**Open source framework**

1. OpenRemote

OpenRemote is a middleware platform that integrates many different protocols and concentrates on house automation, asset control, smart city industrialization, smart building and healthcare. The platform translates data sources, whether they use generic or specialized IoT protocols. Applications designed with OpenRemote work on Android, iOS and web browsers. Development teams can also manage or configure OpenRemote without the vendor lock-in.

An example use case of OpenRemote is a crowd management system that combines data from sensors that to monitor and control the sound levels and predict, parking system, video surveillance and street lighting. An application dashboard with data visualization software aggregates data from devices, sensors and subsystems controlled via a local hub and combines them to observe crowd management statistics.

2. Device Hive

The DeviceHive IoT-based application development platform, is a machine-to-machine interaction framework that implements IoT tools for device data and control. It offers a cloud-based API that enables remote control while eliminating the need for additional network configuration. Device Hive comes with online support, such as management protocols, books and gateways to help organizations customize and integrate their solutions. DeviceHive focuses on fields of application including security, industrial mechanization and intelligent home technology.

3. The Thing System

The Thing System is a group of software elements and network protocols that connect smart home devices together to give users more centralized control over their devices, such as smart lighting, Nest thermostats, air conditioners, Apple TVs and other IoT-based devices.

4. Distributed Services Architecture

DSA takes information collected by devices, services and applications and feeds it into a real-time model and library of distributed service links that translate protocols and integrate data. The DSA system facilitates interaction between machines and sets up a network to share functionality between discrete computing operations.

5. Node-RED

Node-RED is a low-code programming platform to link multiple APIs, devices and online services. In other terms, Node-RED is a flow-based development editor that creates different visual flows using simple and automatic editing help available through a web browser. Developers can use JavaScript commands in the platform and the platform saves generated flows in the open-standard JSON file construction, which makes it simpler to re-use.

6. DeviceHub

The open source platform DeviceHub.net offers cloud management for connecting and monitoring devices. The platform provides visualization and analytics of data in real-time. Organizations can use DeviceHub for IoT deployments in wellness care monitoring, asset tracking, and collecting telemetry data.

7. Kaa

Supported by Cybervision, the Kaa open source offering implement end-to-end device maintenance. System software developers can use the multipurpose middleware to build IoT solutions, associated apps and products. This open source platform offers advantages in its simple set up, with customizations that can be applied to the platform quickly.