

1 Purpose of this Standard

The purpose of this standard is to provide the basic foundation for establishing the structures for housing documentation and data files or information.

2 Risks of non-compliance

Some of the risks of not having, or not complying with these standards are:

- Folders structures will become convoluted
- File paths will become onerous and may corrupt files
- Files will be duplicated by users for various reasons (ease of access, distrust in storage structure, inadequate workflows)
- Folders may be copied or moved into other locations in error, duplicating or losing information
- Files and folders may be deleted
- Inappropriate securities will lead to individuals accessing files that should not be available to them
- A lack of metadata will inhibit the ability for users to search for files
- Electronic and digital data will not be capable of integration with other software applications
- Introduction of legacy data (from acquisitions of facilities or clients) will be difficult

3 Overview

Folder structures are typically a method to store documentation and data files in a manner in which individuals can locate and access that information, as it is published as well as at a later date.

Metadata is a method of attaching pieces of information to a file that is not found in the filename or in the document or drawing number.

Both the folder structure and the metadata are the primary bases for security of data.

4 Folder Structures

In the absence of a software application that acts as either a repository or an interface with the network drives, organizations will typically rely solely on a network drive.

Folder structures should take into consideration Information Technology infrastructures and limitations, such as the length of characters allowed in a file path and storage limits, and the security permission requirements for groupings of files.

4.1 Documentation and Data folders

The following elements must be considered:

- What categories of documentation and data are there
- What classifications of documentation and data are there
- How many different groups will utilize the documentation and data
- How do those groups typically search for or access information
- Do the files need to be modified by more than one group
- How can the files be stored to ensure there is no duplication across multiple folders
- What is the workflow of the information

- What is the lifecycle of the information
- How will the data be archived
- How will the data be audited

All efforts must be made to reduce the depth of sub-folders in a folder structure as it increases the consumer's need for drilling down, it adds to the length of the file path, and creates an environment of confusion in how to use the structure.

A balance between the information found in the filename and file's number, and the detail in the folder structure must be established, ensuring redundant sorting information does not occur unless absolutely required.

The folder structure and the nomenclature must be created in conjunction with each other.

In the event that software is available, there may still be the requirement for a folder structure to allow for an explorer window style search option for consumers. However, because there is the support of an integrated and federated search tool, the folder structure can be further simplified.

4.2 3D Model folders

3D model files in their modifiable form are broken down to allow multiple different designers the ability to modify the files. It also prevents the whole model file, which can be excessively large, from crashing the typical computer when it is opened.

Models are typically broken down by physical area of the facility, and then further by an engineering or technical discipline. Each file is then referenced up into a collector file for read only viewing.

This allows reviewers the ability to see all the discipline files for one area at a time.

If the files are broken down by discipline first, and then by area, it limits the ability to view a complete area of the facility without a lot of re-organization of the modifiable files.

5 Metadata

Metadata is defined as data about data. It gives the consumers of the information additional pieces of information in which to group or search for data.

In a manual system that utilizes only a network drive, metadata can be identified in a manual index using any spread sheeting application. If software is available and it has metadata and advanced searching capabilities, the metadata should be the primary method for entering, storing, providing access, and searching for the files.

In creating the metadata, a number of elements need to be considered:

- What information matters to the management of documentation and data
- What information is required by each group who consumes the information
- What other systems exist that create/house some of the metadata
- What details exist in the documentation or data files
- How will users know that the version they are viewing is the current or final version
- How likely/what is the process for merging acquisition or legacy data into the system
- What resolution (amount of data) is relevant, given other project requirements

6 Security of data

The security of data is vital to protect the integrity of the use and manipulation of information.

Securities should be set by groups of individuals that share the same role or job description, and each group should be given access only to the files they need, and only in the manner they need them.

All efforts must be made to avoid giving access by individual user.

The following considerations must be had:

- Who should have access to add or delete published data
- Who should have access to view each different category of documentation and data
- Who should have access to modify the various classifications of files
- Who will be controlling the sign in and sign out of modifiable facility drawings and documents
- What can the IT or software system manage for security groups
- What access is required for groups who are part of a workflow

Folder structures, metadata, and securities must be properly documented, reviewed, and approved. This allows for better communication to functions that will set up the structure as well as give a basis for continual improvement reviews at a later date.