

DYNESTAR will extend the TransLight/StarLight/GLIF fabrics by (1) interconnecting the major Open Lightpath Exchanges with a mesh of resilient circuits across the Atlantic, including new exchanges such as CERNLight and MarseillesLight, (2) scaling the bandwidth to meet the evolving needs of science over the next five years in a very cost effective way, (3) helping to provide reliable networks for both the major science projects and the broader scientific community through cooperative arrangements including mutual dynamic backup and peering arrangements, and (4) developing fully compatible standard methods and tools for dynamic circuit provisioning, monitoring, and high throughput applications. These new initiatives will continue to advance the progress of next generation communication services and technologies for research and education.

The partnership envisioned by our complementary proposals incorporates the following components. 1) Our collaboration will help ensure sufficient trans-Atlantic path capacity to meet growing requirements for high volume data transfers. 2) To assist in providing redundancy and resiliency for these paths, we will collaborate on creating a fabric of meshed interconnections, so that appropriate failover can occur quickly in case of faults. 3) Through our partnership we will integrate, through federation techniques, the dynamic provisioning capabilities of DYNESTAR with those of other research networks on both continents. 4) DYNESTAR will provide the first fully resilient, dynamic high performance transatlantic optical network for the LHC program. Although the primary focus of DYNESTAR will be supporting the data analysis operations of the LHC ATLAS and CMS Tier2 and Tier1 centers, it will also assist other data intensive sciences. The partnership with TransLight/StarLight will assist in providing access to advanced network services and technologies to many science domains supported by TransLight/StarLight, including computational biology, oceanography, climatology, nanotechnology, astrophysics, astronomy, and many others. TransLight/StarLight will provide for multiple channels of communication and collaboration to assist these science and communities. 5) This partnership will also enable process to be made on investigating (through separate funding) the potential for 100 Gbps trans-Atlantic services for scientific research. Currently, both initiative are exploring these technologies and anticipate deploying it by 2012-2013. This partnership will allow for determining options for early trans-oceanographic prototypes and services.

The result of this partnership will be a significantly enhanced mesh of interconnections, a 60% increased initial capacity, much additional resiliency, and, most importantly, substantially more opportunities for science groups to obtain the appropriate communication services for their research.

We look forward to working with you on these exciting projects.

On behalf of the TransLight/StarLight consortium,

A handwritten signature in cursive script that reads "Joe Mambretti".

Joe Mambretti, Director of the International Center for Advanced Internet Research, Northwestern University, Co-Director, StarLight International Communications Exchange, Director, Metropolitan Research and Education Network