. OARnet provides Ohioans with one of the nation's most advanced, statewide telecommunications



networks dedicated to research, education and economic competitiveness. OARnet's network backbone of more than 1,850 miles of highly scalable, fiber-optic cable serves Ohio's colleges and universities, K-12 schools, medical centers, public broadcasting stations, and state and local government.

In March 2010, OARnet brought three competing organizations – Com Net, Inc., Horizon Telcom and OneCommunity – together as the Ohio Middle Mile Consortium. The goal: to improve broadband infrastructure in Ohio's rural and underserved areas. The three partners were awarded a total of \$141.3 million in federal grants through the American Recovery and Reinvestment Act; OARnet is a sub-recipient in all three grants.

The projects complement OARnet's statewide network by increasing the connection points from the current 14 to 68. This expansion reduces the "last mile" costs for broadband services to anchor institutions throughout the state. This infrastructure will support new initiatives for reaching unserved and underserved Ohioans, as well as initiatives promoting the retention and creation of jobs in economically distressed areas of the state. Visit www.ohiomiddlemile.org for more detailed information.

Reach

The OARnet backbone network features more than 1,850 miles of fiber-optic cable, currently featuring six major rings that extend across the state to most of Ohio's population.

One network ring circles the Columbus metropolitan area, another connects several communities just northwest of Columbus, and yet another reaches northwest to Lima and Toledo. A fourth ring drops

¹ In this instance *NextGen* does not refer to NG9-1-1 directly, but references new and emerging technologies and network communications advancements.

down to Dayton and Cincinnati, a fifth stretches up to Cleveland, Youngstown and Akron, and a sixth circles southeast through Athens and Portsmouth. In addition to the backbone, OARnet operates several local, Sonet-based networks that support research and education, including rings in Toledo, Springfield, Central Ohio, Cleveland, Northeast Ohio, Youngstown and Tuscarawas County.

Beyond the in-state reach of the OARnet network, partnerships with other Regional Optical Networks (RONs) extend OARnet connectivity to Michigan's Merit research and education network, the Pittsburgh Supercomputing Center, the Oak Ridge National Laboratory in Tennessee and the OmniPoP research collaboration network in Chicago.

OARnet also maintains a global reach through its Cleveland connection to Internet2, the United States' most advanced nationwide research and education network. Internet2 is a non-profit, advanced networking consortium of U.S. universities, corporations, government agencies, research laboratories and international organizations that brings together research and academia with technology leaders in industry, government and international communities.

Across the state, the OARnet backbone uses 31 Points of Presence (PoPs), facilities that house servers and routers, to provide an interface point for other networks, and 16 Regeneration Sites, places where the optical signals are re-amplified and reshaped for optimum long-distance transmission.

Capacity

The network backbone lines to Akron, Cincinnati, Cleveland, Columbus, Dayton and Toledo provide those communities with Ethernet capacity of 10 gigabits per second, while the remainder of the network backbone provides bandwidth of one gigabit per second.

Architecture

Unlike traditional networks, the OARnet network can support many networks. With the newest hardware and software upgrades in progress, the updated rings will be capable of supporting 40 independent networks on separate lambdas up to OC-192 (Sonet) transport or 10-gigabit Ethernet speeds. The transport technology Dense Wavelength Division Multiplexing (DWDM) with ITU Grid frequencies, as well as ITU G.709 transport protocol specification, serves as the core technology for the network.

At the transport layer, the network is based on the Cisco ONS 15454 MSTP multiservice transport platforms. The ROADM optic input/output multiplexers with adaptive configuration are part of the solution. Such multiplexers allow creating 40 optical channels per one optical pair. Each of these optical channels can be of 2-, 5- or 10-Gpbs data transmission speeds, depending upon the transponder modules installed in the multiplexer. With the 40-SMR2-C card the network provides multi-degree switching capabilities at the individual wavelength level. Mesh and multi-ring network topologies can now be deployed using the complete flexibility of service routing at all nodes in the network. At the network layer, OARnet employs Juniper M320 "core" routers.

Although "IP everywhere" is the expectation for networks, the OARnet network can transport alternate network protocols, such as SANS and native HDTV.

The network uses MPLS to allow a level of granularity in routing that was previously unavailable. In traditional MPLS environments, a P route, PE Provider Edge and CPE Customer premise equipment router are needed for MPLS operation. OARnet has successfully collapsed the P & PE Function onto a single platform. By using MPLS in the core, packets are routed to their correct destinations. Intra-state and commodity traffic uses traditional IP while Internet2 traffic uses Label Switching to identify Internet2-eligible traffic.

Ohio's 100 Gbps Network

The State of Ohio, led by the Ohio Board of Regents and the Ohio Academic Resources Network (OARnet), invested \$13 million in equipment to “open the faucet” of its current broadband network—increasing the speed of its former bandwidth of 10 Gigabits per second (Gbps) to an impressive 100 Gbps. It connects to Internet2’s international 100 Gbps network backbone at data hubs in Cleveland and Cincinnati.

Statewide Broadband Speeds That Far Exceed the Rest of the Nation

Ohio has long been a leader in its broadband fiber network and speeds. We recently deployed data at an impressive 10 Gbps, which is on par with the national average. While a few states have limited deployments of 100 Gbps, no other state has as far-reaching a network at these speeds benefitting as many sectors.

These speeds will open the doors to many opportunities for Ohio. At 100 Gbps:

- data equivalent to 80 million file cabinets filled with text can be transferred daily
- every one of Ohio's 1.8 million enrolled K-12 students could download an eBook simultaneously in just over two minutes
- 300,000 X-rays be transmitted in just one minute
- 8.5 million electronic medical records can be transmitted in 1 minute
- smartphone data can be sent at 50,000 times faster than current average speeds

Ohio already has more fiber optical broadband installed per capita than any other state in the nation, connecting all of its major cities and research institutions. OARnet acquired dark fiber in 2001-02 and then lit its high-speed fiber-optic backbone with scalable architecture in 2004. This state-of-the-art network was designed so that it could be easily upgraded to higher bandwidths, such as 100 Gbps.

Networking Initiatives

OARnet is more than just a statewide network with massive bandwidth. OARnet, sometimes autonomously and often in partnership with other local, state and federal organizations, actively participates in network-related initiatives that serve to aid and educate. This is accomplished through programs to expand broadband access, enhance community development, advance networking technologies, promote cross-cultural education and improve healthcare.

Connecting Rural Ohio

OARnet plays a leading role in the extension of Internet technology services to rural Ohio Appalachian communities through the Connecting Rural Ohio Wireless Neighborhood Project. OARnet and The Ohio State University Office of the CIO, with major funding from the American Distance Education Consortium (ADEC), the Governor’s Office of Appalachia and the Ohio Community Computing Network (OCCN), are helping underserved communities achieve broadband Internet connectivity through wireless technologies.

For more information please visit the website at: <http://cro.osc.edu>.

ITEC-Ohio

OARnet plays a major role in the national effort to develop and deploy the next generation of Internet technologies through its leadership of the Internet2 Technology Evaluation Center (ITEC-Ohio). Run by and funded by OARnet, ITEC-Ohio is a consortium of Ohio universities, government agencies, and corporate partners. Its mission is to examine critical new applications and infrastructure problems in order to meet the emerging academic, engineering, and industrial needs in research, education, government and commerce.

Regional CPE Possibilities

Virtualization of user desktops along with their applications and data using thin clients has numerous benefits. The benefits include: (i) reduction in hardware procurement budgets, (ii) reduction in operational and maintenance costs, and (iii) “Green IT” due to lower use of energy and space. In this project, we have developed the “VMLab” test bed at OARnet in collaboration with VMware, IBM and Ohio campus partners to evaluate desktop virtualization performance and savings. The VMLab test bed features a 50+ users virtual desktop infrastructure (VDI) built using VMware View 3 at the server side and thin clients that use remote desktop protocols such as Microsoft RDP, HP RGS, Teradici PC-over-IP, and VNC RFB. We are conducting experiments in the VMLab test bed on VDI scalability/reliability, remote desktop protocols performance, and virtualization bandwidth-and-power savings. The VMLab test bed experiment workloads comprise of a range of different user application (e.g. Matlab simulation, MS Word, Windows Media Video) tasks, network health conditions, and system conditions that occur in campus network environments. We are also enhancing the VMLab test bed to study other cutting-edge desktop virtualization technologies and their benefits.

For details of VMLab and gain access to the testbed, please visit - <http://vmlab.oar.net>

State and Local Government

From state agencies to county offices, these public entities can connect to OARnet’s backbone through a partnership with the State of Ohio Office of Information Technology.

Local Governments

- City of Columbus
- City of Dayton
- City of Dublin
- City of Portsmouth
- City of Worthington
- Clark County Municipal Court
- Cuyahoga County
- Delaware County
- Erie County
- Franklin County Data Center
- Franklin County Veterans Memorial
- Tuscarawas County
- WCNet (Wood County)

State Agencies

- Department of Development
- Department of Natural Resources
- Department of Transportation
- Department of Youth Services
- Department of Veterans Services
- Environmental Protection Agency
- Office of Information Technology
- OPLIN (Ohio Public Library Information Network)
- Rehabilitation Services Commission
- Secretary of State

Governance, Boards & Committees

OARnet Advisory Board

OARnet is advised by a committee of 10 members: the Chancellor of the Ohio Board of Regents or his designee, who serves as chair; a representative from the Ohio Department of Development ; a representative of the Governor's Office; the Chief Information Officer for the State of Ohio's Office of Information Technology; a representative from the Ohio Department of Education; the executive director of the Ohio Supercomputer Center; and four members appointed by the Chancellor. Of the four, one member will be selected from among Ohio's public four-year universities, one from Ohio's public two-year community and technical colleges and one from Ohio's nonprofit institutions of higher education holding a Certification of Authorization pursuant to Chapter 1713 of the Revised Code. This committee recommends broad policy guidelines for OARnet and periodically reviews its program and operations, with special attention to ensuring that the management and operation of the network supports the State of Ohio's goals for higher education, P-12 education, economic development, and the goals of its state agencies. The advisory committee meets at least semiannually.

OARnet Advisory Board Meetings

All meetings are at the Ohio Board of Regents office. The Ohio Board of Regents announces the meetings. Information can be found at <http://regents.ohio.gov>

Board of Regents CIO Advisory Board

Member institutions are encouraged to participate on the Board of Regents CIO Advisory Board, as representation ensures that member institutions are given a voice in the future direction of the network, shared services and evolving technologies. The Chancellor of the Board of Regents appoints members of the committee to advise him/her on the development and direction of the integrated technology infrastructure needed to support the Board of Regents education and technology programs. The members of this committee includes chief information officers or equivalent senior administrative officials responsible for information technology from Ohio's public and private not-for-profit universities and community colleges, as well as representatives from private industry. [Click here for the BOR CIO Advisory Board pages.](#)

BOR-CIO Advisory Board Subcommittees

Three advisory board subcommittees are co-chaired by representatives from the BOR-CIO Advisory Board, with members representing public and private four-year institutions and public two-year institutions. The subcommittees are:

- IT Efficiency and Strategic Capacity. Creates efficiencies by identifying opportunities for virtualization and consolidation and evaluating outsourcing.
- Technology and Security. Promotes the continual development of OARnet's services, including identity management.
- Budget and Finance. Searches for cost saving opportunities. They also review financial practices involving the Chancellor's plan. [Click here for BOR-CIO Advisory Board Subcommittee pages.](#)

OARtech

OARtech provides a forum for technology staff from OARnet's member institutions to exchange ideas and share best practices. Attendees also provide OARnet with advice and suggestions on technical issues germane to the organization. All OARnet clients are invited to attend the bi-monthly meetings. [Click](#)

here for the OARtech pages.

OH-TECH

The Ohio Technology Consortium functions as an umbrella organization for Ohio's statewide technology infrastructure, the Ohio Academic Resources Network (OARnet), the Ohio Supercomputer Center (OSC), OhioLINK, eStudent Services and the Research and Innovation Center. [Click Here](#) for the OH-TECH pages.

Fiscal Agent

The Ohio Board of Regents created OARnet as a consortium, which conducts its affairs under the administrative supervision of The Ohio State University. The Ohio State University is the legal entity, which is responsible for all contractual obligations of OARnet.

MULTI-AGENCY RADIO COMMUNICATIONS SYSTEM – MARCS

MARCS (Multi-Agency Radio Communication System) is an 800 MHz radio and data network that utilizes state-of-the-art trunked technology to provide statewide interoperability in digital clarity to its subscribers throughout Ohio and a 10 mile radius outside of Ohio. The MARCS system provides statewide, secure, reliable public service wireless communication for public safety and first responders.

The MARCS development contract required 97.5% mobile voice and data in street coverage. 99.71% aggregate voice coverage was realized and 98.13% aggregate data coverage was achieved. This allows maximum statewide interoperability and enhanced safety and protection for public safety service providers through secure digital transmissions.

The MARCS network operates on three system components:

- Mobile Voice – operating on the 800 MHZ digital trunked technology
- Mobile Data – allowing data transmissions, LEADS inquiries, reformatting of data from Mobile Data Terminals (MDT)
- Computer Aided Dispatch - providing GPS-based auto vehicle location, resource recommendation and GGM display

There are currently over 47,500 voice units and over 1,800 mobile data units on the MARCS system with over 1200 public safety/public service agencies statewide. This includes local, state and federal agencies.

At the State level, the State of Ohio Office of Information Technology has implemented the Multi-Agency Radio Communications System (MARCS), an 800 MHz trunked radio system for use by State agencies, as well as local municipalities who choose to subscribe to the system. The MARCS system provides effective mobile level radio coverage throughout the State of Ohio. Currently, in addition to the State users, all sheriffs' dispatch centers within the state have MARCS radios, as well as all county Emergency Management Agency EOCs, many emergency medical services providers, hospitals and health departments. The MARCS system in its current form provides an excellent platform for interoperability among sheriff's offices, local law enforcement, health departments, EMA/Homeland Security, fire/EMS agencies, hospitals and other agencies having the capability of accessing the system.

Local and other agencies are encouraged to use MARCS for interoperability purposes, and the MARCS program office has developed a policy defining the guidelines for emergency use operation (see Appendix F). To encourage interoperability usage and the use of MARCS as a back-up communications resource, the State does not charge user fees for emergency and interoperability use. Furthermore, it is recognized MARCS will provide the foundation for an expanded communications network in the future. If the need for redundant assets arises, the Ohio EMA maintains a remote deployable site (site on wheels) that can be deployed during an emergency situation. This site, called the transportable Communications System (TCS), is housed within the Ohio EMA mobile communications vehicle. The TCS contains a 5-channel trunked voice and single-channel data capability as well as two NPSPAC Mutual Aid repeaters; VHF, UHF and other radio capability along with patching equipment and deployable radios. The TCS was designed to serve as a replacement to a failed MARCS tower site, to serve as a supplemental site providing extra capacity to serve as a stand-alone site, linked to the state EOC dispatch center by satellite for radio coverage in areas where land-line infrastructure has either been destroyed or does not exist. Additionally, the State Highway Patrol, Department of Natural Resources, State Fire Marshall, Ohio Army & Air National Guard, and many individual counties maintain mobile communications/command vehicles that can be deployed in case of emergency. A recent survey has identified 38 mobile communications/command vehicles maintained by local entities, over 1200 MARCS capable deployable radios, over 4200 radios in local radio caches, and approximately 20 fixed gateway devices as well as 20 mobile gateways.

LOCATION BASED RESPONSE SYSTEM – LBRS

The Ohio Location Based Response System (LBRS) is an initiative of the Ohio Geographically Referenced Information Program (OGRIP) built in response to the need for coordinated intelligent transportation and location information access between state agencies. The LBRS is a current, accurate, and accessible street centerline and addressing system that is collaboratively maintained as an Ohio asset by local and state resources.

The LBRS program establishes partnerships between State and County government for the creation of spatially accurate street centerlines with address ranges and field verified site-specific address locations. Once established, maintenance of the data is performed by the county using local knowledge and expertise to ensure accuracy and completeness of the data. Through the collaborative efforts of State and Local government the LBRS program is producing highly accurate field verified data that is current, complete, consistent, and accessible. LBRS data is maintained as an Ohio asset by local resources and is provided to the state as part of a coordinated long-term effort by OGRIP to reduce redundant data collection by developing data that meets the needs of several levels of government. The LBRS supports a multi-jurisdictional approach to protecting the health, safety and welfare of the state’s constituents.

The LBRS positions Ohio to comply with NG9-1-1 requirements for a single, unambiguous, site-specific civic address to be matched to every 9-1-1 call – including those coming from apartment complexes, office buildings and mobile home parks. Having precise locally developed and maintained data will be



critical to the operation of NG9-1-1 Location Information Services. With the field-verified data already included in Ohio's LBRS, the vast majority of counties in the Buckeye State are already prepared for the NG9-1-1 rollout. LBRS will become the cornerstone for reliable mapping and, in turn, building emergency routing databases.

OHIO MIDDLE MILE CONSORTIUM - OMMC

The Ohio Middle Mile Consortium (OMMC) was formed a public-private partnership to create a comprehensive statewide plan to expand broadband infrastructure to the underserved and unserved areas of the state. This plan focuses on community anchor institutions and includes hospitals, public safety and local governments to ensure the development of an affordable and sustainable broadband program to provide Ohioans with statewide IP, Ethernet and fiber wavelength broadband services.

OMMC partners Com Net, Inc., Horizon Telcom, OneCommunity and OARnet formed a public-private partnership to create a comprehensive statewide plan to expand broadband infrastructure to the underserved and unserved areas of the state.

OMMC member organizations are collaborating to provide Ohioans with statewide IP, Ethernet and fiber wavelength broadband services.

OMMC-related projects will reach the following community anchor institutions:

- 83 private and public universities and colleges
- 34 community colleges
- 2,356 K-12 and career training centers
- 1,300+ health care facilities
- 2,200 state and local government offices
- 1,500 public safety operations
- 429 libraries
- 207 industrial parks

The OMMC today is comprised of more than 4,300 miles of optical fiber using state-of-the-art switches, routers and Ethernet switches, providing Ohio with an advanced, statewide telecommunications network dedicated to research, education and economic competitiveness. The grants, collectively, will add more than 3,600 fiber miles.

The OMMC will support an advanced packet-based architecture using Internet protocol (IP) to create one of the most flexible, scalable and cost-effective infrastructures in the country. The new infrastructure will be equipped for both middle mile and statewide capacity to support new initiatives with a focus on serving the economically disadvantaged, bringing broadband to unserved and underserved areas in Ohio.

OARnet will provide 10 Gbps wave service, as capital infeasible rights-to-use (IRUs), to its OMMC partners, while the partners will provide OARnet with dark fiber IRUs. This will allow OMMC to extend its geographic reach to economically distressed, and unserved and underserved areas of the state. This will increase the much-needed capacity to provide advanced applications and services at an affordable cost.