

---

# Testing Cards to the LASSeO Specification

Kevin Farquharson  
Director, Smartran Ltd  
23 Sept 2008

- 
- Why test smartcards
  - Why does it matter now
  - Your London Card Experience
  - What is the requirement for testing
  - Questions

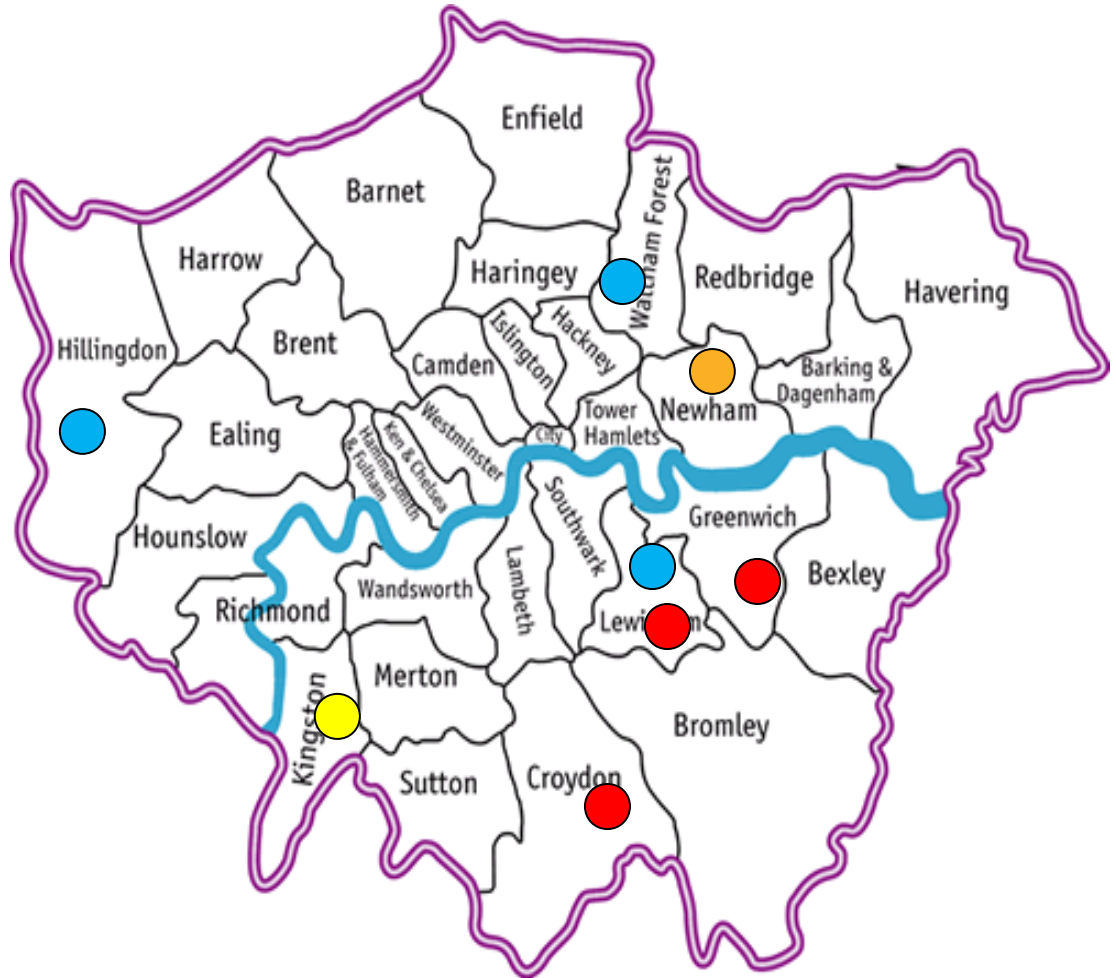
# Why test standard card encoding?

---

- National Smartcard Project lead to development of NSCP software (now SmartConnect) and standard card encoding
- Card encoding subsequently adopted and augmented under LASSeO (LA Smartcard Standards e-Organisation)
- Standards = reduced technical debate on encoding +
- Standards = consistency in encoding +
- Standards = interoperability ????? Possibly
- *cf Cars and driving*
- Different suppliers may interpret or implement specs differently (designers & programmers are human)

- 
- Until recently, pilot and early adopter schemes were local to a borough and/or single supplier
  - ITSO has demonstrated the importance of standards backed by independent component type testing (Integri)
  - Your London Card = multiple issuers + multiple suppliers + multiple services & service providers

- 2003 Oyster Launched
- 2004 SEaLEGS dual chip cards in Croydon, Greenwich & Lewisham
- 2005 Library trial in Newham
- 2007 Waltham Forest OneCard  
 2008 Lewisham One Card  
 2008/9 Hillingdon First card
- 2007 Kingston library trial
- 4+ Councils planning schemes



# Potential London Borough Scheme



# A future day in the life of a Londoner

Leave home & drive to car Park; pay for Parking



## Applications

- Payment
- Parking
- Transport
- Library
- Leisure
- Access
- Amenity Site

On way home, stop at Amenity site with re-cycling



Take tube to work



Drop into Library to hire DVD



Go to shop to pay rent at lunchtime

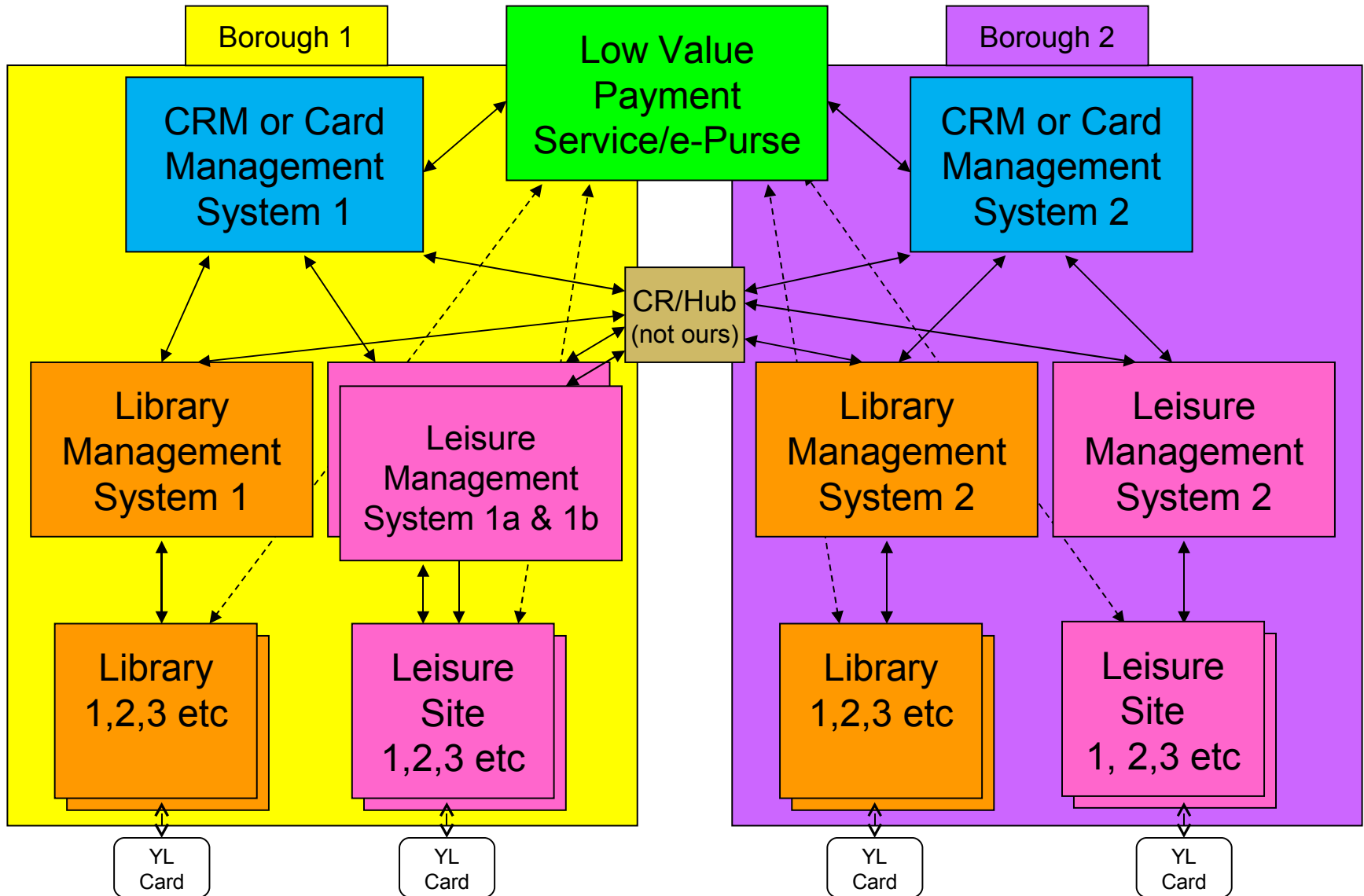
## Payment



Pay for & attend class at leisure centre



# Multi-Borough Solution



- Cards are being produced to the LASSeO spec at present and it is important that any divergences are detected and resolved
- Basic testing is required that is more limited than the kind of service offered for the ITSO environment
- Provide a good degree of confidence for those using the LASSeO Mifare 4k specification that test samples have been encoded correctly
- Produce an exception report where problems are encountered.

- 
- The London scheme(s) are being co-ordinated by London Connects with input from Smartran
  - Active boroughs have come together to progress in a common way with the expectation of being able to interoperate or share service provision in the future.
  - Smartran has identified a number of potential anomalies between card encoders and have sought to find an independent testing facility that can provide an analysis of what is supposed to be on a card, what is on a sample card and compare to the LASSeO spec.

- A service provider is required to:
  - Produce a set of test parameters to test the boundaries
  - Independently test a number of legacy cards produced by various encoders in the initial London schemes
  - Independently test a number of test cards produced for each new scheme/application as they comes along
- It is expected that this will be a growing problem for schemes in the UK and this will be a paid for service
- Mifare 4k card is the preferred choice at the moment - Desfire and newer Mifare products could be included in the future.

# QUESTIONS?

**Kevin Farquharson**  
**Director, Smartran Ltd**

**[www.smartran.co.uk](http://www.smartran.co.uk)**

**[kevin@smartran.co.uk](mailto:kevin@smartran.co.uk)**

**01483 772241**