

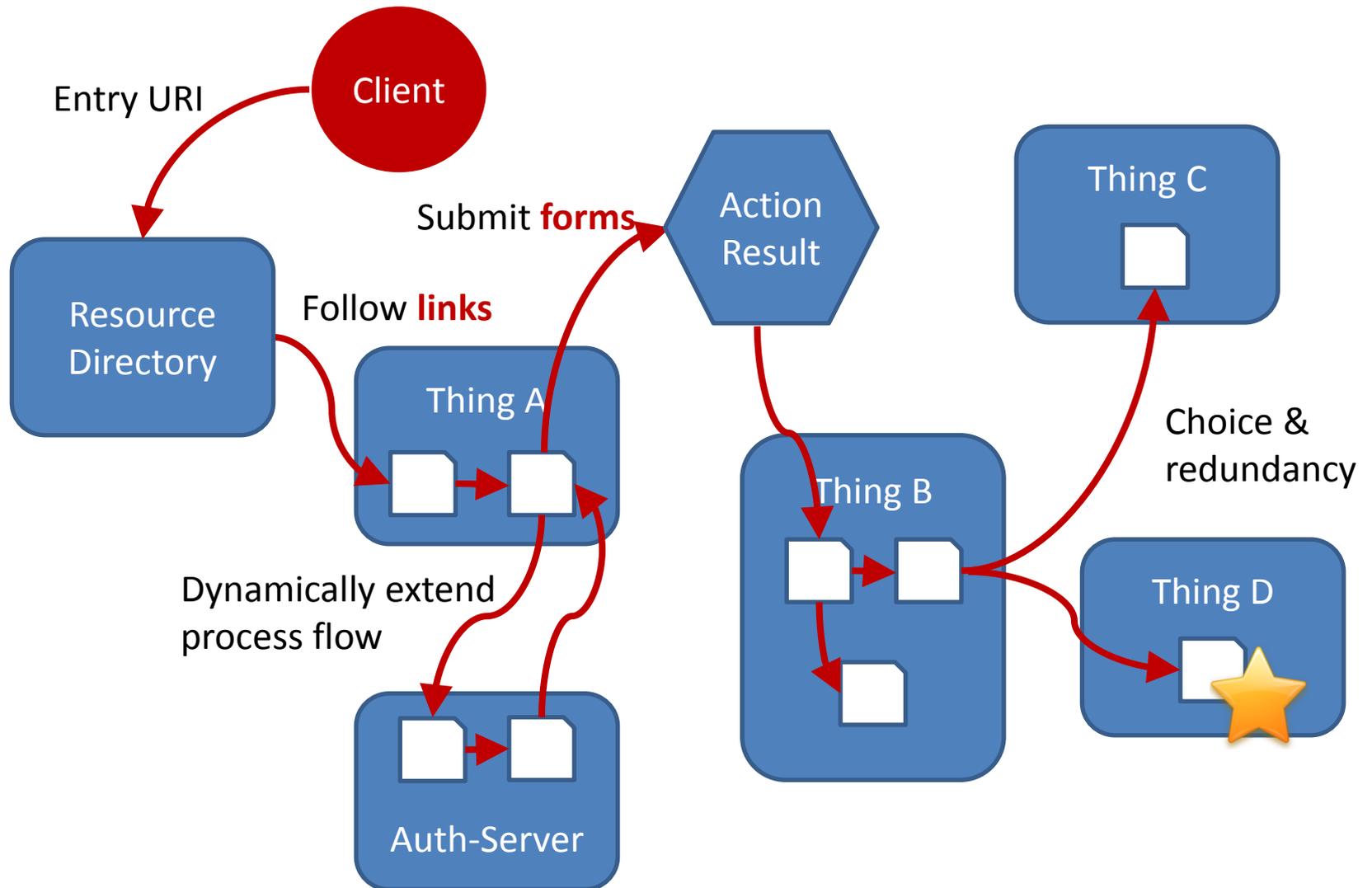
# **HATEOAS: Hypermedia-driven Actions and error handling**

W3C WoT F2F, Osaka, 2017

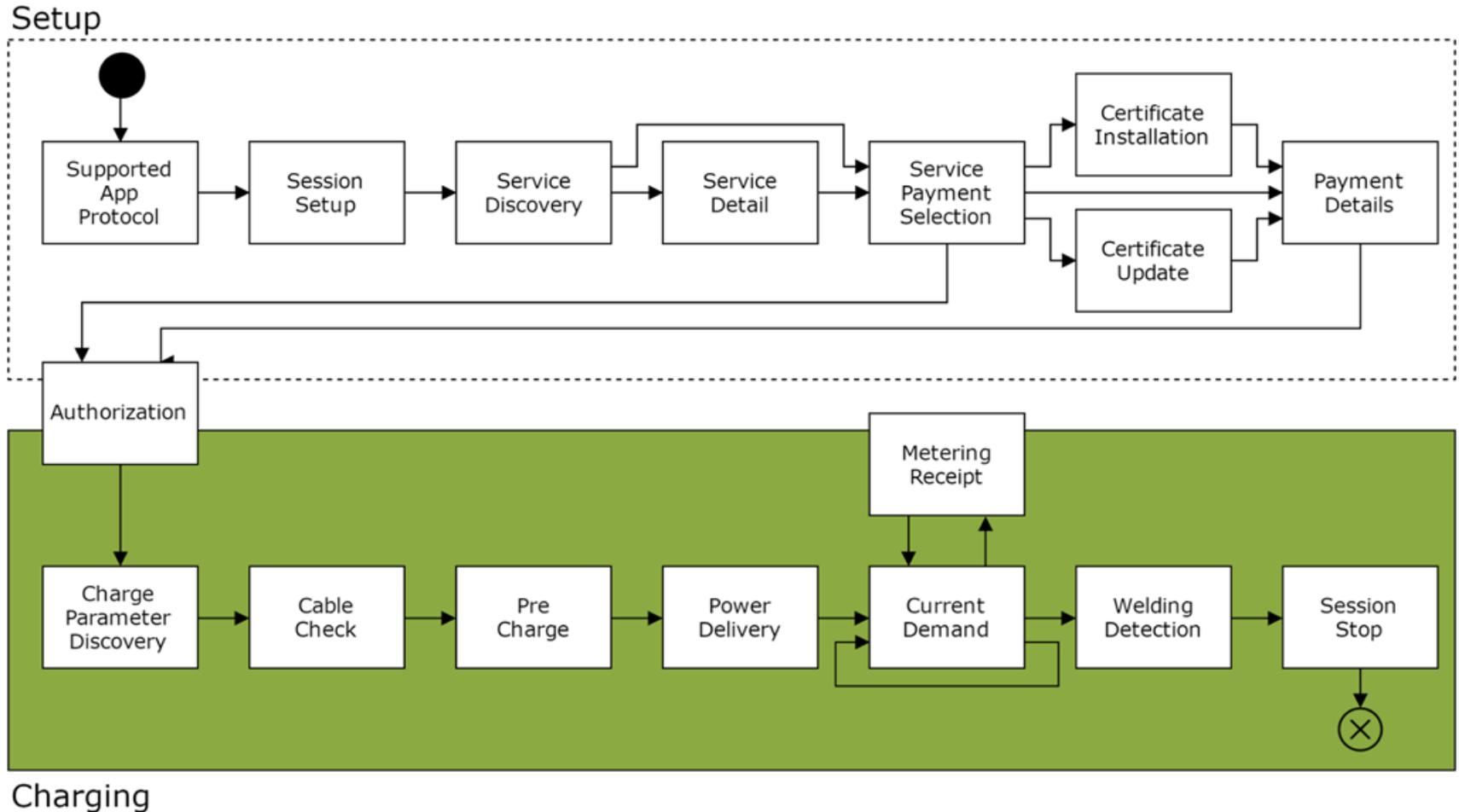
# Be aware: WoT is Two-fold

- Complementing existing standards
  - Need to describe what already exists
  - Cannot change the Things
  - e.g., Binding Templates
- Complementing existing standards
  - Can innovate and provide new technology
  - Can change new Things
  - e.g., Scripting API
- HATEOAS is here!

# HATEOAS / Hypermedia Controls

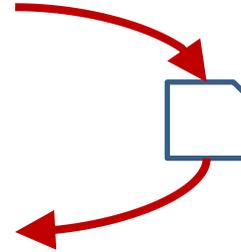


# Prototype: ISO/IEC 15118-2 Electric Vehicle Charging

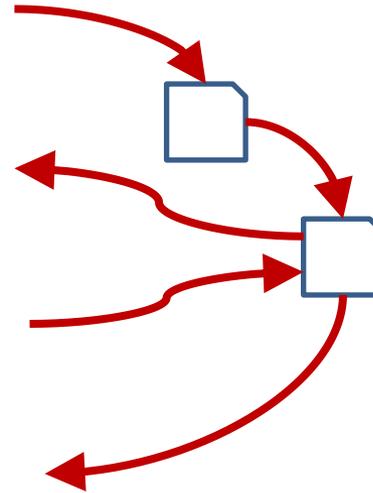


# Actions

- Short-lived
  - invokeAction()
  - Response



- Long-lived
  - invokeAction()
  - Monitor / Cancel
  - Asynchronous response



# Error Handling

```
.onInvokeAction("critical", (input) => {  
    // check input  
    if (input.param1 > 100) {  
        throw new Error("critical");  
        // how to convey error internally to runtime framework?  
        // how to trigger right protocol error code?  
    }  
    // perform Action  
    return output;  
})
```

```
.onUpdateProperty("critical", (input) => {  
    ...  
})
```

# Error Messages

- Provide means for recovery
  - 404: Link to the start page
  - 401: Link to “Log in with Facebook”
- Provide means for machines
  - TD-like interactions
  - Action (?) the get access token
  - ...

# Conclusion

- Model the Servient Management Thing using hypermedia controls
  - New Thing fully under our control
  - Common/shared use case in WoT IG/WG
  - Broad interest in working on it

# Material

- IRTF Thing-to-Thing Research Group
  - <https://t2trg.github.io/>
- RESTdesc (goal-driven clients based on reasoner)
  - <http://restdesc.org/>
  - <https://github.com/smnmyr/iot-semantics-w3c>
  - <http://www.vs.inf.ethz.ch/publ/papers/mayer-smartconfiguration-2016.pdf>