Project Opportunity Rationale
PSFA Permanent Archive Services

Use this form to demonstrate a projects alignment with Agency Strategic Goals; the narrative should fit on one-page and should be primarily qualitative.

SECTION	NARRATIVE
BACKGROUND	All electronic storage media has a finite lifetime. In addition, media is sensitive to a variety of environmental factors: heat, light, humidity, and handling damage. All of these factors accelerate the natural lifetime of media, so even in the best of environments, archival media must be refreshed every 7 to 10 years, or the archived assets will be irretrievably lost. Permanent archival storage must be resilient and robust so that the permanent copy is able to withstand environmental and usage for as long as possible before refreshment to either the original format, or a newer format. We estimate 10 months of one FTE is required to complete the initial task of permanently archiving data. At that rate and using conventional DVD media, once every 8 years PSFA will need to begin the task of refreshing the permanent archive. Each refresh will require approximately 200% more work than the prior version because it will need to be read-in first. In addition, data growth over the prior decade will contribute to the longer duration. Assuming 150% data growth over 10 years, and adding 50% increase in time required to reading the prior archive, we estimate the job of archiving will become a full-time job for two FTE before 2035.
OPPORTUNITY	M Disc is an optical write-once medium that is by any common disc player, but created using a special writer. The storage layer of an M Disc is composed of "stone-like" material (believed to be carbon fiber composite). Unlike conventional discs, which use dye, M Disc writes data to a "stone-like" substrate. The U.S. Department of Defense found M-DISC to be more durable than conventional discs subjecting them to standards of ECMA-379 (185 °F, 85% relative humidity) and full-spectrum light. The French National Laboratory of Metrology and Testing subjected M Discs to an accelerated aging test and found them to be substantively better than discs using organic dyes. M Discs were determined to be able to withstand a 1000-year lifecycle although; the outer polycarbonate "shell" lasts just 100 years. Assuming the lesser of the two durations, adopting M Disc for permanent archival of PSFA electronic assets builds 10-fold the operations agility of processing refreshes of the archival library. Instead of an archival refresh every decade, the first refresh of the original archive may begin several decades into the future.
STRATEGIC ALIGNMENT	Permanent preservation of infrequently accessed data assets aligns with PSFA 2018 strategic goals. 1) "Improving and streamlining Agency processes" through the develop [of] electronic processes and tools to gather facilities' data with uniform reporting to allow for improved analysis, and 2) "Planning, designing, constructing, and maintaining the best possible school facilities" by improvement in cross platform search-ability, cross-referencing, sorting, and analysis.
PROPOSAL	Infrequently accessed data assets introduces orders of magnitude greater risk of data loss and unnecessarily expends "backup" resources because of the absence of a permanent archival strategy and business process, and the technology to support them. PSFA IST department will undertake a project to introduce a permanent archival solution based on M Disc technology; which will include software to index assets and an application for users to be able to search and retrieve them in a similar form and manner to exploring files via Windows file explorer. Archives will be stored in a physical file system on site, and a copy sent offsite for permanent storage (Iron Mountain, for example). The local permanent copy may be 'checked out" by users as needed. PSFA IST proposes using software to iterate which files and folders have not been accessed in at minimum, 5 years, and queuing them for permanent archival. Upon archival and indexing, the media would be added to the physical archive catalogue and available for check out, and the files/folder removed from the share.

*Approved for **Phase I Initiation**:*

Agency Director or Deputy Director	**Date Approved**