TA Appointment Module (Xtrain) Scope Document

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Prepared for:

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REVISION HISTORY

Date	*Version*	*Description of Change*	*Author*
11/22/2002	1.0	Initial version	Steve Fitzgerald
12/11/2002	1.2	Modifications/Enhancements	Steve F
12/23/2002	1.3	Additional Changes	Steve F
03/20/2003	1.4	Added New advocates, workflow/status changes, and delegate information in actor section.	Steve Fitzgerald
04/01/2003	1.5	Incorporated suggestions from advocate	Steve Fitzgerald

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1 INTRODUCTION

The NIH currently awards approximately 1900 training grants per year(approx 17000 trainees). These training grants allow for multiple individuals to work on the development of their carreer research in exchange for a stipend (living allowance) and some form of tuition assistance. Each individual assigned to an appointment on a training grant (usually T32) must fill out several forms as part of the application process. The primary form that is filled out as part of the application process is PHS form 2271 (Statement of Appointment Form). PHS Form 2271 contains personal information about the trainee, such as name, address, educational background, as well as grant specific information, such as grant number, period of appointment, program director's name, and institution information.

Both the trainee and program director must sign form 2271.
Although the trainee and program director both sign the form, the program director is responsible for submitting the form to NIH. Program directors must submit statement of appointment forms to NIH for all individuals appointed or reappointed to a training grant.

Over the past several years, NIH has developed several computer programs to assist in the processing of appointments, both for external users (program directors) and internal users (NIH staff). The programs currently in use are X-Train, (currently ver 1.5) and the TA (Trainee Activities) module. **X-train** is used by **extramural users** (Program directors) to submit appointment data, (an electronic equivalent to the 2271 form). The **TA module** of IMPACII is used by **NIH staff** to approve or reject appointments, and to process 2271 forms that are submitted in paper form. The long term plan for X-train is to have one appointment interface for both external and internal users.

The ERA (Electronic Research Administration), a division of the OD (office of Director) at NIH, has recently undertaken an initiative to leverage all IT software development to utilize the J2EE (Java 2, Enterprise Edition) software architecture. The current version of X-train utilizes technology that is not part of the J2EE architecture, and therefore will be redesigned to be J2EE compliant. Also, besides getting a technology upgrade, some of the business processes will change to better facilitate submission and approval of appointment data. Several business processes common to both external and internal NIH users will be combined in the new version of Xtrain. The new Xtrain will be developed in several iterations, with each successive iteration adding additional functionality. The first version of X-train (2.0) will deal only with the submission of appointment data. Later versions will provide enhancements such as trainee registration and termination, leading to the eventual retirement of the IMPACII Trainee Activities module. See the X-train 2.0 deployment plan for more details of what will be included in each iteration.

1.1 Purpose

The purpose of this Scope document is to collect, analyze, and define high-level needs and features of the X-train system. It focuses on the capabilities needed by the

stakeholders and the target users and why these needs exist. The details of how the X-train system fulfills these needs are detailed in use–case and supplementary specifications.

1.2 Scope

This document will detail the high level functional requirements of the trainee appointment module part of X-train. This document will not address future planned enhancements to X-train, including trainee registration, and the ability to manage terminations. See the X-train 2.x use case survey for descriptions of other planned X-train/TA modules. This document will not address non-functional requirements. Non functional requirements can be found in the supplementary specification.

1.3 Definitions, Acronyms and Abbreviations

Refer to the project Glossary for all definitions, acronyms and abbreviations.

1.4 References

1. PHS Form 2271, Statement of Training Appointment Form
2. Xtrain 1.5 Final System Design Document, April 19, 2001
3. Payback Agreement Form
4. http://grants1.nih.gov/training/extramural.htm - NIH Extramural training information

1.5 Overview

This Scope Document is divided into 10 sections. Section 1 introduces the document. Section 2 provides the business opportunity for the Xtrain Appointment module. Section 3 describes the users and stakeholders of the system. Section 4 overviews the system. Section 5 shows the dataflow of the Trainee Appointment Module. Section 6 shows the workflow of the system. Section 7 lists the Trainee Appointment module high-level features. Sections 8, 9, and 10 discuss constraints, quality ranges and feature priorities respectively.

2 POSITIONING

2.1 Business Opportunity/Scope

There are currently 2 ways that trainee appointment data can be provided to NIH; the 2271 paper form, and X-train 1.5. Many users are still using the 2271 form, and submit it to NIH via conventional mail. Most of the program directors using the paper 2271 form would benefit from a more robust, user friendly version of X-train. The current version of Xtrain, version1.5, allows program directors to submit training appointments, in lieu of using PHS form 2271. It has been used by several institutions, and has been well received by those who have used it. Some of the features of the current version of X-train include the submission of electronic appointments and the ability to view trainee rosters (a list of trainees on grant).
The new Xtrain Trainee Appointment module will provide a technology upgrade to the existing system, make it easier to use, improve data quality, and provide for some

economies of scale by consolidating functionality currently spread across several applications. The new version will also save money on maintenance costs associated with the COMMONS 1.x database. X-train 1.5 currently utilizes version 1 of the Commons database. Recently, all Commons applications, except for Xtrain, were migrated to a new database. When X-train is migrated to the new environment, version 1.0 of the database will no longer be needed, thus saving significant maintenance costs. X-train 2.0 will also be able to build upon the lessons learned from previous J2EE migrations, and be able to reuse a significant amount of newly developed code, including login functionality, account administration functionality, and PPF administration.
As mentioned previously, X-train 2.0 will be developed in several iterations. The first iteration will basically replace the existing functionality in Xtrain 1.5, with a few workflow enhancements. This first iteration will be used by Program directors only. Future versions will allow NIH staff to process appointment information from the same/similar interface.

3 STAKEHOLDER AND USER DESCRIPTIONS

To effectively implement the Trainee Appointment system, it is necessary to identify all stakeholders and target users. This section provides a profile for each stakeholder and user involved with the Trainee Appointment (X-train) system.

3.1 User Environment

The X-train user community is divided into two users groups: extramural users and NIH users. For purposes of this document, it is assumed that all users have access to personal computers and the Internet. Currently, most appointment processing still occurs in the paper world. Most appointment requests come to NIH by means of the form 2271. Although X-train 1.5 allows for electronic submission of trainee appointments, it does not have a large user base. It is expected that a more refined version of the application will lead to a large increase in users. The current version of X-train has had some technical and design problems that have decreased it's dependability, and at times has been cumbersome to use. The new version of X-train will address these issues so that it is easier to use and more stable.

3.2 Stakeholder Summary

This section presents a summary list of all stakeholders, including what they represent with respect to the development of the Xtrain Trainee Appointment system, and the role they play in the development.

Name	Represents	Role
NIH IT Management	IT Department	Ensure that the project stays within budget and schedule.
Workgroup on extramural training systems (WETS)	Extramural Community	Ensure that the project meets the expectations of the extramural and NIH user community. This is a group lead by the group advocates.
Commons Working Group (CWG)	Extramural Community	Ensure that the project meets the expectations of the extramural user community.
NIH Office of Extramural Research (OER)	NIH Extramural Research Policy	Ensure that the project meets the expectations of the NIH grants community.
NIH User Support	User Support	Ensure that the project has adequate help desk and user support resources.

Note: Program directors are represented via WETS and CWG

3.3 User Summary

This section presents a summary list of all users, including what they represent with respect to the Xtrain system, and how the stakeholders represent the user.

Name	Description	Stakeholder	User Status
Program Director	Institutional user responsible for managing the training grant. (Similar to Principal Investigator)	WETS, CWG	Current and future user.
Institutional Delegate	Person who is given authority to act on behalf of the program director when filling out electronic forms.	WETS, CWG	Current User (new to version 2.0)
Trainee	Person being appointed to a training grant	WETS,CWG	Future User
Payback Center Staff	Manage the tracking of NRSA service obligations.	OER	Future User
NIH Grants Mgmt staff	Users who approve/sign-off on appointments submitted via X-train	OER	Future User

3.4 Stakeholder Profiles

This section describes in detail the stakeholders' profiles, in terms of their roles, responsibilities, success criteria, and involvement in the development effort.

Stakeholder	Representative	Profile	
NIH IT Management (CIO Office)	J.J. McGowan, Tim Twomey	**Description**	Manages IT resources and priorities.
		Type	Project Manager.
		Responsibilities	Responsible for all aspects of eRA that interface with the extramural community.
		Success Criteria	Project completion within approved budget and schedule.
		Involvement	Project guidance and review.
		Deliverables	Responsible for delivering Xtrain system to the user community.
		Comments	None.
Commons Working Group	George Stone	**Description**	Policy and IT representation from the extramural user community.
		Type	Subject matter experts and expert users.
		Responsibilities	Communicates needs of the extramural community to the Xtrain project team. Validates project requirements.
		Success Criteria	Project meets the expectations of the extramural community.
		Involvement	Reviews artifacts. Provides feedback on initial deployments.
		Deliverables	None.
		Comments	None.
Group Advocates	Wally Schaffer, Barbara Huffman, Richard Ikeda	**Description**	Communicates needs of NIH community to the task manager and development leads
		Type	Subject matter expert.
		Responsibilities	Communicates needs of the extramural community to the Xtrain analyst team. Validates project requirements.
		Success Criteria	Project meets the expectations of the extramural community.
		Involvement	Reviews artifacts. Provides feedback on initial deployments, interprets policy.
		Deliverables	None.
		Comments	None.
ERA Analyst	Steve Fitzgerald	**Description**	Analyst responsible for gathering and documenting requirements. Also serves as liaison between developers and advocate.
		Type	Analyst staff
		Responsibilities	Document requirements, prepare cost estimates, manage development schedule, iteration planning,
		Success Criteria	Xtrain system provides end to end electronic processing of trainee data, including electronic appointments and electronic terminations.
		Involvement	Prepares documentation required to begin design and development tasks. Reports progress to ERA management and group advocate.
		Deliverables	Scope document, use cases, project plan (MS Project), other RUP artifacts.
		Comments	None.

Stakeholder	Representative	Profile	
Developer	Lisa Chen	**Description**	Manages development effort
		Type	Development Manager
		Responsibilities	Prepare design documentation, prepare design review material, manage development effort.
		Success Criteria	Xtrain system provides end to end electronic processing of trainee data, including electron appointments and electronic terminations.
		Involvement	Manages design and development
		Deliverables	Design documentation, user guide, test plans.
		Comments	None.

3.5 User Profiles

This section details the profile of each Xtrain user in terms of its roles, responsibilities, success criteria, and involvement in the Xtrain system development effort.

3.5.1 Extramural User Profiles

User	Represented By (Stakeholder)	Profile	
Extramural Xtrain User	WETS	**Description**	The individual responsible for verifying that a trainee is eligible to receive support.
		Type	Extramural Program director/delegate
		Responsibilities	Person who uses Xtrain to enter appointment data
		Success Criteria	System provides the capabilities to manage electronic trainee appointments.
		Involvement	Uses Xtrain system to process electronic 2271 forms
		Deliverables	None.
		Comments	None.
Extramural Xtrain Administrator	CWG,WETS	**Description**	Typically, this person directs the Research administration at the extramural organization.
		Type	Extramural Business Official.
		Responsibilities	Has account administration responsibility.
		Success Criteria	Provides capability to indicate which extramural users have Xtrain access.
		Involvement	Reviews artifacts. Pilot participant.
		Deliverables	None.
		Comments	None.

3.5.2 NIH User Profiles

User	Represented By (Stakeholder)	Profile	
TA User	OER	**Description**	Person who manages appointments at NIH (accepts, rejects, amends) Currently via TA module in IMPACII.
		Type	NIH Business Official. Grants Management Specialist (GMS), Payback Specialist.
		Responsibilities	This person will eventually be able to accept appointments via X-train. (version 2.1)

		Success Criteria	System provides the capabilities to accept, reject appointments submitted via X-train.
		Involvement	Currently uses TA module, will use X-train 2.1 to process appointment data.
		Deliverables	None.
		Comments	None.

4 PRODUCT OVERVIEW

This section provides a high-level view of the Xtrain system capabilities, interfaces to extramural users, the NIH eRA Commons system and the IMPAC II system.

4.1 Product Perspective

The Xtrain Trainee Appointment system will replace the current Xtrain System. There will be several releases of X-train, with each release adding new functionality.
The **first version** of X-train 2.0 will allow **external users** (program directors/delegates) to process appointment data. The **2nd version** of Xtrain (ver 2.1) will allow **NIH staff** to process appointment data, (instead of using the IMPACII TA module.)
The 2nd version of Xtrain will also allow for the electronic processing of termination notices.
The 3rd version of X-train (2.2) , will add the ability to register trainees to use the Commons, and will allow trainees the ability to log into the Commons and create/update their own PPF (personal profile) information. The new system will provide, at minimum, all current Xtrain functions. New functionality will be documented in relevant use case specifications, as well as in the Xtrain 2.0 deployment plan.

X-train version	Additional Functionality
2.0	Electronic Appointments for external users
2.1	Internal users (approvals/rejections) Termination notices for internal and external users
2.2	Trainee Registration

4.1.1 Relationship With IMPAC II/Commons

All submitted and accepted trainee appointment data will reside in the ERA enterprise DB. Initially, NIH staff will use The TA module of IMPAC II to review/accept/reject the submitted data. When version 2.1 of Xtrain is complete, NIH users will also be able to use Xtrain to review, submit, accept, and reject trainee appointments.

Program directors/delegates will access Xtrain 2.0 from the Commons 2.0 interface. These users will therefore need a Commons 2.0 account. Program director/delegate accounts will need to be created if they do not currently have an account. Please see the Commons Create Account Use Case for more information.

4.2 Summary of Capabilities

Grantee Customer Benefit	Supporting Features
Ability to submit electronic 2271 forms to NIH	• Delegation to a subordinate user (assistant)
Ability to submit termination notices to NIH (future release)	
Delegation of PPF entry to a Trainee (future release)	

NIH Customer Benefit	Supporting Features
Decrease in paperwork associated with processing paper forms	• All data captured on form is available via TA module.

4.3 Assumptions and Dependencies

The following assumptions and dependencies pertain to the Xtrain system.

To facilitate data entry, when amending an appointment or doing a reappointment, the system will pre-populate data fields when the data already exists in the database. Actual data to be pre-populated will be documented in the appropriate use cases.

The system will conform to ERA interface and architecture standards.

Program directors will have Commons accounts.

Program directors will have the ability to delegate authority to another user. (This is done under the Commons. See Commons Delegation Use Case.

4.4 Cost and Pricing

Xtrain 2.0 Development efforts will adhere to the cost guidelines established by the NIH eRA Steering Committee. See the Xtrain 2.0 business plan for detailed cost estimates for each Xtrain 2.x iteration.

4.5 Licensing and Installation

There are no licensing requirements. The interface is Web-based.

4.6 Xtrain Data Requirements

All data currently fillable by either the trainee or program director/delegate will be stored in the ERA database for retrieval by other applications.

4.7 Xtrain Data Retention

Every valid Xtrain submission will be maintained for historical purposes within the ERA system. Additional archiving requirements are specified in the global ERA supplementary specification.

4.8 Storage of paper 2271s

There is currently no requirement to store paper 2271s in the ERA database. (scanned copy of form)

5 PROCESS WORKFLOW

5.1 Trainee Appointment States

Status	Description
Submitted/Hold	Program director has submitted the appointment to NIH.
Accepted/Appointed	NIH staff has accepted the appointment, and the trainee would now show up on the roster as active.
Rejected	NIH staff has rejected the appointment.

Expired	Trainee was assigned to a previous support year of the grant.

5.2 Trainee Appointment Actions

These are the actions (functions) that can be performed using the system, based upon the state of the training appointment record. The State column descriptions are: See section 5.1 above. Note: NIH staff will be future users of Xtrain.

5.2.1 Actor Actions

State	Actor	Interface	Action	Details
Expired	*NIH Staff*	Xtrain	Re-appoint	Create a trainee appointment for the new support period. (future user)
Expired	PD	Xtrain	Re-appoint	Create a trainee appointment for the new support period.
Appointed	*NIH Staff*	Xtrain	Amend	Allows for an appointment to be amended. (NIH future user)
Appointed	PD	Xtrain	Amend	Allows for an appointment to be amended.
Submitted	PD	Xtrain	Submit	Submit a new appointment, reappointment, or amendment to NIH for review.
Submitted/Hold	*NIH*	TA	Review	Review the trainee appointment submission.
Submitted/Hold	*NIH*	TA	Accept	Create a new appointment record with status of 'Accepted Appointment'.
Rejected	*NIH*	TA	Reject	Send rejection email to ?? (PD)

Note: Need to verify the need to amend a previous appointment.

6 PRODUCT FEATURES

6.1 System (SYS) Features

FEAT1.1 Error Handling: The system shall graciously handle and log all errors encountered.

FEAT1.3 Browser Interface: The system shall provide a user interface through a thin, browser-based client.

FEAT1.4 Interface Conventions: The user interface shall follow standard interface conventions based on ERA standards.

FEAT1.5 Online Help: The user interface shall include online help features.

FEAT1.6 Availability. The system shall be generally available for use on a 24x7 basis with limited downtime acceptable for system upgrades and unexpected conditions.

FEAT1.7 Performance: The system shall provide performance and response times generally consistent with industry standards for Internet applications.

FEAT1.8 Auditing: The system shall provide the ability to capture the type of appointment made (new appointment, amendment, reappointment) for auditing purposes.

6.2 Security (SEC) Features

FEAT2.1 Login to X-train: Users shall provide a valid ID and password for entry to the COMMONS system.

FEAT2.2 Logout of COMMONS: Users shall be able to log out of the COMMONS system. The system shall automatically time-out users after a configured period of inactivity.

FEAT2.3: The system shall support the grouping of security privileges into logical roles for simplified management.

FEAT2.4: The system shall provide a persistent, secure connection between the user and the system.

6.3 User Administration (UA) Features

Not required. This system will validate users against the ERA database.

6.4 Professional Profile (PPF) Features

No Separate features required. See Xtrain Use Case Supplementary Specification for PPF data elements.

6.5 Extramural User (EU) Features

Submit Trainee Appointment: An extramural user shall be able to submit a trainee appointment to NIH for review, along with other supporting features documented in the Xtrain Use Cases.

As well as other features documented in the use cases, when a trainee is either added (new), amended, or re-appointed to a grant, the system will send an email to the trainee informing them that they have been added to the NIH grant and that the appointment is subject to approval by NIH staff. The text of the email will be defined at a later date.

7 CONSTRAINTS

Xtrain is a production system with an established user base. The current users of the system have certain expectations of the system, and the Xtrain group advocates best understand these expectations. Therefore any modification to the functionality (including new functionality) shall require the approval of the group advocates.

8 QUALITY RANGES

This section defines the quality ranges for performance, robustness, fault tolerance, usability and similar characteristics for the X-train system. These characteristics will be further elaborated in the Supplementary Specification document.

Availability: The system shall be available 24 hours a day, 7 days a week.

Usability: The system shall include online help for users. Users should not require a hardcopy manual of the system.

Maintainability: The system shall not hardcode system parameters.

9 OTHER PRODUCT REQUIREMENTS

9.1 Applicable Standards

The desktop user-interface shall conform to ERA Commons browser requirements.

All Xtrain development shall use the Java 2 Enterprise Edition (J2EE) framework.

9.2 System Requirements

The server component of the system shall operate on a J2EE server platform located at the NIH Center for Information Technology (CIT) or other site as specified by the NIH eRA project management team.

The extramural client component of the system shall operate on any personal computer with a browser.

9.3 Performance Requirements

Detailed performance requirements will be documented in the Supplementary Specification.

9.4 Environmental Requirements

None.

9.5 Deployment Requirements

10 DOCUMENTATION REQUIREMENTS

10.1 User Manual

Not Required.

10.2 Online Help

Online help shall be available to the user for each system function. Each online help topic shall link to the relevant online Frequently Asked Questions (FAQ).

10.3 Installation Guides, Configuration, Read Me File

The X-train system will be a Web-based application for the all users.

10.4 Labeling and Packaging

The ERA logo shall be prominent on documentation and splash screens.