IQRF Ecosystem

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What did we see?

1. New way of bonding
   IQRF Smart Connect™

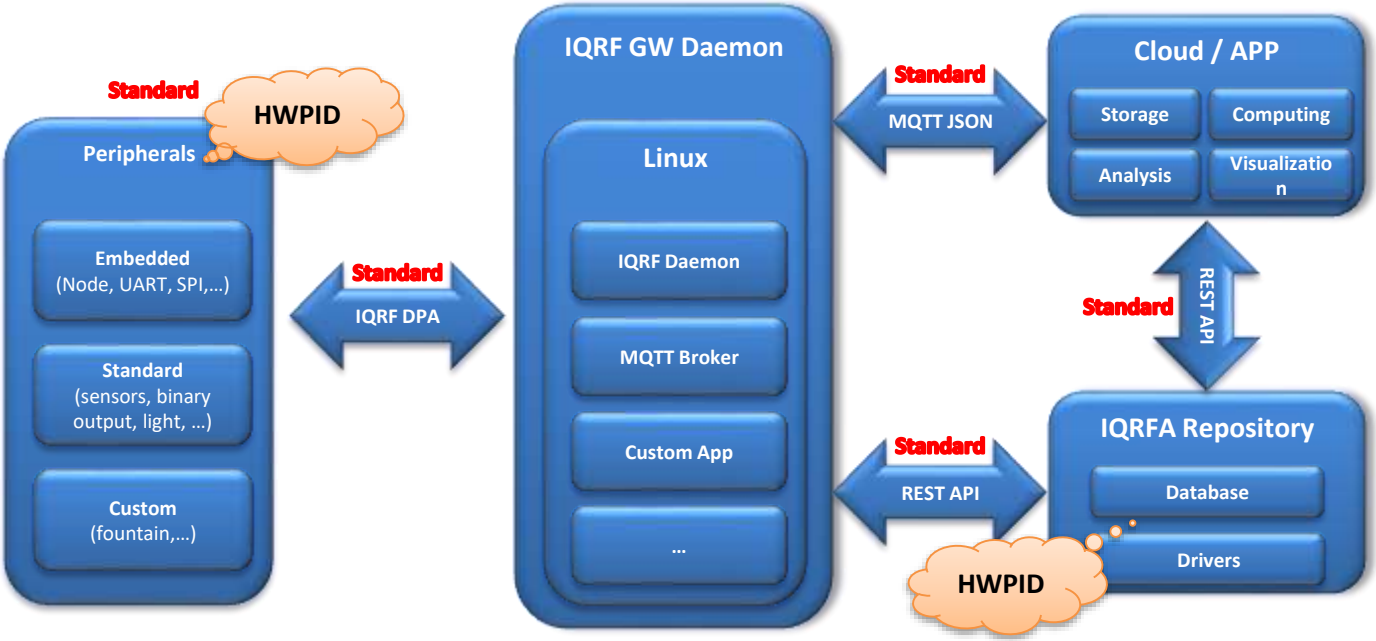
2. Simple product integration
   IQRF Repository and **Drivers**

A year ago we would see …

- Legacy button initiated bonding
- In close proximity to Coordinator
- Preconfigured working channel
- Potential enemy bonding
- No deep integration

IQRF Ecosystem is maturing

A year old picture became reality

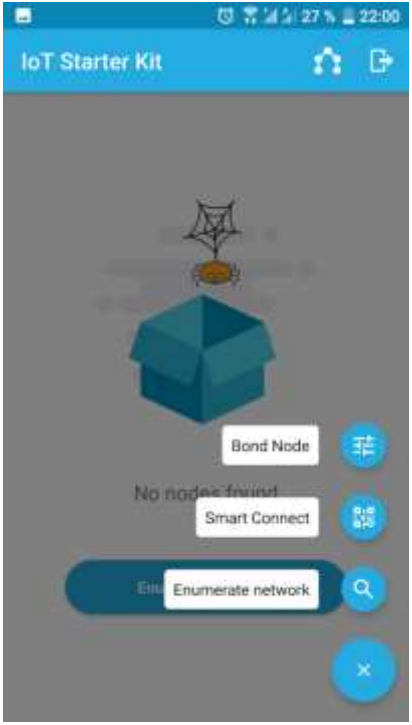


How it works?

10 Steps

1. QR Code scanned by the APP
2. APP decodes IQRF Smart Connect™ parameters
3. Product is found at IQRF Repository
4. Coordinator drivers loaded from IQRF repository
5. APP connects to IQRF GW Daemon
6. IQRF Smart Connect™ executed
7. Product drivers loaded from IQRF repository
8. Drivers used to explore the device
9. APP UI generated
10. Drivers used to control the device

QR Code scanned by the APP



APP decodes IQRF Smart Connect™ parameters

I**QR**F Code	**Pvra7LWSFP4Fb4e9cWbgzfyQZ4769iHQdV51L**
MID	**81009CE0**
IBK	**6F5F8AC3EAF1A7A39C7D17B6ECD739B0**
HWPID	**0001**

Step 3

Product is found at IQRF Repository

Zabezpečeno | https://repository.iqrfalliance.org/api/products/1

JSON

- **hwpid :** 1
- **name :** Protronix NLII-CO2+RH+T-IQRF+
- **manufacturerID :** 1
- **companyName :** Protronix s.r.o.
- **homePage :** https://www.iqrfalliance.org/product/nlii-co2-rh-combined-sensor
- **picture :** https://www.iqrfalliance.org/product_files/co2-rh-t-preview.png

Coordinator drivers loaded from IQRF repository

```
/* Function: iqrf.embed.explore.Enumerate_Response
Decodes DPA response from enumerating DPA peripherals.

Parameters:
  response - string: DPA response string.

Returns:
  object: Object with the following fields (see DPA documentation https://www.iqrf.org/DpaTechGuide/ for

* dpaVer
* perNr
* embeddedPers
* hwpid
* hwpidVer
* flags
* userPer
*/
iqrf.embed.explore.Enumerate_Response = function ( response )
{
  var responseData = iqrf.CheckResponsePnumPcmdDlen( response, iqrf.PNUM_Enumeration, 'bf', -12 );
  var result =
    {
      dpaVer: responseData[0] + ( responseData[1] << 8 ),
      perNr: responseData[2],
      embeddedPers: iqrf.BitmapToIndexes( responseData, 3, 6 ),
      hwpid: responseData[7] + ( responseData[8] << 8 ),
      hwpidVer: responseData[9] + ( responseData[10] << 8 ),
      flags: responseData[11],
```

APP connects to IQRF GW Daemon

Gateway Daemon

IQRF Smart Connect™ executed

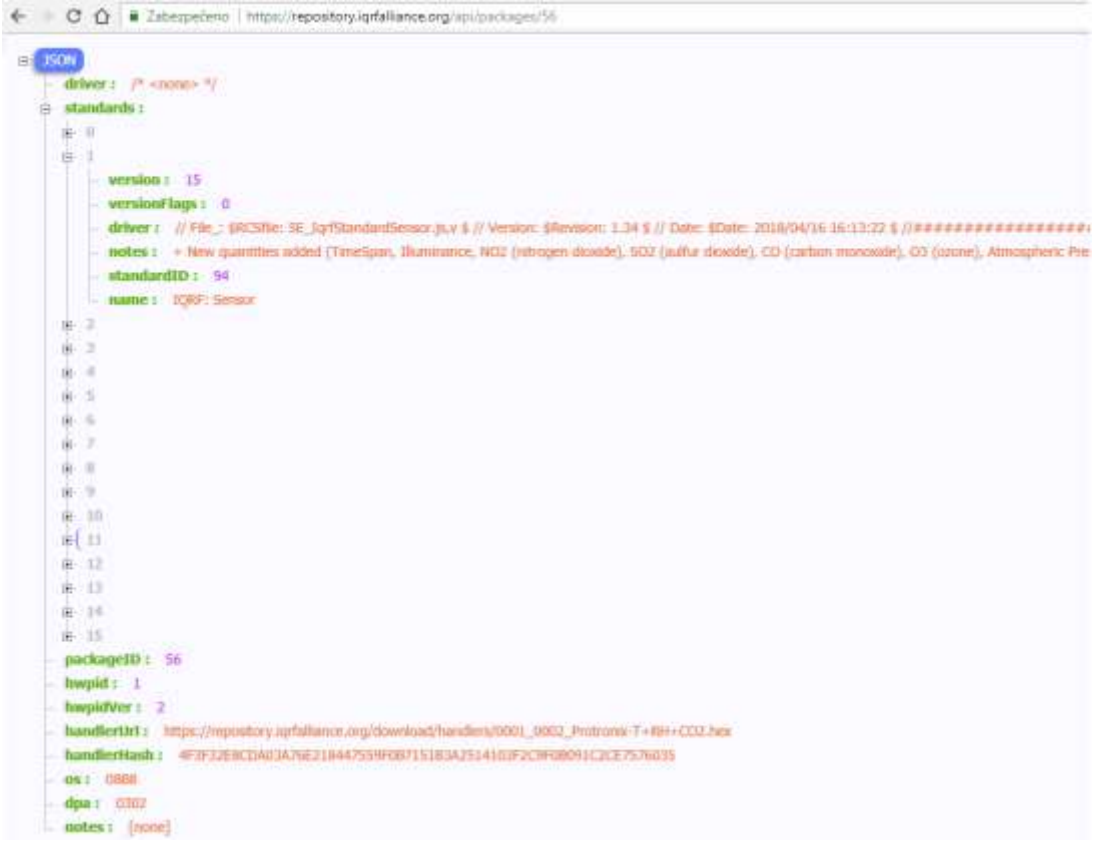
iqrf.embed.coordinator.**SmartConnect_Request**

```
iqrf.embed.coordinator.SmartConnect_Request = function (reqAddr,
                                                        bondingTestRetries,
                                                        ibk,
                                                        mid,
                                                        bondingChannel,
                                                        virtualDeviceAddress,
                                                        userData             )
```

Encodes DPA request for Smart Connect. From version 1.00 for DPA 3.03.

Step 7

Product package with drivers loaded from IQRF repository



Drivers used to explore the device

iqrf.sensor.**Enumerate_Response**

```
iqrf.sensor.Enumerate_Response = function (response )
```

Decodes DPA response from sensor enumeration.

Parameters

response string: DPA response string.

Returns

array: Array of objects describing each sensor. The object has the following fields:

- **type** number: Value type of the sensor (quantity). See IQRF Sensor standard for details.
- **name** string: Name of the sensor (quantity).
- **shortName** string: Short name of the sensor (quantity). Typically it is a symbol used at physics.
- **unit** string: Unit of the quantity. Dimensionless quantity has empty string "".
- **frcs** array: Array of FRC commands supported by the sensor.

```
"0": {
  "type": 1,
  "name": "Temperature"
  "shortName": "T",
  "unit": "°C"
},
"1": {
  "type": 128,
  "name": "Relative humidity"
  "shortName": "RH",
  "unit": "%"
}
```

APP UI generated

Drivers used to control the device

iqrf.sensor.**ReadSensorsWithTypes_Respo**

```
iqrf.sensor.ReadSensorsWithTypes_Response =
```

Decodes DPA response from sensor value reading.

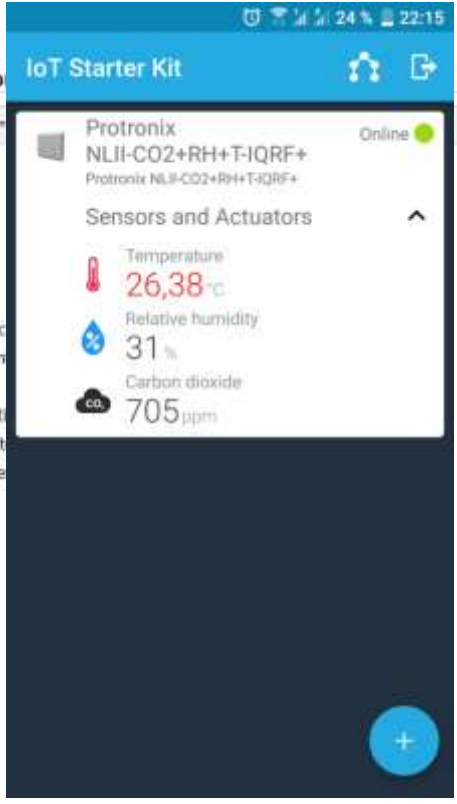
Parameters

response string: DPA response string.

Returns

array: Array of objects for every read sensor. The objec

* **type** number: Value type of the sensor (quan
* **name** string: Name of the sensor (quantity).
* **shortName** string: Short name of the sensor (quant
* **value** number: Value of the sensor. It equals t
* **unit** string: Unit of the quantity. Dimensionle



Things to remember

- IQRF ecosystem is maturing
- Based on industry and own standards
- IQRF Smart Connect™
- IQRF GW Daemon
- IQRF Repository
- Simple integration and maintenance

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