BIC Bites

BIC Bites are a series of short, high level, papers on topics of interest to BIC Members.
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Introduction to LCF

Background

The Library Communications Framework (LCF) is a set of library interoperability standards which defines a framework for the communication of circulation data (such as items on loan or reservation, patron's personal data and data about fines and other charges) between self-service and other applications to and from library management systems.

The origins of LCF were as a replacement for the dated SIP and SIP2 protocols. SIP and SIP2 were developed by 3M for Self-Issue terminals driven by modern developments in RFID technologies and standards. However, whilst LCF's origins are for self-service applications, the data model was designed to be flexible to accommodate other circulation applications and services. For instance, LCF forms the basis of the NISO FASTEN specification for defined interactions between a library system and an e-content provider.

Basics of LCF

At the heart of LCF lies the *data framework* – a model describing the core *entities* (objects and actors) required for the circulation operation of a library. The data framework describes 12 key entities:

Manifestations	An identified manifestation of an abstract work, e.g., a book, magazine, newspaper, or recording (analogue or digital).
Items	An identified copy of a manifestation that is in a library's stock / holding.
Patrons	An identified person or organization permitted to borrow an item from a library.
Locations	A location associated with a library including branches and shelf locations
Loans	An identified event in which one or more items have been loaned to a patron.
Reservations	An identified event in which one or more titles have been reserved for a patron.
Charges	An identified charge made to a patron. May be a fee or a fine.
Payments	An identified payment made by a patron to settle one or more charges
Contacts	Contact details for the primary contact person or organization for a patron, location, or authority/institution.
Library authorities/institutions	A library authority or institution.
Patron authorisation codes	A patron authorisation code
Message / alert	A message or alert that may be communicated to a patron or group of patrons.

LCF then specifies a REST webservice to allow manipulation of the data framework *entities*. REST is a web service pattern whereby resources (such as the different *entities*) are represented by URLs, and HTTP requests can be sent to Create, Retrieve, Update and Delete the entities. This is the key to LCF flexibility. Typical circulation operations can be easily mapped to this model, e.g.:

- Checking out a book corresponds to creating a new *Loan entity.*
- Returning a book corresponds to updating an existing *Loan entity.*
- Changing a user's password corresponds to updating an existing *Patron entity.*

Why use LCF?

LCF is intended to enable commercial suppliers to develop new functionality for circulation related applications. Its flexibility allows providers to determine for themselves the means by which data is exchanged as it confines itself to identifying the functionality required to deliver a service, the elements that need to be exchanged to deliver it, and the values that these elements might contain. At the same time, LCF uses access and identity standards so that the data supplied can be based on what the particular user is allowed to see, thus ensuring compliance with legal and local data policies.

LCF is intended to provide much needed rationalisation of the interoperation between disparate IT solutions. In a time of scarce resources libraries are actively seeking to improve both their existing solutions and to offer new services without the risk of buying into solutions that cannot be developed or transported to a new platform. LCF provides that possibility. Examples include:
- Many library systems link family members together, allowing parents to deal with children's bills. Policies can be put in place automatically to block customers when they owe more than a specific amount and processes set up automatically to chase up outstanding debts. Detailed income reports can be produced without staff intervention and ad hoc reports run.
- Many libraries have self-service kiosks using RFID that allow self-service payment by some or all of cash, card, or contactless payment. These could be linked to and pay off LMS accounts.
- Libraries increasingly run other systems that levy bills, such as PC booking, PC and Wi-Fi printing and photocopying. These systems could be linked to the customer account on the LMS.

Governance

LCF is governed by BIC via two groups: BIC's LCF Review Group and BIC's LCF Technical Panel. Both groups meet on a regular basis. Via the Technical Panel, the development of the standard is maintained by BIC's team of technical editors.

Further Information

The current version of LCF specification (1.3.0) can be found at https://bic-org-uk.github.io/bic-lcf/

More information on LCF, including Terms and Conditions of its use, can be found on the BIC website here: https://www.bic.org.uk/145/Information-about-LCF/

Requests for new features, bugs, corrections, use cases or help can be submitted to the LCF GitHub issue tracker at: https://github.com/bic-org-uk/bic-lcf/issues.

Work on new versions as well as XML Schema and Open API schemas for LCF can also be found on the GitHub site: https://github.com/bic-org-uk/bic-lcf

The most recent LCF newsletter can be found here: https://www.bic.org.uk/199/LCF-Newsletter/