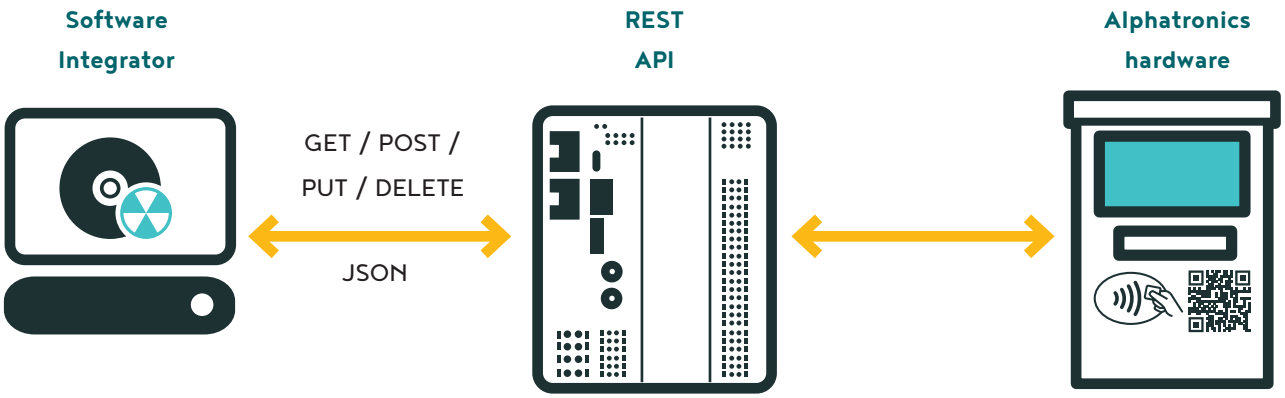
AT – HALAPI

An accessible RESTfull API – to interface with hardware created and delivered by Alphatronics



The HALAPI is a webservice that facilitates the integration of hardware devices provided by Alphatronics in a 3th party software solution.

A device is represented as a resource and the device's features (LEDs, barrier, digital inputs, digital outputs, ...) are available through a set of data contracts.

Each data contract consists of a set of methods defined for a specific feature of the device. A device can have one or more data contracts.

For example: The smartcover is a waterproof motorized hatch, mounted in a kiosk. It allows users (eg: car drivers) to present documents that need to be scanned or receive printed documents. This device has three data contracts:

- Hatch: represents the motorized hatch.
- Indicators: represents the front cover RGB Led.
- Inputs: represents the digital inputs (hatch full closed/ open, safety).

The webservice is a REST based API that uses JSON as data exchange format.

Regarding the http communication protocol, two possible scenario's are supported:

- unsecure (http): the api is consumed by a front-end client (eg: SPA web app, desktop app) running on the same host as the api. Http communication does not pass the network interface and the api cannot be reached from outside the host.
- secure (https): the api is consumed by a backend application (eg: service or daemon) running on the same OR another host. In this case, the OAuth2.0 client credentials flow must be used and a JSON webtoken must be requested before access is granted to the api's methods.

The webservice also supports the websocket protocol for unsolicited messages
(eg: digital input, barcode presented,...).

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Specifications

- Runs on-premise inside a docker container (linux arm32 / windows X64) on an iot edge controller delivered by Alphatronics
- Installed and configured through ALIOT (IoT platform of Alphatronics)
- Deployment based on Azure iot edge modules. No incoming connections (eg: port forwarding rules) are required.
- REST based API
- JSON as data exchange format
- HTTP(S)
- OAuth2.0 client credentials flow for authorization (uses JSON access token)
- Websocket support for hardware device events

Supported devices	Linux arm32	Windows X64
SmartOne barrier	X	X (*)
Smart cover	X	X (*)
e-ID reader	X	NOT SUPPORTED
Universal barcode scanner	X	X
IO-module on CAN interface	NOT SUPPORTED	
IO-module on RS485 interface	COMING SOON	COMING SOON

(*) a SmartController is always required to run the Smart-One / SmartCover logic

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