

Standards

National and international standards exist to ensure that data will be interchangeable between systems and institutions and sustainable in the long term, and that systems and applications will themselves be interoperable. They are the tools that make accessible, sustainable, and interoperable digital image collections feasible. Adherence to data standards (for instance, by stating that an image is a reproduction of *The Last Supper* by Leonardo da Vinci in a predictable and recognized way) allows precise search and retrieval and may also save **cataloguing** and indexing time by making it possible to incorporate portions of documentation records from other institutions or previous projects into new records. The transitory nature of digital technology demands that technical standards be applied to the creation and documentation of digital image files if they are not swiftly to become defunct.

There are many data, descriptive, indexing, and technical standards available, developed by various institutions and communities. The difficulty usually lies in the selection of the most appropriate combination of standards and their customization, if necessary, to suit the particular needs of the institution and project. If possible, choose **open standards** rather than **proprietary** ones, as the latter may be idiosyncratic and/or reliant upon knowledge or equipment that may not always be freely and generally available, and thus lead to a sacrifice of interoperability and longevity. The National Digital Library Program of the Library of Congress, the California Digital Library, and the Colorado Digitization Program are some examples of groups that have made available their own standards, guidelines, and best practice recommendations for all aspects of imaging projects, and these can be immensely helpful (see *Online Resources*). When considering adopting a standard, it is important to consider how well established vendors support it and the depth of its user base. For instance, individual manufacturers and developers may support different subsets of the total specifications for a technical standard or modify specifications to the extent that the standard is broken. This can lead to decreased interoperability. Research—or consultation with an experienced imaging specialist—can help sort out how well a standard is supported and by whom.

Technical standards addressing a broad range of information technology issues, including file formats and technical **metadata schemas**, are maintained and developed by international organizations. Examples include the International Organization for Standardization (**ISO**); the International Electrotechnical Commission (**IEC**); the Institute of Electrical and Electronics Engineers (**IEEE**); the International Telecommunications Union (**ITU**); and the World Wide Web Consortium (**W3C**), which develops vendor-neutral open standards and specifications for **Internet** and **Web**-based transactions, with the intent of promoting interoperability. National standards bodies—including the American National Standards Institute (**ANSI**), the U.S. National Information Standards Organization (**NISO**), the British Standards Institution (**BSI**), and the German Deutsches Institut für Normung (**DIN**)—not only define and endorse their own standards but also support the work of international agencies. The *NISO Data Dictionary: Technical Metadata for Digital Still Images* (released as a draft standard in 2002) is particularly worthy of note, because it was developed for cultural institutions (and other organizations) interested in maintaining collections of digital still images. (See *Selecting a Metadata Schema*). Technical standards may also be developed within an industry or an individual company. These may or may not be subjected to a formal standards-making process and are often proprietary.

Note that standards evolve and new standards emerge. Ensuring that imaging processes conform to current standards will involve vigilance and a continual investment in updating and **migrating** information.