

UltraLight: An Ultrascale Information System for Data Intensive Research

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UltraLight is a collaboration of experimental physicists and network engineers whose purpose is to provide the network advances required to enable petabyte-scale analysis of globally distributed data. Current Grid-based infrastructures provide massive computing and storage resources, but are currently limited by their treatment of the network as an external, passive, and largely unmanaged resource. The goals of UltraLight are to: (1) Develop and deploy prototype global services which broaden existing Grid computing systems by promoting the network as an actively managed component, (2) Integrate and test UltraLight in Grid-based physics production and analysis systems currently under development in ATLAS and CMS, (3) Engineer and operate a trans- and intercontinental optical network testbed, including high-speed data caches and computing clusters, with U.S. nodes in California, Illinois, Florida, Michigan and Massachusetts, and overseas nodes in Europe, Asia and Latin America.

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