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# FUNCTIONAL and TECHNICAL REQUIREMENTS DOCUMENT

## *FDP Expanded Clearinghouse Pilot Phase 2 – Web-based System*

### ***DEVELOPMENT & IMPLEMENTATION COLLABORATION BETWEEN:***

The Federal Demonstration Partnership (FDP)  
Vanderbilt University Medical Center (VUMC)  
University of Washington (UW)  
FDP Expanded Clearinghouse Pilot Entities

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## 1.0 GENERAL INFORMATION

### 1.1 Purpose

The purpose of this document is to provide information to the FDP Executive Committee sufficient to allow their endorsement of the development, maintenance, hosting, and use of an on-line FDP Expanded Clearinghouse system [see [http://sites.nationalacademies.org/PGA/fdp/PGA\\_171520](http://sites.nationalacademies.org/PGA/fdp/PGA_171520)]. This document explains the high-level technical and functional requirements, and provides information about the roles and responsibilities needed to support such a system, including the obligations of FDP and the obligations of other parties. The document also includes a cost estimate for developing and maintaining this type of system for FDP members. It does not include details about expanding access to the system to non-FDP members, though the system will be designed in such a way to permit such an expansion.

### 1.2 Scope

This Functional and Technical Requirements Document outlines the functional, performance, security and other system requirements identified by the FDP Expanded Clearinghouse System Development Working Group (EC-SDWG) as the proposed information system solution for the Expanded Clearinghouse.

The On-line-Expanded Clearinghouse will

- House on-line profiles of FDP member institutions documenting the static/annual information needed by pass-through entities for routine subaward issuance and subrecipient monitoring activities, such as annual audit results, F&A and fringe benefit rates, and key contacts. The content of on-line profiles is expected to mirror the content currently found in the Expanded Clearinghouse pilot profiles found at: [http://sites.nationalacademies.org/PGA/fdp/PGA\\_171219](http://sites.nationalacademies.org/PGA/fdp/PGA_171219).
- Allow secure access by FDP member institution representatives to create and maintain their on-line profiles, including deployment of real-time data validation mechanisms where practical.
- Provide notifications to profile-holders when time-sensitive data are obsolete (e.g. expired audit information, outdated SAM record, etc.)
- Import data from secure government systems needed for the On-Line profiles (e.g., SAM, Federal Audit Clearinghouse) to expedite profile completion and increase timeliness of data (FUTURE)
- Allow FDP member institutions to manage (add, change, delete) user rights for profile maintenance within their institution
- Allow FDP members and non-members to view published profiles, and download copies of individual profiles
- Allow FDP members (only) to export On-Line Expanded Clearinghouse profile data via an Application Program Interface (API) for use in their local subaward or contract and grant management systems
- Provide data for use in discussions with the federal government about reducing administrative burden and wise stewardship of federal funds.

The scope of this work includes the initial development of the web based system, based on information and feedback gathered during the Phase 1 Pilot. References to future development considerations are included in this proposal for information purposes only.

### 1.3 Project References

Key documents supporting this proposal are listed below as reference:

- Original FDP Expanded Clearinghouse [Phase 1 Pilot Proposal](#) to FDP Executive Committee
- Initial proposal for system development from Vanderbilt (*Appendix A*)
- Notes from initial system development working group meeting
- [Entity Profile](#) currently in use

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## 1.4 Acronyms and/or Definitions

API	Application Programming Interface, a set of protocols or standards for communicating with web-based applications
Community	FDP member institutions
CSS3	Cascading Style Sheets; language used to describe the presentation of a document written in markup language, e.g., HTML
Composer package manager	Tool for PHP development
ECWG	FDP Expanded Clearinghouse Working Group
EC-SDWG	FDP Expanded Clearinghouse System Development Working Group
Entity	An FDP member institution or organization participating in the pilot, identified by DUNS number
FAC	Federal Audit Clearinghouse, a public database of single audit results maintained by the Office of Management and Budget
Git version control	Free and open-source version control system
HTML 5	HyperText Markup Language; the fifth and current version of the HTML standard
InCommon Federation	A consortium providing a service enabling users to use single sign-on (their institutional/organization account) to access on-line resources that take part in the federation
ISP	Internet Service Provider
JavaScript	Programming language used extensively in website development
jQuery for Javascript	Javascript library
JSON format	Data-interchange format
MySQL	Open-source database management system
PHP	General-purpose scripting language especially suited to web development
PHP Symfony	PHP framework to create websites and web applications
RESTful API	An API that uses a standard set of HTTP requests
SAM	System for Award Management, searchable online database of entities and their eligibility to receive federal funds

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## 1.5 Points of Contact

### 1.5.1 Information & Coordination

Points of Contact relevant to this project are listed on the first page of this proposal. Once the project has received Executive Committee approval, this document will serve as a formal MOU detailing the agreed upon responsibilities and requirements. A representative from each organization will be asked to sign the document documenting their organization's acceptance of its roles and responsibilities.

### 1.5.2 Roles and Responsibilities

**VUMC** VUMC will serve as the lead developer for this Phase as well as be the lead on ongoing maintenance and support until such time as any of the parties and/or the FDP Executive Committee wish to transfer duties to another party

**EC-SDWG** The system development working group will support VUMC in the development and maintenance of this system and provide review, feedback and approval during all stages of development.

**ECWG** This working group will be responsible for the administrative oversight and operations of the Clearinghouse system as detailed in the next section.

**UW** UW will serve as part of the system development group and provide back-up development and technical support should it be needed.

**FDP** The FDP will serve as the ultimate oversight, in the form of the FDP Executive Committee to ensure appropriate review, support and approval is provided throughout Phase 2.

### ***Pilot Entities - Requirements of FDP Member Institution Subscribers***

FDP Members who subscribe to the system will sign a business use agreement committing to the following:

- Subscribers will prepare, submit and certify their initial profile within 60 days of their logon ID being created (the subscriber's profile will not be publically viewable until this step is complete)
- Subscribers agree to have internal processes in place to ensure their profile data are maintained and kept current, as follows:
  - Must be updated within 5 business days after a change in status:
    - Suspension and Debarment status
  - Must be updated within 30 days after a change:
    - Audit information
    - F&A Rate agreement
    - Fringe Benefit rate information
    - Key Contact information
    - Addition or loss of a standard accreditation or change in its status (e.g. AAHRP, AALAC)
    - Expiration dates of approved systems (e.g. Purchasing System, etc.)
- All other information must be reviewed at least annually.
- Subscribers routinely not adhering to profile maintenance standards may be suspended at the sole discretion of the FDP. No subscriber will be suspended without having first had an opportunity to cure.
- Pass-through entity subscribers agree to use Subscriber' profiles to obtain static/annual information for their subawards, and to not request this same information in other formats from fellow subscribers.
- Subscribers agree to participate in standardized subaward tracking during the Pilot time period, and to furnish their data as requested by the FDP Expanded Clearinghouse Co-Chairs.
- Subscribers who use the API agree to refresh their local data at least weekly, or at each time a profile is downloaded for use, whichever they prefer.

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### 1.5.3 Administrative Support and Oversight

The ECWG will operate as the support team for the Online Clearinghouse performing the following tasks:

- Develop and maintain all necessary user documentation, FAQs, surveys and reports
- Provide EC-SDWG necessary list of values or detailed functional requirement for areas such as data elements to base alerts on, key fields for validation, etc
- Review each profile when submitted or modified and review all profiles regularly to ensure data integrity remains high
- Monitor use of the clearinghouse including dates of API downloads by users, frequency of updates by users and other functionality to monitor the needs of the clearinghouse
- Maintain awareness of needs related to changes in data elements, additions, deletions or modifications
- Coordinate communication among the users and provide users regular updates and status reports on the Pilot
- Receive and track ongoing feedback from the users
- Maintain all user required resource documents on clearinghouse webpage
- Maintain clearinghouse webpage overall
- Coordinate review of overall clearinghouse at least annually on an ongoing basis

## 2.0 CURRENT SYSTEM SUMMARY

There is currently no single, on-line electronic database containing all information needed for pass-through entities to perform risk assessments and to do ongoing monitoring of static or annualized data related to subrecipient monitoring. Select data are instead housed in certain federal government systems, such as the System for Award Management (SAM) or the Federal Audit Clearinghouse (FAC) with the remainder retained by the individual entities themselves. Certain data expected under the Uniform Guidance to be used for this purpose are as yet unavailable nationally to pass-through entities, including copies of A-133/Single Audits or federal management decisions. This lack of data and dispersion of data led to research institutions creating data collection documents used with each other at time of subaward issuance or updating. The plethora of forms coupled with most institutions collecting data on a per-subaward basis rather than on a per-entity basis has led to significant administrative burden without commensurate benefit from a risk management perspective.

The FDP Expanded Clearinghouse Phase 1 Pilot created a process whereby each pilot entity could provide a standard set of data and answers to questions in the form of an Entity Profile. These Entity Profiles are currently maintained in excel and converted to pdf for to a centralized [web site repository](#). Data relative to administrative burden relief is being captured and will be reported quarterly beginning Fall 2016; early data suggest the relief will be meaningful. The current process, however, relies on limited data validation opportunities on the profile form itself, as well as significant manual review, approval/certification and loading of documents by multiple individuals involved in the process (institutional representatives, FDP Expanded Clearinghouse volunteers, and FDP staff.) The profiles themselves generally require updating at least twice per year, resulting in significant ongoing burden. In addition, download of data for use in local systems is not available. These results, along with the remarkable success of the original FDP Financial Conflict of Interest Clearinghouse that was eventually opened to non-FDP members and now includes more than 1000 entities, signified a need to change to a more automated and electronically robust process for the longer term. This proposal reflects the FDP's efforts to build that electronically robust system.

## 3.0 FUNCTIONAL REQUIREMENTS AND USER IMPACTS

### 3.1 Summary of Functions

The FDP Expanded Clearinghouse requires a technology based solution for a community-wide data collection and management system whose primary functions include:

- Data Accessibility
- Entity Profile Administration
- User Accounts
- Data Integrity
- FDP Administration Panel
- System Security
- Links to related systems/external compliance databases

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### 3.1.1 Functional Requirements

In order to accomplish the above articulated need, the FDP Expanded Clearinghouse requires a community-wide data collection and management system that includes the following base functionality: (*See Appendix B for system mock up*)

- ***Data Accessibility***
  - Entity profile information is publicly available via a searchable website
  - Profile data is available for direct system-to-system access via an HTTP API (read only)
  - System will track the date and time of last API data pull
  - Profile details for individual institutions can be downloaded in Excel or PDF format
- ***Entity Profile Administration***
  - Entities may submit online requests to have their profile added to the clearinghouse
  - Authorized users can update the entity's profile directly on the website
  - Date and user name are logged when profile is changed
  - Designated entity representatives can delegate editing rights to other users at their institution
- ***User Accounts***
  - User accounts are password protected (Utilization of InCommon Federation will be considered in future phases of development )
  - Password reminders and resets are handled by the website
  - With the exception of system administrators, all user accounts are tied to an institution
- ***Data Integrity***
  - At designated intervals (at least monthly), the system sends an email reminding entities to update their profile
  - System will also be able to send reminders on certain data elements when the data has become out of date (SAM expiration date, Audit date, etc) A list of these data elements will be developed by the ECWG and provided to the ECSDWG.
  - If feasible, system will also provide alert/notification upon sign-in by entity user when any of the above dates or data elements requires updating
  - Consideration will be given to requiring a Profile update at FDP Annual report time to help ensure Profiles are kept current
  - New profiles must be reviewed and approved by FDP designee before appearing online
- ***FDP Administration Panel***
  - System provides designated FDP administrators with additional rights.
  - FDP Administrators create new entities and approve new profiles
  - FDP Administrators designate first primary user for entity
  - FDP Administrators can create, edit, and disable user accounts.
- ***System Security***
  - Public has read-only access via website
  - API provides read-only data access
  - Profile editing requires password-protected user account with manually-assigned rights
  - Change log records details on data modification (date, username)
  - Consideration will be given to potentially hiding of email address from public view to avoid collection by spam senders
- ***Links to related systems/external compliance databases***
  - Future development considerations include:
    - Links from each Entity Profile to Entity's SAM.gov page. Consideration will be given to a select set of fields in SAM that could be accessed to help "jump start" the profile creation (ECWG to compile list)
    - Assessment of feasibility of merging data from current FDP Institution Profile
    - A-133 data base integration
    - FCOI clearinghouse integration
    - Assessment of feasibility of utilizing data in the Federal Audit Clearinghouse (FAC)



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## 3.2 Summary of Impacts

### 3.2.1 FDP Organizational Impacts

The FDP Expanded Clearinghouse Web-based system will require an initial team of developers and testers. These roles will be filled by the EC-SDWG on a volunteer basis. The project will require administrative, project management, and training duties that will be performed by the ECWG. Any financial management needs of this project will be coordinated through David Wright, Mark Sweet and Pamela Webb with the FDP Executive Committee.

To support the ongoing needs of this system the FDP will require an oversight committee to oversee and manage the system and the community's data to ensure ongoing reliability and integrity of the system (ECWG). It is expected that once built, this system will exist on an ongoing basis with at least an annual review process build in to determine effectiveness, needs for updating or changes, potential need for termination, or other circumstances.

Entities will have access to their data and reporting, but publication of community-wide data will be authorized by the FDP Executive Committee.

### 3.2.2 FDP Operational Impacts

In anticipation that the web-based FDP Expanded Clearinghouse will eventually replace the various data collection components currently maintained by or through FDP we expect the long-term overall impact to FDP to streamline the type of data currently being housed on the FDP webpage. We anticipate an eventual time savings for FDP staff and members, since there will one combined and centralized location to house what is currently:

- FDP member institution profile
- A-133 data base
- FCOI clearinghouse
- FDP Expanded Clearinghouse excel/pdf repository

Users will interact with the system in real-time via the web. FDP members will be expected to acquire and maintain a secure and reliable internet connection adequate to facilitate data entry by their staff. Questions on the system in general, data entry, reporting and use will be facilitated by the FDP Expanded Clearinghouse Working Group. FDP pilot institutions are required to alter their current subrecipient entity forms and internal processes to accommodate the expected data collection and data entry, including timeliness. All user information, guidance and FAQ's will be developed by the ECWG and EC-SDWG and maintained on the FDP webpage. All Pilot entities will have access to instructions and training materials to access to the system, including FAQ's regarding the system.

The FDP Expanded Clearinghouse will be maintained in the current Excel spreadsheet / PDF repository fashion until such time as a web-based system has been developed, testing and fully adopted. Pilot entities will be required to assist in the transition between methods/systems.

### 3.2.3 FDP Expanded Clearinghouse System Development Working Group Impacts

The FDP Expanded Clearinghouse System Development Working Group will commit time and work together to accomplish the development and ongoing maintenance of the clearinghouse system in the following ways:

- Communication between and among group members
- Regular conference calls to review status and discuss open issues
- Establish and maintain up to date project timeline & status reports
- Functional and operational business side of the team will be represented by: Lynette, Jennifer, Pamela and ECWG
- Technical side of the team is represented by: Neal, Chris, Jason, Mark and David
- Lynette will operate as key point of contact for ECWG and UW's involvement
- Neal will operate as key point of contact for technical group at Vanderbilt
- A central location will be developed to maintain working group documents (Dropbox or similar)
  - Functional and technical specifications
  - Action lists and notes