



国家金融安全及系统装备工程技术研究中心
National Financial Security and System Equipment Engineering Research Center

China's experiences on payment management in crisis situation

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Main ideas to be presented

- **Establishment of cash circulation facilities**
- **Cash delivery & ePayment network establishment**
- **Cash chained Information management**
- **Mobile cash delivery and payment implementation**
- **Security enhancements for cash delivery services**





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Establishment of cash circulation facilities





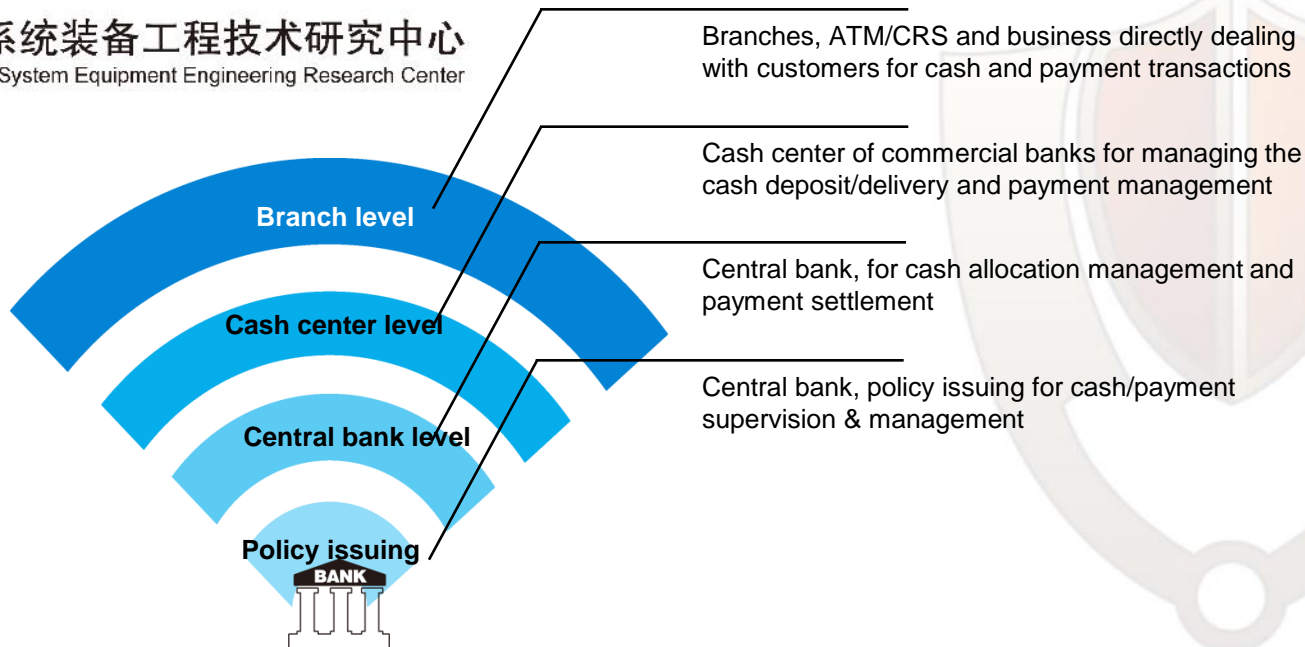
Multiple tiers of entities for the cash delivery system in China

- **Central banks (several levels of facilities of people's bank)**
- **Cash Centers of commercial banks (each commercial bank may own/manage one or more cash center(s) in one city)**
- **Branches (ATMs) of commercial banks (each commercial bank normally owns multiple branches/ATMs located in its service region)**

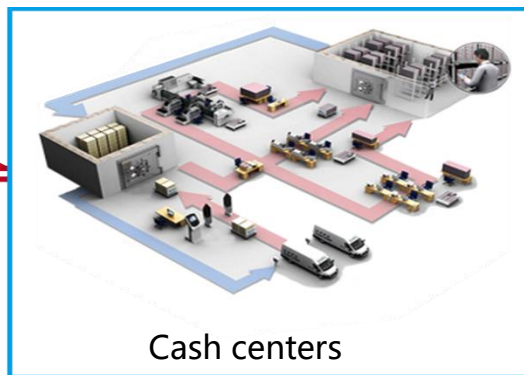


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Central banks



Cash centers



Branches



Multiple tiers of entities for the cash circulation management

Tier one: Central banks

- **Central bank, Policy issuing, managing cash printing and key vaults for cash reserve**
- **Regional/province level cash centers --- Allocation/Management and shredded etc.**
- **City level cash centers --- dealing with commercial cash centers for the city in which the commercial bank is located**
- **County level cash centers (not in the each county)--- dealing with commercial cash centers for the city in which the commercial bank is located**



Multiple tiers of entities for the cash movements

Tier two: Cash Centers of commercial banks

- **One or more cash centers in each city for each commercial bank**
- **Need to manage to have enough deposited cash to cover quantity of cash usages**
- **Meanwhile, need to manage to keep the amount deposited in vaults at a minimum to be as efficient as possible**
- **Managing the cash vaults and delivery for branches and ATM usage supervised by central banks**



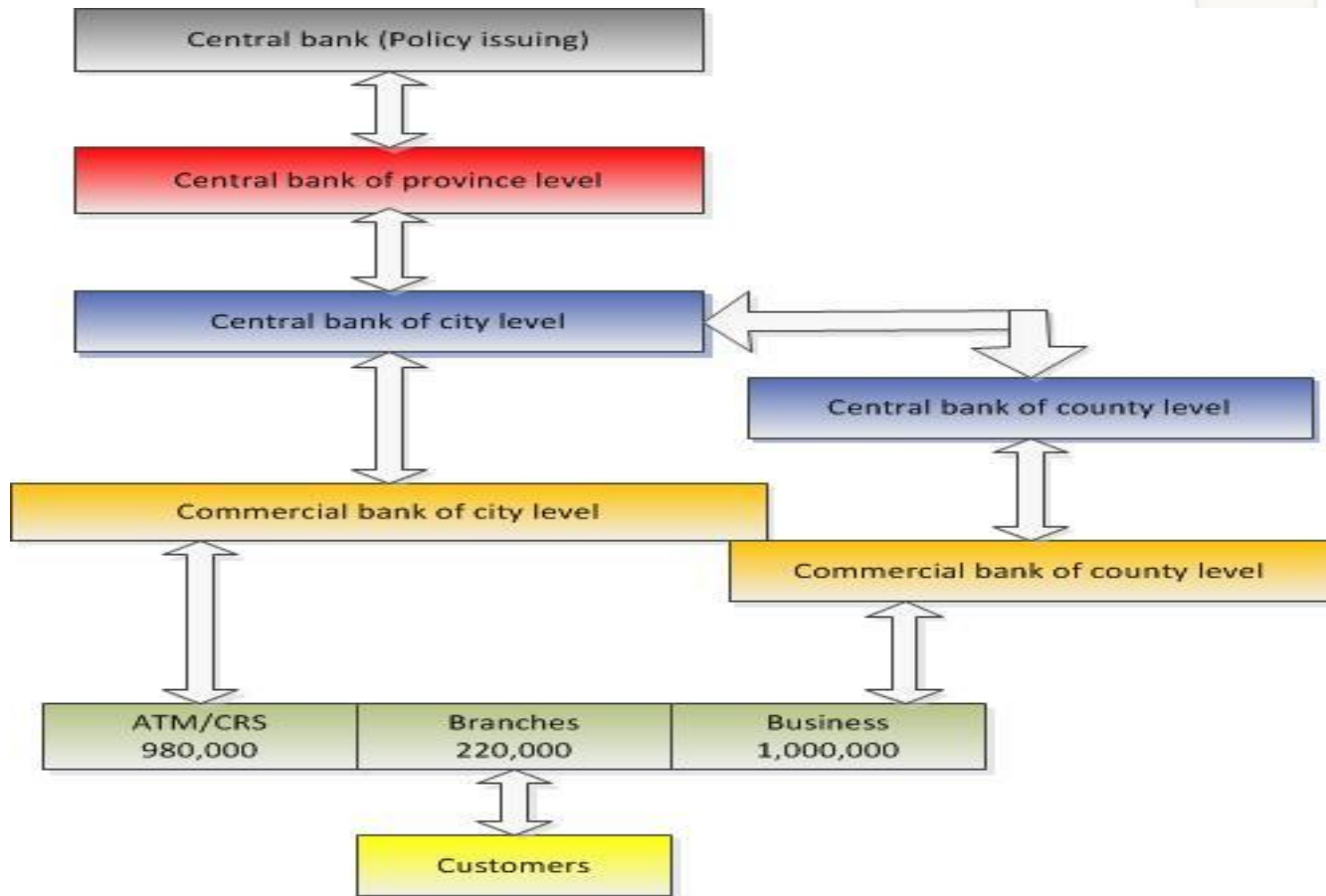
Multiple tiers of entities for the cash movements

Tier three: Cash in/out & payment points

- **Branches: Branches of Commercial banks, close to 220,000 country wide**
- **ATM/CRS of commercial banks: close to 980,000 country wide**
- **Business customers for which the cash is managed by cash centers, more than 1,000,000 country wide**



Cash circulation and ePayment management layouts





The network establishment for cash and ePayment

- **Making sure the cash could be delivered on the same day per request.**
- **Cash can be delivered from nearby cash sources in the system so it can be available sooner in certain circumstances.**
- **The chained information management across the entire cash “hot spots” is linked under supervision of the central banks to realize the secure and efficient delivery of cash and to make any movement accountable.**
- **Multiple backup systems in the same city & remote cities across the country for each bank to make sure that payments remain available and smooth as long as there is one system still online**



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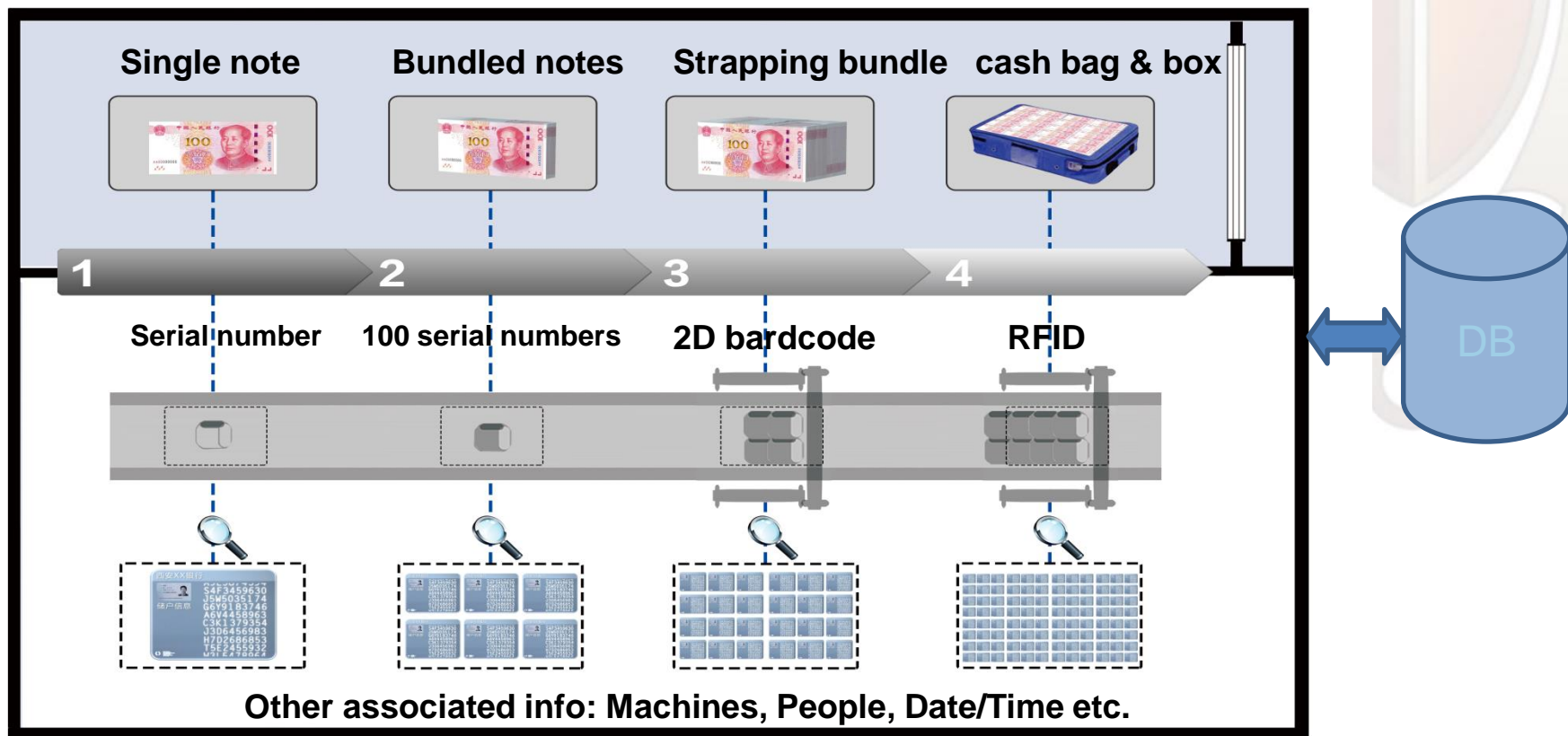
Chained information management





Chained information management

- **Establishment of a nationwide serial number recording and management system**
- **Using “serial number” of each note for recording, storage and searching**
- **Serial numbers are associated with the packages so that each individual note can be tracked at any destination; including date/time, machine processing the notes and people involved etc.**





Chained information management

- **Single note information storage and management**
- **Bundled notes information storage and management**
- **2D barcode for strapped bundles management**
- **RFID for package (multiple bundles) management**
- **Cash circulation chained information validation and applications**
 - **Searching and identify the transaction involved with a given serial number**
 - **Original package (Bundle & Package) for source tracing**





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Vault automation management





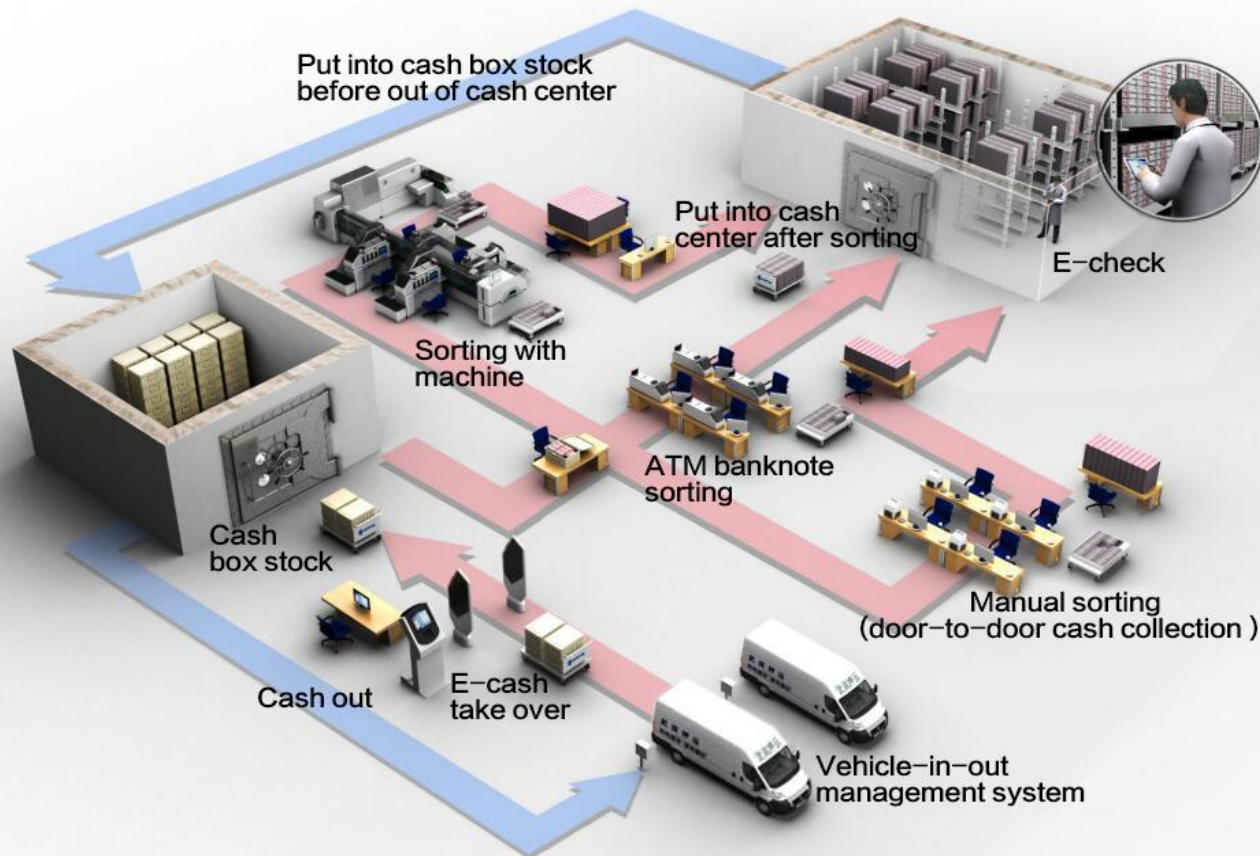
Vault automation management

- **Establishment of nationwide cash vault facilities:**
 - **Normal cash depository and delivery**
 - **Fast response to crisis situation**
- **Each vault containing several sections:**
 - **Sorting and processing**
 - **Packaging & Storage**
 - **ATM replenishment**
 - **Transportation management**
 - **Cash information management**





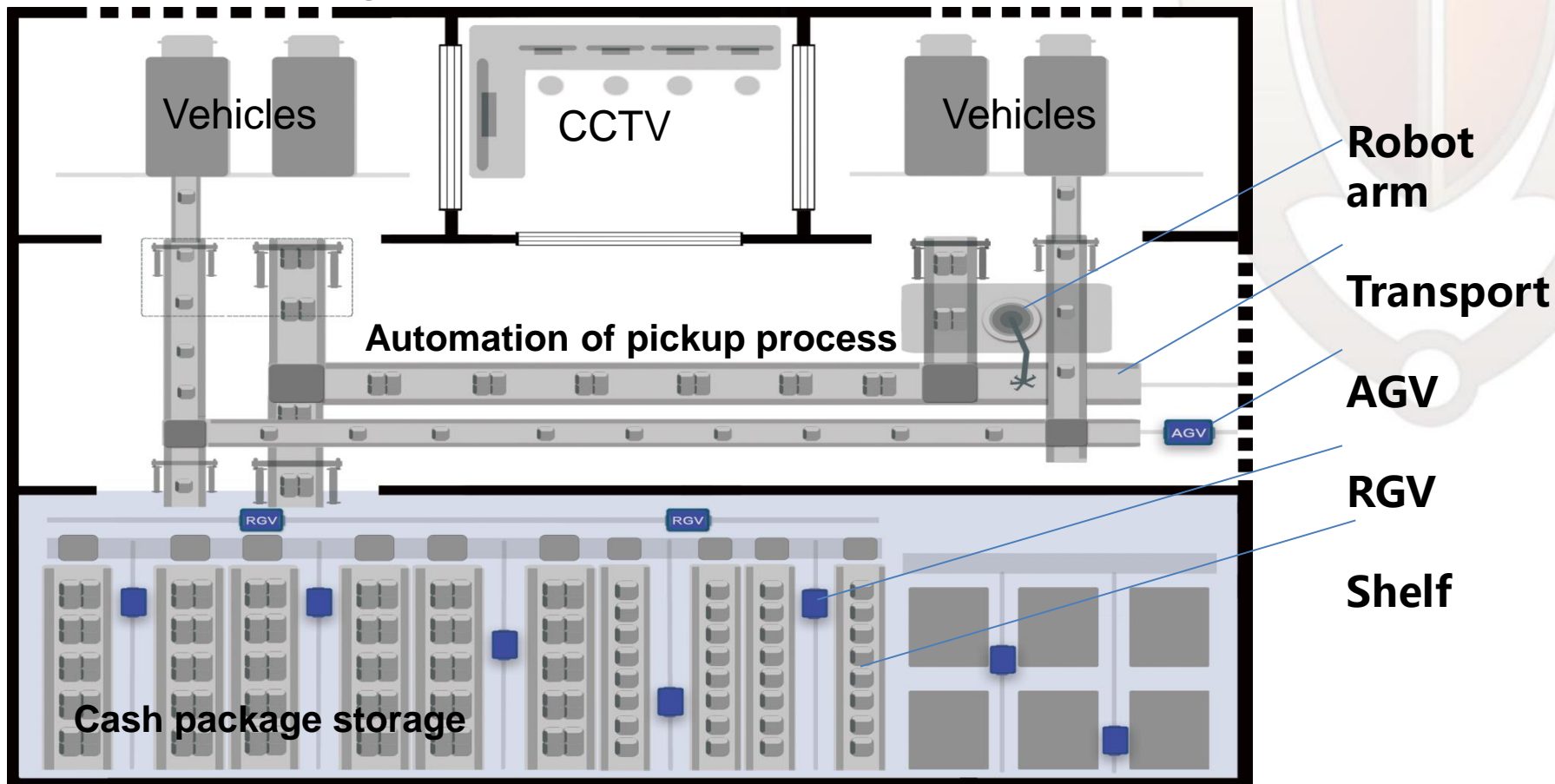
Typical cash center layout of a commercial bank



- Gate automatic validation
- Cash processing
- ATM replenishment
- Vault for cash
- Vault for cash box
- Vehicle & transportation management



Automation Management of Cash Vault





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Multiple channels for cash delivery and payment systems implemented



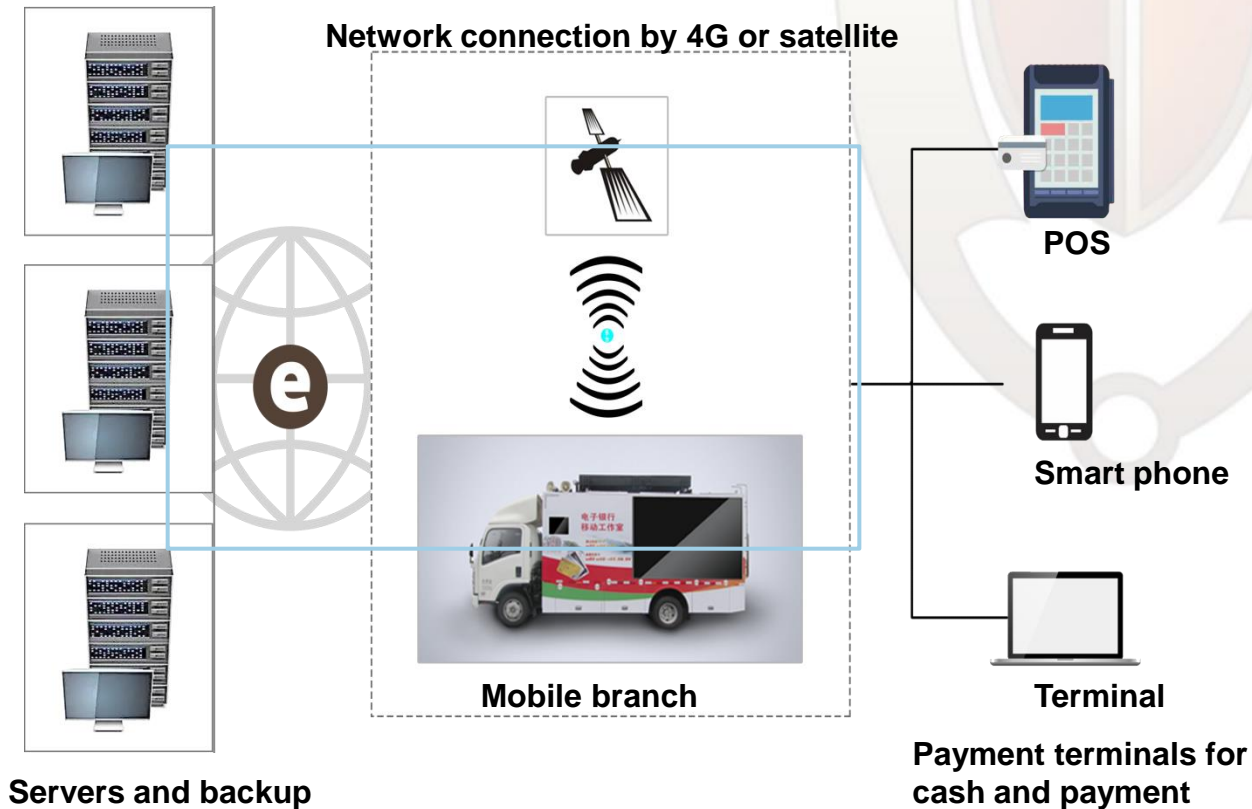


Multiple channels for cash delivery and payment systems implemented

- **Mobile branches implementation:** Covering remote areas in which traditional branches and ATMs are out of service due to a crisis situation (Such system was applied in May 2008 - earthquake)
- **POS (Wire and wireless):** payment system countrywide
- **Alipay:** online mobile payment, easy to setup on the mobile phone. Buyers make purchases on merchant's website or the store will deduct the amount of payment from buyer's Alipay account and then settlement will be made between Alipay and merchant
- **WeChat ePurse:** online mobile payment for point to point
- **Wechat banking:** online payment and banking for point to point



Typical example of Mobile Branches





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Security enhancements for remote monitoring

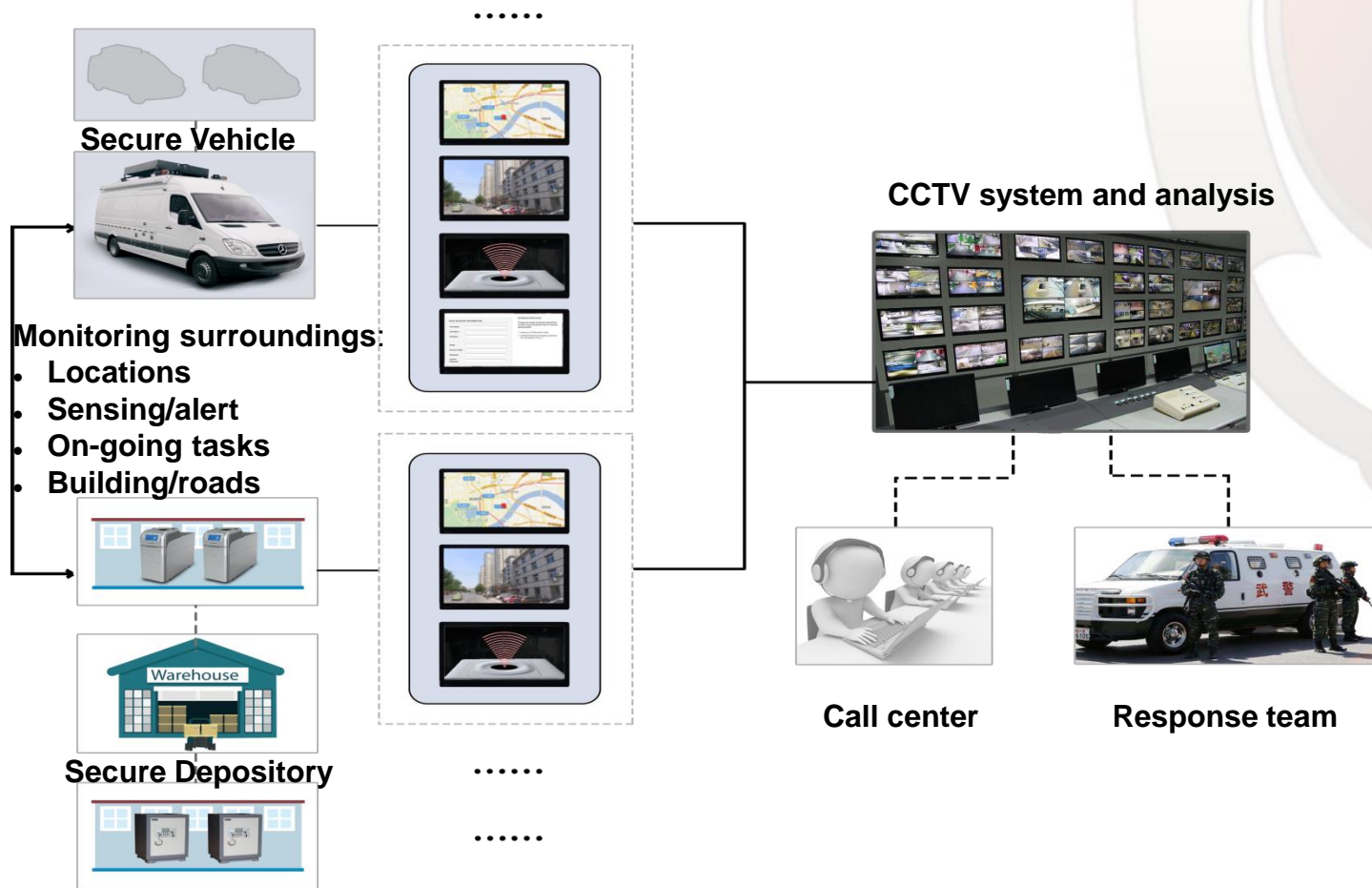
-- Cash delivery and management systems **to be implemented in China**





Security enhancements for remote monitoring -- Cash delivery and management systems **to be implemented in China**

- **Unarmed secure vehicles for cash transportation**
- **Unarmed flexible vaults for cash depository**
- **Centralized monitoring system and alert pattern recognition**
- **Alert monitoring and response team**



THANK YOU

