

# UbiSec



**UBIQUITOUS SECURITY CONTROL V1.0**

# System Overview



- Technology demonstration simulating a door and panel access control mechanism using QR codes, CoAP over 6LowPAN and HTTP over panOulu
- Event participants “register” at the entrance using their QR codes
- An access control server keeps track of participants and their information and photos
- A separate access control mechanism is implemented for registered participants selected to sit at a panel

# Technology Overview



Admin

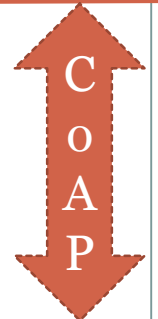


Users

Web and Access Control  
Server



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Panel Access  
Node

Display

Image  
Capture

QR

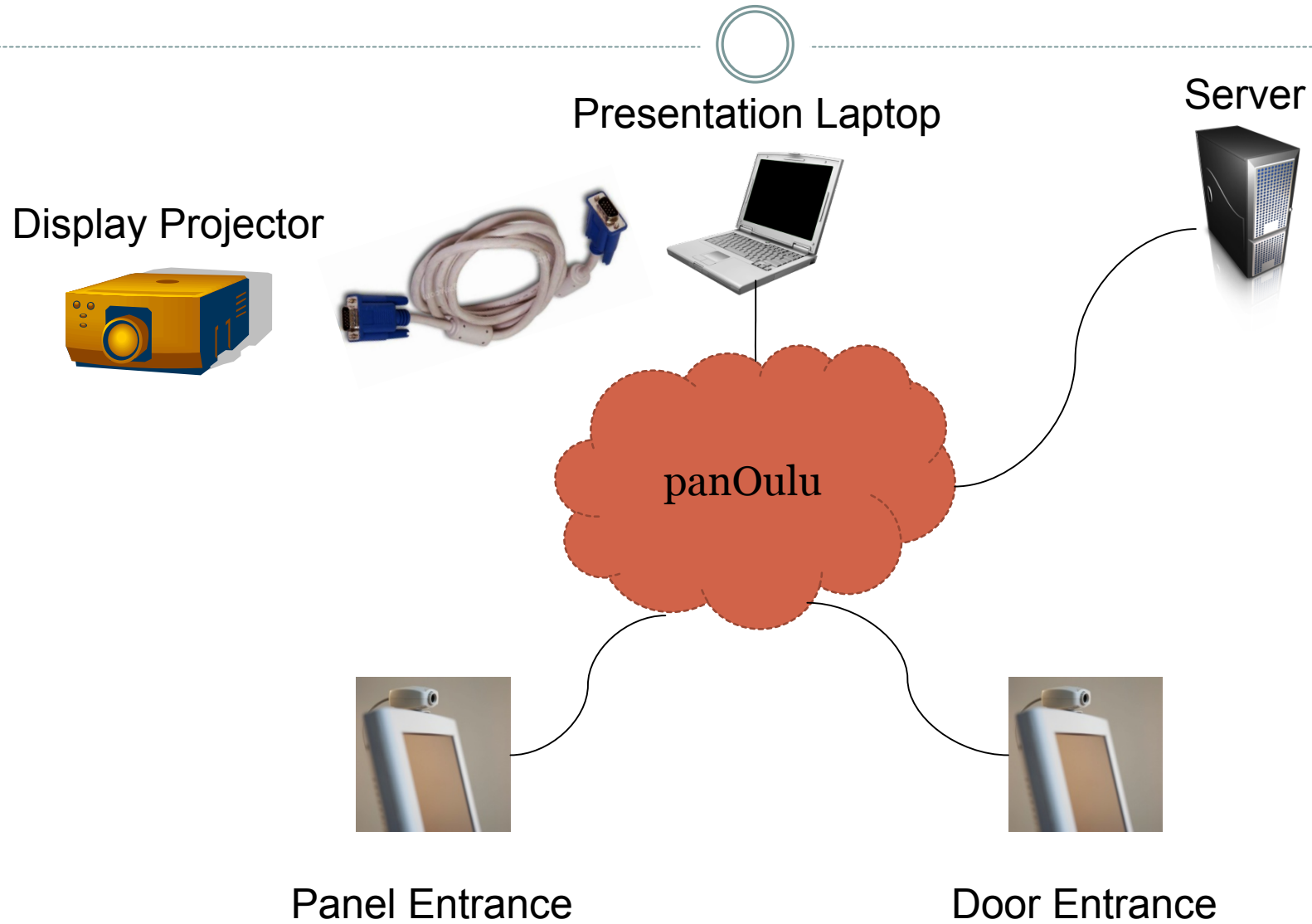
Door Entrance  
Node

Display

Image  
Capture

QR

# Component Layout

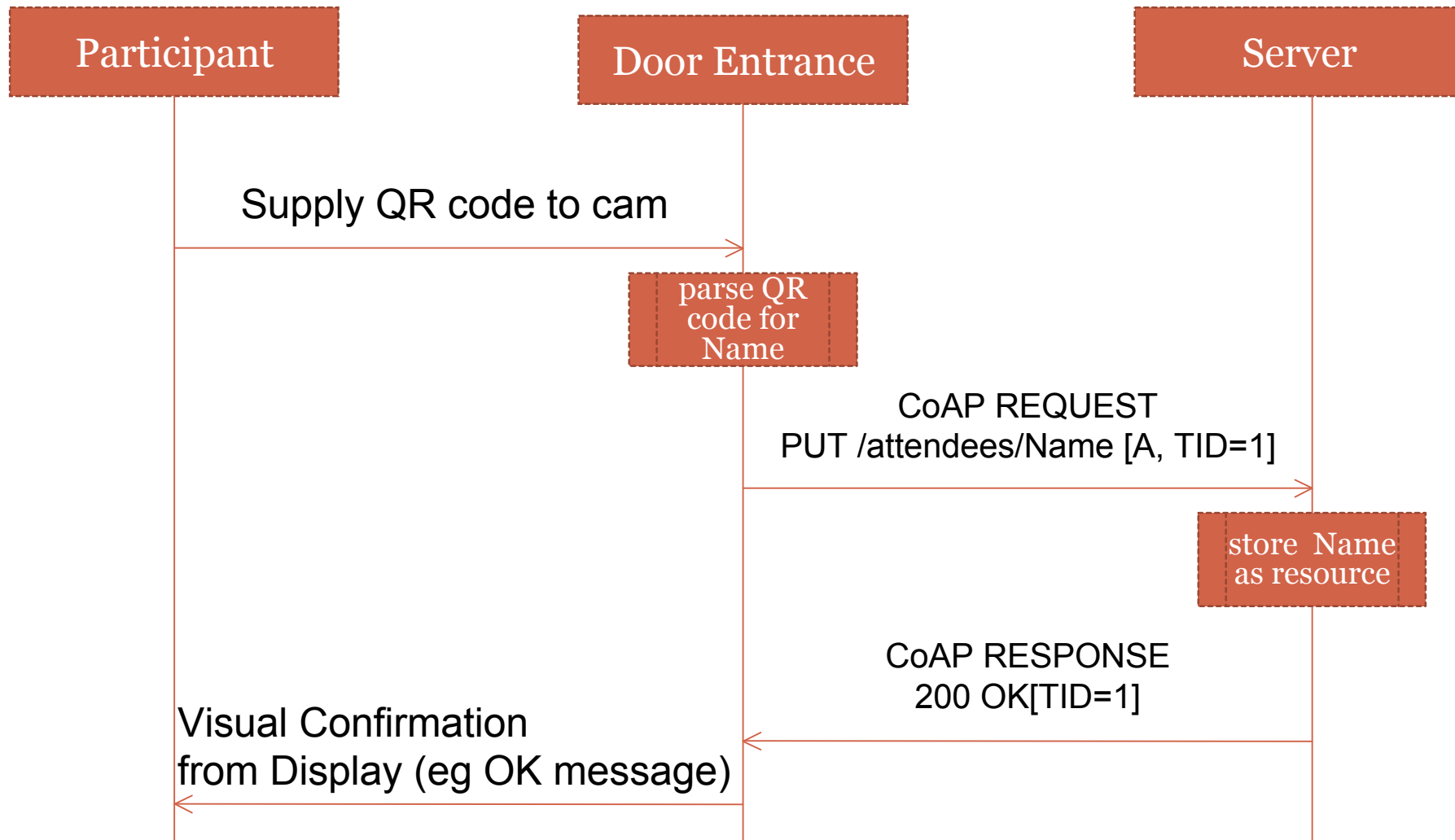


# Tasks

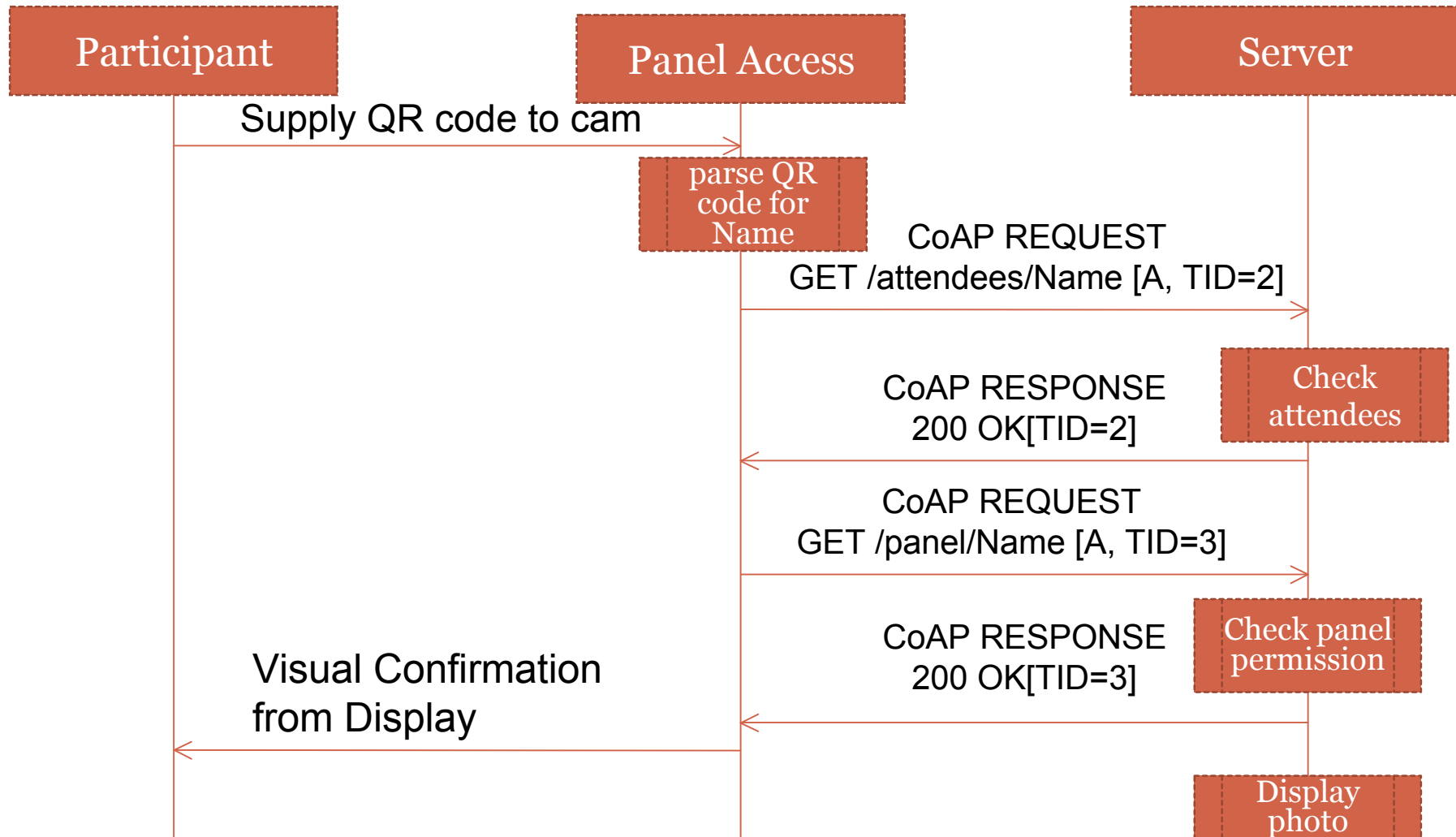


- Design sketch and specs
- QR code generation
- WADL resource design
- HTTP server with CoAP support
- Entrance machine
- Panel access machine

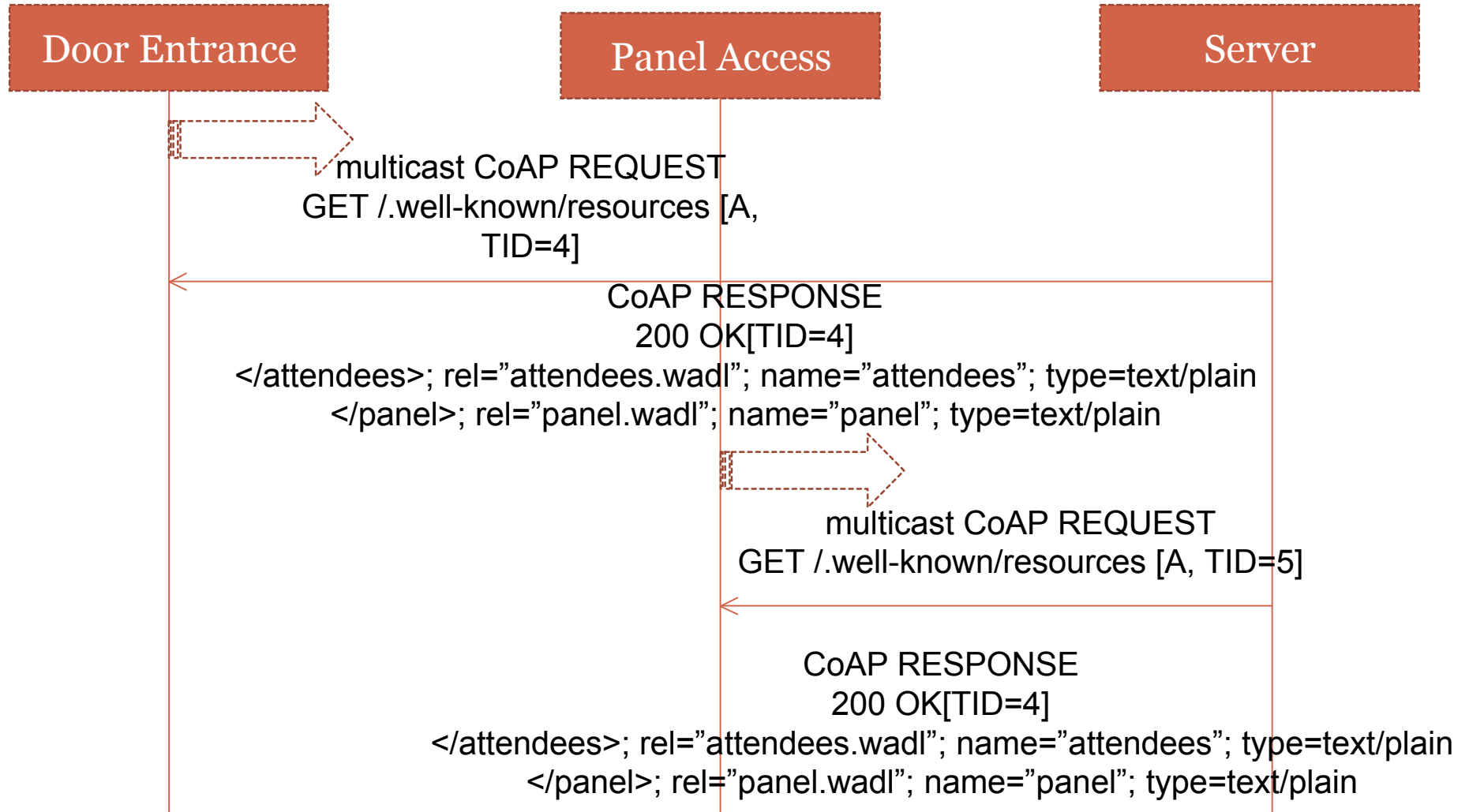
# Registration: Event Sequence



# Panel Access: Event Sequence (best case)



# CoAP Resource Discovery



# attendees.wadl



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<application xmlns="http://research.sun.com/wadl/2006/10">
  <resource path="/attendees">
    <method name="GET" id="Name">
      <response>
        <status="200"/>
        <fault status="404"/>
      </response>
    </method>
    <method name="PUT" id="Name">
      <response>
        <status="200"/>
        <fault status="404"/>
      </response>
    </method>
  </resource>
</resources>
</application>
```

# panel.wadl



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
  <application xmlns="http://research.sun.com/wadl/2006/10">
    <resource path="/panel">
      <method name="GET" id="Name">
        <response>
          <status="200"/>
          <fault status="404"/>
        </response>
      </method>
    </resource>
  </resources>
</application>
```

# QR code



- **Attributes**

- Name
- Affiliation
- Email Address
- Constant String: “UBI Summer School 2010”



# Demo



- **5 actors**
  - 4 attendees (3 valid, 1 invalid panel member)
  - 1 false player (invalid attendee, panel member)
- **Scenario**
  - System allows valid attendees to pass entrance door
    - ✦ Valid panel members pass panel access control
    - ✦ Invalid panel member will be blocked at panel access control
  - System blocks the false player at entrance door