BIC Task & Finish Working Groups

(BIC) NFC and Security Task & Finish Group Briefing Document

Document Status: Open to BIC Members

Project Name: BIC NFC and Security Briefing Document

Version Number: 1.0
Created by: Mick Fortune
Created date: 6 October 2013

BIC Committee Review

Reviewed by	Name	Organisation	Date
Karina Luke		*BIC*	29.10.2013

BIC Committee Approval

Approved by	Name	Organisation	Date

TABLE OF CONTENTS

1. PURPOSE

To find a solution to the security risk posed by NFC technology to the use of RFID in libraries.

2. BACKGROUND

Near Field Communication (NFC) uses radio operating in the same frequency as that used in the vast majority of libraries using Radio Frequency Identification (RFID) throughout the world.

Libraries using RFID do not generally lock or encrypt data, and the internationally recommended data standard – ISO 28560 – does not make any recommendations on the use of either potential solution, or for using password protection, since this would severely limit the interoperability of tags with other systems and particularly limit the functionality available for resource sharing (e.g. in consortia).

Libraries have therefore been vulnerable to having their tags modified or deleted since they first began using the technology but until very recently such actions required some investment in hardware coupled with some technical skills on the part of the potential perpetrator.

The risk has therefore been regarded as negligible.

This all changed when NFC began to be introduced to the smartphone and tablet market. The number of devices capable of reading and writing to library tags grew by 125 million in 2012 alone (as reported by manufacturers) and the number of RFID read/write applications available for Android devices free of charge grows daily.

The risk of a library suffering some kind of 'attack' is now significantly higher than at an time in the last 15 years.

A number of possible solutions to this problem have been proposed by suppliers, concerned librarians and industry experts but most involve 'locking down' an individual service – with consequent loss of interoperability, functionality and transferability.

A common solution – that can be rapidly implemented by RFID and other library systems providers – is required.

3. PROJECT DEFINITION

3.1. PROJECT OBJECTIVES

- To assess the nature and size of the threat posed.
- To work with Library Management systems and RFID suppliers to develop a common approach to a solution.
- To inform and advise librarians of the scale of risk and best practice solutions.

The major deliverables will be a risk assessment of the threat to individual institutions and a proposed – probably software based – solution to the problem that can be easily implemented by LMS and RFID suppliers working together.

The major part of the work will be to produce a report outlining the current state of play and a summary of the solutions under consideration. This will be followed by a meeting of industry representatives to consider the most advantageous solution.

In addition there will be a need to produce guidelines for librarians to assess their own vulnerability and to advise on what steps they should be taking to mitigate their risk until a solution is available

The business benefits will be the continued use of RFID for the streamlining of library management services and the introduction of new, smartphone-based applications all operating within a secure environment meeting the requirements of international legislation.

Costs to BIC: This is a global issue facing libraries and suppliers across the world. Face to face meetings of all interested parties are unlikely to be possible so it is anticipated that the majority of the work will be carried out online. Any software development required will have to be undertaken and funded by individual companies, not by BIC, as the way in which any solution is implemented will vary from system to system.

3.2. PROJECT SCOPE

The scope of this project is limited to protecting library assets against interference from NFC-enabled mobile devices operating in the library market. The BIC Library Committee will maintain a watching brief on the RFID market to monitor future changes that might pose a similar threat.

3.3. OUTLINE PROJECT DELIVERABLES AND/OR DESIRED OUTCOMES

- A Communications plan to all BIC members and the wider library community, to highlight the work BIC is undertaking. The plan needs to be mindful that publicising present vulnerabilities increases the risk of attack.

- A set of guidelines that will enable librarians to complete a risk assessment.
- Best practice guidelines for protecting existing installations from malicious interference via NFC devices.
- Possible revisions to ISO 28560 to secure data from Denial of Service attacks – without comprising operational functionality.
- Consideration & development of a BIC Breakfast/Information Day to share & communicate to stakeholders/BIC members.
- An agreed specification for dealing with the problem. This might require software development by suppliers, alterations to the UK data model etc.
- Monthly progress reports tracking against budget & schedule, to the BIC Libraries Committee

3.4. CONSTRAINTS

BIC Budget

Time – project needs to be completed at the earliest possible date. The risk is current, and growing.

3.5. INTERNAL/EXTERNALINTERFACES

ISO WG11 – the International Standards Organisation working group (WG) charged with the responsibility for developing data standards for RFID in libraries.

BIC Training, Events & Communications Committee.

All BIC's Library Community members

Society of Chief Librarians.

CILIP

NAG

4. OUTLINE BUSINESS/INDUSTRY CASE

Please refer to sections 1 and 2 above.

5. QUALITY EXPECTATIONS

It will be up to the BIC Libraries Committee to accept the findings of the T&F WG and approve its recommendations. It is expected that prior to sign off, all stakeholders will have been consulted and will have provided feedback on all of the documented deliverables.

6. ACCEPTANCE CRITERIA

Guidelines must be agreed by suppliers in both RFID and LMS supply.
Guidelines must be easy to understand.
The BIC Libraries Committee has final sign off on the T&F Working Groups deliverables: this sign of must happen before any documentation or communication is made public.

.

7. RISKS

The present level of threat appears very low. This is the current assessment made by major RFID suppliers, encouraged by the fact that no library, so far, has suffered an attack. Open discussion of these issues could however draw attention to the vulnerability so confidentiality will be essential.

It seems probable that the co-operation of LMS suppliers will be essential to finding the most flexible solutions but implementations may vary from supplier to supplier. BIC can act as a broker – and recommend any consequent changes to its UK Data Model – but will not be able to prescribe or fund a software solution that will work for all LMS providers since system architectures vary. For example, one suggestion already being proposed by some commentators would be to use the manufacturer's ID instead of a barcode number. This could require one supplier to build a database table while another may use a different methodology to achieve the same results.

8. OUTLINE PROJECT PLAN

The emerging threat from NFC suggests a short timeline for obtaining sign-off for this briefing document from the Library Committee – Nov 5th 2013.

First meeting of the group to be held in Jan 2014 with online meetings thereafter until a solution is found. Final face to face meeting May 2014

Delivery dates:

- A set of guidelines for risk assessment – February 2014

- Possible revisions to ISO 28560 to secure data from Denial of Service attacks – without comprising operational functionality.

- Best practice guidelines for protecting existing installations from malicious interference via NFC devices – draft and approval by March 2014, publication May 2014 2014.

- Possible revisions to ISO 28560 to secure data from Denial of Service attacks – without comprising operational functionality. – subject to ISO procedures.

9. BUDGET/COSTS

The BIC costs of this project are likely to be as follows:

Room bookings at CILIP x 2 *(first meeting targeted for Jan 2014)*
Mick Fortune: consultancy fees as per agreed daily rates (estimate 4 days over 6 months)
All costs associated with holding an Information Day (if deemed a requirement). This should be a free to attend event for BIC Members

10. AUTHORITY RESPONSIBLE

Executive Director of BIC.

11. PROPOSED TASK & FINISH WORKING GROUP LEADER/PROJECT MANAGER

Mick Fortune is proposed – this to be approved by the BIC Libraries Committee

12. CUSTOMERS AND USERS

2CQR, 3M, Axiell, Bibliotheca, Capita, D Tech, Infor, SirsiDynix, Librarians, Chartered Institute of Library and Information Professionals, Society of Chief Librarians, Local Government Association, Society of College, National and University Libraries (SCONUL) etc.

13. REPORTING

When a formal budget is produced then the T&F WG will be expected to report into the BIC Library Committee on progress against timelines and budget on a monthly basis. T&F WG Project Leader will report into both the BIC Libraries Committee and BIC's Executive Director.