



Protocols for Developers



eNewsletter #5

"TeleSoft gets a very high grade for being solid, reliable, and dependable... rock-solid throughout the whole project. Performance was also quite good. Didn't have to touch the TeleSoft code."
– 3COM Primary Access

"Telesoft has always been a great partner helping us to integrate the ISDN stack into our application. Their code and support is superior. That's what sets them apart."
– Voyant Technologies

"TeleSoft code reduced our time-to-market by at least two man years."
– Workstation Technologies

NEWS ITEMS

- * **Software Acquisition**
- * **DSL protocols**
- * **RFC 1483 LLC SNAP**
- * **RFC 2364 PPPoA Software**
- * **RFC 2516 PPPoE Software**
- * **Embedded Linux Support**
- * **QSIG Software**
- * **FALC 56 and COMET Drivers**
- * **E1 CAS R2 Signaling**
- * **Summary of current products**

SOFTWARE ACQUISITION

The recent acquisition of our primary competitor by Wind River Systems leaves TeleSoft as one of the very few truly independent stack suppliers. TeleSoft is neutral with respect to RTOS's and chip sets, we give our customers the choice of support for many proprietary RTOS's including Vxworks. The same is true for processors and interface chip sets.

This freedom of choice allows you to start a project with one platform configuration (e.g. Motorola and VxWorks) yet have the flexibility to move to another (e.g. MIPS and Linux) with the assurance of support from TeleSoft.

DSL Protocols

Is DSL on your roadmap? TeleSoft now offers proven source code for the popular protocols used by DSL products.

DSL Protocols include:

RFC 1483/2684 LLC/SNAP - the basic encapsulation protocol used in most DSL devices

RFC 2364 PPPoA VC MUX - Point-to-Point Protocol over

RFC 2364 PPPoA LLC NLPID - Point-to-Point Protocol over ATM

RFC 2516 PPPoE - Point-to-Point Protocol over Ethernet

PPP LCP, CHAP, PAP

If you are designing DSL products, you need these protocols, and best of all they are fully tested and in operation in many products.

Embedded LINUX

Are you part of the rapidly growing number of engineers interested in Embedded Linux? Do you expect to use Linux in the near future? If so we have a solution underway. Coming soon: TeleSoft stacks running on the MontaVista Hard Hat version of Linux and a Motorola MPC860-based platform.

Let us know if you are interested: sales@telesoft-intl.com

QSIG Announcement

Are you tasked with developing PBX-to-PBX communications? If so you will undoubtedly need to implement the QSIG protocols. You can save yourself much toil and trouble by using the TeleSoft TsLink3 QSIG stack which utilizes the same architecture and management structure as our well proven ISDN stacks. The TeleSoft QSIG is written in 'C' for ease of porting and is designed for smooth integration into virtually any embedded application. QSIG is also available pre-ported to the MIDAS-PRI and MIDAS RAC860 hardware reference platforms.

Contact us for QSIG Stack Modules:

- QSIG Basic Call (BC)
- QSIG General Functional Procedures (GF)
- QSIG Supplementary Services (SS)

COMET Driver

If you are developing T1/E1 equipment you are doubtless considering using the PMC-Sierra COMET Line Interface chip. And why not - one chip can be configured for T1 or E1, Short Haul or Long Haul, and it includes an integrated HDLC controller to handle the D Channel. To complement this attractive hardware solution TeleSoft now offers a full featured COMET Device Driver that not only supports the E1, T1, SH and LH modes but also supports FDL (Facility Data Link).

This COMET Driver wouldn't be complete unless it also included an HDLC Driver and support for T1 Robbed-bit Signaling and E1 Channel Associated Signaling - which it does.

The Layer 1 to Layer 2 interface complies with ITU-T specs and is a natural complement to the TeleSoft PRI and T1/E1 stacks.

FALC 56 Driver

If your preference for a T1/E1 chip is the Infineon FALC 56, look no further for comprehensive driver support. The TeleSoft Driver for this chip supports all modes of operation including T1 or E1, Short Haul or Long Haul, D-Channel HDLC and FDL (Facility Data Link). The Layer 1 to Layer 2 interface complies with ITU-T specs and is a natural complement to the TeleSoft PRI and T1/E1 stacks.

Both the COMET and FALC 56 are excellent devices and we offer you a choice of drivers to let you make the selection best suited for your application. Contact us (sales@telesoft-intl.com) now for information.

E1 CAS R2 Signaling

Multi-Frequency R2 signaling is still alive and much in use in many countries in Latin America and the Far East. The challenge in developing telecom products for these markets lies in identifying what the MF tone combinations are (and they are different for each country) and then implementing them in conformance with the national standards. We can help. In addition to our E1 drivers we also offer MF R2 signaling variants for 9 different countries. These variants can co-exist in the same stack with any or all of our TsLink3 PRI switch variants and are selectable at run-time.

DSL Standards Book

TeleSoft has previously demonstrated its technology leadership in the ISDN world with two books published to its credit. One of which is considered to be the bible for ISDN developers (ISDN Implementors Guide by Charles Summers and published by McGraw Hill). Charles, in addition to his busy schedule as VP Engineering at TeleSoft, has written another technology leader: ADSL - Standards, Implementation and Architecture. It is published by CRC Press.

S O F T W A R E S O L U T I O N S

TeleSoft TsLink3 is an evolving family of WAN software building blocks that provides a valuable head start to developers of communications equipment. Listed below is a sampling of protocols and APIs available from TeleSoft International.

Q.931

TsLink3 Switch variants are run-time selectable and include BRI and PRI support of Network and Terminal sides for:

- | | | |
|-----------------|----------|----------|
| * North America | * Japan | * Europe |
| * South America | * Africa | * Taiwan |
| * Australia | * China | * Korea |

Q.932

Defines the ISDN Supplementary Services and is available for User-side Lucent 5ESS Custom, US National ISDN-1, and Network & User-side EuroISDN.

QSIG

A set of standard signaling protocols defined for interworking between PABXs, is supported by the Q.931 and Q.921 implementations.

X.25

Provides continuing support for packet networks and can be used independently or integrated with TsLink3 ISDN software. Setting up X.25 calls through the ISDN network removes the need for a permanent connection to an X.25 router.

PPP

Point-to-Point Protocol

Multi-Link Point-to-Point Protocol + BACP/BAP

ML-PPP provides a standard software B-channel aggregation mechanism, commonly used to create a 128kbps BRI connection.

Now being extended for use with DSL links for multi megabit communications.

Always On/Dynamic ISDN (AO/DI)

Integrates ML-PPP, BACP, and X.25 to provide an always-available connection to ISPs and can lower subscribers' connection costs and ease the burden on the circuit-switched infrastructure.

OS Interface Support:

- * TsRITE RTOS kernel (PPC, X86 and 68K)
- * Nucleus * VxWorks
- * QNX * VRTX
- * MQX * RTXC

Frame Relay

A highly efficient packet switching service that combines the benefits of bandwidth sharing and circuit-switched networks. TeleSoft's Frame Relay includes support for both PVCs and SVCs.

T1 Robbed-bit and E1 Channel Associated Signaling (CAS)

Non-ISDN signaling protocols for channelized T1 and E1 lines. T1 RBS tone- and ABCD-signaling is in-band. E1 CAS tone signaling is in-band but ABCD signaling is out-of-band and the data rate is 64 Kbps. MF R2 signaling is available for 9 countries.

MIDAS Reference Designs

PRI, Single and Multi-BRI, ADSL

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