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MOBILE TACTICAL EDGE NETWORK

(MTEN)



WARFIGHTER/OPERATOR RESULTS

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IT 3.75 ASSESSMENT COMPONENTS

[WARFIGHTER](#) | [TECHNICAL INTEROPERABILITY](#) | [INFORMATION ASSURANCE](#) | SEIWG

(If a text entry is not linked, there is no assessment in that category for this trial)

WARFIGHTER/OPERATOR PERSPECTIVE

Warfighters were extremely impressed with the capabilities of the pTerex system. The ability to maintain 100% connectivity throughout the exercise while utilizing different applications (wired and wireless) such as VTC, Exchange Services and during transits through known communications choke points was the highlight of pTerex. Warfighters were unaware of any switch in connection types. When switching connections, the only noticeable difference observed was a slightly slower connection. Warfighters stated satellite connections, although a sub-optimal signal provided adequate VTC communications and email processing. Warfighters successfully tested the ability to maintain connectivity when an external power loss was initiated; the external power loss did not have an adverse effect on an application in progress. When disconnecting the external power, pTerex failed over to battery without any disruption in connectivity and functioned flawlessly as if the power was still connected. **Warfighters agreed pTerex provided the ability to establish communications immediately in natural disaster or in cases of attack on a city and also enhanced mission operations,** effectively keeping units continually connected to the home network for information processing during missions. Warfighters felt that pTerex is a good tool for field use by the commanders and other mobile units, and the ability to establish a temporary base of operations (the ability to create a LAN, have VOIP phones available, etc.) with full access to the home network is ideal. By providing Situational Awareness information, instant access, and coordinated communications with all parties involved provides an enormous advantage. **Warfighters stated that it would have been extremely difficult or impossible to maintain the level of communications established during the exercise without the use of pTerex units.**

Warfighters overall opinion of the capabilities of pTerex MTEN was outstanding. They believe pTerex is the system of the future, an excellent technology and an incredible asset in the field. It is small and portable, effectively transportable from location to location. Warfighters unanimously agreed using multiple units could greatly enhance both information sharing and tactical decisions and would drastically improve field communications. **Warfighters stated that pTerex would likely have an enormous impact on homeland security and first responders by providing dominance in Situational Awareness.**



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WARFIGHTER/OPERATOR COMMENTS

"pTerex needs to be fielded ASAP!"

"Excellent piece of equipment for emergency response situations."

"The sooner these could be made available to commanders and warfighters, the better."

"Highly recommended for any branch of service."

"Easy to operate and setup, would recommend the addition of UHF and VHF capabilities."

"pTerex was 100% operational. It would be an asset to unit response to incidents."

"Excellent, I would recommend to high level responders who need instant access from various sites."

PERFORMANCE

pTerex Mobile Tactical Edge Network (pTerex-MTEN), IT 3.75, connected deployed Commanders, National Guard communications units, and Emergency Operations Center (EOC) First Responders to their home based networks and the internet to access shared applications, databases, etc. pTerex units maintained connectivity between transport technologies (wired, wireless, cellular, and satellite) without user intervention. This afforded a Common Operational Picture (COP) to the mobile communications teams and first responders regardless of location. USNORTHCOM .Colorado Springs, CO, NSWC Dahlgren, VA, and EUCOM Stuttgart, Germany demonstrated pTerex units. Additionally, pTerex, deployed to the EOC at Charleston, WVA, supported a statewide National Guard exercise run in conjunction with a mass evacuation event on CWID Execution Day 1. A pTerex Executive Communications Suite (ECS) provided CWID connectivity to the WVA National Guard Joint Force Headquarters (NG JFHQ) Battle Captain. A second mobile unit used by WVA State Deployed Communications Operators maintained connectivity in remote areas while in transit from the EOC in Charleston ,SC to an EOC in Elkins, WVA. pTerex installations at other locations in North Charleston, SC to supported a state wide National Guard exercise - Palmetto CWID. The first pTerex Executive Communications Suite (ECS) was located in Sterett Hall (HQ Command Location - Thunder Cat - JICC); A second pTerex ECS was located at the South Carolina National Guard Seahawk Task Force (STF).; and a third pTerex Vehicle Mount Unit was located in the VIP Mobile Transportation Unit (Mobile Command Location - SCOT). All pTerex units, successfully installed without technical issues, remained connected throughout Palmetto CWID supporting Command staff at the JICC, mobile command, and the Seahawk Task Force.

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ASSESSMENT LEVEL

Seventeen warfighters evaluated the trial through JDCAT questionnaires and observation forms at the following sites: USNORTHCOM (4 warfighters), NSWC Dahlgren (2 warfighters), EUCOM (2 warfighters), SEAHAWK (2 warfighters), West Virginia National Guard (3 warfighters), South Carolina National Guard (4 warfighters). Of the six warfighters that provided background biographies, all were well qualified to operate/interact with the pTerex trial.



TECHNICAL SUPPORT/TRAINING

pTerex representative provided adequate on-site technical support, configuration and equipment set-up, and on-site training at all trial locations, including 2 SC NG locations; JICC and Seahawk Task Force. The trial also supported the Mobile Commander by phone. Trial representatives provided warfighters/operators a user manual and a Power Point training guide. Warfighters/operators considered pTerex training successful and the system set-up and operation easy.

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CAPABILITIES/FINDINGS

DEMONSTRATE NEW TECHNOLOGY OR ENHANCEMENT TO EXISTING TECHNOLOGY THAT STREAMLINES THE OPERATIONAL DECISION-MAKING PROCESS THROUGHOUT THE SPECTRUM OF MILITARY AND CIVIL OPERATIONS, INCLUDING GWOT CONTINGENCIES AND CRISIS RESPONSE:

pTerex successfully met this capability. The pTerex MTEN CWID configuration consisted of Remote Units at various CWID locations and a single Base Station at USNORTHCOM. All pTerex units, including deployed units for the South Carolina and West Virginia National Guard, were easily set up and available on the network for the duration of the exercise; just open the unit and initiate power.. Although there were some network and latency issues at all locations, they did not deter from the effectiveness, reliability or capabilities demonstrated.

During CWID Execution, MSELs were structured to support a power loss event due to a natural disaster scenario event. All pTerex units, stationary and deployed, remained operational without power. Testing throughout the exercise simulated infrastructure damage as well. Warfighters unplugged the network Ethernet cable and the pTerex unit automatically failed over to a local DSL Ethernet. To simulate complete infrastructure loss, the pTerex unit was completely disconnected and removed from the building. Within 5 minutes, the unit was set-up and automatically failed over to satellite connectivity. Fail over for both power and connectivity options were observed and monitored by all warfighter and operations continued as normal. Additionally, pTerex units at other CWID trial sites connected command stationary and mobile computers. pTerex maintained network connectivity throughout the exercise without user intervention. The deployed pTerex units roamed to maintain connectivity to the pTerex base stations installed on the CWID network. The pTerex units provided EUCOM with mobile command and control and situational awareness by connecting directly to a pTerex Base Station at USNORTHCOM. Commanders achieved a COP by having direct access to the MSELs through the CWID portal and achieved collaboration with CWID operational players.

pTerex also supported a mass evacuation event in WVA executed by WVA NG JFHQ and State Mobile Communications Operators. Mobile operators conducted a 548 mile round trip transit from Charleston to Elkins through diverse and differing topographies, testing pTerex with various applications while enroute. The pTerex system successfully maintained wireless connectivity with JFHQ except on two reported instance where connectivity was lost in mountainous areas.

An unplanned event occurred which proved the capability to maintain connectivity during a complete power loss. On Tuesday 19 June, the EUCOM CWID building experienced two separate power outages during the day. During each power outages the EUCOM network dropped of line. Although the buildings generator restored limited power and the network was restored within ten minutes, the pTerex unit failed over to battery power seamlessly and failed over to the German DSL connection seamlessly facilitating uninterrupted network service.

On another occasion pTerex provided an unplanned assistance to another trial when, the CTF network simulated a network loss and a work-around was required to send a message to SDCMOC from CTFC2. The EUCOM pTerex unit, the only option available for message transmission successfully sent the message.

As an ad hoc demonstration of the system's versatility, pTerex collaborated with a non CWID trial, GATR Technologies, which provided a deployable SATCOM solution. GATR established a high-speed satellite internet connection via the INTELSAT Horizons 1 iDirect network and pTerex warfighters relocated pTerex MTEN Remote Unit, pTerex laptop computer, and assigned IP Phones to where the dish was operating. In less than



three minutes, MTEN achieved connectivity via the GATR satellite up-link and re-established a local area subnet of the USNORTHCOM enclave consisting of pTerex and IP Phone. Via the extended subnet, communications were established with the MTEN subnet in Stuttgart via IP Phone and Email. The communications quality was exceptional given the inherent latency of all SATCOM systems.

pTerex demonstrated connectivity not only through the internet, but also behind the CWID-network, passing message traffic to SC NG JICC and facilitating a Common Operational Picture across the CWID sites (NORTHCOM, EUCOM, DAHLGREN, etc.). pTerex also conducted multiple Video-Teleconferences (VTCs) with NORTHCOM, EUCOM, and Dahlgren to discuss message traffic and to facilitate the Common Operational Picture.

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CONCLUSIONS

In conclusion, pTerex provided a seamless crossover while roaming through networks and the product is ready for fielding by any Service or Agency. It provided wired and wireless WAN and LAN, classified communications access as well as Voice, Video, Data to deployed commanders, forces, and other system users. Lightweight and portable, the pTerex units allowed for immediate deployment and set-up in minutes for emergency deployment. All pTerex units remained connected throughout the exercise regardless of available power or transport technologies (Ethernet, wireless, cellular), greatly enhancing mission capabilities and information flow by accessing the Internet and VOIP from any location fixed or mobile. pTerex clearly demonstrated its ability to provide mission critical connectivity when disaster strikes and infrastructure is damaged for Continuity of Operations. pTerex units improved mobility, survivability and adaptive dominance for communication and information transfer, allowing for continuity of operations from HQ, while en route, and upon arrival to deployed locations. pTerex units facilitated the provision of a Common Operational Picture, Situational Awareness, and Mobile Command and Control in crisis response and GWOT contingencies by providing a direct connection to the command HQ network (in the case of CWID – the CWID Global Network). pTerex demonstrated connectivity not only to the internet, but also behind the CWID network, facilitating a COP across the Command, the JICC, the Seahawk Task Force, and First Responders increasing tactical autonomy and decentralization. pTerex, is interoperable with many of the systems currently use by the Military and by First Responders. pTerex achieved its CWID Objective for Integrated Operations and enhanced the commander's capability to command, control & coordinate across joint and coalition forces, government agencies, NGOs, and first responders.

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RECOMMENDATIONS

- Warfighters did not provide recommendations or suggest improvements.

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