Clarinet-system
A PC-based platform for protocol testing

Clarinet-system developed by ACACIA is a powerful tool for testing protocols on ATM, WAN and LAN networks. The Clarinet-Book can be connected to a Desktop-PC or Notebook running under Windows™95, Windows™98 or Windows™NT 4.0.

Common ATM, LAN and WAN interfaces are available:

- ATM: STM1/STS-3c, E3.
- ISDN BRI: S/T Bus, U.
- ISDN-PRI, QSIG and Trunk: E1, T1.
- SS7 and V5: E1.
- Ethernet: AUI,10base2,10baseT.
- Vseries: V24-V28, V35, V36, X24-V11.

Notable features of this equipment include:

- Protocol decoding through a user specified protocol stack.
- Statistics: message counting, flow.
- Filtering and triggering on messages type.
- Common protocols supported on ATM, bit-oriented or characters links in a user-specified stack : ATM, SSCOP, Q2931, MPOA, LANE, CL-IP, HDLC, ISDN, QSIG, SS7, V5, X25, Frame Relay, IP/IPX, TCP, X224/X225, V120, PPP, LCP, GSM, Asynchronous characters and a large number of variations (national versions, RFC extensions, ISO/ITU/ANSI...)

- Simultaneous simulation and analysis (ATM, ISDN, QSIG, V5, SS7, X25, Frame Relay).
- Conformance testing: execution of ETS (ATM, ISDN, QSIG, VPN, V5, SS7, X25, Frame-Relay).
- Clarinet-API: development of programs in C, or in TTCN to compile ATS.
- User-friendly operator interface using dialogue in MS-Windows.
- Easy use of multiple interfaces by connection of multiple Clarinet-Book units on a SCSI2 bus.

Easy to configure & run test

A user-friendly operator interface common to all CLARINET applications has been developed under the Windows environment. The choices of configuration are selected by a Windows dialogue and systematically saved in files. Configuration of tests are defined in Clarinet-profiles. A wizard allows the creation of new profiles from a list of templates. Profiles can be automatically repeated, chained, looped...

The protocol analyser

All the exchanges occurring on the Interface Under Test are time-stamped with a resolution of 0.1 milliseconds (0.1 microseconds for ATM). The events are recorded in real-time directly on hard-disk in their native format (binary data + date & time). The

ounting....The start and stop of recording can be triggered on any user specified event.

The event editor displays the recorded events, reading the recorded file in real-time, or at a later date. The events are decoded and translated according to the selected protocol, in text. The user specification of the protocol stack provides an unlimited number of combinations of decoding, both at the same time and selected after the recording. Both the D and B channels can be displayed at once, PPP on both asynchronous links and in ISDN B channels, IP/TCP on ATM, Ethernet links ... the list is endless! The events in the file can be selected according to a filter specification, eliminating unnecessary clutter in the display. Powerful search and edit facilities allow easy location of the desired events. A complementary function provides statistics counting of BOP events, data flow, delays. Counters can be displayed in either history or counter mode.

The automatic simulator

An automatic simulator allows control of ISDN, QSIG, ISUP, V5 communications, ATM, X25 or Frame Relay circuits. The built-in simulator emulates the signalling stack of protocols (Q931, QSIG, ISUP, Q2931, V5, X25, Q933) and includes the behaviour of the generator (outgoing call) and responder (incoming call) functions. The messages and parameters are fully specified in the Windows dialogue. The parameters allow the configuration of the emulation mode (UNI/NNI, Network/Terminal, DTE/DCE…), the selection of national versions of ISDN (DSS1, National-ISDN, 5ESS), time-limit values...Commands allow the user to manually control the simulator: call/clear, send messages, DTMF values, etc...Built-in data sources are available to fill B channels (LOOP, X25 data, BERT, tones) or virtual circuits (patterns, files). Outgoing calls can be triggered by incoming call message contents.

The programmable simulator

When the user test requirement needs additional development, the Clarinet-API provides all the interfaces for programming in the C language. The executable program specifications are included in the standard Clarinet environment.

The Conformance Testing Simulation runs executable programs generated by using the Clarinet-TTCN-compiler (concurrent TTCN and ASN1 options) and the API interfaces. A wide range of software packages corresponding to standard ETS are available (ATM, SS7, ISDN, QSIG , VPN, V5, X25).

The versatility

CLARINET-System is supported by any type of PC: Desktop or Notebook. A single SCSI2 port is used for multi-point connection. The different types of Clarinet-book can be mixed on the SCSI bus or used independently. The software is installed under Windows™95 or Windows™98 or Windows™NT 4.0. Clarinet-system is a powerful tool to investigate when random defaults occur on links and networks: the triggers and record capabilities allow the storage of all messages and physical states.

A universal use

Clarinet-system is an invaluable tool in many situations.

- Development laboratories: Clarinet-system has a wide range of functions to evaluate the behaviour and performance of PBX, terminals, switches supporting WAN and LAN protocols.
- Production: Clarinet-system provides a reference to validate communications equipment in a production line. The automatic simulator and the analyser run pre-prepared profiles.
- Test labs: Clarinet-system with the additional ETS packages is a powerful and low cost TESTER to run standard ETS or to compile ATS developed in the TTCN language.
- Field operation : Clarinet-system is a powerful tool to investigate when random faults occur on links and networks: the triggers and recording capabilities allow the storage of all messages and physical states for later analysis.