WISHI Hackathon Planning

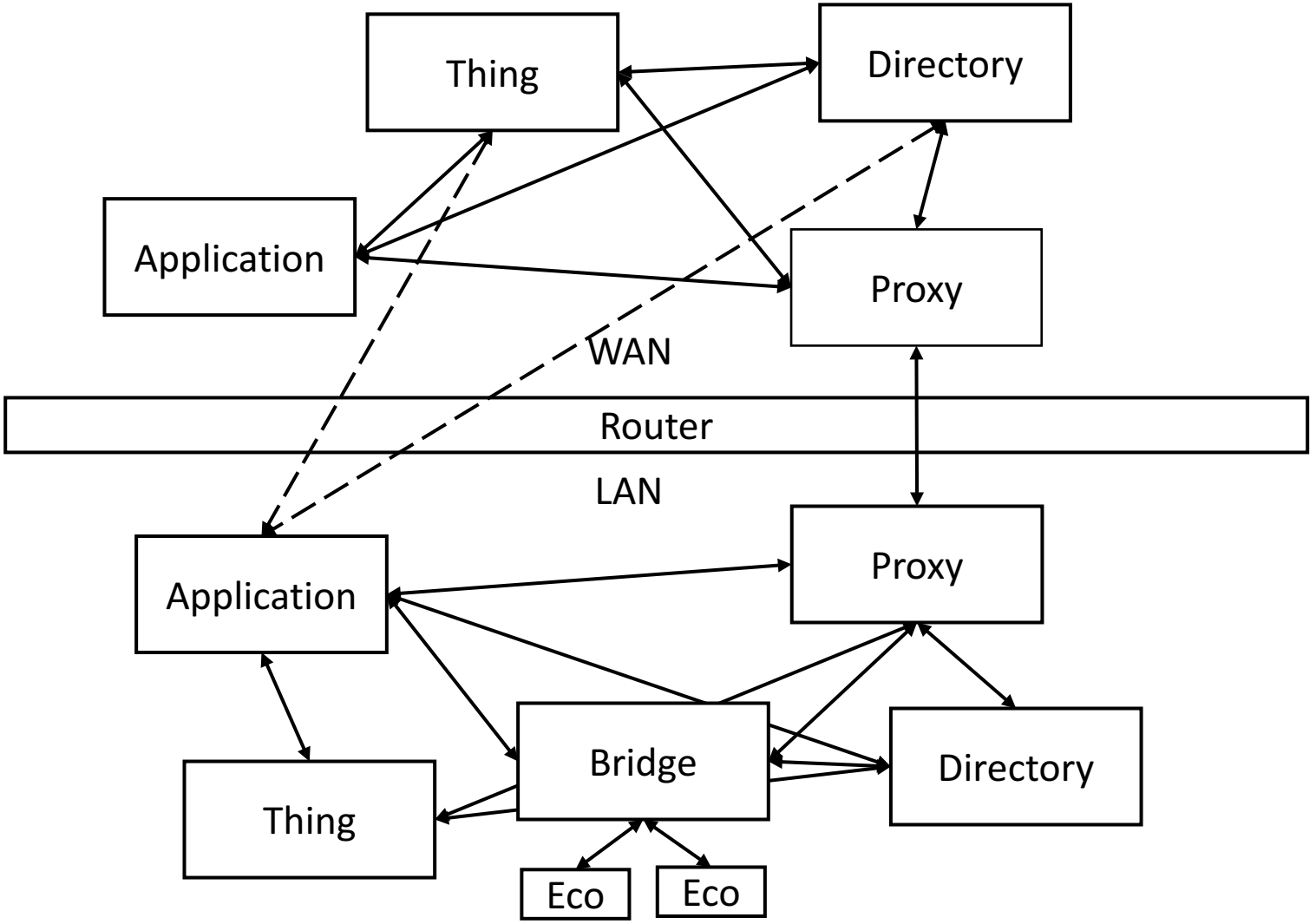
WISHI Teleconference

June 18, 2018

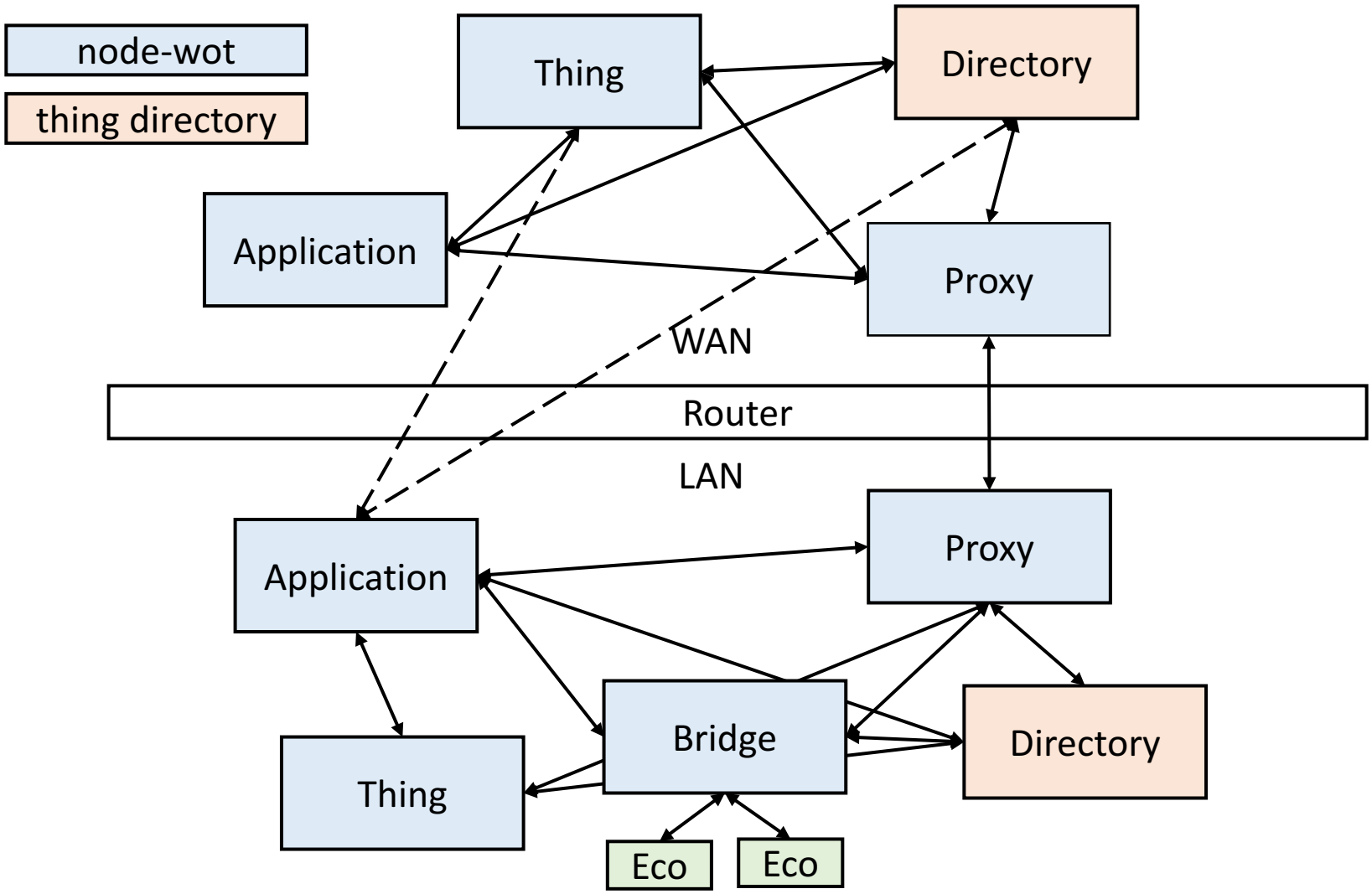
WoT Plugfest vs. WISHI Hackathon

- W3C WoT Plugfest
  - June 30-July 1
  - Testing WoT Components, formats, and protocols
  - Design Patterns as Use Cases
- WISHI Hackathon
  - July 14-15
  - Testing Semantic Interoperability
  - Design Patterns as variables
  - WoT Components as Infrastructure
  - Other components, formats, and protocols

System Architecture



System Architecture



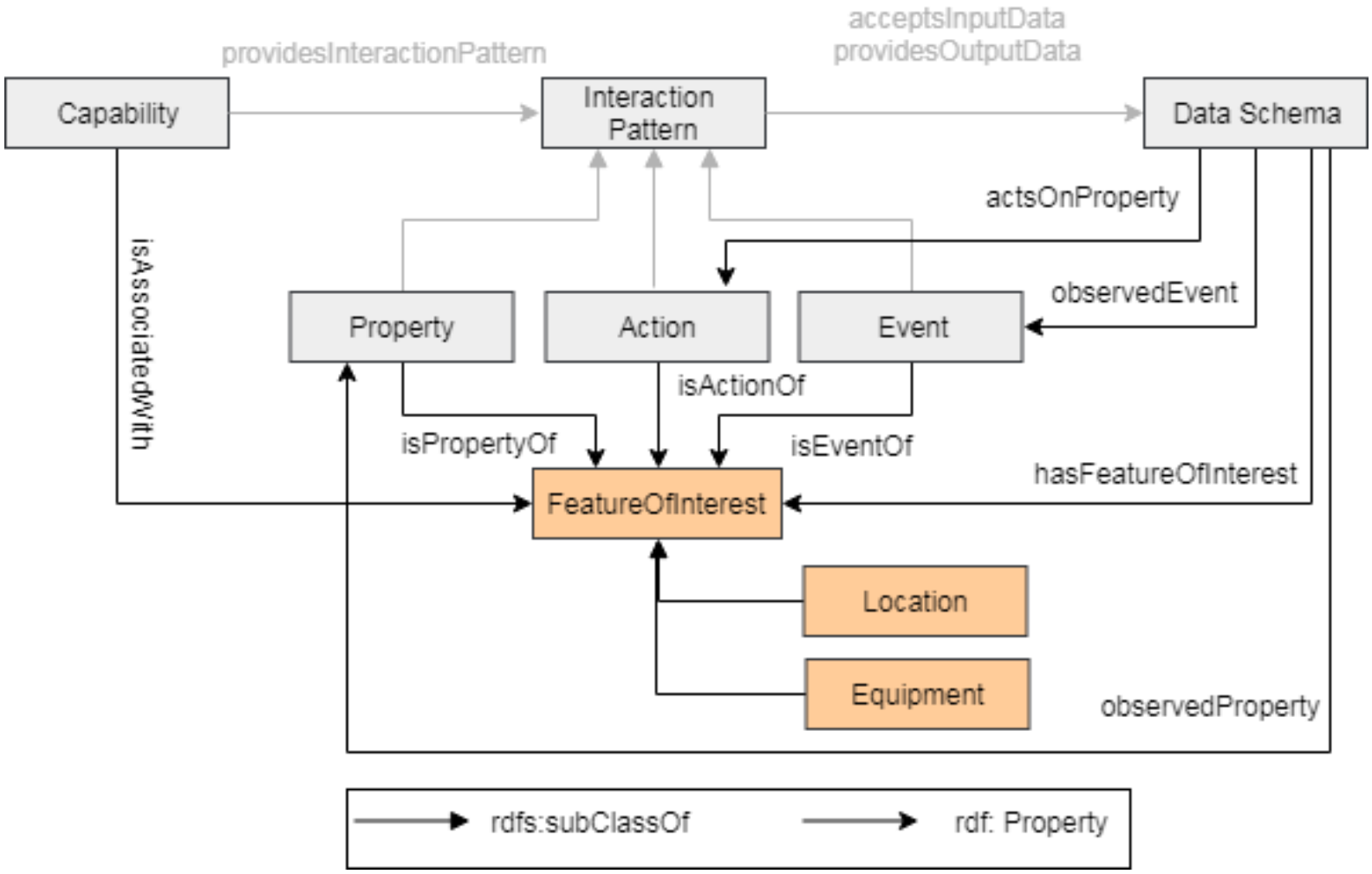
Semantic Annotation

- iot.schema.org definitions
- Capability + Interaction + Datashape
- Feature of Interest – concept from SSN
- Integrated with W3C Thing Description, Thing Directory
  - Capability uses @type annotation in TD
  - FoI uses link annotation - experimental
- Annotation for LWM2M Instances
- Annotation using Hyperlinks, Resource Directory

Feature of Interest

- Things in the physical world that are the target of sensing or actuation
- Things that are properties of a Feature of Interest, e.g. room air temperature
- Temperature as a property of a FoI aligns with temperature as an Observed Property in sensing, which is the subject of an iot.schema capability
- Interactions defined by iot.schema therefore act on properties of a feature of interest

Feature Of Interest Pattern



Feature of Interest Annotation Example

```
{
        "@id": "iot:TemperatureSensing",
        "rdfs:subClassOf": { "@id": "iot:Capability" },
        "iot:providesInteractionPattern": {"@id": "iot:Temperature"}
},{
        "@id": "iot:Temperature",
        "rdfs:subClassOf": { "@id": "iot:Property" },
        "iot:isPropertyOf": {"@type": "iot:Room"},
        "iot:providesOutputData": {"@id": "iot:TemperatureData" }
},{
        "@id": "iot:TemperatureData",
        "rdfs:subClassOf": { "@id": "iot:DataSchema" },
        "iot:hasFeatureOfInterest": {"@type": "iot:Room"},
        "iot:observedProperty": "iot:Temperature",
        "schema:propertyType": { "@id": "schema:Float" },
        "schema:unitCode": { "@id": "iot:TemperatureUnit" },
        "schema:minValue": "schema:Float",
        "schema:maxValue": "schema:Float"
}
```

Practical Planning Requirements

- Participant Documentation
  - **Wiki page per entry – prepare a template**
  - What? Thing, Bridge, Proxy, Directory, Application
  - Technical description, protocols
  - Scenarios, Workflow
  - Goals
- Online Preparation and Pre-testing
  - TD Playground for TD document development
  - Online directory to test registration and discovery
  - Online instances can be tested
  - F-Interop could allow local instances to be tested together across the internet

Capture Results

- Check-points during the Hackathon
- Documentation of the check points and results
- What went well?
- What were the problems?
- Was your goal achieved?
- Wiki template to follow up from planning document?

Technical Components (1)

- Mediatypes
  - WoT Thing Description
  - OMA LWM2M
  - SenML
  - JSON
- Protocols
  - HTTP
  - CoAP
  - MQTT

Technical Components (2)

- Software Components
  - Thingweb - node-wot
  - Thingweb - Thing Directory
  - Node-RED
- Some Bridged Ecosystems
  - OCF
  - LWM2M
  - IKEA Lighting
  - Philips Hue
  - SmartThings

Additional goals and discussion

- Accessibility
- Security
- Privacy