

## Leviathan Based PC Secure Computer Systems

By Walter A. Helbig, Sr.  
CTO TEPartners, LLC

TEPartners, LLC intends to introduce its line of Leviathan PC motherboards that can be enhanced with a Leviathan option card and its accompanying software. The motherboard alone will provide you with a PC<sup>1</sup> that is compatible, in all aspects, with the system you now have.

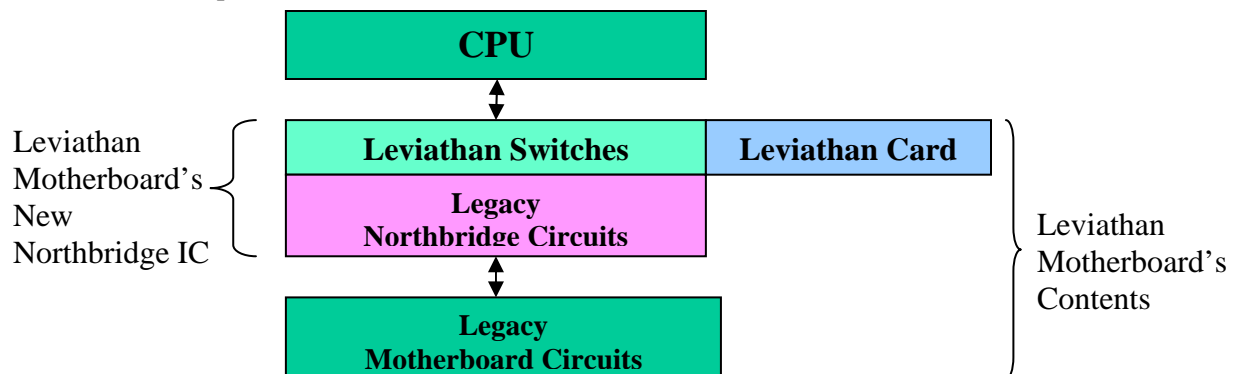
It will:

- a. Fit into the same packages,
- b. Use the same CPUs and memory cards (DIMMs),
- c. Accept the same peripheral expansion cards,
- d. Use the same peripherals,
- e. Perform under the same Operating Systems, and
- f. Run the same application programs.

What is most important though is that your new Leviathan motherboard can have the TEPartners' Leviathan Card and its accompanying Leviathan Access Control Software installed when you get the motherboard or later at your site. Together they will provide you with the utmost in computer security and information assurance features, features that will protect your computer system from all classes of physical and electronic threats that are created intentionally or accidentally. The Leviathan system achieves this principally by having the Leviathan Card operate and store its data in its own separate address space unreachable by the computer's CPU.

All of the items in this new product line directly address all of the aspects of computer security that were originally defined more than a quarter of a century ago and added to since. The products in this new line will then provide you with the ability to defeat all attacks on your computer information and hardware. For years the computer industry has increasingly provided your computers with capabilities to prohibit many types of attacks from causing damages. Unfortunately, catching up and providing defenses against new threat types has been, and still is, without a Leviathan system, an unobtainable goal.

TEPartners alone has developed, demonstrated and patented the one integrated approach that makes this product line a quantum leap forward with its capability to protect you from all kinds of known and presently unknown threats. When you purchase and install the Leviathan components you will notice that the prices are comparable to those of similar components that don't provide you with Leviathan's capabilities. You will also notice that a Leviathan enhanced system does not take up any more room than the system you presently have. Further, with the proper equipment you will be able to measure, but you will not otherwise notice, the amount of computational time used and the amount of power consumed by the Leviathan components.



<sup>1</sup> PCs first and other computer versions later.

## **Operation Descriptions**

When your PC with a Leviathan motherboard includes the Leviathan Card and Leviathan Access Management Software combination all manners of security and information assurance features become available for your use. Most of these features are available to you at no additional cost but some require the purchase of additional items from TEPartners or others. All features that use any computer resources are inactive initially and must be activated by the Trusted System Operator. Without any of the features activated the computer will operate as a non-secure system without any protection other than that provided by the installed Operating System and any other installed security Application Software.

There are several types of security features that are available, depending on which part of the Leviathan enhancements come into play. For example, the Leviathan Card's basic job is to provide integrity assurance for the computer system, the information it contains, and the operations it performs. It also is critical in providing assurance that the system is being used properly. When used the Leviathan Card endows Trust to the following operations:

- a. Configuration Management,
- b. Local/Remote User Identification and Authentication (I & A),
- c. Local/Remote User I & A Information Entry,
- d. Audit,
- e. Lock, Unlock, Sign Off, Shut Down, and
- f. Audited Recovery.

Further, if the system includes the Leviathan Tamper Proofing option the Leviathan Card will handle all of the monitoring, detection, audit, and alarm functions by itself.

To provide the above listed functions the Leviathan Card is endowed with capabilities that will be used for the following:

- a. File Encryption and Decryption,
- b. Key Management,
- c. File Signature Generation and Verification,
- d. File Error Detection Encoding and Error Detection/Location/Correction, and
- e. EDAC Algorithm Management.

The Leviathan Access Control Software's basic job is to work with the Leviathan Card in carrying out the individual steps associated with assuring that the system remains secure, that all information remains sacrosanct (inviolable), and that all users operate the system in manners that are within their previously approved secure operation boundaries for both Mandatory and Discretionary Access Control.

## **Accessories**

Every Type 2 Leviathan Card will come with a Type 2 Security Features User's guide. Type 2 systems are for securing unclassified applications.

Every Type 1 Leviathan Card will come with a Type 1 Security Features User's guide. Type 1 systems are for securing classified applications and will be available only with secure delivery to a cleared facility.