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U.S. Federal Institute of Museum and Library Services  
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**A Radioactive MARC Record Approach for  
Interoperability Testing**

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**Project Work Plan**

**DRAFT**

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# Project Work Plan

## 1. Introduction

This document details a work plan to guide the planning and execution of a new phase of the Z39.50 Interoperability Testbed Project. In this phase, we will use a set of special, diagnostic MARC records to identify interoperability problems between a Z39.50 client and a Z39.50 server providing access to a database of bibliographic records supporting the search and retrieval functions of an online library catalog. We refer to these special, diagnostic records as radioactive MARC records. The project includes a number of separate but related activities. The structure of the work plan groups these activities into work areas, each of which describes the major activities, tasks, deliverables, timelines, and responsibilities. The work areas are:

- Creating MARC documentation database
- Developing Radioactive MARC records
- Identifying test searches
- Enhancing indexing guidelines for searching
- Creating testing procedures and processes
- Validating radioactive MARC record approach for interoperability testing
- Conducting interoperability testing

A number of these work areas will proceed in parallel, and there are interactions between the work areas.

## 2. Project Work Areas

### 2.1 Creating MARC documentation database

This work area focuses on creating a MySQL database to store MARC content designation information. The purpose of this database is to be able to quickly find all content designation structures that can be used for various formats of materials. The final implementation of the database will run under Linux; it will be web accessible via PHP scripts for administration as well as data input.

Activities	Tasks	Deliverables	Timeline	Responsibilities
Design and Prototype DB	<ul style="list-style-type: none"> <li>• Identify requirements</li> <li>• Develop initial design</li> <li>• Prototype design in MySQL</li> <li>• Prototype user interfaces</li> <li>• Determine backup procedures</li> <li>• Develop XML export functionality</li> </ul>	Draft database design; DB prototype	June 1-30	Jason Bill
Implement DB	<ul style="list-style-type: none"> <li>• Finalize design and specifications</li> <li>• Implement DB under Windows for testing</li> <li>• Implement DB under Linux</li> <li>• Implement user interfaces and connect via PHP to database</li> <li>• Test DB application and interfaces</li> </ul>	DB application with user interfaces for data input	June 15-July 15	Jason
Populate DB	<ul style="list-style-type: none"> <li>• Identify sources of data that can be batch loaded</li> <li>• Identify sources of data that will be manually input</li> </ul>		July 1-30	Jason Penny

Activities	Tasks	Deliverables	Timeline	Responsibilities
	<ul style="list-style-type: none"> <li>Load data</li> <li>Input data</li> </ul>			
Validate DB contents	<ul style="list-style-type: none"> <li>Test database with appropriate queries</li> <li>Verify accuracy of data in database</li> </ul>		July 15-30	Jason Penny
Documentation	<ul style="list-style-type: none"> <li>Write complete documentation for database application</li> </ul>	Complete document describing DB, procedures, scripts, data loading, etc.	July 30	Jason

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
MARC DB								

## 2.2 Creating MARC Records

This work area covers all the activities that are required to create the radioactive MARC records. This includes the identification of the character strings that will serve as data values for each field/subfield in a record, identifying tools for creating the records, and the actual creation and validation of the records.

Activities	Tasks	Deliverables	Timeline	Responsibilities
Requirements Setting	<ul style="list-style-type: none"> <li>Identify requirements for data for records</li> <li>Determine options for data value character strings</li> <li>Account for various format specific content designation</li> <li>Determine process for generating character strings</li> <li>Identify number and type of records required</li> </ul>	Draft requirements document for discussion with Index Data	June 15-July 15	Bill Penny Index Data
Create character string patterns	<ul style="list-style-type: none"> <li>Develop tool for producing character strings</li> <li>Produce character strings</li> </ul>	Set of character strings available for data input	July 15-30	Index Data
Identify MARC creation tool(s)	<ul style="list-style-type: none"> <li>Identify functionality needed to create radioactive records</li> <li>Identify potential tools for record creation</li> <li>Install or implement tool</li> </ul>		July 1-15	Penny Index Data
Input data into MARC records	<ul style="list-style-type: none"> <li>Create MARC records</li> </ul>	Set of Radioactive MARC Records	Aug 1-Sept 1	Penny Jason
Validate MARC records	<ul style="list-style-type: none"> <li>Identify procedures to validate records</li> </ul>		Aug 1-Sept 1	Penny Jason

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
MARC Records								

## 2.3 Developing Test Searches

This work area covers the activities and tasks related to identifying and agreeing on the test searches to be used. The results of this work area inform MARC records needed and addressed in 2.2.

Activities	Tasks	Deliverables	Timeline	Responsibilities
Identify Searching Requirements	<ul style="list-style-type: none"> <li>Use U.S. National Profile for Library Applications, Levels 0 and 1</li> </ul>		July 1-15	Penny Bill

Activities	Tasks	Deliverables	Timeline	Responsibilities
	<ul style="list-style-type: none"> <li>Determine character string patterns needed in the record for the searches</li> <li>Determine indexing requirements (see 2.5)</li> </ul>			
Document Test Searches	<ul style="list-style-type: none"> <li>Prepare document that details each test search, search term, and expected search results</li> </ul>	Test Searches document	July 15- Aug 30	Penny Jason

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
Test Searches								

## 2.4 Creating Automated Testing Scripts

This work area covers the activities and tasks related to developing and creating automated mechanisms for issuing test searches and compiling results. Index Data has primary responsibility for this work area.

Activities	Tasks	Deliverables	Timeline	Responsibilities
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	•			
	•			

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
Testing Scripts								

## 2.5 Indexing Guidelines

This work area addresses the expansion of the existing indexing guidelines developed for the first phase of interoperability testing to address the interoperability testing using the radioactive MARC records.

Activities	Tasks	Deliverables	Timeline	Responsibilities
Create draft indexing policies	<ul style="list-style-type: none"> <li>Identify appropriate content designation to be indexed for each test search</li> <li>Develop draft indexing policies</li> <li>Distribute for review and comment</li> </ul>	Draft indexing guidelines	Aug 1 – Sept 15	Penny Jason
Revise and finalize indexing policies	<ul style="list-style-type: none"> <li>Compile comments from review of draft</li> <li>Clarify any questions on content designation to be indexed</li> <li>Create final version of indexing policies</li> </ul>	Indexing Guidelines for Interoperability Testing	Sept 15-30	Penny Jason

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
Indexing Policies								

## 2.6 Validating Testing Procedures

This work area uses the existing Z-Interop reference implementation server and information retrieval system (Sirsi Unicorn) to test and validate all interoperability testing procedures using radioactive MARC Records.

Activities	Tasks	Deliverables	Timeline	Responsibilities
Implement indexing guidelines	<ul style="list-style-type: none"> <li>Review procedures for setting indexing policies in Sirsi system</li> <li>Set up enhanced indexing policies on the system</li> </ul>		Sept 1-15	Jason JungWon
Load records	<ul style="list-style-type: none"> <li>Use record loading procedures to load radioactive MARC records into system</li> </ul>		Sept 15-30	Jason JungWon
Test automated scripts for issuing searches	<ul style="list-style-type: none"> <li>Issue all test searches using automated scripts</li> <li>Identify any problems or issues</li> <li>Revise and finalize automated scripts</li> </ul>		Oct 1-15	Index Data Jason
Test programs for compiling results	<ul style="list-style-type: none"> <li>Review results of the searches and the reports generated</li> <li>Identify revisions or enhancements needed</li> <li>Finalize results reporting mechanisms</li> </ul>		Oct 1-15	Index Data Jason
Documentation	<ul style="list-style-type: none"> <li>Develop summary documentation for validation and testing</li> </ul>	Validation documentation	Oct 15-30	Jason

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
Testing Validation								

## 2.7 Analysis and Reporting

This work area addresses the development of standard documentation for reporting results of interoperability testing. Analysis procedures will be documented.

Activities	Tasks	Deliverables	Timeline	Responsibilities
Analysis procedures	<ul style="list-style-type: none"> <li>Identify analysis procedures for results of testing</li> <li>Test these procedures during 2.6 above</li> <li>Finalize analysis procedures</li> </ul>	Documentation of Analysis Procedures and Reports	Sept 15-Oct 1	Jason Penny
Report template	<ul style="list-style-type: none"> <li>Develop standard report template</li> </ul>		Sept 15-Oct 1	Jason

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
Analysis & Reporting								

## 2.8 Conduct Interoperability Testing with Libraries

This work area covers activities and tasks related to conducting interoperability testing with actual library online catalog and Z39.50 server implementations.

Activities	Tasks	Deliverables	Timeline	Responsibilities
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Activities	Tasks	Deliverables	Timeline	Responsibilities
Create testbed operation procedures	<ul style="list-style-type: none"> <li>Develop draft procedures document</li> <li>Request review</li> <li>Finalize procedures document</li> </ul>	Testbed procedures document	Oct 1-15	Bill Jason
Radioactive MARC Record Availability	<ul style="list-style-type: none"> <li>Set up password protected web folder for records</li> <li>Load records on site</li> <li>Test access to records</li> </ul>		Oct 1-15	Bill Jason
Limited interoperability testing	<ul style="list-style-type: none"> <li>Identify 3-5 libraries willing to go through testing procedure</li> <li>Conduct Interop testing</li> <li>Revise any procedures as necessary</li> </ul>		Oct 15-Nov 30	Bill Jason Penny Index Data
Publicize testbed	<ul style="list-style-type: none"> <li>Prepare press release</li> <li>Prepare call for participation</li> <li>Disseminate information</li> </ul>		Nov 15-Nov 30	Bill Jason Penny
Operation testbed	<ul style="list-style-type: none"> <li>Carry out interoperability testing with libraries</li> </ul>		Nov 30-Feb 15	Bill Jason Penny Index Data

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
Interop Testing								

### 3. Project Timeline

The project currently has an eight month duration. All work for the project should be completed by February 28, 2005. The letter approving the extension arrived in the second week of June. Substantial work on the project will begin on July 1, 2004 (allowing time for subcontracts to be issued and staffing to be confirmed). The following gives a high-level view of carrying out the project work.

Work Area	July04	Aug04	Sep04	Oct04	Nov04	Dec04	Jan05	Feb05
MARC DB								
MARC Records								
Test Searches								
Testing Scripts								
Indexing Policies								
Testing Validation								
Analysis & Reporting								
Interop Testing								