SmartCity® Version 6

SmartCity®, the market leading smart card system has been extensively redeveloped to take advantage of the latest in design technology and rapid application and deployment environments. This latest version of SmartCity® enables SmartCentric Technologies International Ltd to offer our customers a far more flexible system, easily customizable, highly reliable and more user friendly. In addition, there will be a reduced requirement for hardware and a simple deployment and card issuing application. New customer cards, POS terminals, vending machines, servers and applications can be introduced more easily and quickly. By adopting latest Windows and Microsoft .NET technologies, we can rapidly respond to changes in market and customer demand and be ready to adopt new and emerging technologies or applications.

Key Benefits of SmartCity® 6

- Centralized processing and security offers reduced cost for card issuing
- Easy to configure, deploy and manage services, offering increased ease of use for off-campus and city card program
- Transaction processing and collection improved – more information with less effort
- The Web based interface allows for easier development of customer portals and access to individual reports
- Better administration tools allow for easy system management
- Simple upgrade of cards in the field
- Reporting system improved
- New infrastructure supports smaller issuers

So what is so different about SmartCity® 6?

1. Development Environment

While this may not be of interest to many system operators, the way that SmartCity® 6 is structured compared to previous versions is vastly different. The new development environment uses the .NET Framework. The .NET Framework is a platform that allows you to develop software applications and libraries called 'managed applications'; it provides you with the complier and tools to be able to build, debug and execute managed applications.

The .NET Framework manages the applications by providing a controlled runtime environment offering a wide variety of services like loading applications, managing memory, and monitoring and maintaining the security and integrity of the application while it is executed. The advantage of this is that is produces a simple development environment and one which increases the security of the application and data integrity. This in turn reduces the effort required to maintain and debug an application.

The .NET Framework provides the developer with compilers, debuggers, programming languages and an execution engine (CLR – Commons Language Runtime), developer tools and a large number of predefined "building blocks" Libraries. These libraries are named FCL (Framework Class Libraries) – each of which are like building blocks.

2. Application Environment

All SmartCity® 6 applications run in a Windows based web environment. This requires less dedicated hardware and means that application code does not need to be loaded to client PCs. The applications run on an Application server and serve the resulting code to the client PC. Applications can be run from anywhere, simply and cheaply, only requiring card reader software to be loaded to any PC with an attached card reader.

Reporting is also made easier. Crystal Reports 14 is now supported and as with other parts of the system, making changes to existing reports and processes and simplified, and while changes to reports will still take some time, this is greatly reduced in SmartCity® 6.

The User Interface has been redeveloped and enhanced. Users can now have a customized User Interface and also customized views of the data or information that they require.

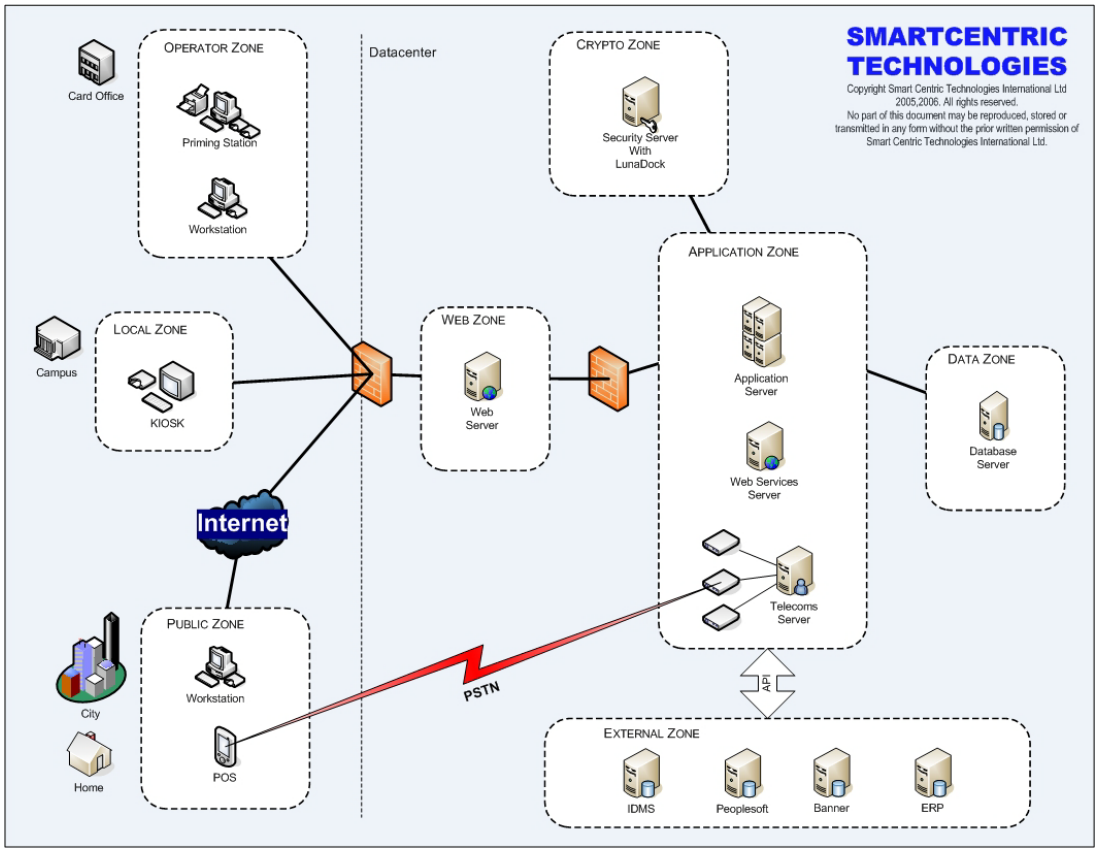
3. System Structure

The SmartCity® system is now divided into a number of zones as shown in the diagram which follows.

Within the **External Zone**, there is the **Operator Zone** (card office), the **Local Zone** (with a college or corporate campus) and the **Public Zone** (workstations and POS terminals external to a defined local zone).

The **Operator Zone** is where there can be one or many workstations that connect via a web server to the relevant application zone. For example, card issuing is now carried out via an Operator zone, which consists of a workstation PC, with a card printer, smart card reader/priming unit and camera (if required). There will no longer be a requirement for each card issuing workstation to be equipped with control and initialisation cards, as one single set will be controlled on the card issuing application – now housed on the application server.

Other workstations can allow authorised card office staff to access the new "Customer Service Center" where they can reissue cards, cancel cards, deal with balance enquiries etc. This is carried out using a new look, easy to use system where student details can be searched and viewed by student name, card number etc.



These enhancements to the card office functions will result in faster and simpler access to data and other card office activities.

In the **Local Zone**, the addition of new devices – POS, vending, copiers etc is simplified and can be greatly speeded up in comparison with previous versions of SmartCity®. Where possible, devices will connect to a web server using TCP-IP for transaction collection and hotlist distribution. In offline environments, transaction collection cards will continue to be supported.

The **Public Zone** consists of Workstations and public POS terminals. The Public Zone will connect, as at present, through the Internet, and public POS terminals will connect over a public service telephone network (PSTN).

The **Overall Internal Zone** will now most likely be housed within a Datacenter. This will house all of the servers that are central to the SmartCity® Back Office System.

As with other parts of SmartCity® 6, the Back Office Software has been largely redeveloped, also using the .NET Framework. The basic system will require a minimum of 4 servers, although these may be shared with existing servers providing similar functions.

a. The Web Server: provided the key access point for outbound and inbound data. This could be housed on an existing web server, and for security is firewalled from the external zone and from the application zone.

b. The Security Server: The SmartCity® security server in version 6 still requires a security token and will provide all of the main security functions for the system. It interfaces with other elements of SmartCity® via the application server.

c. The Application Server holds a key role in SmartCity® 6, which operates in the .NET Framework which involves serving all activity in the system in the form of managed applications. All of the major processes in the system will be accessed through this server including Acquirer, Transaction processing, card issuance etc.

The Application server will also be the point through which the SmartCity® system interfaces with external systems such as IDMS, Meal plans, Banner, Access control or Library systems.

d. The Database Server: This will hold the SmartCity® database, the preferred database of choice will continue to be SQL server but as the system is database independent, other databases such as Oracle and Sybase will be supported. The Database server is housed within the Data Zone, and may reuse an existing database server.

e. The Telecoms server is used to communicate with external devices via a PSTN, and may be housed on the Application server.

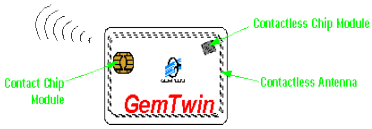
4. System Hardware

While system hardware is more easily interchanged and new hardware incorporated, this section outlines the hardware supported.

Cards: A maximum of 4 purses will be supported.

Gemplus MPCOS family

GemXpresso



GemTwin

Desfire 4K Contactless

HID iClass

Siemens OS Card

Devices: Laundry, vending, photocopiers, printing: These devices will be QI Systems or Debitek.

POS Terminals: The Verifone 3750 and VX570 and 5100 and VX610 terminals will be supported initially.

Smart Card Readers

OMNIKEY Cardman 3121
OMNIKEY Cardman 4040
OMNIKEY Cardman 5121
OMNIKEY Cardman 6121

Gemplus GemPC USB-SL
Gemplus GemPC Card
Gemplus GEMPC Key

Biometric Readers

Precise 100MC Biometric Reader
Precise 100SC Biometric Reader

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