

Plan Overview

A Data Management Plan created using DMPTool

Title: Additive Manufacturing for Spare Parts Supply Chain

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Additive Manufacturing for Spare Parts Supply Chain

Roles and responsibilities

The Data Management Plan should outline the rights and obligations of all parties as to their roles and responsibilities in the management and retention of research data. It must also consider changes to roles and responsibilities that will occur should a principal investigator or co-PI leave the institution.

Dr. Jin will take the responsibility for data management and monitoring the data management plan. His graduate student involved in this project will assist implementing the data management plan. This data management plan will be checked quarterly with a check list. The Department of Industrial and Systems Engineering at University of Tennessee at Knoxville (UTK) will take responsibility over time for decision about the data if the original personnel are no longer available.

Expected data

The Data Management Plan should describe the types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project. It should then describe the expected types of data to be retained.

The data will include features and demand patterns of spare parts used in this research and resulting solution data related to sourcing and network optimization. The data will be stored in text files or Excel spreadsheets. Features and demand pattern of spare parts will be collected or simulated through the interactions with local businesses. The solution data will be generated through the models and algorithms to be developed in this research. No existing data will be used. The collected data will be cleaned and modified to protect credentials of collaborating businesses. The data will be manually checked for quality.

Period of data retention

The Data Management Plan should describe the period of data retention. Minimum data retention of research data is three years after conclusion of the award or three years after public release, whichever is later. Public release of data should be at the earliest reasonable time. A reasonable standard of timeliness is to make the data accessible immediately after publication, where submission for publication is also expected to be timely. Exceptions requiring longer retention periods may occur when data supports patents, when questions arise from inquiries or investigations with respect to research, or when a student is

involved, requiring data to be retained a timely period after the degree is awarded. Research data that support patents should be retained for the entire term of the patent. Longer retention periods may also be necessary when data represents a large collection that is widely useful to the research community. For example, special circumstances arise from the collection and analysis of large, longitudinal data sets that may require retention for more than three years. Project data-retention and data-sharing policies should account for these needs.

The collected and created data will be kept for ten years after the completion of the project.

Data formats and metadata

The Data Management Plan should describe the specific data formats, media, including any metadata.

The data include raw data and solution data along with the source codes implementing the algorithms to be developed during this project. The data will also include the business cases decision support tools (including source codes), reports and/or others. These raw data and solution data will be in text files and Excel spreadsheet. The algorithm program will include Python and some other open source programs. The metadata can be created in the form of a Readme file.

Data dissemination and policies for public access, sharing and publication delays

The Data Management Plan should clearly articulate how "sharing of primary data" is to be implemented. It should describe dissemination approaches that will be used to make data available to others. Policies for public access and sharing should be described, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements. Research centers and major partnerships with industry or other user communities must also address how data are to be shared and managed with partners, center members, and other major stakeholders. Publication delay policies (if applicable) must be clearly stated. Investigators are expected to submit significant findings for publication quickly that are consistent with the publication delay obligations of key partners, such as industrial members of a research center.

Most data will be stored on local computers at the Logistics, Transportation, and Supply Chain lab and secured Trace systems at UTK. People authorized by the PI will have the access to the data. The decision support tools will be available through a website housed at UTK. There are no ethical and

privacy issues for the data involved in this project and no IRB protocol is applicable in this project. The University of Tennessee at Knoxville will hold the intellectual property rights to the data. Academic and research community, businesses, and government agencies may be interested in the data. They may use the data to make their decisions on whether and/or how to incorporate additive manufacturing in their supply chains. The PI plans to publish findings at academic journals and does not expect prospective publishers place any restrictions on other avenue of publications. The PI will retain the right to use the data in three years before opening it up to wider use at the completion of this project. The embargo periods are mainly for publisher reasons but the data will be available for reviewers and editors before the publication is accessible to the public.

Data storage and preservation of access

The DMP should describe physical and cyber resources and facilities that will be used for the effective preservation and storage of research data. In collaborative proposals or proposals involving sub-awards, the lead PI is responsible for assuring data storage and access.

Data will be permanently archived with University of Tennessee' Trace. The PI and his student will backup data from their local computers to UTK's Trace. Access to the data through UTK's Trace will be available for 10 years after the end of this project.
