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SONET/SDH Automatic Protection Switching

Trunk Management

APS (Automatic Protection Switching) is one of the major benefits of SONET (Synchronous Optical Network) as well as SDH (Synchronous Digital Hierarchy). SONET/SDH. APS is well defined by standards in contrast to T and E carrier technologies where proprietary schemes are employed. NComm's APS modules in the NComm TMS® family of telecom source code provides the necessary functionality to monitor each line as well as the control/switching over multiple lines. In it's first release, the Linear APS models can be implemented in both the 1+1, 1:1 and 1:n architectures. Future releases will address the needs of the ring APS models including Unidirectional Line Switched Ring (ULSR), Bidirectional Line Switched Ring (BLSR), Unidirectional Path Switched Ring (UPSR) and Bidirectional Path Switched Ring (BPSR).

Features

- Self Healing protection functionality such as that found in SHNS (for Self-Healing Network Service) and AccuRing
- SONET/SDH Multiplexers
- Class 5/4 Switches
- Routers

Benefits

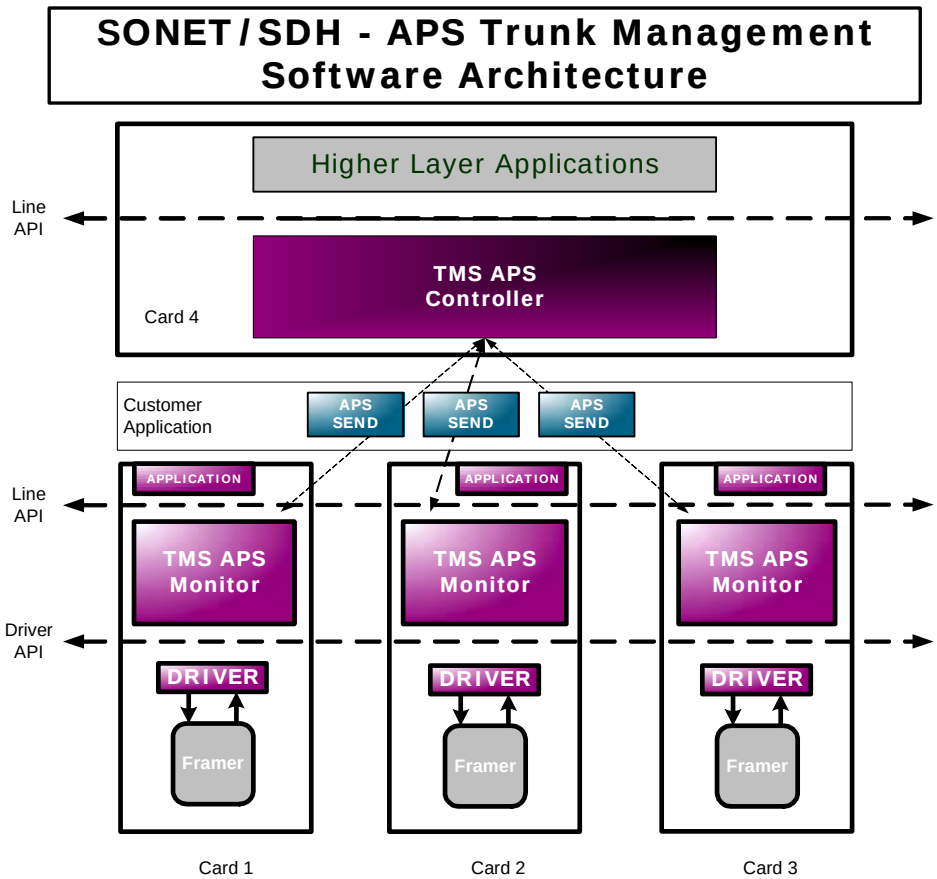
- Full implementation of linear APS state machine
- Designed to accommodate **multi-processor** arrangements
- Works across various hardware architectures
- Built-in Wait-To-Restore feature
- Models fully compliant with GR-253-CORE
- SONET/SDH framer device inde-

Trunk Management

The NComm APS TMS system implements controller and monitor blocks resulting in a totally flexible APS solution. It includes a fully implemented Linear APS state machine. The modules have built-in bridge and selection control as well as complete transmission and acceptance of K1, K2 bytes. 1+1, 1:1 and 1:n (n = 1 to 14) systems are easy to build and can be run time configurable. In conjunction with the SONET/SDH TMS software, Signal Fail and Signal Degrade with configurable hold-off times provide the foundation of the APS switch triggers.

Wait-to-Restore (WTR) timers are also configurable with proper overrides for subsequent Signal Fail/Degrade indications.

Switch request priorities are fully operational as well as equal priority mediation. All switch commands are accessible including Clear, Lockout of Protection, Forced Switch of Working, Forced Switch of Protection, Manual Switch of Working and Manual Switch of Protection. The Exercise command is also supported. Control commands include Lockout of a Working Channel and Clear



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