The GS1 System supports the whole cash cycle and lead to benefits for professional cash handlers, such as:
- National Central Banks (NCB), mints and printing works
- Banks
- CIT companies (cash in transit)
- Commercial enterprises

The ordering and depositing process of cash can be eased substantially by the GS1 based message transfer:

**Electronic Ordering of Cash:**
The Electronic Cash Order is transferred to the NCB. After preparation of the withdrawal the NCB can send a Notification of Delivery that contains information about the prepared cash units according to the order. With the Confirmation of Delivery the NCB informs its customer about the delivery of the cash.

**Electronic Notification of Inpayment:**
The Customer can announce its deposit of cash electronically to the NCB prior to the physical delivery with a Notification of Inpayment. Having taken in the cash units, the NCB answers this message with a Confirmation of Receipt. After reconciliation of the deposit the NCB informs the customer about the accurate counting results (Final receipt) or alternatively send a Notification of Discrepancy to him.

Because of the messages’ neutral design the data flow is not limited to central bank operations but can be performed between every professional cash handler.

### GS1 System

The GS1 System is an integrated system of global standards for identification and communication purposes. It provides information regarding products, assets, services and locations. It is the most implemented supply chain standards system in the world and the basis for a wide range of efficient supply chain applications and solutions. GS1 has local offices in over 100 countries worldwide. Together with the GS1 Global Office in Brussels GS1 serves about 1.2 million companies in over 150 countries.

### Participants in the cash cycle

The GS1 System supports the whole cash cycle and lead to benefits for professional cash handlers, such as:
- National Central Banks (NCB), mints and printing works
- Banks
- CIT companies (cash in transit)
- Commercial enterprises

### Benefits of GS1 Standards in the cash cycle

The cash cycle consists of various processes for ordering, receipt and delivery of notes and coins. It includes a lot of different cash handlers asking for highly secure and reliable business transactions.

The usage of the GS1 Standards improves the efficiency, the security and the transparency of all relevant cash handling processes.

In this context GS1’s global, multi-sector standards contribute to:
- increasing the reliability of the physical tracking of cash units
- optimising and standardising the message flow between professional cash handlers
- eliminating duplicate inputs
- saving time in preparation, shipping and receiving
- improving traceability and thereby contributing to customer safety
- increasing reliability and optimising inventories
- improving the quality of service
- enabling the automatic recording of data to ensure the quality of information.

### Improvement in cash processes

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General Overview on the Cash Cycle

(Exemplary description: Depending on the national cash cycle additional message types or steps may be necessary.)

**PREPARATION OF WITHDRAWAL**
- Acceptance of cash order;
- Order Response;
- Preparation of cash units, labelling with SSCC;
- Notification of delivery to CIT company and bank.

**INPAYMENT**
- Acceptance of inpayment by scanning the SSCC of cash units;
- Confirmation of receipt to CIT company and bank;
- Arrival notice to commercial enterprise.

**STORAGE AND TRANSPORT**
- Vault management;
- Identification of cash units by SSCC;
- Message flow for transport with Despatch Advice and Receiving Advice.

**CASH WITHDRAWAL**
- Acceptance of cash units by scanning the SSCC;
- Confirmation of delivery to CIT company and bank.

**CASH PROCESSING**
- Identification of cash units by SSCC, based on data of notification of inpayment;
- After sorting process final receipt or notification of discrepancy to CIT company and customer.

**TRANSPORT FROM/TO**
- NCB BRANCH
- PRINTING WORK
- MINT

NCB branch / Ancillary Cash Centre
Handling Processes
(can be used and professional cash handlers might play a different role.)

**CASH PROCESSING**
- Identification of cash units by SSCC;
- After sorting process final receipt to customer;
- Inpayment at NCB or withdrawal to customer (banknote recycling framework).

**CASH COLLECTION**
- Acceptance of received surpluses by scanning the SSCC of cash units;
- Automated confirmation of receipt to bank, commercial enterprise.

**PREPARATION FOR INPAYMENT**
- Notification of Inpayment to NCB.

**DISTRIBUTION TO CASH POINTS**
- Receiving of cash units by scanning the SSCC;
- Linkage of physical cash flow to information flow;
- Cash points (e.g. ATMs, branches of banks, shops) identified by GLN.

**RETURN FROM PUBLIC**
- Electronic indicator for cash-in-machines / cash-recycling machines (identification by GLN);
- Automated creation of notification of delivery to CIT company in case of surpluses;
- Surplus of stocks in branch of bank;
- Revenues of commercial enterprises;
- Surpluses identified by SSCC.

**ISSUANCE TO PUBLIC**
- Automated creation of cash order for CIT company / NCB in case of shortages in ATMs, branch stocks etc.

**CONSUMERS**
- Company / Cash Centre
- Bank / Commercial enterprise
GTIN (Global Trade Item Number)

Identification number of 13 digits for products and services. The GTIN is normally constructed from a GS1 company prefix assigned to a company, an item reference designated by the company and a check digit.

<table>
<thead>
<tr>
<th>GS1 Company Prefix</th>
<th>Item reference</th>
<th>Check Digit</th>
</tr>
</thead>
<tbody>
<tr>
<td>N₁ N₂ N₃ N₄ N₅ N₆ N₇ N₈ N₉ N₁₀ N₁₁ N₁₂</td>
<td>N₁₃</td>
<td></td>
</tr>
</tbody>
</table>

GTINs are assigned by the ECB or NCB to banknotes and coins in different status, such as denomination, series, condition or packaging detail. GTINs may also be used for the identification of special services.

GLN (Global Location Number)

13-digit number that identifies uniquely any physical or legal location or party involved in a given transaction.

The GLN identifies professional cash handlers involved in the cash cycle. For tracking and tracing purposes GLNs can be related to ATMs, cash points or cash processing systems.

SSCC (Serial Shipping Container Code)

18-digit number that uniquely identifies a logistic unit and provides an efficient way to facilitate automated dispatch, delivery and good-in processes. The SSCC is used to manage storage and shipping of logistic units. To accelerate the identification processes the SSCC is typically expressed in a bar code GS1-128 or can be also encoded into a RFID tag as per the EPC format (Electronic Product Code).

In order to clearly identify cash units they are given a SSCC. This number enables to track the cash on the way to the scheduled destination (NCB branch, ancillary cash centres of the CIT company or bank etc.).

Communication via standardised message types

Several NCBs of the Eurosystem decided on using the above mentioned GS1 identification keys and standard message types of GS1 XML in their national cash cycles. The main messages used for cash transactions are:

- “Multi Shipment Order” for Cash Order
- “Order Response” for Cash Order Response
- “Despatch Advice” for Notification of Delivery, Confirmation of Delivery and Notification of Inpayment
- “Receiving Advice” for Confirmation of Receipt, Arrival Notice and Final Receipt
- “Application Receipt Acknowledgement” for Application Handling Message.

Furthermore the GS1 standards were accepted in the Eurosystem as one standard for cross-border cash operations.
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GS1 in Europe is a collaboration of 45 GS1 member organisations. We lead the creation and implementation of harmonised, user-driven solutions for improving the supply and demand chain of European companies.

One world. One system. One global language of business.

With special thanks to the working group “GS1 Standards for Cash Handling”.

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