

# **KREONET-S Implements An SD-WAN Connection From South Korea To The StarLight International/National Communications Exchange Facility In Chicago: Inaugurating Novel Advanced International Communications Services**

Daejeon South Korea, Chicago, IL – August 5, 2016

Today, KREONET-S, a first-of-a-kind international software-defined wide area network (SD-WAN) over 100 Gbps optical fiber was announced in Daejeon, South Korea and Chicago, Illinois. The KREONET-S initiative was established to drive softwarization of KREONET infrastructure, using Software Defined Networking (SDN) architecture and technologies, based on the dedicated 100 Gbps optical fiber launched between Daejeon and Chicago early this year. The first phase of this project has been targeted to softwarize six regional and international network centers, which are Daejeon, Seoul, Busan, Gwangju, Changwon in South Korea, and Chicago, specially, the StarLight International/National Communications Exchange Facility. The first phase of this project will be completed in three years (by 2017), eventually providing the first production SD-WAN services for KREONET users. KREONET-S will provide multiple advanced networking services capabilities, including international science collaborations, by implementing more flexible and programmable networking capabilities, specialized provisioning for large scale data flows, and flow isolation.

KREONET-S was established to implement a nationwide virtual programmable network infrastructure (based on a SDN control platform/ONOS (Open Network Operating System) and programmable network components) that can be accessed mainly through Open APIs by individual KREONET users who would like to develop their own research and education applications over a large scale wide-area SDN. KREONET-S has been designed to provide end-to-end SDN production network services for advanced research and applications, especially those requiring specified time-to-research and time-to-collaboration. KREONET-S is built on an ONOS-enabled core platform, with specialized edge/access capabilities, and techniques for international network operations and federation options. All of the network elements on KREONET-S infrastructure, including domestic and international networks, can be provisioned by the ONOS control platform to enable new SDN network operations, management, and services.

KREONET-S is contributing to building a national software-defined infrastructure as a major component for the new era of hyper-convergence ICT and data-centric economy based on IoT, cloud, big data, supercomputing, and data-intensive science. It is a model of next generation communications architecture and infrastructure, based on high levels of virtualization, flexibility, programmability, and granulated partitioning of resources. The lead organization for this project is KISTI, a government-funded non-profit research institute. KREONET is a principal national R&E network operated by KISTI and funded by Ministry of Science, ICT and Future Planning (MSIP) in Korea.

In Chicago, at the StarLight facility, KREONET/KREONET-S will be integrated with the international Software Defined Network Exchange (SDX), a project funded by the National

Science Foundation (NSF) under the International Research Network Connections program (IRNC) to research, develop, and deploy innovative services, architecture, and technologies designed to provide scientists, researchers, engineers, educators, and students with highly advanced, diverse, reliable, persistent, and secure networking services, enabling them to optimally access resources in North America, South America, Asia, South Asia (including India), Australia, New Zealand, Europe, and other sites around the world. KREONET/KREONET-S will also be integrated with the StarWave multi-100 Gbps exchange facility at StarLight. In Chicago, KISTI will continue their research and development partnership with International Center for Advanced Internet Research (iCAIR) at Northwestern University,

“The StarLight consortium and iCAIR are looking forward to building on our long term partnership with KISTI to advance the state of the art in next generation networks, including innovative advances in services for global data intensive science,” said Joe Mambretti, Director of iCAIR at Northwestern University.

#### **About KISTI**

KISTI is a government-funded non-profit research institute, which is devoted to maximizing the efficiency of science and technology research and development, and supporting advanced collaboration and research for academic, research and industrial sectors by developing HPC and national research network infrastructure as well as knowledge information (soft) infrastructure for e-informatization in Korea. KREONET is a principal national R&E network. ([www.kisti.re.kr/eng/](http://www.kisti.re.kr/eng/))

#### **About KREONET**

KREONET is a principal national R&E network operated by KISTI and funded by MSIP in Korea. It uniquely provides production research network services for approximately 200 non-profit research and educational organizations, based on hybrid (IP and non-IP) network infrastructure with 21 network centers in Korea (17), USA (2), China (1), and Netherlands (1). ([www.kreonet.net](http://www.kreonet.net), [www.kreonet-s.net](http://www.kreonet-s.net))

#### **About the StarLight International/National Communications Exchange Facility**

With more than 30 100 Gbps connections, the StarLight International/National Communications Exchange Facility is the world's most advanced and highest capacity optically based networking exchange facility. StarLight provides advanced networking services and technologies that are optimized for high-performance, large-scale metro, regional, national and global applications. With funding from the National Science Foundation (NSF), StarLight was designed and developed by researchers, for researchers. StarLight is managed by the International Center for Advanced Internet Research (iCAIR) at Northwestern University, the Electronic Visualization Laboratory (EVL) at the University of Illinois at Chicago, the California Institute for Telecommunications and Information Technology (Calit2) at the University of California, San Diego, and the Mathematics and Computer Science Division at Argonne National Laboratory, in partnership with Canada's CANARIE national networking organization and The Netherlands' SURFnet. ([www.startap.net/starlight](http://www.startap.net/starlight))

#### **About the International Center for Advanced Internet Research (iCAIR) at Northwestern University**

The International Center for Advanced Internet Research (iCAIR) at Northwestern University accelerates leading-edge innovation and enhanced global communications through advanced technologies, in partnership with numerous international community, and national partners.  
([www.icaair.org](http://www.icaair.org))

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