



SNEDAI SA	T : +226 25 65 57 93
Zogona, Ouagadougou	E : supportbf@snedai.com
Burkina Faso	W : www.snedai.com

TOBACCO PRODUCTS CODING SPECIFICATIONS

DOCUMENT HISTORY

Version	Release Date	List of Changes
1.0	10 Feb 2021	Initial version of the document
1.1	12 Mar 2021	Pack coding with SGTIN option section 4.3 and 4.4
1.2	10 Jun 2021	Pallet SSCC

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1 PURPOSE

The purpose of this document is to communicate on key guidelines and specifications for the product coding as mandated by Burkina Faso Government. This document is intended to any economic operators involved in the tobacco manufacturing and distribution who will have to implement the solution in accordance with the “Arrêté n2015-0356-MICA-MEF”. Information provided through this document are the main reference requirements to be used along with the technical documentations provided separately.

SNEDAI reserves the right to adapt and/or update these specifications in order to consider any new technical and/or operational constraints related to the implementation of the traceability system.

2 BACKGROUND INFORMATION

2.1 T&T REGULATION

SNEDAI has been exclusively appointed by the Burkina Faso Government to implement a mandatory system for volume control and tracking and tracing of Tobacco Products sold in the Territory.

The traceability system foreseen to address illicit trade of tobacco products in Burkina Faso aims at providing the necessary means to comply with the WHO Framework Convention on Tobacco Control (FCTC).

2.2 GLOSSARY OF TERMS & ABBREVIATIONS

Term	Description
AI	GS1 Application Identifier
DTV	Digital Tax Verification
DVV	Digital Volume Verification
FCTC	Framework Convention on Tobacco Control
GDTI	GS1 Global Document Type Identifier
OOS	Out Of Scale
OTP	Other Tobacco Products
SGTIN	GS1 Serial Global Trading Identification Number
SGLN	GS1 Global Location Number (with or without extension)
SN	Serial Number
SSCC	Serial Shipping Container Code
TMO	Trade Mark Owner

Definitions

Data carrier: means of representing a data string in machine readable format (2D barcode).

Distributors & Wholesalers: economic operators in charge of distributing and selling the tobacco products.

Economic operators: any legal entity involved in the trade of Jordan tobacco products. This includes, but is not limited to, the tobacco manufacturers (local and abroad), the distributors, 3PLs...

Importer: importer of tobacco or related products is the owner of, or a person having the right of disposal over, those products that have been brought into the country territory.

Burkina Faso Unique Pack Identifier: alphanumeric sequence that uniquely identifies the unit pack of cigarettes.

Product Volume Verification: Means the secure monitoring and reporting of quantities of packaged excisable fast-moving consumer goods by means of reliably counting packs with a printed code, in compliance with applicable law.

Repository system: is a central database, owned and managed by the governmental authorities containing all code status and traceability data collected at the tobacco manufactures and on the supply chain.

Tobacco Manufacturers: legal entity who manufactures or has a product designed and manufactured that is responsible for introducing the tobacco products into the Jordan distribution process.

Unit Pack: smallest individual packaging level of tobacco product that is placed in the Burkina Faso market.

2.3 REFERENCES

Reference	Document
R1	ISO/IEC 15415:2011 Bar code symbol print quality test specification Two-dimensional symbols
R2	ISO/IEC 16022:2006 defines the requirements for the symbology known as Data Matrix
R3	ISO/IEC 15417:2007 Code 128 bar code symbology specification
R4	ISS DotCode Symbology Specifications 4.0 This specification defines the requirements for the symbology known as DotCode
R5	GS1 General Specifications Release 20.0 or latest equivalent
R6	1.2 Governmental Repository Interface v.1.2 Burkina Faso

3 GENERAL RECOMMENDATIONS FOR DATA CARRIER

Dimensions of the data carrier is critical of importance for later on aggregation operations and field enforcement. The data carrier must be printed with a good quality level and dimensions in line with the scanning performance of the vision equipment deployed. Factors like available space, amount of data to be encoded, printer capabilities (printing technology, printhead) must be considered to specify the data carrier dimensions and are at the discretion of the manufacturers.

Data carrier can be printed in black on a white background (Inkjet printing technology) or in white on a black background (laser engraving technology). Data carrier must be readable by commercially available scanners, camera, smartphone.

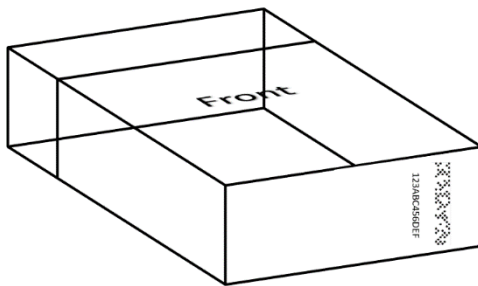


Figure 1: Inkjet technology

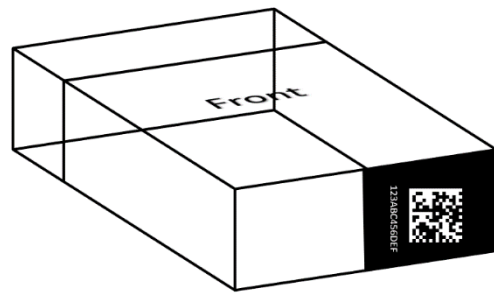


Figure 2: Laser technology

Figure 1 and 2 are for illustration purposes only.

3.1 DATAMATRIX AS DATA CARRIER

A Data Matrix is a two-dimensional code consisting of black and white "dots" or dots arranged in either a square or rectangular pattern, also known as a matrix. The symbol size (row, column) of the Data Matrix will vary according to the number of data actually encoded.



Figure 3: data matrix for only illustration purpose

3.2 DOTCODE AS DATA CARRIER

DotCode is a small to medium capacity data carrier or two-dimensional (2-D) matrix symbology that is composed of dots that are arranged in a specified rectangular array. Released in 2009, DotCode was designed for use with high-speed industrial printers, where printing accuracy cannot be guaranteed. Because it does not require the use of continuous lines or precise spacing.



Figure 4 : DotCode for only illustration purpose

The area where the DotCode is applied can vary in size. The dimensions shown within this document can be used for guidance but should not interfere with Burkina Faso Regulations (health warning regulation for example).

Indicative dimensions of DotCode printed with laser equipment are 14mm x 2mm. The combination of DotCode and a single line of text shall be printed within an 18 mm (14+2+2) x 9 mm (5+2+2) area, as illustrated in figure 5. A 2 mm area on the edge's directions should be left as a safe zone to allow an offset of the serialization position that might occur during the manufacturing process.

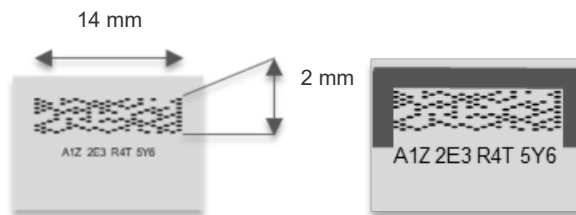


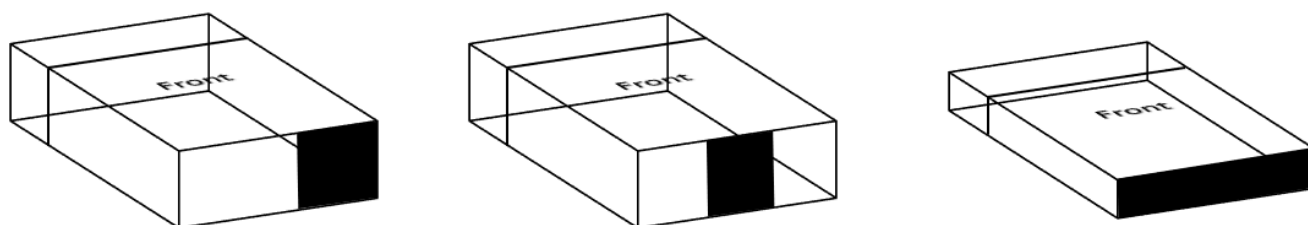
Figure 5 : DotCode indicative dimensions

Final dimensions must be specified with industrial printing equipment providers.

3.3 CODING AREAS

The manufacturer can determine the position and aspect ratio of the coding area, depending on the product shape (regular, slim...). The machine-readable barcode, human-readable code and any additional printed information shall be arranged according to manufacturing constraints, provided readability of the codes is guaranteed.

The following schematic outlines the recommended position of where the pack code can be printed considering the general overview. Please note that the illustrations below indicate the code is on the bottom of the pack.



However, size of the printable area for the data carrier and position of the code i.e. left or right, landscape or portrait is at the discretion of the manufacturers.

4 UNIT LEVEL IDENTIFIERS (PACKS UI)

4.1 GENERAL REQUIREMENTS

The following table set out the key requirements of the digital marker for the tobacco packs, outers, master case and the parameters associated with it.

Reference	Requirement
Req-1	The digital marker applied on the pack is composed of a visible: - machine-readable code (encoded in the form of a 2D data carrier) - human readable alpha-numeric code
Req-2	Unit Pack serial number: INEXTOR Serial Number
Req-3	Position of the pack coding area must: - not interfere with general health warnings applied on tobacco products. - Coding must be readable by commercially available scanners, camera, smartphone.
Req-4	The digital marker can be applied using: - laser engraving - Inkjet technologies
Req-5	The chosen method for digital markers application is under the full responsibility of the tobacco manufacturer
Req-6	Personalization of the digital marker on the pack must be on a solid background color guaranteeing good contrast to allow the machine-readable part of the data carrier to be fully scanned during the process
Req-7	Each pack must bear a unique visible digital marker irremovable and applied as described in section 4 of this technical note.
Req-8	Manufacturers are free to choose the font for alphanumeric character printing, provided all characters must be legible.
Req-9	All pack codes must be positioned on flat surface and free from creasing
Req-10	Tobacco Manufacturers shall ensure high readability of the machine-readable codes. A quality of the machine-readable codes rated at least 3.5 in accordance with ISO/IEC 15415:2011 [R1]
Req-11	Tobacco Manufacturers shall ensure that the machine-readable codes are capable of remaining readable for at least five years after their application on the pack.

4.2 MANDATORY INFORMATION ON UNIT PACKS

Any individual unit pack must bear both:

1. A visible machine-readable code, as a form of a 2D data carrier containing all information as specified section 4.3 of this document
2. The serial number (Burkina Faso Unique Pack Identifier) of the unit pack printed in the human readable form, right close to the 2D symbol.

4.3 DATA STRUCTURE FOR MACHINE READABLE CODE

Both, the Serialized GTIN (SGTIN ,GS1 standards) data structure or only serial number (Burkina Faso Unique Pack Identifier), can uniquely identify each individual tobacco pack.

- **Scenario using “SGTIN”:**

Element strings that have to be concatenated in the same data carrier and print in the machine-readable forms are:

initial FNC1 is placed to indicate that the code will follow the GS1 convention meaning it will be followed by an Application Identifier (AI).

<i>Data</i>	<i>length</i>	<i>Designation</i>
<FNC1>		GS1 group separator: initial FNC1 is placed to indicate that the code will follow the GS1 convention (meaning it will be followed by an Application Identifier)
AI (01)	2	Application Identifier: used as GTIN prefix
GTIN	14	Data string: GTIN-14 (or GTIN-8, GTIN-12, GTIN-13 fill with leading zero(es))
AI (21)	2	Application Identifier: used as serial number prefix
Serial Number	12*	Burkina Faso Unique Pack Identifier (12 alpha-num characters) : supplied by INEXTO code generator

**string length is fixed to 12 characters (alpha-numeric) in the scope of Burkina Faso Track and Trace.*

Example: GS1 SGTIN - data carrier: <fnc1>010123456790123721ABC123DEF456

- **Scenario using only a “Burkina Faso Unique Pack Identifier”:**

The “Burkina Faso Unique Pack Identifier” only, can be used to generate the data carrier in the condition that the product GTIN is available on the tobacco pack. Burkina Faso Unique Pack Identifier is composed of 12 alpha-numeric characters. No application identifier nor specific separators are required in that case.

Example – Burkina Faso Unique Pack Identifier: data carrier: ABC123DEF456

IMPORTANT: Transmission to national repository system (EPCIS Interface)

Whatever is the data structure used to generate the data carrier, SGTIN or Burkina Faso Unique Pack Identifier only, both the product GTIN and the Serial Number must be set in the EPCIS message transmitted to the National central T&T repository as per [R6] specifications (§1.3.3 SGTIN format for EPC codes):

It is highly recommended to use a **SGTIN** for machine readable code

	SGTIN	Unique Pack Identifier
Printed Machine Readable: DataMatrix	<FNC1>01<GTIN14>21<Serial>	<Serial>
Printed Machine Readable: DotCode	<FNC1>01<GTIN14> 21<Serial>	<Serial>
Printed Human Readable code	<Serial>	<Serial>
Transmitted in EPCIS event	01<GTIN14> 21<Serial>	01<GTIN14> 21<Serial>

4.4 EXAMPLES

The table below provides examples of data carrier / data structure combination for tobacco pack coding.

Packaging Level	Illustration	Data Structure
Unit Pack		Burkina Faso Unique Pack identifier printed on the tobacco pack. Data carrier: ABC123DEF456 Human readable: ABC 123 DEF 456
Unit Pack		SGTIN code printed on the tobacco pack. Data carrier: <fnc1>010123456790123721ABC123DEF456 Human readable: ABC 123 DEF 456

Recommended

5 AGGREGATED LEVEL IDENTIFIERS

5.1 GENERAL REQUIREMENTS (OUTERS, MASTER CASE, PALLETS)

Marking and recording of aggregated packaging of outers, master cases and optionally pallets must be carried out. Aggregated level unique identifiers shall be encoded using at least one of the following types of data carriers:

(a) an optical device-readable Data Matrix with error detection and correction equivalent to or higher than those of the Data Matrix ECC200. Barcodes conforming to ISO/IEC 16022:2006 [R2] shall be presumed to fulfil the requirements set out in this point.

(b) an optical device-readable Code 128 with the error detection equivalent to or higher than the one provided with the algorithm based on the even/odd — bar/space character parity and the check character. Barcodes conforming to ISO/IEC 15417:2007 [R3] shall be presumed to fulfil the requirements set out in this point.

5.2 SGTIN DATA STRUCTURE

SGTIN using GS1 application identifier (01) for GTIN and (21) for Serial Number must be used as unique identifier for aggregated levels such as tobacco outers and master cases. Mandatory information to encode in the data carrier are:

<i>Data</i>	<i>length</i>	<i>Designation</i>
<FNC1>		Special GS1 separator: initial FNC1 is placed to indicate that the code will follow the GS1 convention (meaning it will be followed by an Application Identifier)
AI (01)	2	Application Identifier: used as GTIN prefix
GTIN	14	Data string: GTIN-14 (or EAN prefixed by 0)
AI (21)	2	Application Identifier: used as serial number prefix
Serial Number	20 max	Data string: alphanumeric sequence uniquely identifying the logistic and/or trade item.

Group separator after AI (21) element string remains optional. Refer to concatenate rules and GS1 specifications set out by in [R1]

Normative references: ISO 15459-2:2015, ISO 15459-3:2014, ISO/IEC 15459-4: 2014 Section 4.1.2 (normative), ISO/IEC 15459-6:2014 Section 5 (normative) and Annex B (informative), and the GS1 General Specifications V.19 (or latest equivalents)

Example: GS1 SGTIN - data carrier: <fnc1>010555000077777821222ABCDEF555



5.3 OPTIONAL APPLICATION IDENTIFIERS

Optional application identifiers (GS1 AI) are authorized. They can be appended to the mandatory set of data used to generate a GS1 SGTIN or SSCC code in order to meet specific manufacturers requirements. This code will have to fully comply with the concatenate rules and GS1 specifications set out by in [R1]

Example: GS1 SGTIN - data carrier:

<fnc1>**01**0222333444444**121**123456WWZZZ<fnc1>**240**Product1<fnc1>**10**999000



5.4 SSCC DATA STRUCTURE

GS1-128 encoding Serial Shipping Container Code (SSCC) using application identifier (00) for SSCC can be used to uniquely identified aggregated levels such as mixed/uncomplete master case and pallet and logistic units...

<i>Data</i>	<i>length</i>	<i>Designation</i>
<FNC1>		Special GS1 separator: initial FNC1 is placed to indicate that the code will follow the GS1 convention (meaning it will be followed by an Application Identifier)
AI (00)	2	Application Identifier: AI used as SSCC code prefix
data	18	Digits containing GS1 company prefix and serial reference plus a check digit

Normative references:

ISO 15459-2:2015, ISO 15459-3:2014, ISO/IEC 15459-1: 2014 Section 4 (normative) and Annexes A and B (informative), and the GS1 General Specifications V.20 (or latest equivalents)

Example: GS1-128 1D barcode data carrier: <fnc1>**00**012345670000000220



5.5 CODING AREAS

The manufacturer can determine the position and aspect ratio of the coding area, depending on the outer shape (Carton, label applied on cellophane wrap, ...). The machine-readable barcode, human-readable code and any additional printed information shall be arranged according to manufacturing constraints, provided readability of the codes is guaranteed.

5.6 EXAMPLES

The table below provide series of examples of outer package coding.

Packaging Level	Illustration	Data Structure
Tobacco outer	 (01) 02223334444441 (21) 123456WWZZZ (240) Product1 (10) 999000 2 223334 444441	GS1 DataMatrix encoding SGTIN. Mandatory (01) GTIN (21) Serial number Optional: (240) Additional product identification (10) Batch or lot number
Master Case	 (01) 05550000777778 (21) 222ABCDEF555 (240) Product1	GS1 DataMatrix encoding STGIN plus additional optional identifier. (01) GTIN (21) Serial number Optional: (240) Additional product identification
Master Case	 (00)012345670000000015	GS1-128 encoding SSCC In case of Mixed product or incomplete master case.
Pallet Optional	 (00)0123456700000000220	GS1-128 encoding SSCC

