CMS Brick Working Group
NIHRFC0029
Category: Standard

C. Geiler, et. al.
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Web Content Management Systems (WCMS) Standards V1.0

Status of this Memo

This memo specifies a standard for the National Institutes of Health (NIH). Distribution of this memo is limited to NIH until approved. After approval distribution of the memo is unlimited.

The standards specified in this memo supersede the Web Content Management Service Pattern and Web Content Management System Brick, which were approved by the NIH Architecture Review Board (ARB) on June 24, 2004.

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1 Introduction

Web Content Management Systems (WCMS) consist of applications used to create, manage, store and deploy content on the Web, including text, graphics, video or audio, and application code. Web Content Management Systems are often a component of Enterprise Content Management (ECM) solutions. However, the scope of these standards is limited to the basic WCMS solution.

The purpose of these standards is to provide implementation guidance to NIH project teams who are undertaking new WCMS projects or investments or are undertaking major upgrades / migrations to existing WCMS implementations.

The standards include a revised Web Content Management Service Pattern and a revised Web Content Management Systems Brick.

2 Web Content Management Service Pattern

Web Content Management Systems (WCMS) consist of applications used to create, manage, store and deploy content on the Web, including text, graphics, video or audio, an application code. Web Content Management Systems are often a component of Enterprise Content Management (ECM) solutions, and some of these features are represented in the **Other ECM Services Layer.** However, this pattern is focused specifically on basic web content management services.

This pattern can be viewed in the following layers:

- Interface Layer
- Integration Layer
- Other ECM Services
- The Content Management Layer
- Storage Layer

Interface Layer

The pattern below depicts different levels of users, from passively browsing users and active contributors in a Web 2.0 framework, to the authors, content managers/administrators, and system administrators in a traditional Web publishing model. While some WCMS solutions include Web 2.0 tools that allow users to actively contribute to the site, all WCMS solutions will have content authors, managers, and administrators contributing content either through a Web interface or desktop application linked to the site. Access is typically granted to the user interface layer through the authentication layer in order to enforce the appropriate security policies. At NIH, due to the importance of collaboration with external stakeholders, support for Federated Identity and Authentication should be provided throughout the WCM solution.

Integration Layer

The Integration layer provides other applications the means to exchange data with the Web content management application document management software. It typically consists of Web Services, Application Programming Interfaces (API), or other Integration Services.

Other ECM Services

In a robust ECM implementation, some of these ECM services might be coupled with the WCMS application to form a large, often costly, ECM suite. Some of the other components of an ECM suite include Enterprise Search, Workflow or Business Process Management tools, Document Management, Digital Asset Management, and Collaboration Tools.

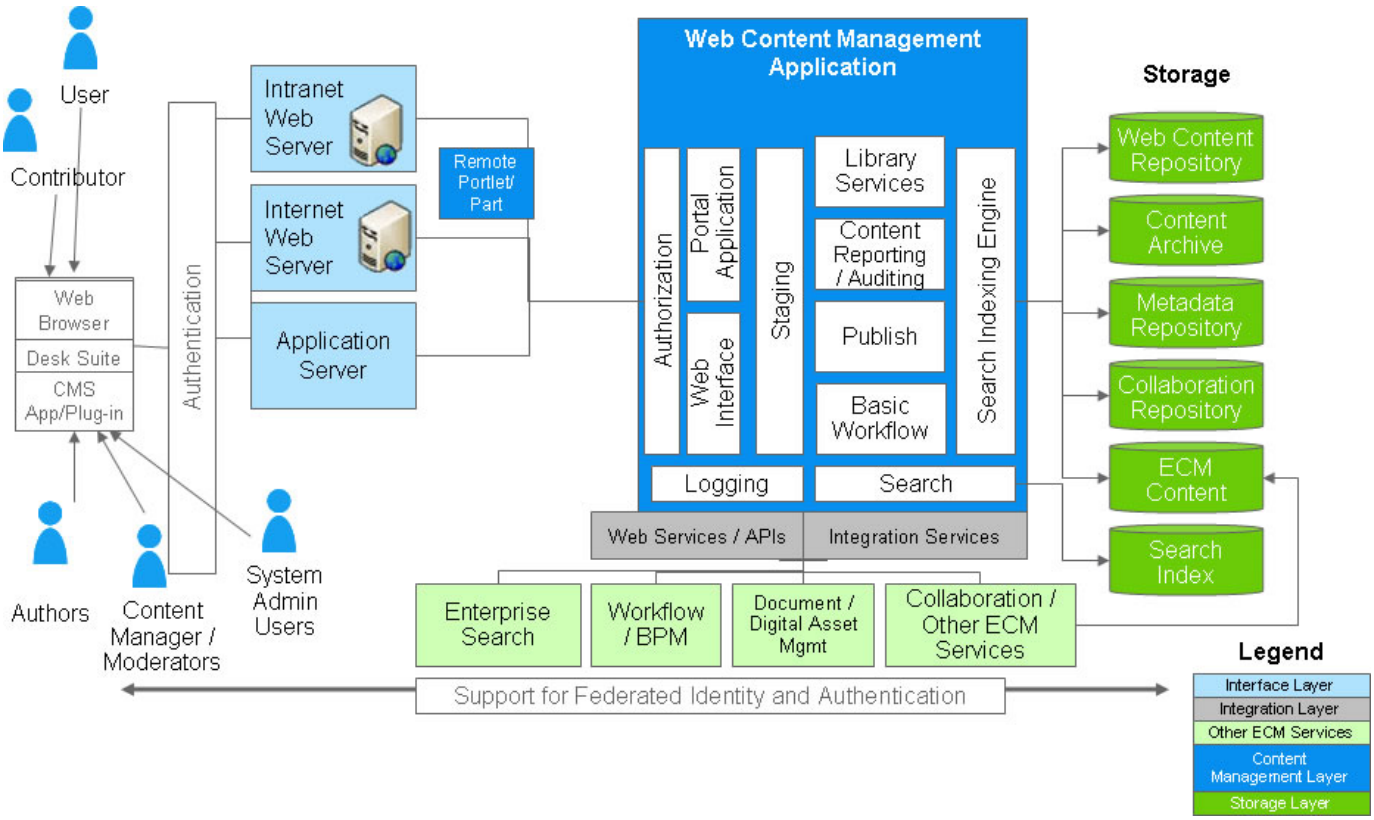
Content Management Layer

The Content Management layer contains the core components for the Web Content Management Application. The authorization component grants the appropriate privileges to users, based on their respective roles. Library Services provide the core content management functionality (check-in/out, version control), along with Publish, Staging, Logging, and Content Reporting/Auditing. Basic Workflow, embedded in most WCM solutions, provides for basic routing of content jobs. The Web Interface and Portal Application present the content to the various user segments, based on their authorization. Remote portlets (e.g., webparts, gadgets, widgets) can be used to embed content management functionality or sourced content in portals provided by other vendors. The search indexing engine can create searchable indexes from websites supported by WCMS solutions. Websites may also be independently indexed by NIH enterprise search engines.

Storage Layer

The storage layer provides a repository for these assets: Web Content, Content Archive, Metadata, Collaboration data, ECM content, and the Search Index.

Diagram



Benefits

- This pattern illustrates levels of functionality, any or all of which may be necessary for a project.
- This pattern standardizes conversation between mission and technical teams regarding components and complexity.
- This pattern can be applied to many business scenarios depending on scale and functional requirements.

Limitations

- This pattern does not illustrate true complexity of security integration in NIH's federated environment.
- This pattern does not alleviate the need for requirements and policy analysis (e.g. taxonomies, usability metadata, security and appropriate usage guidelines)
- This pattern does not address the specific workflow, task profiles, or content creation that are necessary for any website project.

3 Web Content Management System Brick

Web Content Management Systems (WCMS) consist of applications used to create, manage, store and deploy content on the Web, including text, graphics, video or audio, an application code. Web Content Management Systems are often a component of Enterprise Content

Management (ECM) Solutions. However, this standard is focused specifically on technologies that may provide basic web content management services.

The NIH enterprise has multiple WCMS applications within its baseline today. However, there are internal and market drivers that will drive organizations within NIH to reassess their WCMS strategy and portfolios. Given that organizations across the enterprise will require both large scale and small scale WCMS implementations, this standard includes a portfolio of large and small scale WCMS solutions. As with all applications used by the Federal Government, it is required that these applications be section 508 compliant.

Brick

Tactical (0-2 years)	**Strategic** (2-5 years)
• Ektron CMS400.net • Interwoven TeamSite • Microsoft Office SharePoint Server (MOSS) 2007 • OpenText RedDot • Percussion Rhythmyx • Zope/Plone (open source)	• Interwoven TeamSite • Microsoft Office SharePoint Server (MOSS) 2007
Retirement (To be eliminated)	**Containment** (No new development)
	• Custom WCMS solutions • Merant Collage • Microsoft Content Management Server 2002 • PaperThin CommonSpot
Baseline (Today)	**Emerging** (To track)
• Adobe Contribute • CrownPeak (hosted solution) • Custom WCMS solutions • Interwoven TeamSite • Merant Collage • Microsoft Content Management Server 2002 • PaperThin CommonSpot • Percussion Rhythmyx • Zope/Plone (open source)	• Adobe Contribute • EMC Documentum • Hosted solutions (eg. CrownPeak, Clickability, etc.) • IBM Workplace Web Content Management (WWCM) • Leading Open Source solutions • Oracle Stellent ECM • Tools with strong Web 2.0 capabilities • Vignette

Comments

- Tactical and strategic products were selected to leverage NIH's investment in products that are a proven fit for NIH's known future needs. Leveraging baseline products in the future will minimize the operations, maintenance, support and training costs of new products.
- Some baseline products have been designated retirement and containment. These products are either not as widely or successfully deployed at NIH, or they do not provide as much functionality, value, or Total Cost of Ownership as the selected tactical and strategic products.
- Current projections are that Microsoft Content Management Server 2002 will no longer be supported after 2009. Therefore, owners of websites that do not migrate off of this platform by this time may be at risk.
- It is strongly suggested that in lieu of complete custom development, open-source solutions be considered.
- Some open-source solutions are more developed/refined for web content management than others.
- Ektron CMS400.net is a non-open-source alternative for smaller implementations.
- All costs should be considered with open-source solutions, due to the potentially higher development and maintenance costs.
- Enterprises should look deeply into content security, uptime contract clauses, and migration and recall prior to committing more than project-level interest in hosted services.
- Although Adobe Contribute and CrownPeak are currently in the NIH baseline and appear promising, there is only one reference implementation each. Therefore, they are considered emerging at NIH.
- Opentext RedDot should be considered when the OpenText LiveLink document management solution is also being implemented as part of a broader Enterprise Content Management (ECM) implementation. See the Document Management Tools Brick.
- The brick group recommends consideration of migration on existing content.
- Project teams should consider usability testing on the supported website before it is deployed.
- IC’s are strongly encouraged to partner with each other for WCMS implementations to reduce cost and technical risk.

4 Contact

To contact the NIHRFC Editor, send an email message to EnterpriseArchitecture@mail.nih.gov.

To contact the CMS Brick Working Group, send an email to Christen Geiler at GeilerC@mail.nih.gov.

5 Security Considerations

This NIHRFC raises no security issues.

6 Changes

Version	Date	Change	Authority	Author of Change
0.1	11/21/2007	Original Template	CMS Brick Working Group	Steve Thornton
0.2	2/1/2008	Moved CMS2002 to containment from retirement and updated comments to reflect recommendation that websites not migrated at end of support may be at risk.	ARB	Steve Thornton, NIHRFC Editor
1.0	2/12/2008	-ARB approved. -Change author address.	ARB	Steve Thornton, NIHRFC Editor

7 Author's Address

Christen Geiler, Chair
NIAID
6610 Rockledge Dr
Bethesda, MD 20817

Working Group Members and Co-Authors:

Roberta Albert, NIDDK
Camille Haylock, NIGMS
Erin Hooley, OD/OHR
Marina Korobov, NIDCD
Mark Malamud, NHLBI
Steve Thornton, NIH OCITA
Thuy Van, NIAAA
Lindsay Zahra Richards, NIAAA