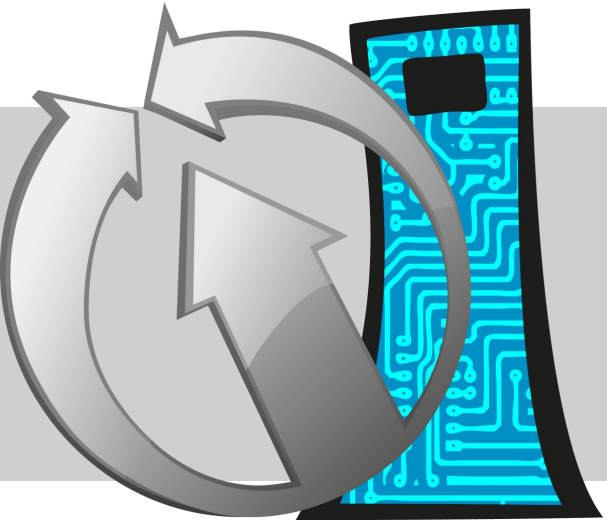
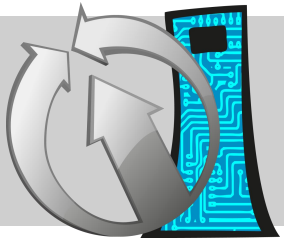


Partnering

ROBOTICS

Diya-node / diya-SDK devel



Partnering ROBOTICS

Goal

Diya-node

- **Managment and Monitoring** of the different programs/services running on the robot / the partnering server

- **Unified Interface** for accessing The robot's services (connection securing and user rights managment).

→ *Base element for the futur maya-network*

Diya-SDK

JSON Protocol for the communication between a diya-node instance and its services

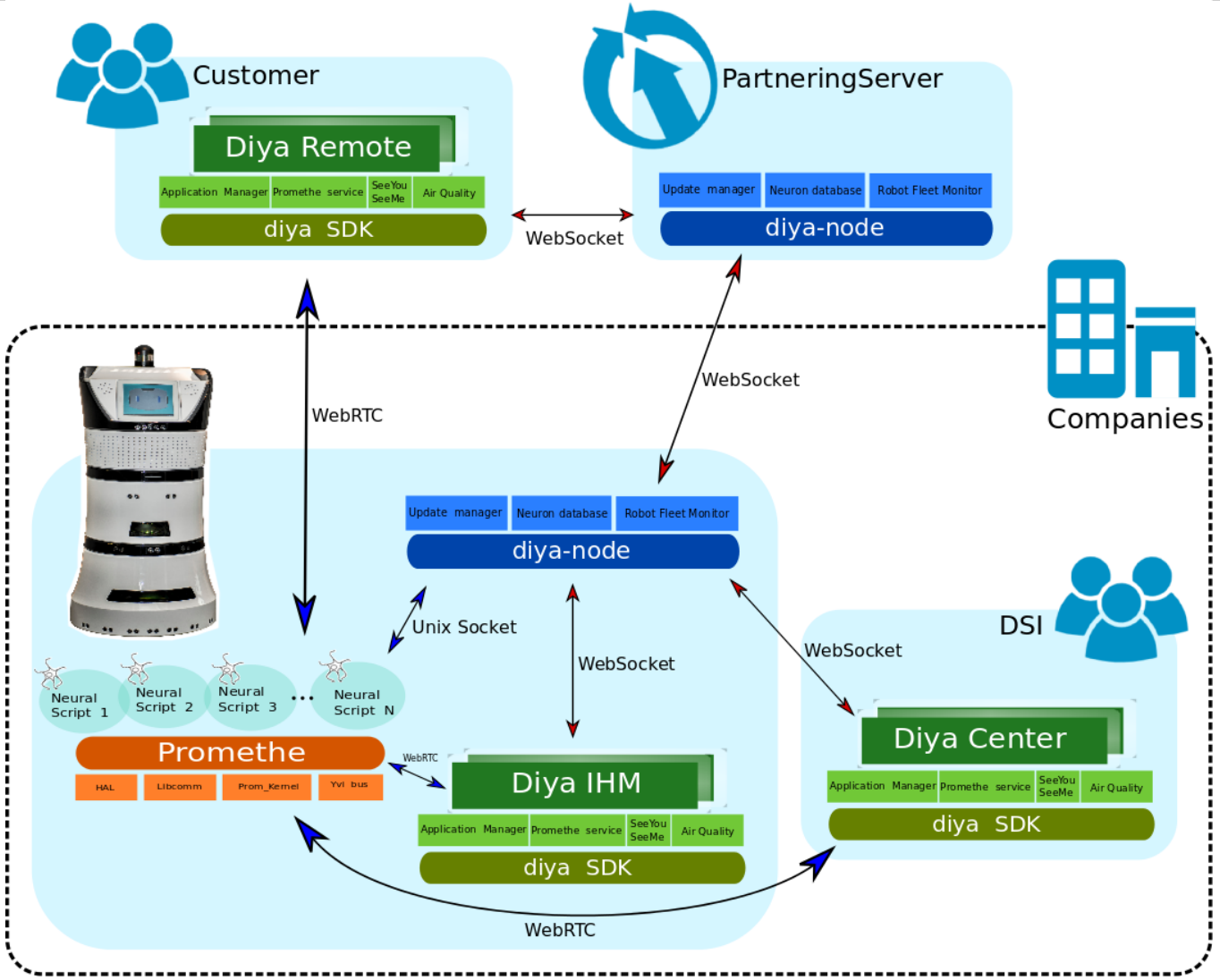
- **Low level Javascript implementation** of that protocol.

- **High level Javascript implementation** of the services business logic.

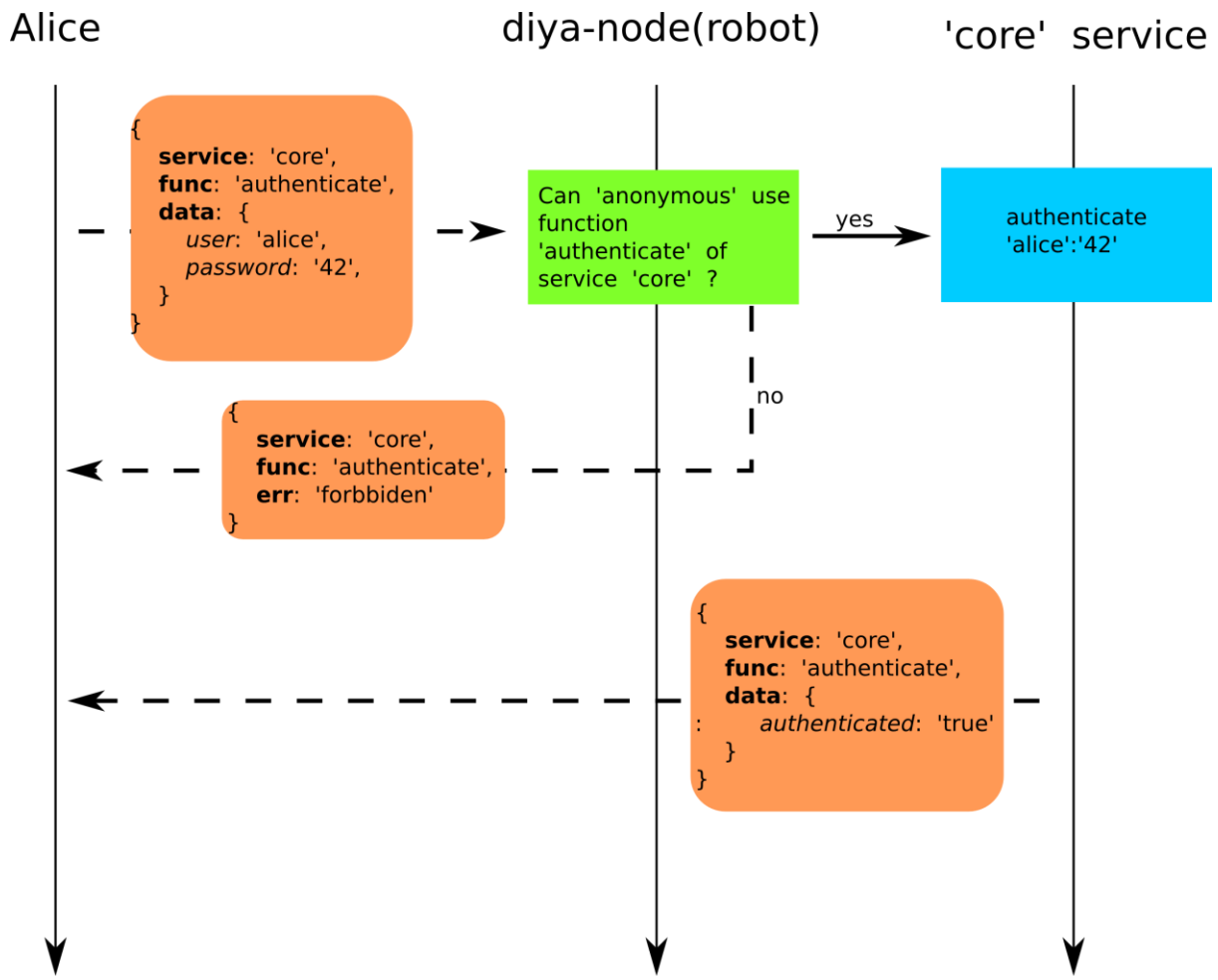
→ *Base element for the development of client Application.*

Partnering ROBOTICS

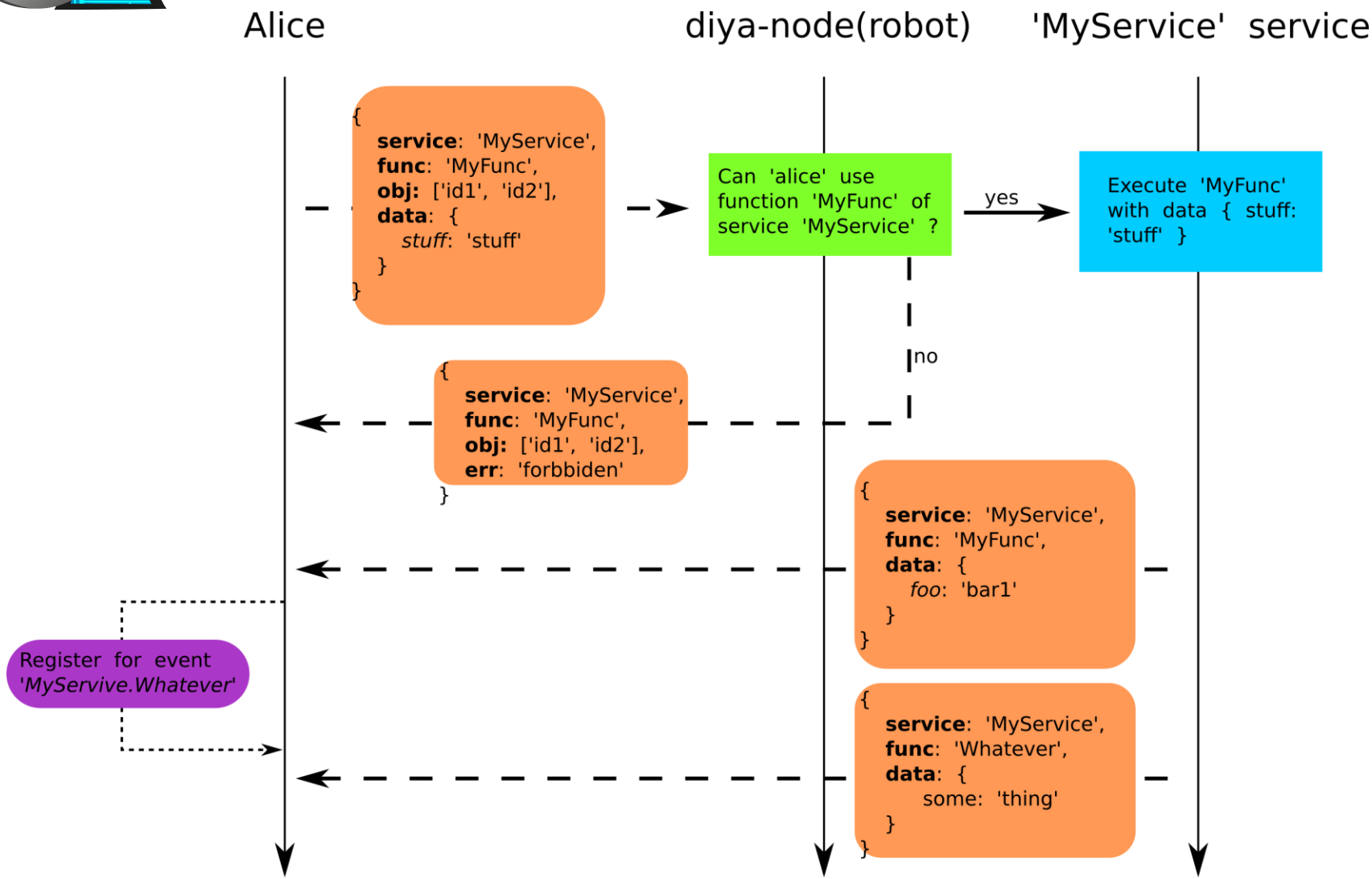
Architecture overview

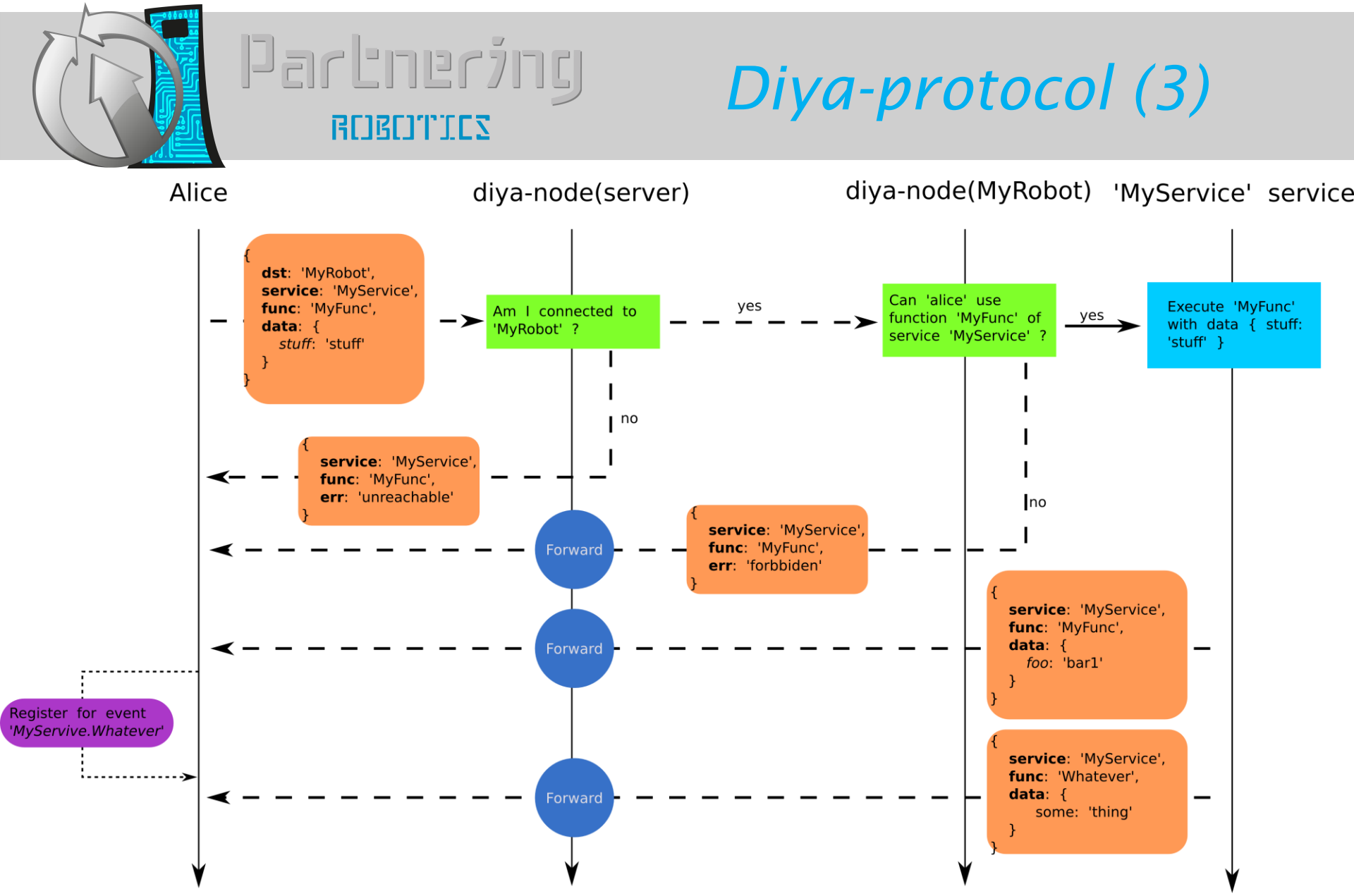


Diya-protocol (1)



Diya-protocol (2)

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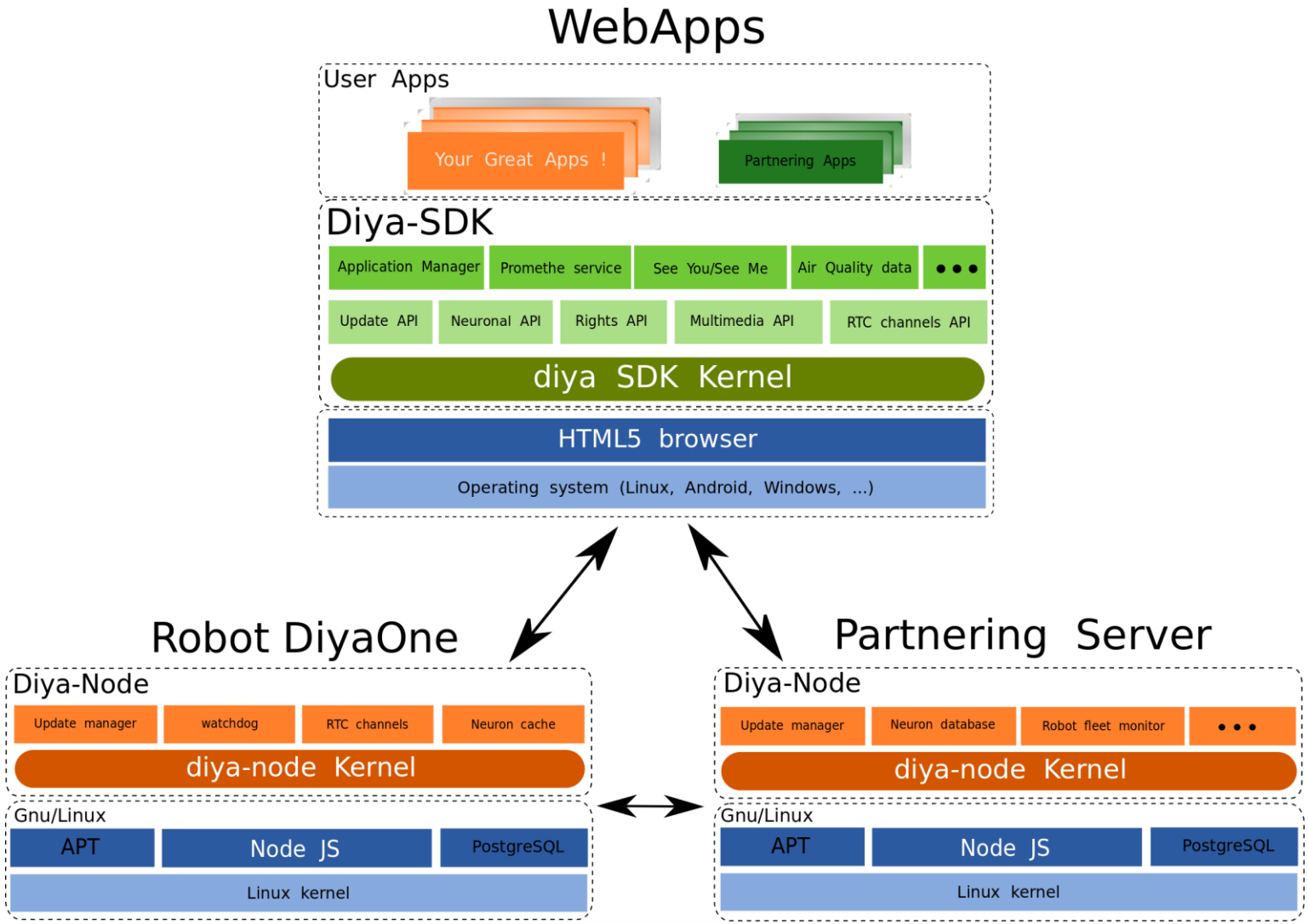
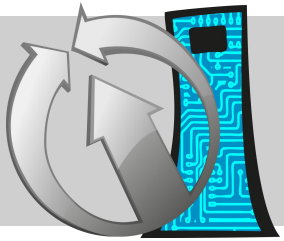
ROBOTICS
Diya-protocol (3)
Alice
diya-node(server)
diya-node(MyRobot)
'MyService' service
{
dst: 'MyRobot',
service: 'MyService',
func: 'MyFunc',
data: {
stuff: 'stuff'
}
}
Am I connected to 'MyRobot' ?
yes
Can 'alice' use function 'MyFunc' of service 'MyService' ?
yes
Execute 'MyFunc' with data { stuff: 'stuff' }
no
{
service: 'MyService',
func: 'MyFunc',
err: 'unreachable'
}
no
{
service: 'MyService',
func: 'MyFunc',
err: 'forbbiden'
}
Forward
Forward
{
service: 'MyService',
func: 'MyFunc',
data: {
foo: 'bar1'
}
}
Forward
{
service: 'MyService',
func: 'Whatever',
data: {
some: 'thing'
}
}
Register for event 'MyServive.Whatever'

Partnering ROBOTICS

Diya Software stack





Partnering ROBOTICS

Hipster technologies

- Functional language
- loosly typed
- object-oriented (kinda)
- Looks familiar but isn't

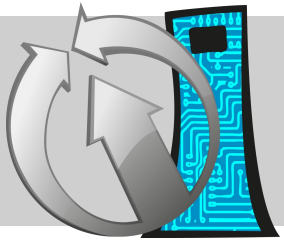
- Based on V8 JS engine (chrome)
- Asynchronous

- provide all necessary system APIs in a JS environement
- doesn't provide HTML5 JS APIs
- Lots of plugins

- HTML → content structure
- CSS → content layout
- JS → behavior

- A set of high level APIs providing various functionnalities (similar to JVM + Java APIs)

-Multi plateform



Partnering
ROBOTICS

Hipster technologies

WEB COMPONENTS

polymer

https://www.polymer-project.org

https://bower.io

TEMPLATES

```
<template id="">
</template>
```

SHADOW DOM

```
div
  #document-fragment
    span
```

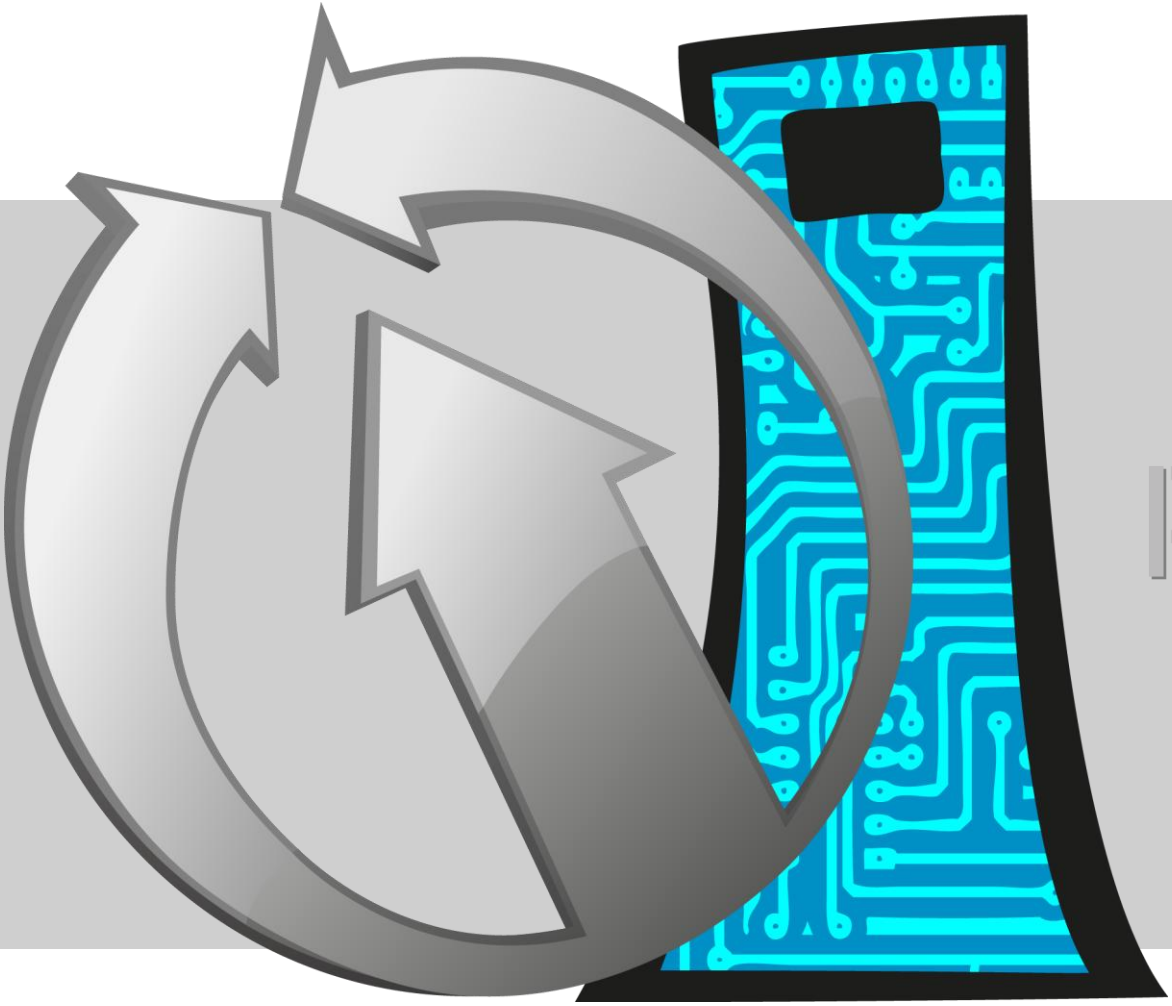
HTML IMPORTS

```
<link rel="import"
   href="part.html">
```

CUSTOM ELEMENTS

```
<my-elem>
</my-elem>
```

http://webcomponents.org



Partnering

ROBOTICS

Thanks