

# Why federal agencies need to level up connectivity for AI

As AI is transforming government operations, federal agencies must also invest in the high-speed connectivity that powers and supports these technologies. With the pace AI is expanding, appropriately balanced network connections can help avoid data bottlenecks that can reduce AI's intended purpose. Here's how agencies can tap into the resources they need to augment networks and support AI-driven transformation.

Artificial intelligence-backed tools are quickly becoming indispensable assets for government agencies as they look to streamline operations, automate repetitive tasks, and fortify workforces — all on tight budgets.

To sustain this AI explosion across government, however, agencies will need to consider and invest in the infrastructure necessary to enable robust, scalable underlying connectivity.

“AI functions and large language models, in particular, are driving massive data growth, due to increased connectivity between sensors, applications, and systems,” said Lamont Copeland, senior director of Federal Solutions Architecture at Verizon. “To support this, we need robust connectivity, including fiber and edge infrastructure, to link data centers, cloud services, and field devices.”



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**Lamont Copeland**

Senior Director of Federal Solutions Architecture, Verizon

Indeed, in a [recent survey from Ciena](#), data center experts predicted a minimum six-fold increase in data center interconnect (DCI) bandwidth demand between 2025 and 2030, with 43% of new data center facilities expected to be dedicated to AI workloads, specifically. And all these new data centers will need to be efficiently and securely dispersed and connected.

**By 2030, experts predict:  
6x increase in DCI bandwidth demand  
43% of new data center facilities  
dedicated to AI**

“To build a resilient, scalable system, you need multiple data centers across different regions and high-capacity connectivity between them. Unlike traditional human-to-human traffic, AI workloads, especially machine-to-machine workloads, demand massive bandwidth,” said Jim Westdorp, chief technologist at Ciena Government Solutions, noting that connections have moved from traditional 10 Gbps to 100 Gbps connections. Now providers are looking to enable 400 Gbps connections, with 800 Gbps on the horizon, in order to help accommodate AI.



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Chief Technologist, Ciena Government Solutions

But these growing connectivity needs are about more than just connecting data centers, they're also about moving connectivity toward the edge for tools like sensors or mobile devices to be used in the field. This means enabling low-latency processing for real-time applications, while also ensuring other data flows back to cloud service providers in a timely manner for deeper analysis.



“It’s not just about connecting facilities, it’s also about enabling seamless communication at the edge,” Copeland said.

### **Laying the foundation for AI**

While AI adoption is undoubtedly necessary for mission success, many federal agencies aren’t in the position to stand up new data centers and enable the high-speed connectivity necessary to take full advantage of AI-backed tools.

This is where strong industry experts like Ciena and Verizon can step in.

“The federal government has made progress modernizing its networks, moving away from outdated technologies like TDM and copper and adopting fiber, higher-bandwidth solutions, and advanced wireless services like 5G. But there’s still a long way to go,” Copeland said. “Many agencies are still in the process of migrating, and it’s critical to partner with providers like Verizon and Ciena, who are expanding both core and access networks to deliver the bandwidth needed to support growing data demands and extend connectivity at the edge.”

For federal agencies that are not interested in or equipped to set up their own infrastructure, [Managed Optical Fiber Networks \(MOFN\)](#), in particular, can help agencies to augment their existing networks without the need to delve into the world of obtaining dark fiber or network licensing. In fact, according to Ciena’s recent survey, 67% of data center decision makers plan to use MOFN services run by communications service providers to interconnect distributed data centers.

The MOFN model is similar to today’s managed service model used by telecom providers, the main difference being that it is focused on quelling the demand for new infrastructure and connectivity that AI has created.

“Not every agency wants to build and manage its own network infrastructure, it’s just not their core business,” said Westdorp, noting that this need aligns perfectly with the capabilities of network builders like Verizon and Ciena. “In lower capacities, or in places where somebody already has fiber, there’s no need to invest more capital to turn up new fiber when a managed service provider can do it for them. We already have the capabilities — it’s a natural fit.”

## Managed Optical Fiber Networks

According to Westdorp from Ciena, MOFN are not one-size-fits-all. Each federal agency has unique needs depending on whether a provider needs full network control or scalable capacity growth, and to address the needs of their specific AI workloads and the tools that enable them. For this reason, there are several MOFN options available, including:

**Standard MOFN** — In which agencies are provided with an end-to-end, dedicated fiber optical network as a service, allowing the agency to rapidly scale and expand new capabilities quickly.

**Lit capacity MOFN** — Operating like a leased-capacity or wavelength service, this service also has the added benefit of a dedicated network infrastructure built with the agency's preferred technology.

**Hybrid OLS MOFN** — The vendor builds a dedicated OLS and provides it as a service to the agency, which then deploys transponders over the network as needed to enable any necessary capacity growth.

Westdorp further clarified that, irrespective of the type of MOFN an agency opts for, the network will be built on advanced optical technologies like coherent optics and OLS platforms to support high-capacity backhaul, meet the fast-expanding demands driven by AI and cloud workloads, and ultimately ensure that networks are scalable and future-ready for federal agencies.

## Illuminating Dark Fiber

Ever heard of dark fiber? It isn't a sci-fi series you missed, it's the key to enabling the high-speed connections necessary to support AI workloads. These high-speed communication networks depend on fiber optic cables to carry data — they're essentially the highways for digital traffic. Fiber optic cables are usually installed in large bundles, often with many unused strands left unlit to save on equipment costs. Lighting them up later is often very capital-intensive, so many fibers are left dark, meaning they're physically in place but inactive. This dark fiber provides valuable capacity for future connectivity between data centers. In fact, 33% of data center decisionmakers reported in Ciena's recent survey that they will acquire dark fiber to address growing data center connectivity needs.

"Dark fiber is the fiber that's in the ground, it's there, it's physically present, but it doesn't have equipment on it, and it hasn't been enabled for those growing high speeds that are quickly becoming necessary," Westdorp said. "Dark fiber is that resource that you need in order to turn up new connectivity between data centers."

### **A Collaborative Solution**

Ciena and Verizon are poised to work hand-in-hand to support federal agencies as they look to enable the bespoke network solutions necessary to take advantage of AI. Verizon builds and operates the network, while Ciena provides the industry-leading high-speed communications equipment. Ultimately, by working together with agency leaders, the team delivers to agencies the top speeds and fiber capacity necessary to meet the mission.

“As AI evolves, the networks that support it must evolve too, becoming faster, smarter, and more integrated with the applications and devices they serve,” Westdorp said. “This tight connection between AI and connectivity is what will enable federal agencies to deliver real-time insights and transformative services for their constituents.”

**Learn more about how Verizon and Ciena can help your agency tap the network infrastructure necessary to enable AI expansion.**

