

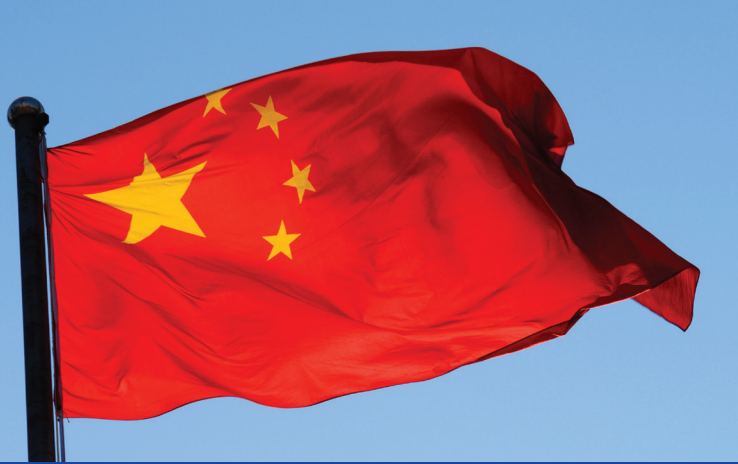
GLORY



KIBANGO™

Serial Number Management Solutions

Commercial Banks, China



2010: First implemented in Nanjing, Jiangsu: all banknotes dispensed by any ATM in Jiangsu must comply with the new regulations from the Central Bank of China.

2013: Introduced throughout China: all banknotes dispensed by bank branches, cash centres and ATMs, including off-premises, must comply with the new regulations.

THE CHALLENGE

Serial number management regulations in China present Commercial Banks with a significant and unique challenge.

The People's Bank of China (the Central Bank of China) regulates all cash management process within the country, including the requirement to record and trace serial numbers of every banknote in circulation.

Before the international athletic tournament "Asian Games" which was held in Guangzhou in 2010, there was already an increasing demand from Chinese banks for the Central Bank of China to introduce measures that would regulate currency circulation. Banks were particularly concerned about the distribution of counterfeit banknotes; especially during a prestigious international tournament.

In order to prevent the redistribution of counterfeit banknotes, the Central Bank introduced new regulations which would require serial numbers on Chinese banknotes to be recorded. Banknotes dispensed from any ATM in the country were subject to the regulations; the objective being to enable the Central Bank to identify where the counterfeits originated from. This new requirement was a significant challenge to cash handling organisations in China and also unprecedented anywhere in the world.

A SIGNIFICANT CHALLENGE FOR COMMERCIAL BANKS AND FOR GLORY

For Commercial Banks, the challenge presented by these new regulations was significant:

- Required to record serial numbers of all banknotes processed through their branches and cash processing centres.
- Record and manage a significant volume of data.
- For banknotes dispensed at teller counters or via ATMs, serial numbers needed to be recorded with the specific transaction details: time / quantity / breakdown / fit-unfit / Operator ID/ Terminal ID/ cash processing device ID etc.

- Significant changes to cash handling processes or a reduction of cash processing speeds was not acceptable as part of the solution, as this would have adverse financial effects on the banking operation itself.
- Replacing cash handling equipment was also an unacceptable solution, as this would require significant additional investment.

The technology to read serial numbers (up to ten characters) within a high-speed processing device (12 banknotes per a second) whilst simultaneously identifying banknote denomination, authentication and determining the fitness of each individual banknote, was not yet available.

Integration of existing cash handling hardware into a reliable software solution, without any loss of cash processing speed, was vital.

Up to this point, serial number recognition was only possible when a cash handling device's processing speed was decreased, resulting in unacceptable performance and efficiency levels.

Glory undertook the challenge to provide a solution to Commercial Banks in China and successfully developed an advanced software solution, KIBANGO, which has the ability to store and manage serial number data of every banknote that is processed on a connected device.

A **COMPREHENSIVE** SOFTWARE AND HARDWARE **SOLUTION**

Glory's cash handling solutions, ranging from desktop banknote counters for bank branches to mid-sized sorters for cash centres, have the ability to read banknote serial numbers. With the addition of KIBANGO as part of the total solution, Glory is able to offer breakthrough solutions that can accurately read and record serial numbers whilst processing banknotes at maximum machine speeds.

GLORY'S SERIAL NUMBER RECOGNITION FUNCTIONALITY

Cash handling device:

- Trace any banknote via a scanned image; full or partial
- Reject suspect notes by serial number blacklist checks
- Reject suspect notes by dual serial number verification

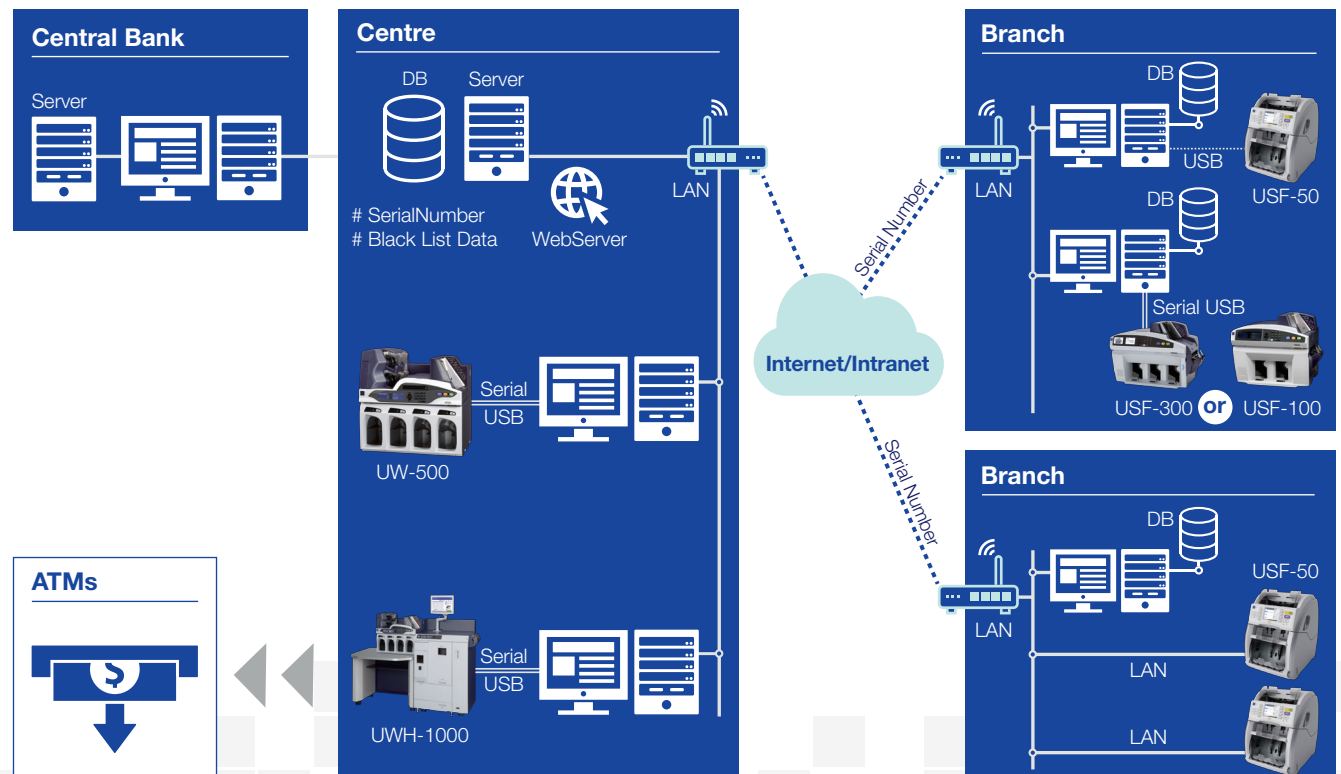
Software:

- Records serial numbers and transfers the data to a terminal / local server / Cloud in real time
- Flexible database retrieval function
- Reports information regarding suspect counterfeits to the Central bank



SERIAL NUMBER MANAGEMENT PROCESS

- Serial number data from banknotes processed on a Glory device within branches or cash centres is stored on a local server through LAN/USB
- Data stored on local servers is transferred to the Cloud or the Bank's intranet
- The data is managed in a database by the Bank's headquarters
- The database, controlled by each Bank, is always available to reference or report information to the Central Bank



COUNTERMEASURES AGAINST COUNTERFEITS

A 'black list' of serial numbers is regularly updated by the Central Bank and this information is open to Commercial Banks. Each Bank is able to utilise the information on the 'black list' to prevent suspected counterfeit banknotes being accepted at the teller position in their branches.

CENTRAL BANK

- Regularly updates the information regarding counterfeit banknotes, based on the reports received from Commercial Banks.
- A 'black list' of counterfeit banknote serial numbers is shared and is accessible by each bank

Share

COMMERCIAL BANK

- Cash deposited in branches is compared to the counterfeit information provided by the Central Bank
- Glory devices and software check the pre-registered blacklist of serial numbers and, in addition, simultaneously verify the dual serial numbers on a banknote.
- When a suspect note is detected, it is immediately removed from circulation
- The branch sends the captured image of suspect banknotes to their relevant cash processing centre
- Banks also report information of suspect notes found to the Central bank

Report

HOW DO **COMMERCIAL BANKS** BENEFIT FROM IMPLEMENTING **THE KIBANGO SOLUTION?**

1. Compliance with Central Bank regulations, with minimal capital investment

Banks in China were able to prepare their cash handling infrastructure to be compliant with the new regulations, with minimal capital investment. There was no need to replace existing cash processing devices, as the solution offered by Glory only required a software application and a minor upgrade to existing hardware. Glory's cash handling devices already incorporate high resolution sensors that scan a full banknote image, including the section of the banknote where serial numbers are printed. The hardware upgrade consisted of adding a small and inexpensive processing board.

HIGH RESOLUTION IMAGING SENSORS ARE INCORPORATED INTO A RANGE OF GLORY DEVICES, WHICH ARE CAPABLE OF SERIAL NUMBER RECOGNITION.



HOW DO **COMMERCIAL BANKS BENEFIT** FROM IMPLEMENTING **THE KIBANGO** **SOLUTION?** [continued]

2. Confidence to both customers and banks

- Tellers are able to confidently process customer transactions; banknotes are assured as genuine
- Combats counterfeits being accepted in the branch, by utilising the “black list” data supplied by the Central Bank

“Accepting counterfeits has penalties for a teller in China, but the serial number recognition function helps us detect suspect notes. Additionally, I can hand over cash to customers with confidence.”

Source: Teller from a commercial bank



A CONTINUOUS CHALLENGE

Glory is a leading provider of serial number management solutions, which have been utilised to specifically address the Central Bank regulations in China. Now, more than 50 servers and 5000 clients utilise Glory's KIBANGO application all over China. The reasons for this are clear:

- Glory's comprehensive software and hardware solution addresses the specific needs of financial institutions in China
- Glory is highly trusted and relied upon by banks in terms of the provision of superior quality products
- KIBANGO can be utilised by Glory cash handling devices in bank branches and cash centres, to comply with serial number management requirements
- Glory's KIBANGO application can adapt to each bank's differing serial number recognition needs; for example, data can be saved via OCR, partial capture of the banknote image or the entire banknote image can be scanned and saved.

Glory's innovative approach to serial number management is now moving to the next generation of cash handling solutions. Glory is now introducing "all-in-one" devices, where cash handling processes and serial number management can be performed on the same device, without the need to have external software or a PC connection.

Additionally, serial number data can now be saved onto smart media, such as an SD card, to deliver more flexible methods of data output. Customers can now choose to have real-time transfer to a local server / Cloud via a LAN connection. Additionally, off-line data processing is possible, whereby the media can be removed from the device and be handled separately.





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