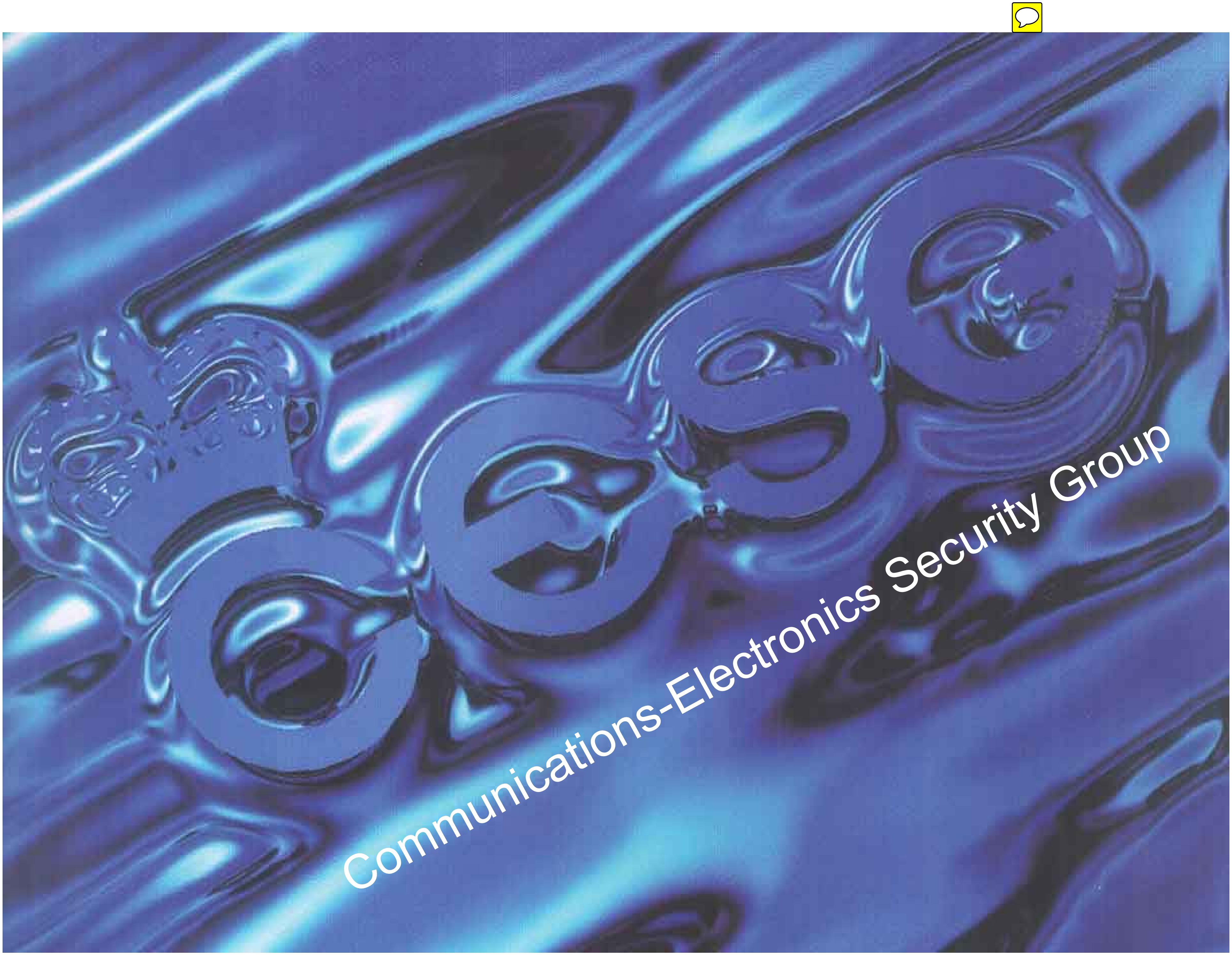


Communications-Electronics Security Group

PKI interoperability issues for UK Government … again

Richard Lampard

Richard.Lampard@cesg.gsi.gov.uk

… or,

The triumphant return of Richard Lampard!

Richard Lampard
Richard.Lampard@cesg.gsi.gov.uk

… or,

Oh dear, Lisa must really be scraping the barrel.

Richard Lampard
Richard.Lampard@cesg.gsi.gov.uk

Structure

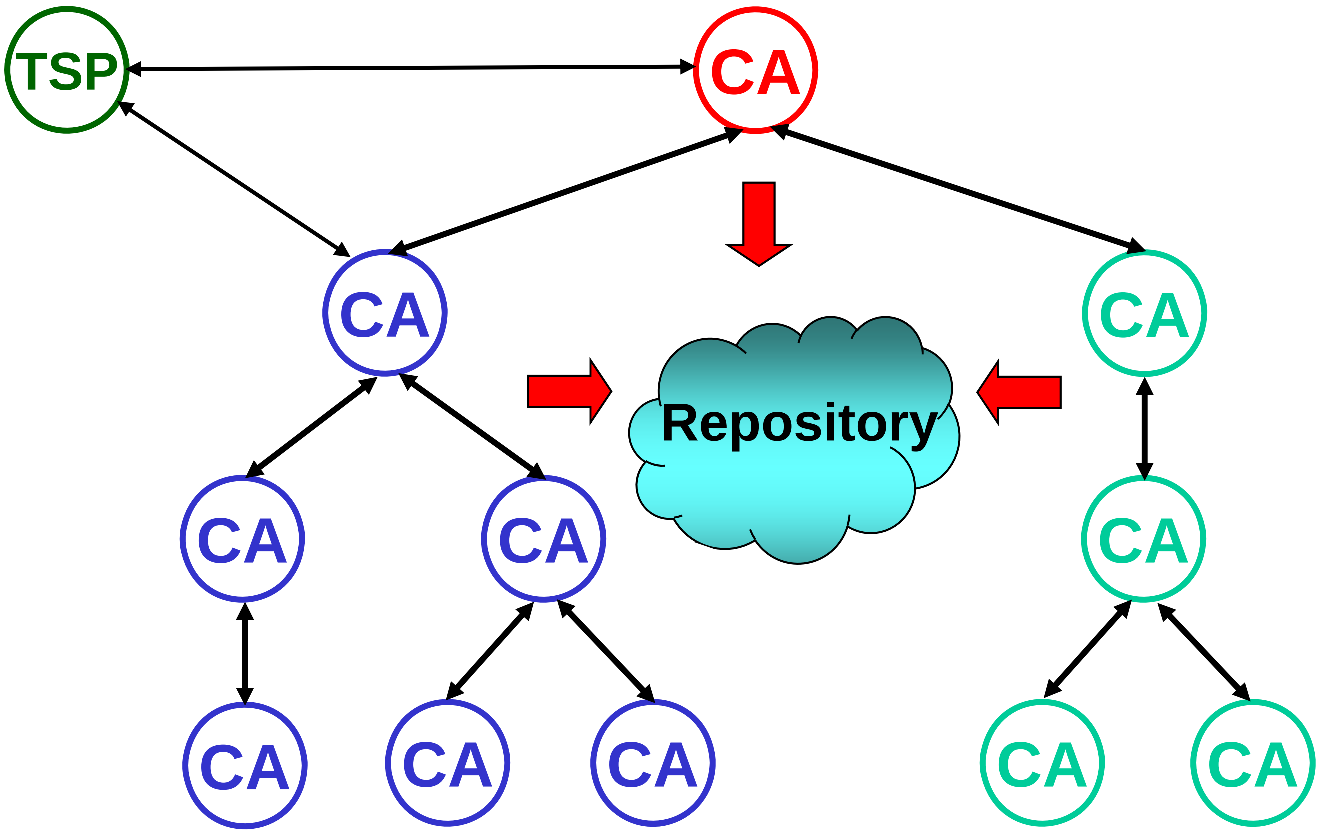
1. Quick introduction
2. Why is interoperability crucial?
3. ALICE
4. Vendor interoperability trial
5. Summary

1. Quick introduction

- Communications-Electronics Security Group
  - a government agency
  - UK national Infosec authority
  - operates on a cost-recovery basis
  - aims to encourage adoption of PKI and related technologies by UK government, the armed forces and wider public sector

Capitalising on the UK's Sigint knowledge base, we will help to protect the nation's security and safety, and deny foreign Sigint success

2. Why is interoperability crucial?



2. Why is interoperability crucial?

- Encoding
  - DER versus BER
  - GeneralizedTime vs UTCTime
  - DN ordering
  - Base 64 vs ASN.1
  - PrintableString vs TeletextString
  - RFC 822 address included in DN

2. Why is interoperability crucial?

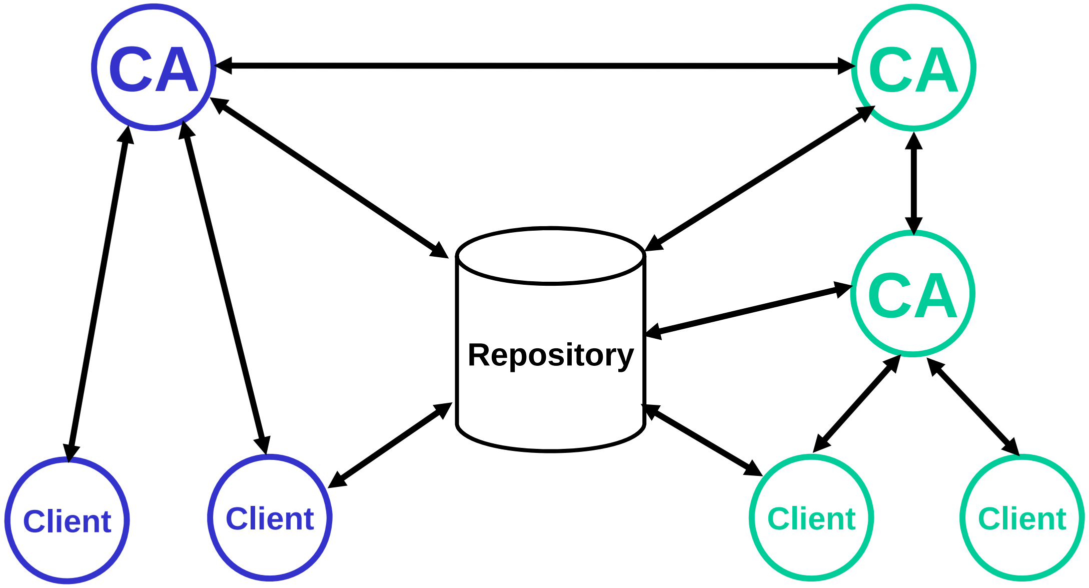
- Implementation problems
  - misinterpretations of standards, crass mistakes, incorrect assumptions, or “short cuts”
  - ASN.1 compiler bugs
  - arbitrary or machine limitations e.g. serial number length
  - inability to deal with incorrect or unexpected behaviour e.g. bad certification requests

2. Why is interoperability crucial?

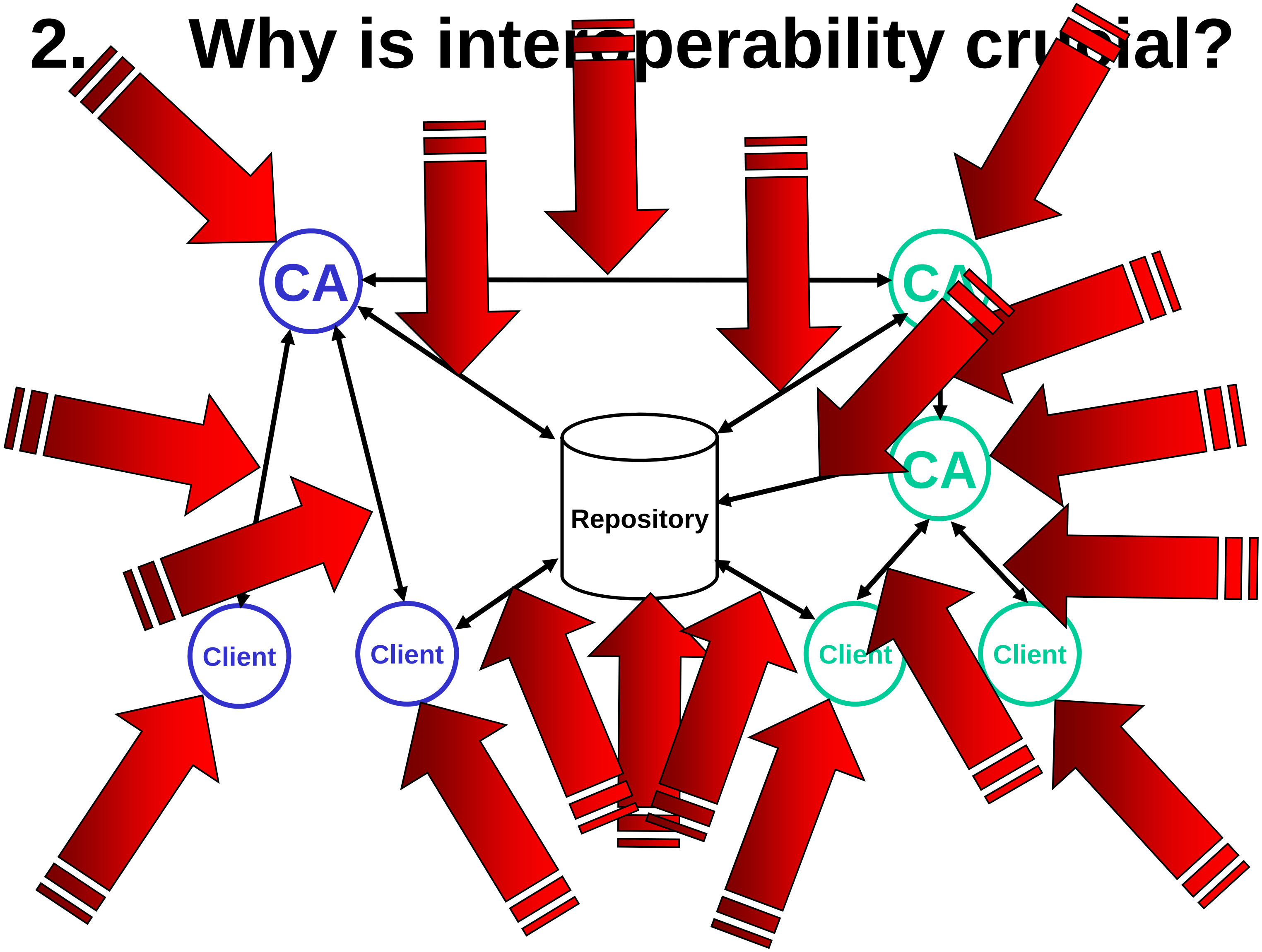
- Directories (gulp!)
  - inability to use same Directory
  - schema clashes

- Proprietary private key token formats

2. Why is interoperability crucial?



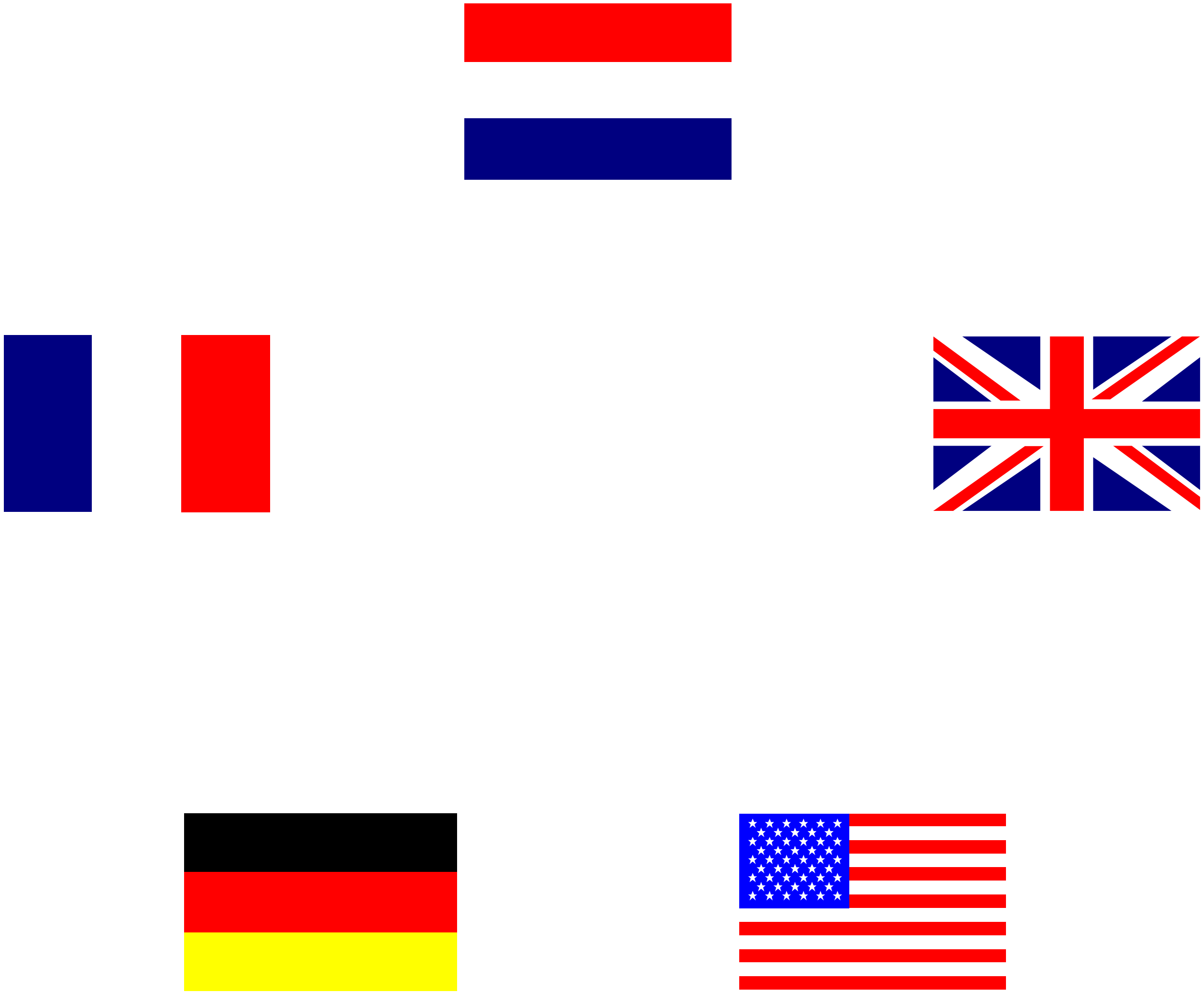
2. Why is interoperability crucial?



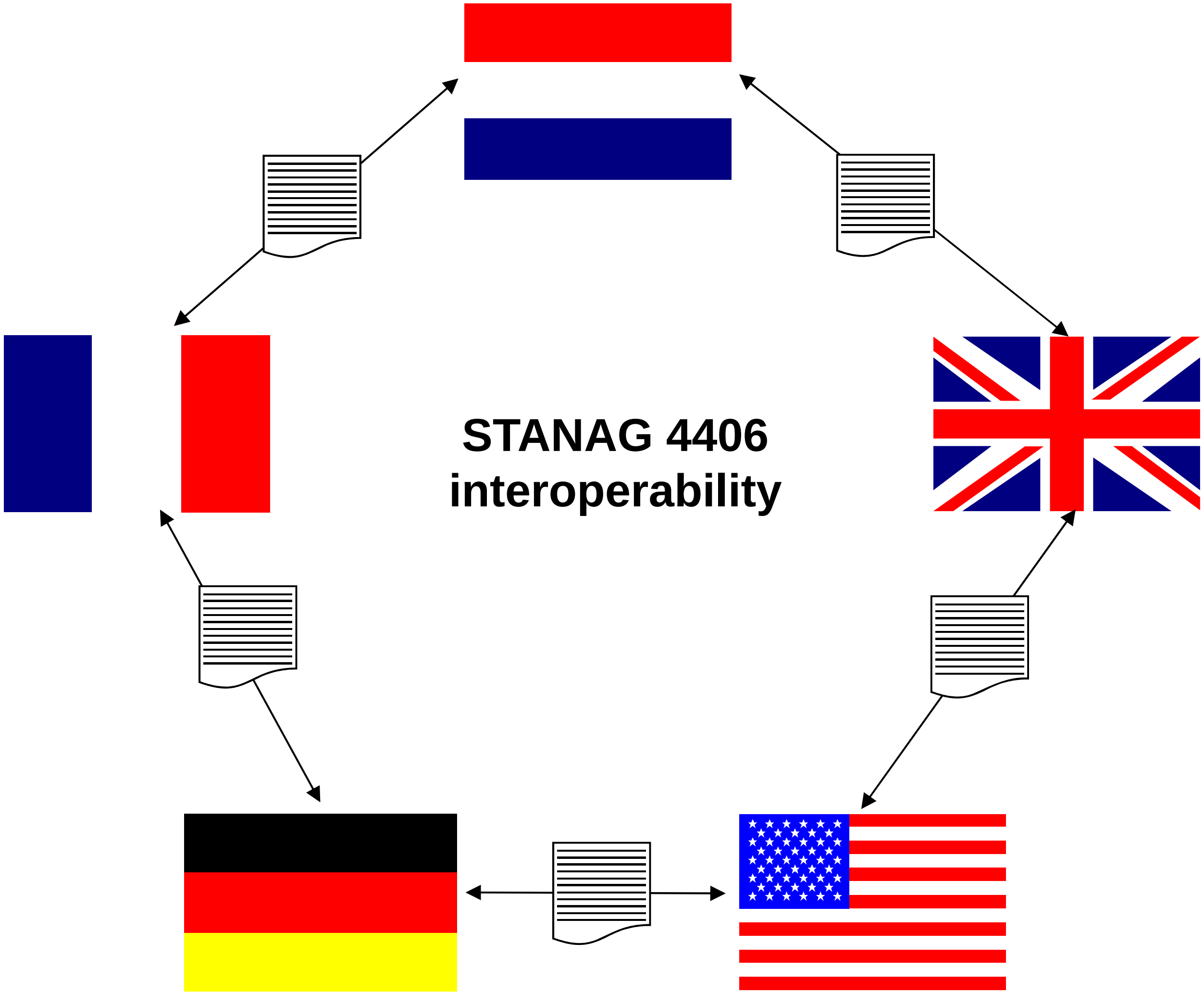
3. ALICE

- Test level of interoperability provided by national implementations of international and NATO standards
- Hence, reduce risk to national procurements and developments

3. ALICE

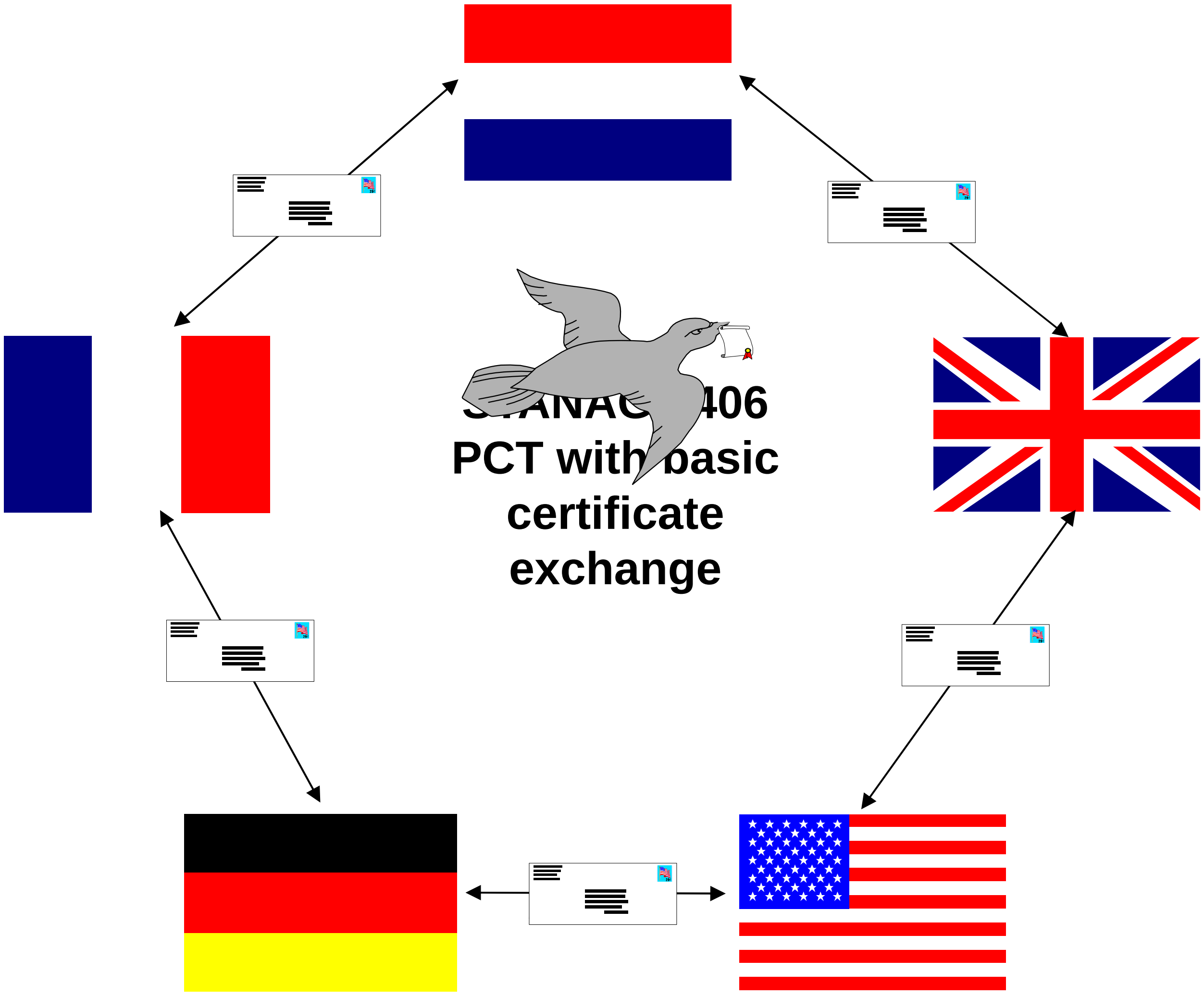


3. ALICE



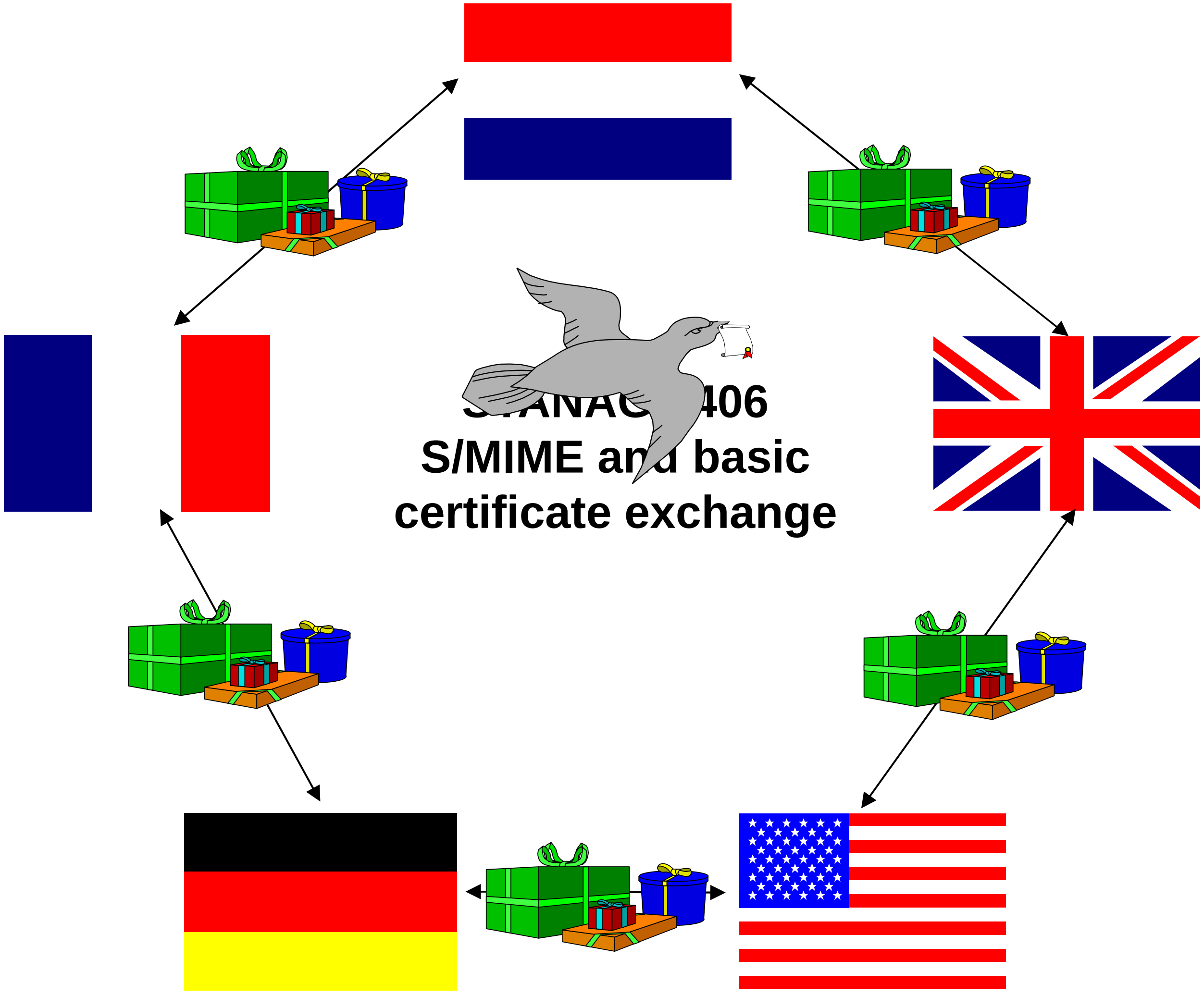
STANAG 4406 interoperability

3. ALICE



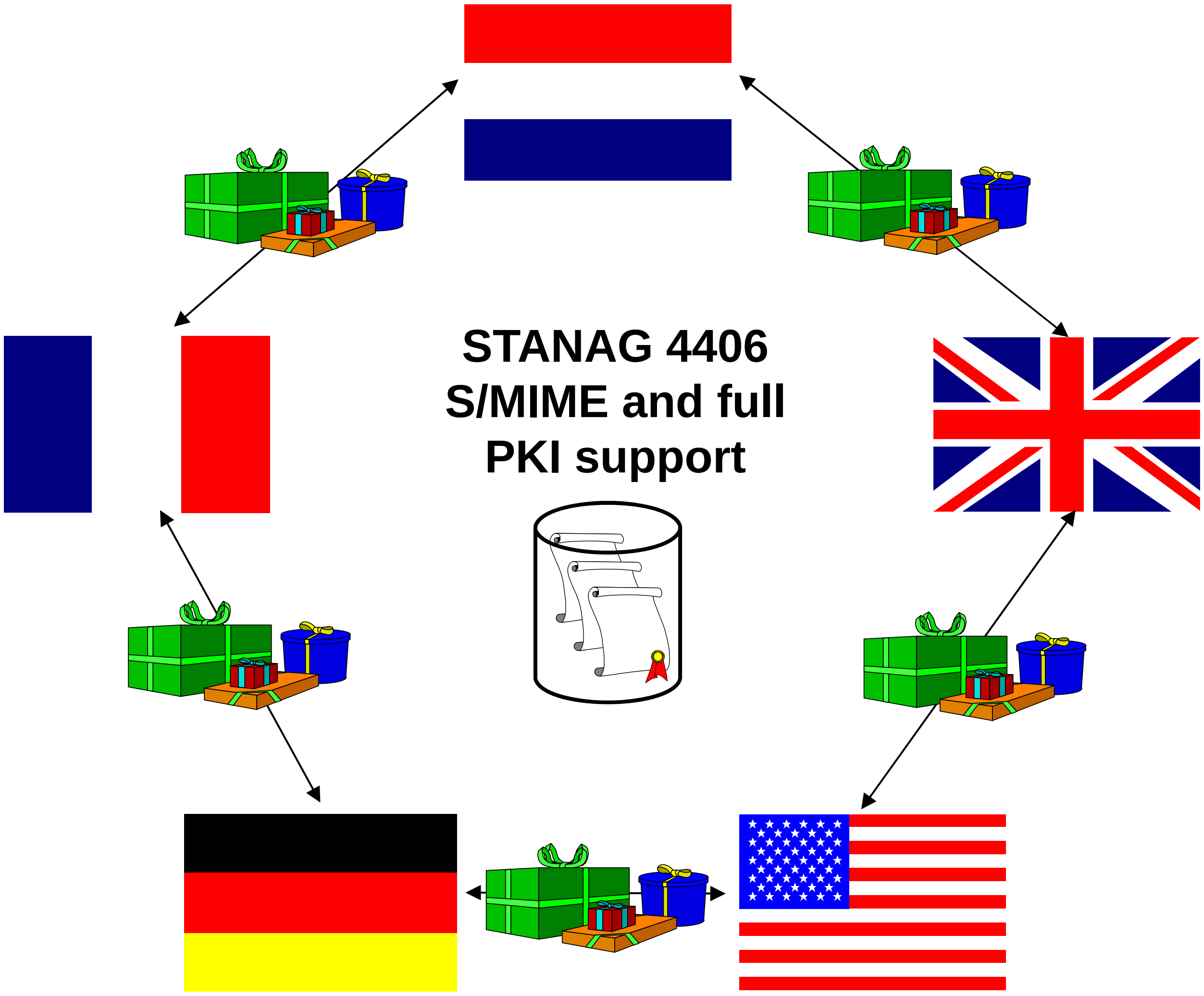
STANAG 4406
PCT with basic
certificate
exchange

3. ALICE



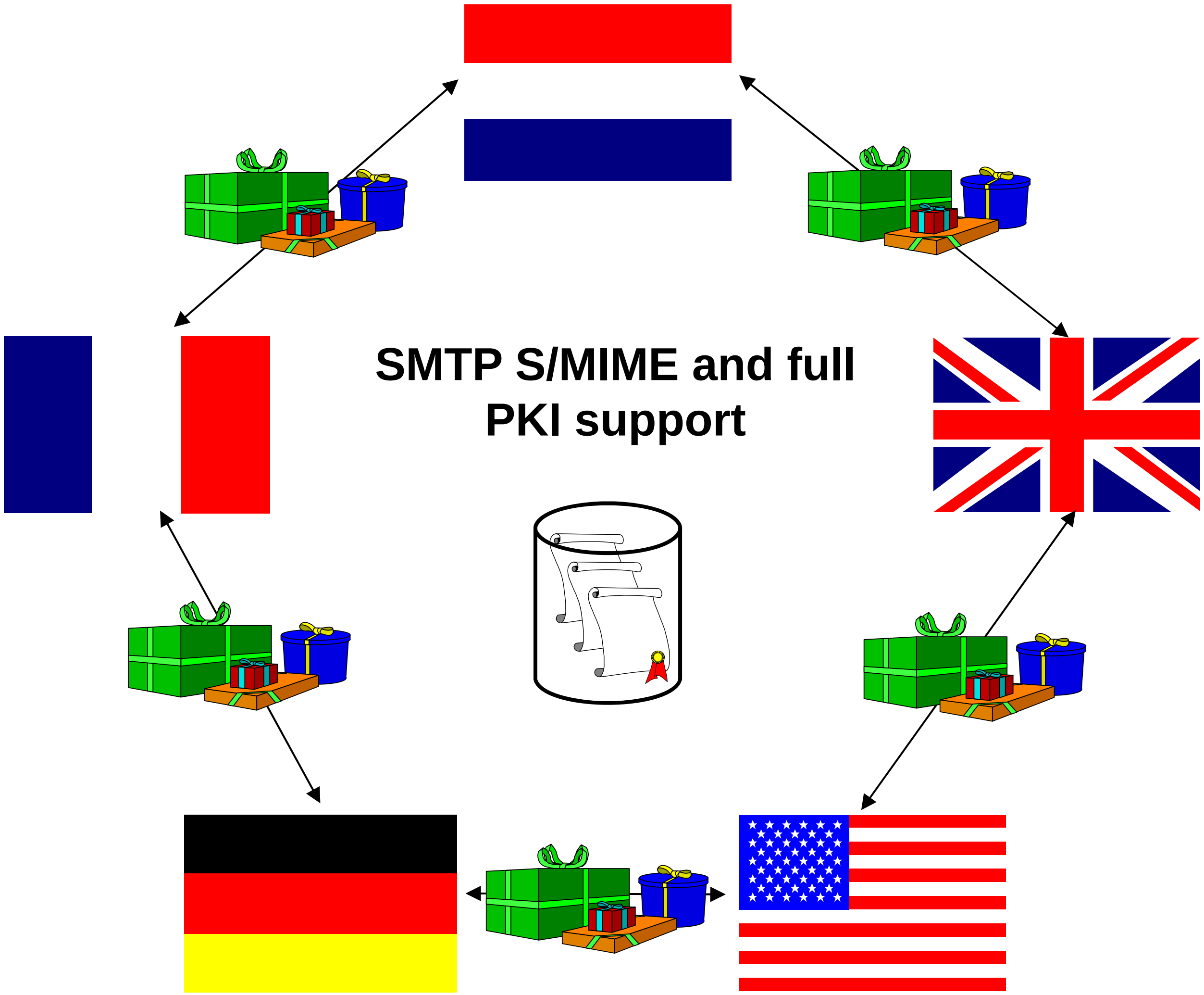
STANAG 4406
S/MIME and basic
certificate exchange

3. ALICE



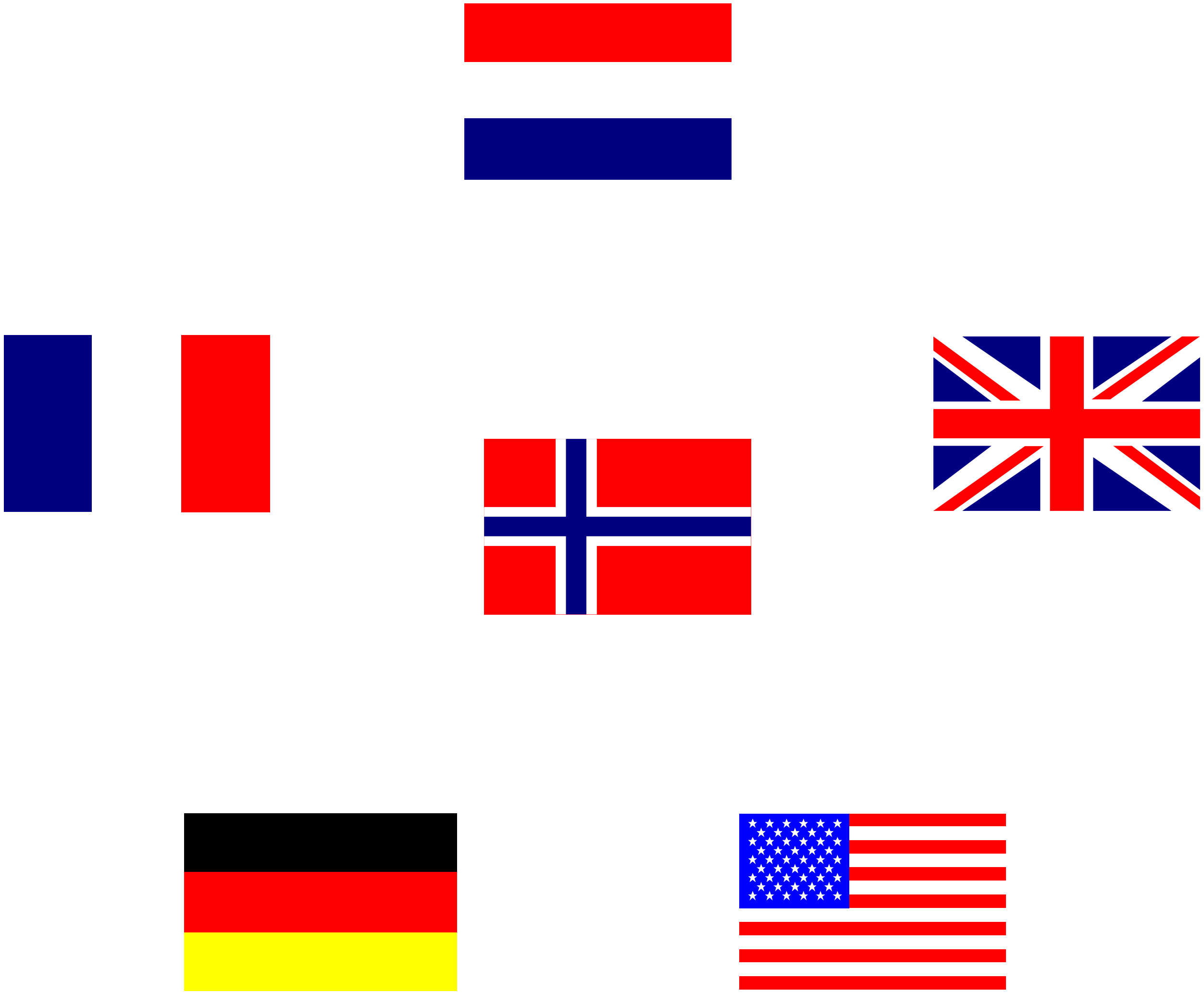
STANAG 4406
S/MIME and full
PKI support

3. ALICE



SMTP S/MIME and full PKI support

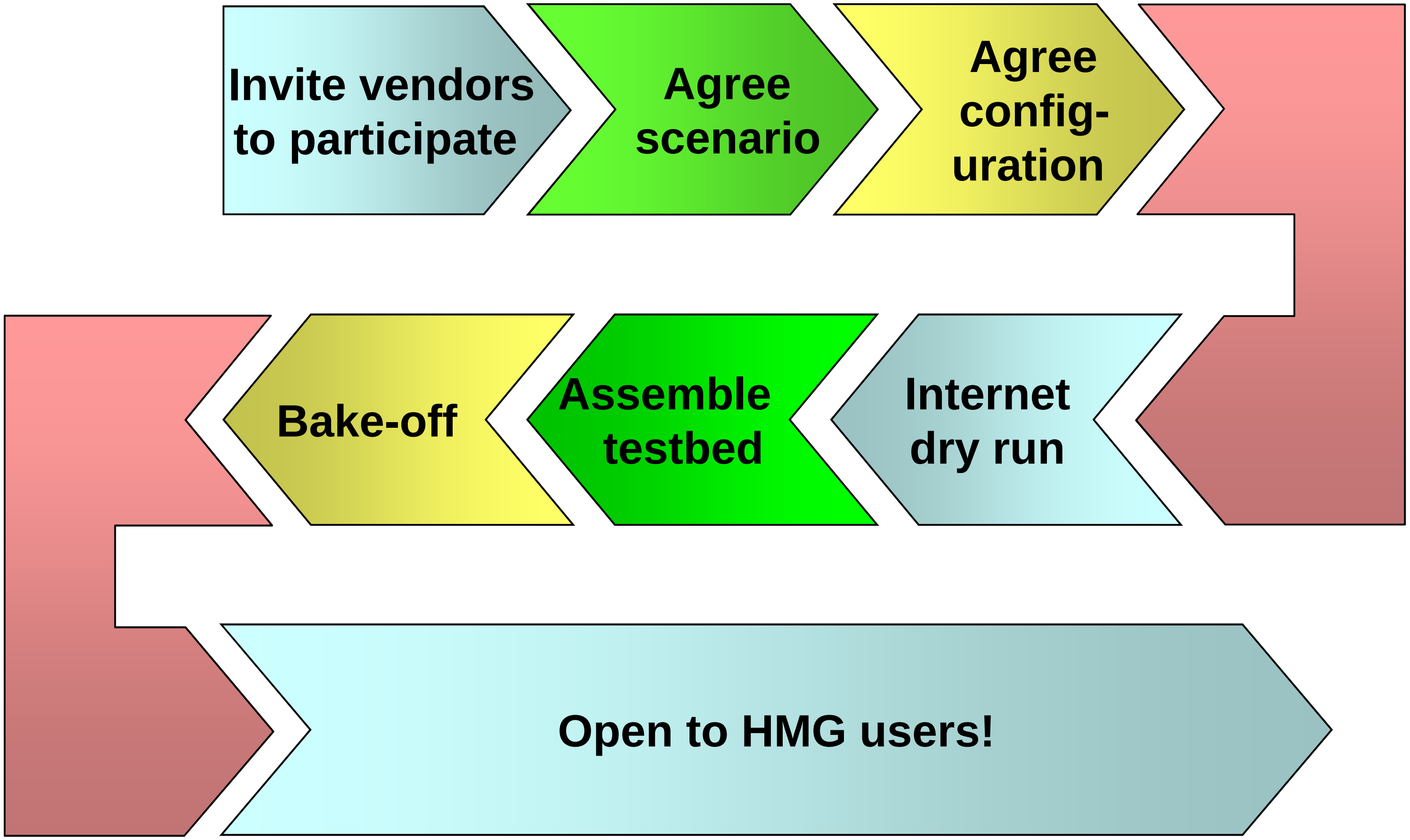
3. ALICE



4. Vendor interoperability trial

- Previous interoperability work attracted some criticism
  - we didn't always have most up to date version or based on beta code
  - not enough vendor involvement
  - test scenario did not present a level playing field

4. Vendor interoperability trial



Invite vendors to participate

Agree scenario

Agree config-uration

Internet dry run

Assemble testbed

Bake-off

Open to HMG users!

4. Vendor interoperability trial

- Why are we doing this?
  - give vendors the chance to prove their claims
  - … or enough rope to show otherwise
  - provides an up to date view of interoperability for products *out of the box*
  - shows CESG’s commitment to working with multiple vendors
  - shows CESG’s departmental customers the state of play

  - does anyone want to play?

5. Summary

- Lack of interoperability will *still* be a major problem for UK Government
- Key HMG efforts:
  - ALICE
  - vendor interoperability trial
  - and of course, participation in PKI Forum

5. Summary

PKI is done neither for personal acclaim (because the applications get all the glory), nor for financial gain (if you’re a civil servant).

Therefore, CESG PKI experts must be the purest form of security consultant.

Discuss.

Communications-Electronics Security Group