Surveillance Impact Report - DRAFT
Bibliotheca RFID Circulation and Security Gate System
San Francisco Public Library

As required by San Francisco Administrative Code, Section 19B, departments must submit a Surveillance Impact Report for each surveillance technology to the Committee on Information Technology ("COIT") and the Board of Supervisors.

The Surveillance Impact Report details the benefits, costs, and potential impacts associated with the Department’s use of the Bibliotheca RFID circulation and security gate system.

DESCRIPTION OF THE TECHNOLOGY

The San Francisco Public Library system is dedicated to free and equal access to information, knowledge, independent learning and the joys of reading for our diverse community.

In line with its mission, the Department uses the Bibliotheca RFID circulation and security gate system to improves the customer service experience at the library.

It is the Library's opinion that the use of passive low frequency RFID technology as an inventory control mechanism does not constitute the implementation of Surveillance Technology. No patron information is collected, retained, processed or shared through the use of RFID in the process of circulating and securing materials. Patron’s library cards will continue to use eye readable barcode labels which will only be readable by barcode scanners. The Library is including this technology in its response because RFID is specifically cited as a possible surveillance technology in the relevant ordinance.

The use of passive low frequency RFID tags on the library’s collection in conjunction with Bibliotheca staff workstations and self-service equipment improves the customer service experience at the library. Self-check machines are significantly quicker and easier to use than those based on tattle-tape technology. Staff RFID workstations speed up the circulation tasks significantly, freeing up staff time to better serve the public. Both patrons and staff will be able to check in or out approximately 8 items at a time (piles up to 12 inches high), since RFID eliminates the existing need to scan and desensitize each item. The overall improved inventory control ensures patrons find the items they are looking for and reduces the time that books are unavailable to the patrons by streamlining circulation cycle from check-in to on-shelf.

RFID security gate technology will improve security, while improving service through improved communication. If the alarms sounds, staff will be able to quickly identify which item was not checked out or if it is a false alarm, eliminating the need to go through bags and check every item the patron may have against the printed check-out slip or pull up their record in the Sierra ILS database.

The Department shall use the Bibliotheca RFID circulation and security gate system only for the following authorized purposes:

- Passive RFID tags applied to library material – For use in inventory management and circulation functions.
- Staff workstation RFID pads – For use by staff to check in and out material and trigger holds.
- Self-check machines – For use by patrons to check out material.

Surveillance Oversight Review Dates
COIT Review: TBD
Board of Supervisors Review: TBD
• Inventory wand – For use by staff to confirm the current inventory on the library’s shelves.
• Sorting machine – For use in checking in material and sorting the items into carts and bins for delivery to other floors and branches.

The following use cases are expressly prohibited:
The Library will not use RFID tags on patron library cards. To ensure patron privacy, the library will continue to use eye readable barcodes on library cards. The Library’s revised Privacy Policy specifically references the library’s use of passive low frequency RFID technology and excludes the use of RFID tags on patron cards.

Department technology is located at all 28 public library locations and 4 bookmobiles which travel to all neighborhoods in the City visiting senior centers, early education schools and playgrounds will have the technology deployed. RFID will also be used for inventory purposes at 190 9th Street and 750 Brannan Street.
Technology Details

A. The following a is product description of the Bibliotheca RFID circulation and security gate system.

Staff Workstation RFID Pad Specification: Reader connects to PC via USB; it is supplied with a localized plug-in supply (110V ac/60Hz or 240V ac/50Hz). The RF power output is 1.2 Watt and the workstation™ shielded conforms to CE and FCC. Our staffConnect™ circ software will need to be installed on your existing PC, running MicrosoftTM Windows (XP SP3 or W7 32/64). Connection to the LMS/ILS is only required for some of the functionalities.

Self-Check Specification: Operating frequency: 13,56MHz, Max. Transmitting power: 1.2W Supported tag types: ISO 15693, ISO 18000-3-A (NXP SLI, SLix, SLix2) RFID Item capacity: Approximately 5 items at any one time. Software: selfCheck™ components uses our quickConnect™ self-service software, which provides the customer with the full range of borrow, return and account functions. The software is configured for connection to the library ILS/LMS through SIP2. Access to the library’s network via Ethernet is required.

Inventory Wand: Scan rate: Up to 20 items per second. Operating frequency: 13.56 MHz. RF Transmitting power: Standard Mode 1.5 W / Boost Mode 4.0 W. The mobile inventory device comes with our staffConnect™ inventory software which provides the user with the full range of search, inventory and shelf order functionality. The software does not require a connection to the LMS/ILS, but it can be configured to communicate directly via SIP2/NCIP. Access is required via a Wi-Fi access point. The software can be used on tablets and mobile devices that are able to run Java version 6.

Sorting Machine: SPECIFICATIONS LYNGSOE LIBRARY MATE™ 1200 SELF-RETURN KIOSK

Dimensions Large front: 708 mm H x 506 mm W / 28” H x 20” W Tunnel2000: 800 mm L; Max. angle: 7 degrees

Power 100-240 V AC 50-60 Hz

Network connection Wired Ethernet

Capacity Up to 1,100 materials/hour

Touch screen 19” color touch screen

Standard colors Front plate: Green (RAL 6025/Brilliance 70); Shelf: Storm (RAL 7015)

Suitable for receiving Library materials (books, magazines, CD/DVDs etc.)

Item restrictions Item size: Min: 100 mm L x 100 mm W x 2 mm H / 4” L x 4” W x .1” H Max: 400 mm L x 300 mm W x 100 mm H / 15.8” L x 11.8” W x 4” H Item weight: Min: 30 g / 1 oz Max: 5 kg / 11 lbs

For use with LMS/ILS using SIP standard interface protocols Sorters: Sort Mate 1000 and 2000 sorter series Software: Library Mate software communicating with the ILS/LMS Software: IMMS for control of floating collections and reservations RFID: Danish Data Model

LYNGSOE SORT MATE™ 2000 MODULESPECIFICATIONS

Dimensions Module: 600 mm L x 420 mm W x 860/950 mm H / 23.6” L x 16.5” W x 34/37.5” H Chute: Depending on choice of chute

Weight 44 kg / 88 lbs

Power 100-240 V AC 50-60 Hz
Network connection Wired Ethernet to master module containing the PLC
Capacity Up to 2,400 materials per hour
Materials Steel chassis
Chute Standard chute for trolley
Standard colors Chassis: Black (RAL 9005) Corner and end plates: Green (RAL 6025) Standard chute covers: Green (RAL 6025)
Suitable for receiving Library materials (books, magazines, CD/DVDs etc.) Material restrictions Material size: Min: 100mm L x 100mm W x 2mm H / 4” L x 4” W x .1” H Max: 400mm L x 300mm W x 100mm H / 15.8” L x 11.8” W x 4” H Item weight: Min: 30 g/1 oz Max: 5 kg/11 lbs
For use with Hardware: Library Mate™ inductions Hardware: Lyngsoe Ergo Staff™ inductions Hardware: Lyngsoe Turn Mate™ Hardware: Lyngsoe Ergo Chutes™ Hardware: Standard chutes Software: Lyngsoe PLC software 1.0 and newer Software: Library Mate™ software communicating with the ILS/LMS Software: IMMS for control of floating collections and reservations RFID: Danish data model Bar code: Dependent on Library Mate™ and Ergo Staff™ induction configuration

B. How It Works
Passive RFID tags applied to library material: RFID tags have adhesive on the back and are applied primarily to the inside back cover of a library book or directly on to DVDs or CDs. The tag is used to store the 14-digit barcode number that is assigned to the item for use of inventory tracking within our Sierra ILS database. There is also a security component stored on the RFID tag, which tells an RFID reader whether the item is checked out or not. The tags are passive and only transmit data when a Bibliotheca reader comes into range.
Staff workstation RFID pads: The pads can simultaneously read multiple RFID tags in piles of material that are placed on top of the pad. The number of items may vary, since the read range is 12 inches from the pad. USB RFID pads have a smaller read range of only 6 inches, so they are mainly used for single-item transactions.
Self-check machines: The touch-screen devices allow patrons to check out their own library material. They allow multiple items to be stacked on the reader for instant and simultaneous check-out. The number of items may vary, since the read range is 12 inches from the pad.
Inventory wand: These portable wands include a RFID reader and allow staff to upload a shelf list of items that should currently be on the shelf. Items on a shelf can be inventoried by moving the handheld wand along the spine of each item. The read range is 8 inches from the front of the wand.
Sorting machine: RFID scanners track the item as it moves along the conveyer belt to be sorted. The read range is limited within the equipment to ensure the sorting process is not interrupted. The equipment also communicates using SIP2 communication to the Sierra ILS system, so that the library material is checked in.
Data collected or processed by the Bibliotheca RFID circulation and security gate system will not be handled or stored by an outside provider or third-party vendor on an ongoing basis. The Department will remain the sole Custodian of Record.
IMPACT ASSESSMENT

The impact assessment addresses the conditions for surveillance technology approval, as outlined by the Standards of Approval in San Francisco Administrative Code, Section 19B:

1. The benefits of the surveillance technology outweigh the costs.
2. The Department’s Policy safeguards civil liberties and civil rights.
3. The uses and deployments of the surveillance technology are not based upon discriminatory or viewpoint-based factors and do not have a disparate impact on any community or Protected Class.

The Department’s use of the surveillance technology is intended to support and benefit the residents of San Francisco while minimizing and mitigating all costs and potential civil rights and liberties impacts of residents.

A. Benefits

The Department’s use of the Bibliotheca RFID circulation and security gate system has the following benefits for the residents of the City and County of San Francisco:

- Time savings and improved customer interaction

Additional benefits include:

- Improved Customer Service at security gates. Security gates that use tattle-tape technology can only notify staff that an item may not be checked out. This requires staff to ask patrons to go through their items and check item by item to see if any material is not checked out. RFID gates do not read RFID tags from other libraries, book stores or other sources, so false hits will be eliminated. If an SFPL item is not checked out, the specific title will be listed in the StaffConnect software, allowing staff to provide that title to the patron and ask them to check the item out.

B. Civil Rights Impacts and Safeguards

The Department has considered the potential impacts and has identified the technical, administrative, and physical protections as mitigating measures:

The Library is following the 2012 RFID privacy guidelines recommended by the American Library Association and the National Information Standards Organization (NISO). These standards were developed to safeguard patron privacy. For library material, the Library uses low frequency 13.56 MHz passive tags that are compliant with ISO 18000-3 mode 1 and ISO15693 air interface protocols and the SLi-1 and SLi-2 chips are capable of storing data in the industry standard ISO 28560 format. The RFID readers on staff desks and self-check machines only detect the tags within 6 to 12 inches. The RFID Security gates have a read range of up to 30 inches. By limiting the read range, the library is limiting the chances that a tag will accidently be read by staff equipment. The use of shielded RFID work pads at circulation desks ensures that the equipment only reads 12 inches directly above the pad and not to the sides, ensuring better control at our busy service desks. Even if a non-staff person was able to obtain a Bibliotheca reader, they would need to stand in very close proximity to a patron to read the tag. If they did succeed in reading the tag, the only information they would retrieve is the 14-digit barcode number of the item. Without access to the Sierra database, this barcode cannot be used to pull up bibliographic information about the item. Since the library cards will use barcode labels for
patron library card numbers (not RFID tags), it will not be possible to use a RFID reader to gather patron barcodes.

By following the 2012 RFID privacy guidelines recommended by the American Library Association and NISO, the library is able to safeguard patrons’ civil rights and liberties by minimizing risk through the implementation of appropriate safeguards. Even after the RFID reader’s read range limitations, personal information cannot be obtained through a RFID reader. RFID readers read only RFID tags. Notably, SFPL’s RFID tags contain 14-digit barcode numbers that are linked just to SFPL items (i.e. books, magazines, DVDs, etc.). If an RFID tag is read, only library item data will appear; no personal patron information will be viewable. Notably, Patron library cards do not contain RFID tags, but rather utilize separate barcode labels. Access of patron information by RFID reader is therefore impossible.

As no personal information is transmitted or collected by RFID readers and only SFPL item data is viewable (i.e. item title, author, etc.), patrons remain completely anonymous when engaging with RFID readers. The risks of dignity loss, discrimination, loss of liberty, or loss of autonomy that might ensue if RFID readers were able to identify personal patron information if within RFID reading range are therefore negligible to nonexistent.

As patron data remains secure and untouched by RFID readers, other risks such as economic loss from financial information breach, physical harm from location tracking, or loss of trust resulting from tracked personal trends or appropriated personal data are also negligible to nonexistent.

C. Fiscal Analysis of Costs and Benefits

The Department’s use of the Bibliotheca RFID circulation and security gate system yields the following business and operations benefits:

- Time savings during the check in and check out process of handling the library material. See attached Radio Frequency Identification (RFID) Costs/Return on Investment report. During staff tests, it was found that an average savings of 5.16 seconds will be saved for each item checked in (CKI) and 7.83 seconds will be saved for each item checked out (CKO). While some staff time will be saved as we tag each branch’s collection, the complete conversion will not be finished until the end of FY20. For the report we opted to only track a full year of savings, estimating approximately $626,185.40 in organizational time savings in FY21.
- Improved Collection Inventory - Improved accuracy during circulation transactions and the ability to perform collection inventories will greatly reduce the number of missing items that are repurchased. SFPL replaces missing items on a regular basis, and the average cost of replacing such material is $25.00 per item.

The total fiscal cost, including initial purchase, personnel and other ongoing costs is

<table>
<thead>
<tr>
<th>Number of FTE</th>
<th>550 (est.) Note: number of staff versus FTE are not the same.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td>36xx, 99xx, 18xx</td>
</tr>
<tr>
<td>Total Salary &amp; Fringe – (one time cost of tagging the collection initially)</td>
<td>$577,476</td>
</tr>
<tr>
<td>Software (one-time cost)</td>
<td>$64,633</td>
</tr>
<tr>
<td>Hardware (one-time cost)</td>
<td>$1,887,182</td>
</tr>
<tr>
<td>Professional Services (ongoing costs)</td>
<td>First year of maintenance is covered in the cost of the equipment purchase. It is too early to predict the cost of future equipment maintenance, but there will be an annual charge.</td>
</tr>
<tr>
<td>Other (Tags, one-time cost)</td>
<td>$848,465</td>
</tr>
<tr>
<td>Other (Tags, ongoing costs)</td>
<td>$20,000</td>
</tr>
</tbody>
</table>
| **Total Cost** | One-time cost: $3,377,756  
Ongoing cost: $20,000 plus cost of technical support contract. First year coverage for equipment is free. |

The Department funds its use and maintenance of the surveillance technology through Capital project budget funded by the Library Preservation Fund, City Charter Section 16.109.

**COMPARISON TO OTHER JURISDICTIONS**

RFIDs are currently utilized by other governmental entities for similar purposes.
APPENDIX A: Surveillance Impact Report Requirements

The following section shows all Surveillance Impact Report requirements in order as defined by the San Francisco Administrative Code, Section 19B.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Toolkit References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Information describing the Surveillance Technology and how it works, including product descriptions from manufacturers.</td>
<td>[Toolkit 1.6 and 1.7]</td>
</tr>
<tr>
<td>2. Information on the proposed purpose(s) for the Surveillance Technology.</td>
<td>[Toolkit 1.2, 1.3, 1.8, 1.9, and 1.10]</td>
</tr>
<tr>
<td>3. If applicable, the general location(s) it may be deployed and crime statistics for any location(s).</td>
<td>[Toolkit 3.5]</td>
</tr>
<tr>
<td>4. An assessment identifying any potential impact on civil liberties and civil rights and discussing any plans to safeguard the rights of the public.</td>
<td>[Toolkit 2.1]</td>
</tr>
<tr>
<td>5. The fiscal costs for the Surveillance Technology, including initial purchase, personnel and other ongoing costs, and any current or potential sources of funding.</td>
<td>[Toolkit 1.11 and 1.12]</td>
</tr>
<tr>
<td>6. Whether use or maintenance of the technology will require data gathered by the technology to be handled or stored by a third-party vendor on an ongoing basis.</td>
<td>[Toolkit 3.23, 3.23a, and 3.23b]</td>
</tr>
<tr>
<td>7. A summary of the experience, if any, other governmental entities have had with the proposed technology, including information about its effectiveness and any known adverse information about the technology such as anticipated costs, failures, or civil rights and civil liberties abuses.</td>
<td>[Populated response conditional on previous drop-down selection]</td>
</tr>
</tbody>
</table>
APPENDIX B: Mapped Crime Statistics

Not applicable to this technology.