Eclipse Ditto

Digital Twins for Eclipse IoT

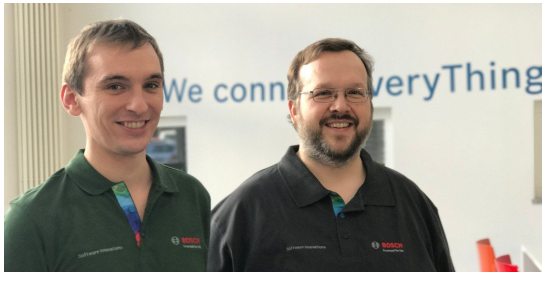
-

new project introduction

Created by **Thomas Jaeckle** (**@thjaeckle**)

who are we?

project leads



Gerald Glocker

Thomas Jaeckle

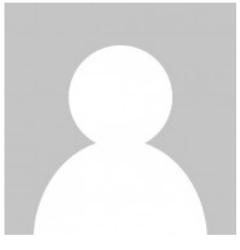
Committers

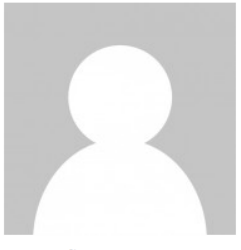
Daniel Bohn

Daniel Fesenmeyer

Dominik Guggemos

Gerald Glocker


Johannes Kraeher


JÃ¼rgen Fickel

Thomas Jaeckle

Yufei Cai

our profession

DevOps'ing a cloud service @boschsi

foundation for Eclipse Ditto

distributed + highly scalable

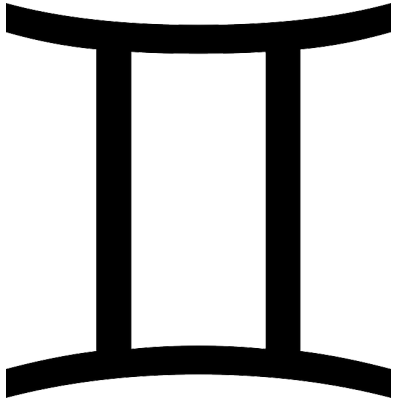
on active codebase since > 2.5 years

battle proven

we are eager to work on OpenSource

iot
eclipse.org
Digital Twins
a mechanism for simplifying IoT solution development

Digital Twin metaphor



→ mirrors physical devices

→ provider of aspects+services around devices

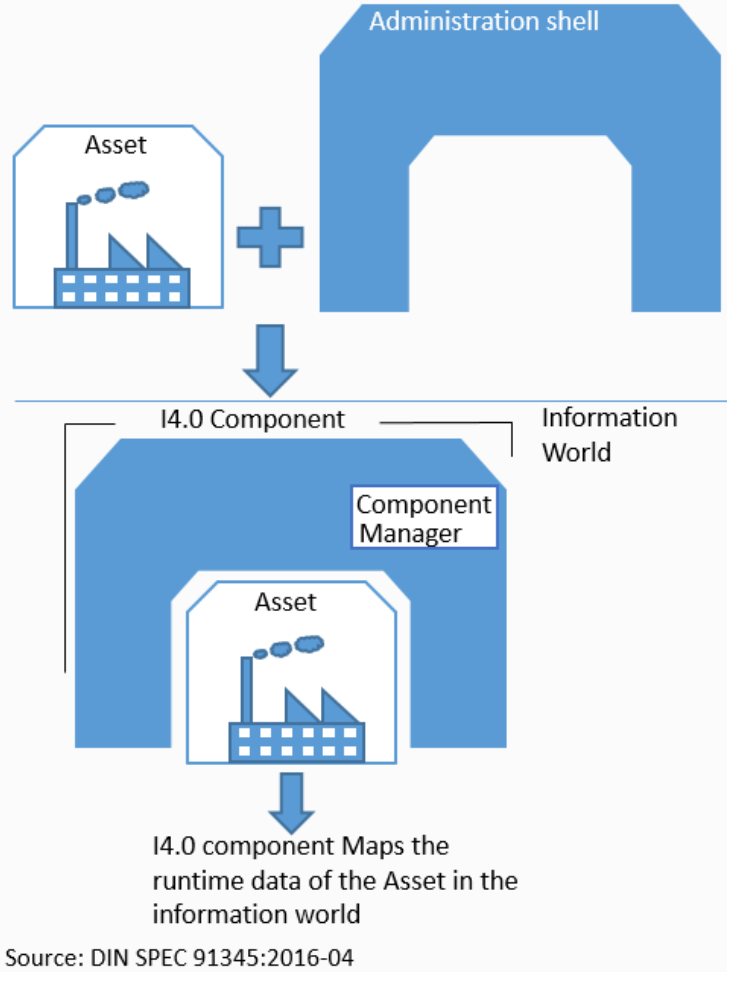
→ keep real and digital worlds in sync

→ industrial and consumer-centric IoT scenarios

in IIoT / Industry 4.0

→ asset administration shell ("Verwaltungsschale")

→ holistic view of all capabilities (services) and aspects of an asset

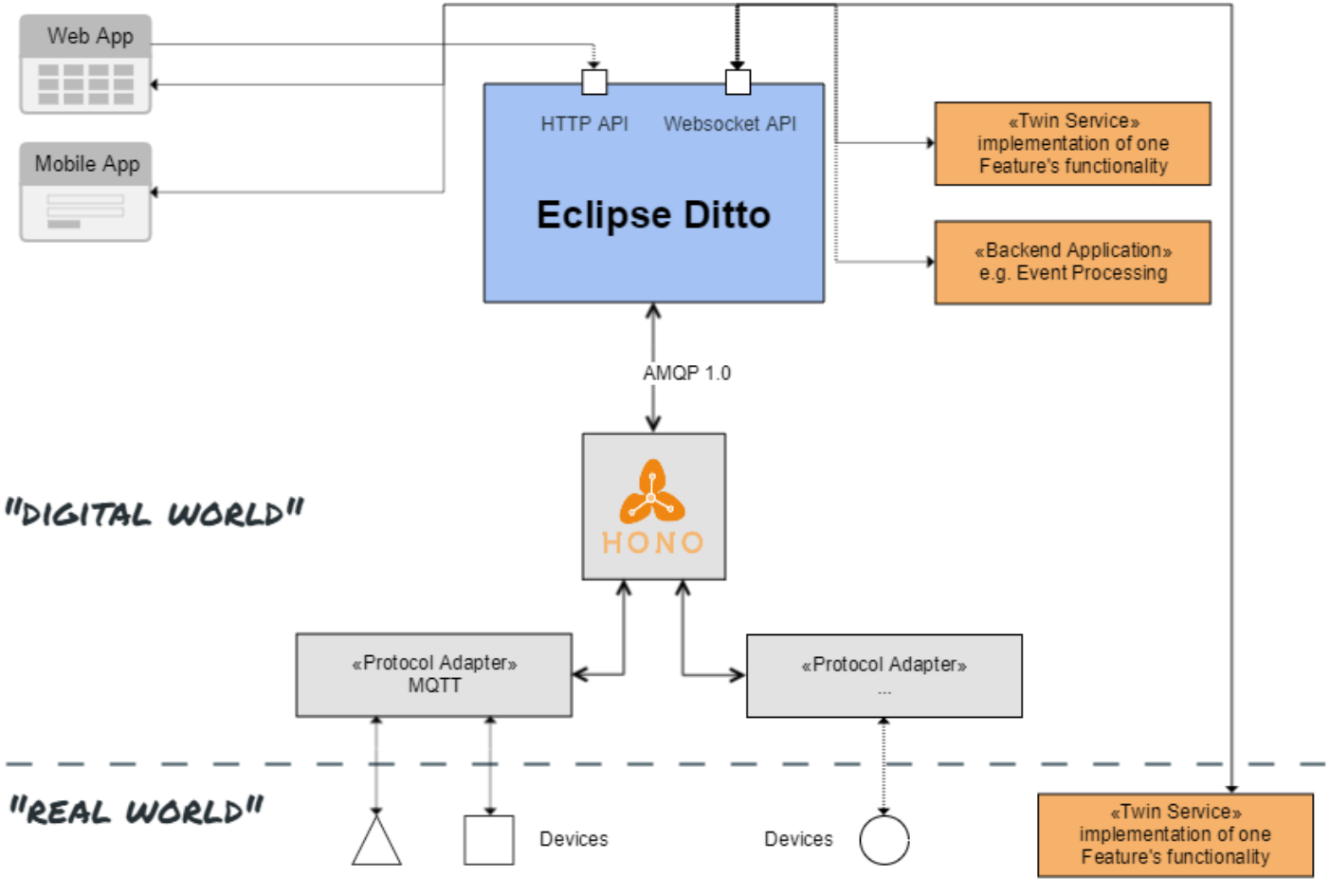


Source: DIN SPEC 91345:2016-04

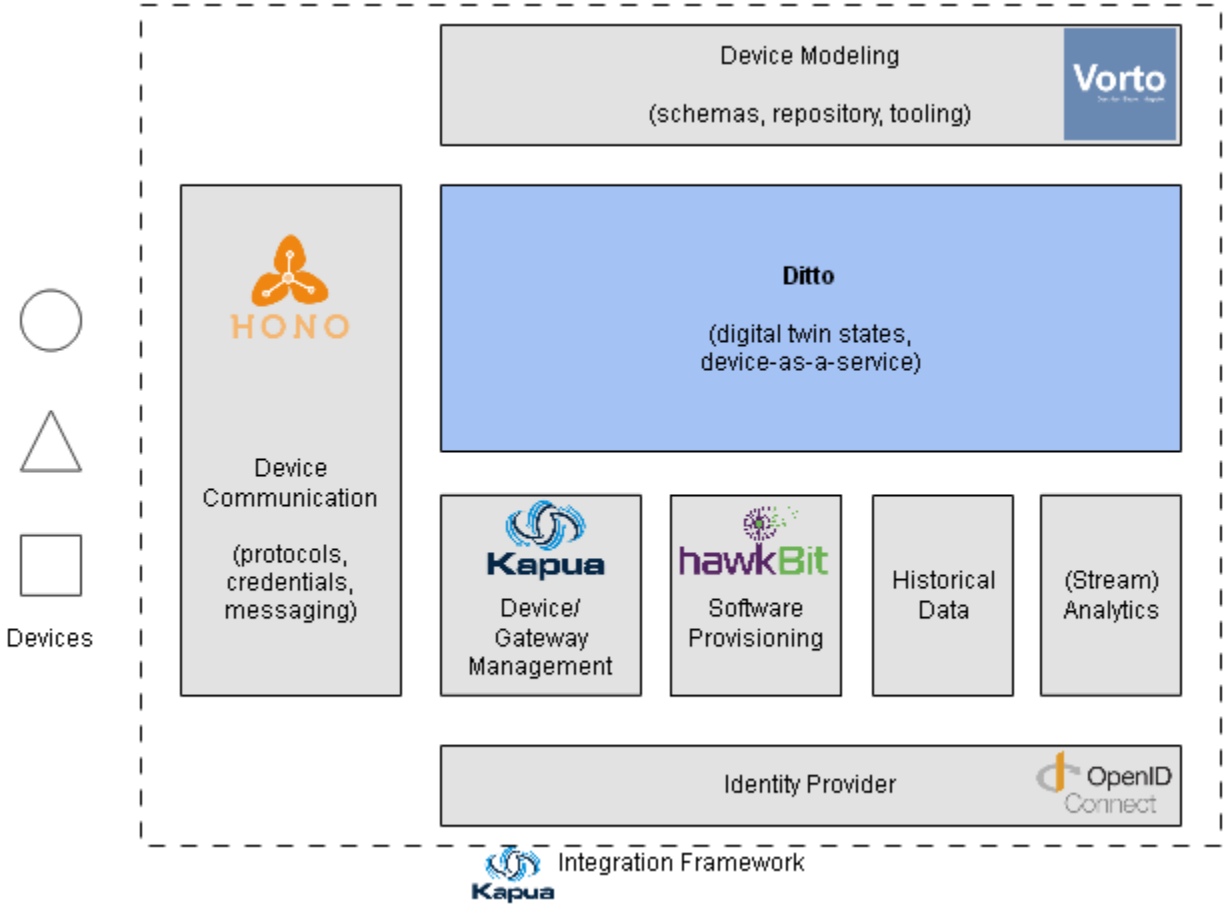
Eclipse Ditto

... where IoT devices and their digital twins get together

context


Web App
Mobile App
HTTP API
Websocket API
Eclipse Ditto
«Twin Service»
implementation of one
Feature's functionality
«Backend Application»
e.g. Event Processing
AMQP 1.0
HONO
"DIGITAL WORLD"
«Protocol Adapter»
MQTT
«Protocol Adapter»
...
"REAL WORLD"
Devices
Devices
«Twin Service»
implementation of one
Feature's functionality

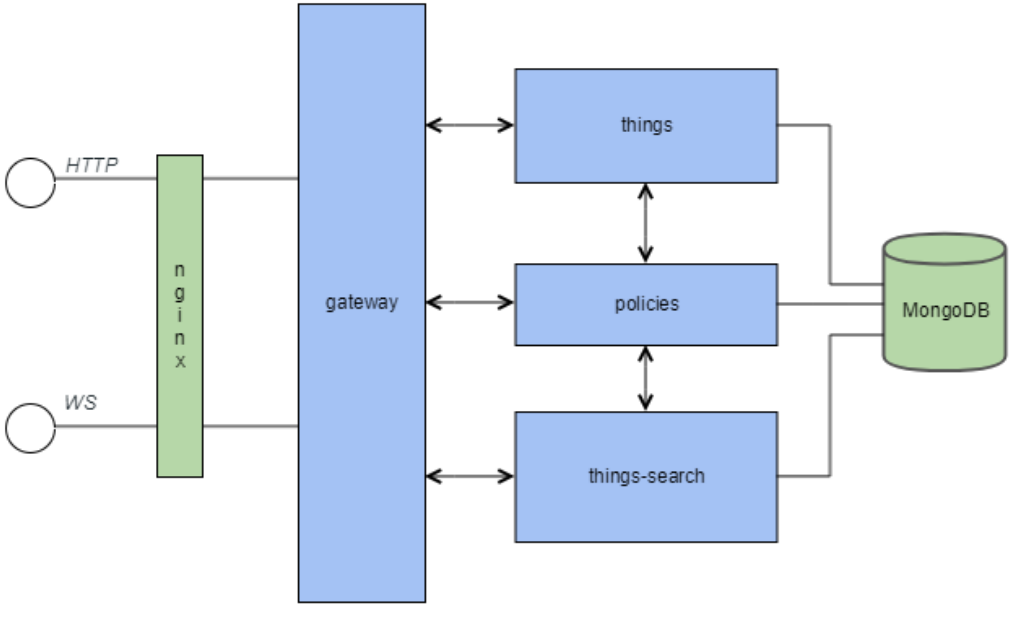
in context of Eclipse IoT



Contribution

what is initially contributed and what comes next?

initial contribution



→ domain model, commands, events, protocol-adapter

→ Java based microservices bundled as Docker containers

→ dependency to MongoDB

what comes next?

→ milestone release

→ documentation + examples

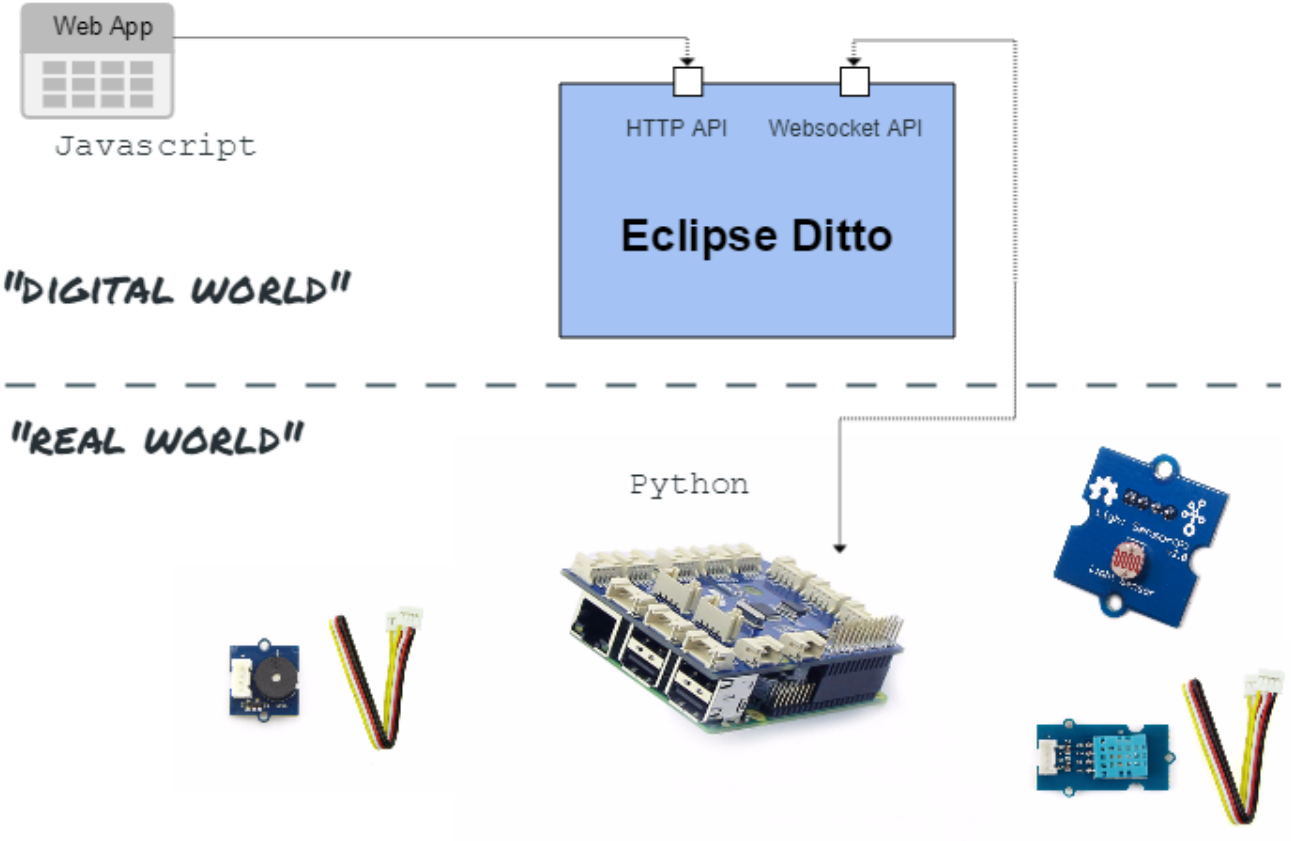
→ project site + logo

→ optional integration of **Eclipse Vorto** for validation

→ **Eclipse Hono** "bridge" for receiving device telemetry

iot
eclipse.org
Demo time!
may the demo gods be with us

setup



Hardware

seeed studio
GrovePi+
Buzzer
Light Sensor
Temp&Humidity
Sensor

iot
eclipse.org
Thank you
Questions?
visit us at our Bosch Software Innovations booth @eclipsecon or engage via:
https://projects.eclipse.org/projects/iot.ditto
https://github.com/eclipse/ditto