

## Comparison of Software Platforms



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### 1 Platform

#### 1.1 Philosophy, assumptions, etc.

Meadow	Devices will get more and more capable
AllJoyn	
SmartThings	Devices are dumb (only support simple commands like open/close, etc); “logic” need to be added outside of devices
HomeKit	
Nest	
ROS	
MessageSight	

#### 1.2 Key concepts

Meadow	Flexible; can be implemented both centralized or distributed
AllJoyn	
SmartThings	MVC framework – 1) Device connected to Hub (Model), 2) SmartApps on Cloud (Control), 3) SmartApps connected to UI (View),
HomeKit	
Nest	
ROS	
MessageSight	

#### 1.3 Distributed vs centralized

Platforms allows to add new “logic” or “smartness” in the world of devices.

Meadow	Flexible; can be implemented both centralized or distributed
AllJoyn	
SmartThings	<i>SmartApps</i> run on the Cloud for now; they plan to <b>let SmartApps to run also on Hubs (without internet connectino)</b>
HomeKit	
Nest	
ROS	
MessageSight	

#### 1.4 Runtime needed on devices?

Meadow	Yes
AllJoyn	Yes
SmartThings	
HomeKit	
Nest	
ROS	
MessageSight	

#### 1.5 Distributed vs centralized

Platforms allows to add new “logic” or “smartness” in the world of devices.

Meadow	Flexible; can be implemented both centralized or distributed
AllJoyn	
SmartThings	<i>SmartApps</i> run in the Cloud
HomeKit	
Nest	
ROS	
MessageSight	

### 1.6 Runtime with varying capability

Can we tweak the capability of runtime depending on devices?  
e.g. thin client vs full client.

- Meadowview runtime can be designed so that only partial capability (e.g. only “properties” are handled but functions, events are not supported’) be served on lesser devices

## 2 Devices

### 2.1 Notion of device types

Meadow	
AllJoyn	
SmartThings	
HomeKit	
Nest	
ROS	
MessageSight	

### 2.2 Supported networking protocols

Meadow	
AllJoyn	
SmartThings	ZigBee, Z-Wave, WiFi, IP, UPnP
HomeKit	
Nest	
ROS	
MessageSight	

## 3 Services: Adding “Logic”

### 3.1 What types of service abstractions

### 3.2 Where to deploy services?

### 3.3 When can services be deployed?

### 3.4 How can services be deployed?

### 3.5 Who deploys services?

### 3.6 In which language?

Meadow	Meadowview
AllJoyn	Java, C, C++, etc.
SmartThings	Groovy
HomeKit	Object-C
Nest	
ROS	
MessageSight	

## 4 Security Model

### 4.1 Addition of services

### 4.2 Companies

Meadow	
AllJoyn	
SmartThings	Samsung
HomeKit	Apple
Nest	Google
ROS	
MessageSight	IBM

### 4.3 Target domains

Meadow	Home automation, Factory automation, Health care, etc.
AllJoyn	Home automation, etc.
SmartThings	Home automation
HomeKit	Home automation
Nest	Home automation
ROS	Robot programming
MessageSight	

### 4.4 How products are differentiated

Meadow	
AllJoyn	
SmartThings	Two types of kits (“Know your home kit” and “Know and control your home kit”)
HomeKit	
Nest	
ROS	
MessageSight	