



TruOps Common Language

Capitalize on rural broadband demand by reducing the cost and time of network buildouts

challenges

Government funding to close the digital divide is increasing the competitive environment as electrical co-ops, cable companies, mobile operators and satellite providers expand into rural markets.

Low population densities increase the importance of operational efficiency so services can be priced affordably yet profitably.

Rural service providers often have an incomplete view of coverage gaps and available network infrastructure, making it difficult to pinpoint where new equipment should be deployed.

solution

TruOps Common Language CLEI Codes streamline asset management product updates.

TruOps Common Language CLLI Codes identify, classify and understand the location and other key attributes of every piece of infrastructure across departments, vendors, etc.

Common Language mobile app gives field workers and warehouse personnel real-time access to identify and track equipment and network assets.

Network view feature lets rural service providers quickly visualize the locations of coverage gaps and existing infrastructure, making routing and interconnection tasks more manageable and time efficient.

results

Quickly expand coverage to drive additional revenue and stay ahead of competitors, including greenfield operators.

Granular network insights ensure that new equipment is deployed exactly where it will deliver the highest ROI.

Maximize service quality and customer satisfaction by avoiding errors during network upgrades and other changes.

challenge: density affects accessibility and affordability

Roughly 42 million rural Americans lack broadband access, making it difficult or even impossible to do remote work, use telehealth, online education, e-commerce, streaming entertainment and other services available to people in suburbs and cities. The pandemic highlighted the daily drawbacks of slow or no internet access for rural America, but this is a longstanding problem. For over a decade, governments, citizens, businesses, schools, physicians and rural service providers have lamented the digital divide between rural and urban communities.

The digital divide persists because the rural market has unique requirements and challenges, starting with the low population density that affects the ROI for each new tower, fiber route and other network infrastructure. A UScellular white paper describes how this affects the business model for fixed wireless access (FWA):

"To justify unsubsidized investment, we must be able to reach several hundred homes and businesses per tower (note: our economics require over 150 subscribers at \$65 per month to equip an existing tower with the necessary equipment; or approximately 500 subscribers to build a new tower, and we can't assume that everyone will adopt the service). This density is rare in unserved and underserved locations, which is a key driver of the current digital divide. The cost of building and maintaining a tower in rural America can be nearly twice as expensive as building a tower in an urban area, and the density of customers in these areas is far less than in suburban and urban areas, thereby putting pressure on the revenue generation needed to drive a positive return on investment."

The good news is that the federal government recognizes these challenges and is subsidizing buildouts through initiatives such as the Infrastructure Investment and Jobs Act (IIJA), the \$42.45 billion Broadband Equity, Access, and Deployment (BEAD) program, the USDA ReConnect program and the proposed \$9 billion 5G Fund.

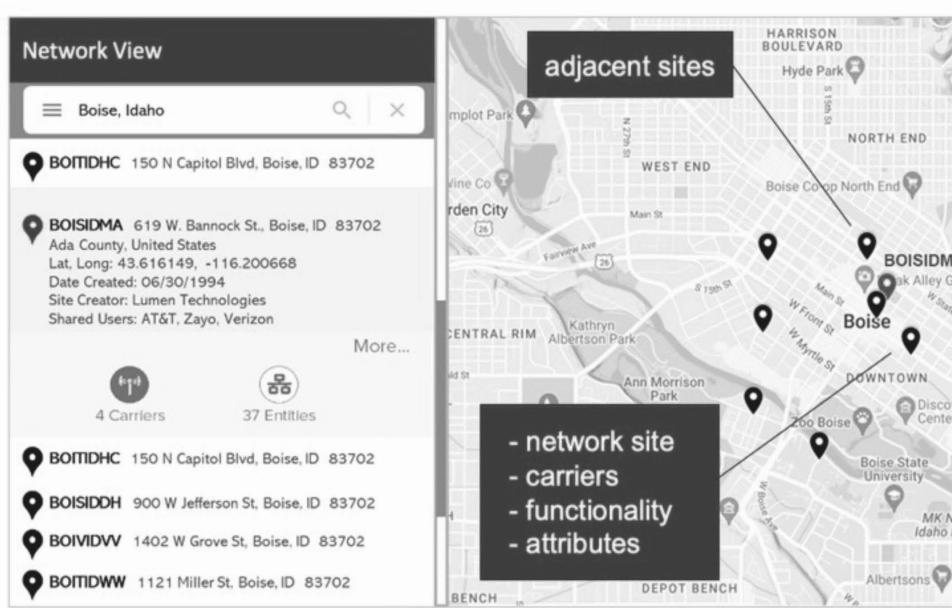
TruOps Common Language

solution: authoritative information in an industry-standard framework

Communications service providers (CSPs), tower companies, data center operators and others in the communications ecosystem rely on TruOps Common Language for their network planning and coverage needs. As the de facto industry standard for network locations, it helps companies seamlessly verify, correct and augment information about locations, equipment, connections and service functions so they can be sure that they have the right equipment in the right location to meet the growing demands of their customers, where and when it is needed most. This precision is particularly valuable for rural service providers because they have larger geographic areas to cover, which means more points of interconnection and more equipment to provide services. Common Language enables them to wring maximum coverage and revenue out of each infrastructure dollar.

Common Language enables all departments within wireline, wireless, VoIP, cable companies and other rural service providers to speak the same language. For example, through leveraging the power of Common Language, rural service providers can easily see whether a network site has the functionality and characteristics they need to deliver high-quality broadband services to rural homes, businesses, schools and clinics. That clarity helps avoid misunderstandings and errors, and saves money by enabling faster interconnections and more informed network planning activities.

Using Common Language CLLI Codes, rural service providers can identify, classify and pinpoint the location and other attributes of network infrastructure such as towers, poles, routers and points of presence, which helps streamline interconnection with their peers, maximize efficiency and minimize errors in network design and provisioning.



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Understandably, rural service providers invest heavily in network infrastructure to support new technology rollouts. Core to those investments is the equipment that each new technology rollout needs to support the enhanced coverage, security and additional capabilities that drive new revenue-generating services. To ensure maximum effectiveness, rural service providers must quickly identify and track equipment assets in the field, warehouse or sparing pool for installation to ensure maximum uptime. Common Language CLEI Codes make network operations management simpler and employees more efficient by automating processes that were labor intensive. For example, rural service provider employees can use the Common Language app to scan the barcode on a piece of equipment. This gives them instant access to the network equipment's attributes, allows for compatibility checks so that new equipment can be easily integrated with existing infrastructure during network expansion projects and updates inventory management systems. CLEI Codes also streamline network planning. For example, when planning network expansion, rural service providers can use CLEI Codes to select equipment based on specific requirements. This ensures that the chosen equipment aligns with the network architecture. The Common Language mobile app lets users capture equipment information at various locations. This feature is beneficial for tracking equipment across different sites during network planning. Rural service provider employees can use CLEI Codes to reference network equipment types, thus ensuring that all references are the same. This consistency helps with network planning by providing a clear understanding of what equipment will be needed when expanding broadband.

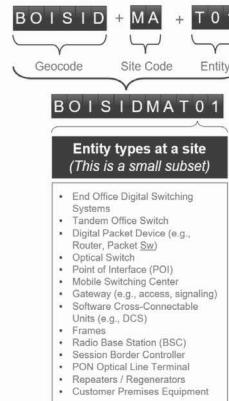
CLEI Codes also are key for ensuring interoperability between equipment from different product lines, platforms or providers. This is crucial when planning and expanding networks because it helps rural service providers integrate new components into the existing infrastructure without major compatibility issues. This also helps ensure that new customers get high-quality service from day one.

- **CLLI Codes** are geographic identifiers that uniquely specify the location of sites within a network

• **Locations Registry** is a single source of network location information that enables operators to achieve efficient network operations and provides seamless collaboration with their trading Partners

• A **Network Site** is an existing location where one or more network functions exist

• A **Network Entity** refers to any functional category of telecommunications equipment at a network site



Site Discovery:
123 MAIN DR, ANYTOWN, ST 10001

1 record found

CLL:

WDZAA810

LAT:

35.019444

LONG:

-115.473555

Date Record Created: 09/27/2019

Status: Active

Site Description: Customer Building, Cell Site

Record Creator: XYZ Telecom

Network Entities: 21

Entity Code	Entity Type	Description	Company (Creator)
00W	DIGITAL PACKET DEVICE	ROUTERS	XYZ Telecom
0AW	DIGITAL PACKET DEVICE	Ciena 3930 10G CSIPA SWITCH, ETHERNET NTE	First Cellular
0CW	DIGITAL PACKET DEVICE	ETHERNET NTE CIENA-M113XC047	Gold Wireless
0FW	DIGITAL PACKET DEVICE	Ciena NTE SPL59	Gold Wireless
0HW	DIGITAL PACKET DEVICE	SWITCH, ETHERNET NTE	First Cellular
0IW	DIGITAL PACKET DEVICE	CELL SITE	MG Broadband
0JW	DIGITAL PACKET DEVICE	SWITCH, ETHERNET NTE	MG Broadband
CM1	MOBILE SWITCHING CENTER (MSC)/MOBILE TELEPHONE SWITCHING OFFICE (MTSO)	GOLD WIRELESS SERVICES	XYZ Telecom
D00	PROCESSOR/SERVER GROUPING FRAMES	RET CONTROLLER	TelcoView LLC
FD1	FRAMES	DSX-1 RR 01 LINEUP	XYZ Telecom
HA0	MISCELLANEOUS NONSWITCHING ENTITY	LCIc RR 1 LINEUP	XYZ Telecom
Q01	RADIO ACCESS NETWORK EQUIPMENT	COLLOCATION / CAGE	XYZ Telecom
Q02	RADIO ACCESS NETWORK EQUIPMENT	CELL SITE EQUIPMENT	First Cellular
WA1	FACILITY/CIRCUIT POINT OF INTERFACE (POI)	BASE STATION	Gold Wireless
Q00	MISCELLANEOUS OPTICAL EQUIPMENT	HICAP/REGAL ACTUSC-023 (PFM)	XYZ Telecom
		FUJITSU 8300 I-TEMP REMOTE MUX #1	TelcoView LLC

* All entries shown use fictitious data and are for illustration purposes only.

TruOps Common Language

results: maximize revenue opportunities, competitiveness and operational efficiencies

Common Language provides the industry-standard nomenclature and framework that the communications ecosystem relies on over 20,000 times each day to maximize efficiency, competitiveness and profits. CLLI Codes, network view, CLEI Codes and the mobile app all give rural service providers the authoritative info they need in a faster, automated way that allows for quicker time-to-revenue for new services and better ROI for network planning and builds.

Quickly expand broadband coverage: granular, accurate and authoritative network insights help identify gaps in coverage or interconnection to ensure that new equipment is deployed exactly where it's needed and where it will deliver the highest ROI.

Optimize service quality and boost customer satisfaction: Rural service providers can accurately report usage of assets, which helps with network design, database reconciliation, service activation and process flow-through, allowing them to streamline and expedite processes such as planning network changes, buildouts and upgrades for maximized performance. Service quality also helps them compete against other rural service providers, especially for farms, clinics and other business customers that put a premium on reliability and performance.

Decrease operational costs: By using a single, industry-standard terminology and framework, rural service providers instantly improve communications across their organization and with other service providers, data center operators and tower companies, such as for interconnection. This helps reduce costs associated with asset management and buying excess inventory. Those savings also help rural service providers price their broadband services affordably yet profitably.

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