

Improving Cash Logistics Efficiency through GS1 Standards

Demand for cash continues to grow in the majority of European countries despite the increasing use of cashless payment methods. That means that millions of banknotes and coins are moving every year, which cause a major logistical challenge to each of the participants in the cash cycle and a considerable cost, in part due to the lack of common standards or procedures.

To help address this issue, in 2011 Deutsche Bundesbank, Banque de France, Banca d'Italia and Banco de España agreed to join efforts to bring more efficiency to the cash cycle by modernising their national cash applications and adopting logistical standards. The objectives were to automate and speed manual processes in order to minimise handling errors, increase security, reduce costs and, last but not least, contribute to preserving the environment.

Given the similarities between the cash handling and other logistics and transportation services, the four national central banks (NCBs) decided to adopt the GS1 standard, the most widespread supply chain standards system in the world, which provides information regarding products, actors, services and location.

The GS1 standard as applied to cash handling processes is as follows:

- A** Cash packaging units are identified through a global unique code called the Serial Shipping Container Code (SSCC). The SSCC can be encoded in a barcode or EPC/RFID tag, ensuring the complete traceability of banknotes and coins since the packaging is created in the printing works or mints.
- B** The legal actors involved in the cash cycle – credit institutions (CIs), cash in transit companies (CITs), retail organisations – as well as the cash points and physical locations, are identified through Global Location Numbers (GLNs).
- C** The different status of banknotes and coins (denomination, series, condition...) are tracked by Global Trade Identification Number (GTINs) which are assigned by the European Central Bank (ECB) or NCBs.
- D** The Global Shipment Identification Number (GSIN) is a number assigned by a seller and shipper of goods to identify a shipment comprising one or more logistic units that are intended to be delivered together.

E Finally, the Global Returnable Asset Identifier (GRAI) is another GS1 key for asset identification. This GS1 key is especially suitable for the management of reusable transport items, transport equipment and tools. It can identify these returnable assets by type and, if needed, also individually for tracking and sorting purposes.

In this area of cooperation, the four NCBs created the Central Bank GS1 User Group (CB GS1 UG) to support further harmonisation in European cash services and provide best practices for the banking industries. Banka Slovenije joined the group in 2015. Currently, GS1 is the most broadly communication format used in the Eurosystem, at national level and between NCBs for cross-border transactions.

The following goals have been achieved since the formation of the CB GS1 UG:

- 1. Harmonisation of exchanged messages between NCBs and cash actors:** CIs perform their request of withdrawals and lodgements of cash through electronic messages (GS1 XML) and they are informed when the physical deliveries can be done in the same way. This is an STP, which improves transparency and speed and minimises errors in communications. At the same time, electronic records bring eco benefits in reducing or eliminating paper records.
- 2. Harmonisation of cash processing machines messages:** focused on the interfaces between cash processing workstations/machines and the IT back office systems in a cash centre, a comprehensive solution for cash processing results notification and statistics reporting has been developed using GS1 EDI XML standards. It reduces costs in modifications in these messages.
- 3. Traceability of every cash package from the printing works/mint until delivery to the CI:** SSCC labels on the cash packaging and electronic communication allow full traceability of banknotes and coins, from the printing works or until they are delivered by NCBs to the CI. It improves security, control and service quality.

4. Creation of a platform for NCB collaboration and resource sharing: the CB GS1 UG provides, free of charge, support to other NCBs interested in the knowledge and use of the GS1 standards and informs them regarding their implementation process.

That is the case with Oesterreichische Nationalbank, Banco de Portugal, Národná Banka Slovenska, Lietuvos Bankas, National Bank of Kazakhstan, Narodowy Bank Polski and the Federal Reserve System, who attended, together with the ECB, the latest meeting in June in Madrid. The Federal Reserve System has also chosen the GS1 standards in its Cash Visibility project, running since 2017 (see CN September 2017).

The CB GS1 UG has, among its next challenges, the promotion of the use of the GS1 standards throughout the whole national cash cycles to reduce the cost of cash.

Currently CIs and CITs typically use the GS1 standards in their transactions with their NCBs. However they use own barcodes to identify each logistic unit internally, which entails relabeling, costs and time handling. Therefore, the full benefits of standardisation will only be reached when the whole cash industry (NCBs, printworks, mints, CIs, CITs, retailers) adopts GS1 in their internal processes and throughout the cash cycle.



Attendees of the latest CB GSI UG meeting in Madrid last month.

Further information can be obtained from the CB GS1 UG webpage at https://www.bundesbank.de/Redaktion/EN/Documentation/CBUSERGROUP/HtmlDoc/index_node.html.