NIKE: Integrating Workflow, Digital Library, and Online Catalog Systems

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Categories and Subject Descriptors

H.3.7 [**Information Search and Retrieval**]: Digital Libraries – *collection, dissemination.* H.4.1 [**Information Systems Applications**]: Office Automation – *workflow management.* I.7.1 [**Document and Text Processing**]: Electronic Publishing, Document and Text Editing – *document management.*

General Terms

Design.

Keywords

NIKE, digital library, knowledge management, publications, submission & tracking, crosswalk, public access.

1. INTRODUCTION

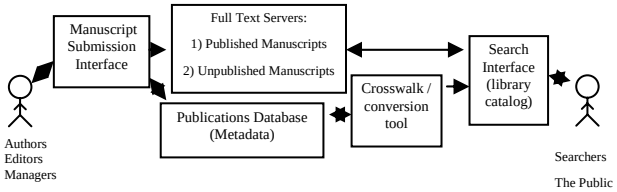
Many publishing houses are moving to online manuscript submissions and processing systems to handle the work of receiving, reviewing, and publishing scholarly documents. Separate digital archives, integrated library systems, and gateways or portals of various sorts store, organize, maintain, and deliver documents to users. NIST Integrated Knowledge EditorialNet (NIKE), a project designed by the National Institute of Standards and Technology (NIST) Information Services Division, will combine all of these elements. NIKE will streamline NIST's complex manuscript submissions workflow and put scientific documents within the public grasp. The project is currently in the first of two development phases.

2. OVERVIEW

Basics: A comprehensive digital knowledge management system, the NIKE infrastructure will integrate a web interface; a publications database of bibliographic and process information; a server of full text, video, audio, and database documents; and an integrated library system that will provide access both to bibliographic data and digital documents.

Functionality: Entryways customized by user role and location in the organization will allow users to enter metadata that will be translated by means of crosswalk scripting into library Machine-Readable Cataloging (MARC-21) records. Uploaded manuscripts will be read, edited, and approved by peers and managers before being submitted to scholarly journals or published in-house. Upon completion, approved manuscripts will automatically be sent from a file server behind a firewall to a Web server of published documents. An online library catalog will provide public access to published NIST digital documents.

3. NIKE SYSTEM



NIKE User View

Main features

- **Database:** A new Oracle database extending a pre-existing NIST database to support the needs of all the NIST laboratories. Tables store user, organizational, process, and metadata information.
- **Web Interface:** The web interface will be used for manuscript submission, approval process, editorial review, searching, locating records, and creating reports.
- **Online Library Catalog:** The online catalog provides journal authority control, a sophisticated search engine, and links to published digital documents.
- **Crosswalk:** A software program using Perl scripting is being developed to automatically migrate the captured relevant data in the new Oracle database to the integrated library system. The crosswalk will work seamlessly between the NIKE and online catalog systems.
- **Server:** The NIKE system will house full-text manuscripts, final published documents and supplemental files.

4. PHASED RELEASES

Phase I	Phase II
• Submit and track a manuscript • Create reports • Migrate bibliographic data	• Online Peer-review • Electronic approval • Online revisions • Electronic Signatures

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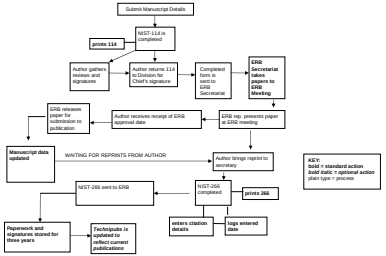
INTRODUCTION

In today's publishing climate, online manuscript submissions and processing systems frequently handle the work of receiving, reviewing, and publishing scholarly documents. Separate digital archives, online public access catalogs (OPACs), and gateways or portals store, organize, maintain, and deliver documents to users.

NIST Integrated Knowledge EditorialNet (NIKE) is a National Institute of Standards and Technology (NIST) in-house project that will merge these elements. NIKE will streamline NIST's complex manuscript submissions workflow and join it with an adapted legacy database of metadata and process information, an online catalog of MARC records, and a digital library of text, video, and other documents. NIKE will enable researchers and the general public to find and access NIST scientific government documents and also documents published in the private sector by NIST authors describing their work at NIST.

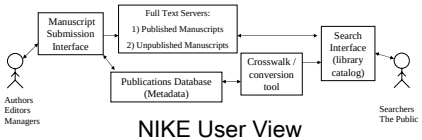
The project is currently in the first of two development phases.

WORKFLOW



One of Many
NIST Manuscript Submission Workflows

OVERVIEW



NIKE User View

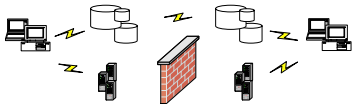
Internal Manuscript Submissions Process
Role-based authorization by authentication
Web-based intranet system
User-focused interface
User entry of metadata
Authority controls for user names and source titles
Manuscript uploads to document server
Manuscript editing, approval/disapproval
Manuscript tracking
Generation of bibliographic and statistical reports
Published document uploads to document server
Intranet search and retrieval of approved manuscripts
Database maintenance
Crosswalk of metadata from database to MARC
Published document transfer to web server

NIKE Workflow Features

Public Access to Published Documents
Links from OPAC MARC record to web server
Search of NIST government documents via OPAC
Retrieval of NIST government documents via OPAC
Search of NIST-authored private-sector documents via OPAC
Retrieval of NIST-authored private-sector documents via OPAC

NIKE Public Access Features

SYSTEMS



Systems View

Publication Types
Journal article
Conference paper
Conference presentation
Conference proceedings
Technical report
Book
Book chapter/section
Web page/site
Encyclopedia article
Database
Software only
Videorecording
Other

Media Types/Formats
Print
Oral only
Electronic – WWW
Electronic – CD-ROM
Electronic - DVD
Electronic – Diskette
Electronic – Remote
Videocassette

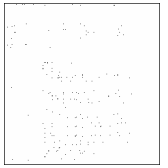
Publication and Media Types

245 TITLE STATEMENT (PUBLISHED TITLE)		
IND 1	Constant: 0	*(1XX fields not used)*
IND 2	[count of number of non-filing characters]	see Marc21 Initial Articles.doc
$a	db: Title	followed by subfield b--ends in space and colon; followed by subfield c--ends in space /
$b	db: subtitle (portion following ":")	ends in space /
$c	db: authors names: first last, first last.	ends in period

Crosswalk Map Fragment

Crosswalk Maps: Seven maps were created for various publication types. The preceding map section was written for Field 245 of one map. Each MARC21 record has approximately19 fields, and each field its own map section. Existing Perl scripts from the legacy database will be adapted to "crosswalk" the metadata entered by authors in the publications database over to MARC21 records in the online catalog. One of the MARC21 fields will provide links to documents on the web server.

SAMPLE RECORD



MARC

OPAC

USER INTERFACE

Home page/login

Search

Input