



**DigiNotar**  
Internet Trust Services

# ENUM and Wireless PKI aspects of a business case

ENUM Business Opportunities event

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Utrecht 02-03-2010



# Agenda

Introduction

Perspective

Mappings

Validations

    levels of assurance (LoA)

Wireless PKI

Aspects of a business case



# Internet Trust Services

Trust components  
and services

“Wheel of Trust”

Independence and  
trust as core  
business





# Perspective

Telecommunication, internet as an essential service, it is part of our business transactions infrastructure.

## Phases internet presence

- online
- publication/communication
- → transaction/interaction
- → integration



# interactions

## informal

search, compare, to be found

## formal

order online

contractual agreements

deliver (documents, insurance)

pay, internet banking

report, taxforms



# The Netherlands are active on the internet, some statistics



Activiteiten op internet: in de top  
(percentage van de bevolking, Eurostat, 2008)

	Bloggen	Instant Messaging	Chatten en fora	Skypen	VoIP	Blogs lezen
<b>NL</b>	<b>10</b>	<b>30</b>	<b>21</b>	<b>18</b>	<b>9</b>	<b>26</b>
DE	2	19	28	15	13	13
DK	8	31	22	24	18	18
<i>EU27</i>	<i>4</i>	<i>22</i>	<i>16</i>	<i>16</i>	<i>12</i>	<i>15</i>
FI	4	29	25	16	15	31
FR	7	32	11	32	20	25
SE	5	25	19	16	10	32
UK	5	22	15	13	8	16

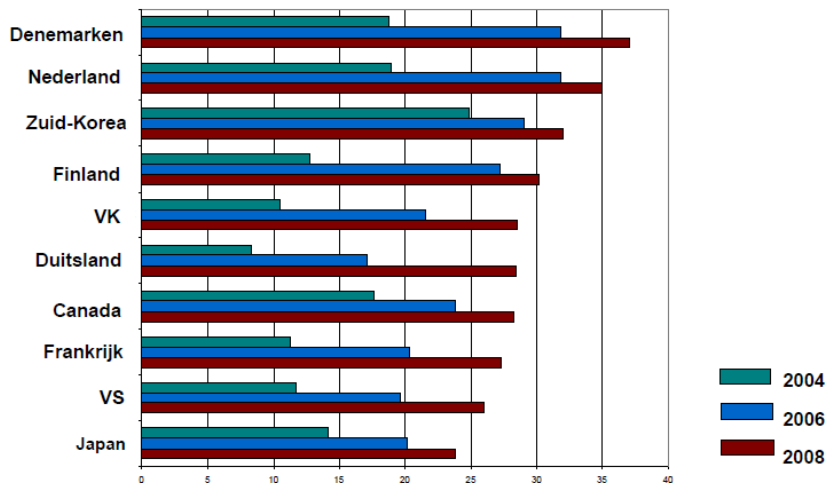


# Broadband connectivity



## Aantal breedbandaansluitingen per 100 bewoners: nr. 2

Aantal breedbandaansluitingen per 100 inwoners, internationaal, 2004-2008 (1-2)



<sup>1)</sup> Sitatie in december van het betreffende jaar.  
<sup>2)</sup> Exclusief mobiele aansluitingen.

Bron: OESO

# ENUM: electronic number mapping

Mapping between domains

You & me and

Social Fiscal (Sofi) number

BSN Citizen Service Number ~ SSN

Educational, student number(s)

Customer number(s) (Air miles loyalty)

Bank number

Company number Chamber of Commerce

Persistent pseudonym



# Why ENUM ?

How can we reduce transaction costs?

Finding and exchanging information,  
supporting internet based transactions.

ENUM is related to Identity management

Business case: How to reduce  
registration costs



# Mapping telephone and internet

## Telephone and internet

- SMS authentication
- Wireless PKI
- Internet on mobile telephone
- Liberty Alliance work: Bridging IMS and Internet Identity



# Telephone related numbers

Mobile phone number

SIM card number

IMEI (International Mobile Equipment Identity)

ASID anonymous subscriber id, mobile internet





# ENUM validation

assignee phonenumber (e164) =  
registrant domain

registration procedures



# Validation

## Validation of identity information

A digital identity is a set of claims made by one party about another party.

Authentication: verification of claims with a certain level of assurance



# Validation quality

- NIST 800-63 identity proofing

- CA/Bforum [www.cabforum.org](http://www.cabforum.org)

The CA/Browser Forum, a voluntary organization of leading certification authorities (CAs) and Relying-Party Application Software Suppliers has updated its guidelines for issuance and management of Extended Validation (EV) certificates, which include standardized procedures for verifying and expressing the identity of the certificate holder.

- OpenID-plus.nl

verification of some basic elements (NAWTE)

- eRecognition for Companies (DigiD)

- STORK



# STORK Levels of Assurance (LoA)

Secure Identity Across Borders Linked

With which level of assurance is a claim verified?

How can a level be communicated (inter)nationally?

Which elements determine the LoA?



# STORK Scheme

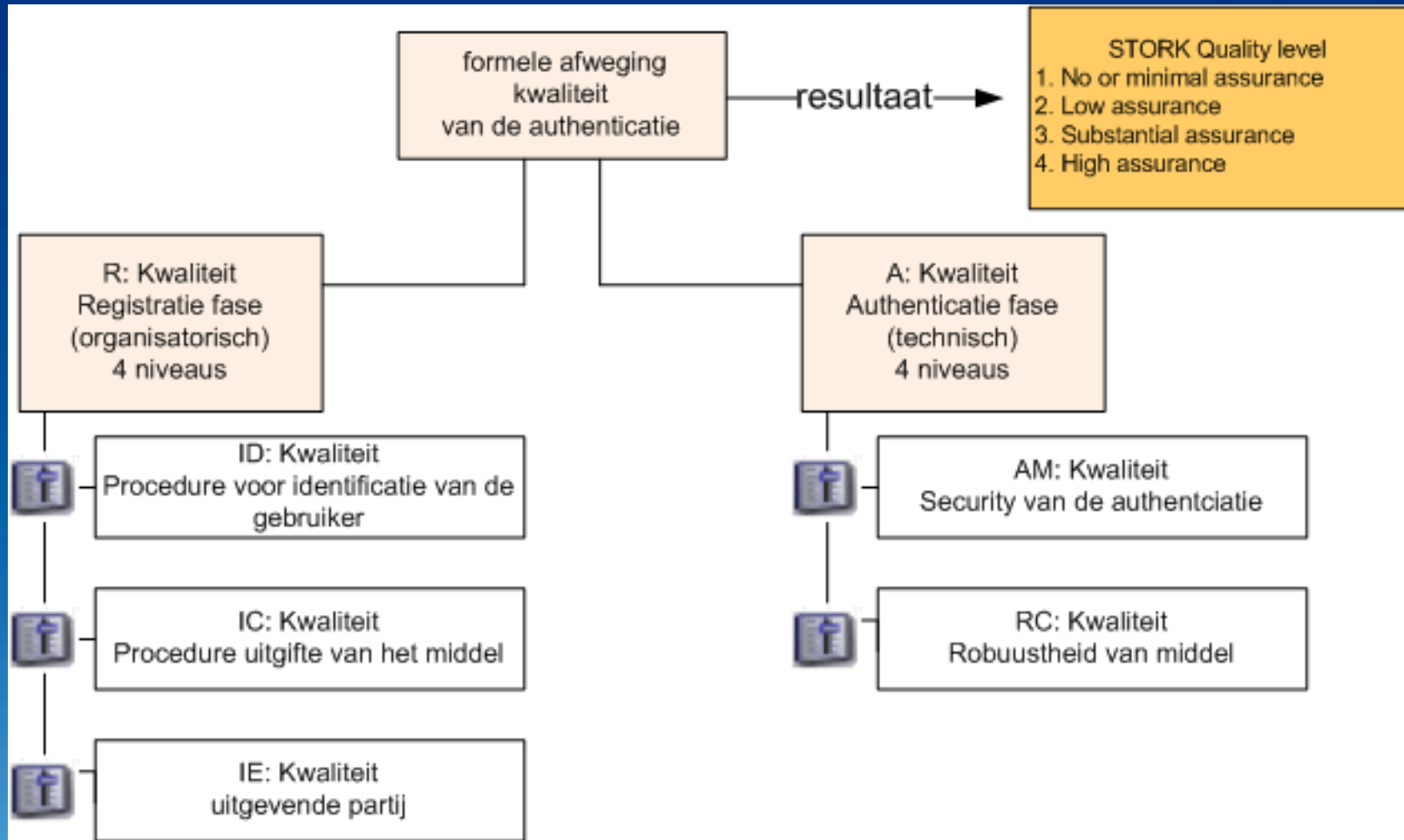
Secure Identity Across Borders Linked

STORK QAA level	Description
1	No or minimal assurance
2	Low assurance
3	Substantial assurance
4	High assurance

**Table 4: STORK QAA levels.**



# STORK





# Wireless PKI (WPKI)

Issuing a certificate on a new generation  
SIM-cards

## Benefits

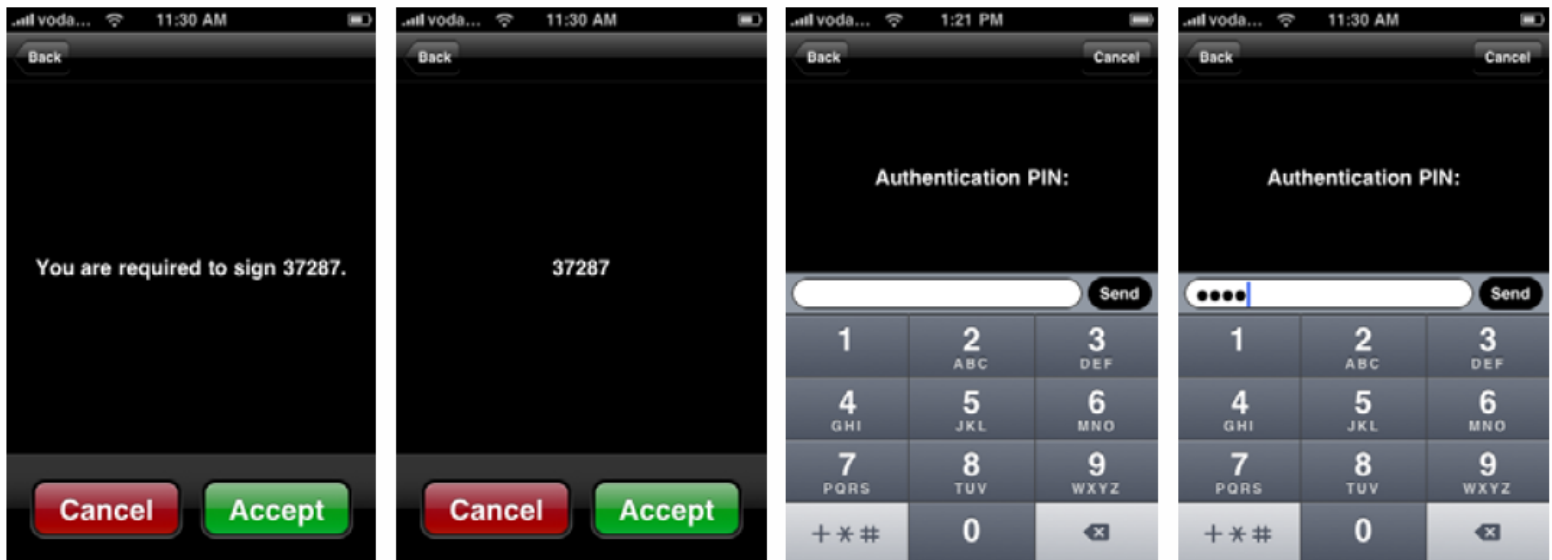
- Ease of use
- Login
- Legal Signing documents

For the details: SURFnet DigiNotar pilot

<http://www.surfnet.nl/nl/bijeenkomsten/archief/Pages/SURFnetExpertiseseminarVeiligMobiel.aspx>



# WPKI user interaction



Figuur 8 - Interactie met de gebruiker op de mobiele telefoon

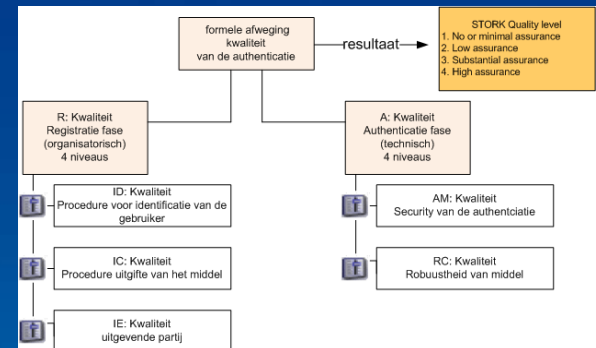


# Quality level mobile phone

We have a secure SIMcard

need to arrange for

- registration of user
- issuing of certificate
- quality of organization





# Aspects of a business case

- Registration and validation costs
- Validation efficiency
  - Authentic registers should be shared
- Validated information has value for others, reuse of verified information.
- Critical mass in the consumer domain as a success factor
- ENUM as an add-on to a digital identity
- Valimo Gemalto case



# Aspects of a IdM business case

## Points of view

- DigiD 8 mln citizen (C2G)
- eRecognition for Companies (B2G)
- OpenID-plus.nl (B2C)
- SURFnet Federated Identitymanagement
- EazyID DigiNotar (consumer-Id, B2C, and B2B)
- Homeshopping organization
  - higher conversion rates



## Some topics for discussion

- in what way do mobile and internet converge?
- a business case needs commercial thinkers not identitymanagement specialists?
- not if, but when?
- which domain will be leading in consumer IdM?



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Internet Trust Services

# Thank you

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