SENT Release Notes for 7.2

These release notes list, in telegraphic style, the SENT evolutions from 7.1 to 7.2. The intent is two-fold: Explain the changes and highlight the benefits.

New Features

Support CRC computation/validation for slow channels (6bits and 4 bits). Slow Channels (SC) CRC errors are emitted to the Status column, in the same way as all other Fast Channels (FC) errors.

Added 2 columns for Slow Channels(SC). Message ID and Data are now shown in a dedicated column avoid polluting D0 and D1. This also allows all of the ProtoBusMAG functions to execute on these new columns(ProtoBusMag is sold separately and operates on all decoders)
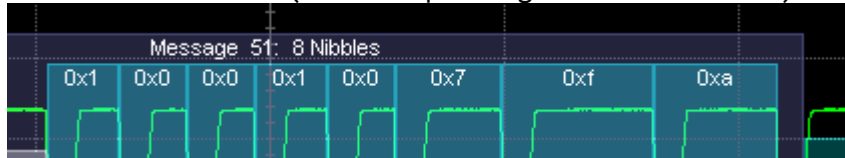

Chromacoding of S&C bits. This feature helps understanding how the SC values are distributed on many Fast Messages(16 or 18). The example below shows an Enhanced Slow message, where Sync, ID, Data and CRC are distributed on 18 Fast Messages. The grey color shows the Slow Channel Sync bits, red is the 8 bit ID, green is the 12 bit Data and blue the CRC.
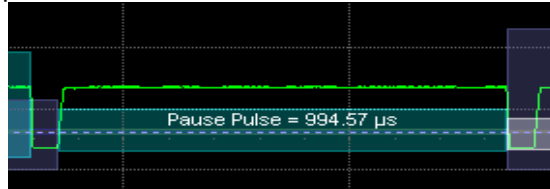

Complete automated recognition of both synchronization mechanisms, on 16 and 18 messages slow channels. This feature eases the task of interpreting the slow channels.
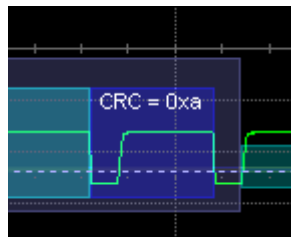
Improvements, Renaming

Nibbles use 0xa instead of 0x0a.(useless padding zero is removed)

Rename Inter Message gap to Pause Pulse to adhere to the SAE2716 spec

Make CRC blue more visible

Support both Enhanced SC modes with automated recognition:
- 8 bit ID + 12 bit Data
- 4 bit ID + 16 bit Data

Default Values for Control Variables

Default Endianess is now MSN
Default Idle State is now High

Both of these controls were inadvertently set to the less frequently used value.
The new default values will allow (in most cases) a faster tuning of the decoder
when starting work.

Improvements of SCDF (Slow Channel Definition File) syntax

Boost SCDF table length to their specified values, allowing full use of the
dedicated bit fields.

```
// Size of the Slow Channel Interpretation Tables
#define MAX_8bit_MSG  0x100  // 256, index 0 through 255
#define MAX_4bit_MSG  0x10   // 16, index 0 through 15
#define MAX_SENT_REV  10     // 10, index 0 through 9
#define MAX_SENSOR    0x1000 // 4096, index 0 through 4095
#define MAX_DIAG_MSG  0x1000 // 4096, index 0 through 4095
#define MAX_MANUFACT  0x1000 // 4096, index 0 through 4095
```

We added Clear and Load SCDF remote commands for Testers and Automated Tests systems.

Support Line number in hexadecimal in the SCDF file. Decimal and Hexadecimal values can be mixed and matched along the table list. However the same format should be used on the same line.

Better Error reporting

Show more errors in red on message overlay.

The currently detected errors are now:
- Fast channels: CRC error, Sync Length out of spec, Nibble Value less then 0 or greater then 15
- Slow Channels: CRC error, Bit 7, or 13 or 18 not equal to zero in Enhanced Slow message Format bit3 of S&C nibble.

Add column with Boolean 1 **if Status text is non-empty** to allow Pass Fail usage via MessageToValue Parameter. This helps automated tests catch status errors. Note that numerical errors can already be caught using Pass-Fail on Fast Channels, i.e. detecting FC values greater then 4089.

Bugs

Fixed broken Search in nibble mode
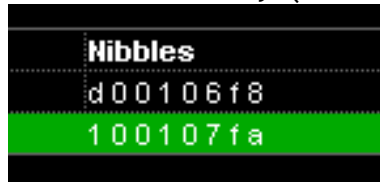Hide channels control in Nibble Decode Type (#57007)

Slightly widen Line Number Column to make "SENT" readable on all screen width. (#57149)
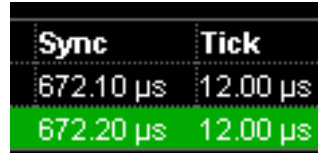
Rename MSB/LSB to MSN/LSN in Fast Channel Dialog

In Nibble Mode have a dedicated Nibble column, (instead of reusing D0 column)

Have Sync and Tick next to one another in Words and Nibble Mode

Lahniss July 2013