Odin TeleSystems Inc.

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OtxTrauEx Library

The OtxTrauEx (TRAU - Transcoder and Rate Adaptation Unit) library is a software library that performs transcoding functionality for speech channels and RA (Rate Adaptation) for data channels in the GSM network for the industry award-winning Odin Telecom frameworX (OTX) hardware. The library accepts incoming compressed 16 kbps TRAU data including payload overhead and decodes it to 64 kbps A/u-law G.711 data stream.
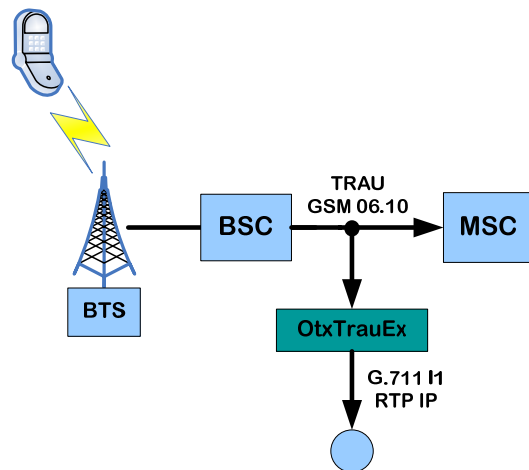
The OtxTrauEx library supports Full Rate GSM codec (FR-16 kbps). FR codec is used for automatic capture and coding/decoding of speech. It allows to extract speech data from TRAU frames.

GSM transmitter segments voice into 20 milli-second frames and applies compression to place voice traffic into Full Rate channel: 16 kbps = 2 bits every 1/8000 sec. = 320 bits per 20 ms. TRAU frames are 320 bits = 40 bytes.

GSM 06.10 compresses frames of 160 13-bit samples (8 kHz sampling rate, i.e. a frame rate of 50 Hz) into 260 bits; for compatibility with typical applications, our implementation turns frames of 160 16-bit linear samples into 33-byte frames (1650 Bytes/s).

TRAU frames are time-aligned as the control information stored and transmit ted on the selected sub-channel. The OtxTrauEx library supports the TRAU frames creating and debugging mode with GSM 06.10.

Feature Highlights

- Uses the standard OTX HW SDK API.

- Highly optimized library.

- Facilitates the compression (decompression) of speech data from 64 kbps G.711 to 16 kbps GSM TRAU (from 16 kbps to 64 kbps).

- A-law and u-law companding are supported.

- Uses burst DMA mode of Odin's OTX card to transfer data buffer.

- Capturing and decoding of TRAU frames such as FR (Full Rate GSM 6.10).

- TRAU data converting directly to the IP (on request).

- TRAU streams may be decoded/ encoded on any T1/E1 timeslot.

- Supports flexible sub-channel mask inside timeslot.

- Multiple sub-channels on various T1/E1 spans can be simultaneously processed.

- Multiple boards are supported.

- The overhead decoding layer allows to check and recover errors on-the-go.

- Demo applications are available.

Hardware and Software Specifications

The library is supported by the following operating systems platforms:	• Win32, Win64 (Windows 2000/ XP/ 2003 Server/Vista). • Linux (x86, ARM Davinci).
The library can be configured to run with the following Odin TeleSystems' board combinations:	• Thor-2-ExpressCard for 2 full T1 or E1 spans. • Thor-4-ExpressCard for 4 unidirectional T1 or E1 spans. • Thor-2-PCI-Plus for 2 full T1 or E1 spans. • Thor-4-PCI-Plus for 4 full T1 or E1 spans. • Thor-8-PCI-Plus for 8 full T1 or E1 spans. • Thor-8-PCI-Plus-2.0 for 8 full T1 or E1 spans. • Thor-2-PCI-Express for 2 full T1 or E1 spans. • Thor-2-PCMCIA-PRO for 2 full T1 or E1 spans. • Thor-2-PCMCIA-EX for 2 full T1 or E1 spans. • Thor-2-PCMCIA-CST for 2 full T1 or E1 spans. • Gimle-16-PCI-Plus for 16 unidirectional E1 spans. • Gimle-16-PCI-Express for 16 unidirectional E1 spans. • Sleipnir-1-PCI-Plus for 1 full T1 or E1 spans. • Sleipnir-1-PC104-Plus for 1 full T1 or E1 spans.

Features

	• Facilitates the compression (decompression) of speech data from 64 kbps G.711 to 16 kbps GSM TRAU (from 16 kbps to 64 kbps). • A-law and u-law companding are supported. • Uses burst DMA mode of Odin's OTX card to transfer data buffer. • Capturing and decoding of TRAU frames such as FR (Full Rate GSM 6.10). • TRAU data converting directly to the IP (on request). • TRAU streams may be decoded/encoded on any T1/E1 timeslot. • Supports flexible sub-channel mask inside timeslot. • Multiple sub-channels on various T1/E1 spans can be simultaneously processed. • Multiple boards are supported.

Other features

	• The overhead decoding layer allows to check and recover errors on-the-go. • Demo applications are available.

Ordering Information

Product Name / Product Category	• OtxTrauEx library / SMA-1033-1

Contact Information

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