Wind River Solutions

For Signaling System 7 (SS7) Applications

Wind River | *Networking*

SS7 protocol suite for advanced communications solutions

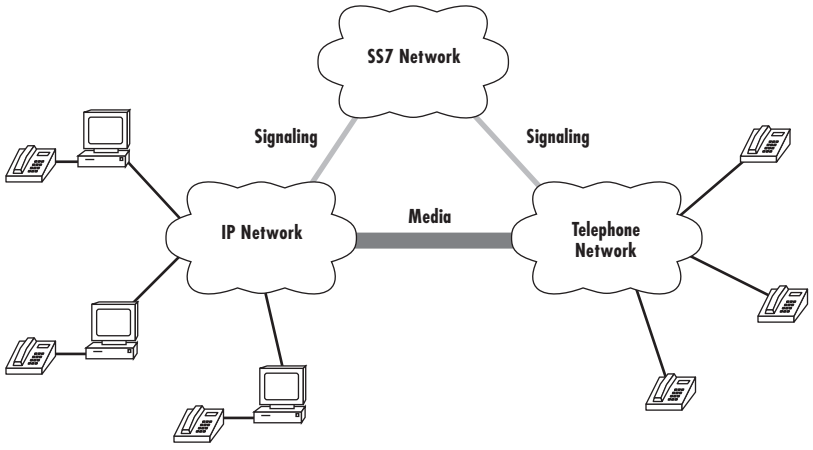
Wind River's Signaling System 7 (SS7) product line provides a set of ANSI C source code modules that can be quickly adapted to a wide variety of applications, including softswitch, wireless, voice, data, and voice-over-IP (VoIP) networks. Service control point (SCP), signal transfer point (STP), and service switching point (SSP) functions are supported. Wind River's SS7 modules can be quickly and easily ported to a wide variety of embedded and workstation environments, and are fully compatible with other Wind River signaling protocols, such as SIP, Megaco, MGCP, ISDN, R2, and RBS.

The SS7 product line includes the MTP-2, MTP-3, SCCP, and ISUP layers of the SS7 protocol stack – all of which support ITU, ANSI, and ETSI versions.

Message transfer part, level 2 (MTP-2) module

In addition to implementing all the functions of the MPT-2 layer, the Wind River module also supports the implementation of the fill-in signal unit (FISU) feature in hardware, as well as providing a complete software implementation. Since the processing overhead required to

IP/TELEPHONY INTERWORKING WITH SS7



Features

- Support for ITU, ANSI, and ETSI variants
- MTP-2, MTP-3, ISUP, and SCCP protocol support
- Modular design supports both function call and message-based intermodule communications
- Operating system and hardware independent
- Ideal for SSP, SCP, and STP applications
- Easy integration with other Wind River signaling protocols, including SIP, Megaco, MGCP, ISDN, RBS, and R2
- Enables the rapid development of a broad range of advanced communications products, including:
  - Softswitches
  - Media gateway controllers/call agents
  - Carrier-class switches
  - Wireless base stations and switching centers
  - VoIP servers
  - Enterprise switches

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implement FISU in software can be very high, the Wind River module enables developers to offload FISU functions to hardware when increased performance is needed. The module fully implements FISU in software where system resources are sufficient.

Other features include:

- Normal alignment procedures
- Emergency alignment procedures
- Realignment after link failure
- Signal unit and alignment error rate monitors
- Basic error correction method
- Congestion control and abatement
- Processor outage procedures
- Implementation of flow control procedures when user definable thresholds are reached
- Configuration of each link to support a different variant

Message transfer part, level 3 (MTP-3) module

- Configuration of each link to support a different variant
- Signaling message handling and network management procedures
- Message discrimination, message distribution, and message routing functions
- Load sharing between links/link sets
- Signaling traffic management procedures, including signaling traffic flow control, forced rerouting, controlled rerouting, changeover, changeback, MTP restart, and management inhibiting
- Signaling link management procedures, including activation, restoration, deactivation, link set activation, and automatic allocation of links
- Signaling route management procedures, including transfer prohibited, transfer restrict, transfer allowed, transfer controlled, signaling route set test, and signaling route set congestion test
- Management of both national and international signaling traffic
- Multiple congestion priorities
- Prevention of deadlocks and overload conditions
- Implementation of flow control when system resource utilization reaches user-configurable thresholds
- Multiple point codes

Signaling connection control part (SCCP) module

- Global title translation
- Routing based on global title, SSN, and DPC
- Connectionless data transfer (class 0 and class 1)
- Configuration of each SAP to support a different variant
- Management functions, including SCCP subsystem status check, notification of change of status to other SCCP subsystems, and service withdrawal of an SCCP subsystem
- Implementation of flow control when system resource utilization reaches user-configurable thresholds
- Support of full address field as defined by ITU and ANSI (1-64 digits)

ISDN user part (ISUP) module

- Enbloc and overlap sending
- National and international capabilities
- Link-by-link signaling using pass-along method
- Configuration of each link to support a different variant
- Support of supplementary services, including user access to calling party address ID, user access to called party address ID, user-to-user signaling, and call forwarding
- Local number portability per ANSI
- Multiple originating point codes at the MTP-3 interface
- Message compatibility, parameter compatibility, and wrong parameter values procedures
- Circuit management procedures, including blocking, unblocking, and reset
- Circuit group management procedures, including blocking, unblocking, reset, and query
- Message segmentation procedures per ITU
- Configurable call-clearing behavior for MTP-3 pause/resume priorities
- Proprietary parameters passed transparently between upper and lower layers

Advanced network solutions

Wind River's SS7 product line provides the foundation for many advanced network products and services. The modular software, conformance to a common architecture, and integration with other Wind River signaling protocols provide a powerful, flexible solution that speeds time to market and reduces development risk. Contact your Wind River representative for more information.

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