



### **Award Recipient: Arcot Systems, Inc.**

The Frost & Sullivan 2006 Product Innovation of the Year Award in the field of Digital Authentication and Security is conferred upon Arcot Systems, Inc. for its development of an innovative software-only smart card, called ArcotID<sup>®</sup>, for electronic strong authentication and digital signing. Based on the company's patented Cryptographic Camouflage<sup>™</sup> technology, the ArcotID can facilitate and reduce the time and cost for the implementation of physical smart card systems, and, hence, the technological infrastructure can be laid out well before the cards and readers have been manufactured and are ready for use.

In traditional software tokens, the given token is encrypted with the user provided personal identification number (PIN) or password. If the software token falls into the wrong hands, 'brute force' programs can be run by a hacker to determine the password (these essentially try a multitude of combinations of passwords). This is possible mainly because such a system will always give feedback as to whether or not the input password was correct, allowing various combinations to be tried till the real password is determined. While this type of brute force cannot be applied in the case of physical smart cards, the cost of manufacturing and implementing a physical smart card system is significantly higher than that of a software token solution and physical smart cards can take several years to roll out.

Arcot Systems' has developed a solution, the ArcotID, that addresses this problem. By employing patented Cryptographic Camouflage technology, the solution gives multiple correct answers to a hacker that all look like a correct result, irrespective of whether or not the entered password is correct. In other words, the hacker receives hundreds of thousands of inoperable but correct-looking keys rather than just one actual correct key. Such 'information overload' overwhelms the hacker. The only way to determine the correct password, is by connecting to a backend server which can detect the brute force attack and deactivates the ArcotID after several failed attempts.

ArcotID employs the industry standard, X.509 Digital Certificates as the underlying technology for authentication and digital signing. Although the ArcotID is relatively simple to use (as it hides all the complexity of public key infrastructure [PKI] from the users) and it looks and behaves just like a user name-password system for authentication, it inherently has all the properties of a smart card. For instance, it delivers the strength of a hardware digital authentication and signing solution in a software form factor and, hence, can be stored on any CD, universal serial bus (USB) token, crypto token, or any other supported client device with a low risk of compromise. The ArcotID is also flexible enough to work across many applications and technical environments. It coexists well with other authentication solutions, including hardware tokens, within enterprises that use multiple authentication and risk management techniques. Given its software format, the ArcotID is portable and is easy to deploy and manage, giving the user secure authentication any time, anywhere. While physical smart cards can only hold a limited number of certificates, the ArcotID can theoretically hold an unlimited number of certificates. These are some of the attributes that distinguish the ArcotID.

But what is equally important is that in many cases, ArcotID turns out to be more cost effective than hardware alternatives. In many organizations, only around 30% of the human resources work in the company building and the remaining 70% work away from the office building (field personnel, partners, and so on) or remotely. In such cases, it is too expensive and unnecessary to distribute hardware tokens or smart cards to each person, since only 30% of the personnel need the tokens or readers and cards for physical and logical access. Arcot's technology is well geared toward providing a cost-effective smart card alternative to precisely such a mobile human force.

The ArcotID multi-factor solution complies with FFIEC, SOX, IdenTrust, and HIPAA requirements and is currently deployed in enterprises within several industries. Arcot Systems has more than 10 issued patents and several other patents pending on the Cryptographic Camouflage and related technologies. The company recently added the ability to tie ArcotID to a specific device or IP location to address end-point hardware security issues. Moreover, the company is working to develop authentication systems for PDAs such as the Blackberry. Arcot has already shown the workings of its technology in mobile devices and in lab environments, and currently has pilot projects underway to take mobile transaction authentication to a commercial level.

In summary, the Frost & Sullivan Award for Product Innovation of the Year recognizes Arcot Systems' outstanding level of product innovation in the field of digital authentication and security, as exemplified by the company's creation and practical deployments of a novel software-only smart card for digital authentication, which makes provisioning and management of digital credentials easy while substantially reducing the overall cost of implementation.

## About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.

### Award Description

The Frost & Sullivan Award for Product Innovation of the Year is presented each year to the company that has demonstrated excellence in new products and technologies within their industry. The recipient company has shown innovation by launching a broad line of emerging products and technologies.

### Research Methodology

To choose a recipient of this award, the analyst team tracks all new product launches, R&D spending, products in development, and new product features and modifications. This is accomplished through interviews with all the market participants, and extensive secondary and technology research. All new product launches and new products in development in each company are compared and evaluated based on degree of innovation and customer satisfaction. Companies are then ranked by number of new product launches and new products in development.

### Measurement Criteria

In addition to the methodology describe above, there are specific criteria used to determine final competitor rankings in this industry. The recipient of this award has excelled based on one or more of the following criteria:

- Significance of new product(s) in their industry
- Competitive advantage of new product(s) in their industry
- Product innovation in terms of unique or revolutionary technology
- Product acceptance in the marketplace
- New product value-added services provided to customers

## About Frost & Sullivan

Frost & Sullivan, a global growth consulting company, has been partnering with clients to support the development of innovative strategies for more than 40 years. The company's industry expertise integrates growth consulting, growth partnership services, and corporate management training to identify and develop opportunities. Frost & Sullivan serves an extensive clientele that includes Global 1000 companies, emerging companies, and the investment community by providing comprehensive industry coverage that reflects a unique global perspective and combines ongoing analysis of markets, technologies, econometrics, and demographics. For more information, visit [www.frost.com](http://www.frost.com).

## About Arcot Systems

Arcot is a leading provider of secure e-payment, strong authentication, credential management, and digital signature software solutions. The company's cost-effective and highly scalable *software-based* authentication products limit online transaction fraud and enable advanced functionality such as the turn-key issuance of roaming credentials and secure electronic document exchange. Arcot's products meet the need for strong, multi-layered transactional security while providing customers with a seamless, user-friendly experience. The company's offerings are compliant with U.S. and international standards including 3-D Secure, IdenTrust, SAFE and FFIEC Internet Banking Authentication recommendations. Enterprises also work with Arcot to meet legislative requirements such as Sarbanes-Oxley and HIPAA. Over 10,000 card-issuing banks and 20,000 online merchants and other enterprises use Arcot to protect the identities of millions of consumers worldwide. For more information, visit [www.arcot.com](http://www.arcot.com).