



## **POLICY FORUM ON BODILY DIFFERENCE ISSUES IN BIOMETRICS**

**PF COORDINATOR:  
INFONOMICS & NEW MEDIA RESEARCH CENTRE, ZUYD UNIVERSITY**

**MEETING CO-ORGANISER:  
COMITE EUROPEENNE DE NORMALISATION – BIOMETRICS FOCUS GROUP**

**DATE: 4 MARCH 2009**

**PLACE: BRUSSELS**

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## **HIDE – Homeland Security, Biometric Identification & Personal Detection Ethics**

Contract No: FP7-217762 Programme: FP7 Capacities

**Science in Society Ethics and Security Research**

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*HIDE's mission is to set up a platform devoted to ethical and privacy issues of biometrics and personal detection technologies which addresses transnational (European) and international problems. HIDE aims to become the preeminent catalyst for innovative policy solutions to emerging ethical problems in the area of surveillance technologies, especially where collaboration among national and international agencies, communities, businesses, and NGOs is crucial. HIDE promotes creative problem solving and provides for concrete tools for a successful dialogue.*

### **Policy Forum on Body Issues and Diversity in Biometric Identification**

March 4<sup>th</sup>, 2009 09.00 – 16.00

Venue : CEN Building,  
Avenue Marnix 17, B-1000 Brussels, Belgium.

Tel +32 + 2 550 08 11

<http://www.cen.eu/cenorm/homepage.htm>

NB You will have to present yourself at the reception in order to obtain your badge. The reception is located on the 4th floor.

#### Directions and practical information:

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**P**olicy Forums offer a setting for exploratory discussions of complex issues involving multiple parties. Unlike focus groups, policy forums do not have the direct tie-in to a particular technology or a technology solutions, but they address vast, GENERAL, policy issues, which crosscut all technological fields. The general remit of Policy Forums will be to reflect on and question basic assumptions and values entailed by body issues and diversity, and to issue a yearly, comprehensive report.

Each Policy Forum will be chaired by a project partner experienced in managing policy discussion. Participants will include delegates from all other project partners and external experts (FP7 project coordinators and partners; member of international networks and committees, EC officers, privacy advocates, policy makers, CSO delegates). External experts, who will be mainly selected in the project database, will join the forum by invitation of the chair. Policy Forums will chiefly work through the Wiki. They will, however meet once at the start of the forum. As a moderated Wiki community, the forum will produce papers, recommendations, opinions. The chair will initiate the discussion by publishing a draft position paper that will serve as a reference document on which seeking agreement among members of the forum. The chair also may schedule events such as online hearings with external experts, and real time online meetings with forum participants. Access to the forum Wiki pages will be regulated according to the general policy decided by the project board.

## **Agenda Wednesday March 4th**

08.30-09.00 *Reception and coffee*

09.00- 09.15 **Welcome and Roll Call**

09.15-10.15 **Teletrust White Paper on biometrics privacy** *Christoph Busch*  
**TURBINE (TrUsted Revocable Biometric IdeNtitiEs)** *Nicolas Delvaux, SAGEM, CEN*

10.15-10.30 **Introduction HIDE Policy Forum**  
The Policy Forum on Body Issues & Diversity: Mission, Aims, and Themes.  
*Irma van der Ploeg, INM Zuyd University.*

10.30-10.45 *coffee break*

10.45 – 12.15 **SESSION I *Partial Perspectives on Biometrics***

**Biometrics in EU large-scale IT systems: age limits and other issues** - *Bénédicte Havelange*, European Data Protection Supervisor

**Biometrics for the diversity of migrants** – *Ruzayda Martens*, International Organization for Migration

**Usability of biometrics for people with a disability** – *Roel van Houten*, CG-Raad (Dutch organisation of people with a disability), *Viziris* (Dutch Organisation of the Blind & Partially Sighted), European Blind Union (*member*)

**Why law has failed to promote good biometrics** – *Annemarie Sprokkereef & Paul de Hert*, Tilburg Institute for Law & Technology (*both*) , Free University Brussels (*PdH*)

12.15 – 13.15 *Lunch*

13.15 – 14.45 **Session II *Biometric Perspectives on Differences***

**Increasing the usability of biometric solutions** *Gillian Ormiston*, Biometric Identity Management and Security Solutions, Motorola Ltd.

**Accessibility Issues in Biometrics**, *Mario Savastano*, University of Naples/ ISO/IEC JTC1 SC37 WG6

**Privacy & automatic authentication using (soft) biometrics**  
*Ben Schouten*, Fontys University for Applied Sciences/CEN Focusgroup on Biometrics

14.45 – 14.50 *Tea break*

14.50 – 15.50 **Special Session CEN biometrics roadmap**

Round Table / Panel discussion – CEN roadmap – see p. 10  
Chair *Ben Schouten*

15.50 – 16.00 **Policy Forum Follow Up Activities**

– introduction to on-line tools  
*Karolina Owczynik*, INM Zuyd University

16.00 *Wrap up & Closure*

## 1 Introduction to the topic

### Body difference issues in biometrics: two angles of approach

Whereas biometrics is generally conceived of as using certain features of 'the' human body for IT-mediated authentication and identification, we are all aware that 'the' human body does not exist. People come in a variety of shapes, colours, genders, and ages, sharing, of course, most of their physiology and anatomy with most of humanity, but never all. Moreover, these differences between people are commonly used to categorise people as belonging to a specific groups defined in terms of age, gender, ethnicity, (dis-) ability, etc; categorisations that, rightly or wrongly, have social, ethical, legal and political significance.

This Policy Forum is set up to identify and frame the ethical and policy issues emerging from the various ways in which biometric technologies and human bodily differences interact/interfere. There are at least two different angles to approach this topic:

**A** On the one hand there is the matter of *exclusion* of certain categories of 'different' people from system use, because the systems cannot cope with difference (failure to enrol, template aging etc.) Here questions concerning implicit notions of *normal* vs *abnormal* or *rule/standard* vs *exception* are in order.

This particular phenomenon is often occurring when systems designed for and tested on a limited, relatively homogeneous population are transferred to other contexts with more diverse populations, or rolled out in large scale applications.

**B** On the other hand, there is the type of (new) system that *uses* the differences mentioned, trying e.g.; to *automatically classify* people in gender, age, ethnicity etc categories. 'Partial identity information' can be used for example to fuse with other biometric data to improve overall identification, or conversely, to establish membership of a category without actually identifying, such as in applications to determine that someone has passed a certain legal age limit. Here questions about the contingent, perhaps unscientific, or even unethical *construction* of those categories - implementing a particular, perhaps not unproblematic definition of the distinction, and building them into the systems - may arise.

### Ad A Human differences and the biometric body

Underlying the very idea of biometric technologies as automated identification and authentication tools is a conception of the body that is rather paradoxical. On the one hand, biometrics is based on the biological fact that every individual is physically *unique*. No two fingerprints are identical, everybody's irises are different from those of another, the same way that no two faces, voices or retinas are exactly the same. This is the condition of possibility of the very idea biometric technologies as *identification* tools.

On the other hand, however, there is a simultaneous assumption of *similarity*: every human person is assumed to have a clearly audible voice, a set of ten fingerprints, two irises, and a recognizable face, and so on. Though hardly ever mentioned as such, this assumption of similarity is as crucial to the functioning of biometric systems as is the assumption of uniqueness.

But whereas uniqueness is an absolute – something is either identical or with something else or not, even though in biometrics ‘a match’ too is defined as a range within particular values - similarity is of a different nature. Similarity is comparative, relative, and defined within particular margins. Something may be more or less similar to something else, even though in both cases a similarity can be said to exist. With respect to the human bodily features used in biometrics, this means that there is an assumption of normality that is defined as a range of variations that constitute ‘the normal’.

Such notions of normality are built into the equipment: hand scanners have particular shapes, with designated places to put the fingers; fingerprint systems are designed for the registration and comparison of a particular number of fingerprints, (most systems use one, two or ten); cameras to scan faces are directed at a specific height, and work best for a particular shade range of skin color, and so on.

Secondly there is an additional assumption regarding the *stability* of the body over time. Considering the fact that biometrics by definition deal with living organisms, this is a particularly tenuous assumption to hold. Like all living matter, human bodies change over time. Besides the natural processes of development and ageing, bodies wear the signs of their histories: scarring and other damage, facial signs of hardship and worries, prosthetic additions to compensate functional losses are all part and parcel of living and interacting with the world during a lifetime. Though physical features used for biometric identification purposes are chosen precisely because they are relatively stable and universal, the operative word here is ‘relatively’.

For many purposes both these assumptions may be quite reasonable, but when it comes to practical application in real life, the implied notions of normality quickly prove to be what they are: abstractions that may fit a majority, but actually exclude significant numbers of people. This has come to the fore in particular now that biometric systems are quickly pushed forward from their experimental and pilot stages to under pressure large scale roll-out. For example, with demands for biometric passports for ‘visa waiver country citizens’ by the USA government, many countries, among which all of the EU, are under time pressure to issue them on a wide scale. This means that in the course of just a few years, millions of people will be subjected to fingerprint authentication when presenting their passports for inspections at the border.

While it is true that most technology has an in-built conception of a more or less narrowly defined standard user, this is not in all cases as problematic. Products may be designed for specific groups rather than a mass market, and also, in consumer technological products, the need to seduce people to buy and use makes for the best possible incentive to cater to individual tastes, possibilities and desires. Most biometric systems, however, and particularly those that are going to be implemented on these very large scales, are not intended to merely serve the people subjected to them. Instead, these systems are often obligatory for people to exercise some right, or procure a service, such as free movement and travel, collecting benefits, or applying for asylum, and, some critics say, they are based on an implicit distrust. Hence, these systems are not catering to the needs of individuals, but instead are often built to ‘process’ (sometimes extremely) high numbers of people as fast as possible - ‘high through-put’ being a top priority in today’s border management, for instance. These requirements of scale and speed make for a highly standardized technology, that presupposes a ‘standard’ human person, where increasing flexibility quickly leads to losses in accuracy and effectivity. To the extent that the assumptions of normality and stability built into the systems is unwarranted, large scale applications can be expected to run into difficulties.

And so, according to most experts, they will. In the context of biometric technologies, 'accessibility' refers to the problem that many people, often specific categories of people like the elderly, children, people with a particular ethnic or professional background, are unable to enrol in a biometric system because they do not possess the required bodily feature or a sufficiently 'machine-readable' one. Almost all biometric techniques present, for instance, an age range in which the biometric data can be optimally acquired and processed. The elderly, as well as infants, have a problem being enrolled by many existing fingerprint scanners because of the particularities of the height of their papillary relief. In infants and small children the height of the papillary relief is still underdeveloped, whereas the elderly often show a "wearing down" of their papillary relief. Most research attention has gone to the upper age limit and, in biometrics' vocabulary, the problem of 'template ageing', defined as the degree to which biometric data evolve and change over time, and the extent to which templates fail to account for this change. Few research has been done on minors and children, with the study done by TNO ( see section 5) being an exception.

The specific form in which these the two assumptions of universality and stability are materialized in a particular biometric system determine who is and who will not be excluded from enrolling in it. As access to more and more services and entitlements is regulated by biometric identification, the fact that certain groups and individuals will be systematically excluded becomes a problem with ethical implications. Obviously, the problem is unintentional, and a lot of efforts are being directed today at extending the range of variety a system can cope with, for example by improving the image resolution of the scanners. Nonetheless, imperfections of the systems are often downplayed, and even the smallest percentage of 'non-machine readable' people will amount to unacceptably high numbers when a system is rolled out on a large scale. Moreover, the very fact of being required, but physically unable to comply with the demands of a system said to be 'for everyone', and maybe even being asked for explanations, can in some situations be experienced as awkward or painful. But above all, if the in-built assumptions concerning normality and stability of the human body remain unacknowledged to the extent they are today, responsibility for remedying the situation for those excluded by the system is less likely to be taken up adequately.

## **Ad B Sensitive categories, 'partial identities' and soft biometrics**

In 1998, J.L. Wayman, then director of the National Biometric Test Centre at San Jose State University, testified in a US congressional hearing:

"We must note that with almost all biometric devices, there is virtual no personal information contained therein. From my fingerprint, you cannot tell my gender; you cannot tell my height; my age, or my weight. There is far less personal information exposed by giving you my fingerprint than by showing you my driver's license."<sup>1</sup>

Despite such reassurances, the at that time still relatively unknown biometric technologies had some people worried enough to include the provision that "collection

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1

Michael N. Castle (Chair) (1998), Hearing on Biometrics and the Future of Money, Committee on Banking and Financial Services, Washington, May 20, p.49.

of a biometric identifier must not conflict with race, gender, or other anti-discrimination laws” in, for example, the proposals for the Californian Consumer Biometric Privacy Act’.<sup>2</sup>

Although this was then seen by many biometrics advocates as being based on unfounded and ill-informed beliefs about biometrics, science historian Simon Cole writes the following on the presumed ‘emptiness’ of fingerprints:

“Galton's [the founder of dactyloscopy] “regret,” his failure to find the key to the code of heredity in fingerprint patterns, has been confused with the notion that fingerprint patterns actually contain no information pertinent to health, ancestry or behaviour. But other researchers found rough correlations between fingerprint pattern type and ethnicity, heredity and even some health factors. These correlations, especially the ethnic ones, have proven robust and still hold up today. As with any correlation, they are not determinative; one cannot predict ethnicity from fingerprint pattern, but fingerprint pattern types do appear with different frequencies among different “ethnic groups” (as defined by researchers). True, not much has been done with these correlations. But the point is that the situation with fingerprint patterns and genes is fundamentally the same — correlations. It is not that fingerprint pattern correlations do not exist; rather, it no longer scientifically acceptable to investigate them — unlike genetic correlations with so called ethnicity. In short, the perceived “emptiness” and harmlessness of fingerprint patterns is a social achievement, not a natural fact.”<sup>3</sup>

Moreover, a few years after the congressional hearing, it has become even more clear that Wayman may not have been entirely right: in an article on so-called ‘soft biometrics’, we read:

“Many existing biometric systems collect ancillary information like gender, age, height, and eye color from the users during enrollment. However, only the primary biometric identifier (fingerprint, face, hand-geometry, etc.) is used for recognition and the ancillary information is rarely utilized. We propose the utilization of “soft” biometric traits like gender, height, weight, age, and ethnicity to complement the identity information provided by the primary biometric identifiers.”<sup>4</sup>

So, today’s developments in ‘soft’ biometrics, i.e. a set of experimental biometric applications aiming at using ‘partial identities’, and recognising general body characteristics such as body weight, gender, age, or ethnicity, yield a set of critical issues that need to be addressed here as well. In particular when they are integrated in the AmI and Ubicomp environments, they call forth an urgent need for critical analysis and assessment. The aimed for ability to distinguish concerns sensitive categories, many of which are overburdened with histories of discrimination of the worst kind.

Whereas at present soft biometrics are often used as a secondary mechanism to improve classic biometrics’ performance, the quoted article gives a few lines of research, that clearly point to potential applications beyond that:

“Methods to incorporate time-varying soft biometric information such as age and weight into the soft biometric framework will be studied. The effectiveness of utilizing the soft biometric information for “indexing” and “filtering” of large biometric databases must be studied. Finally,

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<sup>2</sup> Biometrics in Human Services, Vol.2, No.2, May 1998, p.11.

<sup>3</sup> Simon A. Cole, The Myth of Fingerprints <http://www.gene-watch.org/genewatch/articles/19-6Cole.html>

<sup>4</sup> Anil K. Jain, Sarat C. Dass, and Karthik Nandakumar (2004) *Soft Biometric Traits for Personal Recognition Systems*, Proceedings of International Conference on Biometric Authentication, LNCS 3072, pp. 731-738, Hong Kong, July 2004.

more accurate mechanisms must be developed for automatic extraction of soft biometric traits.”<sup>5</sup>

One could easily imagine justifiable uses for systems that can categorise, e.g., faces, according to gender or ethnicity, or ‘filter’ a database that way, for example where a reliable witness statement in a crime investigation would render exclusion of particular categories from a database search highly valuable. Another such example would be classifying subjects in broad age categories, in order to determine legal competence to apply for certain services, or buy certain products, while preserving anonymity. On the other hand, there are all too many situations imaginable in which filtering people out on the basis of their gender, age, or ethnic/racial background constitutes illegal discrimination, and developing systems to automate this process could therefore be considered inherently risky.

Also, and contrary to what their apparent self-evident reference in ordinary language and everyday life may lead one to believe, the reification of these categories and distinctions, as the history and philosophy of science have made clear, is essentially contestable and unstable. For example, the distinction between the male and female gender on a genetic level does not entirely match the ones made on the endocrinological, anatomical, psychological, or socio-cultural levels; and even when birth registered gender is taken as a reference point, a problem exists where even this is amenable to change during an individual’s lifetime. In an exacerbated form, similar problems exist with ethnicity and race classifications, all of which have been proven to lack any objective basis in ‘nature’.

These states of affairs render any automated application of such categories an endeavour fraught with risks of error and contestation, risks that will undoubtedly increase when these systems are applied in an embedded and ‘unobtrusive’ fashion.

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<sup>5</sup> Jain et al. (2004) p.7

## 2 Framing Issues

It is always a challenge to bring together people from various backgrounds to engage in meaningful discussion, not in the least because of differences in language and vocabulary.

Below we have listed a few terms from the technical discourse, the legal regulatory discourse, and the socio-ethical frameworks, that are not easily translated into the vocabularies of each other; however, they do point to ideas, practices, and problems that, we feel, are significant and relevant to the others' work and its impact. The point here is, besides giving each other a flavour of the differences in discourse, indicating potential focal points for interdisciplinary dialogue.

(n.b. juxtaposition is random )

Technical/management discourse	Socio-ethical discourse	Legal/Regulatory discourse
Template ageing Failure to enrol Exception handling Extreme populations Accessibility Usability System performance Scalability (to large/different populations) Standardisation Soft biometrics (certain types of) Partial identities Fusion/multi modal biometrics Identity = ...	Social inclusion and exclusion Automated categorisation and classification Inscribed user (in technology) Social sorting Reification Black boxing Normalisation Determinism (social, biological and/or technological) Dignity, embarrassment, and humiliation Egalitarianism Power structures and relations Identity is = ...	eInclusion Design for All (Non-)discrimination Compliance Transparency Accountability and Control Legitimate purpose Proportionality Consent Equality Sensitive personal data (protection of) Identity = ...

Language and vocabulary are pivotal in framing problems, and the way in which problems are framed is highly consequential for the way potential solutions may be subsequently conceived. This, we suggest, should be born in mind when the Policy Forum sets out to address its core questions:

- *What are the important issues related to biometrics and bodily differences? Where and how do they occur, and affecting whom in particular?*
- *What (type of) actions should be taken to address them, where, when, and by whom? and to what extent should they be of a technical, legal, organisational or other nature.*
- *What is/should be the role of standardisation efforts in this?*

### **3 Special Session on CEN Roadmap 14.45 – 15.45**

#### **Follow-up activities in relation to European biometrics (standardization) needs.**

**Joined meeting of the CEN focus group on biometrics CEN and HIDE Consortium,  
Chair Ben Schouten**

#### REQUEST FOR CONTRIBUTION

In many existing and new applications, such as e-commerce, e-banking and health monitoring, many urgent questions around user authentication remain open. From an application perspective, such questions include: Are biometric technologies yet ready to support citizens in handling their digital identity? What impact can be expected from mandatory applications on the usage of various biometric modalities in everyday and ubiquitous applications? How can biometrics be used in reliable, user-friendly, and widely acceptable control mechanisms for checking the digital and real identity of an individual? How can biometrics be combined with more traditional approaches (such as PIN codes, passwords or tokens) for person authentication? How can biometrics engender trust in digital identities? What metrics are relevant for security and "convenience-oriented" applications to guarantee biometric applicability in a large variety of business models capable of dynamic and seamless end-to-end integration of resources across a multiplicity of devices, networks, providers and service domains?

The creation of standards within the different standardization bodies like ISO/IEC Joint Technical Committee 1 (JTC 1) Subcommittee 37 (SC37) on Biometrics is strongly driven by the US following the 9/11 events. There is therefore a need for an activity at the European level that strengthens Europe's influence on the standardization process and provides for early implementation of products and verification software compliant with European law and user needs.

The European Committee for Standardization CEN agreed at its meetings of October 2007, that Project Teams will be created, to produce intermediate working drafts on a roadmap for short/medium follow-up activities in relation to European biometrics standardization needs.

It is of extreme importance that all different stakeholders are heard such as the *user as well as the end-user, industry, governmental bodies, research community* in order to contribute to this roadmap. Therefore the focus group on biometrics of CEN and HIDE consortium has organized a joined meeting on March 4 at 14:45 h to discuss:

#### **A roadmap for biometric standardization needs**

**We would like to have input from experts on 3 different topics 1) interfaces and usability, 2) testing, 3) cross-jurisdictional and societal aspects.**

**Please fill in the questionnaire and send it back to us before March 2**

Note that the 3 topics will be addressed by several speakers in the morning and afternoon sessions on March 4 – see agenda in this doc - , followed by a discussion at 14:45. In this session *Ben Schouten* (CEN) will introduce the different topics; a panel discussion will follow to complete the recommendations. The outcome will be used for a roadmap for follow-up activities in relation to European standardization needs.

### Example Questionnaire

Topic	Application	Urgency 1-5. 5=very urgent	Remarks
The development of design methodologies for biometric applications, user interfaces and usability including interaction design. Facilitating ease of interaction between user and system, especially with respect to the “outlier” groups which is fundamental to the concepts of inclusiveness and empowerment	Border Physical Access	2 3	
Multimodal and cross sensor authentication to improve robustness	All security applications	3	

JOINT MEETING OF CEN FOCUS GROUP & HIDE CONSORTIUM

## CEN Questionnaire on future (standardization) needs

Please send this form to [ben.schouten@fontys.nl](mailto:ben.schouten@fontys.nl) before March 2

Topic	Application	Urgency 1-5. 5=very urgent	Remarks

Name	Affiliation	Email address	Date

## **4 Catalogue** of physiological and medical factors that can affect the usability and efficiency of biometrics [http://www.tiresias.org/research/guidelines/biometric\\_systems.htm](http://www.tiresias.org/research/guidelines/biometric_systems.htm)

### Visually impaired

- Aniridia, absence of iris, a phenomenon found in a proportion of 1.8 out of 100,000 births, which affects both eyes for genetic reasons
- Similar effects may be caused by laser iridotomy (used to correct angle-closure caused by glaucoma)
- Blind people can have problems due to their natural difficulty to align their eyes with the camera
- A similar case is that of people with pronounced nystagmus (tremor of the eyes)
- People that have been operated on for cataracts may need to be re-enrolled, although empirical evidence suggests that relatively few people need to do so

### Hearing impaired

- Speech may be affected due to loss of hearing resulting in difficulty in using voice recognition systems
- Inability to hear instructions for example from the camera of face and iris recognition systems

### Physically impaired

- Conditions such as arthritis may affect usability (it may be difficult to position the finger and/or hand correctly)
- Skin conditions such as eczema may cause blistering on the fingertips
- Any kind of surgery that significantly changes the structure of the face, will require an individual to re-enrol
- Cuts, bruises and swelling can have a temporary effect on face or hand images
- Inability to use hand or finger based systems due to loss of limbs and or digits
- Crutches may make it difficult to stand steadily
- Drooping eyelids
- Wheelchair users can face usability barriers due to the usual location of cameras and insufficient height variation possibilities
- Changes in medical condition can be faster than normal ageing affects
- Those with cerebral palsy, multiple sclerosis, muscular dystrophy, motor neurone disease etc, may have little control of their muscle movement and may find it very difficult to hold their head or fingers still long enough for a facial, iris or fingerprint recognition device. Similarly, they may be unable to record a digital signature

### Cognitively impaired

- Dyslexia, language, learning or knowledge retention difficulties may make it difficult to reliably and consistently provide a biometric sample or otherwise navigate through an automated process

### Language impaired

- Speech and language disabilities include functional limitations in comprehension and expression, voice response rate, quality of voice and fluency, and stuttering which may affect using voice recognition systems
- Colds, laryngitis can have a temporary effect on the voice

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## **5 A selection of headlines on biometrics and bodily differences**

### **School upsets parents by fingerprinting their kids**

Friday, June 06, 2008

More than 700 students were fingerprinted last week by the Clinton County School District and some parents aren't happy. Parents learned about the fingerprinting only after it happened.

<http://pippaking.blogspot.com/search/label/USA>

### **American Civil Liberties Union voice concerns using children's fingerprints for food purchase**

Wednesday, February 28, 2008

Chuck Samuelson, executive director of the American Civil Liberties Union, Minnesota on the possible introduction of fingerprint scanners for lunch lines at Oltman Junior High in St. Paul Park and East Ridge High School.:

"This is a solution in search of a problem. It just baffles me. Of all the problems schools face, is this really an issue?"

Officials think it will speed up lunch lines, solve the problem of children forgetting their ID numbers and prevent identity theft (!?)

<http://pippaking.blogspot.com/search/label/USA>

### **Czech government wants biometric passports for kids**

The Czech government decided on 1 December 2008 that children as young as 6 years old will be required to have passports with fingerprints. The government also asked the Chamber of Deputies to reflect upon the bill with rapid discussions. In case the bill will be approved the passports will be introduced as of 1 of April 2009.

The main reasons for the introduction are to comply with EU requirements – which amongst others also aim to prevent fraud – and to adopt to the conditions set by the US for the visa-free possibility for border-crossing at its borders. According to the Czech on-line newspaper “Aktualne”, the age limit at 6 might not be sufficient enough, since Canada requires passports for even younger children. But according to the Czech minister for interior affairs the Czech government found that the lowering of the age limit would be useless.

Finally, the regulation would require only newly issued passports to contain finger prints and the old ones will also remain in use until they expire.

More on: <http://aktualne.centrum.cz/czechnews/clanek.phtml?id=623733>

### **Biometric passports: no fingerprinting of children under-12**

Children under twelve should no longer have their fingerprints included on passports issued in the European Union, the EP Civil Liberties Committee agreed in a co-decision report adopted on Monday. But they should have their own passports, containing data on their parents, so as to combat trafficking in children, say MEPs.

The committee was voting on plans to amend a 2004 regulation laying down biometric features to be included in passports and other travel documents, including the holder's fingerprints.

Experience has shown that children's fingerprints are not of sufficient quality, especially those of the youngest children, which can change greatly as they grow older. In its draft text, the European Commission therefore suggested an exemption for children under twelve.

A similar exemption was agreed for people deemed physically unable to give fingerprints.

[http://www.europarl.europa.eu/news/expert/infopress\\_page/019-37251-259-09-38-902-200809151PR37250-15-09-2008-2008-false/default\\_en.htm](http://www.europarl.europa.eu/news/expert/infopress_page/019-37251-259-09-38-902-200809151PR37250-15-09-2008-2008-false/default_en.htm)

## EDPS finds biometric concessions not good enough 'Kids and elderly should be exempted'

(26/03/08)

The European Data Protection Supervisor (EDPS) found the proposed European rules on biometric passports still unsatisfactory despite some introduced concessions.

Revision of EU regulations governing the issuing of passports was proposed by the European Commission. The new legislation demand that passports contain certain security features involving biometric identifiers in the form of fingerprints.

Peter Hustinx, the EDPS has also reviewed the proposed rulings and highlighted some welcome exemptions, principally for children and the elderly. However, according to him the concessions do not go far enough to protect the rights of citizens.

More on: <http://www.out-law.com/page-8977>

Link to the EDPS's official opinion on biometric passports and the concessions:

<http://www.out-law.com/PDF/edps2.pdf>

## Biometric machines hinder Japanese school kids' smoking

A Japanese company designed a new a new biometric vending machine to prevent minors from buying cigarettes. In Japan the age-limit for smoking is 20 years, still youngsters in practice could relatively easily buy cigarettes also below this age. However, the company Fujitaka has presented recently its biometric system designed to hinder kids in their attempts to buy cigarettes illegally. In practice all customers are required to look into a digital camera on a vending machine, which is designed to compare facial features to the data of approx. 100,000 other persons who's age has been saved. Features from sagging or dry skin to wrinkles will be considered by the "age-detecting" machine, which makes the judgment whether or not to serve the customer.

Fujitaka's spokesman says, with new biometric machines "the problem of minors borrowing (identification) cards to purchase cigarettes could be avoided". The machine operates with a relatively high 90 per cent accuracy rate. In case the machine has doubts, the customer would be asked to provide a driving license for additional proof.

*"The Japanese health ministry accounts that 13 per cent of boys and 4 per cent of girls aged 17 to 18 smoke on a daily basis. Yet, the biometric fag machine's accuracy is not yet proven, and the Japanese finance ministry has not yet given the project the go-ahead. Either it will become legal in Japan or Japanese still have to bum ciggies off their older siblings like everywhere else in the world."*

More on: <http://www.theinquirer.net/gb/inquirer/news/2008/05/12/biometric-vending-machines>

## “Biometrics is for adults, not for babies”

Small children appear to be quite hard nuts to crack for biometric systems, according to research carried out by Ruud van Munster, senior project manager at The Netherlands TNO Science and Industry, who investigated the biometric enrolment possibilities of the youngest of the youngest of a population.

*“He and his colleague Stephanie Moro-Ellenberger, recruited 161 children under 12 from colleagues, a day care centre, and an after school program - a small sample, to be sure - and experimented with taking fingerprints and facial scans.*

*... Of course, it was already known that humidity is a big problem in capturing fingerprints. Turns out this is worse with children: their hands tend to be both sticky and damp (you're a parent, you knew this). Thumb-sucking tends to have a negative effect (cripes, when I was small, it was only bad for your teeth; now it can make you a biometric outcast)... The conclusion: fingerprinting isn't really possible for children under six. Quite apart from the problems listed above, there is the possibility of severe damage to the children due to extreme frustration on the part of the enroller.*

*“You really have to like two to three year olds,” he observes.”*

More on: <http://www.theinquirer.net/inquirer/news/712/1015712/biometrics-is-for-adults-not-for-babies>

## Gender Identification in Speech

The Centre for Unified Biometrics and Sensors at the University of Buffalo runs projects relating to both hard and soft biometrics. One of the projects concerns “accent identification in speech” and the technological sensors are able to link differences after distinction in voice patterns to determine whether it is a voice of a male or a female person.

The project running researchers argue that voice biometrics is the most non-intrusive amongst the many biometrics already in use and also has many advantages over other biometric techniques (usability, costs).

*“Apart from the content of speech and identity of the user, information such as accent, gender, age and other soft biometric traits of the individual can also be inferred from his speech signal. This has particular importance in situations such as 911 call handling, where gender, age or ethnicity can be used to route the calls to specific personnel. As a first step towards this goal, we have attempted to automatically identify gender and accent of individuals. Human discriminate between men and women according to the frequency of the speakers voice. Women speak with higher fundamental frequencies as compared to men. We have used 3 pitch estimation methods and used them in combination to classify a speaker in 6 classes.”*

Although the methods in this pilot study had an accuracy level of 70% only, researchers argue that this level could be significantly improved if more datasets will be provided.

More on: <http://www.cubs.buffalo.edu/speech.shtml>

## Biometric enrolment of Muslim (Asylum-seeker) women in the UK

Biometrics for Muslim women could also mean a cultural treat if the processing of identification is not adequately implemented. Being aware of the UK border-control requirement that the enrolment into the biometric identification procedure is obligatory for asylum-seekers, Muslim women are exposed to particular cultural threat. Notably, while seeking for asylum they also need to obtain a face scan for which they have to take off their veils completely.

According to a UK MP the processing of identification should be culture-sensitive. Hence, Muslim asylum-seeker women will have to be escorted by a female officer in order to enrol the asylum-seeker to the required biometric identification process. While processing both the female officer and

the candidate for biometric registration have to remain alone in a room, where the facial scanning should take place in its proper manner.

For further details, see the letter of the UK MP on this issue:

<http://www.parliament.the-stationery-office.com/pa/ld200304/ldselect/ldcom/140/140we110.htm>

## Are biometrics race neutral?

A picture from “idtrial.org” web-site may answer the question ...



source: *A Real Time Race Classification System*.

Original caption: *Two detected faces and the associated race estimates.*

From: <http://idtrail.org/content/view/689/42/> more information can be found on the web-site before. A pdf version of the article is available at: [http://www.idtrail.org/index2.php?option=com\\_content&do\\_pdf=1&id=689](http://www.idtrail.org/index2.php?option=com_content&do_pdf=1&id=689)

## Italy blasted on plan to fingerprint Roma children

Italy's interior minister Maroni revealed a proposal in June 2008 to fingerprint Roma children as part of efforts to combat crime.

The proposal received a lot of international attention, including a highly critical opinion of the Council of Europe.

It sparked huge concerns about racism, and treating Roma children as criminals.

Yet, Maroni argued that a census could help to

*"guarantee that those who have the right to stay can live in decent conditions and to let us send home those who don't have the right to stay in Italy"*. Moreover, such a census would involve fingerprinting everyone in the camps, including children, *"to avoid phenomena like begging"*. *"It will not be an ethnic register but will provide further guarantees for their rights,"* The idea was to have the police, in charge of carrying out the census in Roma camps, accompanied by the Italian Red Cross in order to give further guarantees.

But even within Italian government critical voices were heard as well, e.g. Deputy Family Minister, Rosy Bindi, who said that fingerprinting would *"treat Roma children as if they were hardened criminals"*. *"As much as he denies it, this would really be an ethnic register and that is frankly unacceptable."*

<http://uk.reuters.com/article/worldNews/idUKL2635616820080626?pageNumber=1&virtualBrandChannel=0>

The opinion of the Council of Europe is available at:

<http://www.euractiv.com/en/mobility/council-europe-blasts-italy-roma-fingerprinting/article-173775>

## “Dirtiness of left hand” - in some cultures - shows potential barrier for biometric enrolment

Ideas concerning hygiene are culturally variable, which has implications for implementing biometrics, according to a study by Daniel Munyan. For example, in Hindu or Arabic societies, the left hand is

considered dirty, which renders the biometric consideration of the left hand for enrolment quite problematic.

Munyan, D. (2005) - Coming clean on hygiene; Biometric Technology Today, pp. 7-8

abstract:

[http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6W70-4G4KV14-K&\\_user=10&\\_rdoc=1&\\_fmt=&\\_orig=search&\\_sort=d&\\_view=c&\\_acct=C000050221&\\_version=1&\\_urlVersion=0&\\_userid=10&md5=c785b3cd8d19841ba30e8534610f0337](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6W70-4G4KV14-K&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=c785b3cd8d19841ba30e8534610f0337)

## A new biometric initiative by Siemens:

**“SpeechAdvance™ Biometrics AgeGender** by Siemens identifies the age group and the gender of a person from speech. Age groups may be for instance “child”, “adult” or “senior”. The innovative technology can be applied to customer analysis e.g. in call centres to produce valuable statistical information like “70% of the callers were female seniors”. Furthermore, the age/gender recognition can be used to pre-classify callers, e.g. for routing senior customers to specially trained call center agents, or to adapt the offering to the customer’s needs.

SpeechAdvance™ Biometrics AgeGender is based on the technology of our speech recognizer SpeechAdvance™ ASR Server. Its standardized interfaces make it possible to integrate age/gender information easily into any VoiceXML browser or dialog engine like SpeechAdvance™ Dialog Server.”

[https://www.ct.siemens.com/de/business/speech/portfolio/anlagen/CT\\_IC\\_5.product\\_sheet.5D12.en.Biometrics\\_Age\\_Gender.pdf](https://www.ct.siemens.com/de/business/speech/portfolio/anlagen/CT_IC_5.product_sheet.5D12.en.Biometrics_Age_Gender.pdf)

## UK trial raises questions over biometric identification

The UK government has published in 2005 the results of a major trial of its biometric technology, showing significant failure rates and particular problems for disabled people in registering their identity. Many of the findings appear to remain valid till today.

The major findings of the report mapped out the results of research over disabled people’s biometric enrolment compared to controls

The three biometric techniques tested in the study were facial scan, iris scan and fingerprinting

<http://www.epolitix.com/latestnews/article-detail/newsarticle/trial-raises-questions-over-biometric-technology/>

## “Camera sums up your life for marketers”

The security camera that can determine our age, gender and at some point in time of the future potentially also our social class is already in operation. The FieldAnalyst as it is called is developed by NEC. The system zooms on the faces of people who pass by the video camera with a very high accuracy rate. Then rapidly it compares the images against samples in a database. Afterwards, the computer will give a high accuracy guess about the approximate age and gender of the “watched” person.



The system developers of NEC try to add clothing as a characteristic and classify people by what they wear.

The FieldAnalyst is not designed to look for criminals, but its purpose is to make real-life profiling of visitors in shopping centres for owners in order to let them better understand the shopping habits of people and their social, cultural class.

*“NEC started selling it in Japan a few weeks ago and already a few malls have installed it. It's not pinpoint accurate, but it is fast. It said I was 50, for instance, twice. (In reality, it's 46 3/4.) But it came up with that answer in a few seconds. It works better with Japanese people as the vast majority of the samples in the database are Japanese.*

*It also hones down your age only to within 10 years. However, NEC wants to narrow the range, possibly even getting to the point where it can determine age within a year or two.*

*NEC points out that the FieldAnalyst, which costs \$19,000 (2 million yen), does not store data or record the images, so your privacy is preserved (sic). And yet the store is still sizing you up. In some parts of America, customers would be tempted to burn down a mall that had installed it.”*

More on:

[http://news.cnet.com/8301-10784\\_3-9790253-7.html?tag=nefd.blgs](http://news.cnet.com/8301-10784_3-9790253-7.html?tag=nefd.blgs)