AP-EIP70 Secure Emergency Call IP Phone

TLS/SRTP Protocol

AddPac Technology

Sales and Marketing

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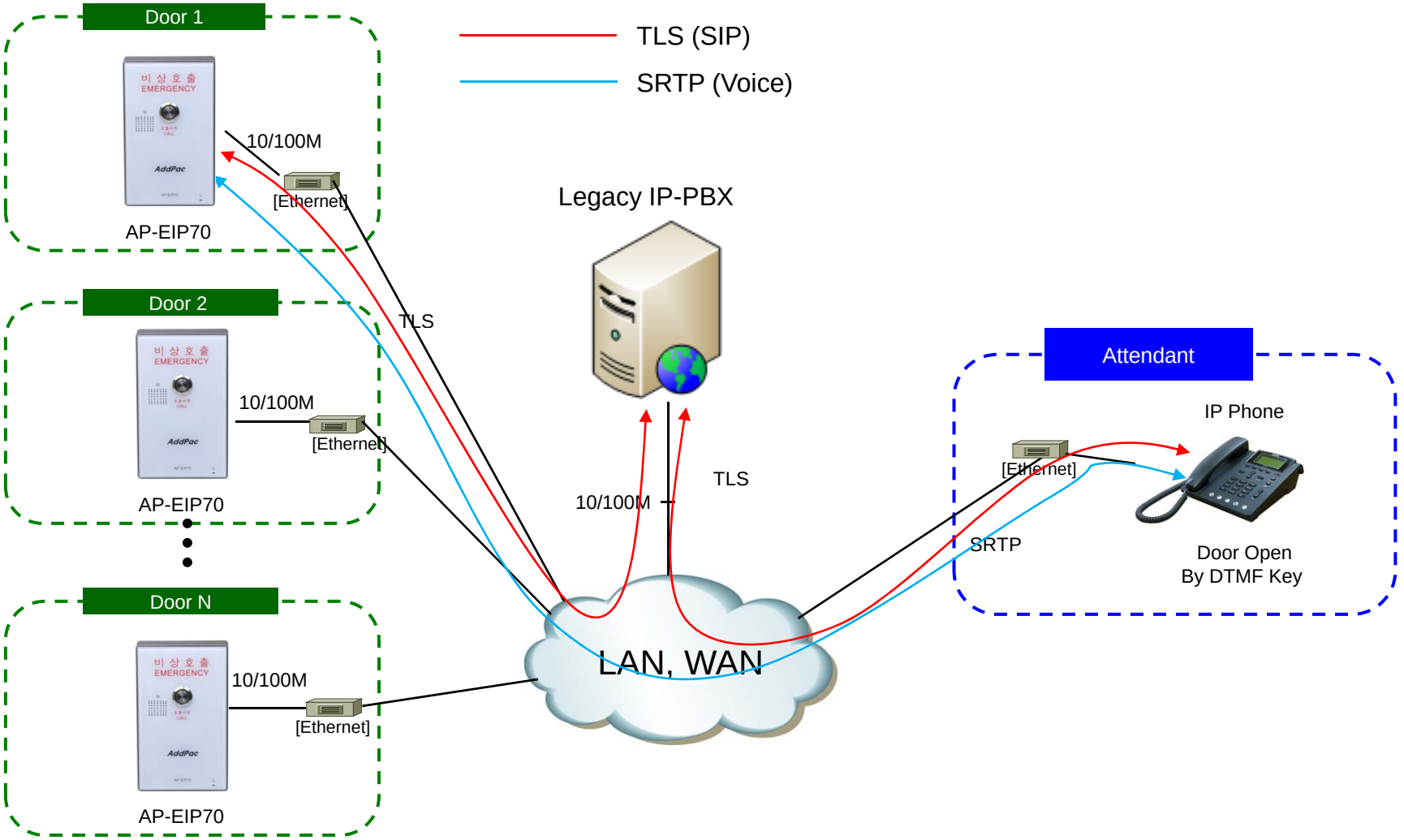
- Secure Emergency Call IP Phone Service Diagram
- Secure VoIP Protocol & Algorithm (TLS & SRTP)

Secure Emergency Call IP Phone Service (Voice Only)

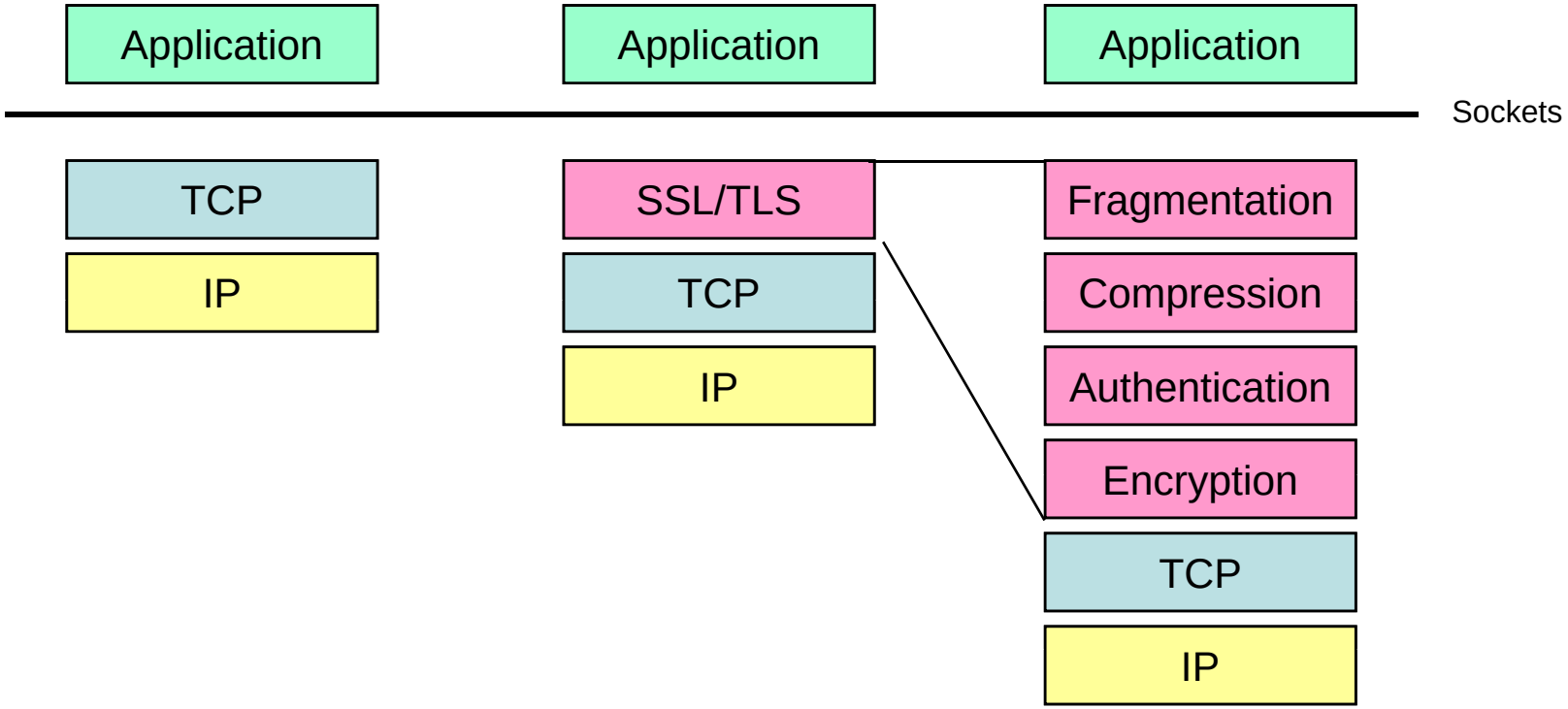


Secure Emergency Call IP Phone Service Features

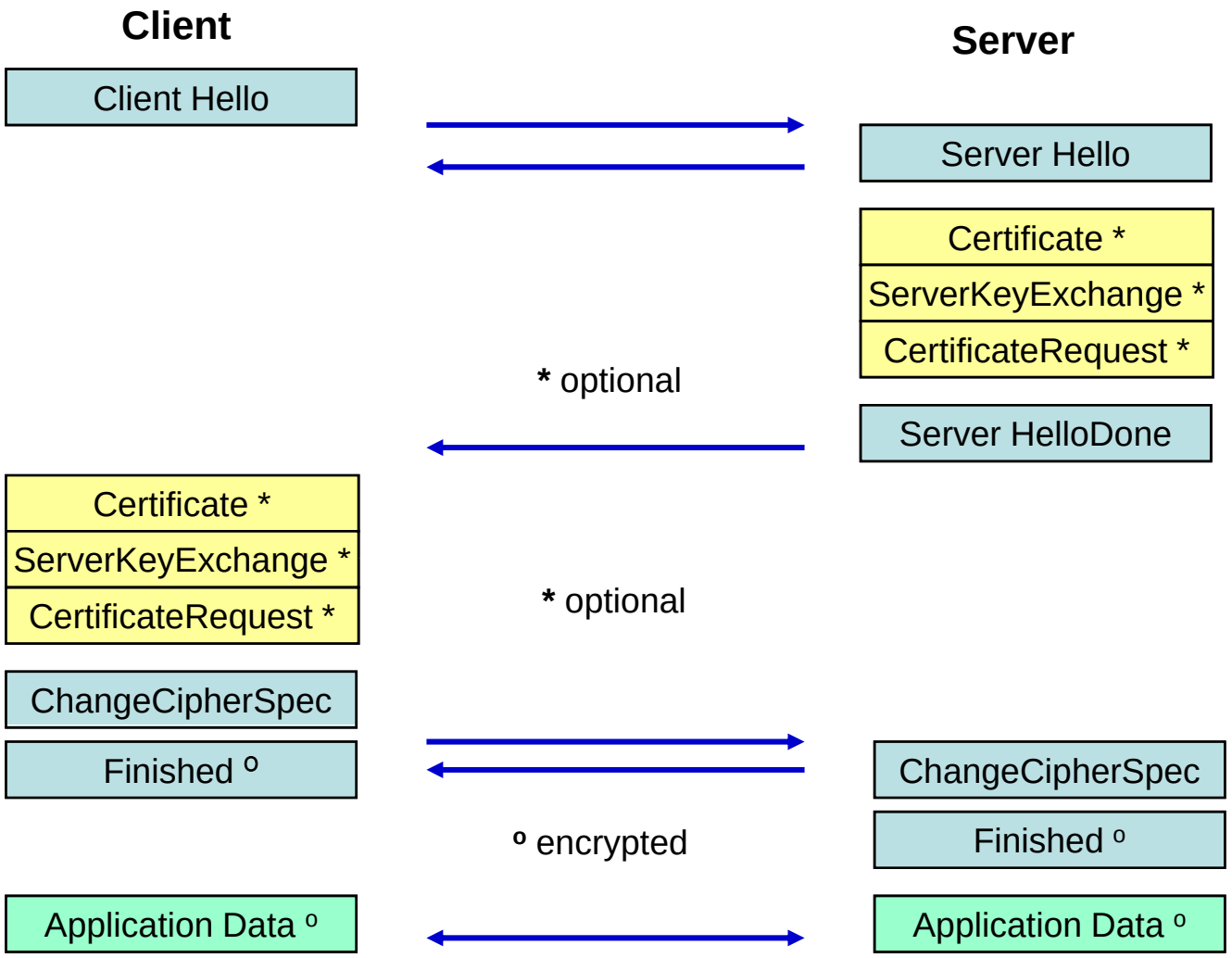
TLS Features for Secure VoIP Service

- Support for TLS 1.1, TLS 1.0 and SSL 3.0 protocols
- Since SSL 2.0 is insecure it is not supported.
- TLS 1.2 is supported but disabled by default.
- Support for TLS extensions: server name indication, max record size, opaque PRF input, etc.
- Support for authentication using the SRP protocol.
- Support for authentication using both **X.509 certificates** and OpenPGP keys.
- Support for TLS Pre-Shared-Keys (PSK) extension.
- Support for Inner Application (TLS/IA) extension.
- Support for X.509 and OpenPGP certificate handling.
- Support for X.509 Proxy Certificates (RFC 3820).
- Supports all the strong encryption algorithms (including SHA-256/384/512), including Camellia (RFC 4132).
- Supports compression (optional).
- CRLs
  - CRL (Certificate Revocation List)
  - OCSP (Online Certificate Status Protocol, RFC2560) (via HTTP)
- Hash Algorithm : SHA-1, MD5

SSL/TLS Protocol Layers



SSL/TLS Handshake



TLS Comparison with OpenSSL

- **Protocol Support**

	SSLv2.0	SSLv3.0	TLSv1.0	TLSv1.1	TLSv1.2
AddPac	No	Yes	Yes	Yes	Yes
OpenSSL	Yes	Yes	Yes	No	No

- **Key Exchange Algorithms**

	Anon-RSA	RSA	RSA Export	DHE-RSA	DHE-DSS	SRP-DSS	SRP-RSA	SRP	PSK	ECC
AddPac	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
OpenSSL	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes

- **Encryption Algorithms**

(*1) **40-bit encryption is insecure**

	AES-256-CBC	AES-128-CBC	3DES CBC	DES CBC	RC4-128-CBC	RC4-40(*1)	RC2-40(*1)	Camellia	SEED	ARIA
AddPac	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OpenSSL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No

SRTP (Secure Real-time Transport Protocol) Features

- RFC4568, Standards Track, Session Description Protocol (SDP) Security Descriptions for Media Streams
- RFC 3711, Proposed Standard, The Secure Real-time Transport Protocol (SRTP)
- RFC 3551, Standard 65, RTP Profile for Audio and Video Conferences with Minimal Control
- RFC 3550, Standard 64, RTP: A Transport Protocol for Real-Time Applications
- RFC 2104, Informational, HMAC: Keyed-Hashing for Message Authentication
- Cipher Algorithm : ARIA, SEED, AES, DES(*), 3DES(*)

* Support at AddPac Specific SRTP

Thank you!

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