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**Labelling – The Way Ahead**

**September 2009**



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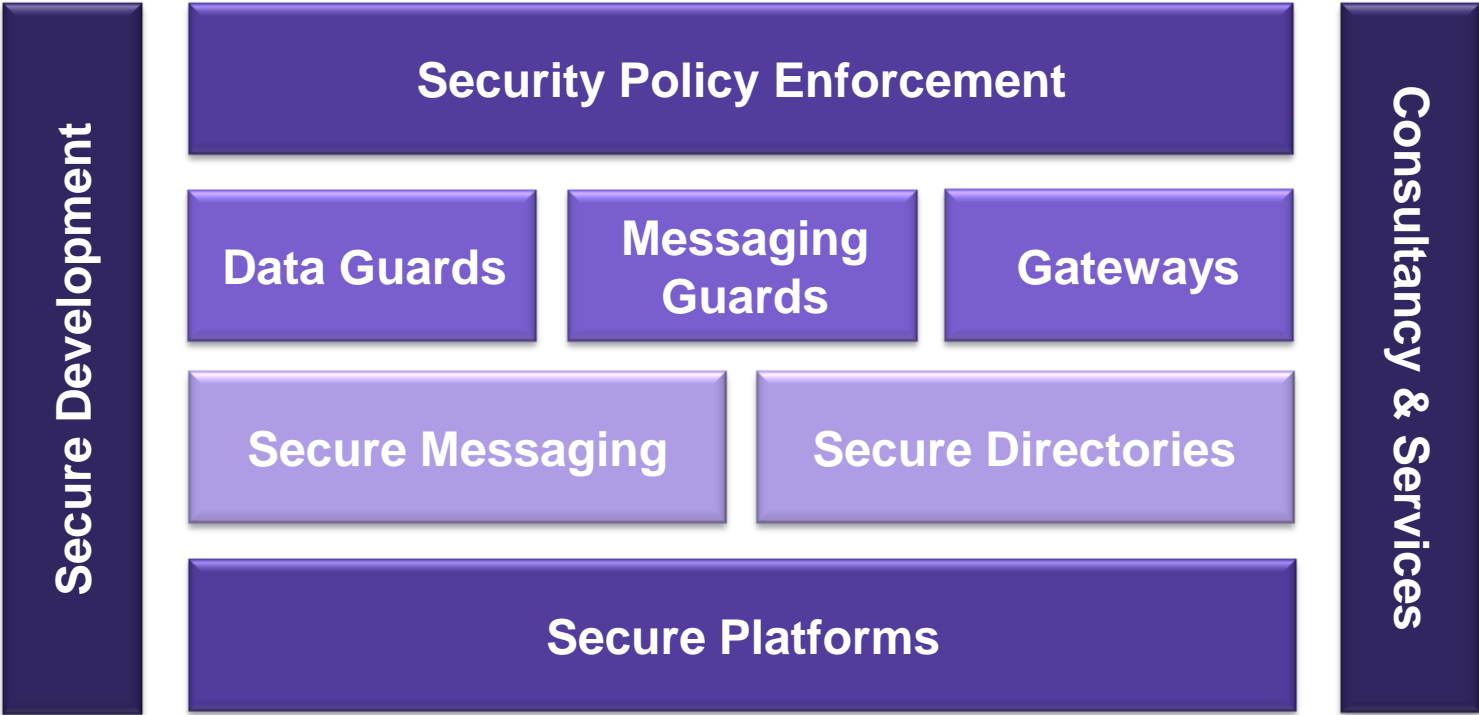
**Labelling - Discussion Areas**

**Steve Penny**



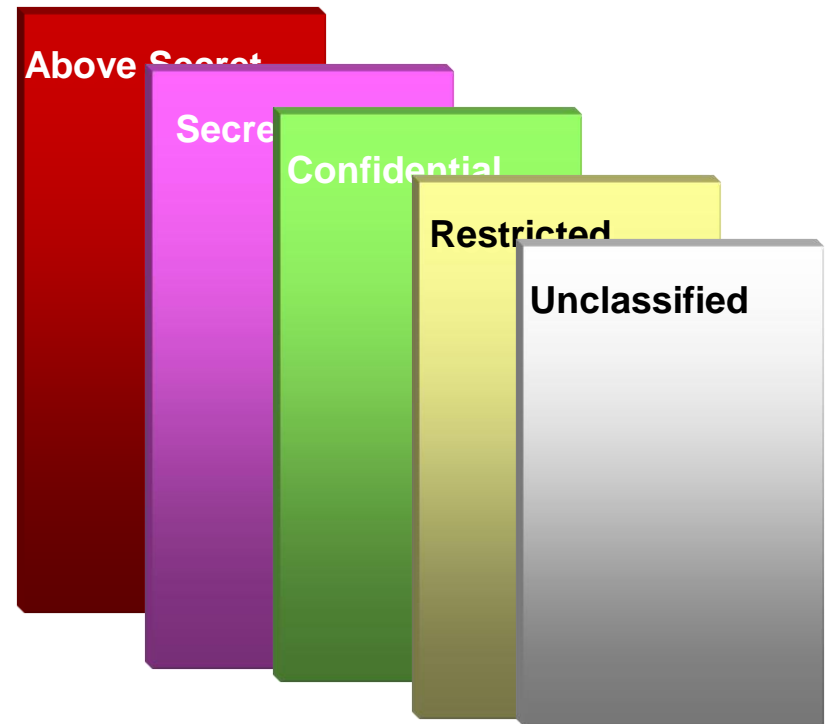
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# Portfolio

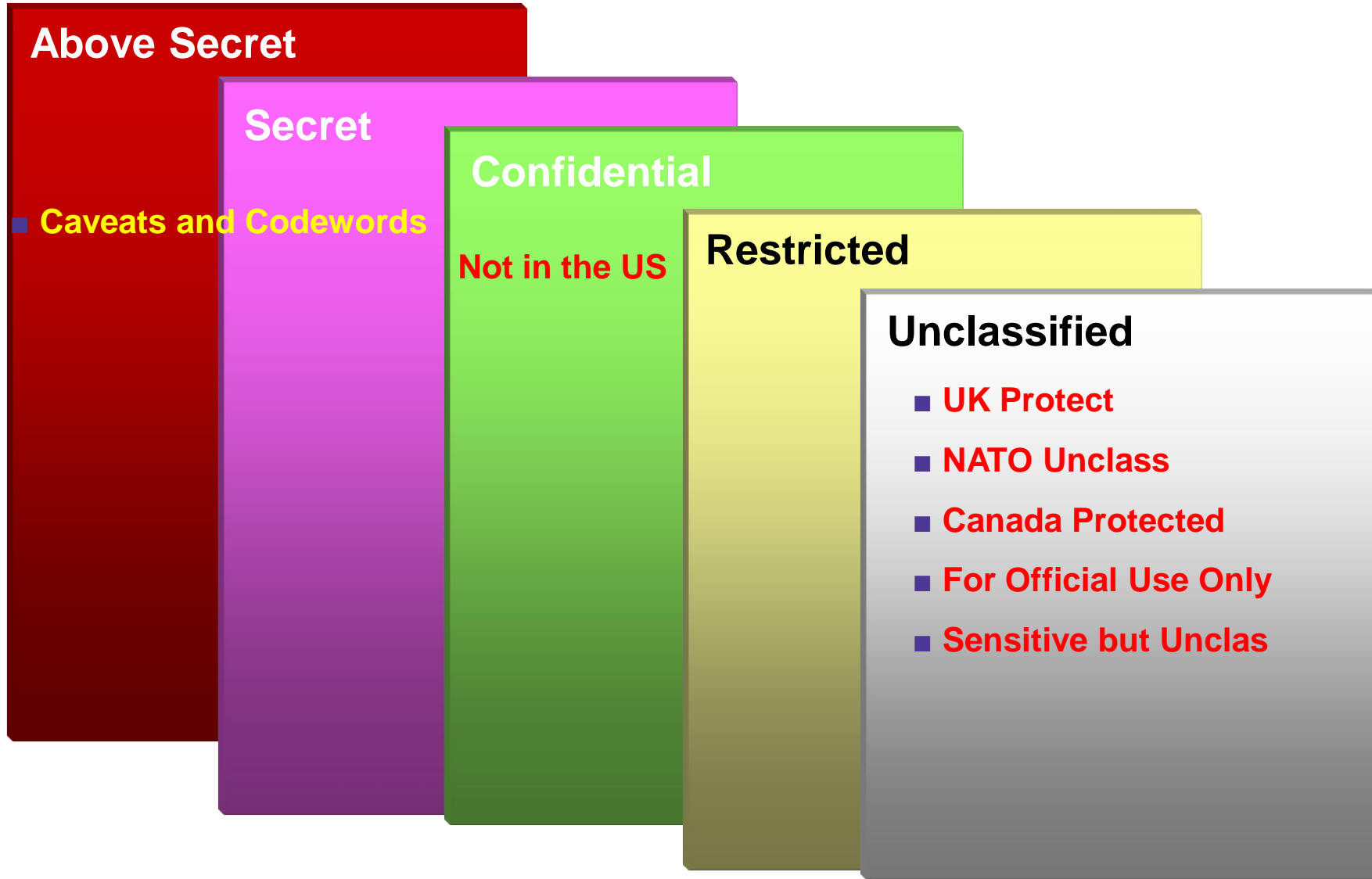


# Labelling – A means to an end

- Labelling is a means of security policy mapping/enforcement
- Maps handling, access etc policies
- Need to interoperate securely across different security policies
- Different nations have different policies



# Security Domains and..



# Issues - Policy

- No single policy exists for the classification or 'sensitivity' **labelling** of information
  - Either Nationally or internationally
    - » Documents
    - » E-mail
    - » Data (discrete and streamed)
- No consistent location for the electronic 'storage' of such labels in an agreed format



# Issues - Implementation

- Worse for data, as no pen and paper equivalent (i.e. ACP127) to translate from.
  - Pertinent to ISTAR
  - Sources or data conduits are therefore classified
    - » Quickly leads to 'system high'
    - » Inhibits access
  - Problem of continuous data i.e. radar streaming
    - » How granular is data to which label applied?



# Emerging Themes

- Labelling policy
- Label generation
- Label binding
- Label retention
- Label review
- Label 'gate-waying'
- Label guarding



# Themes

- Labelling policy
  - 'Standards' work
    - » What, where, how
    - » NATO XML WG
  - Consider i.e. aggregation/association
    - » UK Govt beginning to address



# Themes

- Label generation
  - Labelling at the Domain Border as opposed to 'client'
  - Adding default label based on 'system' ie
    - » Default label policy
    - » Data Source
    - » Data Destination
  - Analyse data and propose labelling (upgrade/downgrade) ie
    - » Content analysis
    - » Intelligent application of 'rules'



# Themes

- Label binding
  - Binding label to data throughout life
- Label 'gate-waying'
  - Mapping of labels from disparate policies
    - » Different formats
    - » Different schema
  - Protection equivalence
- Label guarding
  - E-mail
  - Documents
  - Data



# Themes

- Label retention
  - Through fusion process
  - Cut and paste process
- Label review
  - Automatically review down grading based on i.e. time
    - » Historical data
    - » Life expired real time data
    - » Other attributes?



# Discussion: labelling a 'means' to an end?

- Where do we want to be?
  - Labelling policy
  - Label generation
  - Label binding
  - Label retention
  - Label review
  - Label 'gate-waying'
  - Label Guarding
- Impact of lack of standards on ability to implement guards etc and thus share information



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**Labelling – The state of the market**

**Humphrey Browning  
September 2009**



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# Recap

- We have heard NATO's requirements for labelling
- We know we need standards for data labelling
- What is the state of the market in respect to standards based solutions?



# The problem we have already solved

- Look at the diversity in simple email labelling
- Where to put the label
  - Subject, FLOT, Envelope (inner and / or outer), TNEF, Freely in the text.....
- How to control the syntax of the labels
- How to bind the label securely to the content
- How to compose, display, read, print the label
- How to map the label for different domains, nations, languages



# The problem we have already solved

- Luckily a range of solutions have been developed to resolve these problems
- This works because broadly solutions adhere to various internationally agreed standards – WP7, SDN.801, X.411 etc and email is a pretty well defined and controllable application



# The problem with data

- So solving the email problem was simple
- Only taken us 20+years or so to get to this point !
- Now think about the problem getting agreement on the labelling of data
- All the same issues apply but now we have a myriad of applications from a multitude of vendors with no internationally agreed standards to start from.
- So vendors are doing their best implementing solutions that they hope will become the de-facto standard.



# What is needed to move forward ?

- Governance
- Policies
- Standards
- Compliant Solutions



# Governance and Policy

- We need nations to understand and own the problem of governance
  - To agree the basis on which they will share data
- We need nations to implement policies that support these agreements
- We need solutions that support adoption and implementation of the agreed policies



# Standards

- NATO doing some good work on XML labelling and binding standards
- Some work being undertaken on XML Security Policy Information Files (Open XML SPIF)
- Further work to validate identity and apply relevant access controls once these standards are more mature



# Compliant Solutions

- Until we have agreed standards we can only produce proprietary solutions
- This leads to a requirement for gateways and guards to handle multiple proprietary formats
  - Can lead to issues with integrity and complexity
- The quicker we address and agree the standards the sooner vendors will be able to provide secure, interoperable, open and compliant solutions



# Summary

- Labelling for email / messaging text pretty well understood and supported.
- The need to share different data types is creating a need for labelled data
- Proprietary solutions exist but standards starting to emerge
- Labelling is just one element of the solution.....

