**FEBRABAN I2OF5 Feature**

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| **REVISIONS** | | | |
| **REV** | **DESCRIPTION** | **DATE** | **AUTHOR(S)** |
|  |  |  |  |
| A | Initial version | 04/27/2017 | P. DasGupta |
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**Objective**

Brazilian Banking Documents may contain Interleaved 2 of 5 Barcodes of length 44, that require some special check characters to be inserted in the transmitted data stream. This feature implements that requirement.

**Background**

Zebra’s Brazilian Sales team felt that absence of FEBRABAN feature puts Zebra Scanners at a competitive disadvantage. This feature is used rather extensively in Brazilian Banking System. So, the DS2278/LS2278 product team agreed to have this feature implemented.

**Detailed description**

Interleaved 2 of 5 (often referred to as I2OF5) encodes only numeric characters. The FEBRABAN feature requires the following additional processing on the decoded numeric data:

* If PARAM\_FEBRABAN\_ENABLE is set, AND I2OF5 decoded data has exactly 44 digits,

AND the 1st and 3rd character meets a specific criterion,

* Calculate extra check digits dependent on the output.
* Insert those calculated check digits in the transmitted data at specified locations.
* Otherwise, transmit I2OF decoded data as is.

The customer specifies the algorithms for calculating the additional check digits, and where they should be inserted in transmitted data stream.

The detail of that specification is in document “Implementing the FEBRABAN.docx” and is located in Sharepoint at Decoding\Knowledge Base.

A link to that document is provided below:

<https://zebra.sharepoint.com/sites/mengDCS/_layouts/15/guestaccess.aspx?guestaccesstoken=pYqKzsZOKF0t9HJzq8nPQCiVwfsC2%2fZQGIkckRwvvyo%3d&docid=2_16b4ed1e93a234264bf6dc438e806897b&rev=1>

The decoded characters and the exact length of an 1D barcode, is known after ASCII conversion of the symbol characters. So, it has been implemented through a function call at the point.

**Additional Information**

1. According to customer specification, the decoded data of FEBRABAN barcodes will be transmitted as of base I2OF5 type i.e. BT\_I2OF5.
2. Also, if the I2OF5 barcode does not meet FEBRABAN specification (e.g. data length not 44, OR 1st character of data is ‘8’ and third character is NOT ‘6’, ‘7’ 8’ or ‘9’), normal I2OF5 data will be transmitted, even if the parameter for FEBRABAN is enabled.

**New Parameters**

A new byte parameter has been added to enable/disable this feature.

It is named in parmacro.h as: PARAM\_FEBRABAN\_ENABLE

Currently, the parameter can have only 2 values:

0: Disable FEBRABAN Processing.

1: Enable FEBRABAN Processing.

The default value of the parameter is 0 (Disabled).

The parameter number for PARAM\_FEBRABAN\_ENABLE, as defined in PARAMNUM.H:

#define NUM\_FEBRABAN\_ENABLE 1750 /\* F8 06 D6 \*/

These parameter barcodes are provided in **Appendix A.**

**System Support required for this functionality**

The system side code needs to implement the new parameter to make this functionality available.

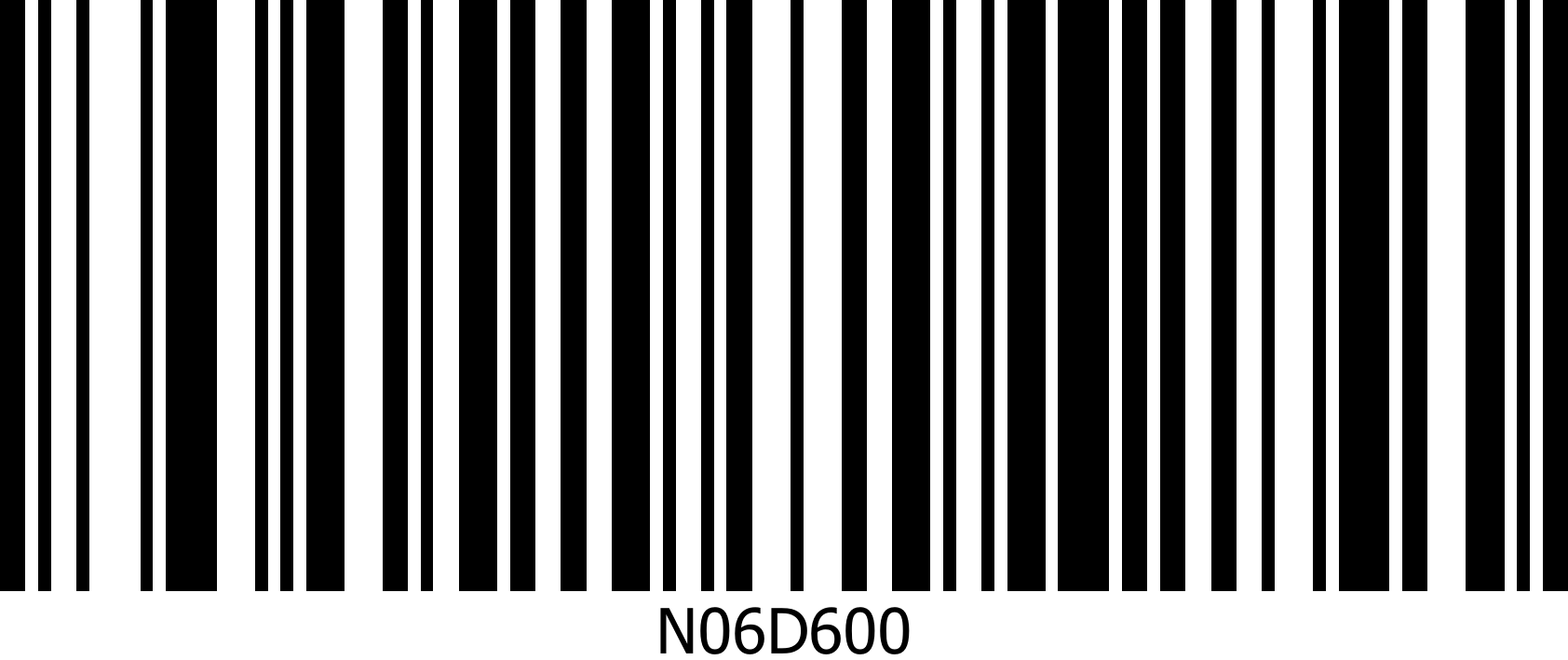
**How to test the feature**

Some customer samples (with expected transmitted output) is available with the product team. A few additional barcodes were created with customer examples data. These can be used to test the feature.

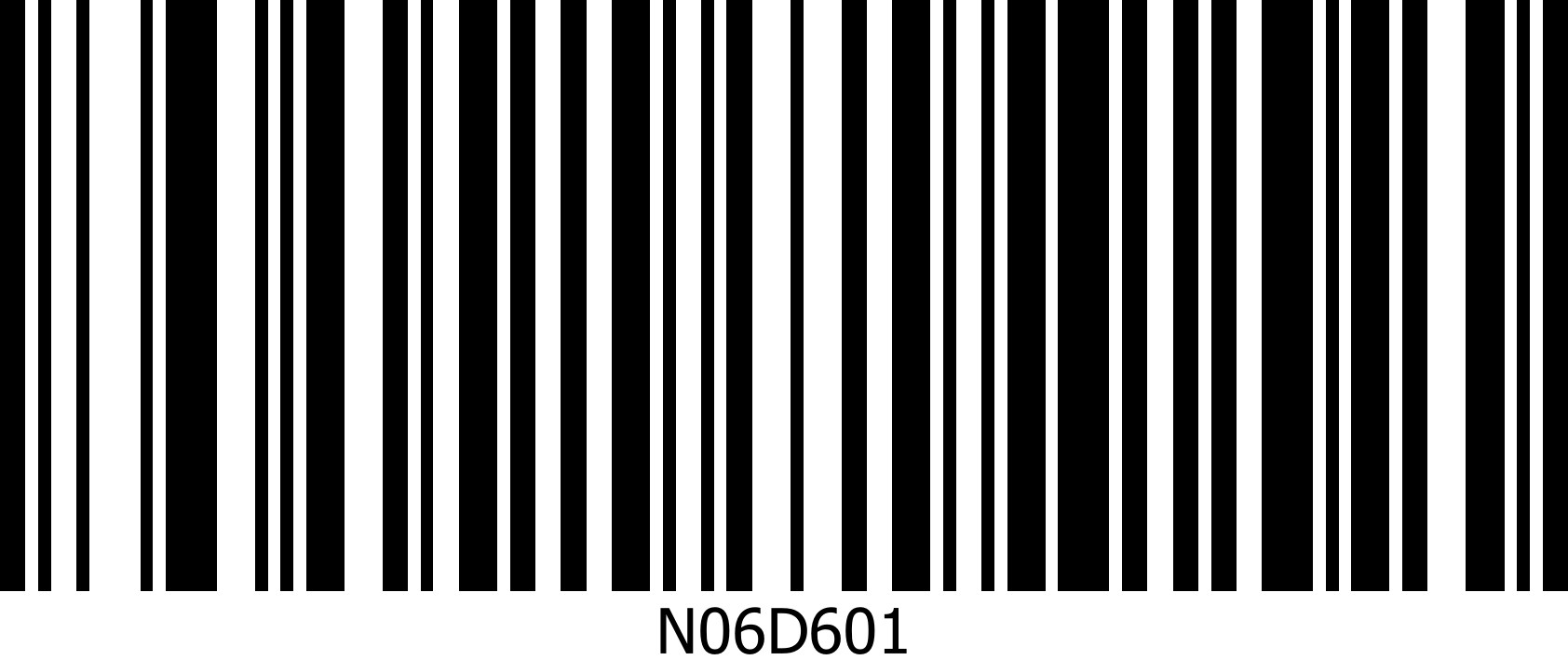
A few of the valid and invalid FEBRABAN barcodes are provided in **Appendix B.**

**Appendix A. Parameter bar codes**

DISABLE FEBRABAN

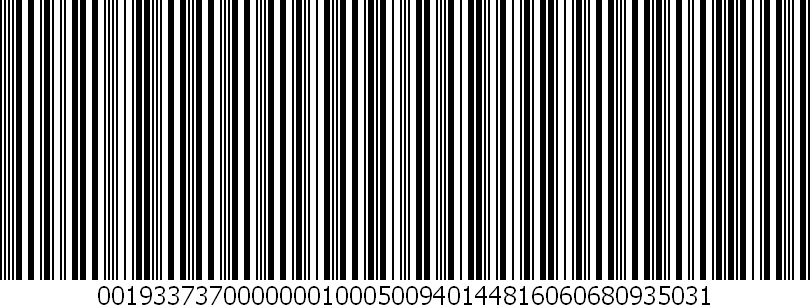


ENABLE FEBRABAN



**Appendix B: Some BarCode Studio generated FEBRABAN barcodes**

**Barcode #1 (Valid FEBRABAN)**



**Expected data with FEBRABAN Disabled (44 Characters):**

**00193373700000001000500940144816060680935031**

**Expected data with FEBRABAN Enabled (47 Characters):**

**00190500954014481606906809350314337370000000100**

**00190500954014481606906809350314337370000000100**

**Barcode #2 (Valid FEBRABAN)**



**Expected data with FEBRABAN Disabled (44 Characters):**

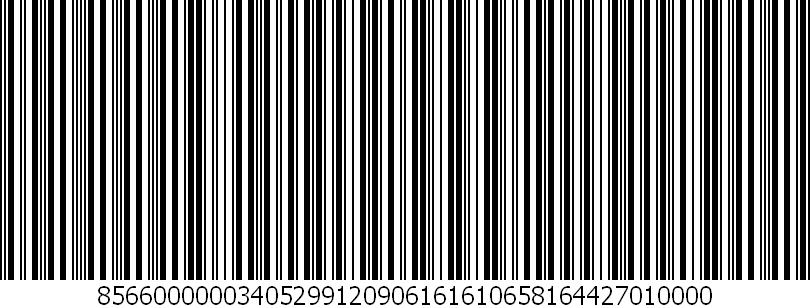
**85870000004998104321534407161534217638084878**

**Expected data with FEBRABAN Enabled (48 Characters):**

**858700000049998104321537440716153429176380848780**

**858700000049998104321537440716153429176380848780**

**Barcode #3 (Valid FEBRABAN)**



**Expected data with FEBRABAN Disabled (44 Characters):**

**85660000003405299120906161610658164427010000**

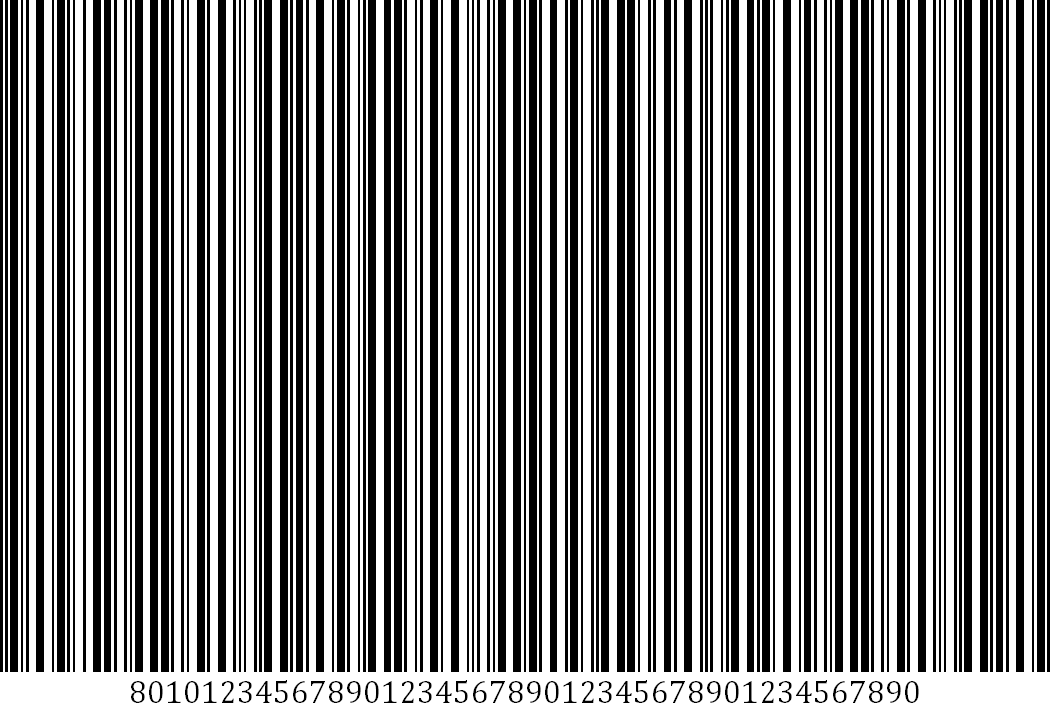
**Expected data with FEBRABAN Enabled (48 Characters):**

**856600000033405299120908616161065811644270100006**

**856600000033405299120908616161065811644270100006**

**846600000000399900800018103165825276101701711083**

**Barcode #4 (INVALID FEBRABAN)**



**Expected data with FEBRABAN Disabled (44 Characters):**

**80101234567890123456789012345678901234567890**

**Expected data with FEBRABAN Enabled (44 Characters):**

**80101234567890123456789012345678901234567890**