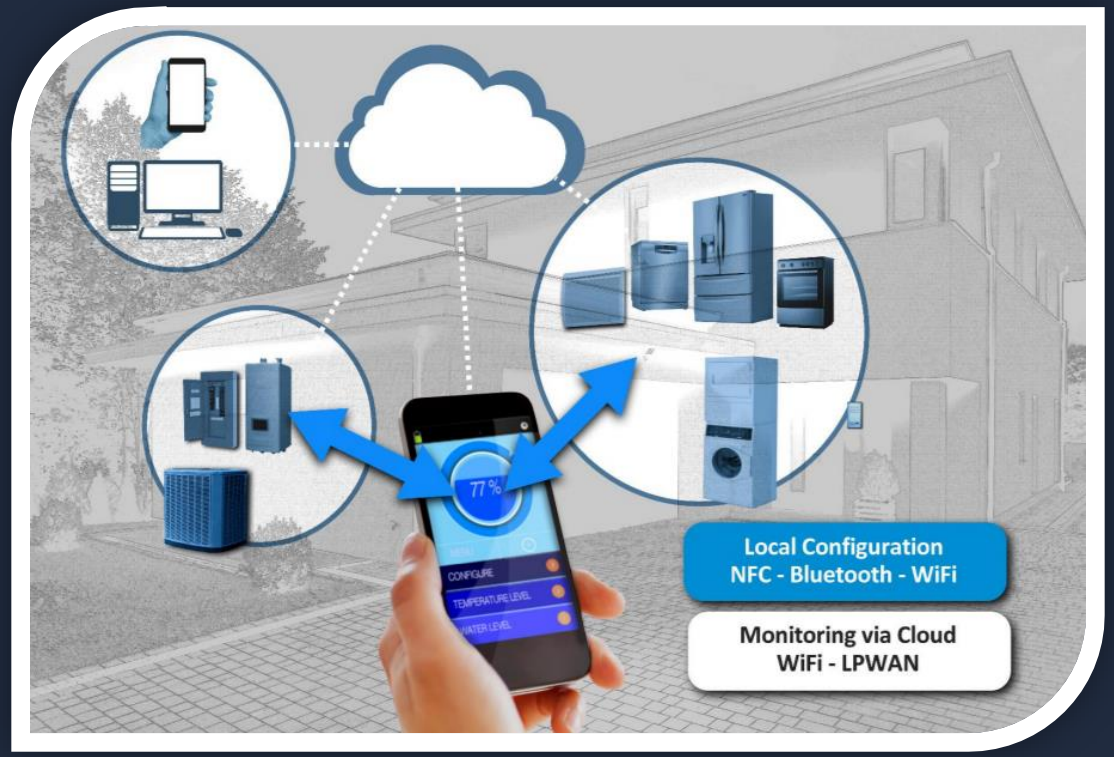
Wireless Solutions for Easy IoT

Instant HMI for PLC and Industrial Devices



Authorized Partner

09 February 2023

www.iotize.com

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Our Expertise Today

Founder: **Francis Lamotte**
Offices: Grenoble, France
Founded: **Feb 2017**
Employees: **10** (80% R&D)

Embedded Electronics
- Microcontrollers
- Embedded Software
- C, C++, Java

Wireless
- Near Field Communication
- Bluetooth, Wi-Fi, LoRa, …

Mobiles & Cloud
- Cordova, Ionic
- Android, iOS, WIndows
- MQTT, CoAP
- AWS, Bluemix, Watson, …

IoT Security
- Encryption
- Authentication

Customers

Appliance

HVAC

Energy

Industry

Authorized Partner

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Problem of Complex Technology Landscape

New Technology

Increased Complexity

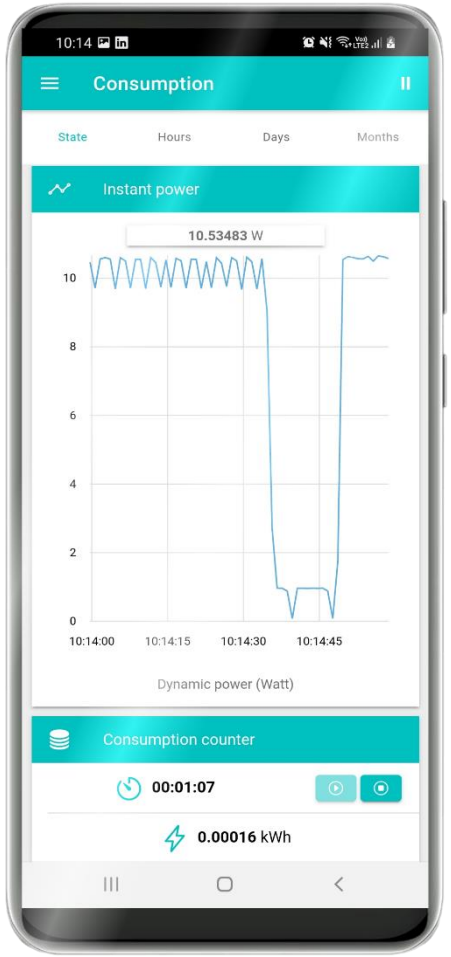
Lack of Resources

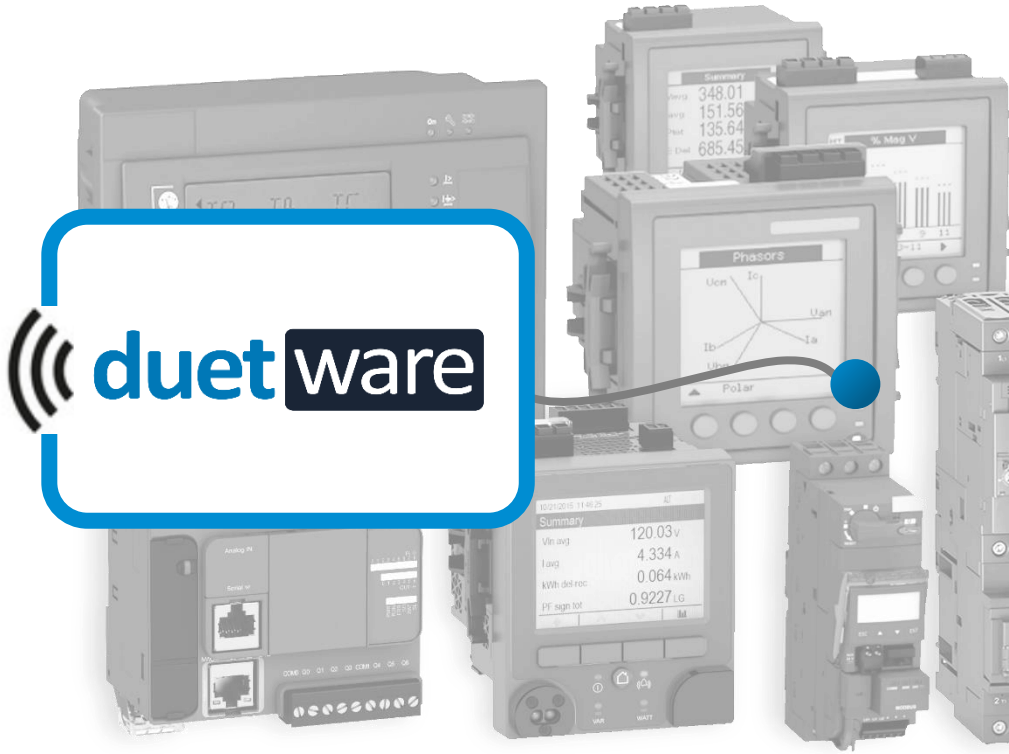
IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Reduce Integration Effort by a Factor of 10

Just plug it in,
& configure…

…our tools do
the rest for you.





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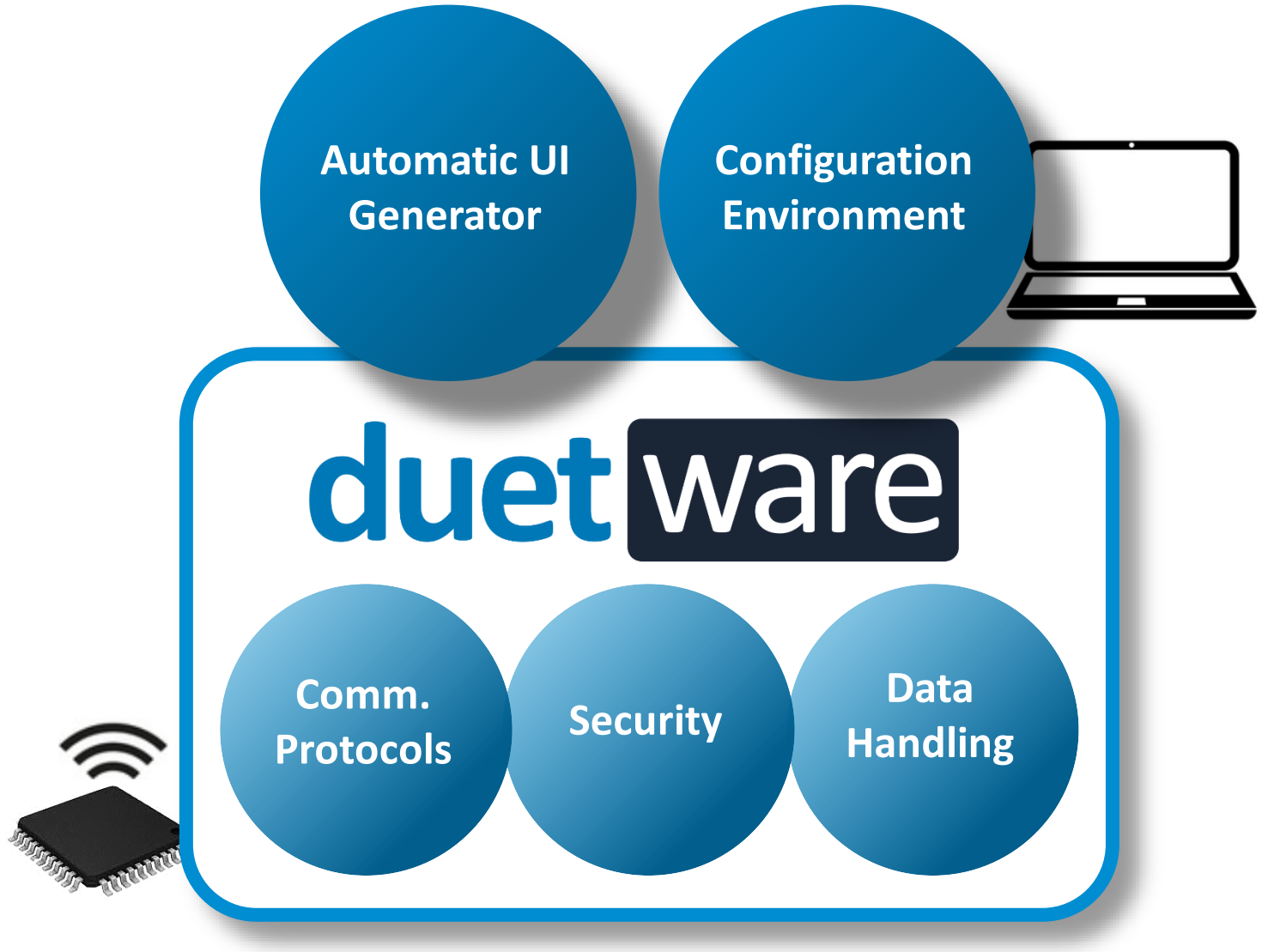
Connectivity Packaged to Save Effort

‘No Code’ Software Ecosystem



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They iotize…

Cotherm

Heating Appliances

Schneider Electric

Energy & Automation

Air Liquide

Industrial Monitoring

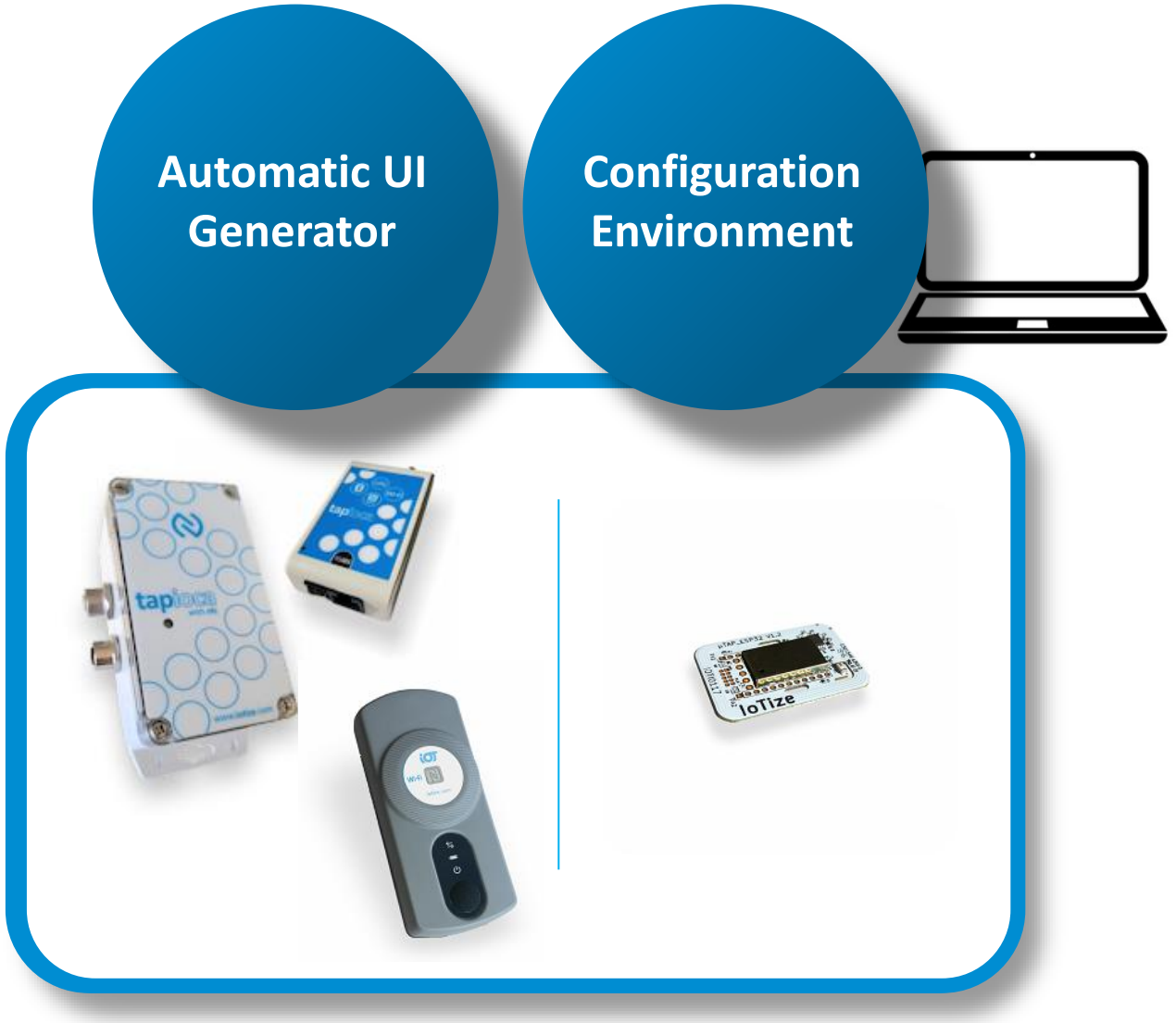
IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Connectivity Packaged to Save Effort

‘No Code’ Software Ecosystem

Industrial Retrofit or Native Integration

NFC, Bluetooth, Wi-Fi
LoRa, LTE, NB-IOT



IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Instant Connectivity & Adaptable HMI

What Do You Need?

Target System (Modbus™)

Connection Info for the Target

An IoTize Wireless Device

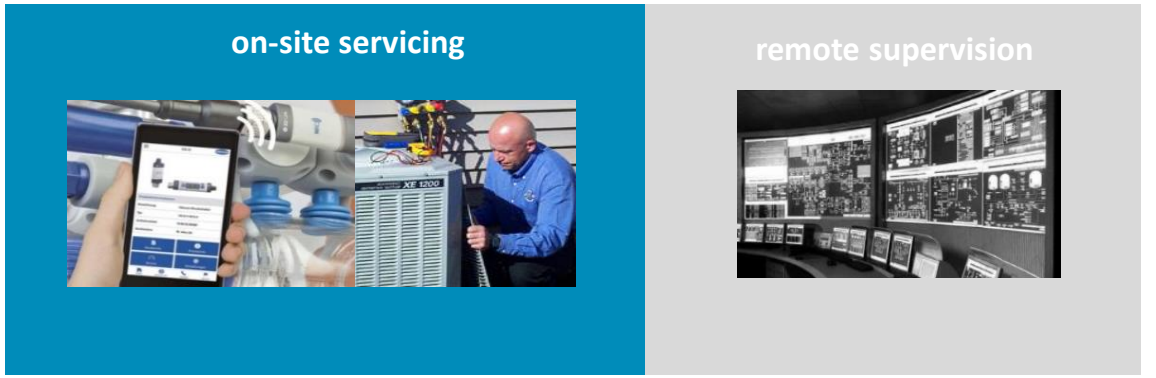
Tap Manager App & Your Mobile

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Tapioca with Duetware

Solution for original equipment manufacturers, owners or service providers.

Retrofit on Modbus or Serial bus.



	Available	Certified	BUS	IP67	NFC	Bluetooth	Wi-Fi	LoRa	LTE	...
★ TpC FS4W123	Yes	Yes	RS485		X	X	X			
TpC FE0L123	Yes	Yes	Ethernet		X	X	X			
TpC PS4W123	Yes	Yes	RS485	Yes	X	X	X			
TpC PE0L123	Yes	Yes	Ethernet	Yes	X	X	X			
TpC PS4L123	Yes	Yes	RS485	Yes	X	X	X	X		
TpC PS4L123	Yes	Yes	Ethernet	Yes	X	X	X		X	

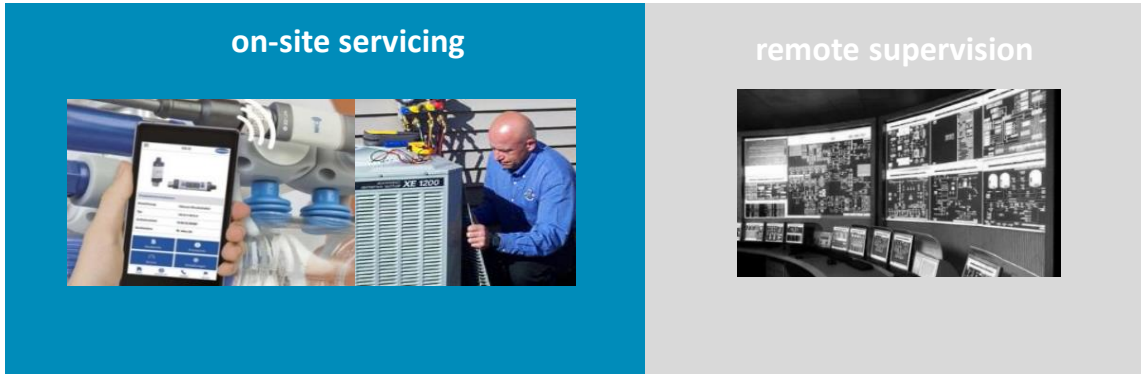
Many more variants...

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

TapNPass with Duetware

Solution for original equipment manufacturers, owners or service providers.

Retrofit on Modbus or Serial bus.



	Available	Certified	Power Supply	NFC	Bluetooth	Wi-Fi	LoRa	SigFox	...
TnP NSW103	**Yes**	**Yes**	**Battery***	**X**	**X**	**X**			
TnP FSW103	**Yes**	**Yes**	Target**	**X**	**X**	**X**			

Notes:
* *Rechargeable Li ION battery.*
** *Powered from the target system.*

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Install Tap Manager on Your Mobile

Tap Manager

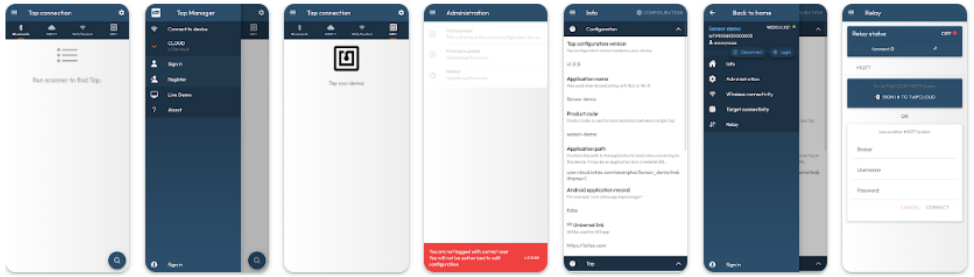
IoTize SAS

100+
Downloads

Everyone

Install on more devices

This app is available for all of your devices



GET IT ON Google Play

Download on the App Store

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

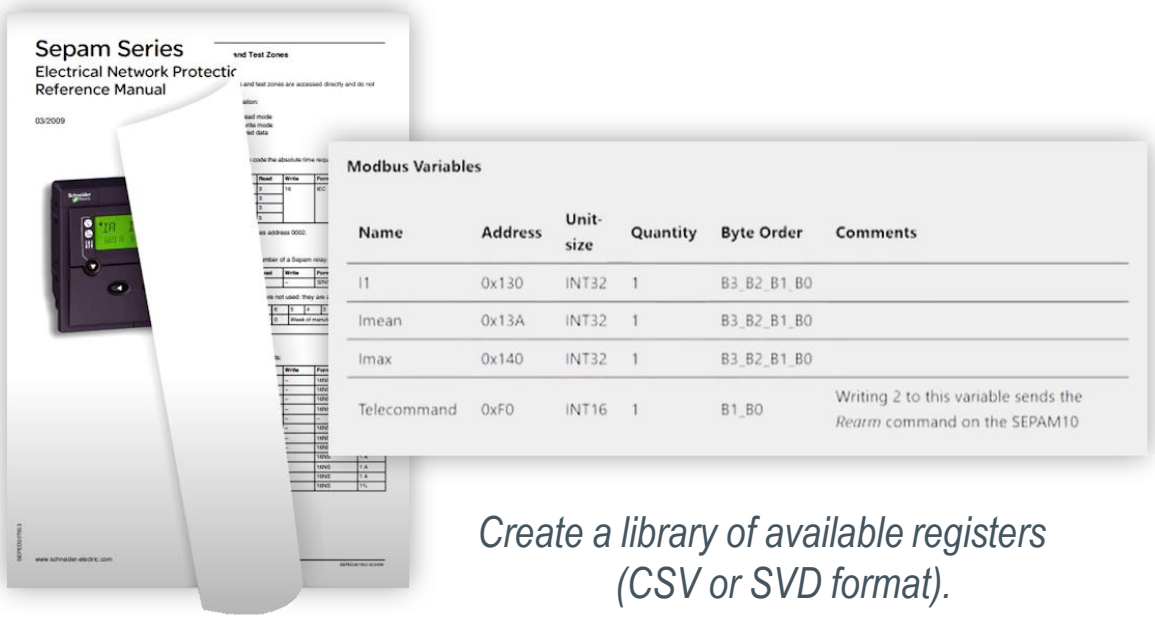
Target Equipment

Connection Information

Supports Modbus™ protocol

Connection parameters

Accessible registers



Create a library of available registers (CSV or SVD format).

Information from target documentation.

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Connect

Fieldbus

2 Signals

Power supply

Modbus protocol

Supported Fieldbus Types

- USB
- Ethernet
- RS485
- RS232

- RJ45
- DB9
- USB

Direct Wire Connections

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Connect Mobile to Tapioca

NFC Tap to Connect

(NFC smartphone
Approach to 3cm for
automatic connection)

Scan in Tap Manager for:

Bluetooth

(No Pairing Code)

Wi-Fi hotspot

(WPA: ABCD1234)

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Login to Tapioca

Administrator Access

(Password: admin
Login: admin)

Tapioca is designed with security in mind. It will require users to login at different moments during the configuration process.

Users can also create profiles to contrain users' access to features and configuration.

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

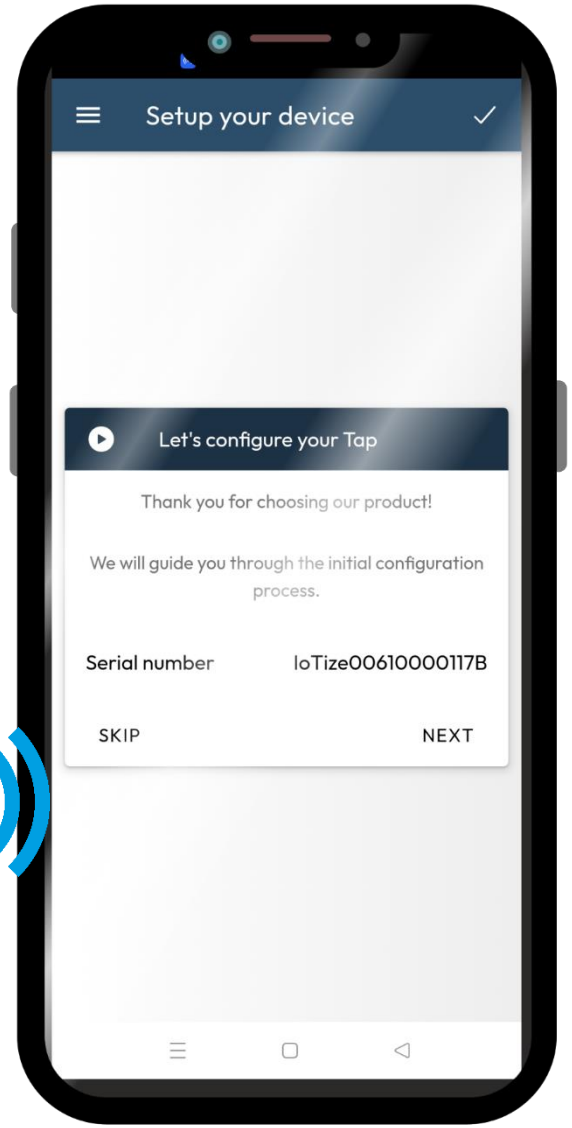
Configure Tapioca

Configuration Wizard

Detects Tapioca is not Configured

- Select the Model
- Create TapCLOUD account (optional)
- Name your Tapioca
- Configure WAN (optional)
- Select Target Protocol (Modbus-RTU)

This configures Tapioca for communication with the Target and the mobile app.

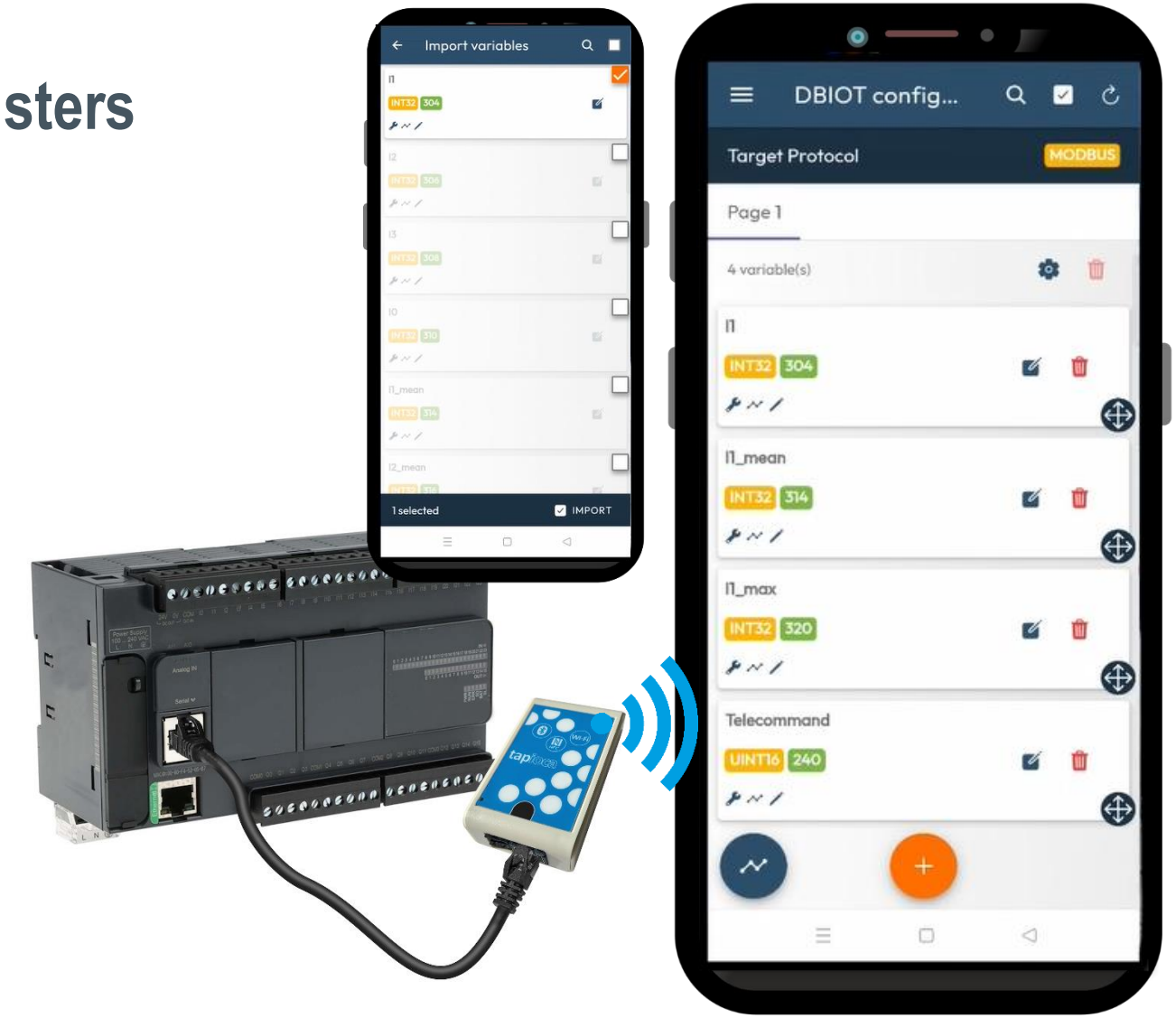


IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Select Registers

Select Using Library of Registers

- Create by users from the target documentation
- CSV format, IoTize provides a template
- Select registers you are interested in
- You can always add more later



IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Configure HMI

Set Variable Displays Parameters

Without graphic configuration, the app displays numeric values

- Display name
- Access type (read/write)
- Graphical display type & parameters
- Organized variables in pages

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Use Your HMI

Your HMI for Your System

- Launched at each connection
- Modifiable at any time
- Requires Tap Manager app

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

What Else?

DBIOT config...
Target Protocol
MODBUS
Page 1
4 variable(s)
I1
INT32 304
I1_mean
INT32 314
I1_max
INT32 320
Telecommand
UINT16 240
DBIOT Monito...
37.74
C
Average CPU Temperature
37.970
37.965
37.960
37.955
37.950
5: 37.956
11:16:15 AM
11:16:20 AM
11:16:25 AM
IoTize

Access Control

User Profiles Limit Access

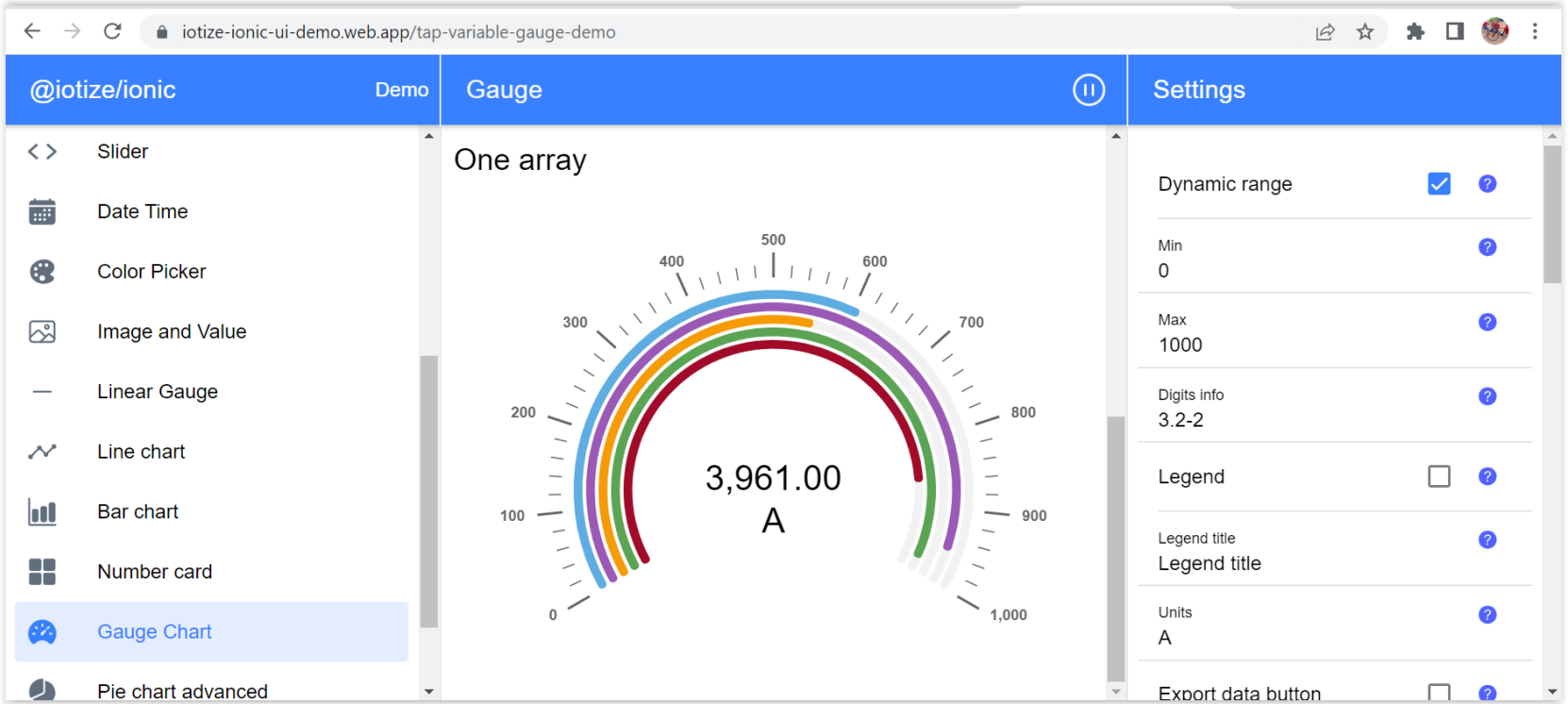
- IoTize ADMIN profile for configuration
- Supervisor for use and HMI adaptation
- Create own profile for HMI use only

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Online Examples of Graphical Controls

Wide Range of Graphical Eléments for Your HMI

- https://iotize-ionic-ui-demo.web.app/tap-variable-number-demo



IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Need More? That's Normal…

- **Create autonomous, branded app**

  No Problem! Configuration is compatible with IoTize complete solution (IoTize Studio & App Generator). Generated app project gives you full control of graphics, styles, splash screen. Generate publishable apps for iOS & Android.

- **Drive components & sensors directly**

  No Problem! Go to the full solution for access to the embedded Virtual Machine in TapNLink. With a few lines of Java, TapNLink can be your CPU and directly drive external sensors and actuators. Examples at: https://support.iotize.com/

- **Send data to the cloud platform**

  Data logging to Cloud platforms is being integrated into Tap Manager. This feature is being tested currently.

www.iotize.com

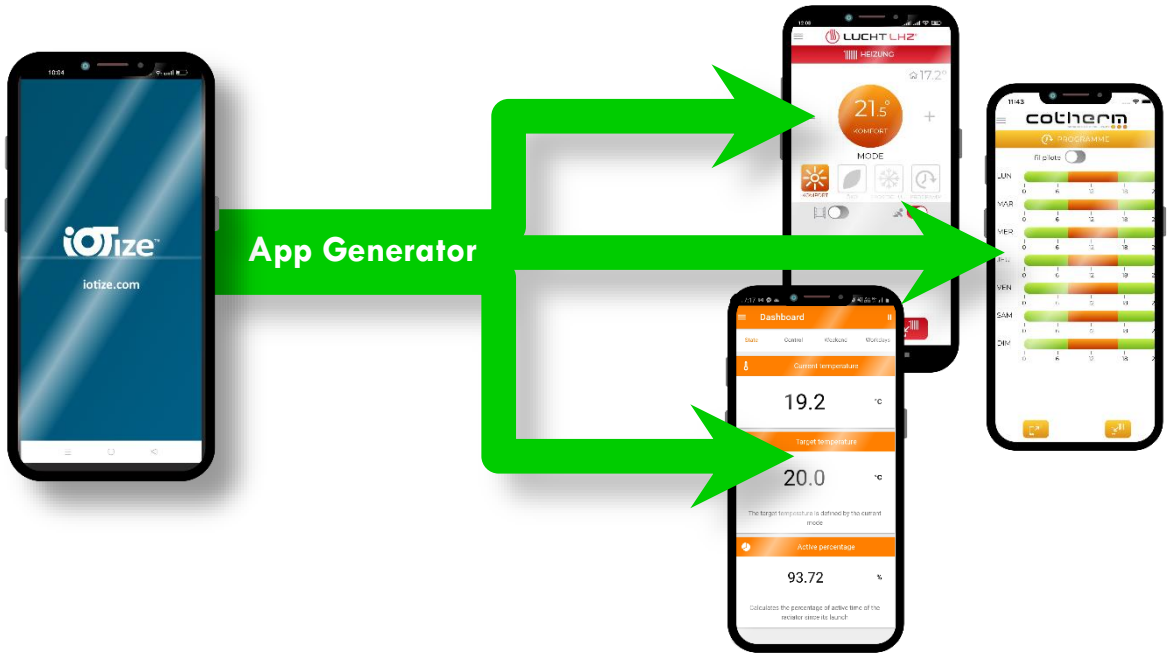
IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Future Evolutions

Generate Personalized Apps

Create an HMI in Tap Manager then export to our app generator.

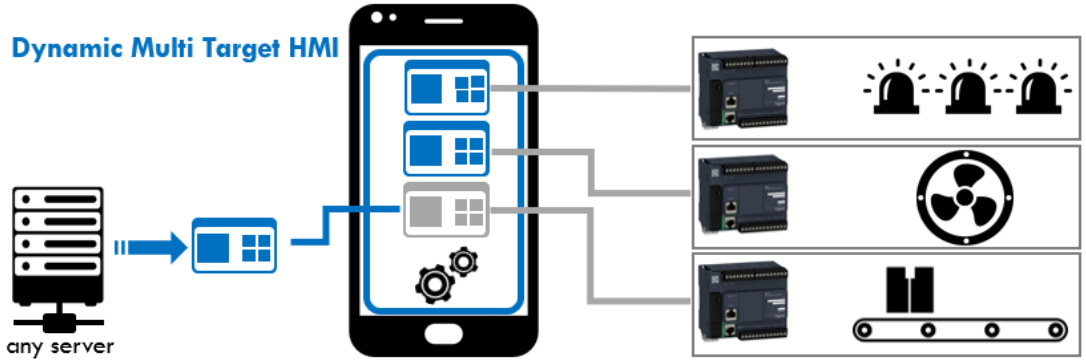
- Control Look-and-Feel, Branding
- Create and Publish Your Own APK / IPA



Multi-Target Support

Load the HMI for different target equipment when connecting to the same TapNPass wireless device.

- Universal, adaptable service app
- Dynamic target detection
- HMI files (CSV) on mobile or server



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They iotize…

Cotherm

Heating Appliances

Schneider Electric

Energy & Automation

Air Liquide

Industrial Monitoring

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Recognized Innovations

embedded world
Exhibition&Conference
it´s a smarter world

TRUSTECH
PAY | IDENTIFY | CONNECT & SECURE

NFC FORUM

Authorized Partner

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Thank you!

Questions

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Annex Slides – the Solution

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IoTize Embedded Duetware

Connects electronic systems to mobiles & Cloud

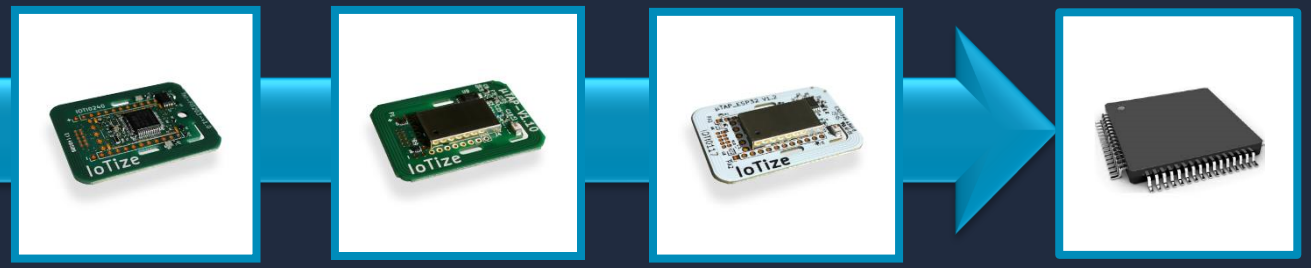
Minimizes integration effort

Maximizes reuse

Adapts to any wireless chipset !

Duetware

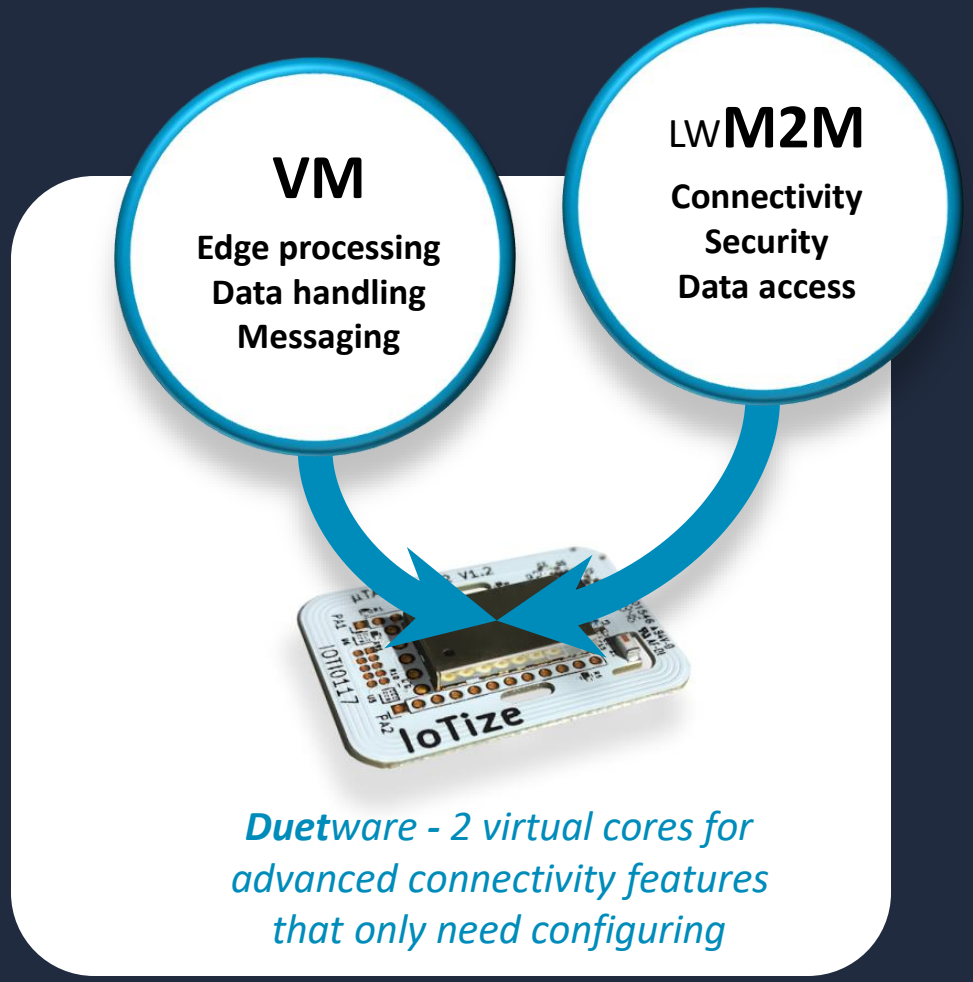
LWM2M Core
Java Virtual Machine



www.iotize.com

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Duetware Embeds Intelligence for Plug'n Play Integration



***Duet**ware - 2 virtual cores for advanced connectivity features that only need configuring*

Duetware for…

- *Plug'n play wireless integration*
- *Instant HMI as mobile apps*
- *NFC wake-up & pairing of RF interfaces*
- *Designed-in security & access control*
- *Embedded Java Virtual Machine*

Advantages for Design Teams…

- ***No expertise needed** (wireless design, security, apps, etc.)*
- ***Reduces design effort & project complexity***
- ***Improves design flexibility***
- ***Speeds integration, deployment & ROI***
- ***Ports to industry leading processors (ESP32, STM32, …)***

www.iotize.com

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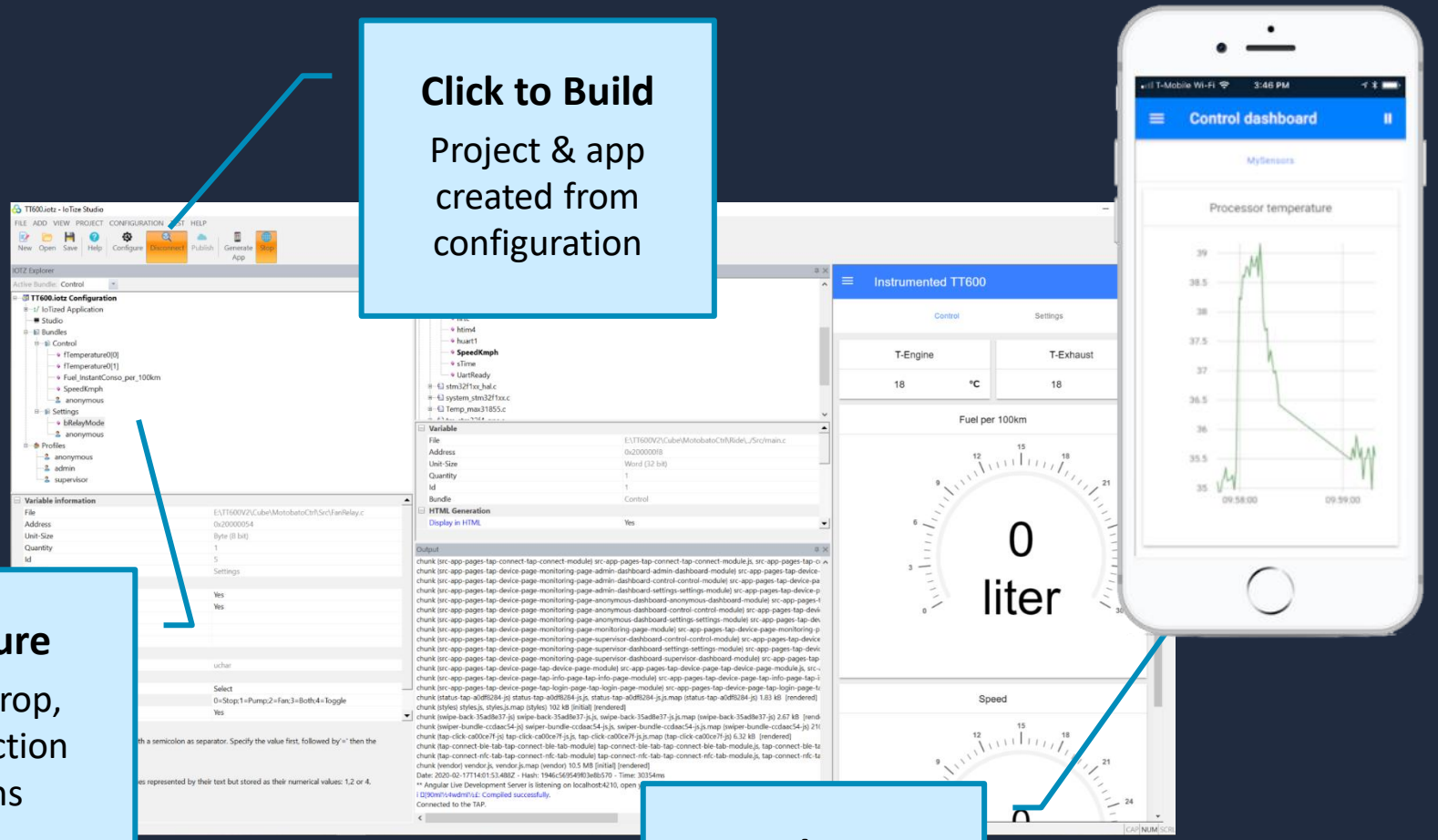
Configuration & Design Software

Click to Build

Project & app created from configuration



Configure

Drag'n drop, and selection options

Test the app

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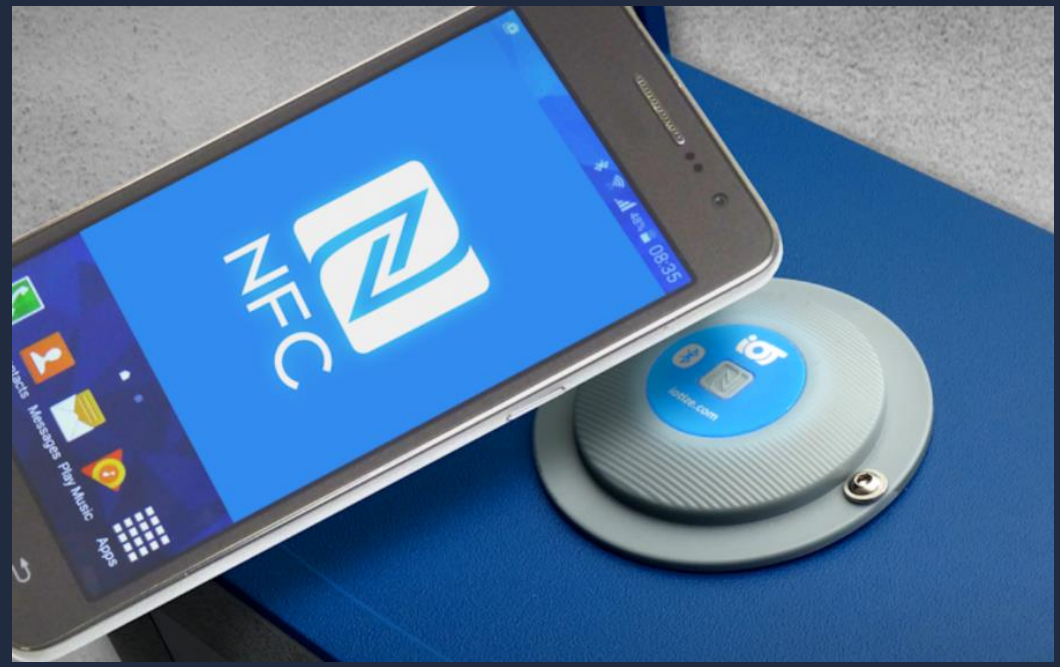
Duetware & Near Field Communication

- Intuitive app launch
- Automatic pairing for BLE / Wi-Fi
- Secure authentication
- Low energy consumption
- Reduced radio emissions
- Low-cost solution
- NFC 3-stroke configuration



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NFC 3-Stroke Configuration

Improved User Experience

- Intuitive
- Efficient
- Secure

Step1	Step2	Step3
Read settings	Edit settings	Update settings

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Annex Slides – Use Cases

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IoTize Duetware Use Cases

1. Commissioning & Configuration

- Mobile app
- Near Field Communication
- Share w/Cloud if needed

2. Diagnostic Monitoring

- Mobile app
- Bluetooth, or Wi-Fi
- Share w/Cloud if needed

3. Remote Monitoring

- Cloud platform & Mobile app
- Wi-Fi, LoRa / SigFox / NB-IOT, GSM

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Commissioning, Configuration & Audits

NFC

WiFi

Needs…

- *Short, Repeated Transactions with Equipment*
- *Collection and/or Update of Parameters*
- *Secure & Sure Connection*
- *Visibility of Parameter Modifications*
- *Record of Configurations & Interventions*

Duet Mobile Solution…

- *NFC Tap-to-Connect is Secure & Sure*
- *Better Visibility & Navigation of Parameters*
- *Stored Record of Configurations, Interventions*
- *Blocked? Get Help Directly Via the Mobile.*

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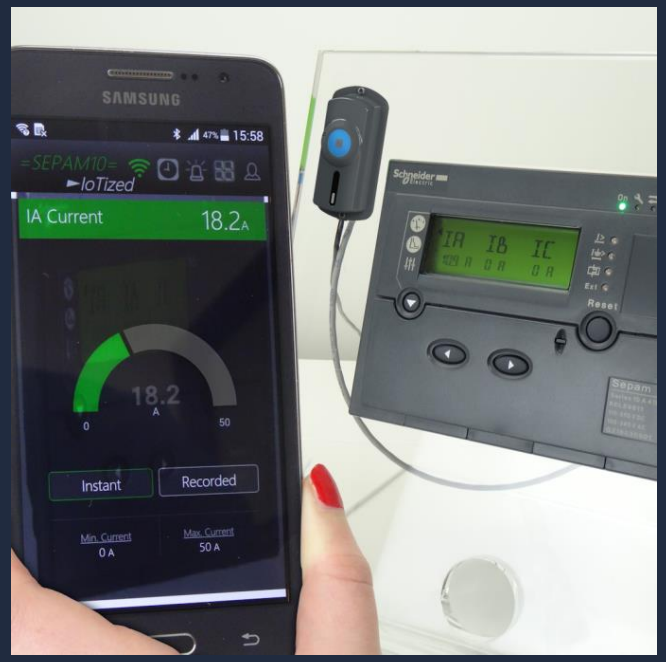
Diagnostic Monitoring & Updates



NFC

WiFi

Needs…

- *Extended, Live Interaction with Equipment*
- *Secure & Sure Connection*
- *Visibility of Parameters, Test Results & Flags*
- *Remote Operation for Safety & Comfort*
- *Record of Results & Interventions*

Duet Mobile Solution…

- *NFC Tap-to-Pair is Secure & Sure*
- *Comfort of Extended Range*
- *Better Visibility & Navigation of Complex Data*
- *Stored Record of Results & Interventions*
- *Blocked? Get Help Directly Via the Mobile.*

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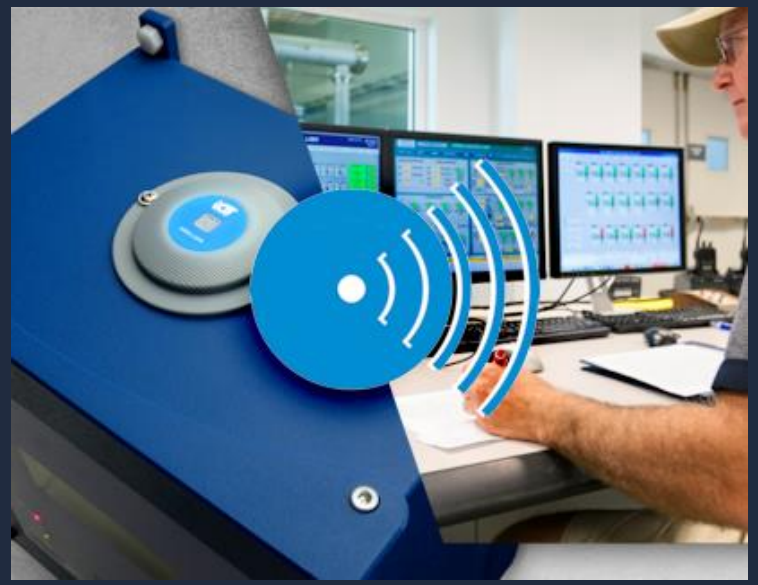
Remote Supervision



WiFi or **LPWAN**

Needs…

- *Secure*
- *Visibility of Parameters & Status*
- *Adaptability to Infrastructure Evolutions*
- *Planning & Triggering of Actions or Interventions*
- *Record of Results & Interventions*

Duet Cloud Solution…

- *Layered Encryption & Configurable Access Control*
- *(Re)Configurable Add-on, OTA Programmable*
- *Visualization & Controls based-on Configuration*
- *MQTT Adapts Easily to Any Service Platform*

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Annex Slides – Products

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Tapioca with Duetware

Solution for original equipment manufacturers, owners or service providers.

Retrofit on Modbus or Serial bus.

	Available	Certified	BUS	IP67	NFC	Bluetooth	Wi-Fi	LoRa	LTE	...
TpC FS4W123	Yes	Yes	RS485		X	X	X			
TpC FE0L123	Yes	Yes	Ethernet		X	X	X			
TpC PS4W123	Yes	Yes	RS485	Yes	X	X	X			
TpC PE0L123	Yes	Yes	Ethernet	Yes	X	X	X			
TpC PS4L123	Yes	Yes	RS485	Yes	X	X	X	X		
TpC PS4L123	Yes	Yes	Ethernet	Yes	X	X	X		X	

Many more variants...

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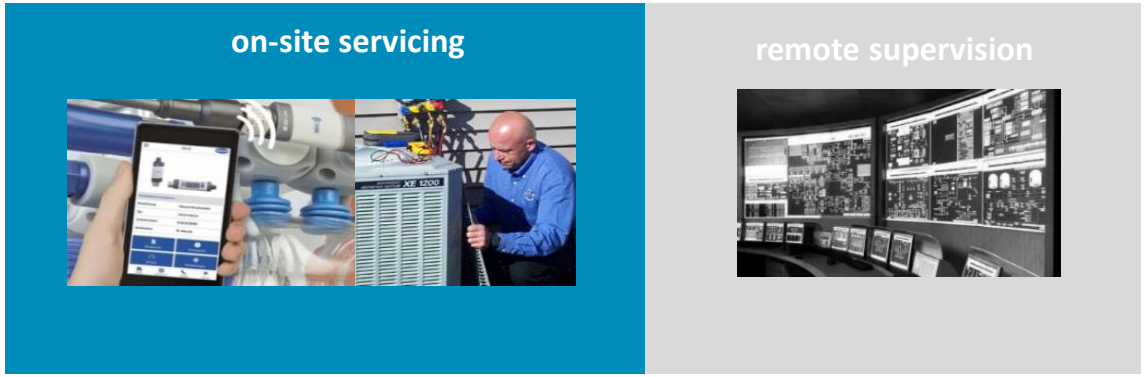
TapNPass with Duetware

Solution for original equipment manufacturers, owners or service providers.

Retrofit on Modbus or Serial bus.



	Available	Certified	Power Supply	NFC	Bluetooth	Wi-Fi	LoRa	SigFox	...
TnP NSW103	**Yes**	**Yes**	**Battery***	**X**	**X**	X			
TnP FSW103	**Yes**	**Yes**	Target**	**X**	**X**	X			

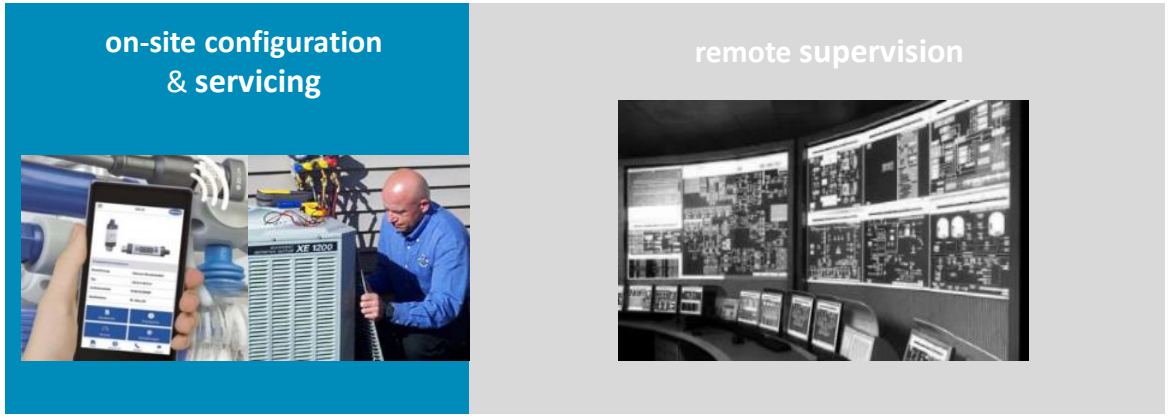
Notes:
* *Rechargeable Li ION battery.*
** *Powered from the target system.*

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

TapNLink Line with Duetware

Solution for original equipment designers & manufacturers

Connect directly to target CPU



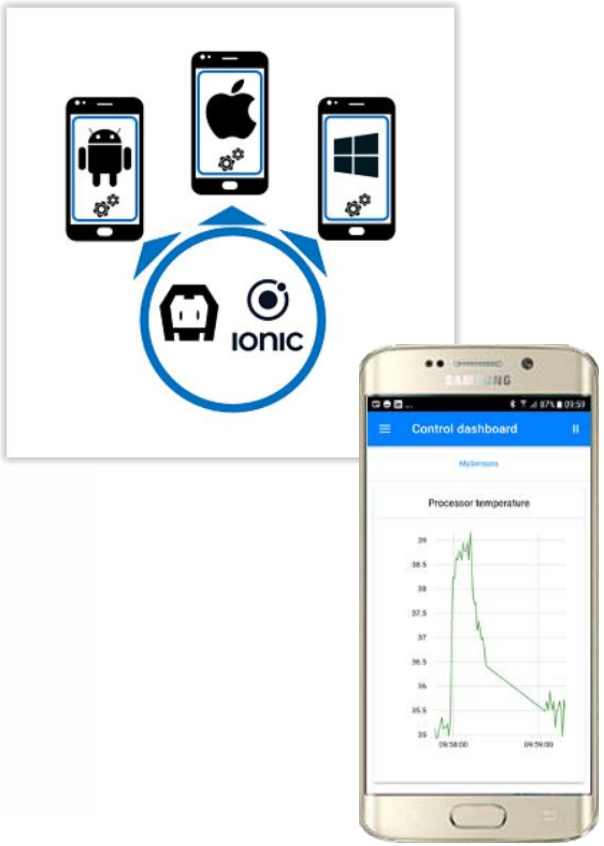
	Available	Certified	NFC	BLE	Wi-Fi	LoRa	SigFox	NB-IOT	...
TnL FIT203	**Yes**	**Yes**	X						
TnL FIR103	Yes	Yes	X	X					
TnL FIW103	**Yes**	**Yes**	X	X	X	X			
TnL FIL103	**Preview**	**Q1 2022**	X	X		X	X		

IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.

Automatic App Generator

Automatic APK, IPA Project Generation

	Trial[3]	StartUp[4]	Pro[4]	Enterprise[4]
General Features				
Profile Management	●	●	●	●
JVM [1]	●	●	●	●
Dynamic Encryption	●	●	●	●
MQTT	●	●	●	●
API	●	●	●	●
Web App Generator				
HTML5	●	●	●	●
App Generator (server-based)				
N° of Developers	1	1	10	unlimited
N° of Projects	1	10	25	unlimited
N° of Builds	15	20/month	unlimited	unlimited
Android APK	●	●	●	●
iOS IPA	●	●	●	●
Source files	Xcode [5]	Xcode [5]	●	●
Multi-target static	○	○	●	●
Multi-target dynamic	○	○	○	●
Support				
Forum	●	●	●	●
Get Started Training	○	○	1 [2]	3 [2]
SLA	forum	email (3-day service)	email / phone (next day service)	custom



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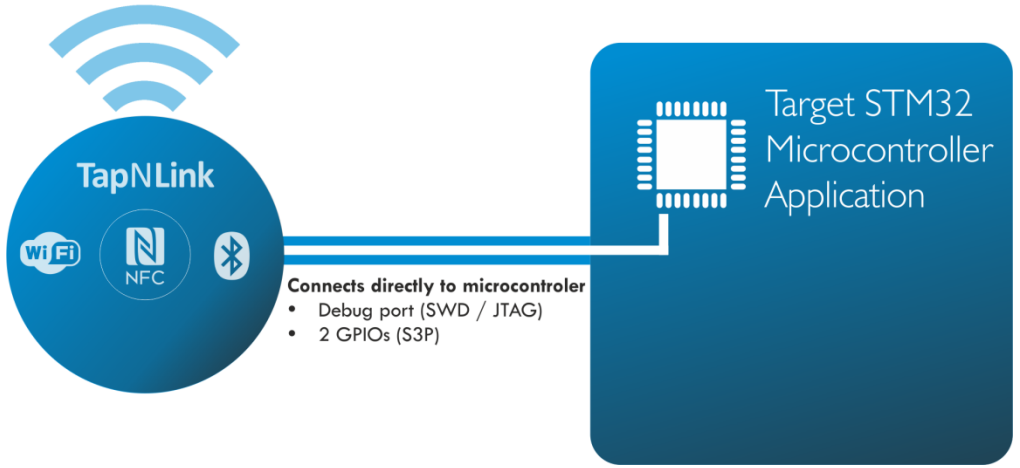
TapNLink Primer Eval Tool

TapNLink Primer NBW

NFC, BLE, Wi-Fi
HMI Proof-of-Concept in minutes
Complete sample implementation
Web apps (HTML5) **or Native Hybrid** (Cordova)
Free configuration software
Online app generator for APK
Arduino ARD-Tap Library

$49 USD (40 Euros)



IoTize is a patented technology of IoTize SAS. Patent No. 14/54445.