

## **Data grids to preserve cultural heritage**

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The main goal of libraries, archives, and museums has always been preserving and spreading knowledge. Today, this really important function can take advantage of the development of digital technologies. Advanced distributed computation (computing grids) and reliable research and education networks offer, in fact, redundant and huge distributed storage capabilities, providing an ideal and secure place for the long-term preservation of digitized literary works and documents of artistic and historical relevance. Digitization is used more and more often as a precious tool to avoid losses caused by aging and environment conditions in which paper documents are physically stored. Documents are converted into files and due to the high quality of digital images, the collected digital archives are of remarkable size. In addition to that, multiple copies of high resolutions scans have to be stored in a distributed network environment to ease their availability for consultation over geographically widespread research communities. The size of the archives, together with the need of a reliable, fine-grained authentication and authorization infrastructure (providing access by single users, groups or entire communities) are the two main reasons to use Grids. Together with the archives, a detailed set of metadata is provided to allow structured organization of scanned files, providing effective searches through the advanced Grid metadata services available. Two use cases have been considered to demonstrate how grid digital libraries can guarantee preservation of literary heritage: the archives of the work of Italian writer Federico De Roberto, made up of almost 8000 digitalized documents, and the musical and the musical archives of the “Civiltà Musicale Napoletana” project, with more than 250,000 documents. A working prototype of the De Roberto digital repository has been implemented on the gLibrary platform, a grid-based system to host and manage digital libraries developed by INFN Catania, on the Sicilian e-infrastructure of the COMETA consortium.