Brief

# Barcodes and Document Identifiers to Track and Authenticate Official Documents in the Ethiopian Healthcare Supply Chain

## Overview

When you receive a notice in the mail requesting a payment from a given agency or company, how do you know it is a legitimate document from that organization? In a world with increasing fraudulent activity and counterfeiting, it is extremely important to have mechanisms that will ensure the authenticity of documents, particularly for financial transactions. Global Document Type Identifier (GDTI) provides such a mechanism to track, control, and authenticate documents. With support from the USAID | DELIVER PROJECT, GDTI's, with serialization, are being used in barcodes to track and authenticate official documents from Ethiopia's Pharmaceuticals Fund and Supply Agency (PFSA).

PFSA, an agency of the Federal Ministry of Health in Ethiopia, is responsible for the public sector healthcare supply chain.

## What is GDTI?

GDTI is the GS[1] identification key used to identify important documents. It can be encoded in a barcode or printed directly on a document. Where required, it can include a serial number that uniquel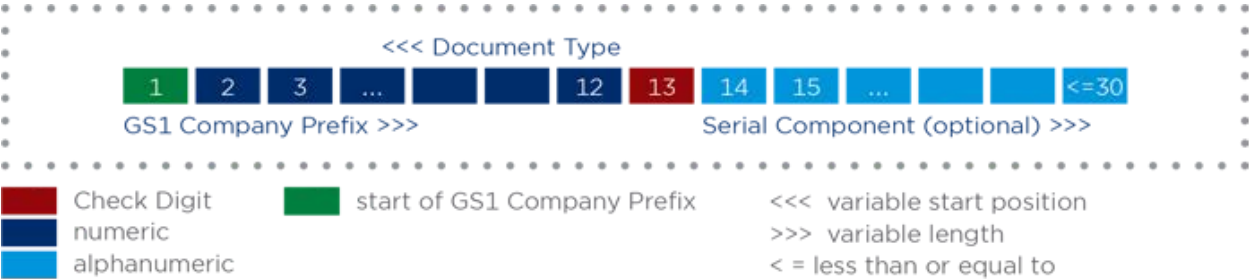y identifies a specific document (see figure 1). Organizations can use the GDTI to identify and register documents, as well as for information retrieval, document tracking, and electronic archiving. Another specific application of GDTI is to prevent fraud and document falsification.

[1] Global Standards 1 (GS1) is an international standards organization that designs and implements naming standards for a variety of sectors, from retail and health to transport and logistics. http://www.gs1.org/barcodes

**Figure 1. GDTI Components[2]**



# How is PFSA using GDTI?

PFSA is responsible for supplying essential pharmaceuticals to health facilities throughout the country. They handle hundreds of millions of dollars' worth of health commodity transactions, supplying nearly 20,000 health service delivery points: hospitals, health centers, and health posts. The USAID | DELIVER PROJECT collaborated with PFSA to introduce GDTI for certain official documents. GDTI, with serialization, is being included in 2D barcodes and printed on documents to ensure that each individual document is uniquely identified. Document types covered include—

- cash and credit invoices

- purchase orders

- stock transfer vouchers.

The GDTI numbers are linked to a centralized PFSA database. Recipients of PFSA documents can now scan the barcodes on their documents and log into a PFSA web portal to verify the authenticity of their documents (see figure 2).

**Figure 2. Sample PFSA Cash Invoice with Barcode**



(253)085729500602(21)0800000282

| Accounts | RDF Regular | | From | Test Hub : 2009 | | | Cash Inv. No | 09 - 00100 |
|---|---|---|---|---|---|---|---|---|
| To | Gindeberet Woreda Helath Office | | Region | Oromia | | Town | Date | መስከረም 05, 2009 |
| License | GWHO/4032/2008 | | Zone | | | VAT | Delivery Note | |
| Warehouse : | AA1 | | Woreda | Ginde Beret | | TIN No | | |

**Medical Supplies**

| No | Stock Code | Item Name | Unit | Qty | Unit Price | Total Selling Price | Manufacturer | Batch No | Expiry Date |
|---|---|---|---|---|---|---|---|---|---|
| 1 | HS.1000.8 | Cannula Intravenous Set (IV Cannula) - 22G | 100 | 2 | 274.98 | 549.96 | Bio Med Health Care Products | 671405 | 04/19 |
| 2 | HS.1000.20054 | Disposable Syringe - 3 parts , 3ml with 21G needle | 100 | 10 | 68.23 | 682.30 | Shandong Zibo Shanchuan | 20151111 | 11/20 |
| 3 | HS.1000.83 | Scalp Vein Winged Infusion Set - 23G | 100 | 1 | 73.84 | 73.84 | GST Co. | 5010/4 | 10/16 |
| | Sub Total | | | | | 1,306.10 | | | |
| | Grand Total | | | | | 1,306.10 | | | |

In Words: One Thousand Three Hundred Six Birr and Ten Cents Only

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# What are the Potential Benefits?

**Authentication**. Utilizing GDTI on PFSA documentation enables verification and authentication of documents originating from PFSA. When a hospital receives a credit invoice, for example, they can use a standard barcode reader app to scan the barcode on the invoice; before processing payment, they can quickly verify that the invoice received originated from PFSA.

**Tracking and Document Control.** PFSA engages in a myriad of transactions with numerous entities, from warehouses to hospital facilities. GDTI enables PFSA to track documents in real-time and to ensure document control within the supply chain.

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