

## SPECIAL REPORT

In 2004, manufacturing inefficiencies had HID Global facing a critical crossroads that threatened its reign as the world leader in contactless access control credentials and readers. Exclusive interviews with executive leadership and a tour of its North Haven, Conn., plant reveal how HID responded to this challenge by radically overhauling its approach to manufacturing and implementing a dramatic strategic shift.

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### AT A GLANCE

- Founded in 1991 and now part of ASSA ABLOY, HID Global is a pioneer in RF technology and the world's top supplier of contactless access control credentials and readers
- Confronted with manufacturing inefficiency and diminishing returns, in mid-2004 HID hires a Lean Manufacturing expert to transform its North Haven, Conn., plant with the mission to deliver on time, every time
- Benefits for systems integrators include better products, fewer returns, quality control on the cards themselves and improved delivery time
- North Haven plant manager details finer points of the Lean process, tells how it can work within a systems integration context
- HID Global CEO explains how the company is keeping up with convergent technology to best serve the needs and expectations of integrators, OEMs and end users



# HID in Plain Sight

If under a security-themed category “HID” popped up on the game board during an episode of “Jeopardy,” the answer clue would likely scarcely escape the mouth of host Alex Trebek before any contestant with even a casual familiarity with the industry would correctly respond, “What is access control?” Such is the brand recognition and marketplace dominance HID Global has built as the planet’s leading supplier of contactless access control credentials and readers.

Formed in 1991 as Hughes Identification Devices, a subsidiary of Hughes Aircraft, HID was acquired by its current par-

ent company, Sweden’s ASSA ABLOY AB, in 2000. HID is currently part of the Global Technologies Division within ASSA ABLOY, a \$3.2 billion supplier of locking solutions that employs 30,000 people (650 with HID) around the globe.

Headquartered in Irvine, Calif., HID Global is represented via regional offices serving more than 100 countries and runs 13 facilities handling manufacturing, processing and/or distribution throughout the world. The firm has a research and development center in Denver, while North Haven, Conn., and Zurich, Switzerland, are where its core manufacturing operations are located.

## HID REASSERTS ROLE AS ACCESS LEADER

With an initial product offering consisting of proximity cards and readers, HID promptly secured its legacy as a pioneer of radio frequency (RF) technology. The company would go on to greatly expand its product range and ship more than 250 million access credentials worldwide. However, for all its successes and storied history, HID found itself at a critical crossroads just a few years ago.

For a short period of time at the end of 2003, the company's North Haven (HID-CT) facility, which had long functioned as a traditional batch-and-queue manufacturer, was plagued by high inventories, poor on-time deliv-

ery, low customer satisfaction and long lead times. Consequently, in mid-2004, HID management acknowledged drastic changes were necessary to maintain, and especially in order to grow, its operations.

As Jason Bohrer, HID Global general manager, Americas, explains, those changes included looking outward for fresh ideas and leadership.

"After working through several different consultants and various manufacturing process improvement initiatives, we realized we needed a comprehensive effort that would rally all aspects of the organization," says Bohrer. "We were impressed with the

improvements made by companies like Toyota and their total commitment to being 'lean' in all aspects of their business. This led us to adopt our own lean process improvement in our Connecticut facility."

Paul Murphy, a specialist in *Lean Manufacturing* (see sidebar below) implementation and turnarounds was appointed HID-CT plant manager and director of the company's manufacturing engineering worldwide. Other key personnel schooled in Lean practices were also brought in to institute a rapid culture change that would not only transform the physical facility, but also refocus workers

### What It Means to Get 'Lean'

**L**ean Manufacturing, a technique recently implemented by HID Global in its North Haven, Conn., plant (HID-CT), is a process-based management philosophy largely derived from the Toyota Production System. Perhaps best conceptualized as "a place for everything and everything in its place," Lean is renowned for its focus on the reduction of wasted efforts and materials through the implementation of process consistency and a shared mission of overall customer satisfaction.

Lean Manufacturing promotes the use of several Japan-derived tools and practices. They include *Kaizen* (continuous process improvement), the "5 Ss" (*Seiri*: tidiness, organization; *Seiton*: orderliness; *Seiso*: systemized cleanliness; *Seiketsu*: standards; and *Shitsuke*: sustaining discipline), and "pull" production (as needed) through the use of *Kanban* (sign or signaling system) and *Heijunka* boxes (visual scheduling devices).

At HID-CT, these practices have been combined with a commitment to instill employees with a sense of pride, connection and fun. It's an environment where employees are encouraged, empowered and motivated to come up with innovative ideas on a daily basis. Team building is further promoted via a multitude of community-minded activities.

During a recent tour of HID-CT, Plant Manager Paul Murphy fielded questions about Lean Manufacturing and its relevance for systems integrators.



**HID-CT Plant Manager Paul Murphy shows off the facility's policy deployment plan for 2007, which is predicated on Lean Manufacturing principles.**

#### What are the most challenging aspects of implementing and maintaining the Lean approach?

**Paul Murphy:** The first challenge is always trying to get people to believe that they can make this kind of change. When you're on a downward spiral at a facility, people tend to have what we'll call 'incomplete-itis' in terms of their activities. They're unsure of the direction. So helping set that direction initially and getting people confident, those people who sit on the fence sometimes, is really important. This is then sustained through team involvement and measurement.

#### If employees hear Lean is imminent, should they look for another job or can it be an easy transition?

**Murphy:** From a management perspective, if you understand what you're trying to do, which is to provide more value to your customer than anybody else, then you want to have the best mousetrap. And the best mousetrap involves getting everybody in your organi-

zation engaged in understanding the vision of where you want to be and actively pursuing that as an organization. If that's what you want, then a good way to do that is Lean.

But you have to be vested in it. It's not something you can fake and it's not something you can't participate in and hope everybody else does. You have to be one of the leaders out there, as a manager, as a supervisor, as an owner, doing it, because people aren't going to make that difficult transition if they don't see you out

on providing customers the highest quality product, on time, every time.

“We reshaped the organization, we reshaped the direction of the facility around Lean Manufacturing concepts, which helped support a better business model so our folks in the field could have more confidence in our ability to deliver our product with the level of quality they expect in the HID brand name,” says Murphy.

The implementation has not gone unnoticed. In November 2006, HID-CT was awarded the Connecticut Silver Shingo Prize, which is presented to recognize a company that has solved challenging manufacturing process

problems, and in the process, is working toward transforming into a world-class organization. In June, HID received Connecticut’s Connect-Ability initiative for 2007 Top Employers award, which recognizes exemplary employers for leadership, accomplishment and diversity.

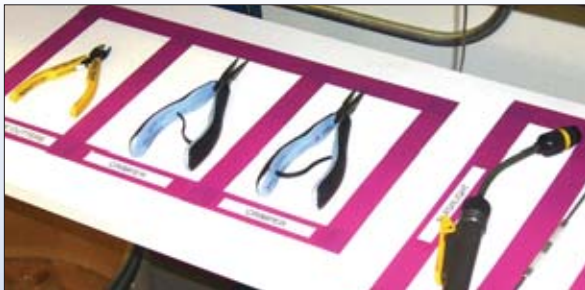
To get a firsthand look at how the industry’s most prominent supplier of technologically advanced access control credentials is reinventing itself and uncover how the process translates into business advantages for security integrators, SSI recently took a private tour of the HID-CT plant and conducted the following

exclusive interview with Denis Hébert, HID Global’s president and CEO since 2002.

### **‘Lean’ Implementation Identifies, Eliminates Inefficiencies**

*Why did HID Connecticut make the move to Lean Manufacturing?*

**Denis Hébert:** You move in that direction because it’s the right thing to do. We had some issues in our plant relative to the scrap rates we were running and the quality of card manufacturing. These production issues resulted in delays of deliveries to our customers. Therefore, we had to optimize our production capabilities. So, Lean was a way of helping



**A fundamental tenet of Lean Manufacturing is a place for everything and everything in its place, so as not to waste time looking for common items.**

there front-and-center, changing your habits just as you would want them to change theirs.

### **Does Lean make sense for service-oriented businesses, like systems integrators?**

**Murphy:** Absolutely. A systems integrator brings value to the process. That’s what they’re there to do, just like we’re here to provide value to support them. And what you’re trying to do in a Lean environment is always focus on the value you’re trying to produce. Crystallize that value, deliver the value and measure your performance against that value. For a systems integrator, you want to shorten the cycle of integrating so that you’re able to quickly move on to the next money- or value-generating activity. If you have to work a project for four weeks vs. 10 weeks, you can make two-and-a-half times as much money. And trust me, the customer will be a heck of a lot more satisfied, too, if it takes less time.

### **How would you advise those systems integrators to motivate their employees and keep them engaged?**

**Murphy:** It’s like anything. Communicate what your vision is and then measure toward that vision. Lay out how you’re going to get

there, measure your progress and then reward people for helping you get there. Make it a sincere reward. It doesn’t have to be money. It’s very important to get your employees involved. Otherwise it’s your path and your direction, your failure, your success. Allow your people to get vested, involved and make their mistakes.

### **What is the best way for operators of security companies to learn more about these practices?**

**Murphy:** “Lean Thinking” by [James] Womack is a good book. Read “The Goal” [by Eliyahu Goldratt]. It’s not necessarily about Lean, but it talks about the theory of constraint. Books like “Good to Great” [Jim Collins] are always good in terms of understanding strategy and things like that.

### **What are the most difficult products to produce at the HID-CT plant?**

**Murphy:** When you start getting into double and triple technology cards, they’re a lot more difficult. Obviously, the more coils you have in a card and the more chips you have, the higher the failure rate or the opportunity for failure rate. You start to get into using Six Sigma techniques to manage your processes at that point in time, to make sure your laminating process is capable of giving you the quality level you want. If you have an iCLASS™ Prox card or something like that, or something with a Wiegand iCLASS Prox in it, you need to have tight controls over your processes.

### **How do you ensure proper functioning of the cards with readers, software and other system elements?**

**Murphy:** There are a lot of things put in place so we don’t have to spend our time inspecting quality in the product; it’s built into the processes. We certainly do check on first pieces to ensure the configuration of the next whatever it is, a hundred cards or thousand cards, is done correctly. We also do a lot of testing at our Denver labs to make sure configurations are correct.

## HID REASSERTS ROLE AS ACCESS LEADER



**HID-CT operations include graphics, document control, a print shop, chip embedding, warehousing, wire processing and grading, card lamination and cutting, card programming, and Wiegand strip manufacturing.**

us identify inefficiencies and become much better at process control.

*What other areas of HID has this approach been applied to and what have been the results?*

**Hébert:** Ideally, it's a process that applies to everything we do. We use Lean as a tool to identify inefficiencies in any of our processes. We've identified areas for Lean application with a goal of becoming a Lean enterprise. By holding *Kaizen* [continuous improvement] events in different areas, we've applied the Lean philosophy to our product development and accounting groups. That's really what Lean is about: Become more efficient, reduce costs.

*How do the Lean philosophy and its results ultimately benefit both resellers and users of your products and services?*

**Hébert:** First of all, Lean has the benefit of eliminating inefficiencies from a production environment. It inherently means that quality will improve, so one benefits the other in that way. Resellers benefit by having better products to provide to their own customers. Fewer returns, quality control on the cards themselves, improved delivery time, fewer issues with product going from manufacturer to reseller to end user.

Through *Kanban* [visible signage to help enable "pull" production] and

other processes, Lean also helps us to be able to deliver in a more timely way. So there's an additional benefit. For example, when an end user has a certain time schedule, our reseller is faced with that schedule. Time of delivery is important to the end user and, therefore, important to the reseller — we're at the beginning of that chain. If we're good at our deliveries, and we've got processes and tracking in place that enable us to meet our commitments, then everyone benefits up the chain.

*What can other security manufacturers learn from HID-CT's operations?*

**Hébert:** Many parts of the security industry in general have applied either Lean or Six Sigma to their manufacturing processes. Alarm panel manufacturers and camera manufacturers, for example, use these techniques today. However, Lean adoption and process control has been a bit more scattered in the access control space. Many of the companies are smaller and they don't necessarily have the same kind of practices.

There probably are some things they could learn from us, such as software development where true control is often neglected. When software gets designed, it doesn't necessarily get designed in a process environment that's very well structured. Applying Lean concepts can help.

*The North Haven plant includes the new Card Credential Services. What is that all about? Is it only applicable to end users or can systems integrators benefit?*

**Hébert:** The premise here is that security is made of various levels. One of the levels is technology. But a lot of it has to do with what goes on the surface of a card. There is a multiplicity of different means of applying security on a card that aren't that evident. You need a certain amount of specialized equipment for specific customization of cards.

A card service bureau enables putting security features on cards in a cost-effective, large-run environment. Even though this is still under development, this process of adding value to a card is something many end users are very interested in having.

So systems integrators benefit because their value proposition to their customer, the end user, increases when they sell a card with added

## HID Global Timeline

**1991:** Forms as Hughes Identification Devices, a subsidiary of Hughes Aircraft

**1995:** Becomes subsidiary of Palomar Technological Companies, changes name to HID Corp.



**HID's Irvine, Calif., headquarters.**

**1996:** Acquires Sensor Engineering from Echlin Inc., adding Wiegand technology

**2000:** Acquired by ASSA ABLOY AB

**2002:** Becomes part of the ASSA ABLOY Identification Technology Group (ITG)

**2006:** Acquires Fargo Electronics

**2006:** Launches HID Connect

**2006:** Forms HID Global, combining HID, Indala and Fargo solutions

**2007:** Acquires Integrated Engineering, adding platform of MIFARE-based reader technology

**2007:** Launches HID Identity and EDGE

## HID REASSERTS ROLE AS ACCESS LEADER



**Color visual aids and organizational tools are among the tell-tale signs of HID-CT's conversion to Lean Manufacturing, which minimizes waste while maximizing productivity and quality.**

value. They're not selling a white piece of plastic; they're selling something with added value by virtue of security-enhancing features. That's where Card Credential Services can help them.

#### Strategy Forged to Meet Demands of Access Control Convergence

*What have been the most significant recent changes within HID Global?*

**Hébert:** One of the most significant changes was the development and articulation of a new strategic direction. A multidiscipline team from different functions and business areas worldwide embarked on a program to scan the industry environment and review the landscape. We developed strategic alternatives and analyzed them.

We assessed our corporate resources and developed a corporate vision. This process was a major investment in time and resources, resulting in an expanded corporate strategy that will allow us to strengthen our core business while focusing our unique competitive advantages for future growth. At the core, HID Global is focused on creating customer value as the trusted source for products, services and know-how related to the delivery of secure identity.

We have looked at our business from the perspective of trying to understand where we have to be in the future. This is where we determined that being a leader in the delivery of secure identity is more applicable to where the future lies. As you look at

the world of convergence, logical and physical access, personalization, and how all those different things fit together, that's where we are best suited to address market needs.

Remember that 12 months ago, Fargo® became part of the family. And that's been a step change for us in the direction of where this company is going, and from a secure identity standpoint. It is a substantial part of our business today and shows tremendous potential for growth.

We've had some other market developments, such as Edge™, which have been big changes for us as well. Crescendo™, released in February, is a new tool of convergence that hasn't existed before, moving us into the logical space because that's where the market wants us. It represents a huge change for us and will be a substantial part of our business over time.

*Specifically, how will this affect/benefit installing access control dealers and integrators?*

**Hébert:** As an industry, we've all been faced with the entry of IT and the influence they now have over security in general. The effect is that, as a manufacturer, we have a responsibility to our channel to help give them the opportunities to compete in this space. The onus is on us to come up with products that enable them to operate in this area.

We recognized the convergence equation, with logical and physical

sides, and offered Crescendo. It really is an off-the-shelf approach to convergence, and is something they can offer to their customers. Our mantra has always been 'to take the complex and make it simple,' and Crescendo is an example of this approach, much like iCLASS® has been.

*Which legacy and new HID products/systems are most ubiquitous in the marketplace, and to what do you attribute their popularity?*

**Hébert:** Clearly, the most ubiquitous product is 125kHz Proximity cards and readers. They are still a large part of what we do. The popularity really has to do with availability of products, cost-effective pricing and a broad array of 'flavors' — a multitude of different readers and card options. HID's worldwide sales and marketing capabilities — the ability to deal with global customers and to provide local 'flavors' — contribute to its popularity. The technology is easy to install and easy to use.

What's been most important during the past two or three years is our ability to deliver in a timely fashion. So

#### HID Technology Overview

**125kHz Proximity** — Readers / Credentials / Embedded modules / Programmers



**HID's North Haven, Conn., plant.**

**13.56MHz iCLASS®** — Readers / Credentials / Embedded modules / Programmers

**13.56MHz FlexSmart® / MIFARE® / DESFire®** — Readers / Credentials

**Edge™** — Readers  
**Crescendo™** — Smart cards

**VertX CS** — Central station managed access control  
**Magnetic stripe** — Readers

**Wiegand** — Readers / Credentials

**For more info on these technologies and products, visit [www.hidcorp.com](http://www.hidcorp.com).**

## HID REASSERTS ROLE AS ACCESS LEADER

through our Priority Plus, and other programs, we can deliver 1,000 cards in 24-48 hours. Those kinds of programs provide a new, but necessary twist in our ability to satisfy our customers.

If you look at iCLASS, its increasing popularity in the marketplace was due to the fact it demystified the contactless smart card world. We provided something a bit more understandable, yet more secure, to our customers, while applying the same rule set in terms of distribution and speed of delivery to be able to satisfy their needs. On top of that, we also provided multitechnology solutions, both at the card and reader level, providing migration strategies for customers. These components, taken together, have made iCLASS the No. 1 selling contactless smart card brand for access control in the world.

Going forward, I think the next step will be for us to apply the same dynamic to Edge and Crescendo. We now have the technical tools to accomplish that in the marketplace. This makes things easier for both end users and our channels to provide solutions for convergence, the use of IT and related networks in the access control space.

### IT, Smart Cards and Standards Set Stage for Future of Access Control

*What have been the most significant changes in the electronic access control industry the past five years?*



**HID-CT houses Card Credential Services (CCS), HID's card production service bureau. To ensure security, unused card inventory is protected and stored in a locked cage, a limited number of personnel guarantee auditable production and biometric verification is required for access.**

**Hébert:** First, the growing influence of the IT domain on access control and their definition of what access control is. It's not just riding over networks. If you look at the convergence picture, it's the rules and the policies that govern the network access control world. It hasn't fully taken place yet, but physical access control systems seem to be headed in that direction as well. Physical access control systems are sharing networks today.

Therefore, their influence over its use has grown considerably, since this is their domain. During the past five years, this has accelerated substantially.

The use of contactless smart cards, rather than standard proximity cards, has been another substantial change. Even though a small portion has been realized to date, the potential is there for multiple application use of cards and, of



**"We're very fortunate to be perceived as a trustworthy supplier by the channels and end users, and have worked very hard to establish that trust," says HID Global President/CEO Denis Hébert.**

course, the heightened security those cards provide. Those two elements have contributed to the shift toward high frequency contactless smart cards.

Finally, with the understanding of things like HSPD-12 [federal government ID standard] and other such models, there is recognition that access control is really part of a total identity equation. During the past two years, this has become a much more important and prevalent 'discovery' that is likely to change how physical access control is viewed.

*How have these changes altered integrators' businesses and their customers' use of access control?*

**Hébert:** Well, it certainly altered their businesses in the sense that they now need many more capabilities and staff in the IT realm. They will have to have people that are MSCE [Microsoft®] or Cisco® certified, for example, with an understanding of networks and IT. In the future, they may have to have an



**Viewed through the glass of HID-CT's clean laminating room, a technician adds her special touch to the card manufacturing process at HID's North Haven plant. The facility employs more than 100 people.**

understanding of service-oriented architectures and other developments.

In the past, it was such an independent, proprietary environment, but now we're living in a world that will become more standards-based. So that's been a big influence on systems integrators' businesses. Not all of them have followed that path, but those that have are growing for the future.

The use of access control systems is much greater now than it was at other times. So convergent opportunities between technologies, applications, logical and physical access control — all these things are starting to change how the access control system is used. For purposes of securing assets and people, access control systems are being relied on as a trusted information source rather than data gathering.

*What will be the most significant changes during the next five years?*

**Hébert:** The significant change will be a true convergence of physical and logical access. A true picture of the notion of a 'secure identity' — how it begins, how it is vetted, how it is managed, its lifecycle, how it fits with other applications, how it fits into the IT world. These are the points of influence that are going to change in the access control industry. ■