

# Breeder documents

## The keys to identity

by John Mercer

The term 'breeder document' is often used when discussing identities. Most of the time, it is used in a negative sense, making it appear as though these documents 'breed' false identities. This is simply not so - the basic process of identification starts with known, trusted personal data, which may be used to create additional documents that confer additional privileges on their bearer. Thus, earlier documents 'breed' subsequent documents. This article reviews the identity generation process, emphasising the role played by breeder documents.

A breeder document is defined as an ID document issued to support a person's identity and used to obtain another document or privilege of greater perceived value. Based on this definition, an ID document is any document containing the name of a person, and information that supports that person's claim of identity. In this light, a humble utility bill, with no security features at all, can be evidence of residence for a person to obtain a library card and get municipal services.

The most important breeder document is the birth certificate (or similar documentation). Combined with proof of residency, a birth certificate enables children to attend public school, and play sports with children of the same age. Some breeder documents are more valuable than others. If the birth certificate is the cornerstone of identity, the driving licence come a close second. In addition to bestowing driving privileges, it is widely accepted as proof of age, allowing its bearer to enter bars, buy tobacco, enter government buildings, be an airline passenger, etc. The passport is widely considered to be the ultimate ID document - it not only certifies identity, nationality and age, it also includes an image of the bearer. Yet even a passport can be used as a breeder document (to obtain a driving licence, for example).

Because breeder documents and identities are inherently linked, and because criminals continually

need new identities, the weakest link in the identity generation chain is generally attacked first. Unfortunately many of these weak links are documents that are used to verify identity. Before proceeding any further, let's briefly examine why ID documents are used (and required) in the first place.

### Purpose of ID documents

Identity documents are issued for three reasons.

#### 1. As proof of identity

Someone's identity is established on the basis of his or her birth documents (the birth certificate in particular). Subsequent ID documents, such as national ID cards and passports, are usually obtained on the basis of these birth records.

#### 2. As proof of ownership

Ownership is assigned by means of titles and deeds. While these ownership documents primarily define the object that is owned, they also tie the object to a person. They therefore provide good collateral evidence of a person's identity. It is in the interests of the state to provide records of who owns what, and highly valuable ownership records are generally well maintained.

#### 3. Proof of privilege

Automobile and truck drivers, people who practice a profession, including lawyers, doctors, engineers, pilots, merchant mariners, beauticians and barbers, all hold licences that tie their identity to their chosen profession. Academic records and diplomas also fall in this category. Even though membership cards equally confer privileges, they are often of more limited value. It's worthwhile remembering that employee ID cards, medical insurance cards, frequent flyer cards, loyalty cards and even library cards are important means of identification within their (restricted) area of validity.

Problems arise when documents are used for purposes beyond their original function. For example, back in the late 1930s, the US authorities assigned a Social Security Card and Number to workers registered for the national retirement scheme. Because this number was unique to the person, the Social Security Number (SSN) was widely used for identification purposes far beyond the original purview, particularly as it linked many aspects of the individuals' supposedly private identity (including banking and health records). Some states used the SSN as the driver's license number.



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Another example, briefly mentioned above, is the use of driving licences as proof of age. Indeed, this practice has become so commonplace that many US states have begun issuing an identity card to non-drivers (a non-driving licence?) to provide proof of identity and age. Driver's licenses applicants in the US are now required to show proof of legal presence in the US, so that now the harried folks in the local Department of Motor Vehicles have to adjudicate a person's nationality as well as their ability to drive and knowledge of the driving laws of the state.

### Issuers of ID documents

Private Enterprise, such as employers, issue ID cards to their employees and health care and insurance providers issue ID cards indicating level of coverage as well as identity. These cards frequently have few security features if any.

Local, city and state governments issue many identity documents. Although this varies by Nation, issuance of these documents may be best done on a local basis. Driving licenses, business licenses, library cards and even birth records are often kept and issued locally. These documents typically have the security of a low budget operation, where pennies count, and are often weak links in the identity chain.

Worse than the security of many of the ID documents are the issuance procedures that allow genuine documents to be given to unqualified persons. Issuing personnel have to be trained to verify the bona fides of the applicant, and to detect fraud and forgeries. Decentralized issuance exposes more genuine blank documents to loss or theft. Documents of great value, such as birth certificates, are often personalized by common office printers, which are the same as used by the bad guys.

Passports and other ID documents issued by national governments are often perceived to offer the highest level of security. Travel documents are issued in accordance with international standards, and all countries deploy personnel specifically trained in document security and fraud detection. Yet every Nation has to choose for itself the balance between the number of security features, the number of documents to be issued, and the budget available to do this. To the extent that documents don't meet international standards on security, this opens the door to counterfeiters, whose output sometimes fools even the most well-trained inspector.

### Document attributes

In addition to the document data, the security features and the strength of adjudication, ID documents possess at least three other attributes that are important when establishing their authenticity.

### *Documents have age*

Many ID documents embody the technology used at the time of their creation. Old birth certificates were written by hand, using either a fountain or ballpoint pen. Later documents were personalised by typewriter (using cloth and later carbon ribbons). Modern documents are generally printed on laser, ink jet or even thermal transfer printers. Each technique has characteristics that allow the document to be dated, and an old breeder document that has been personalised by means of laser printing is obviously false.

Documents can also be dated on the basis of their materials. Ultraviolet brighteners are a recent development and won't be found on older documents. Likewise, certain watermarks and other features were not introduced until comparatively recently. All materials - ranging from ink and paper to data printing and security features - have to match the age of the document.

### *Documents leave trails*

People leave documentary evidence during their lives. They register for school (and are entered in school records and yearbooks), they play sports and participate in other activities, they pass their driving test and are issued a driving licence, and they may even get a police record. They graduate, go to college, establish a credit record, start work, get sick, get married, and have children, who start the whole process all over again. Each transition leaves a record, and, more often than not, some specific documentary evidence of the event in question. Depending on the privilege for which the person applies, these records would provide valuable corroboration of his/her identity, and a person without history should certainly be considered suspicious.

Documents are issued on trust. The identity chain works on the basis of trust. Are the document issuers trustworthy? Do the documents contain security measures that can be verified? Is the issuance process secure, or is it open to bribery? If any stage of this process cannot be trusted, the overall process should be considered suspect, and personal interviews may be required.

### Specific documents

In the early days, birth certificates were simple documents denoting basic information including the date, time and location of birth, and the names of the infant as well as the parents. This information is required by governments to account for their citizens, and to provide resources for education, healthcare social security, etc. It may even be used in the allocation of electoral districts. These days, original birth records are generally kept in a central location, and certified copies are issued to citizens

on request. However, the more issuance locations and types of birth record there are, the more difficult it is to distinguish between genuine and fraudulent documents. Another problem with birth certificates is that they are not governed by any standards. In many countries a significant number of births are not recorded. Many pastoral cultures migrate and have no fixed address. Some births are therefore not recorded until well after the event. Other circumstances, including birth abroad, adoption and certain religious customs, can also be misused, thus undermining the integrity of the birth record system.

Even though an international standard has been developed for driving licences (ISO/IEC 18013-1:2005), many countries do not yet comply. Driving privileges vary considerably around the world, as does the level of identification required to obtain a licence. Security therefore varies greatly and less secure driving licences present an opportunity for fraud. Although issuing agencies have recently been assigned additional responsibilities to ensure that driving licences are issued to bona fide parties, this is more complicated than it sounds. As few people are willing to wait for driving licences, there is little time to investigate the applicant's background.

Passports rank among the most valuable documents in the identity chain, not least because they provide a secure source for determining a person's name, age and nationality. Strong international standards exist for passports and other travel documents. Still, if documents of sufficient quality are provided, occasionally even passports are issued on false documents.

### Document issuance scenarios that highlight the role of breeder documents

1. Legitimate issuance of a birth certificate, followed, at a later stage, by the issuance of a work permit, a national ID, a driving licence and a passport, all on the

basis of the original birth certificate. All documents are correctly obtained and no fraud is involved.

2. An illegal immigrant buys a genuine birth certificate relating to a deceased person of roughly the same age. The immigrant assumes the new identity, and obtains supporting documents, including a driving licence, a title to a property, and maybe even a passport. This scenario gives rise to: illegal immigration, fraud, possible tax evasion and other crimes.

3. A couple adopts a child from overseas. The baby has been stolen or sold, and the accompanying documents include false information. The couple subsequently applies for and obtains citizenship for the child in their country of residence. This scenario gives rise to: inadvertent human trafficking, document fraud and theft.

4. A person decides to lie about his or her achievements, whether academic or occupational. He or she may, for example, acquire new degree certificates or upgrade his or her existing level of education. Think, for example, of the film *Catch Me If You Can*. This scenario gives rise to: impersonation, fraud and theft.

5. A person steals genuine financial or identity-related information and acquires expensive merchandise before being discovered. Collateral ID documents are used as part of the process. This scenario gives rise to: identity theft, fraud, and theft of money.

6. An illegal immigrant family migrates, and establishes a home, has jobs, perhaps pays taxes, but most importantly has children who are citizens by virtue of birth location. These children receive a public education, and the family uses health care and other government provided facilities. Fraudulent papers facilitate their presence. Crimes are too many to count, and the presence of 'anchor' children of target nationality makes the family difficult to deport once they are discovered. Given the above examples, it is fair to ask whether

**A GUIDE TO BRITISH COLUMBIA'S NEW BIRTH-CERTIFICATE**

The Vital Statistics Council for Canada has undertaken an initiative to renew the design and improve the security of the Birth Certificate.

The new Birth Certificate design will be issued in British Columbia beginning on January 2, 2008.

Some of the security features on the new Birth Certificate are easy to identify and minimize the risk of data alteration and counterfeiting.

**Here's what to look for:**

- Color Shifting Window**  
A see through window feature. When the document is tilted, the ink in the feature produces a green/purple colour shift.
- Clear Window**  
A clear window featuring three maple leaves and surrounded by a gold outline. The leaves appear to "float" in the window.

**You can see the differences:**  
The new Birth Certificate contains many features that you can see.

- Watermark Features**  
Hold the new Birth Certificate to the light and you will see three separate watermark or "window" images. In the top, you will see maple leaves. In the bottom, you will see Canada's gear.
- Thread Feature**  
Running from top to bottom, you will see a thread repeating the word "CANADA".

**You can feel the differences:**  
The new Birth Certificate contains many features that you can feel...

- Polymer Substrate**  
The new Birth Certificate is printed on a high technology plastic, polymer. This material will feel longer than paper and has the ability to incorporate improved security features.
- Raised Printing**  
The maple leaves running along the right hand edge of the Certificate are printed using a raised letter printing method. They have the same feel as printed money.

**1 Rainbow Printing**  
This Certificate includes a colour shift from blue to peach to blue. This colour shift is difficult to produce.

**2 See Through Feature**  
Hold the Certificate to the light and irregular marks on the front and back align to form a perfect maple leaf.



Breeder Documents and the associated process of identity development are an evil process, a good process or perhaps a little of both. If one were able to trust people, then the process would not be necessary, and people could self certify. But unfortunately not all people tell the truth which makes the process necessary. Because it is a process that involves things of value, it will be vulnerable to attack from those who would profit illegally. That doesn't make the process evil, but indicates that it needs protection and strengthening.

### Improving the security of the breeder document process

When it comes to breeder documents, different countries use different document formats, issuance processes, and security features (to name but a few). Having said that, the check list included below could be applied in all circumstances. More detailed evaluations of breeder documents and related issuance processes may be available from international organisations. Such organisations may also be able to assist issuing agencies with process improvements.

1. Who issues the document? If it was issued by a government, at what level? Where are the records kept, and are they indexed so that they can be searched electronically?
2. What are the costs involved in generating the document? Has an adequate budget been made available? Are money handling and issuance separated so that direct malfeasance is not enabled?.
3. Does the document comply with prevailing standards in terms of format and security features? Are users trained to distinguish between genuine and fraudulent documents? Are there incentives for the issuing agency to improve their documents or issuance procedures?
4. Is adequate training on documents available? What does a genuine document look like? What does a fake look like? How do you recognise a suspicious applicant? How can discrepancies in an applicant's story be identified? Ideally, all new inspector recruits should be trained before they are deployed, while the knowledge of existing employees should be regularly refreshed.
5. Are there security gaps in the issuance process? Think, for example, of too many issuance sites, inadequate site or personnel security, reliance on untrustworthy documents and/or processes, or any other shortcomings. Focus on the system's three most significant weaknesses.
6. Analyse which aspects of the breeder document are most susceptible to fraud. While exact scientific data are always best, a reasonable approximation can

be obtained by establishing the source of any fraud. Fraudsters invariably target the weakest aspects of a document or process.

7. What benefits does the user derive from the document?
8. Money is an important consideration. Are penny saving measures on the part of cash starved issuing agencies causing expenses of thousands of euros/ dollars to border agencies or down-stream agencies that depend on genuine documents? A holistic view is necessary, complimented with holistic funding. Most bureaucracies are not set up to accommodate this view, and too often an appeal for help is met with the response, "That's not my problem."
9. The following tips, which apply to document issuers, provide effective protection and are inexpensive to implement.
  - a) Use special print methods and materials that are not available commercially.
  - b) Add optical devices to protect the document data.
  - c) Use microprinting and other fine print patterns behind the most important data elements (the ones that are most frequently attacked): the name(s), dates of birth, and any data field that is important given the purpose of the document (the VIN number for car titles, the National ID number or social security number on healthcare cards).
  - d) Use special fonts to detect subtle differences between genuine and fraudulent documents.

Although a growing number of documents will, in future, be protected by biometrics, this will not be achieved over the medium term. Moreover, some documents, such as birth certificates, cannot be adequately protected using biometrics (a fingerprint or facial image captured at birth will become fairly useless within years).

### Concluding warning

Breeder documents are an important part of the identity chain. Their security could be improved by tackling known vulnerabilities within existing documents and processes. Unless breeder documents and related issuance processes are improved, fraud and criminal activity will continue to exploit the loopholes in the present identity process. But of course, even if documents and processes are perfect, criminal activity will never cease.

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**Figure 1**  
The British Columbia birth certificate contains a number of security features in order to prevent fraud.