Federal Government "Card" Technology Requirements

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Introduction & Disclaimer

- *Thirty year Federal Employee*
- *Degrees in Chemistry*
- *Work in Materials Science*
- *Cooperated with NBS/NIST since 1975*
- *Frequent Speaker-Interpol, Intergraf, Card Tech, SPIE Optical Security, DSA*
- *Disclaimer: My opinions, not official DOS, CA, Passport or Visa positions*
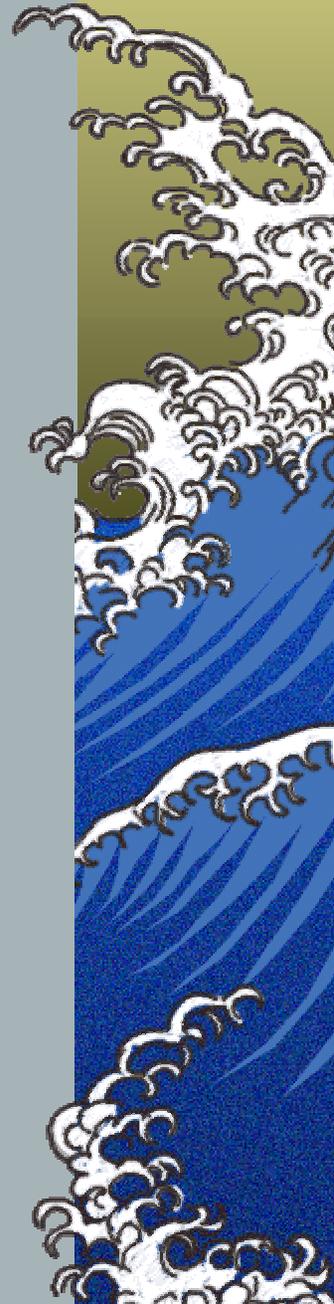
Travel Document Qualifications

- *International Civil Aviation Organization (ICAO) writes travel doc specifications*
- *MOA liaison with ISO SC17/WG3 for assistance and endorsement of TD specs*
- *ICAO's Technical Advisory Group on Machine Readable Travel Documents*
- *Document Content and Format Working Group (DCFWG) writes the Doc 9303 specifications*
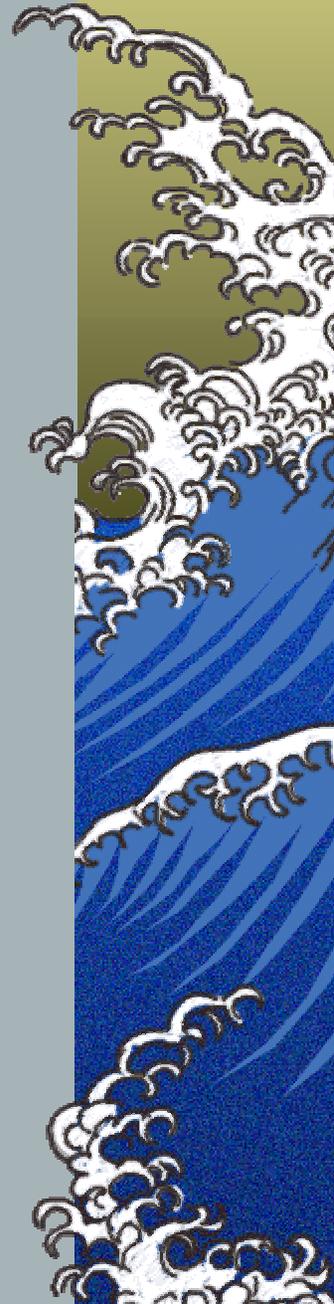
Document & Storage Media Standards Compatibility

	Passport Book	Visa Label Format A	Visa Label Format B	Card ID-1	Card ID-2
OCR-B	🟩	🟩	🟩	🟩	🟩
2-D Bar Code	🟩	🟩	🟩	🟩	🟩
Contactless chip	🟩	🟨	🟨	🟩	🟩
Contact chip	🟥	🟥	🟥	🟩	🟥
Magnetic Stripe	🟨	🟥	🟥	🟩	🟥
Optical Memory	🟥	🟥	🟥	🟩	🟥

Workshop Topics

- *Federal Government Card Technology Requirements*
- *Card Technology Business Case Analysis*
- *Current Card Technology Capabilities*
- *Multi-Technology Integration Requirements/Issues*
- *Interoperability Requirements/Issues*
- *Privacy and Security Issues*
- *Technology Roadmap and Gap Analysis*
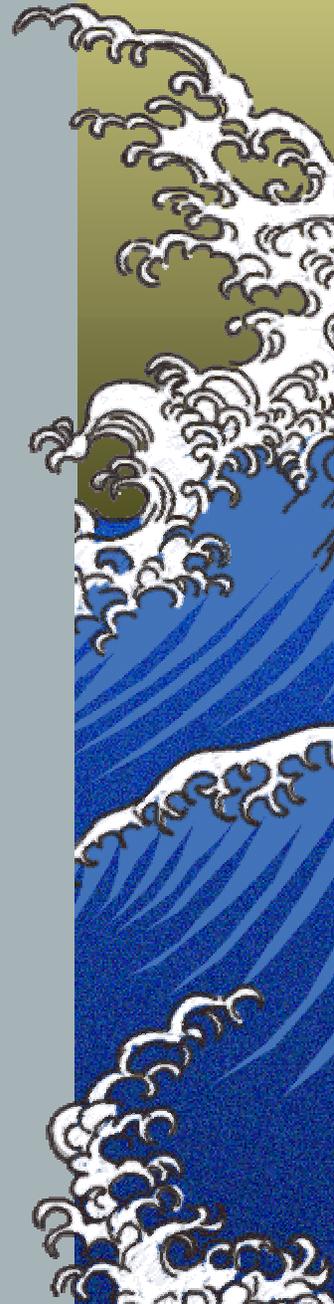
Client Services

Citizens in US *State Department* *Passport Services*	*Citizens Abroad* *State Department* *Overseas Citizens Services*
Non-Citizens in US *DHS* *Services & Enforcement*	*Non-Citizens Abroad* *State Department* *Visa Services*
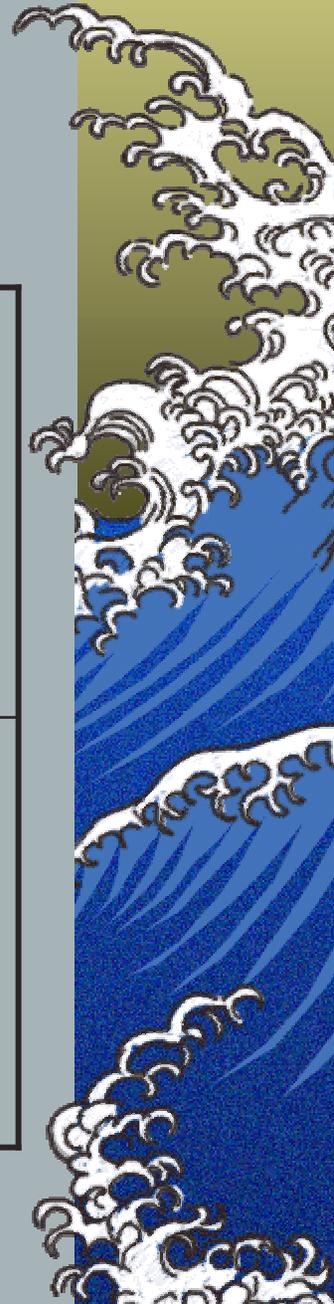
Visa Services

- *INA 214(b) states that an alien is an intended immigrant unless proved otherwise*
- *Strong ties to their native country*
- *Most countries require visas*
- *Visa Waiver Program Countries*
- *Short term business or visits*
- *3 Conditions: MRP, <2% fraud, overstay*
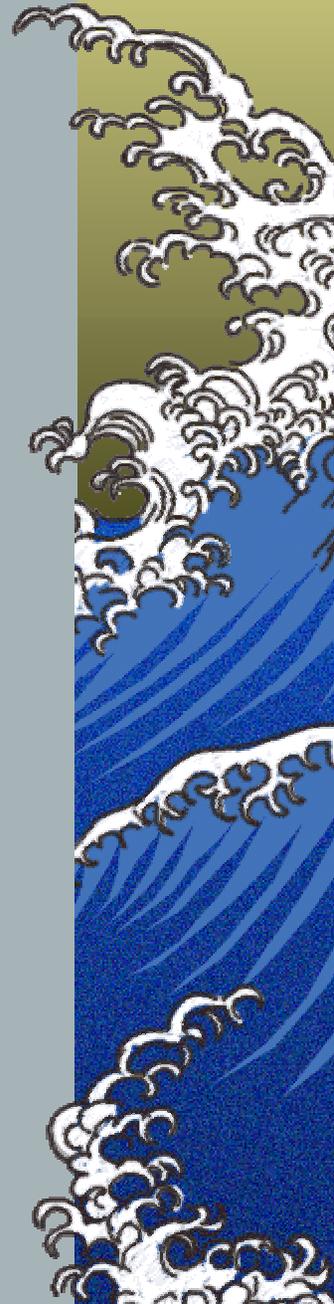
Visa Waiver Program Countries

Andorra	Iceland	Norway
Australia	Ireland	Portugal
Austria	Italy	San Marino
Belgium	Japan	Singapore
Brunei	Liechtenstein	Slovenia
Denmark	Luxembourg	Spain
Finland	Monaco	Sweden
France	Netherlands	Switzerland
Germany	New Zealand	UnitedKingdom
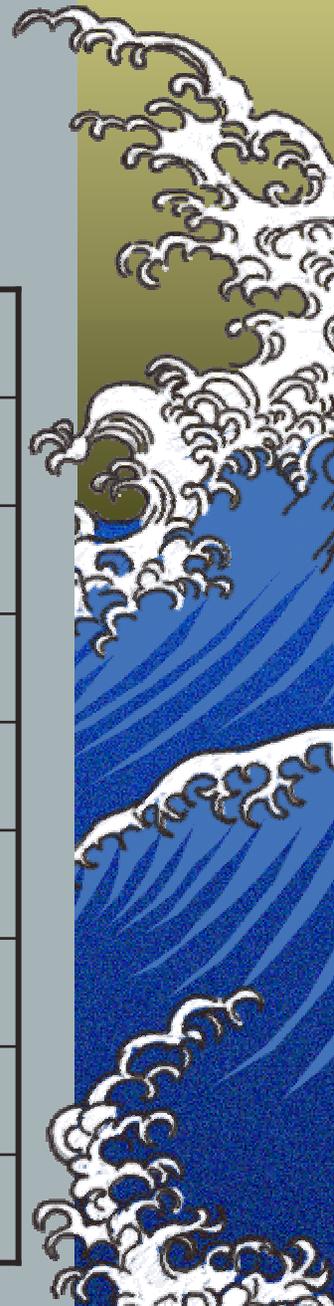
Travel Documents

- *US Passport book*
- *US Non-Immigrant Visa label*
- *US Immigrant Visa form*
- *Border Crossing Card*
- *Marad-Seaman's ID*
- *DHS-Refugee Travel Doc,Reentry Permit Permanent Resident Card*
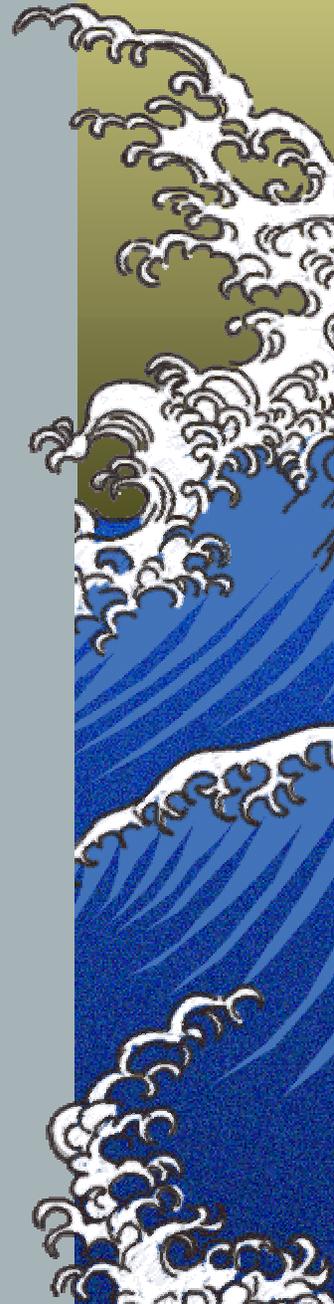
Legislative Drivers

- *PATRIOT Act*

- *Enhanced Border Security and Visa Entry Reform Act*

- *Clear intent to get Biometric ID on every alien entering the US*

- *Sect 303 (b) biometric per NIST in US Visa*

- *Sect 303 (c) biometric per ICAO in Visa Waiver Countries' passports → Ours too!*
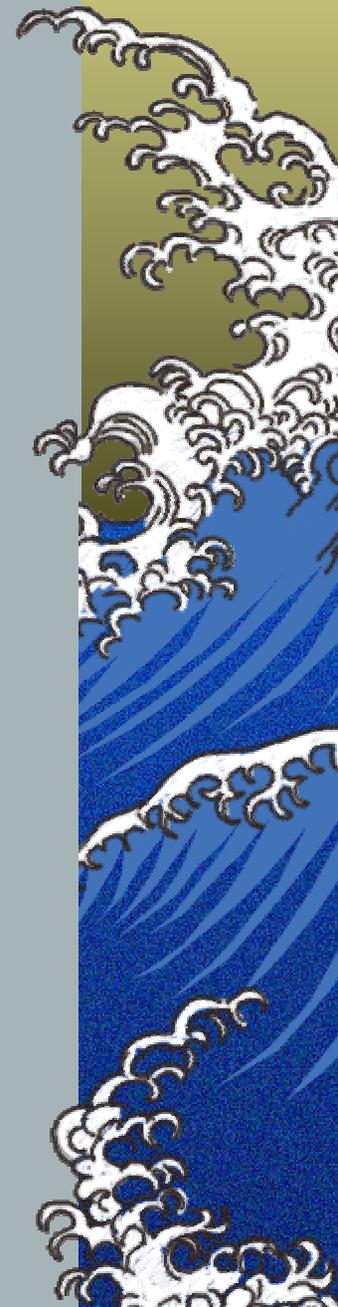
Federal Government "Card" Technology Requirements

- *Not talking about ID/Building Pass Cards*
- *Permanent Resident (Green) Card*
- *Border Crossing Card*
- *INSPass Card*
- *In May 2003, ICAO chose facial image as biometric of choice, and contactless chip as storage medium of choice for Travel Docs*
- *Adapt NISTIR-6887 GSC-IS v2.1 (PAIWG) Contactless work to non-Card platform*
- *How will this play out?*
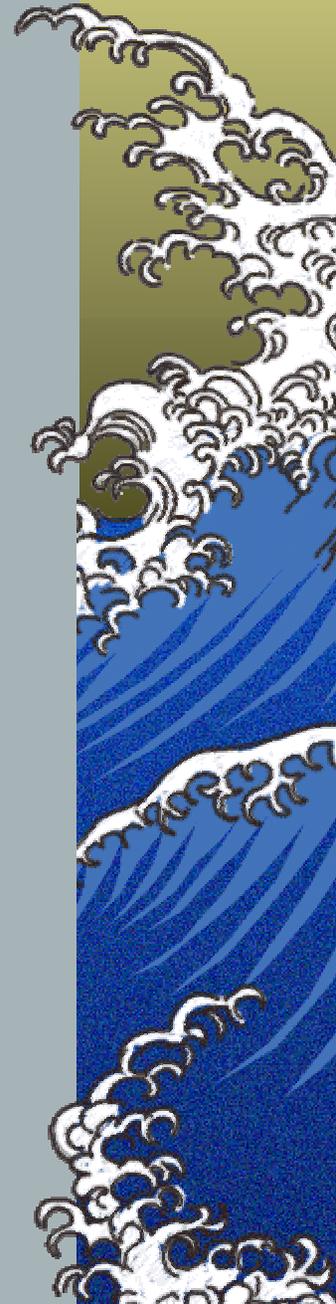
Card Technology Business Case Analysis

- *Success Story-PhotoDig US Passport*
- *Hypothetical Example: Passport "Card"*
- *Case For: compact, fast, huge memory*
- *Case Anti: Not for all countries, not visa-able, update/mod difficult, common opsys*
- *Biometric: speed & level of certainty*
- *Business Case include Policy & Laws as well as Standards, Risk, Security, Cost*
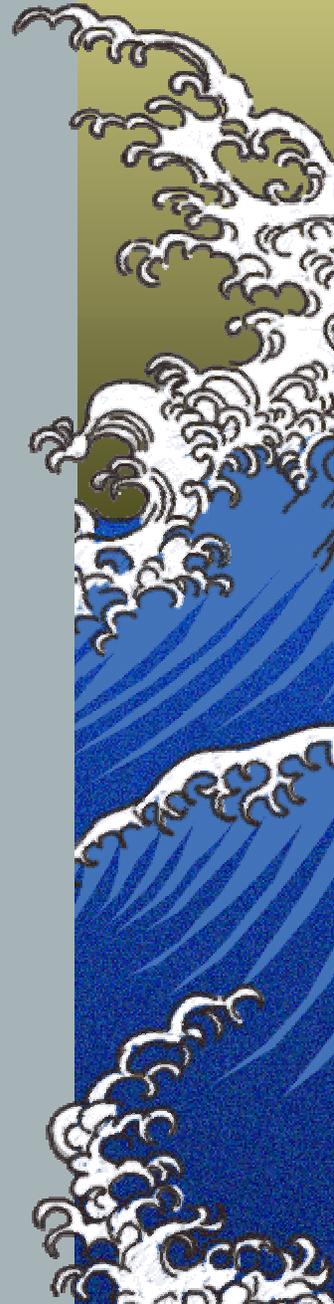
Current Card Technology Capabilities-Passports

- *In tender phase of seeking information on how to allow a contactless chip of sufficient size (32K min) to be embodied into a passport book platform so that it will function and read on standard ISO/IEC 14443 readers.*

- *Assumptions: GPO remains book maker, Toppan printers used for personalization*
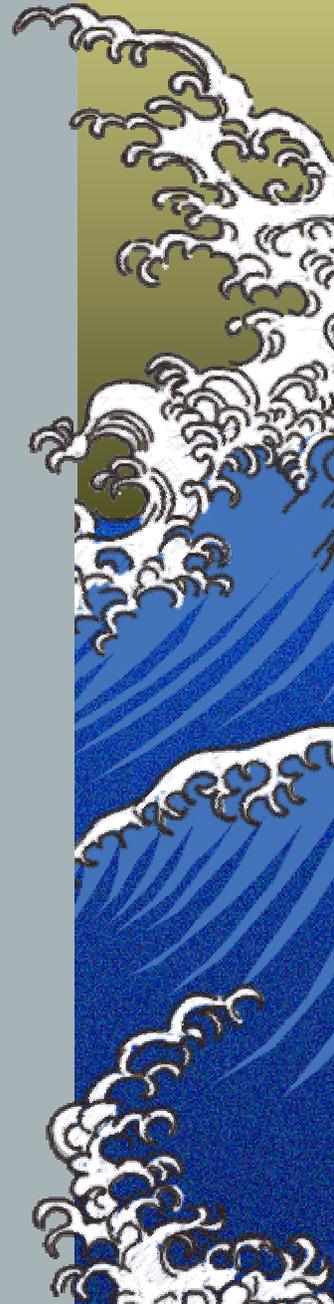
Current Card Technology Capabilities-Other Documents

- *Visa Label hard to add contactless chip*
  - *Multiple visas could cross-talk*
  - *Intaglio not compatible with silicon chip*
  - *Accountability of separate smart label*
- *Remote Card Production or e-Visa*
- *Refugee/Reentry Documents same structure as Passport*
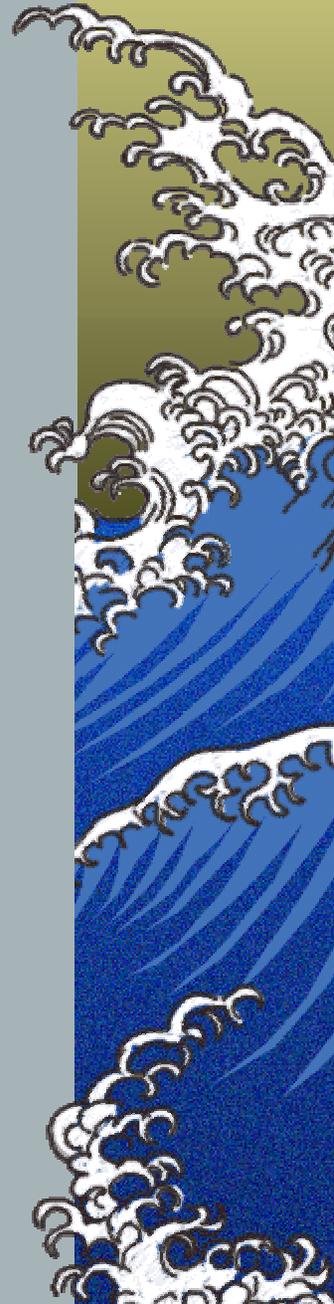
Multi-Technology Integration Requirements/Issues

- *ICAO working multiple technologies since 1997-not limited to ISO 7810 cards*
- *Iterative redundancy inherent in multi-technology cards—cui bono?*
  - *Support legacy readers or systems?*
  - *Allow reading among different users?*
  - *How many iterations proves identity?*
  - *How much cost can the system absorb?*
- *What is the back-up to the higher technology?*
- *How much more efficient is the new system?*
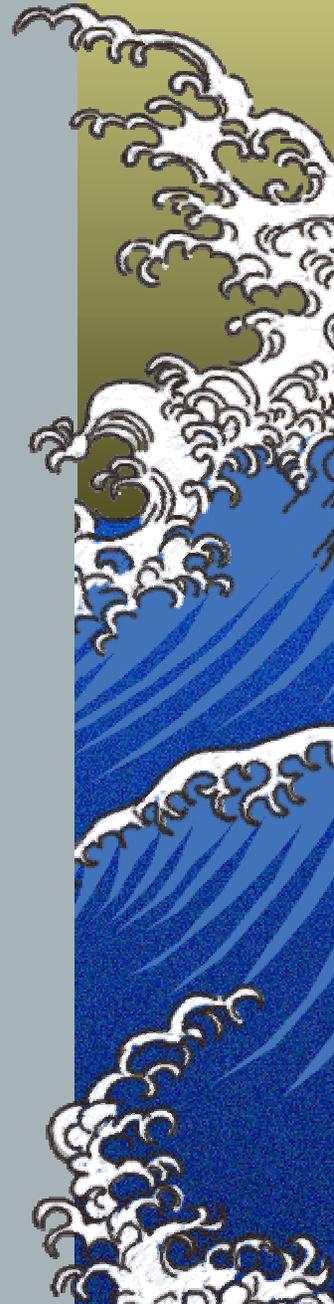
Interoperability Requirements/Issues

- *"Plug Compatible" problem*
- *Who's reading what's written?*
- *6-pin or 8 pin? ID-1 antenna or larger?*
- *Who do you trust to write, and what's their authentication?*
- *ICAO NTWG acts as liaison to facilitate communication, ensure commonality*
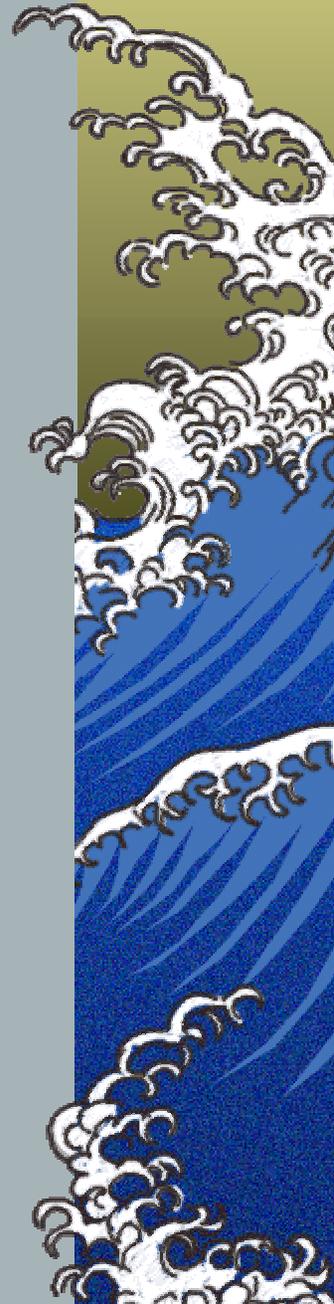
Privacy and Security Issues

- *Both Privacy & Security are subjective*
- *Strong national, religious and ethnic overtones guarantee intense discussion*
- *Can a 7810-based technology enable privacy? Privacy from who?*
- *Can a 7810-based technology enable security? Security from who or what?*
- *Can biometrics be the saving grace?*
- *All document components have to contribute to security*
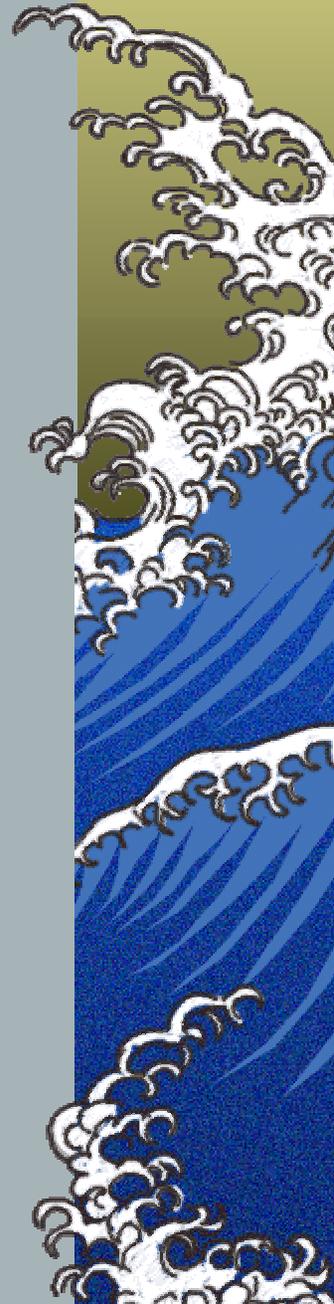
Privacy and Security

- *Both Privacy and Security are objective*

- *Seaman's ID chose biometric to be minutia based, portrayed in numbers in a bar code, such that the original fingerprint cannot be recreated.*

- *Security is not just strong PKI, but the unique combination of data, materials and processes that comprise the protection of the data and the document that protect the person.*
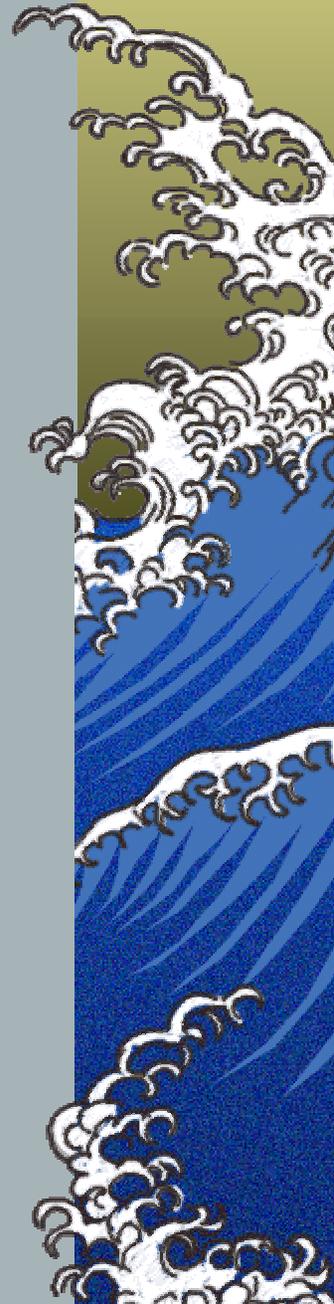
Technology Road Map and Gap Analysis

- *GAP:Durability Tests!! Need a consensus on tests and performance levels. Now!*

- *GAP: Inability of biometrics to interoperate on any but the image level.*

- *GAP: Tests for comparison of optical effectiveness and clarity of holograms or diffraction gratings*
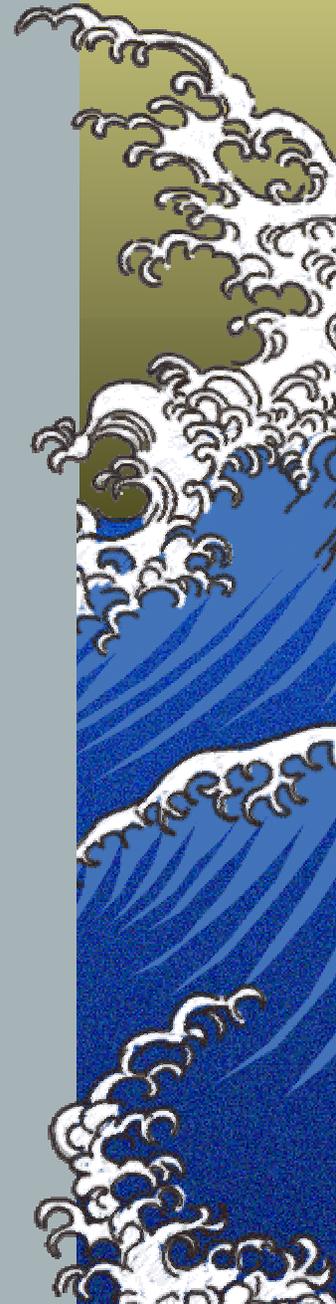
Technology Road Map and Gap Analysis

▲ *MAP: How to partition data needed for each element of transportation process to have all the info they need and not more.*

▲ *MAP: How to show American public that the technology can be an asset, not another obstacle or another intrusion*

▲ *MAP: Leverage technology to reduce huge amount of time wasted in inspection and re-inspection; make life better, not worse*

In Closing….

- *Get involved in standards work*
  - *National & ISO Committees*
  - *Specific standards eg AAMVA, ICAO*
- *Sell to the standards*
- *Become an advocate for the standards*
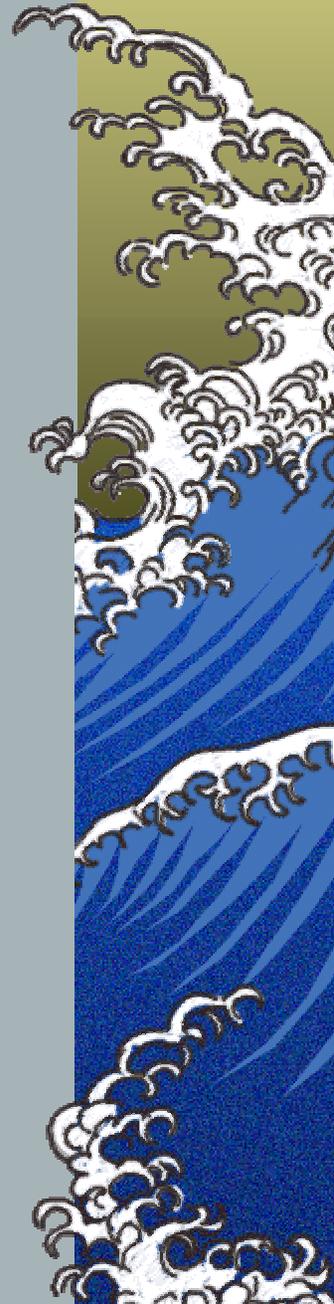
Thanks for your Attention!

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