The Advanced Cyberinfrastructure for Heritage Digital Preservation and Access

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We live in an era where CD-ROMs, hard drives, and memory sticks have a shorter life than the Egyptian papyrus. Thus, we are very concerned about guarantees for a long-lasting lifetime of digital data, including both digital heritage and digitized world heritage data. Not only do we want to preserve the data, but also give a global access to it. The advancements in satellite imaging and sensing, optical networks, storage, graphics, tele-presence and other cyberinfrastructure tools, make it possible to not only preserve the data that we collect today, but also give access to every tiny bit of information, no matter if it is an ancient document, a 2D or 3D picture, a model of an object, or a movie collection. Today's tele-presence high-definition video technologies allow scholars and tourists to virtually walk through and interact with ancient architectural heritage sites, and have a perception of a physical presence, without physical barriers that usually constrain these sites. In this talk, we will take a closer look at available technologies and future trends in cyberinfrastructure serving the world heritage scholarship. We will focus on core cyberinfrastructure developments, such as the ones in optical networking, storage and graphics, as well as the developments in tools and instruments that can be used for capturing high definition images and movies at heritage sites. We will describe data post-processing workflows to make the data available at remote CAVE environments. We will also talk about the "internet of things", open linked data and its positive impact on heritage scholarship.