White Paper Proposals

# Topic: Using Version Control for Documents

## Learning Objectives:

**Understand why document version control is important**

Documents are revised throughout their useful life, and often have multiple authors or collaborators. When multiple individuals are editing a document, it can be difficult to track changes between versions. A naïve solution is to include a version in the document title, but this quickly becomes unwieldy. In large organizations, like the FAA or other federal agencies, document distribution is also challenging – clients may be working off an old version of a file which was attached to an email, and the underlying document has since been updated, leading to confusion and potential disaster. A more formal approach to document version control will address these issues and allow for more rapid, accurate, and efficient collaboration and communication.

**Identify tools and techniques for document versioning**

Some existing tools already use versioning: Word files can track changes and Sharepoint can track versions over time. These options are rarely used, however, and are difficult to implement. The MS Word change-tracking solution introduces its own problem of a single point of failure – if the file becomes corrupted, all versions are lost. Ad hoc methods currently used leave file systems cluttered and cause confusion, so any potential solution will need to avoid those pitfalls.

Github, Bitbucket, and Gitlab are three popular cloud-based solutions for document versioning, and the git program and server are deployable on private machines behind the firewall, if that degree of security is required. These tools allow for collaboration, multiple authors, organizational ownership, and easy difference tracking for most file types.

The ability to quickly see the differences between two versions of the same file is one of GitHub’s most useful features, but it cannot work with proprietary or binary files (like .docx or .xlsx files). This restriction can be circumvented by creating a markdown version of the file alongside the Word version (via the Writage tool for MS Word). The markdown documents can be parsed by GitHub (and Bitbucket, Gitlab, etc)’s editors, and will show the differences between the underlying files.

**Be capable of installing and using necessary tools for version control**

The basic requirements for using GitHub for document management are an installation of git on the local machine and an account at GitHub.com. Additional tools, like the GitHub desktop make versioning much easier, and plugin like Writage allow for easy conversion from proprietary formats to formats which will allow easy highlighting of differences.