



REAL-TIME  
PRODUCTS

SIMULATION

COMPRO

# Infinite Possibilities

## Tomorrow's Success Belongs To Those With The Vision To Redefine The Possible

In the world of evolving technologies, success is achieved by companies willing to challenge established boundaries.

COMPRO's mission is developing products, solutions, and services that provide the speed, power, and reliability required by the most sophisticated and time-sensitive applications in the industry.

COMPRO is constantly developing innovative solutions for emerging real-

time markets, including rapid transit, process control, and interactive entertainment systems.

To date, COMPRO has achieved an installed base of over 10,000 systems, representing over 3,000 customers worldwide. These customers are served via our world-wide offices with our Corporate office strategically located in central Florida.

### Corporate Commitment:

"Ongoing customer satisfaction with our products and services, with a focus on intelligent solutions"

## COMPRO Divisions

COMPRO is divided into three primary divisions which include:

- Real-Time Products group
- Simulation Solutions group
- Comprehensive Services group



## COMPRO Real-Time Products

COMPRO developed the RT-Lightning™, RSX, and LCRS™ product lines specifically for the most demanding needs of the real-time market. Our products have gained a rock-solid reputation in the world's most demanding real-time applications, including simulation, distributed interactive simulation protocol/high level architecture (DIS/HLA), range and telemetry, energy, and transportation.

## COMPRO Simulation Solutions

COMPRO products and software are integral parts of simulation solutions currently in use around the world.

COMPRO training devices incorporate a wide range of advanced features that include simulation exercise planning, simulation exercise generation, monitoring and control, training and playback, and After Action Review management.

COMPRO's key software technologies include our "Synthetic WARfare Management®" software (SwarM™), used in each of our simulator products.

SwarM™ provides a complete suite of simulator software and capabilities. SwarM™ is in use today at customer sites as the core component for realistic training devices, and as a prototype tool used to explore aircraft, cockpit, weapon, and avionics system designs.



## COMPRO Services

COMPRO provides expert maintenance, repair, and logistics support services for multi-vendor products, including Encore, HP®, SGI®, and Sun®. We maintain a state-of-the-art electronic escalation system to ensure all activities worldwide are monitored and escalated to depot logistics and support personnel.

COMPRO provides Professional Services for complex requirements that are readily available from our world-wide team of skilled and experienced engineers.





## The Technological Foundation For Balanced Power

The world of "real-time" demands high-fidelity, high-performance computer systems. Real-time computers must interact with physical events and data, simultaneously analyzing and reacting so quickly that no significant time passes between data acquisition, computation, and response. It is a

world in which COMPRO has staked a 45+ year claim as the leader in innovation and dependability.

COMPRO's Real Time Environment (RTE) is comprised of hardware and software layered onto commercial-off-the-shelf (COTS) platforms running any flavor of the Linux® operating system. RTE provides extremely deterministic/low-latency interrupt system characteristics, meeting critical real-time requirements.

These features were previously available only using custom configurations or proprietary systems. The extremely deterministic, low latency interrupt capabilities that RTE offers is an unparalleled solution for the myriad of high-demand real-time computing challenges of the 21st century.

When properly configured, a COTS system can deliver approximately 12 microseconds of latency with 6 to 15 microseconds determinism.

## COMPRO RT-Lightning™

COMPRO has developed the "RT-Lightning™" technology specifically for the demanding needs of the real-time market utilizing our RTE product. The RT-Lightning™ product line has gained an enviable reputation by satisfying the world's most demanding applications, including aerospace simulation, range and telemetry, energy, transportation, and process control.

COMPRO's RT-Lightning™ architecture incorporates our RTE software, our Reflective Memory system for high-speed system communications, and the computing power of the AMD Opteron™ system to form a unique and exciting system. RT-Lightning™ provides pure linear scalability, determinism, and I/O bandwidth unmatched in the industry.

RT-Lightning™ clustered nodes can be added independently with zero-impact



to the original computational environment, incrementally expanding to meet future application requirements. This provides a "balanced power" configuration where processing capacity and I/O are tuned to meet specific real-time requirements.

In a technical world that has seen "order of magnitude" processor performance increases yearly and little progress in open bus technology, RT-Lightning™ clusters guarantee balanced system growth.

COMPRO fully understands that in the real-time industry you only get one shot to get it right, and we have put real value in the RT-Lightning™ system architecture to achieve that goal.

## Compro Legacy Computer Replacement System (LCRS™)

LCRS™ ushers legacy SEL/Gould/Encore customers into a current "Commercial-Off-The-Shelf" (COTS) computer replacement solution.

LCRS™ simulates, in a software environment, legacy Concept hardware and runs existing binary applications while retaining inherent system timing. LCRS™ executes MPX-32 Operating System software, utility programs like volume manager, assemblers, compilers, and user application (FORTRAN and Assembly) object code, all running on a COTS configuration.



# The Continuing Revolution



## Simulation Products

COMPRO is a turn-key provider of simulation products and services. We offer a wide range of training product solutions for military and commercial customers ranging from fast jets to classroom learning systems.

COMPRO's main simulator products include our simulation runtime software SwarM™, our Tactical Procedures Trainer (TPT), our Part Task Trainer (PTT), our Virtual Cockpit Simulator (VCS) and Portable Desktop Trainer (PDT).

## SwarM™ - The heart of Simulation

COMPRO's Synthetic WARfare Management software (SwarM™) is a unique simulator and real-time code development environment. The philosophy behind SwarM™ addresses a critical industry need – a way to develop simulation and training devices where major components can be conveniently reused and adapted to meet new requirements. SwarM™ is designed to facilitate customer code reuse for modeling common weapons platforms or mission systems in aerial vehicles (fixed wing or rotary/UAV), terrain vehicles, and sea-based vessels.

SwarM™ benefits include:

- Significant reduction in development cost
- Shorter development schedule
- Realistic dynamic aircraft simulation
- Realistic threat environment simulation
- Mission scenario development
- Real-world digital terrain database
- Out-the-Window (OTW) visual scene
- Reconfigurable cockpit displays

SwarM™'s tactical mission environments expose the simulated weapons system to realistic threat stimuli while performing a mission. The threat

stimuli are generated via the simulation of enemy defense systems. These threats are in the form of surface-to-air, air-to-surface, and air-to-air engagements, generated wholly within SwarM™ or multiple Man-In-The-Loop (MITL) simulators.

Specifically, SwarM™ lets the user define the initial mission conditions (scenario parameters) for the environment and players, and model the operation of sensors and counter-measure equipment, weapons, and enemy defense systems.

The head-up/head-down view is selectable, which allows toggling between those two views (most useful on a SwarM™ single-display system). Event logging can be turned on and off, giving the user the flexibility to selectively record any portion of the mission, or the entire mission, for analyzing or debriefing at a later time.

## Tactical Procedures Trainers (TPT)

One of the challenges facing commercial and armed services is providing a cost effective training environment for today's complex aircraft. COMPRO's Tactical Procedures Trainer (TPT) is a direct response to that challenge.

COMPRO's TPT provide high-fidelity, high-performance training solutions at a fraction of the cost of other training devices that use real aircraft avionics. Our TPT simulates, using real glass



displays, the functionality and appearance of the actual aircraft part or subsystem resulting in a far less complex environment to provide the training.

Our TPT flight controls and displays are driven by realistic computer simulations of the actual aircraft's systems, providing accurate responses to pilot inputs. By simulating the aircraft's systems, autopilot, and navigational and operational instruments, COMPRO's TPT allows a large number of pilots to be trained to a consistently high level of competence in a short time.

COMPRO's TPT products include support training in emergency procedures, instrument flight, and air-to-air and air-to-ground combat within a dense threat environment.

## Part Task Trainers (PTT)

COMPRO's Part Task Trainers (PTT) offer an economical way for training pilots on selected avionics systems, weapons systems or maintenance sub-systems. COMPRO's PTT feature commercial off-the-shelf, Linux® based, hardware and software that runs our high-fidelity SwarM™ simulations.

All PTT functional controls, instrument panels, and cockpit hardware used are representative of the actual aircraft parts and reflect the same mechanical characteristics; that is, look, feel, and operate like the actual aircraft component.

## Virtual Cockpit Simulator

COMPRO's Virtual Cockpit Simulator (VCS) features the same high-fidelity simulations in our fully tactile-based TPT and PTT simulators. However, our VCS provides a lower cost, highly maintainable, virtual cockpit utilizing LCD screens in place of the replicated controls of the FTD. Our VCS cockpit features touch screen, fully-interactive, 2D representations of the cockpit environment.

COMPRO VCS provides the customer a highly detailed training and engineering environment in a virtual cockpit environment. The VCS is configured for close replication of a specific cockpit layout and switch/gauge logic. VCS

uses our SwarM™ simulations and is configurable to meet the customer's specific training requirements.

## Portable Desktop Simulator

Our Portable Desktop Simulator is a downsized version of our PTT Simulator. It targets more specific task training and is based on a light-weight PC laptop computer.

COMPRO's portable, affordable Desktop Simulator delivers real-time high quality training in the technical aspects of aircraft operation without custom hardware. The whole system operates using standard PC architecture with software models consistent with SwarM™ simulators.

## Training Products and Options

COMPRO has a long tradition of supporting your training needs with a comprehensive suite of training products options.

### Aural Cueing System (ACS)

The Aural Cueing System (ACS) is our a low cost hardware and software system to control and mix voice and digitally stored sounds. It includes COMPRO real-time software and off-the-shelf computer and audio components. COMPRO uses the ACS in its flight training devices; it also is applicable to a wide variety of applications in the simulation, training, research, and entertainment industries.

### COMPRO's Terrain Database (TDb)

Our terrain database generation software uses elevation, cultural, and imagery data in printed and machine-readable formats. Radar and electro-optic databases also can be created by optionally



encoding material property data in the TDb during compilation.

### The Instructor/Operator Station (IOS)

Compro's IOS provides a powerful, user-friendly interface through which training scenarios can be easily monitored, controlled, and changed. Our IOS is a flexible and versatile solution for military and commercial applications and is based upon Commercial-Off-The-Shelf (COTS) systems and Graphical User Interface (GUI) standards.

The IOS has a display library from which you can configure and develop mission pages. The display library contains the most common conventional avionics and navigation instruments, unclassified versions of military tactical and weapon systems can be displayed as needed by the instructor.







## COMPRO SimBright - "Simulation in a New Light"

Commercial simulation is now more popular than ever and the usage of many existing training devices has lasted far beyond their original project-ed life cycle.

Many of today's commercial simulators are well over 15 years old and need updates to bring them into regulatory standards compliance. To address this growing need, COMPRO has now developed our SimBright commercial simulation products for users wishing to rejuvenate legacy training devices under regulatory certifications.

SimBright products are specifically designed to provide affordable solu-tions, allowing users to extend the life or meet regulatory mandates of their training simulators and retain, where

possible, the existing legacy certifica-tion of the device.

SimBright customers can choose the technology needed to stay current and competitive with today's training markets with minimal impact to train-ing schedules.

COMPRO's SimBright products and services specialize in many areas which include:

- Visual System upgrade / replacement
- Host migration to COTS-based systems
- IOS upgrade
- Database modeling
- Regulatory certification assistance
- Collimated mirror upgrades
- Mirror extension from 150 to 220 HFOV

## Services

COMPRO's total systems approach to service and support offers diverse standard and customized programs that can be fine-tuned to your comput-ing environment. The following servic-es will ensure your success no matter what level of support is required.

## Maintenance

COMPRO offers a variety of mainte-nance programs to ensure maximum uptime of your computing environ-ment. From highly sophisticated users requiring minimal support to the critical needs of multi-vendor, high-demand users, COMPRO will work with you to develop the most appro-priate plan. Services are available for both hardware and software, and each can be tailored to the specific needs of the user.

## Logistics Support

COMPRO offers logistics programs to support any level of customer need for equipment spare parts and repair services. Experienced logistics pro-fessionals – skilled at working with large, long-term programs – work with you to determine the right program for your location.

We offer:

- ISO 9002 compliance
- Repair capacity for multiple vendors (SGI®, Encore, Gould, SEL, Sun®)
- Exclusive source for

installation of ECOs and FCNs for multiple products

- The only authorized repair center for all Encore, Gould, and SEL products

The diverse applications of COMPRO's customer base create a need for cus-tomized support. COMPRO stands ready to assist its customers with either off-the-shelf or proprietary software.

COMPRO's technical capabilities for multi-vendor software and hardware support services are time-proven. In fact, we've been excelling in support-ing the most demanding applications in the world for over 45 years.



# Corporate Headquarters

## Compro Compter Services Inc.

105 East Drive  
Melbourne, Florida U.S.A. 32904

Tel.: (800) 936-2673  
(321) 727-2211  
Fax: (321) 727-7009

e-mail: [info@compro.net](mailto:info@compro.net)  
WWW URL: <http://www.compro.net>

## International Companies and Locations

### England

Encore Real Time Computing, UK  
Tel.: 44 (0) 1252 852228

COMPRO SERVICES LTD  
Tel.: 44 (0) 1252 852228  
Web site: [www.compro-uk.com](http://www.compro-uk.com)

### Germany

Encore Real Time Computing GmbH  
Tel.: 49 0211-52391401

### Brazil

AXXA CONSULTORIA LTDA  
Tel: 55 61 3201-3320

### France

Encore Real Time Computing S.A.  
Tel.: +33 1 30 23 36 00  
e-mail: [info@encore.fr](mailto:info@encore.fr)

Encore Real Time Computing S.A.  
Tel.: +33 4 42 16 23 00

Encore Real Time Computing S.A.  
Tel.: +33 5 61 39 25 25

### Japan Exclusive Distributors

Japan Encore Computer, Inc.  
Tel: 81-3-5791-4940  
email: [info@japan-encore.co.jp](mailto:info@japan-encore.co.jp)

Compro Asia Co., Ltd.

Tel: 0120-919-866  
email: [inquiry@compro-asia.com](mailto:inquiry@compro-asia.com)

### Italy

Encore Real Time Computing,  
S.r.l. Offices

Tel.: +39 0362 300433  
Web site: [www.encore.it](http://www.encore.it)

### Spain

Encore Real Time Computing Espana S.A.  
Operating Office (North-West)  
Tel.: +34-981-288404

Operating Office (South)  
Tel: +34-959-417119

Operating Office (North-East)  
Tel: +34-977-493729

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**PROFESSIONAL  
SUPPORT  
SERVICES**

