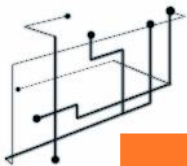


TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

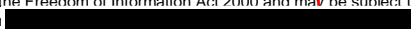


Making Network Sense of the encryption problem Roundtable

 Head of GCHQ NAC



NAC
NETWORK ANALYSIS CENTRE

This information is exempt from disclosure under the Freedom of Information Act 2000 and may be subject to exemption from disclosure under the Official Information Act 1982. Refer disclosure requests to GCHQ on 

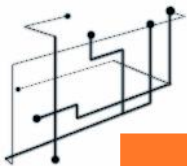
Derived From: NSA/CSSM 1-52

Dated: 20070108

Declassify On: 20360501

TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL GCHQ metadata

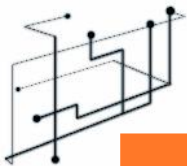
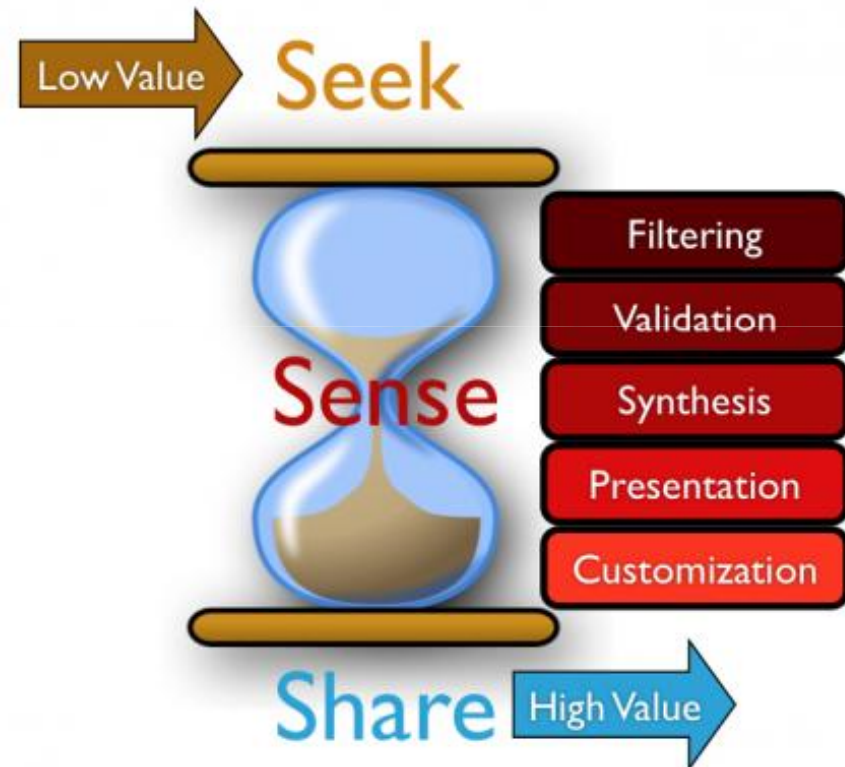
- GCHQ now creating metadata on:
 - SSL / TLS
 - IKE
 - OpenVPN
 - SSH
 - SQUEAL signatures (Various crypt packages)
- Data available in BEARDED PIGGY and/or the CLOUD



TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

How can Network Analysis help ?

- Can NAC help make sense using network knowledge of the volumes of data to isolate that which we want to decrypt...



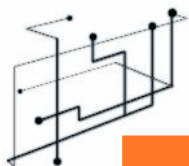
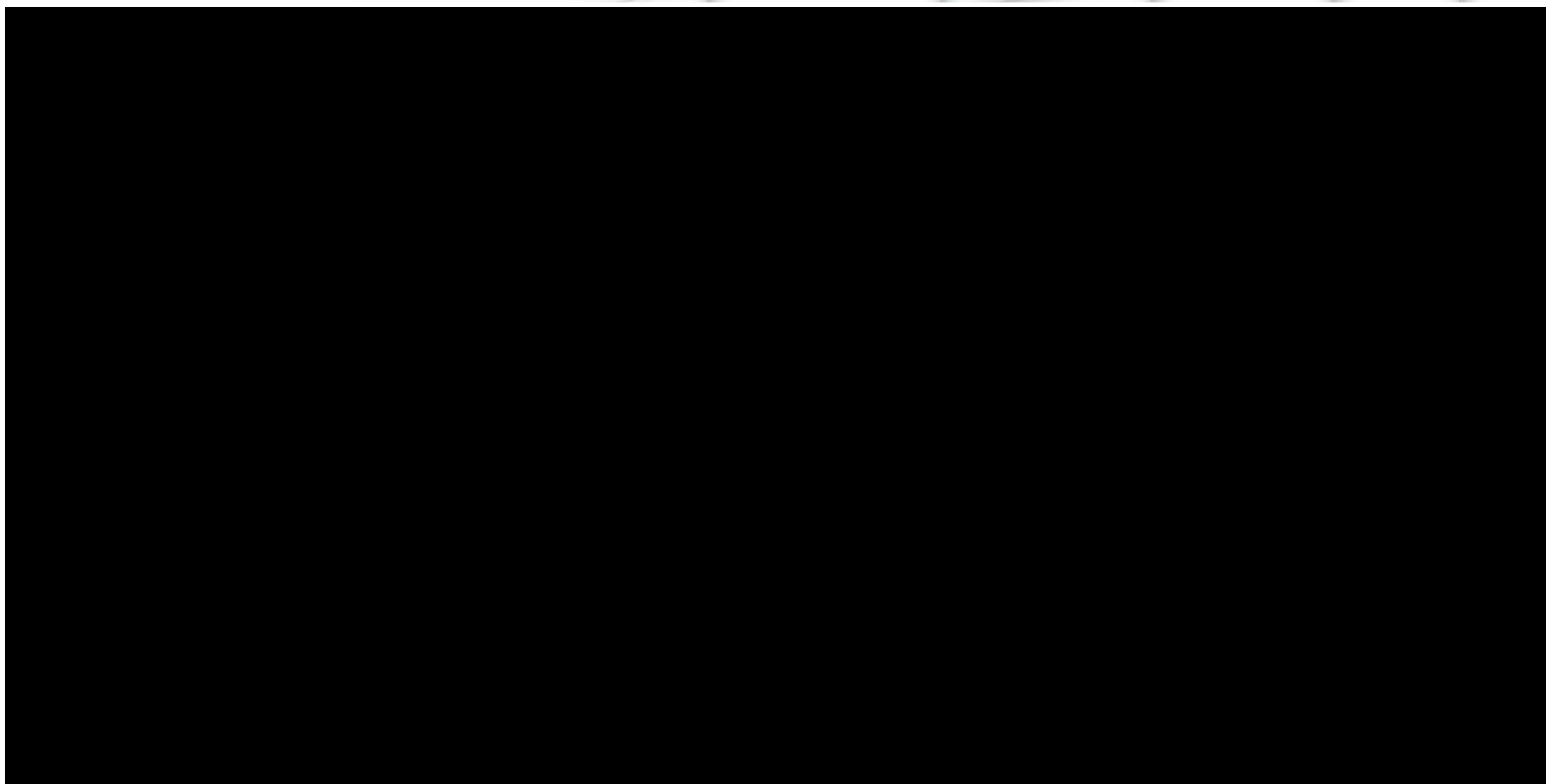
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TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

The Seed Approach

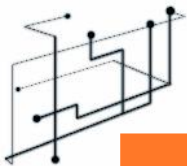
- Intercepted documentation reveals details of VPN set up...



TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

The Seed Approach

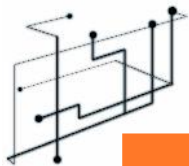
- Turn Seed IP into network block
- Query on network block against metadata
- Chain outwards / fuzzy subnet logic
- Basis of NTAT developed tradecraft:
 - IRASCIBLE HARE
 - IRASCIBLE RABBIT
 - IRASCIBLE MOOSE
 - IRASCIBLE EMITT



TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

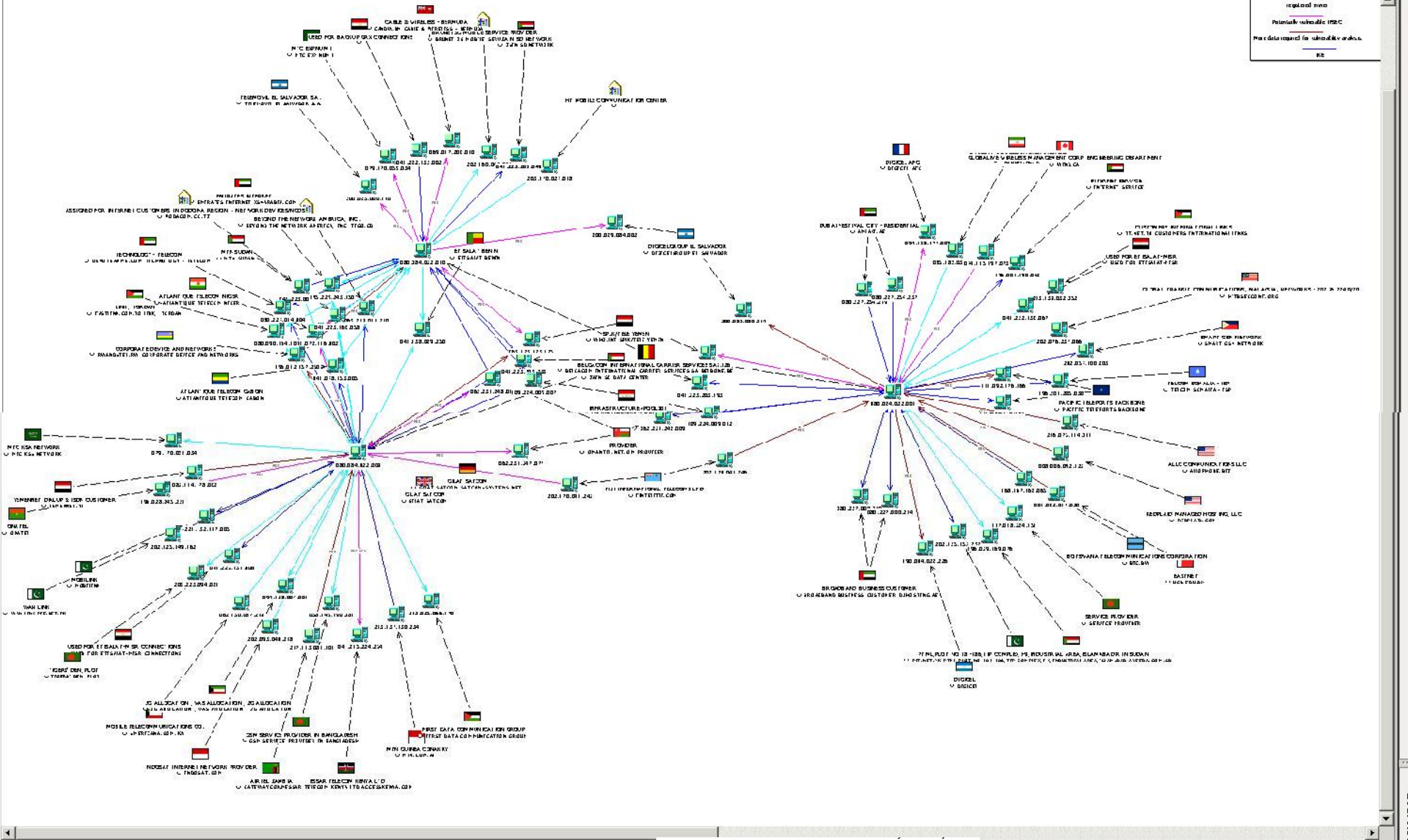
Known usage

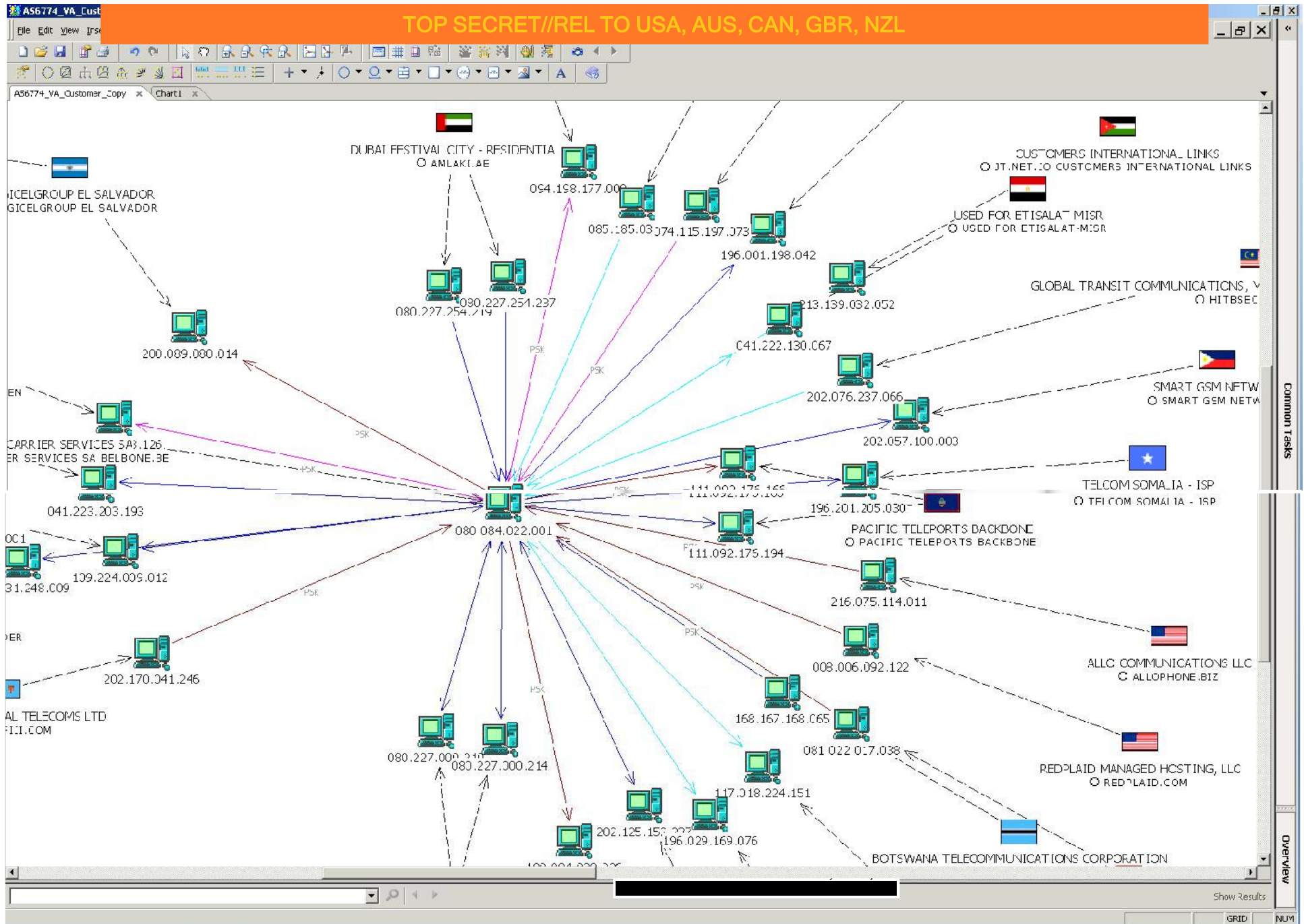
- Target known to use encryption
 - Identify target subnet
 - Select on subnet against metadata
- Or...
 - Start with an AS – look for most interesting wheel
 - BELGACOM - AS6774 – known to run GRX links to MNO over VPN





Legend
Legend Item
Item Name
Item Description
Item Value

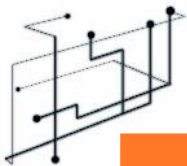




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Network Knowledge enrichment

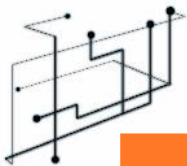
- Internet Registry information
- IP Geolocation
- DNS
- Data derived from network device configuration files (routers/Firewalls etc)
- Network information on surrounding IPs (i.e. rest of subnet is MNO related)
-



TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

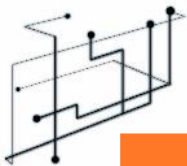
Access Optimisation

- A given role of Network Analysis is optimising access for a given problem – in this case enabling two-ended collection
- Or..... Identifying opportunities to get at the data before it is encrypted therefore no need to make sense of encrypted data.
Can do this both:
 - Passive
 - Active



TOP SECRET STRAP 2 // REL TO USA, AUS, CAN, GBR, NZL

Your Idea's Please



nac
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