

MOD LAND SYSTEMS REFERENCE CENTRE



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ITRINEGY NETWORK EMULATORS DE-RISK DEPLOYMENTS INTO MILITARY NETWORKS



The Land Systems Reference Centre (LSRC) is the Ministry of Defence's (MoD's) unique test and reference facility that ensures the reliability, interoperability and performance of Land Environment Communications and Information Systems (CIS). Testing is carried out to the highest standards on in-service equipment and emulated solutions through the communication, infrastructure and application layers. The LSRC is equipped to provide support to multi-vendor test environments that support the MOD and MOD sponsored Customers to deliver a range of catalogue and bespoke testing services that meet individual needs.

The LSRC facilitates bespoke testing using a combination of real equipment and synthetic simulations. Where possible test environments are configured using Reference Systems held on an Operation Baseline, either in isolation or in conjunction with Customer provided end user equipment. Where this is not possible, representative test environments are configured using sophisticated test tools such as the iTrinegy Network Emulation solutions, that enable LSRC to emulate the characteristics of the reach back communication links along with network stimulation tools that can be used to congest the test networks.

THE REQUIREMENT

LSRC needed a solution that would enable it to accurately emulate a range of network characteristics such as available bandwidth, packet delay and packet loss, to allow them to access applications and systems across representative communication links. This would allow testing to be carried out, in order to understand the impact that the supporting network may have on application/system functionality and performance.

"We were looking for network emulation tools that could be used to create both basic and complex emulations, that were also easy to use and that required minimal configuration," explains Jan Seymour, Service Operations Manager. "We conducted a review of the network emulation marketplace and the iTrinegy INE and NE-ONE devices met our needs."



iTrinegy's NE-ONE and INE Network Emulators (green appliances) are an integral part of LSRC's test set-up

EASE OF USE WINS THE DAY

The main benefit that the LSRC user community have found with the iTrinegy network emulation devices, and in particular the NE-ONE, is the ease of use. The devices are regarded as being very simple to operate and can be configured and set to run an emulation, quickly. The NE-ONE Network Emulators also come with a number of pre-defined network scenarios that can be implemented if needed, and these have been useful to the LSRC test teams.

“The NE-ONE Model 20 has become our go to tool in recent times, the ability to configure a number of concurrent network links and the different modes of operation make it a very flexible tool that meets most of our needs,” said Jan. “The ability to utilize the multi-link feature, that allows us to emulate up to 20 multiple network links between the endpoints, and define individual constraints down to individual IP addresses means that the NE-ONE has been a very flexible, easy to configure, user friendly tool. In addition, the ability to move between both simple emulations and more advanced emulations is a great option for us and allows us to offer bespoke testing, based around individual user requirements.”

CREATING MESHED NETWORKS

While the NE-ONE is regarded as a stalwart for straightforward testing, when the LSRC requires the creation of more complex test networks it relies on iTrinegy’s INE Network Emulation solutions. With its GUI drawing interface, the INE Enterprise model used by LSRC can create multi-point / multi-path network environments such as meshed and partial meshed network topologies. The sophisticated emulator targets the more advanced network specialist and therefore requires additional time and expertise to initially setup. However, as Jan comments, “The customer service and support provided by iTrinegy to the LSRC has been excellent, any issues have been dealt with quickly and solutions provided that provide maximum benefit to us as the customer. iTrinegy have always dealt with us in a friendly and courteous manner.”



iTrinegy's INE Enterprise Network Emulators are used to recreate complex meshed networks

CONCLUSION

iTrinegy’s Network Emulators have enabled the LSRC to offer the MOD a test facility that is able to conduct testing on applications and systems that are due to be released to the live environment, on representative communication links. They can be configured to operate as a simple point-to-point links or to reflect more complex networks with multiple nodes and multiple paths. Applications can be routed through them and degraded based on a variety of parameters, as required, to accurately reflect different scenarios/theatres. By utilizing iTrinegy Network Emulators in this way, LSRC is able to identify, early in the testing process, those applications or systems that are deficient and requiring further reengineering or modification rather than discovering such issues during the latter, and frequently more expensive, field trial stages.

The iTrinegy network devices also enable the LSRC to offer a de-risking/ mission rehearsal type test environment that can be used to de-risk short notice deployments overseas.