

## Reader

## Card

Generate random nonce

Random nonce

Nonce signature = ECDSA(  
Card private key;  
Random nonce)

[Nonce signature, CRSID,  
Group, Expiry, Card public  
key, Card signature]

Verify card signature:  
Check ECDSA(  
Terminal public key;  
CRSID|Group|Expiry|  
Card public key)

Check card expiry date not later  
than today.

Verify nonce signature:

Check ECDSA(  
Card public key;  
Random nonce)

Check group has access to this  
location.

If all checks pass, allow access.  
Otherwise, deny access.