

Solving protocol interoperability issues through match on secure service.

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What issues?

- Biometric devices for Physical Access Control (PAC) do NOT conform to a common standard for low level protocol communications.
- BioAPI in it's current form does not solve this issue since devices are not each connected to a a dedicated PC.
- Wide range of communications mediums for vendor devices:
 - RS232
 - RS485
 - Composite Video
 - IP
 - Possibly even USB
- Multiple physical architectures often necessary.



So what?

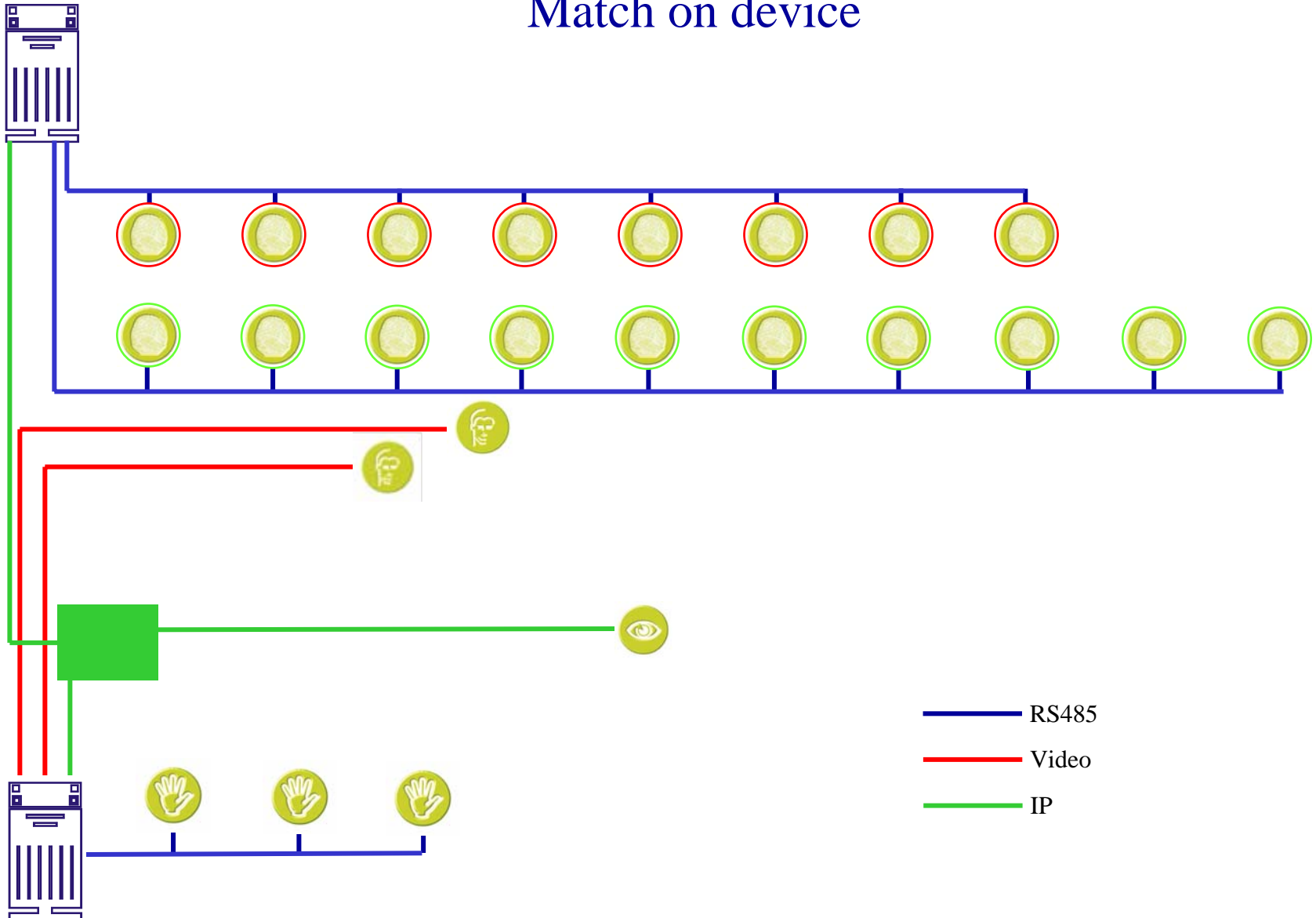
In large, complex, multi-technology environments:

- Expensive to implement.
- Highly complex to install and maintain.
- Physical architecture often not re-useable.
- Multiple front-ends make management virtually impossible.
- Very difficult to perform complex fusion for multi-modal systems.



The architectures

Match on device



The Disadvantages

- Very seldom, if ever, encrypted comms.
 - Eavesdropping
 - Replay attacks
- Template storage on device at door seldom encrypted.
- No direct interchange of devices on same comms infrastructure. (No plug and play)
- Difficult to fuse biometrics since decisions are made and executed at the door.

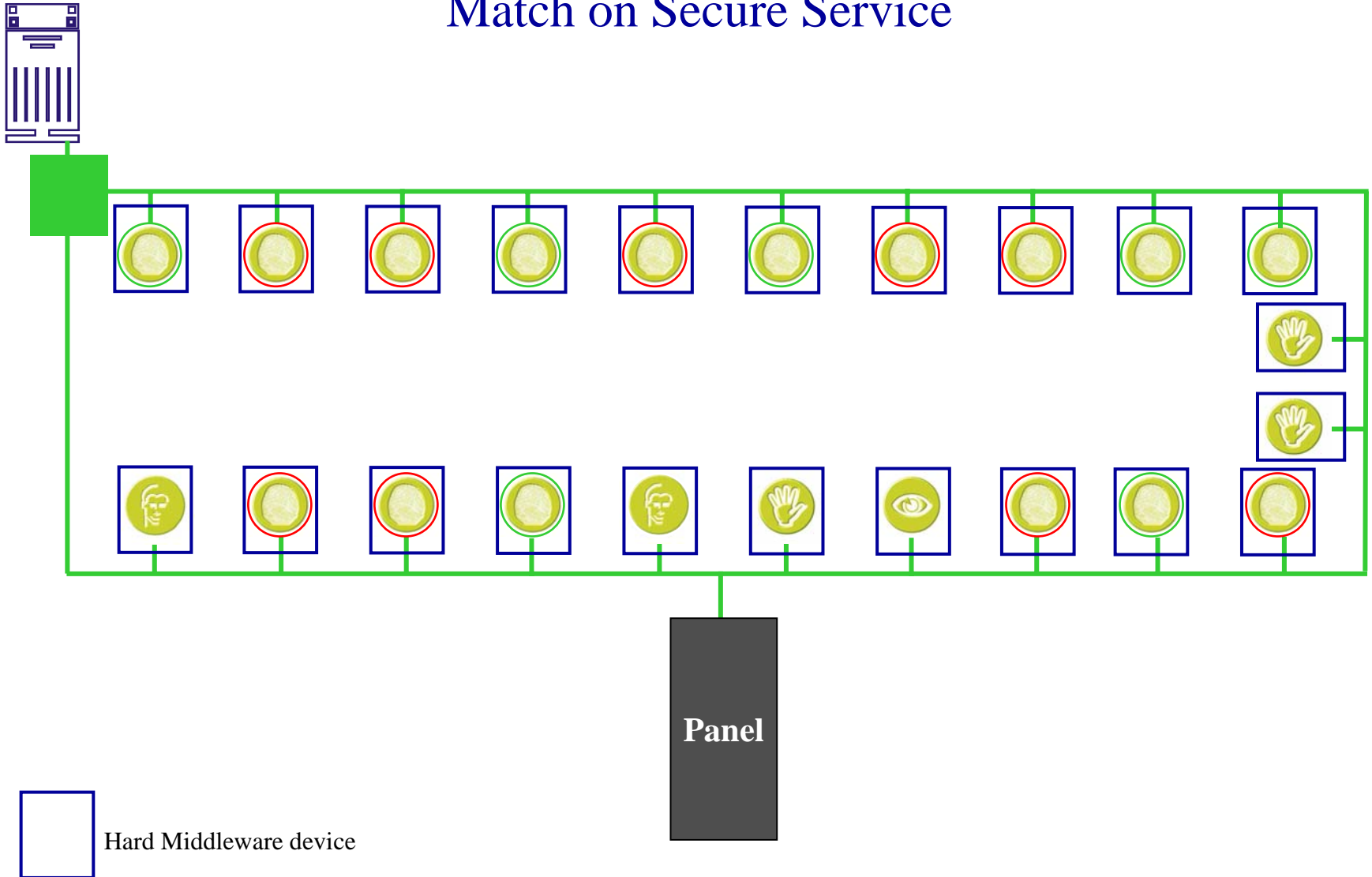
The Advantages

- Offline processing
- Marginally faster processing
- Possibly less prone to casual hack attempts



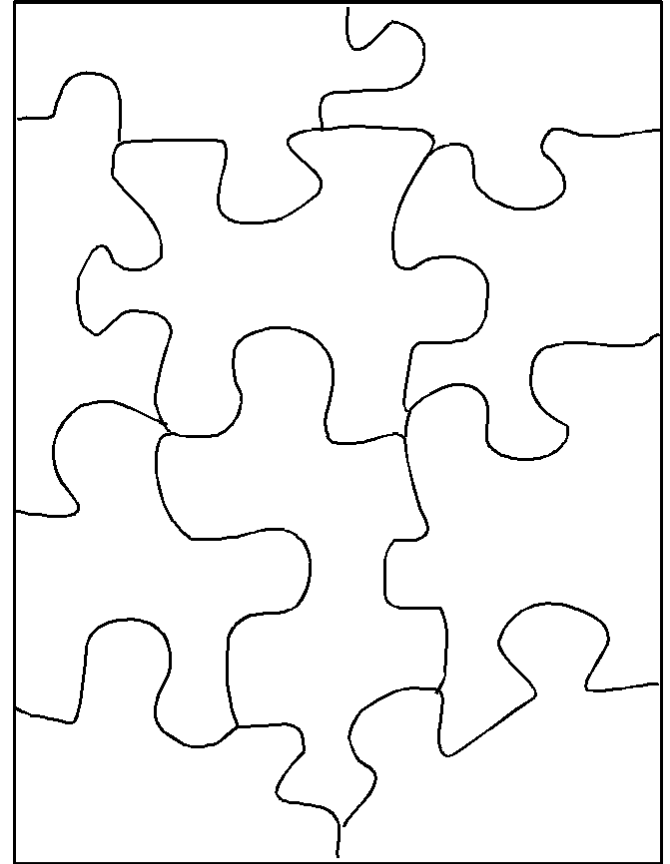
The architectures cont...

Match on Secure Service



The Components

- Software component = Soft Middleware
 - Comms drivers
 - Addressing system
 - Template management
 - Single front-end
- Hardware component – Hard Middleware
 - Comms protocol converter
 - Addressable
 - Other interfaces (e.g. Wiegand)



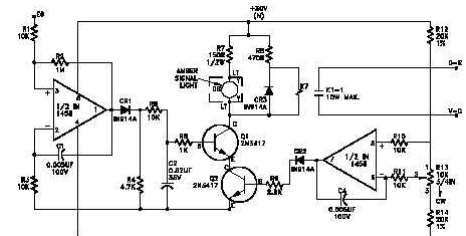
The Vendors

- Two types of matching depending on vendor technology:
 - Logical matching = Capture sample at device but match on server.
 - Physical matching = Capture sample at device and match on device.



The Design

- Understand low level protocols from each vendor.
- Write low level “drivers” for server matching system for each vendor.
- Convert disparate protocols to common protocol.
- Hardware address devices and devise software addressing schema.
- Devise software management system for biometric data (preferably standardized structure).
- Integrate algorithms for logical processing devices.



The Benefits

- Single wiring architecture.
- Plug and play hardware.
- Link devices together simply for multi-biometrics.
- Offers multiple fusion options since decisions are not made at the door.
- Secure comms between devices and server possible.
- Re-useable architecture.



Thank you

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