

Fast to Market.
Proven Quality.

Wize Ecosystem

Webinar 2021-04-22

Hosted by Radiocrafts AS

Peder Martin Evjen

The Wize Ecosystem

- Peder Martin Evjen, Managing Director, Radiocrafts
 - Who are the Wize Alliance?
 - What are the benefits of the 169 MHz ISM band?
 - Radiocrafts Wize module offering
- Mateu Crespi, International Director in Smart Metering Sector at Suez Smart Solutions
 - Wize network access and local deployments of Wize networks
- Bruno Petit, CEO of Enless Wireless
 - Wize end products targeting different applications including building automation and smart metering

House-keeping

- The webinar today is scheduled for 45 minutes with 10-15 minutes for a Q&A afterwards
- Post your questions in the chat window during the webinar, and we will answer the best we can in the Q&A session
- We will post a recorded version of the webinar on our website after it's over, in case you want to go back and see it again

Wize Protocol and Wize Alliance

- Wize Alliance founded by

- GRDF
- Suez Smart Solutions
- Sagemcom

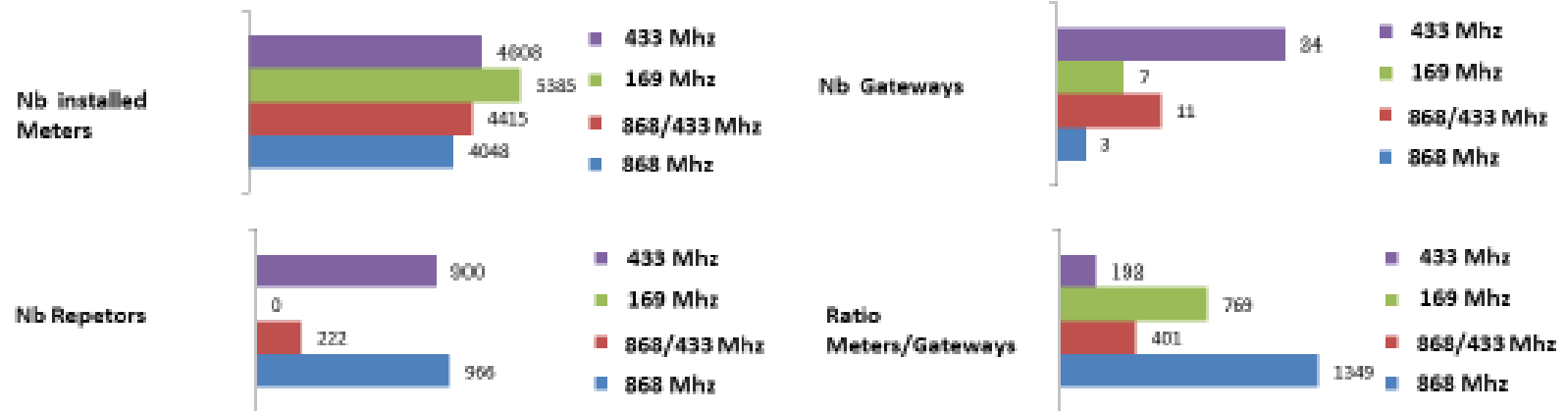


- More than 40 members in 8 countries
- Wize Alliance specify the Wize protocol
- Based on implementations of Smart Water and Smart Gas meters radio network in France
- In 2010/11 GRDF evaluated different radio technologies for their gas meters in several pilots comparing 4 different solutions:
 - 169 MHz
 - 433 MHz
 - 868/433 MHz
 - 868 MHz

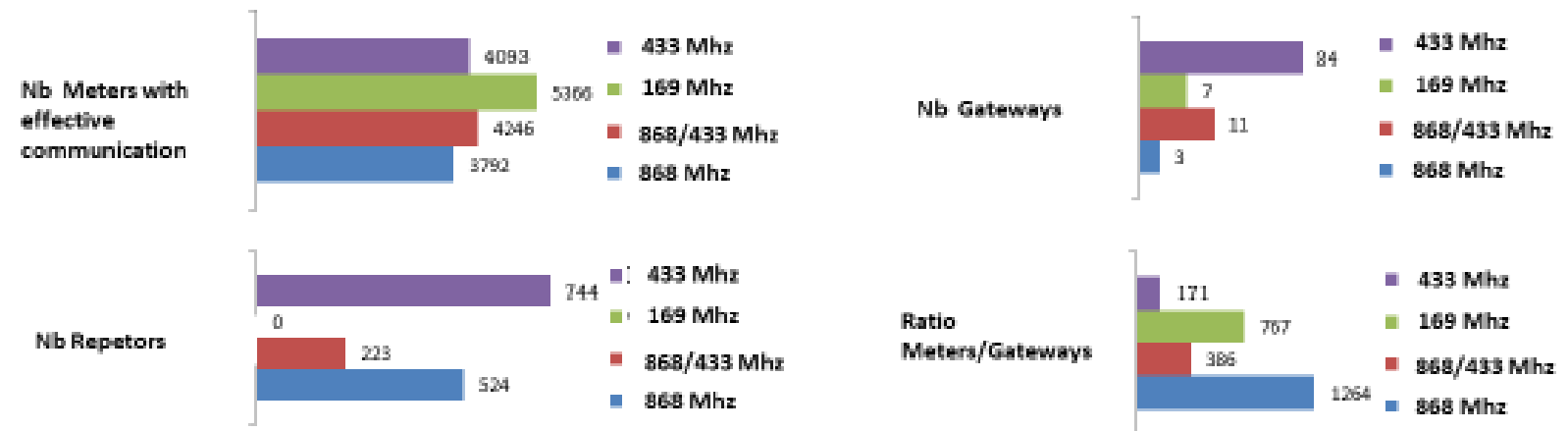
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Keys figures

1 Equipements rolled-out



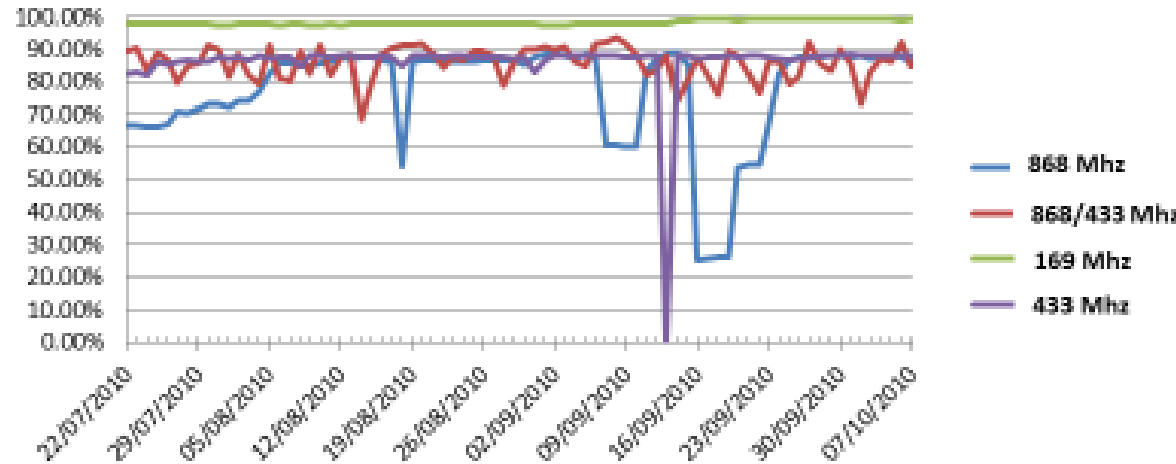
2 Equipements really operationnals after roll-out



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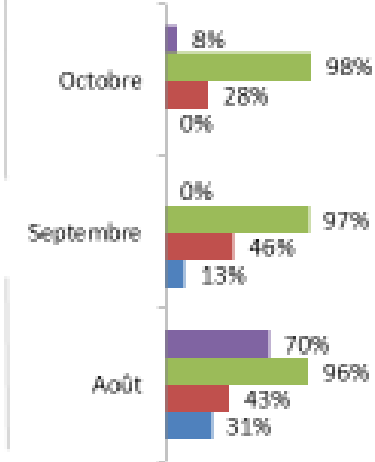
Premiers indicateurs sur le fonctionnement des solutions

3 Daily data read rate

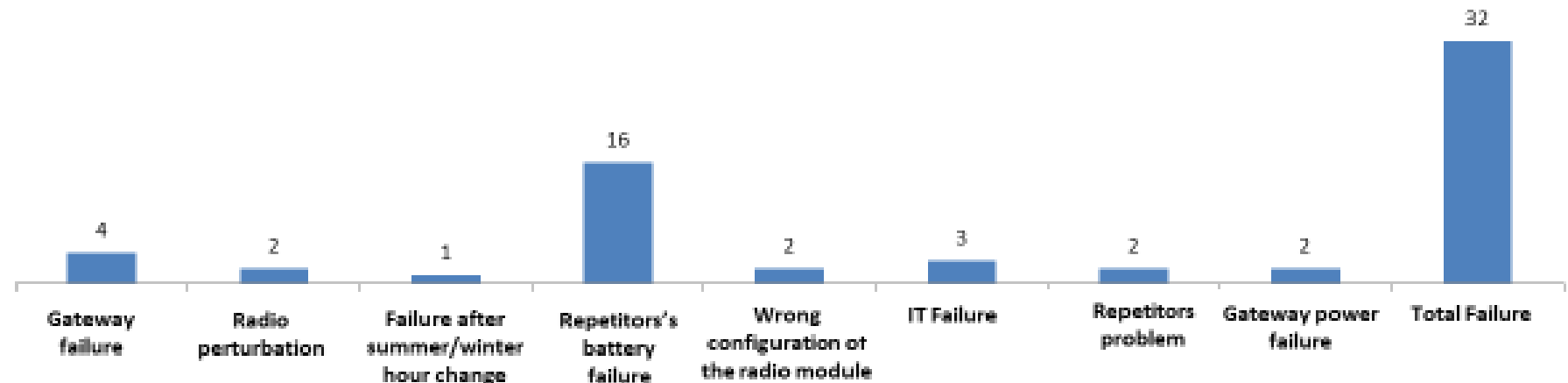


4 Stability

Ratio of meters read each days in a month



5 Majors failures detected during one years (number)



The Wize Protocol is a LPWAN

- Low Power Wide Area Network
- **Smart Metering**
- **Smart City**
- **Industrial IoT**
- Gas and water meters, distribution network and grid supervision
- Infrastructure monitoring (garbage bins)
- Environmental sensors (air quality, outdoor / indoor)
- Building automation
- Industrial sensors (process plant sensors, supervision)

What the Wize protocol offers

- Robust communication and wide area coverage using VHF band
- Secure transfer of data in terms of privacy, data integrity and authentication
- A low power battery operated solution with lifetime > 15 years
- A proven solution based on the established Wireless M-Bus standard
- Firmware download over-the-air as an integral part of the protocol
- **Benefits: Large coverage, secure, low power and future proof**

Main features of Wize (wMB mode N)

- 169 MHz
 - low VHF frequency with good penetration in buildings and pits
- Narrowband 12.5 kHz channels
 - small receiver bandwidth makes it more sensitive and selective, less susceptible to interference
- Low data rate (2.4, 4.8, 6.4 kbps)
 - low data rate means transmitting more energy per bit, which gives more range
- High power, 500 mW
 - longer ranger
- **Benefit: Long range, penetrates into buildings**

Radio regulations

- 169 MHz band is license free in Europe
- Paging systems, before cell phone and SMS
- EU decision 2013/752/EU
 - Metering devices
 - Assistive Listening Devices (ALD)
 - Non-specific Short Range Devices (SRDs)
- ERC REC CEPT 70-03 on 169 MHz
 - Not only EU, but Europe
 - Except Russia, Ukraine, Belarus
- Water meter and gas meters utilizing the long range and properties of VHF frequency for radio coverage
- Many other industrial IoT applications can now take benefit of the same technology
- White Papers available from www.radiocrafts.com
- [White Paper 10 Regulatory Requirements at 169MHz](#)

169 MHz Wireless M-Bus / Wize module offering

- RC1701HP-MBUS4 modem **Wireless M-Bus**
- RC1701HP-MPC1 **Pulse Counter**
- RC1701HP-OSP **Ondeo Systems Protocol, V1**
- RC1702HP-xxx modules **V1 Application specific**
- **RC1701HP-WIZE** **Wize modem, "V2"**
- **RC1702HP-Wxxx specific modules** **Wize application**
- Application and custom specific modules
 - Autonomous module
 - Application profile

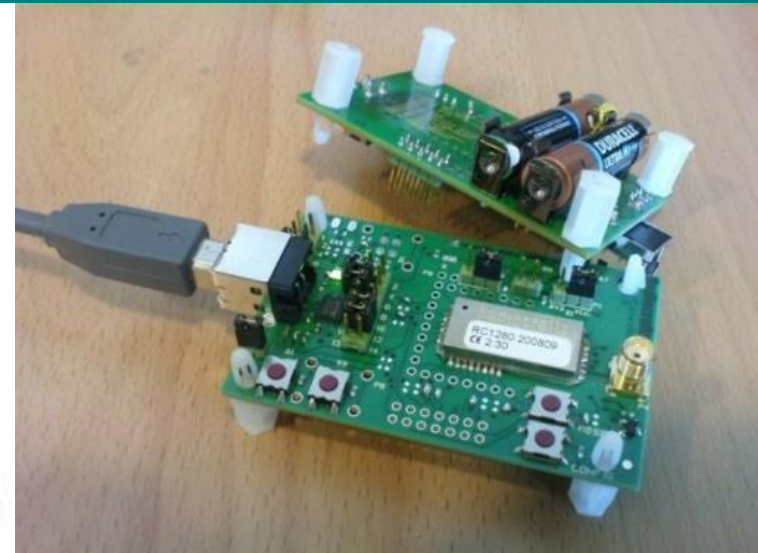


RC1702HP-Wxxx (Customized)

- Autonomous module with Wize protocol and metering/sensor application (no external MCU required)
- Complete application profile
 - Water/Gas meter, Generic sensors, M-Bus protocol etc
- Ping/pong installation
- Encryption
- Authentication
- UART, IrDa or NFC interface for local communication
- Pulse, SPI, I2C, UART interface to sensor or MCU
- Remote (RF) or local (NFC) parameter read/write
- Over-the-air FW download (broadcast)
- RTC for EPOCH2013 (timekeeping)

WIZE Development Kit

- Two Development Boards with the WIZE module
- Onboard USB level shifter and USB connector, SMA antenna connector, I/O break-out
- Quarter-wave stub antennas with SMA connector
- USB cables
- The HP variants include additionally AC/DC Power Supplies



WIZE WORLD WIDE

Current footprint status

30/04/2021



Current footprint

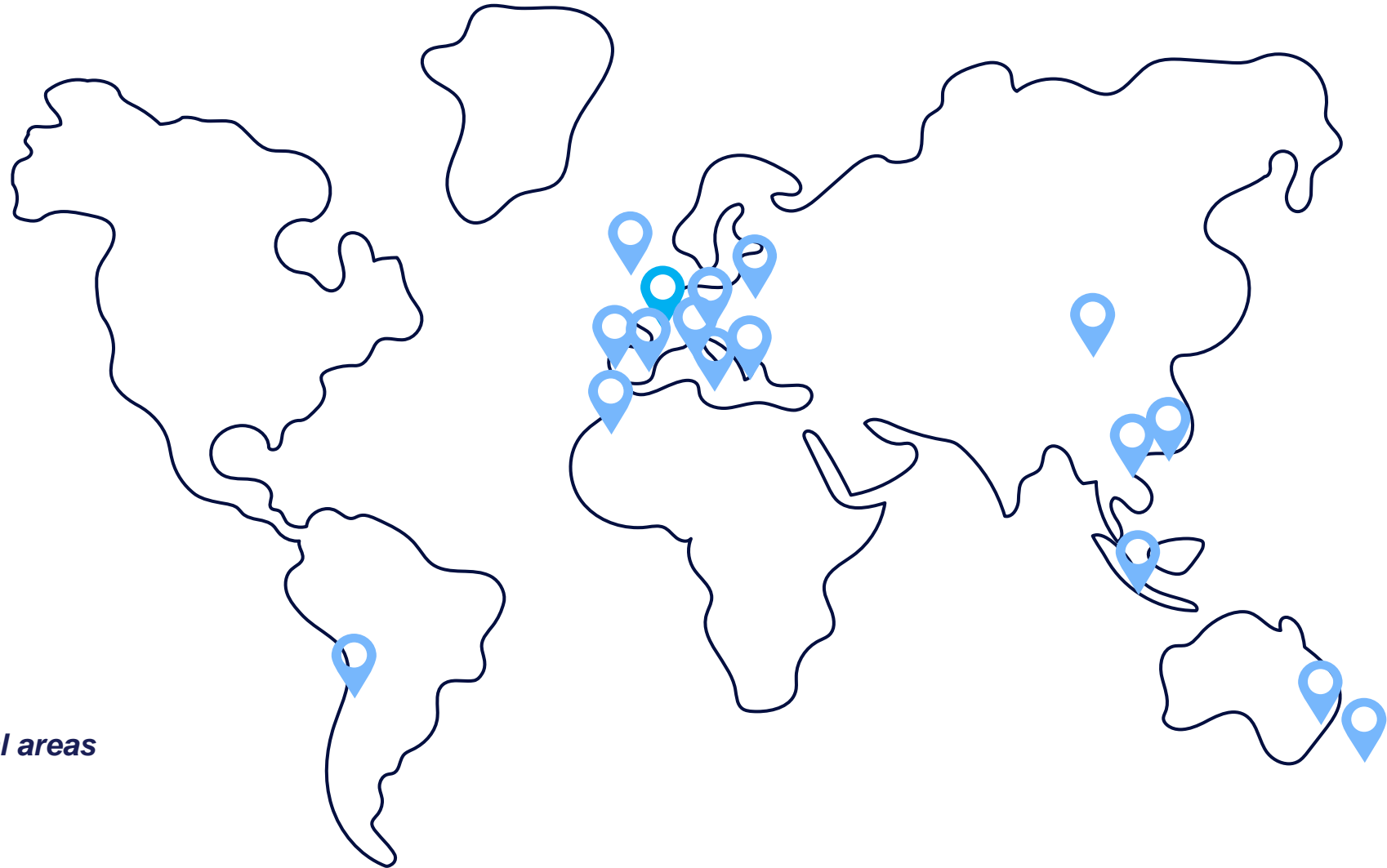
+ 10 million
devices deployed

+ 5 million
water smart meters sold

700 cities
in 16 countries

+10
years deployment

Urban, semi-urban and rural areas



Europe

- Open and free access to 169 MHz
- Supported by EU standard EN13757

	# operating ,000 meters	# contracted ,000 meters
France	1 800	2 600
Spain	1 600	2 700
Malta	265	275
Portugal	50	90
Czech Rep.	35	80
Poland	2	20
UK	3	3
Italy	1	1
Total Europe	3 756	5 769



Asia - Pacific

Australia

- 169 MHz band fully available and licensed by geographic zones, upon application to ACMA, the national radio frequency regulator.
- In practice, almost completely unused and available for smart metering projects as the ones deployed by SUEZ in Queensland, Victoria, South Australia, and New South Wales.
- The WIZE Alliance in Australia has worked with ACMA to demonstrate the reliability, minimal impact, and community benefit of WIZE in this unused piece of spectrum.
- ACMA has therefore reduced administrative effort, including longer-term licenses, reduced paperwork, and larger-area geographical licenses (with each license covering thousands of km²).
- Suez alone plans to have more than 30.000 smart water meters operating by the end of 2021.



Asia - Pacific

Territories where the 169 MHz band is available and SUEZ or the customer has obtained approval by the national radio frequency regulator:

- Macao
- Hong Kong
- New Zealand
- Singapore
- China



THANKS



22/04/2021



WEBINAR WIZE



WEBINAR WIZE



Enless Wireless awarded by the Wize Alliance for the development of a new range of 169 MHz Wize compatible transmitters dedicated to Building Energy Efficiency and Comfort.

12 years

experience in the development of low power radio sensors multi radio protocols dedicated to Smart Building applications.

169 MHz

Long time experience in the 169 MHz radio technology (WMBUS and now WIZE)

60 000 transmitters

169 MHz WMBUS deployed in France by Enless in the past 5 years.

Wize protocol fully adapted for smart building applications



- **Very low power consumption for battery life products 10 years autonomy**
- **Good building penetration**
- **Proven technology (GRDF Gaspar project in France with several millions meters installed)**
- **Very robust & secure protocol**

Enless Wireless Key data



3 M€

Head office in France
(Bordeaux)



20

Collaborators/ Subcontractors

6 employees

Direction, Sales, Marketing

14 subcontractors

Technical Office (London, UK)

Production site (Bayonne, France)

Logistics Centre (Bordeaux, France)



3

Certifications

ISO 9001 Quality Certification



ATEX standard certification -
Explosive atmospheres-



Certification CE



180 000 transmitters installed

 **80% in France**

 **20% Export**

Wize product range for smart Building applications



Product launch planned for Q2 2022

- 7 new Wize transmitters dedicated to Building Energy Efficiency and comfort
- embedding Radiocrafts RC1701 HP WIZE module



ENERGY EFFICIENCY



COMFORT



INDUSTRY



3 Ambient Wize transmitters (indoor)

Temperature
Humidity
CO2
COV (*volatile organic compounds*)



Target pricing between 80 and 180 €



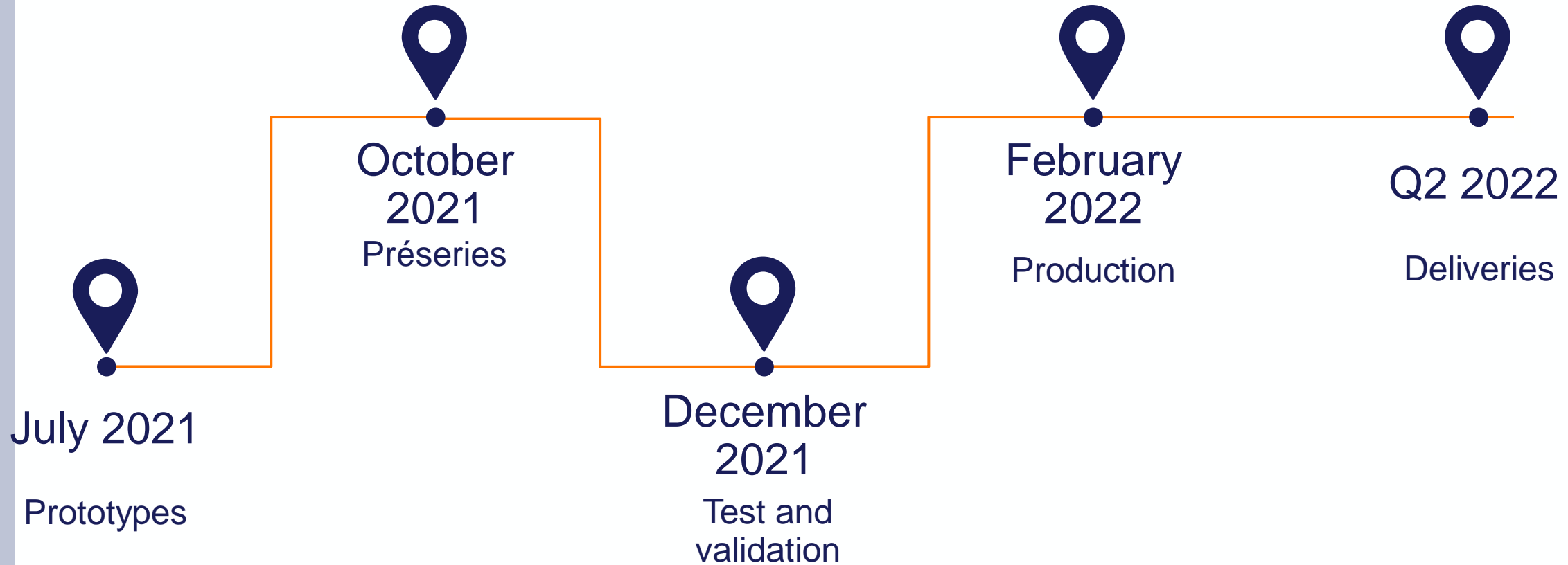
4 Outdoor/rugged Wize transmitters range

Temperature
Temperature probe
4/20 mA
Status



Target pricing between 120 and 150 €

Development planning



CONTACT

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Q&A

Resources

- <https://radiocrafts.com/technologies/wize-alliance-and-wize-technology/>
- <https://radiocrafts.com/products/wirelessmbus/#WIZE>
- Application Notes
 - AN024: Using Wireless M-Bus in Industrial Networks
 - AN025: Tuning the Antenna with Antenna Tuning Feature
 - AN041: Wireless M-Bus 169 MHz Updates
 - AN043: Wireless M-Bus Security
 - AN045: Wireless Connectivity Technologies Selection Guide
- White Papers
 - WP010: Regulatory Requirements at 169 MHz
 - WP011: LPWAN at 169 MHz
 - WP012: Wireless M-Bus For Industrial Applications
 - WP016: Wize Protocol For LPWAN
 - WP018: Relationship Between Wize Protocol and Wireless M-Bus