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ICAO Regional Seminar on MRTDs, Biometrics and Border Security

دودندوة الايكاو الإقليمية عن وثائق السفر المقروءة آليا، والأدوات البيومترية وأمن الحدود

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IDENTITY VERIFICATION IN PASSPORT ISSUANCE AND CIVIL REGISTRATION

THE IMPORTANCE OF "CONTEXT" AND "CONTINUITY" OF IDENTITY

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Identity Verification Fundamentals

PURPOSE

To invite a claim to a set of identity attributes and identity related attributes to enable an assessment of the claimed identity to a level of assurance sufficient to allow a passport/driver's licence/identity card to be issued having regard to security, efficiency and client impact outcomes.

Identity Verification Fundamentals

VERIFICATION OF "CLAIMS"

It is up to the service provider to verify the citizen's claimed identity by checks of:

• what they "have" (ie credentials and tokens that show biographical and/or biometric matching the identity being claimed); and

• what they "know" (ie verifiable information currently and/or previously associated with the identity being claimed); and

• who they "are" (ie biometric identifiers).

Identity Verification Fundamentals

EFFICIENT/EFFECTIVE VERIFICATION OF "CLAIMS"

It is up to the service provider to verify the claimed identity by checks of:

• what they "have" (ie credentials and tokens that show

biogra ✓ Database validation, PKI checks for ePassports, ng

claimed forensic examination. "

• what they "know" (ie verifiable information currently

and/or ✗ Interview and supporting documentation. med); and

• who they "are" (ie biometric identifiers).

✓ Automated biometric comparisons of fingerprints, face
and iris images and voice prints.

Identity Verification Fundamentals

THE "ASSOCIATION" CHALLENGE

Why checks of what applicants "have" and who they "are" may not always be enough.

Identity Attributes:
Biographic
- Name
- Date of Birth
- Place of Birth
- Gender
- Nationality

Identity Attributes:
Biometric Markers
- Face
- Fingerprints
- Iris
- Voice

Identity Related Attributes
- Place
- Time
- Transactional Behaviour

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Identity Verification Fundamentals

Our biological identity is immutable.

In contrast, the identity attributes and identity related attributes we use to support a claim to an identity are mutable.

Identity verification is a complex task, within a complex system that is subject to error and fraud.

Assessment of identity is inherently probabilistic and can't be determinative.

The identity verification challenge is to reliably and accurately associate biographic and biometric identity attributes with each other and with the identity related attributes that help establish a credible "context" and "continuity" for the identity being claimed.

Identity verification must in addition be able to be undertaken over time, in different places, and in different transactional contexts.

Identity Verification Fundamentals

Our biological identity is immutable.

In contrast, the identity attributes and identity related attributes we use to support a claim to an identity are mutable.

Identity verification is a complex task, within a complex system that is subject to error and fraud.

"Human recognition systems are inherently probabilistic, and hence inherently fallible. The chance of error can be made small but not eliminated. System designers and operators should anticipate and plan for the occurrence of errors, even if errors are expected to be infrequent."

principal conclusion #1 at page 1:
"Biometric Recognition – Challenges and Opportunities" (2010)
US Computer Science and Telecommunications Board – The National Academies Press

See: http://www.nap.edu/openbook.php?record_id=12720&page=1

Identity Verification Fundamentals

association gone wrong…

'Perverted' Night Stalker guilty

By Tom Morgan
in London

Night Stalker Delroy Grant was convicted on Thursday of being one of the most prolific and depraved sex attackers in British history.

Police apologised for botched chances to stop the 53-year-old rapist earlier as he was found guilty of preying on the elderly in a campaign of perverted terror lasting 17 years.

Former minicab driver Grant was responsible for some of the most "awful and disturbing crimes" ever investigated at Scotland Yard, senior detectives said.

A jury at Woolwich Crown Court convicted him of claiming at least 18 victims – but it is feared the total may be more than 500.

The conviction brings to a close a massive manhunt that cost tens of millions of pounds and involved hundreds of officers.

Police missed a key chance to stop Grant in 1999 because of a paperwork blunder, it can now be revealed. Officers mistakenly ruled him out of their inquiry when the DNA of another suspect with the same name was confused with his.

The head of the Metropolitan Police's homicide and serious crime command, Commander Simon Foy, said Grant's conviction lifted a shadow of fear from thousands of pensioners living in south London.

But he added, "We are deeply sorry for the trauma suffered by all those victims and our failure to bring Grant to justice earlier."

The police chief branded Grant a "perverted, callous and violent individual" who attacked some of society's most vulnerable.

His crimes were "some of the most awful and disturbing in the history of the Met", he said.

Between 1992 and 2009 the masked sexual predator preyed on frail men and women in south London and violated them in their homes, sometimes for several hours.

Many of his victims – aged up to 89 – were blind, deaf or had conditions including Alzheimer's and Parkinson's disease.

Grant targeted detached and semi-detached 1930s houses in leafy suburbs, often levering out double-glazed window units with a crowbar to gain entry.

He was a highly skilled burglar who carried out daytime reconnaissance. The hallmark of many of his attacks was to remove light bulbs, cut telephone lines, then grab his victims with a gloved hand.

He woke terrified pensioners by shining a torch in their eyes before engaging them in conversation. Grant then subjected his vulnerable victims to humiliating and degrading sexual assaults for a gratification described in court as impossible to understand.

Officers had been hunting the Night Stalker, under the codename Operation Minstead, since 1998 when two rapes were linked to the same attacker.

Grant, of Brockley Mews, Honor Oak, eluded capture for years as the tally of victims linked to Minstead soared to 203.
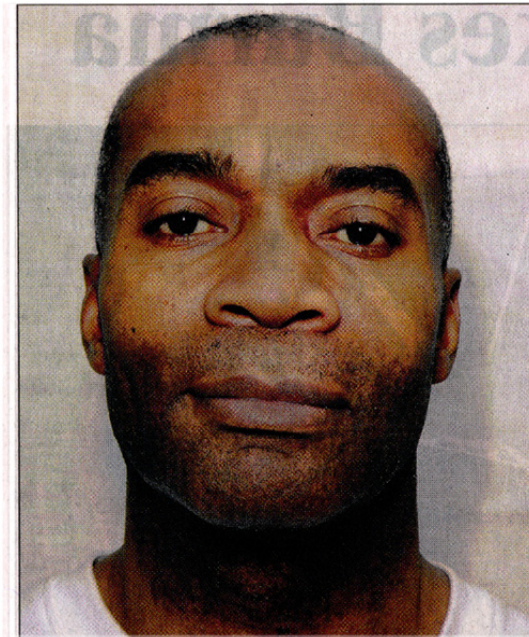
The predator's luck finally ran out when police swooped on his car in the early hours of November 15, 2009.

Grant, a father of 10 and full-time carer for his estranged wife, Jennifer, who has multiple sclerosis and is paralysed, refused to discuss his crimes with police.

By the time the case arrived in court more than a year later, he had spun a web of lies in an attempt to get off the hook.

Among a string of "almost laughable" explanations was his claim that his ex-wife stored his semen in 1977, then waited 15 years to frame him.

The "sickening and depraved" attacker was found guilty of 29 counts of preying on 18 elderly men and women between 1992 and 2009.   PA

CONVICTED: The Night Stalker, Delroy Grant.   Photo: Reuters

An Identity Verification Model

Step 1 – Collect	Step 2 – Collate	Step 3 - Assess

Identity Attributes
 	
• Biographic
  o Family name
  o Given name
  o Date of birth
  o Place of birth
  o Gender
  o Nationality
 	
• Biometric
  o Face
  o Fingers
  o Iris
  o Voice
	associate attributes
	
	&
	
	compare to prior identity claims
		I -Context of claim to identity?
		
		• pattern analysis is transaction dependent

Identity-related Attributes
 	
• Place
  o Address
  o Telephone #
  o IP address
 	
• Time
 	
• Transactions
		II - Continuity of claim to identity?
		
		• Frequency of token re-issue
		• Verification thresholds for transactions

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Identifying suitable datasets and private sector identity verification partners

Datasets that:
- include identity and identity related attributes;
- are transacted regularly and frequently;
- have explicit or implicit revalidation of identity or identity related attributes;
- have extensive coverage;
- have a geo-spatial nexus to the service being delivered; and
- incorporate time stamping features

Banking (via credit checking agencies = data aggregators)

Telecommunication providers

Utilities

Airline loyalty programs

Social media

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Conclusions

There are no silver bullets in identity management:

- Improved enrolment practice is necessary but not sufficient.

- Improved document security is necessary but not sufficient.

- Improved application of biometric comparisons is necessary but not sufficient.

- Improved verification to establish context and continuity of identity is necessary but not sufficient.

…and our citizens need to be assured that achieving better identity security will not come at the cost of efficient delivery of services, their customer experience and their right to privacy.