CNC TRAINING CENTRE

SIMULATION SOFTWARE
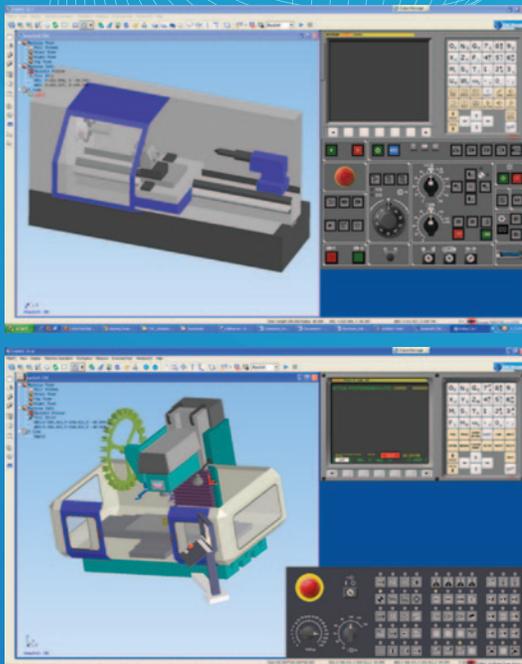
Real Machine vs Virtual Machine*

*The 3D model machine shown was customized for a customer.

Real panel vs Virtual Panel

3D Milling and Lathe simulation in one package

THIS IS NOT JUST A SIMULATOR,
It is an integrated software package that includes:

1. Realistic CNC machine simulator. Setup, program and operate various CNC machines in a virtual safe environment.

2. G-Code parser and debugger with advanced features like canned cycles and macros.

3. Server module to manage student's access to the system, provide remote assistance and administer tests.

Main Features:

- Support for 2, 2.5 and 3 axis CNC machines
- Contains 65 systems and 119 control panels (more being added)
- Rendeing using OpenGL for fast and accurate 3D modeling
- Realtime dymanic rotation, zooming, panning and switch views
- G-code parser with code validaton supports G-codes and M-codes
- G-code debugging tool
- Capabily to simulate canned cycles, macros and the inclusion of parameters
- Fanuc, Siemens polar coordinate programming, G02, G03 spiral inrpolation
- Support for custom codes and cycles in different NC systems
- Simulates post-processed files from UGS, Pro-E and masterCAM
- Materials library, edit and insert niew materials
- Worpiece setting and mounting
- Database management tools and tools customization
- Turret can be configured for 4, 8, 12 tools. The ATC can be horizontal/vertical
- Measuring tools: edge finger, feeler gauge, micrometers, calipers, ect..
- Roughness measurements based on cutting parameters
- Machine simulation includes like coolant, sound for machining operations and chips generation
- Automatic updates online
- Operation process recording and reply in AVI format
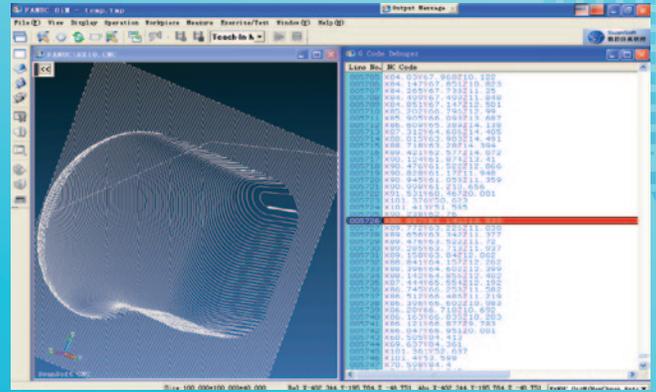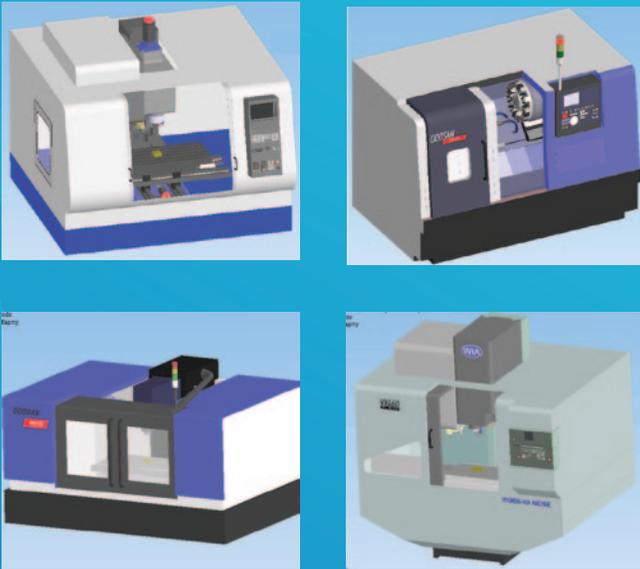- And much, much more...

Works with the most popular control panels

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3D CNC Virtual machine and G-Code Simulator
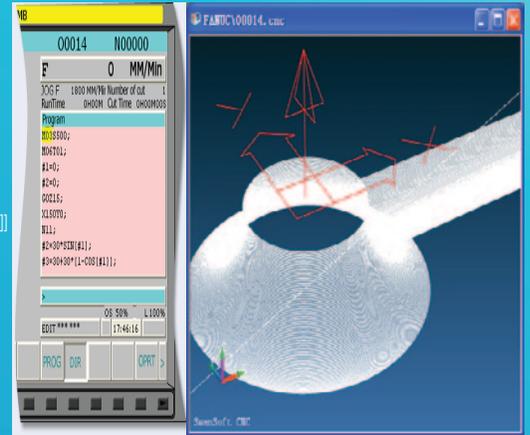
More than 100 operator panels

Program validation and G-code debugger

Multiple 3D model machines

```
M03 S500
M06 T01
#1=0
#2=0
G0 Z15
X150 Y0
N11
#2=30*SIN[#1]
#3=30+30*[1-COS[#1]]
G01 Z-#2 F40
G41 X#3 D01
G03 I-#3
G40 G01 X150 Y0
#1=#1+1
IF [#1 LE 90] GOTO 11
G0 Z30
M30
```
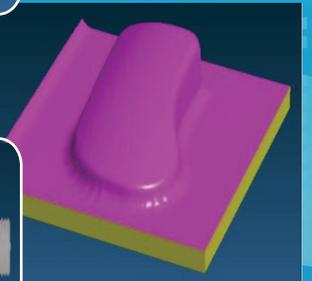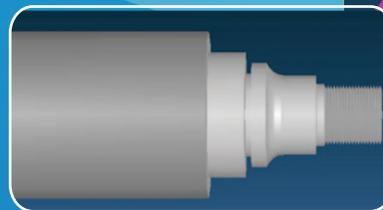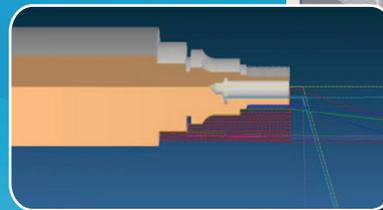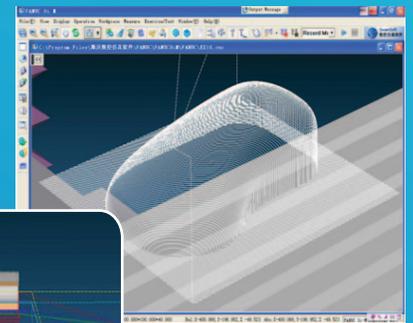
Support for variables and parameters used to program macros

G00	G27	G70	G87
G01	G28	G71	G88
G02	G29	G72	G89
G03	G30	G73	G90
G04	G32	G74	G92
G09	G40	G75	G94
G20	G41	G76	G96
G21	G42	G80	G97
G22	G50	G83	G98
G23	G52	G84	G99
	G53	G85	

G-Codes supported: Lathe

G00	G28	G54	*G80	G89
G01	G30	G55	G81	*G90
G02	*G40	G56	G82	G91
G03	G41	G57	G83	G92
G04	G42	G58	G84	*G98
G15 G16	*G43	G59	G85	*G99
G17	*G44	G73	G86	G50 G51
G18	G49	G74	G87	G68 G69
G19	*G53	G76	G88	

G-Codes supported: Milling

Cutting path (2D) and 3D simulation for Lathe and Milling
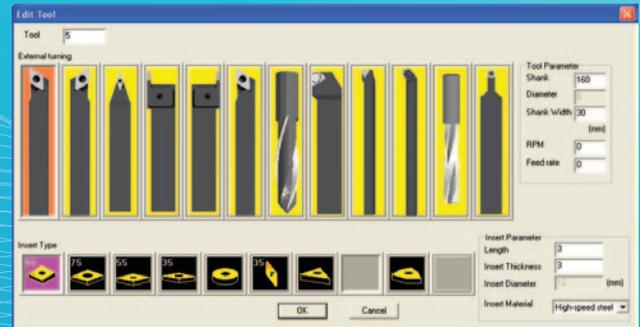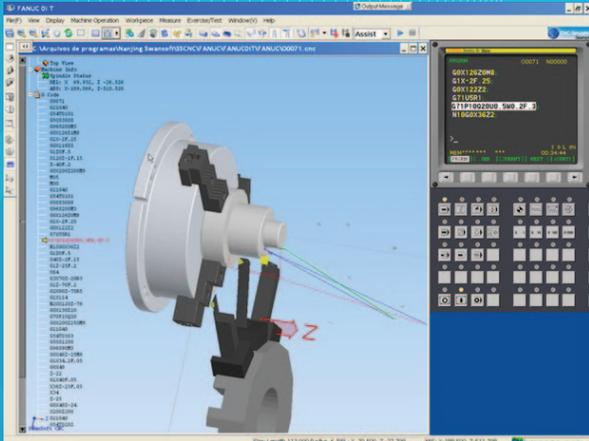
CNC Virtual Machine and G-Code Simulator

Real time dynamic zooming and paning

Extensive tool management capabilities for Milling and Lathe
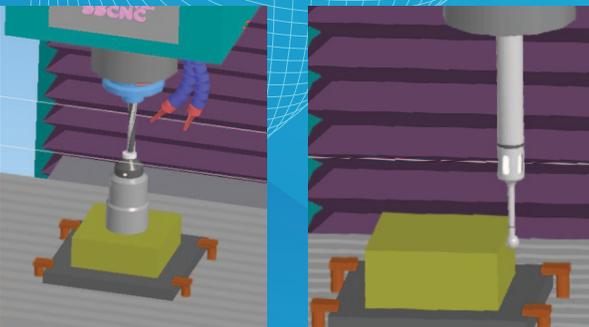
Optical Edge Finder and Z-Axis gauge

Workpiece dimensions and roughness measurements
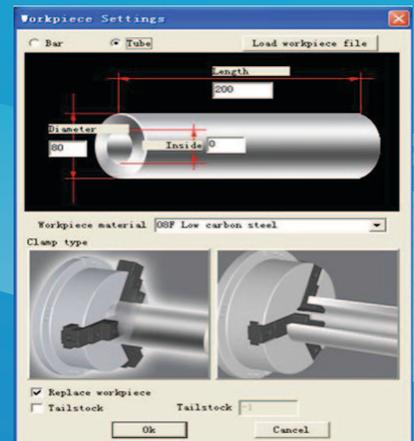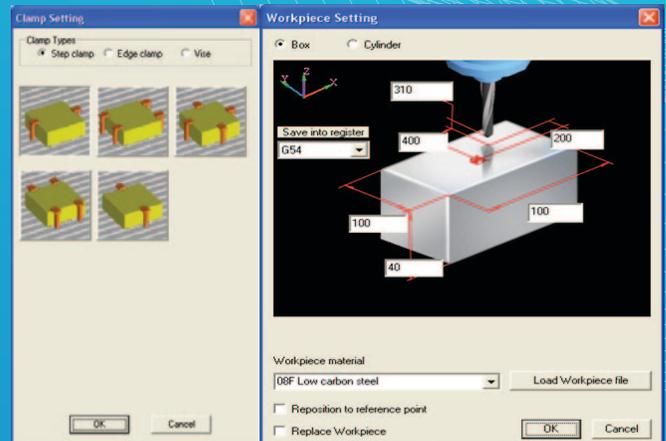
Workpiece and clamping configuration

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Server Features

When the software is installed on a local network in a server-client configuration it provides the instructor with the capability of managing students, clases and tests

1. Users management
Students are registered with an username and password. Once the student log in from any computer in a local network the instructor can centrally manage, monitor and tutow the students.

2. Exercises management
Add and edit exercises into server. Transmit exercises including pictures to client. Get answers from the clients.
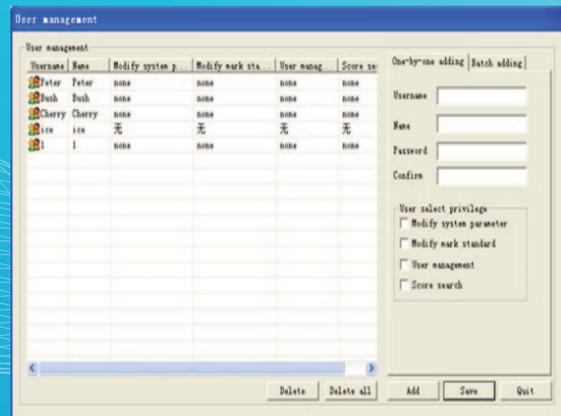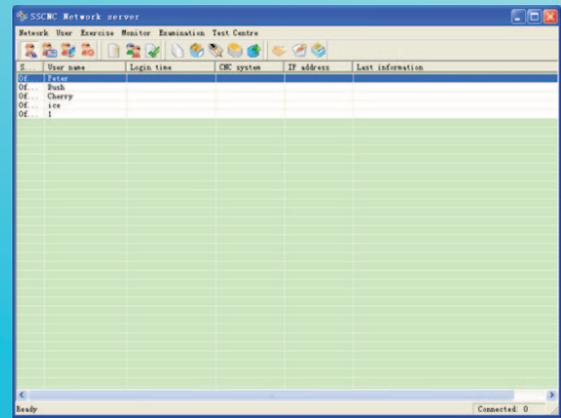
3. Network Monitor
Querry students and control login, logoff and machine operations. Broadcast screen information to the students and remotely assist them via remote view and cintrol of client PC.

4. Examination subsystem
Question library maganement, test paper management, the test process management as well as the examination paper automatic marking.

**5. Test Administration subsystem**
Test data management, exam permit management and test results management.

User monitoring and management capabilities

Hardware and Software Requirements

- Runs on Windows Enviroment - 2000, XP, Vista, Win 7

- LAN network required to use the server fuctionality

- Processor 1.0 GHz minimum, 1.5 GB recommended

- 600 MB of hard disk space for program installation

- VGA graphics card capable of 1024x768 resolution, recommended suport for OpenGL

- Multilingual Software - Portugese, English, Chinese, Turkish, Korean and polish.
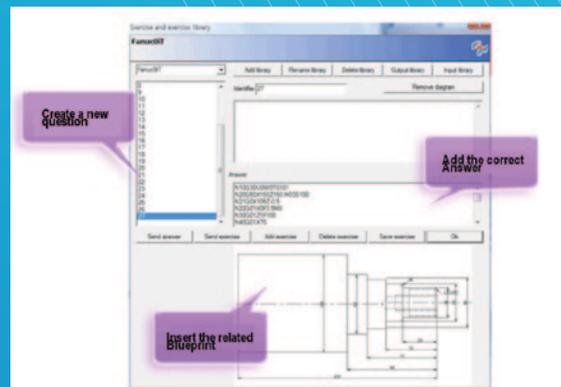
Exercise managament

Customization*

The panels and systems can be cistomized according to your needs. Most of the time the only thing that is required are some pictures and the panel`s manual. Also has tha ability to model the 3D machine (the machine with which you have) so that along with the control, the result is as real as possible. New systems and panels are being added constantly and updates are free of charge.

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