

RESPONSE TO THE REQUEST FOR INFORMATION FOR THE FREEDOM OF INFORMATION ACT TECHNOLOGY SHOWCASE

Progressive Technology Federal Systems, Inc. (PTFS) understands that the Chief FOIA Officers Council's Technology Committee is planning a two-day NexGen FOIA Tech Showcase event in February 2022 to identify FOIA technology solutions for federal agencies. PTFS is fully experienced with the intelligence community and other federal agencies' life cycle processes associated with document classification-declassification and associated records processing, and we are interested in presenting a video-demonstrations during the Tech Showcase for the following Topic Areas: **eDiscovery/electronic record search tools**

Our corporate information is as follows:

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PROGRESSIVE TECHNOLOGY FEDERAL SYSTEMS, INC. OUTLINE FOR DAY # 1 TOPIC AREA # 1 eDiscovery/electronic record search tools

1. PTFS OVERVIEW

PTFS specializes in the development and implementation of product and service solutions in the areas of enterprise content management, document classification-declassification and redaction, media digitization/conversion and associated records processing. We are the Original Equipment Manufacturer (OEM) of Knowvation™, a Commercial-Off-the-Shelf (COTS) enterprise content services platform (CSP) used by the Federal Government, state and local agencies and other organizations. PTFS has developed complementary capabilities for the core Knowvation product, including Knowvation DX™ which has workflow and redaction capabilities to support redaction, PII removal and declassification processing.

2. KNOWVATION CSP PRODUCT OVERVIEW

PTFS' Knowvation software is a complete CSP platform that provides rich search and discovery capabilities with the flexibility to fit in any existing architecture. Built on robust, field-proven technology, Knowvation is designed to reduce the time and cost of finding information from documentation and related files, and providing automation technology to identify and address maintenance needs. Its exceptional file storage, management, search and discovery capabilities make information accessible to authorized users. The application is file type agnostic and supports over 200 different types of file formats out of the box, including all documents and text format types, imagery, videos and most geospatial file formats.

Knowvation is a server-based solution that can be accessed through any web browser. It is simple to install and configure even in the most complex information technology (IT) environments. Knowvation has a Graphical User Interfaces (GUI) to make using, managing and loading data onto the system quick and easy. To use Knowvation, an administrator can simply direct it at local data, data on the web or data on servers to build a wide-ranging catalog of digital resources. Various data sources can be searched with any of the following methods: Pattern (fuzzy logic), Concept (natural language), or Boolean (standard search) in combination with geospatial coordinates or

bounding boxes. These methods can be used on full text in digital files, key metadata fields or a combination of both.

Knowvation utilizes a proprietary enhanced version the Apache Solr search engine to power the data search functions. Those search capabilities are enhanced by integrating and assessing tools that expand those features to include Natural Language Processing (NLP), Machine Learning (ML) and Artificial Intelligence (AI). These capabilities are enhanced and developed with Knowvation user's experience as the focal point. PTFS has several technologies and approaches for adding custom NLP, including data tagging on ingest, as well as full text NLP queries.

2.1. Knowvation CSP Functions

Search and Discovery. Knowvation is a completely web-based application designed with a user-friendly interface to cater to the self-service model with powerful searching capabilities for users to access approved content and download files with or without a login. Knowvation is compatible with the latest web browsers, including Internet Explorer (IE) 11, Chrome, Firefox, and Safari. It offers unique text discovery services, such as Boolean, Concept and Pattern searching, to provide context that is relevant, precise and unified. Below is more detailed information on each type of search.

- **Boolean (Keyword Search)**
- **Concept (Intent-Based Search/NLP)**
- **Pattern (Fuzzy-Text Search)**
- **Geospatial (Visual) Query**

Optical Character Recognition (OCR). Knowvation provides embedded OCR functionality. The OCR processes an image file, creates text based characters from the image and records the spatial page coordinates for each character. When a PDF file is generated by Knowvation the full-text content becomes searchable and permits the system to display hit-highlights in the file for review and analysis. Once OCRed text has been created, it can be used in a cut-and-paste manner for repurposing or metadata creation and can be saved in a variety of formats. The OCR process can be completed during ingest in an automated manner or on digital objects already resident in the repository. PTFS utilizes a specially developed and tuned best-of-breed OCR engine to process images and create the most accurate OCR currently available in the industry. The OCR process can be applied to a diverse set of file formats including image-only PDFs, JPEGs, TIFFs, and other image file types.

Machine Learning Add-On. While artificial intelligence systems are the panacea for a FOIA solution, machine learning is a real-world capability that will enhance Knowvation CSP's sensitive content library. Information provided by analysts will enhance the system's ability to assist researchers. This capability is planned in the Knowvation CSP roadmap and will provide a method for the system to become smarter as highly knowledgeable and trained FOIA analysts perform their job. This add-on capability was proposed for research and development for the product under a US Air Force Small Business Innovative Research Grant which was recently awarded to PTFS.