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SuperB R&D computing program: HTTP direct access to distributed resources

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The SuperB asymmetric energy e+e- collider and detector to be built at the newly founded Nicola Cabibbo Lab will provide a uniquely sensitive probe of New Physics in the flavor sector of the Standard Model. Studying minute effects in the heavy quark and heavy lepton sectors requires a data sample of 75 ab⁻¹ and a luminosity target of 10³⁶ cm⁻² s⁻¹.

The increasing network performance also in the Wide Area Network environment and the capability to read data remotely with good efficiency are providing new possibilities and opening new scenarios in the data access field.

Subjects like data access and data availability in a distributed environment are key points in the definition of the computing model for an HEP experiment like SuperB. R&D efforts in such a field have been brought on during the last year in order to release the Computing Technical Design Report within 2012.

Among the possible data access models resulting of interest for a mid-term future scenario we identify the WAN direct access via robust and reliable protocols such as HTTP/WebDAV and xrootd as a viable option.

In this work we present the R&D results obtained in the study of new data access technologies for typical HEP use cases, focusing on specific protocols such as HTTP and WebDAV in Wide Area Network scenarios. Reports on efficiency, performance and reliability tests have been included, using both Monte Carlo production and Analysis use cases. We also compare the results obtained with HTTP and xrootd protocols, in terms of performance, efficiency, security and features available.

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