

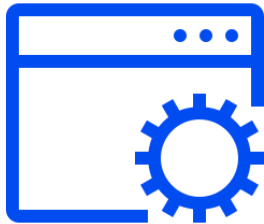


How to create a Service in VICINITY

Grant agreement: 688467

Koutli Maria - CERTH

- Overview
- Integration with VICINITY
 - Expose service
 - Describe service
 - Communicate with other sensors or devices
- Workflow



IoT Service

- Communicate with IoT sensors and devices in a **common** language
- **P2P** communication, no intermediates
- Combine sensor data with **external APIs**
- Find possible clients



VICINITY IoT Platform

How to integrate with VICINITY



My Organisation

Register



VICINITY IoT
Platform

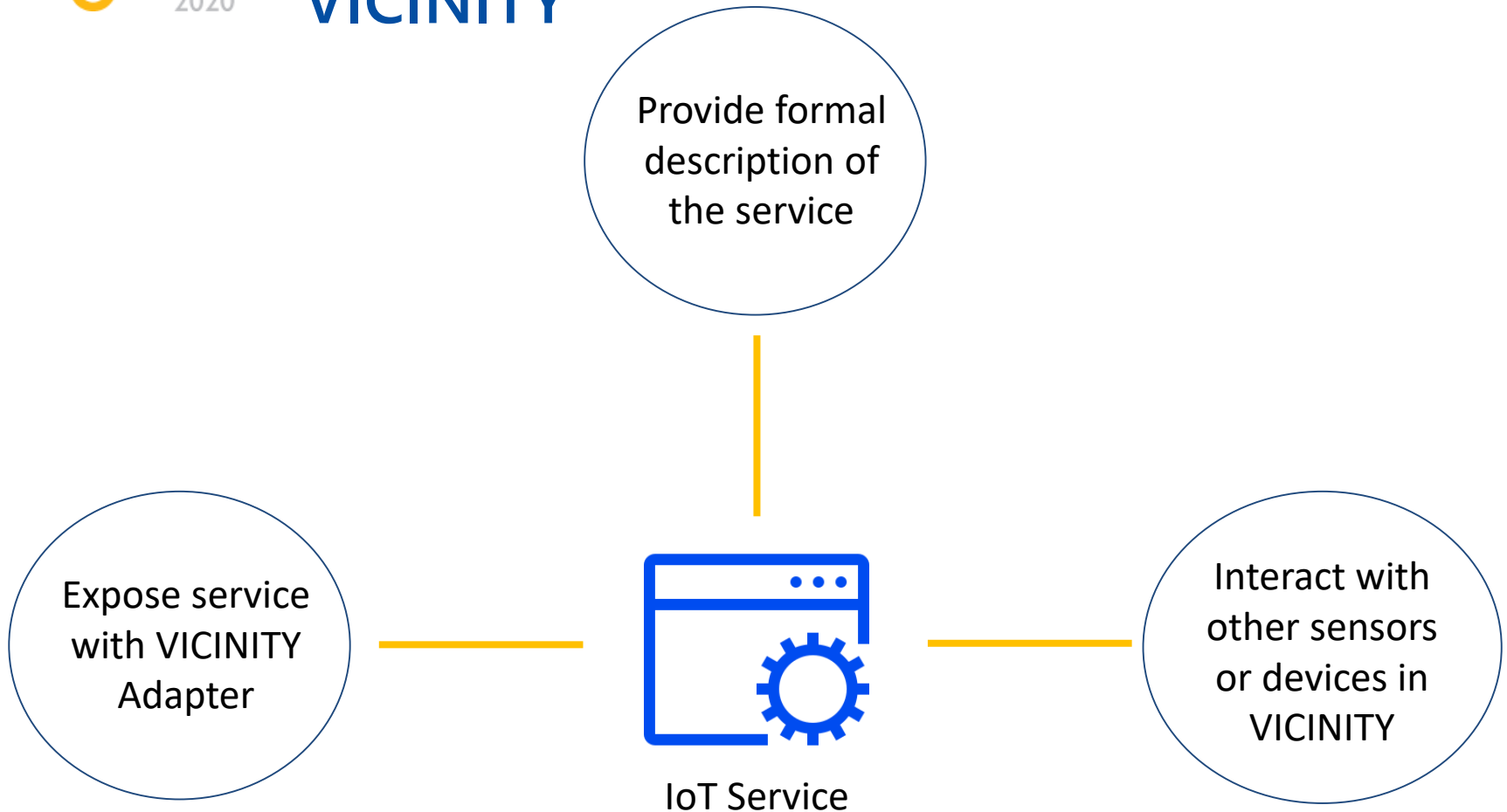
<https://vicinity.bavenir.eu/#/login>



<https://github.com/vicinityh2020>

Configure and Run
VICINITY Gateway API
and
VICINITY Agent
on your Linux machine

How to integrate my service with VICINITY



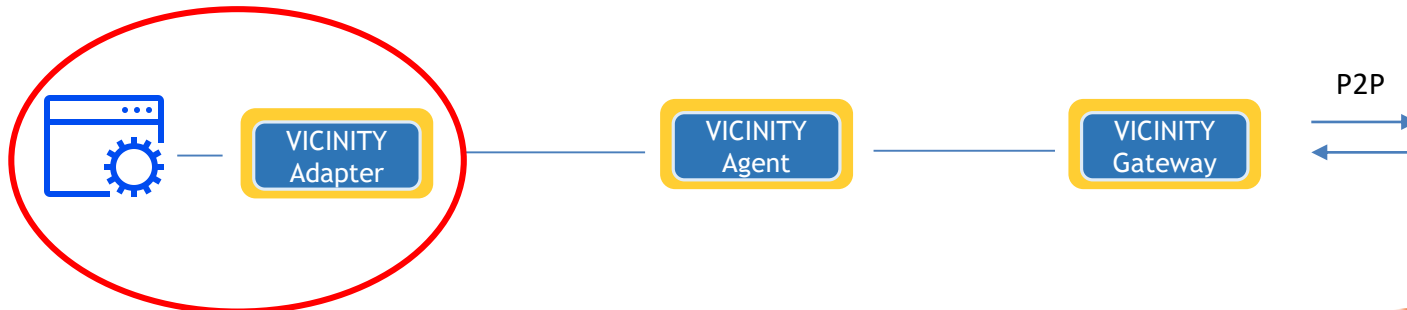
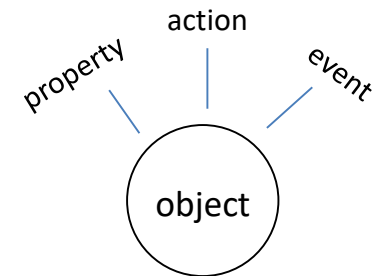
Expose service to VICINITY

What you will need?

- VICINITY Adapter
 - Stand-alone
 - Integrated to the service

What does this mean?

- Adapt service **endpoints** to be VICINITY compliant e.g. `/objects/{service_id}/properties/{func_id}`
- Provide a formal **description** your service functionalities and metadata information (Thing Description)
- Let Agent know about this new Adapter in configuration



Describe the service

- Formally describe the service in a **JSON**, W3C- Web of Things (WoT) based language
- The description contains **mappings** to the VICINITY Ontology
<http://iot.linkeddata.es/def/adapters/index-en.html>
- Usually refer to it as “Thing Description”
- Expose the description to Agent, which will handle the service registration in VICINITY.

Example Thing Description of a service

```

{
  "adapter-id": "my_service_adapter_id",
  "thing-descriptions":
  [
    {
      "name": "Power Consumption Service",
      "type": "core:Service",
      "version": "0.0.1",
      "oid": "mean_power01",
      "properties": [
        {
          "pid": "push measurement",
          "monitors": "adapters:MeanPowerConsumption",
          "read_link": {
            "href": "/objects/{oid}/properties/{pid}",
            "output": {
              "type": "object",
              "field": [
                {
                  "name": "mean_value",
                  "schema": {
                    "type": "double"
                  }
                },
                {
                  "name": "timestamp",
                  "schema": {
                    "type": "string"
                  }
                }
              ]
            }
          }
        }
      ],
      "actions": [],
      "events": []
    }
  ]
}

```


Communicate with sensors through VICINITY

- Create contracts with sensors that will interact with the service, though Neighbourhood Manager web interface <https://vicinity.bavenir.eu/#/login>

Service Provider	IoT Owner	# Items	Status	Type	
Me	Gorenje d.d.	2	Active	serviceRequest Read/Write	 

- E.g. Read data from a power meter

GET http://agent_IP:9997/agent/remote/objects/{v_oid}/properties/{property}

headers:

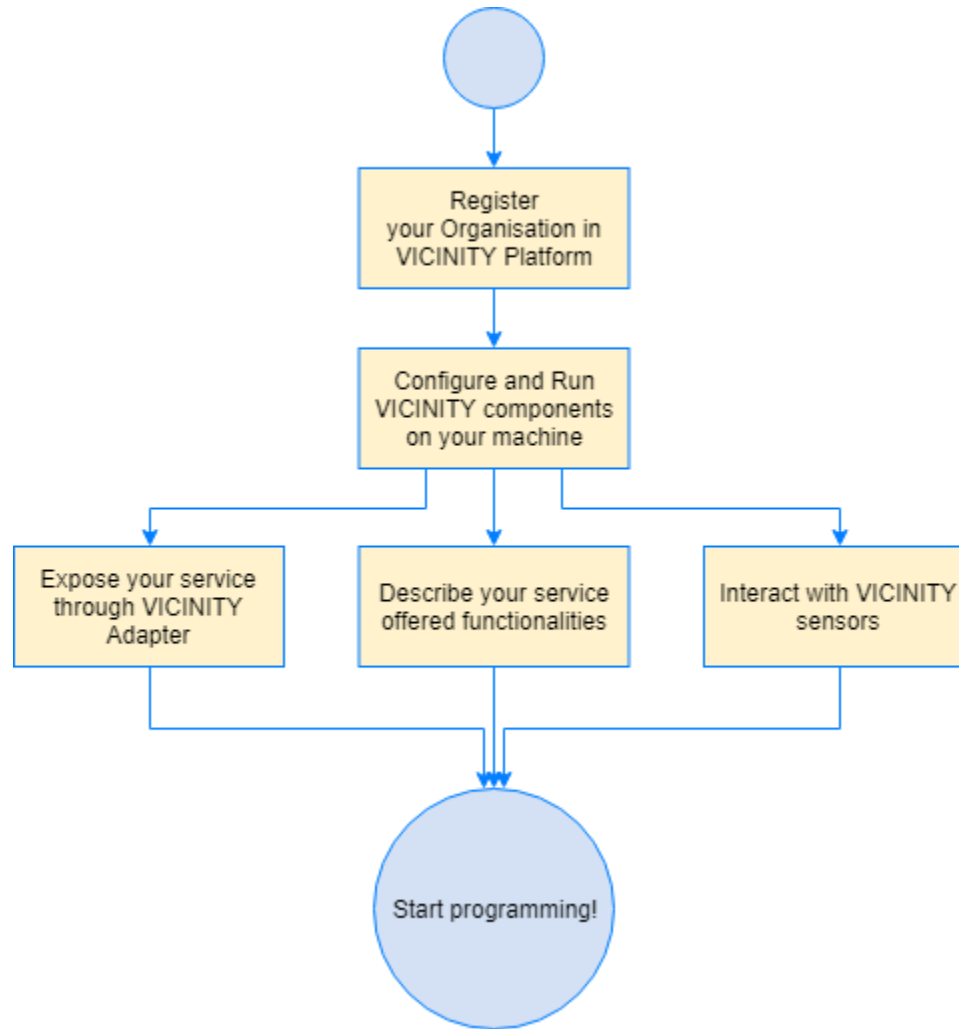
adapter-id=my_service_adapter_id

infrastructure-id=my_service_internal_id

Where, {v_oid} is the vicinity id of the power meter

and {property} is the sensor's property the service will consume e.g. active power, reactive power, power factor etc

Service VICINITY integration workflow



Questions & Answers



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HELLAS

Aclimate
Associates



gnomon
INFORMATICS

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Tiny
mesh

