



Photo Identification Considerations

The ultimate guide to help you select the right photo ID system

White Paper Summary

There is often much more to building a photo ID system than simply purchasing an ID card printer, blank cards and some software. This white paper is to help the reader recognize all of the things they should be considering when planning an identification system purchase.

If you have any questions after reading this white paper, please contact us.

Introduction

The issuance of photo ID cards is an important part of an overall security plan. An ID card is the visual verification that the person is authorized to be there, whether inside a facility, participating in an event, or accessing an organization's assets. An ID card is often also used for other card-based applications and services such as door access control, parking, cafeteria, print/copy control, and logical access control.

While there is an abundance of photo ID systems available for purchase on the internet, we firmly believe that photo ID systems are NOT a commodity, but rather a solution. Careful consideration of many factors should be taken so you select the RIGHT system for your organization. Yes, cost is important, but so is having the appropriate solution that meets your real-world needs.

To Whom to Issue ID Cards?

To have a solid visual security program, ALL groups of people in your facility should have and wear their ID card. This includes employees,

contractors, and visitors. Or, in schools, it includes faculty, staff, students, volunteers, and visitors. Visitor identification is usually a separate system from the ID card system, and the most secure kind of visitor ID is a temporary pass issued for each individual visitor.

In addition to deciding who should be issued ID cards, you also need to consider how often to re-issue new cards, either in bulk, individually, or on a scheduled basis. Knowing how often you need to issue and re-issue cards could be a large factor

in what types of software and hardware you need to purchase. Many ID dealers also provide rental options for times of the year when you know you may need additional equipment to handle high issuance volumes.

Another factor that may affect how often you re-issue cards can include upgrades to new security features (like adding laminate or encrypting access rights), new protocols or technology (like time & attendance needs or contactless readers), or the desire to implement a new ID design (such as a new company logo or color schemes). Thorough, advance planning with all organization decision makers, can help you make sure that you are making the correct ID system purchase for both your present and future card issuance needs.

ID Card Design Considerations

What do you want to print on your ID cards? This relates to the question of whether you need a single-sided or dual-sided card printer. It is our experience that most organizations use the “real estate” of both sides of the card to fit what they need. Common back-side printing may include a barcode, a mission statement, an “if lost/return to” message, and/or EMT information. Often, the barcode used for time/attendance or library won’t fit onto the front side with a photo, logo and cardholder information.

- Some customers print the photo on both sides of the card to prevent the “silent protest” of wearing the card face-in because they don’t like their photo, or even if a lanyard tends to flip a card around while walking or working.
- For front-side printing, most cards utilize at least an organization logo and colors, name, photo, title and department. Some also include a number that might represent an employee number or a visual clarification of access privileges (like on an airport tarmac or in a “clean room”).
- You should determine if you want to utilize color coding to represent different types of groups, such as employee, contractor or student, or even access privileges as mentioned above.
- What kind of quality printing do you want? Many customers are brand conscious and want the best image quality output, while others focus more speed or encoding options. Read on for ID Card Printer Considerations about different card printer technologies.



- One more increasingly important consideration is how to make the card difficult to duplicate, manipulate or forge. Read on the ID Card Security Options section below for more on this.

ID Card Security Options

The widespread use and easy access to ID card printers today means that almost anyone can create an ID card that looks just like yours. In addition, there are many websites that sell fake ID cards. You should consider if you want to add security features that protect you from counterfeit cards. There are many options, either covert or overt, and many are relatively inexpensive. Even if you choose to not add a feature in the card manufacturing process, there are features in photo ID card software (such as ghost images) or in the card printer (such as UV ink) that can be added. For optimum credential integrity, the best solution is to have ID cards with a security feature printed on the card body during manufacturing, at least one added during the card issuance process, and one included in a custom laminate. On top of that, some form of encoded verification on the card that links the cardholder to the appropriate record in your database, such as ID number, a PIN or even a fingerprint, if applicable to your situation, is also recommended.

ID Card Durability & Functionality

How long do you want your ID cards to last? If you don't re-issue cards every year, it is best to purchase "composite" plastic cards. These only cost about a penny more per card on average, but contain a layer of polyester that makes the card much more temperature and crack resistant.

- If you want cards to last for several years, and/or they will be subject to abrasion in slot readers, then adding a layer of lamination in the printing process is advised. See the ID Card Printer Considerations below for a deeper discussion of lamination.
- Will the card be exposed to a lot of sunlight? Regular exposure to UV rays can make the printing on cards fade much faster. This is another primary reason to choose lamination.
- What card technology do you use today (proximity, barcode, magnetic stripe, etc.) and what card technology might you move to in the near future (e.g. contactless smart card)? These capabilities will need to be available in your chosen card printer and/or ID software, and in many cases you may need multiple technologies (old and new) in your issued cards





as you upgrade your readers across your facility to the newer technology.

- What about card slot punching? The traditional slot punching of cards is usually not a good idea, as cards can too easily break at the slot hole, requiring a replacement of the card. It is better to use a clip that can grip the card, or a card holder that can cover the card and connect to a lanyard. See ID Card “Wearability” below.

ID Card “Wearability”

If the ID card needs to be displayed, how will it be worn? There are hundreds of different badge accessories for wearing the ID.

- Do you want everyone to wear the ID card so that it is readily visible?
- What accessory for wearing the ID will work best?
- Will the card need to be “read” in other systems? You don’t want people to have to remove the card from a pouch or other time-consuming activities.
- Will the “reading” be via a tap or a swipe? If the card needs to be swiped in a slot reader, it must be readily accessible.
- While a metal or plastic snap clip is very inexpensive, they do not lend themselves well to nice clothing and dresses. Badge retractors also fall into this category as they are very convenient for cards that need to be regularly used for access control or swiping applications, but don’t work so well without a visible pocket or belt on which to be clipped.
- Lanyards are best if you really want to visually see everyone’s badge. If needed, you can add a rigid card holder so people can easily remove the card and swipe it. Breakaway lanyards are also a good idea, especially in manufacturing environments, where safety is a priority.

Capture Considerations

Consistent and high quality photo images are important to clearly and properly identifying a cardholder. Again, the photo ID is part of security. The photo must be good quality with consistent cropping and centering. Nothing looks worse than “off center” or poor quality photos.

How often to capture? In addition to quality issues, you also need to decide how often a new photo should be captured for cardholders. Unlike decades ago, people today change their appearance often. If you are an educational institution, you may want to capture new images at the beginning of every school year, while for

an employer, it might be closer to once every 3 years.

Web-cameras are inexpensive and now capture a fairly good quality image. However, the subject must sit about three feet from the camera, and the operator must crop and center each photo after it is captured. A good photo ID camera has a strong zoom and flash, and can auto-center and auto-crop images. This is ideal, especially in situations with repetitive daily use, even if they are a bit more expensive.

Capture speed may matter. Do you have peak periods like student registration or new employee orientation? If yes, you may want a higher quality photo ID camera with programmable settings and consistent results that can keep the line moving more rapidly.

Distance from the camera to the subject. If you need to move a lot of people through the line, you may have them remain standing instead of sitting, and be just a few feet away. This could be another reason to opt for a more industrial photo ID camera over a webcam. Also take into consideration the backdrop you use. Colored backdrops can be used to help visually validate access privileges or user classes. Be sure to pick something that is clearly visible yet not distracting from the photo itself.

Distance for the camera to the operator. If it works best for the photo ID camera to be mounted on something that the operator cannot easily reach, or if you have limited space in which to work, you again may want to opt for a more automated photo ID camera.

Mounting the camera. Cameras atop tripods can get knocked over, plus they can take up a lot of usable floor space. Also, unsecured cameras can easily be stolen. It may be wise to consider locking post mounts for a desk, counter, or wall. These can keep your camera(s) fixed in the appropriate direction and distance, as well as make it very difficult to remove without authorization.

Remote people or locations. Do you have people that are remote and cannot easily come to the central location where the photo ID system resides? These people can submit a photo via e-mail, and it can be easily imported to the ID system. There are other solutions available today, such as smart phone or cloud based software that can help. Online photo submission software is also available. People submit photos online. Someone in your organization approves or disapproves the photo image, and then card printing occurs.



Fingerprints and signatures. In addition to considering the parameters of your photo capture solution, you may also need additional peripherals to capture signatures or fingerprints. Along with choosing the right hardware for your specific needs, you should also plan on the best way to secure the sensitive hardware to avoid possible damage or theft while still being easily accessible during the capture process.

ID Card Printer Considerations

There are many different brands of card printers on the market today. The technology is now mature, and ID card printers all tend to be fairly reliable. There is a wide price range of card printers, however, based on brands and technologies, so what options are best for you?

Direct-to-card printers. This is the traditional printer technology, where the print head prints directly to the card using YMCK dye-sublimation ribbon technology. A clear topcoat (T panel) or overlay (O panel) is applied on top of the printing to provide some protection from general fading and wear. Direct-to-card printers are the fastest and least expensive printers. While they produce good quality printing, a downside is that they cannot print “over the edge”, meaning there is a small white border around the edge of the card, often at uneven distances. Exact color matching to your corporate Pantone color is also more difficult, as is printing a solid background color across the entire card.

Retransfer or “reverse image” printers. Retransfer printers produce the very best quality cards. If you are selective about producing the best quality and matching certain colors, then retransfer may be the best option for you. Retransfer printers operate by printing onto the clear polyester film in “reverse”, and then applying that film to the card via thermal transfer. This creates an “over-the-edge” print, where there is no white border on the card. The printed image is lithographic like, meaning it has a quality similar to process printed cards. The clear film is thicker than the topcoat/overlay used on direct-to card printers, so it is also more durable. A downside is that retransfer printers cost a bit more, are usually slower than direct-to-card printers, and ribbon prices are a bit higher. There is also the additional cost of the separate retransfer film. However, they normally have higher print quantities per roll, and are better for printing on cards with embedded technologies or security features.

Print resolution. Card printer print heads have produced 300 dpi cards for many years. Some card printers, mostly retransfer, are now available with 600 dpi printing. Generally, there is not a visually discernable difference in card quality, but 600 dpi is good for adding card security features such as micro text or UV images.

ID card lamination. As previously discussed, you will want to consider adding a lamination option to your



card printer if you need your cards to last for a long time or resist fading due to continuous exposure to sunlight. You can also add a layer of security by including embedded in the laminate such as custom OVDs (Optical Variable Displays), micro text, or UV images.

ID card technology. Barcode printing is still a standard feature on all card printers through the ID card software. Magnetic stripe encoding is an option that is preinstalled when you purchase a printer, or sometimes can be added later. The same can be said for proximity or smart card encoders and readers. You should consider what technologies you use today, and which ones you are looking to add in the future, and plan accordingly with card printers that can handle both, either as preinstalled options or as modules that can be installed in the field.

Other ID card printer considerations. Speed, size, price, number of units, the availability of supplies, field upgrades for mag stripe or smart card encoders, manufacturer reputation, local support or depot service, extended warranties, and how long parts/service/supplies can be provided after product discontinuation are also important items to consider when making an ID card printer purchase. Also consider your total cost of ownership, such as the estimated number of reprints, lost cards, assumed lifespan, potential repairs, and historic print volumes to validate the right card printer purchase. Oftentimes the cheapest solution may end up costing you more in the long run.

Mobile Credentials

With the prevalence of smart phones, many customers are choosing to offer a mobile/digital ID that is stored on the phone. The ID can be used for visual verification and barcode scanning, or, can also be used for applications such as door access control.

People often lose their card, but rarely lose their phone. Having an ID on the phone is a great way to supplement the ID card. In most cases, we do not feel the phone should replace the card, but is a good way to augment it.

ID Database Considerations

While you can manually enter and store information directly into your photo ID system software, it will likely take a long time, especially if there are a lot of records, and have a significant risk of data error. It also means that you now have an isolated database to manage. When people no longer have active





ID cards, they will need to be manually removed from that photo ID system database. It is better to import and share your ID data from a true/accurate data source, such as your existing HR (Human Resources) or SIS (Student Information System) database.

- You can import/export your database, but a direct database connection is usually the better choice.
- Does your true/accurate database have a field for the person's photo?
- Would it be beneficial if the ID system could

populate that field with a photo?

- Would it be beneficial to scan an image of the person's driver's license (instead of photo copying and putting it in a paper file folder)?
- Does your true/accurate database sync with other systems that need personnel and card data? Examples are time & attendance, door access control, library, cafeteria, parking, housing, etc.
- Do you need the ID system to perform the syncing with these other systems?
- Who needs to share your data?

Engage all stakeholders. The industry is abuzz with terms like “the convergence of physical and logical security” and “identity and access management (IAM)”. A discussion regarding the makeup of your ID database is an important part of these topics. You may want to engage your IT staff and other campus system decision makers, such as HR, auxiliary services and security, before selecting a photo ID system. Sharing updated information between all linked systems also speeds up the process for adding new cardholders or removing them when a card is deactivated. Dead spaces between systems can lead to security leaks, or having deactivated cards or invalid cardholders with active privileges.

Card Replacements or Temporary Cards

With a photo ID system, you can replace lost or stolen cards. Keep in mind that the old card needs to be deactivated not just in the ID system, but also in any other linked or related systems, like access control.

What about people that simply forget to bring their card with them? If you have a visual security program, they may still need identification. Many customers use an inexpensive desktop or mobile thermal printer (a few hundred dollars or less), and print temporary, one-day passes or ID labels to be worn. This is a good idea, as it still requires people to check-in and out for access and reinforces the importance of your security protocols. It is also a reminder to everyone just how important it is have their ID cards with them.

Create & Review Reports

Most ID systems have the capacity to print out customizable reports that show various key data points such as the total number of records, the number records added or deleted in a given period, a breakdown of the types of access rights issued, the number of lost cards, etc. If the data is being stored in the system, then usually a report can be generated to show that information. Seeing the historic data on this kind of information can also help you plan supply purchases, downtime for maintenance or upgrades, and issuance trends for specific needs or technologies.

- What other people in your organization would benefit from being able to see the ID data and photos? Security, HR, IT?
- What reports would you like to produce? New employees, employee roster, class roster, etc.

ID System Security

ID system and card printer. Since an ID system might store or have access to important personal database information, it is important to keep it in a room that can be locked during off hours. Or if the ID system is in a thoroughfare with regular traffic, consider locking card holders and a printer lockdown cable. You should even consider options for a lockable cabinet to keep the hardware out of sight when not in use. The ID system itself should have individual user privileges assigned based on the level of access a particular user needs, such as an operator, guard or administrator.

Cards and supplies. These should be kept locked in a secure closet or cabinet, and in a climate controlled area. Ribbons and laminates especially can expire prematurely if there is too much direct light, heat or humidity. You should also keep an inventory log and routinely audit these items to control issuance and deter theft or waste.

Cameras. As mentioned above, especially if you have a quality ID camera that may be expensive or is setup for high traffic captures, you should consider a locking mount to deter theft or tampering.

Software access and database. Employees that use the ID system can see important, and sometimes sensitive, data. You should take steps to protect access to data in the system. Individual logins should be used for the system (not a shared login),





or you can easily add a two-factor authentication to the system.

Ribbon shredder. The used printer ribbons contain data. If the data is sensitive, you don't want the used ribbon to be sitting in the trash can. An optional ribbon shredder is available to dispose of these ribbons. Even if you plan to recycle materials, it is best to shred them before turning them over to the recycler, as cardholder information might still be visible on the used materials.

Installation & Support

Installation. You can always order a prepackaged system via the internet, but then you will have to spend several hours (or maybe days) installing and figuring out how to use it. There are a lot of things that need to be done correctly, especially if integrating with other systems like HR, SIS, access control, etc. We believe it is much more efficient to have an expert come to your site to perform the installation, complete the setup, and provide operator training.

Support, depot or on-site? If you do purchase via the internet, you received the manufacturer's product warranty, which means that you will have to ship it back to them for any repairs. This is a very big pain! You have to talk to an 800 number, remove cards and supplies from the printer, box it (hopefully in the original packaging) and ship it out. If you are lucky, the shipping will be free.

Not only that, but you cannot make new or replacement cards while the printer is gone, unless you purchased backup hardware. When the printer is returned, it may be a different serial number, meaning you have to update your organization's asset list. Sometimes, the problem turns out to not be the card printer, but something else entirely, so shipping the printer was a wasted effort. Sometimes, the card printer still doesn't work once it is returned, and you are stuck in the same mess.

With an on-site maintenance agreement, an expert technician will come to your location to correct the problem, whether it is the card printer, the software, the camera, a combination of items, or something else. This gives you true peace of mind and saves a lot of time and effort on your part.

There is no doubt in our mind that on-site installation and ongoing support is the best and most efficient method. Without having a sensible solution in place for your needs, problems could occur that might affect the system's security, the integrity of your data, and/or your capacity to issue cards.

Conclusion

A photo ID system is just one part, albeit a very important one, of your overall security plan. You need to be sure that you are making the best decision for your organization, and plan to install, integrate and implement it correctly. Talk to a local ID systems expert for advice on the best available options.

About the Author

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About the ISG

The Identification Systems Group (ISG) is a nationwide network of local experts in identification, security, tracking and card personalization technologies, providing high quality, cost-effective solutions backed by local support and the strength of our Professional Services Certification program. Each member company works together to provide seamless support and collaboration in the identification and issuance industries across the USA and Canada.



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