Web Services Security: SAML Token Profile

- presentation to OASIS Security Services TC
- at RSA in Burlington
- by Ron Monzillo
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MIDDLE

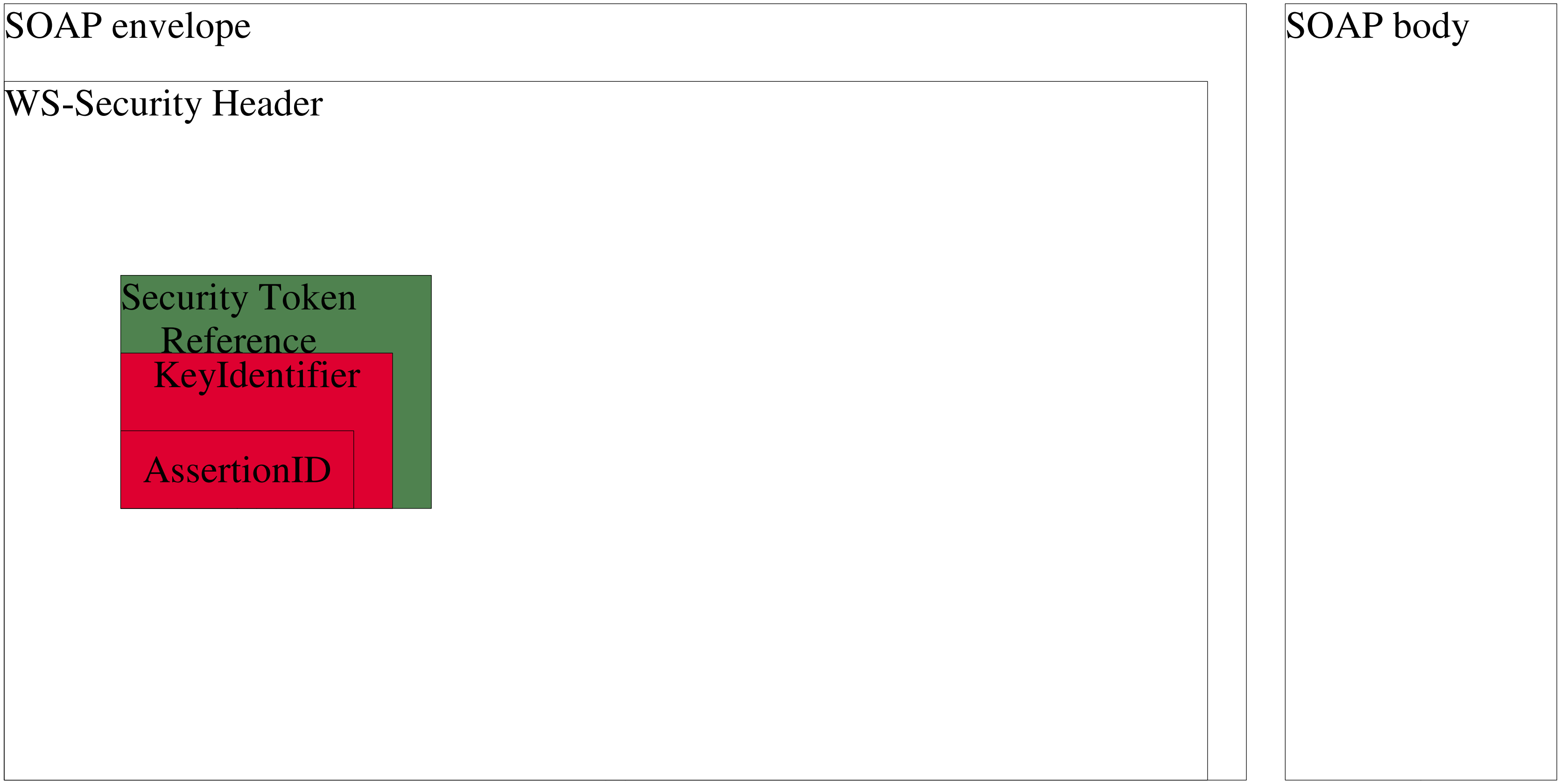
WS-Security Signature Model

- Security Token
  - Collection of (authority certified) claims
- Signature
  - Establishes signer identity, content integrity
  - Dependent on key binding claim
- Security Token Reference
  - Identifies security tokens to satisfy key binding dependencies
  - May encapsulate security token
- Data Reference
  - Identifies input to digest algorithm

Referencing SAML Assertions

- Key Identifier (remote, local implied)
  - ValueType = saml:Assertion
  - wsse:KeyIdentifier
    - saml:AssertionId
    - saml:Binding
    - saml:Location
- Direct or URI reference (not currently used)
  - remote and local references
  - Dependance on wsu:id (or xsd:id) attribute
    - otherwise overlap with key Identifier
- key name (not used)
  - depends on unique key name for assertion

(off-msg) Assertion Referenced From Header



SOAP envelope

WS-Security Header

Security Token Reference

KeyIdentifier

AssertionID

SOAP body

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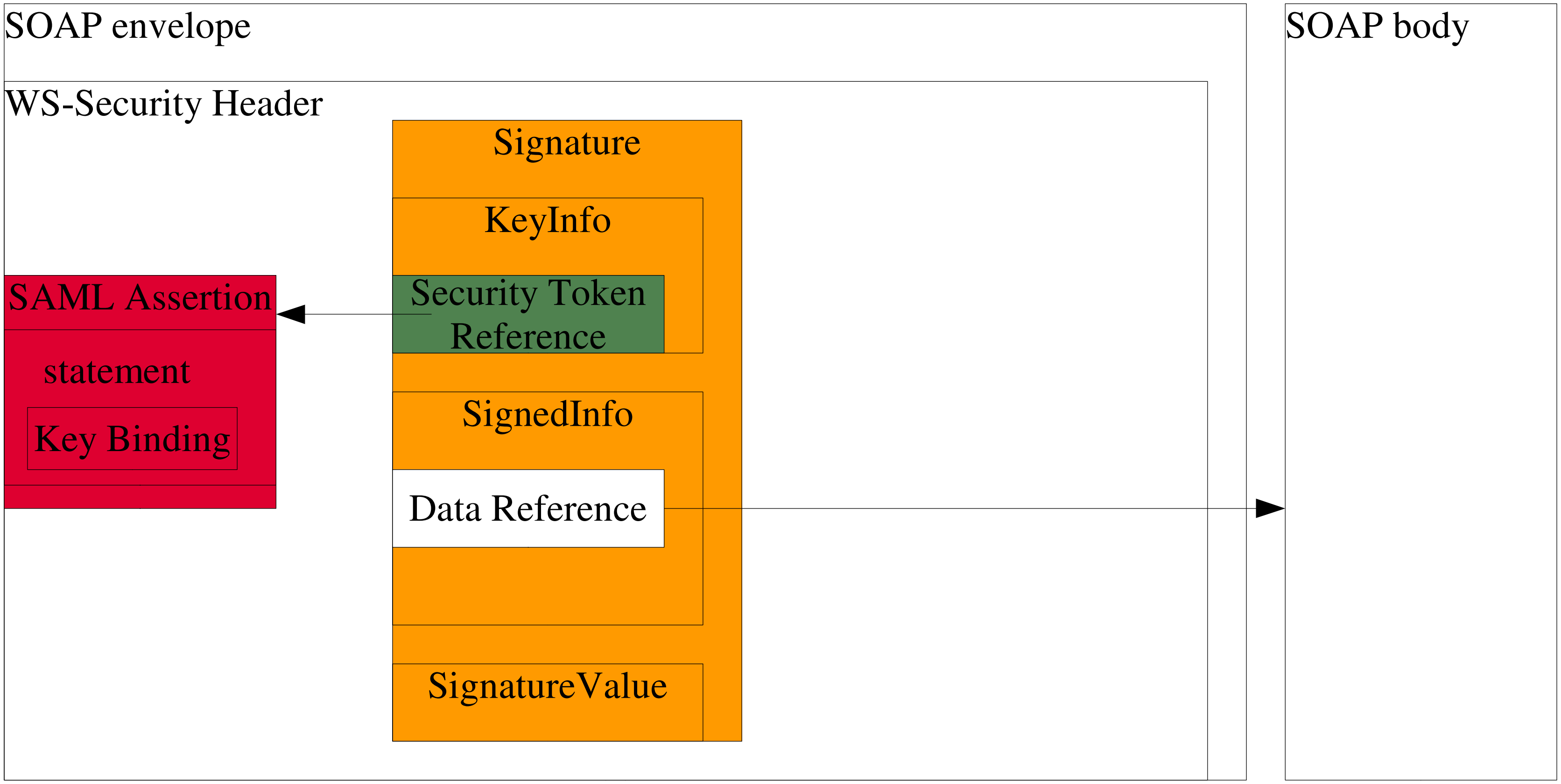
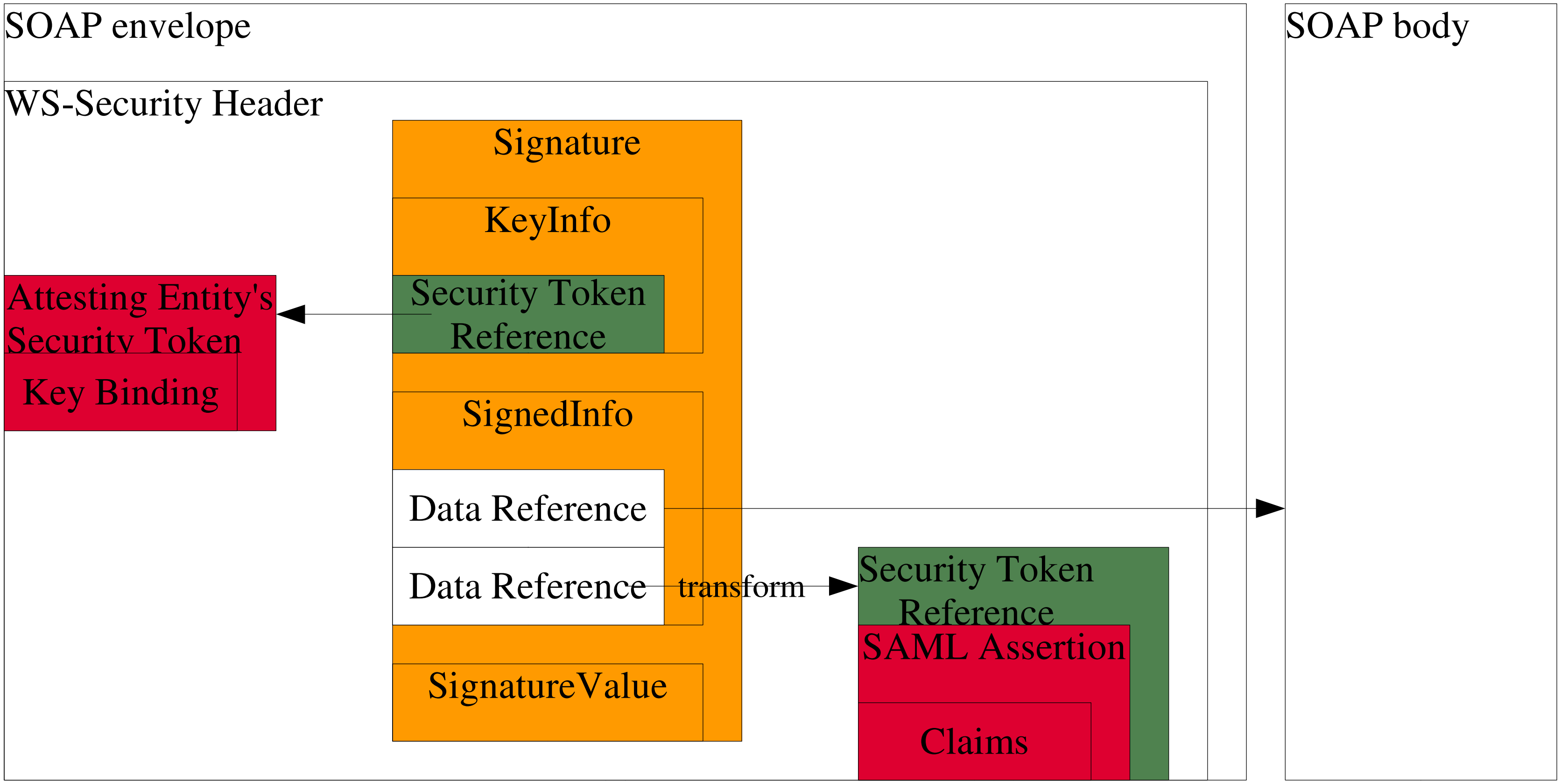
Holder of Key – Assertion Referenced From KeyInfo



Sender Vouches – Assertion Referenced From SignedInfo (note use of “Embedded”)



SOAP envelope

WS-Security Header

Signature

KeyInfo

Security Token Reference

Attesting Entity's Security Token

Key Binding

SignedInfo

Data Reference

Data Reference

transform

Security Token Reference

SAML Assertion

Claims

SignatureValue

SOAP body

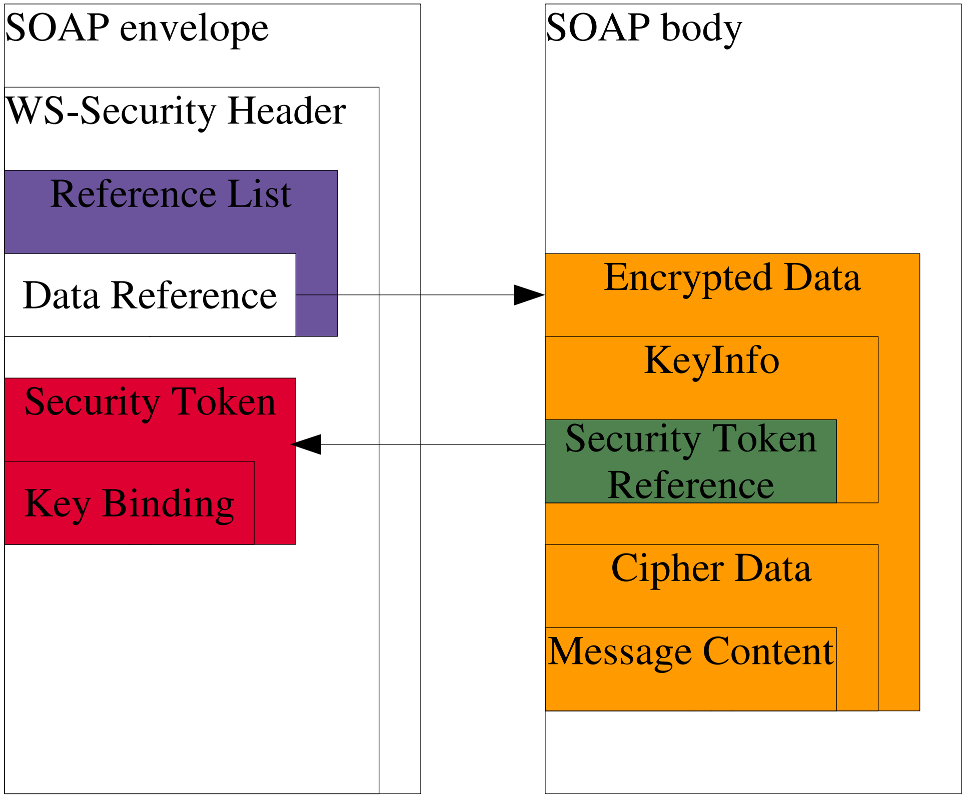
SAML protocol issues/questions

- Can an intermediate (via Sender vouches) reuse an assertion containing “artifact confirmed” statements?
- Can one request an assertion with statements featuring a particular confirmation method? key confirmation requirment?
- Can a statement with a sender-vouches confirmation method contain a confirmation key?
- Can the entity attesting for a holder-of-key statement be different from the subject of the statement?

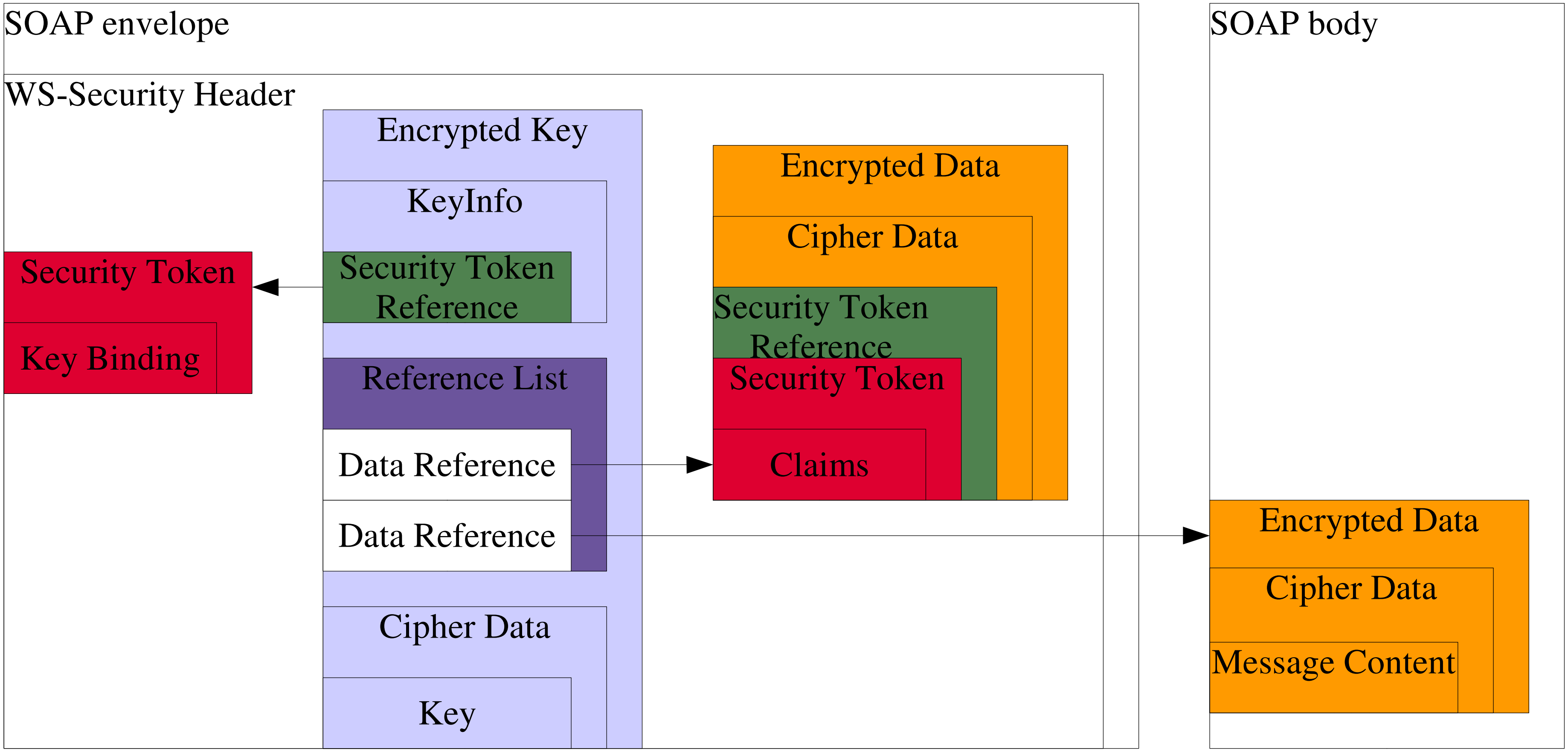
WS-Security Encryption Model

- Reference List
  - Identifies encrypted content
- Encrypted Data
  - Encapsulates encrypted content
  - May depend on key binding claim to identify encryption key
- Encrypted Key
  - Conveys encrypted key and Reference List
  - Dependent on key binding claim

XML Encryption Bound to SOAP (Using Reference List)



XML Encryption Bound to SOAP (using Encrypted Key)


SOAP envelope
WS-Security Header
Encrypted Key
KeyInfo
Security Token
Key Binding
Security Token Reference
Reference List
Data Reference
Data Reference
Cipher Data
Key
Encrypted Data
Cipher Data
Security Token Reference
Security Token
Claims
SOAP body
Encrypted Data
Cipher Data
Message Content