

Solutions for the Internet of Things

Web of Things F2F, Sunnyvale

July 29, 2014

PRESENTATION OVERVIEW / MEETING AGENDA

Introduction

ARTIK platform overview

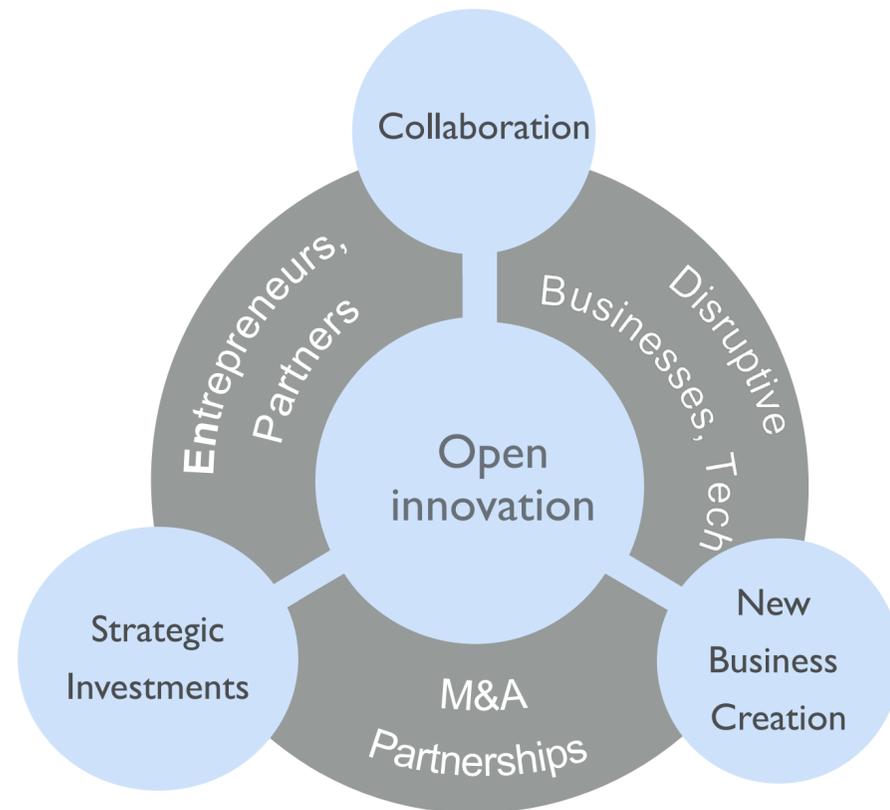
Hardware

SAMI overview

Connecting devices

Communicating with SAMI

Samsung Strategy & Innovation Center (SSIC)



Mission

- Drive business creation with new architectures and better components/subsystems
- Tap into the culture of open innovation in Silicon Valley and other global hot spots
- Help innovators leverage Samsung's global platforms

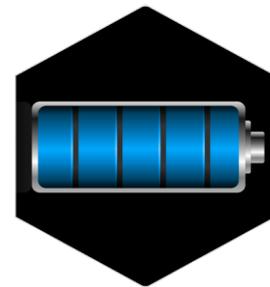


Challenges for IoT



Scaling

Fragmentation
One size does not fit all



Power

Battery life
Battery size



Compatibility

Billions of devices. Diverse
networks Emerging standards



Security/Privacy

70% Internet traffic
unencrypted



Data

Massive quantity. Analytics
Cloud solutions



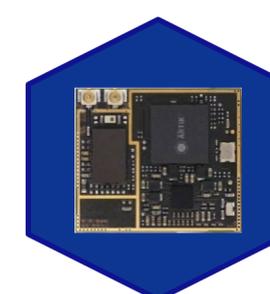
Development

Limited tools,
eco-system support



Time to Market

Limited tools,
eco-system support



Vendor Reliability

Fast production ramp
Mass production

ARTIK – Most Comprehensive IoT Platform



Family of Integrated Modules

Pre-certified modules with processors, connectivity, and sensors
Best power, form factor, and performance



Open Software Solution

Integrated with familiar open source software
Compatible with popular development tools



Best in Class, End-End Security, Privacy

Embedded, hardware-based secure element
Trusted execution environment



Complete Cloud Solutions

Local and cloud-based data storage and analytics

ARTIK Product Family – Optimized for IOT

ARTIK
1

World's smallest



12mm x 12mm
250MHz Dual Core
HW Secure Element
9-axis Accelerometer



ARTIK
5

Ideal balance of size and performance



25mm x 29mm
1GHz Dual Core
HW Secure Element
512MB LPDDR3, 4GB NAND



ARTIK
10

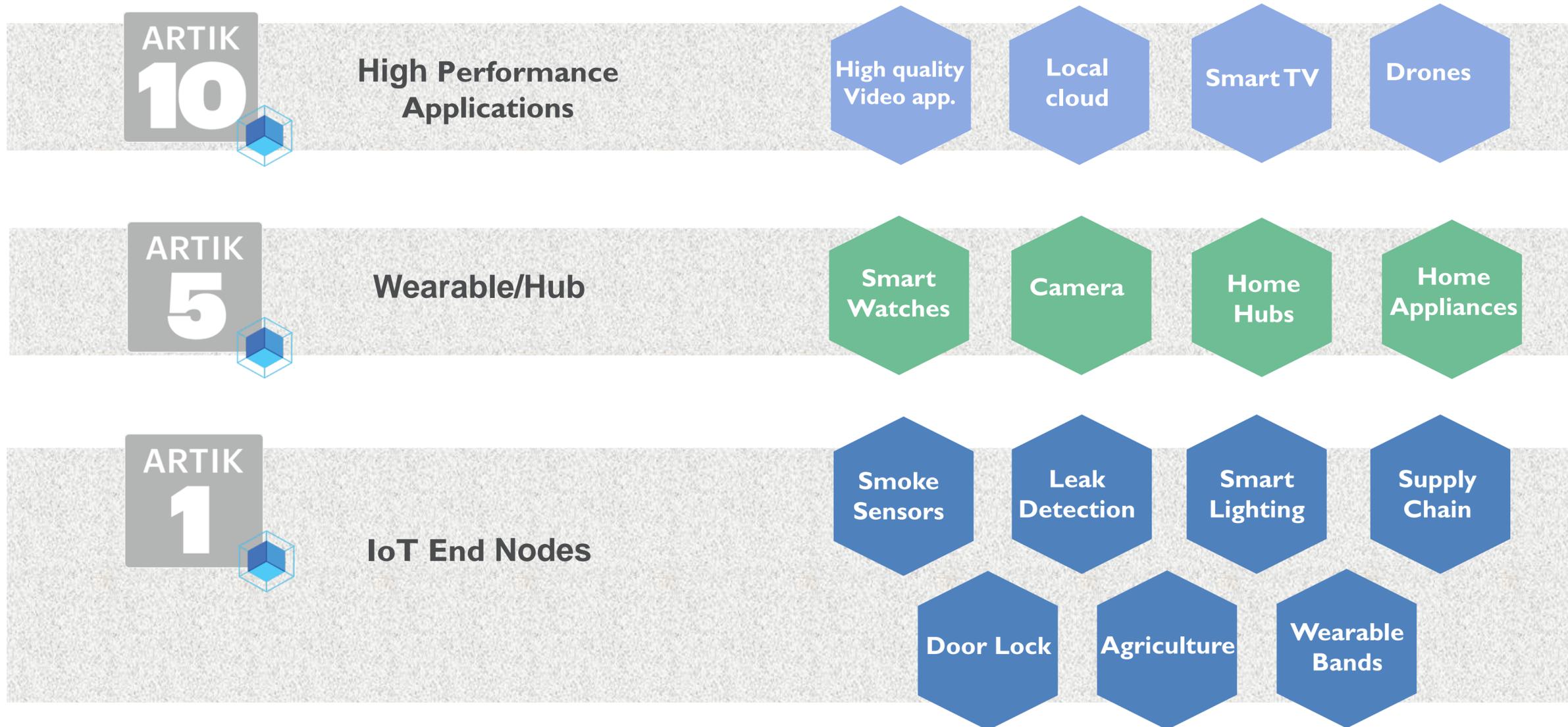
Industry's highest performance



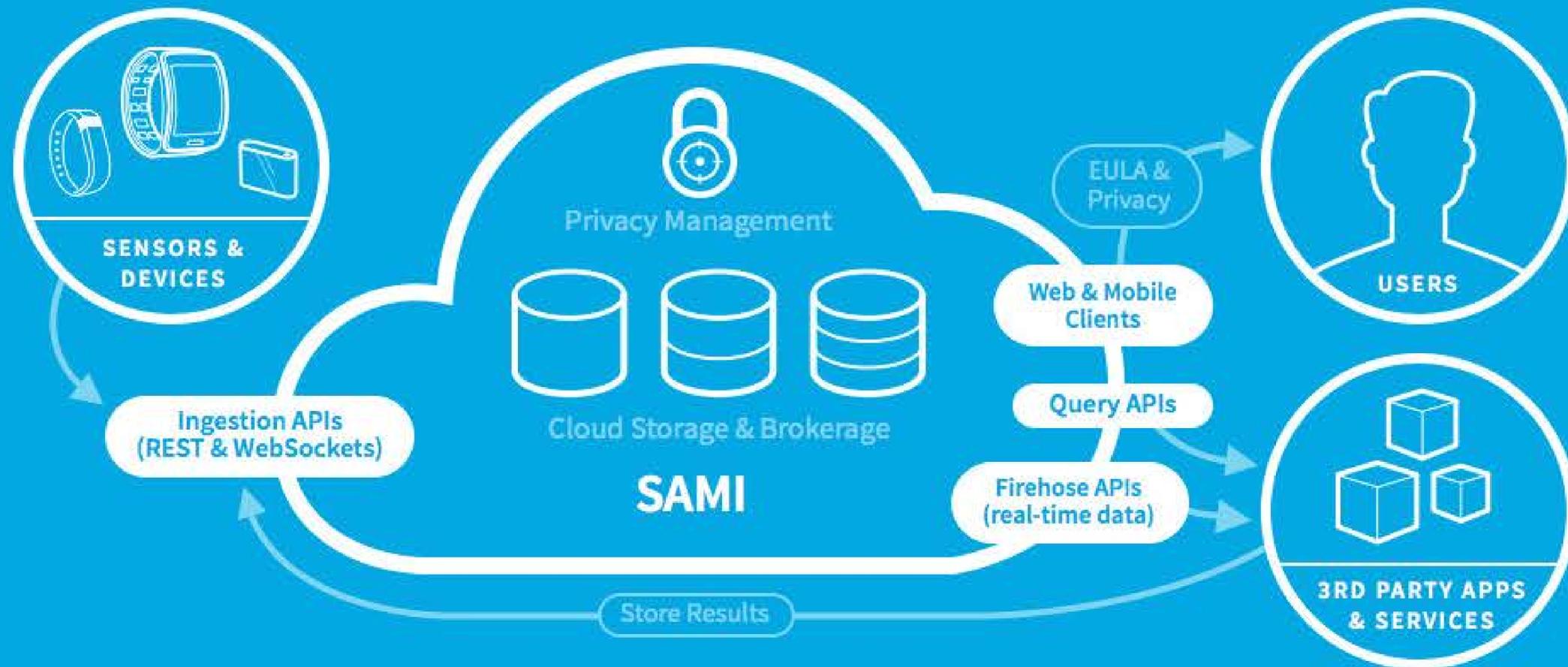
29mm x 39mm
1.3GHz Octa Core
HW Secure Element
2GB LPDDR3, 16GB NAND



Potential Applications of ARTIK



SAMI



Device Type Manifests

Create New Manifest



Andrea Simple Manifest Example: New Manifest

com.samsung.ssi.andreasimplemanifest

SIMPLE MANIFEST

ADVANCED MANIFEST

Simple Manifest: A simple manifest allows you to get your device submitting data quickly in a standard format. It also does not require approval, so you can get started immediately.

Fields

BMIParamenters		
weight	DOUBLE SI.KILOGRAM	
height	DOUBLE SI.METRE	
BMI	DOUBLE STANDARDUNITS.NONE	
temp	DOUBLE SI.CELSIUS	
MYField	LONG SI.CANDELA	

+ NEW FIELD

+ NEW FIELD GROUP

SAVE MANIFEST

CANCEL

Sample JSON Request

SAMPLE

```
{ "BMIParamenters":  
  { "BMI":174.167, "height":123.92, "weight":53.117}, "MYField"  
  ":643, "temp":561.701, "HTTPResponseCode":200}
```

Supporting ANY device and advanced features with Advanced Manifest

```
1 import groovy.json.JsonSlurper
2
3 import com.samsung.sami.manifest.Manifest
4 import com.samsung.sami.manifest.fields.*
5
6 public class BasicManifest implements Manifest {
7
8     // Custom FieldDesc
9     // The device sends a single data point and it's a String that describes its status
10    static final STATUS = new FieldDescriptor("status", String.class)
11
12    @Override
13    List<Field> normalize(String input) {
14        // data is sent by the remote device as a JSON, so SAMI will need to use a library to understand it
15        def slurper = new JsonSlurper()
16        // If the device sent the data in a more complex format here developer can implement their String operations, loops,
17        def json = slurper.parseText(input)
18
19        // now we return the Field to the system
20        return [
21            new Field(STATUS, (String)json.status)
22        ]
23    }
24
25    @Override
26    List<FieldDescriptor> getFieldDescriptors() {
27        // This is a single field, if it was more than one it would be an Array
28        return [STATUS]
29    }
30 }
```

Ingestion APIs

REST and WebSocket (bi-directional)

Live firehose

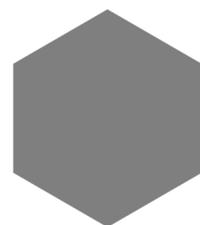
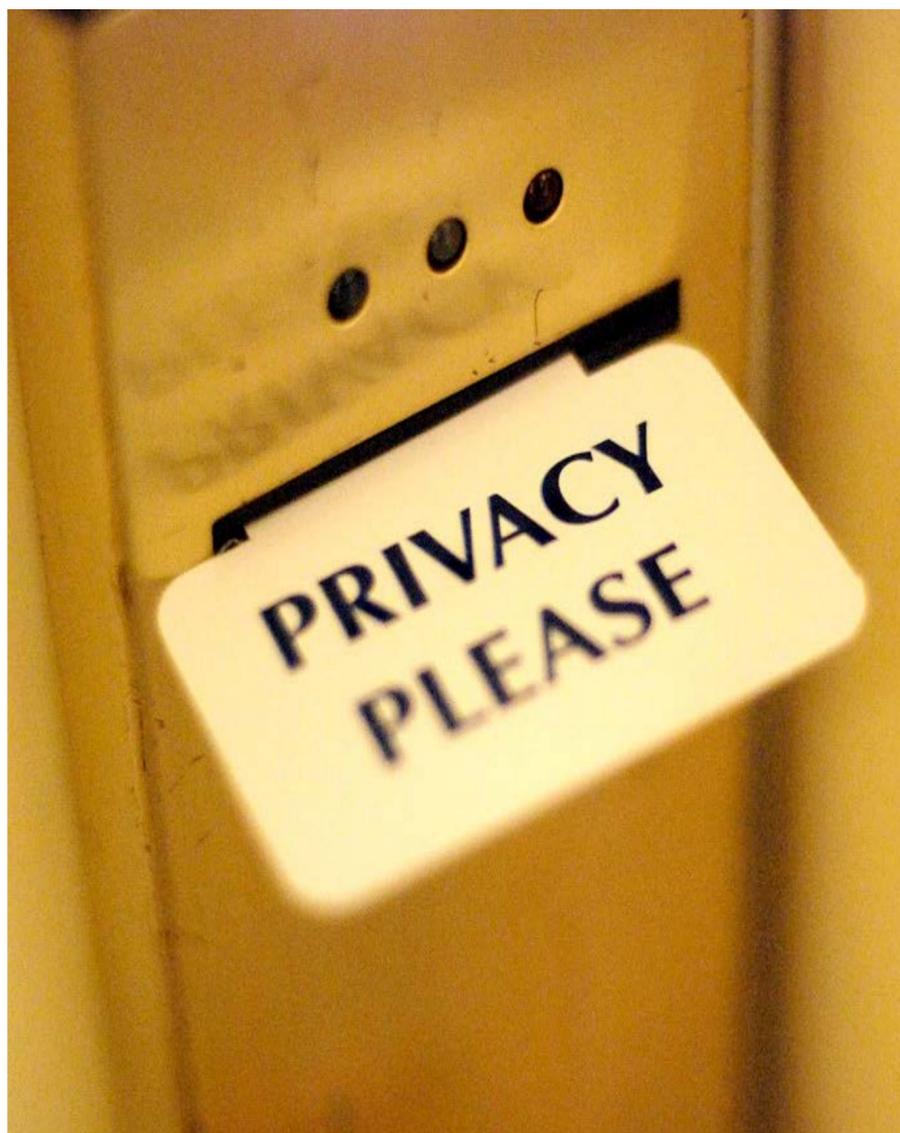
Call

```
https://api.samsungsami.io/v1.1/messages/last?count=10&sdids=5d38779fe2d4480daf392803318756ca
```

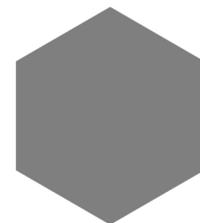
Response Body [Select body](#)

```
{
  "sdids": "5d38779fe2d4480daf392803318756ca",
  "count": 10,
  "size": 10,
  "data": [
    {
      "mid": "64f2da6f020b4e928b23ab7d0355cd80",
      "data": {
        "payload": {
          "field": "activity",
          "stream": "7f1a1020",
          "samples": "AACAPwAA==",
          "version": "0.9.0_00800241_3a33009"
        },
        "activityAnnotation": "static",
        "activity": 1
      },
      "ts": 1438098582783,
      "sdtid": "dte5f9851dca3b4063a6440a3aa1142bac",
      "cts": 1438098585186,
      "uid": "176791c43cd94b9c806a0b259443c618",
      "mv": 44,
      "sdid": "5d38779fe2d4480daf392803318756ca"
    },
    {
      "mid": "45e3cbc6dca24bee8cf0fe1f1f4448de",
      "data": {
        "payload": {
```

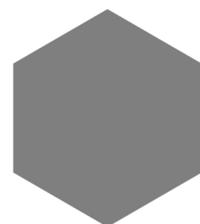
Privacy



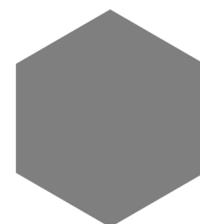
Users own their data



Grant read and write permissions to devices and applications



Applications can write on behalf of users



Users can revoke access at any time

Vocabulary

Links

- <http://www.artik.io>
- <https://developer.samsungsami.io>
- [@AndreaTrasatti](#)
- [@SamsungIoT](#)