# Follow Me

# Security Integration Laurence Jordan



## **Context**

- Addition of security to FlexiNet/FollowMe
  - Decision to use SSL
  - Supplies authentication in FollowMe
  - Other aspects of security
    - Access control
    - Secured objects
- Follows on from work previously done by Ugai Tackanori



### SSL



- Key Exchange Algorithm
- Certificate
- Certificate Verify Option
- Encryption Algorithm
- Message Authentication Algorithm

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# Configuration Support

- Certificates
  - From file
- Algorithm triples
  - By selection of required algorithms
  - By selection of specific triples
- Check for trusted root in certificate chain
  - Option for client and server
- Client certificate requirement
  - Server access option



# SSL and Security

#### Communication

- Message authentication codes (signing) provides integrity.
- Message encryption provides confidetiality.

#### Certificates

- Based on an idea of a "hierarchy of trust".
- Given a copy of the X509 certificate for an authority, an SSL certificate can checked as having been issued by the authority by another via delegation from the authority.



# Binder (Crimson)

Server (generator)

protocol:
"sslrrp" or
"rrp"

Server Sockets
Client Sockets

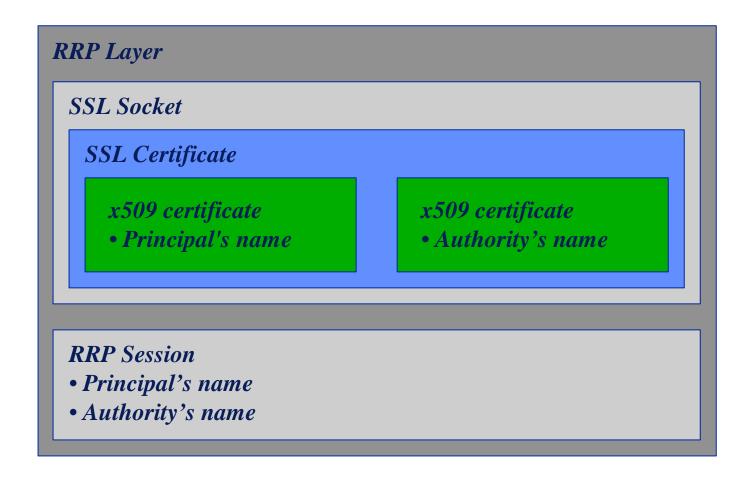
Client (resolver)

protocol:
"sslrrp" or
"rrp"

Client Sockets



# User Authentication





## Access Control

#### **Document**

- \*: author  $\Longrightarrow$  read
- \*: editor  $\Longrightarrow$  read
- \*: author  $\Rightarrow$  edit
- \*: author  $\implies$  annotate
- \*: editor  $\implies$  annotate
- \*: author  $\Longrightarrow$  **D** read
- \*: author  $\Longrightarrow$  **D** author
- \*: editor  $\Longrightarrow$  **D** editor
- Alice: author
- Bob: editor

