



NISO Work Item: Flexible API Framework for E-Content in Libraries

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Objective:

Modernize library-vendor technical interoperability using RESTful Web service APIs and standard mobile application intent calls, using the *Queens Library API Requirements* as a proposed initial draft to establish community, vendor, and developer needs in transmitting library-related information related to serving licensed electronic content such as login/authentication, account information, availability, item status, item check-out, audio/video/online recording streaming, patron registration with vendor, etc.

Create a foundation API tool set that the library industry can build on to fulfill an array of user and library needs, including quicker response times, flexible item discovery and delivery options, improved resource availability, more seamless integration of electronic and physical resources, plus better tracking and reporting, etc.

Background and Problem Statement:

Library patrons struggle with hard to use, old technology when interacting with library resources; they are used to very modern tools and technologies, especially the adoption of mobile technologies, in almost every other area of their lives. Libraries are justifiably proud of their leadership role in developing and promoting literacy and must offer digital content in ways that work for all patrons in order to retain users and community support. An excellent user experience and requisite level of convenience must be available in all customer-facing tools that service library patrons.

For public service and back office operations, libraries use varied technologies to accomplish all the tasks associated with providing services to users. It is difficult, if not impossible, to match and manage these technologies with fast-paced public needs. Many of these tools also rely on outdated and slow communications, such as SOAP¹ and other technologies. To make the situation worse, "hard-wired" vendor solutions create single-line dependencies- which libraries can no longer afford as they compete to improve their organizational capability and offer superior customer service.

It is imperative that although library systems are specialized, they keep pace with the rest of the software development world (commercial or otherwise). By establishing standards on RESTful² Web services APIs³ as well as standard Mobile Application Intent calls⁴, the library industry will leave archaic, difficult-to-use tool sets behind, and level the playing field for libraries, allowing more flexibility in meeting patrons' needs with customized solutions unique to their communities.

This initiative will deliver a foundational framework to communicate an understanding on how libraries expect to provide and receive data, as outlined in the first proposed draft(s) of the *Queens Library API*

Requirements referenced below. Not all services would be required to be used by all vendors, depending on product context. Other services could be potentially be added as the market sees fit. Net benefits will be lower costs in developing library solutions, the new availability of “plug and play” integration opportunities and open source software initiatives, and wider commercial interest in serving the library industry as a whole.

Draft Documents (URL for download):

Application Programming Interfaces (API) Standards for Libraries (Digital Materials)

File: Intents-Required-For-Vendor-Mobile-Applications-V1_1.pdf

Mobile App Intents or Extensions for Library Systems Interoperability

File: Library-Webservice-API-Specification-Draft-V1_4.pdf

Also available here: <http://virtuallibrary.queenslibrary.org/library-api-draft>

Statement of Work:

Deliverables:

- A NISO Recommended Practice describing an API framework covering library-related communications and functions such as customized genre or category views for browse, search, and discovery of collections, catalog information, or digital resources, user authentication, transmission of account information, management of barcodes, check out and return items, stream audio/read material online, show item availability, cancel holds and item requests, and other requirements as determined by stakeholders such as any and all aspects of library operations that have need for convenient, secure, and real time transactions via web services.
- One or more proof-of-concept services which use the proposed approach to deliver services
- A registry to enable supporting data providers and system vendors to communicate their support of the framework

Process:

A NISO working group comprised of stakeholders as described below will create the deliverables, using as a starting point the *Queens Library API Requirements*, which are expected to be modified by Working Group experts throughout the development. Meetings will take place bi-weekly via telephone and WebEx. An in-person meeting or public forum scheduled as part of the process may also help to progress discussion and action. In addition, the Working Group experts will also create materials to help educate the community and support the ongoing effort.

Partners & Participation:

ALA Digital Content Working Group members; ReadersFirst API group members; providers and distributors of e-books, recorded books, and other forms of digital content and media such as music, historical materials, etc.; library system providers; librarians.

Proposed Timeline:

- Appointment of working group: Month 1
- Approval of initial work plan: Month 2
- Completion of initial draft for public comment/trial use: Month 8
- Trial use and comment period: Months 9-12 [to discuss at ALA Annual, Chicago, June 2017]

- Review comments/update document: Month 13
- Publication of Recommended Practice: Month 15 [intended by end of year 2017]

Funding:

Additional funding is desirable to support one or two in-person meetings of the Working Group, in order to facilitate quicker agreement on technical issues, and potential retention of a professional technical lead or developer resource to assist with project management and tool creation. Grants or sponsorship will be sought for this support if required.

Foot Notes:**¹SOAP (Simple Object Access Protocol)**

<http://www.pcmag.com/encyclopedia/term/51602/soap>

²REST (Representational State Transfer)

https://en.wikipedia.org/wiki/Representational_state_transfer

<http://www.pcmag.com/encyclopedia/term/56943/rest>

³API (Application Programming Interface)

https://en.wikipedia.org/wiki/Application_programming_interface

<http://www.pcmag.com/encyclopedia/term/37856/api>

⁴Mobile Application Intents and Extensions

<https://developer.android.com/reference/android/content/Intent.html>

<https://developer.apple.com/library/ios/documentation/General/Conceptual/ExtensibilityPG/index.html>