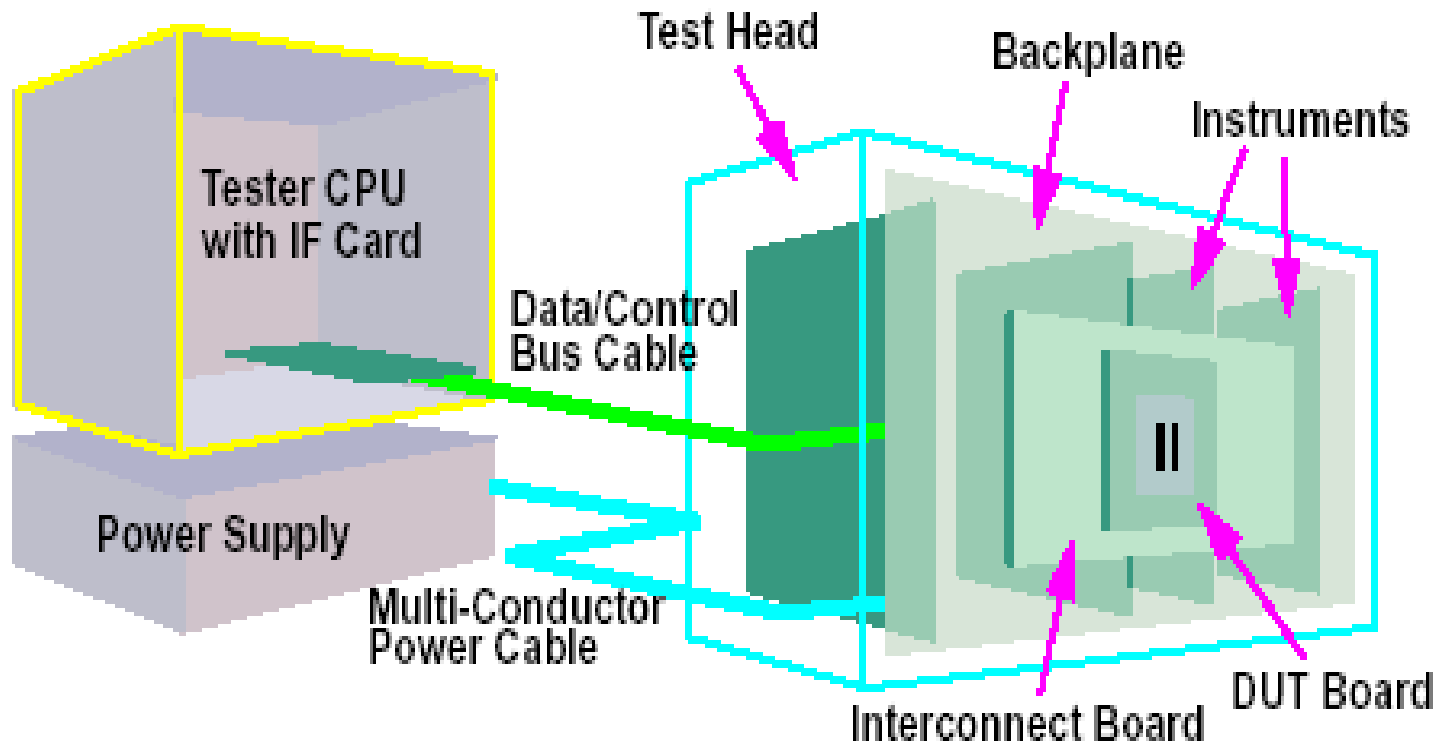# ASL 1000

System and Software Overview

蔚華科技
SPIROX

System Overview

- Tester CPU with test head IF board, data/control bus cable and peripherals
- Power supply
  ±5V,±12V,±16V,±24V,±50V,±65V
- Test head assembly with backplane, interconnect board and DUT board.
  MCB (1nA to 100nA)
  LCB (10pA to 1nA)
- Test instrument cards
- System Manipulator

ASL1000 Overview

Hardware Architecture

Instrument Cards

Item	Name	Instrument	Description
1	ACM	Alternating Current Multiplexer	High-speed test site for testing digital clock devices
2	ACS	Alternating Current Source	Arbitrary waveform generator and alternating current meter
3	ASB	Analog Switch Board	20-channel analog switch tester
4	DCC	Data Converter Card	Highly flexible card for testing ADCs, DACs and other converters
5	DDD	Digital Driver and Detector	8-channel digital pattern generator for digital signal stimulation and readback
6	DOAL	Dual OpAmp Loop	High-precision opamp and comparator resource for testing amplifiers in a closed loop configuration

ASL1000 Overview

蔚華科技
SPIROX

ASL 1000 Instrument Cards (continued)

| 7	DVI	Dual Voltage/Current Source	Two-channel, medium-current V/I source; provides true four-quadrant force/measure operation and rapid settling time
8	HVS	High Voltage Source	High-voltage, low-current floating source for measuring breakdown voltages, biasing or powering a device for tests by other instruments
9	LZB	Link/Zener Blower	Single quadrant V/I source optimized for link and Zener blows
10	MVS	Medium Voltage Source	Same as LZB, with medium voltage and higher current
11	MUX	Resource Multiplexer	Relay card that makes system resource or DUT connections required by a particular test application
12	OFS	Octal Floating Source	Medium-voltage, medium-current floating V/I source

ASL1000 Overview

ASL 1000 Instrument Cards (continued)

13	OVI	Octal Voltage/Current	Eight-channel, low-current V/I source that offers four-quadrant force/measure operation
14	PMU	Precision Measurement Unit	Extremely precise measuring unit that sources and measures up to 45 V and 1 A, in either single pass or dual pass mode
15	PRO	Prototyping	Configurable card used to create custom circuitry for various DUT applications
16	PVI	Pulsed V/I	Medium-voltage resource that provides a very high current, time-limited current pulse in a fully floating mode
17	RCS	Ramp Current Source	
18	TIA	Time Interval Analyzer	Two-channel, high-precision time measurement instrument mounted in the PC case
19	TMU	Time Measurement Unit	Flexible card that gives a wide range of timing measurement functions for both analog and digital devices

ASL1000 Overview

蔚華科技
SPIROX

ASL1000 Source

Resources DC	Voltage	Current	Channels	Resolution	Accuracy	
DVI	45V	2A	2	16 bits	0.03%	
HVS	850V	7mA	1	16 bits	0.25%	
MVS	100V	100mA	1	16 bits	0.20%	
OFS	50V	200mA	1	16 bits	0.20%	
OVI	16V	30mA	8	16 bits	0.10%	
PVI	50V	100A	1	16 bits	0.50%	

AC	Bandwidth	Sample rate	Vrange	Resolution	Performance	
ACS	1MHz	16MHz	10V	12 bits	2%	
DIG-5	5MHz	10MHz	2.5V	14 bits	70dB THD	
TMU	100MHz	n/a	1-1000V	<100pS	10nS	

Digital	Frequency	Channels	Levels	Resolution	Performance	
DDD	14MHz	8	"-5V to + 15V"	100pS	3nS	
TIA	400MHz	2	"-5V to + 15V"	75pS	0.5nS	

Application	Description of application specific resource
DOAL	Two OP-AMP loops, pole/zero compensation, VIO range=100uV, AVOL >120dB
LCB	8 pico ammeters, 100pA full scale range, measure 1pA
DCC	ADC / DAC high speed servo loop, 0.5mS code measure, 20 bit reference, 16 I/O
LZB	Zener link trim card, 40V, 700mA continuous, 4A pulsed, 2x28 matrix

ASL1000 Overview

蔚華科技
SPIROX

Visual ATE Architecture
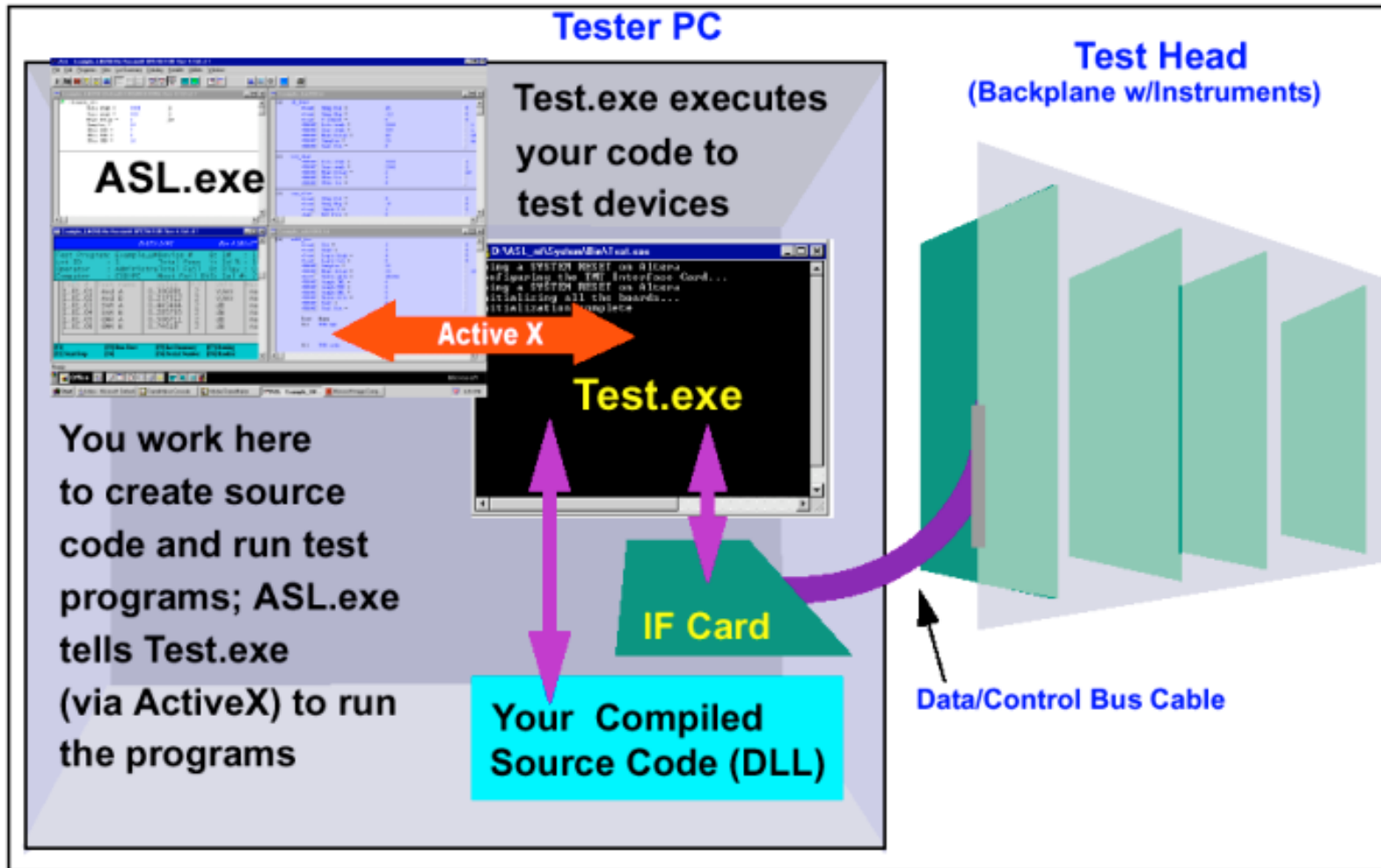
Visual ATE Architecture

Executable Files:

Init.exe

1.Run on system startup and on Visual ATE startup.

2.Initialize the ASL test head interface card and the test instruments.

ASL.exe

1.Let user Analyze and manipulate data, communicate instructions to the tester control program.

2.Communicate user action to the hardware control.

3.Create source files for the system compiler(Visual C++).

4.Create Visual C++ project files(*.dsp),complete header files(*.h), and source code files(*.cpp).

蔚華科技
SPIROX

Visual ATE Architecture

Executable Files(continued):

Test.exe

1. Control the test head instrumentation during component testing as well as data collection.

2. Link to the compiled code(DLL) and direct the tester hardware to test devices according to the test program instructions.

3. Use the Visual ATE system DLLs to control instrument calibration and system events.

HandlerMgr.exe

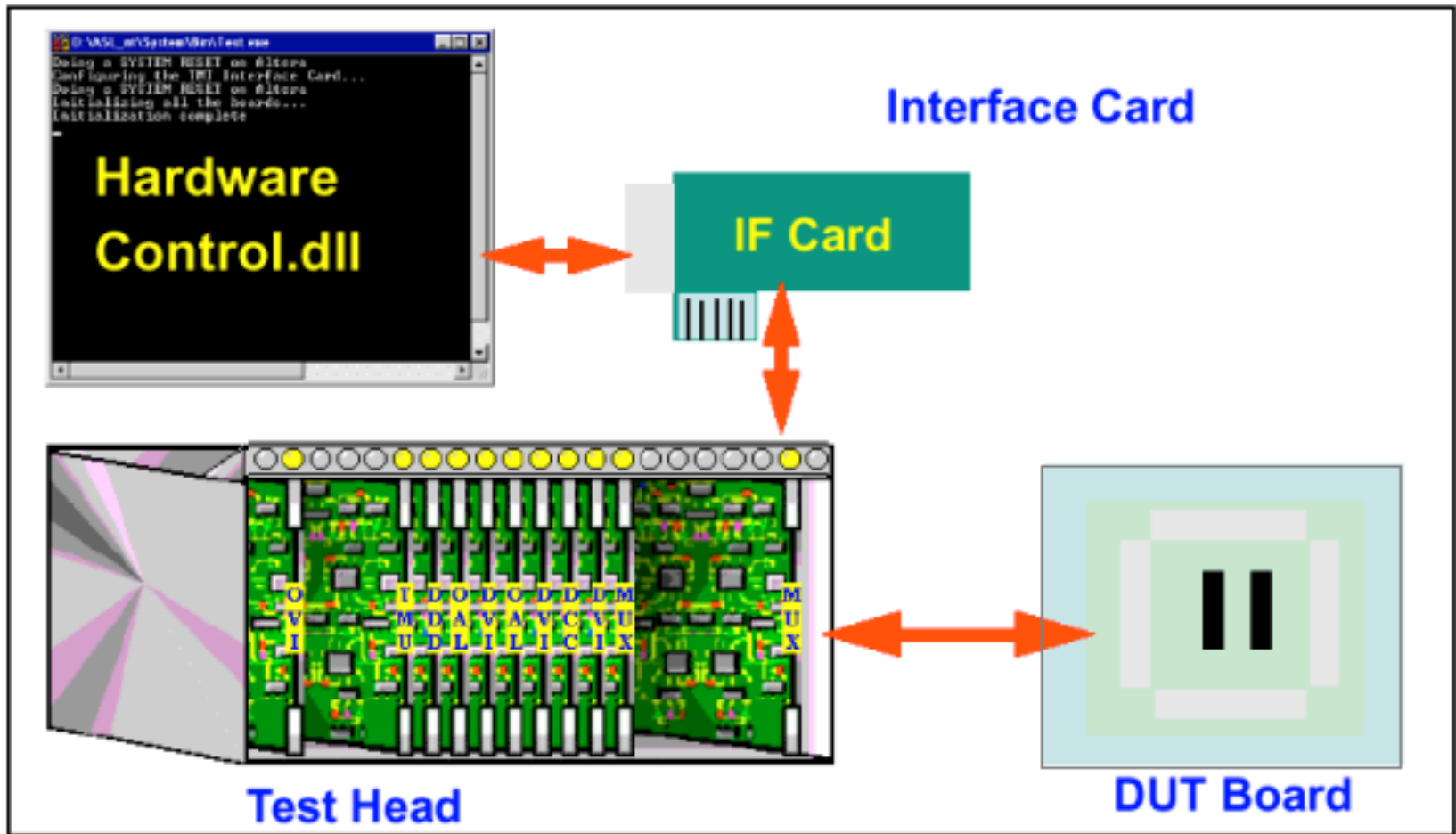Allowing user to create and manage interface card-based handlers.

蔚華科技
SPIROX

Visual ATE Architecture

Dynamic Link Library Files (*.DLL)

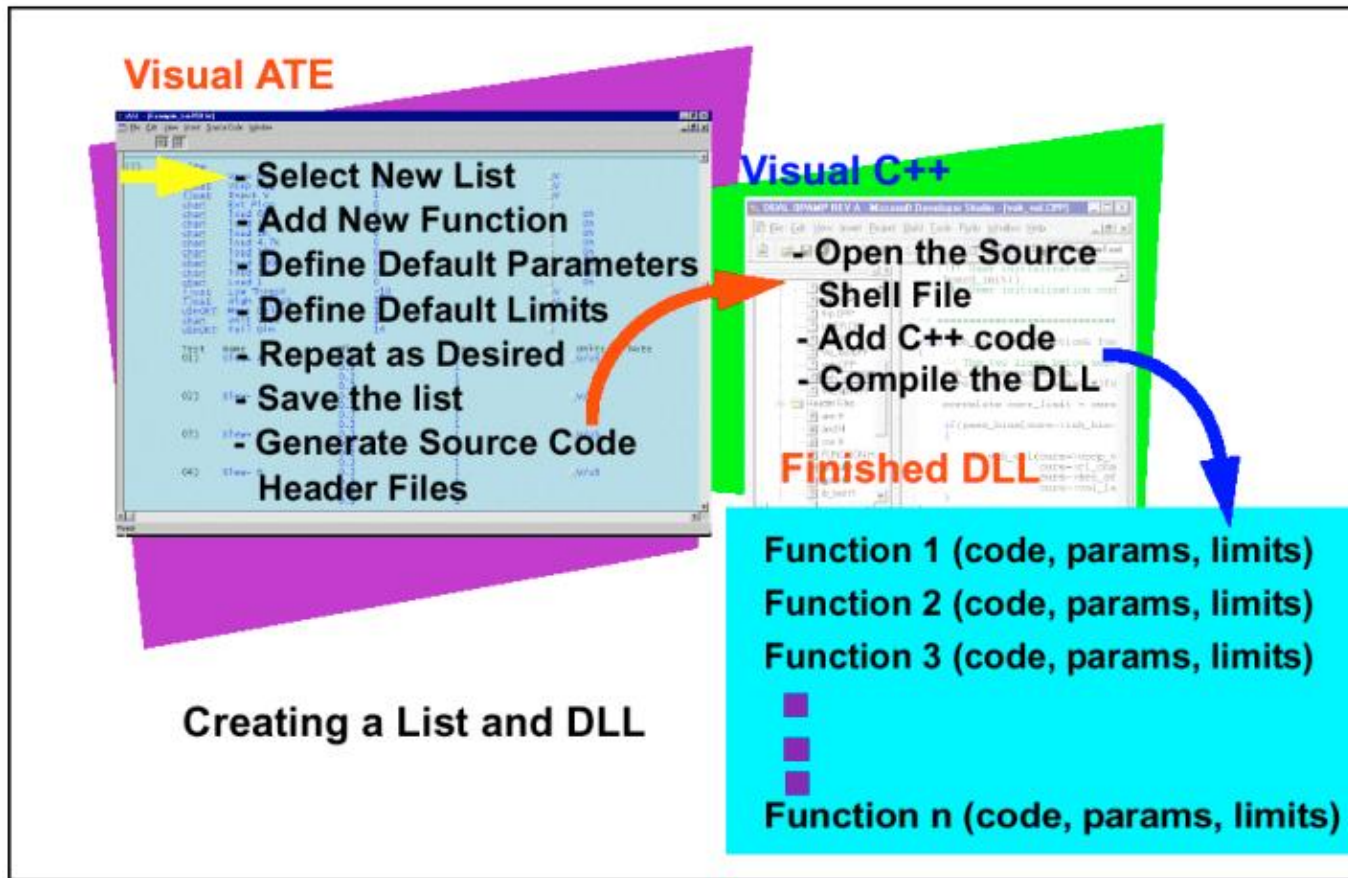Windows library of routines and resources that links to the *.exe files at run time.

All user-written code is complied into DLLs,Visual ATE has its own system DLLs with hardware and interface controls.

ASL1000 Overview

Visual ATE Test Structure

Interface Card

Hardware Control.dll

IF Card

Test Head

DUT Board

蔚華科技
SPIROX

Visual ATE Test Structure

Lists and Source Code Files

Visual ATE Test Structure
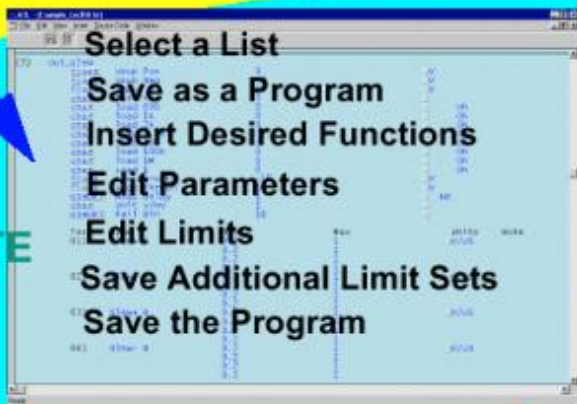
Test Programs

File Types

File Type	Extension	Description
Datalog	*.dl4	Standard Visual ATE database format
Datalog	*.stdf	Standard test database file format
Dynamically Linked Library	*.dll	A shared object library; compiled test functions that are loaded at run time.
Handler Data	*.pin	Generated by the Handler Manager, has handler data
List	*.lst	Generated in Create, these files are the basis for generating DLLs.
Lot summary	*.ls4	Binary file, bin data output summary generated from Lot Summary
Lot summary	*.lsr	ASCII file, bin data output summary generated from Lot Summary
NT Export	*.nx4	Generated by the export command in Create mode
Spreadsheet	*.spd	Comma-delineated text file compatible with most spreadsheet programs
Test Program	*.prg	Generated by actions while in Engineering mode

ASL1000 Overview

File Types (continued)

File Type	Extension	Description
Text	*.txt	ASCII text that can be manipulated as follows: **Report:** — Optional output from Engineering or Create **Spreadsheet:** — Datalog files from Datalog screen **Text:** — Output from Datalog screen

蔚華科技
SPIROX

Visual ATE User Interface

Visual ATE Operating Modes

Operator

Running test programs

Saving and printing test data

Checking instruments.

Engineering

Writing and running test programs

An editor for writing test programs

A run screen for collecting test data.

(cont.)

蔚華科技
SPIROX

Visual ATE User Interface

Visual ATE Operating Modes (cont.)

Create

Construct list files(later compiled into DLLs)

Generate source code

Access all VisATE file types

System Administrator

Define the VisATE system properties and use system utilities

Maintenance

Calibrate and verify the installed test instruments

(END)

蔚華科技
SPIROX