G3-PLC Technology Experience

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Wasion Brief Introduction

Willfar Information

An IoT Solution Provider Focusing on the Digital Grid and Smart Cities

Wasion Group

A Leading Domestic and International Expert in Smart Meters

Wasion International

An Overseas Trade and Marketing Platform Company

Wasion Energy

An Expert focusing on the Transformation of Clean, Digital and Smart Energy

5 Factories Worldwide

2 Listed Companies

4 Business Segments

20+ Years of History

6000+ Employees Worldwide

5000+ Large Corporate Clients

3000+ Patents & Software Copyrights

60+ Regional Offices

Wasion Global Presence

Business in Key Markets

- Smart Electricity Metering Projects
- Smart Prepayment Projects
- Smart Water & Gas Metering Projects

Manufacturing Facilities

China, Mexico, Brazil, Tanzania, Hungary

Country & Regional Offices

- Mainland China
- Hongkong China
- Macau China
- Mexico
- Brazil
- Ecuador
- Indonesia
- Egypt
- Tanzania
- Bangladesh
- Nigeria
- Saudi Arabia
- Hungary
- Austria
- South Africa

Wasion G3-PLC AMI Project and Technology Footprint

WASION

2012

G3-PLC Product launch
&Market promotion,
G3 Discrete MCUs solution,
MAX2992+NXP LPC1768

2016

Egypt EEHC AMI

2017

WIENER NETZE

Austria KNG/WN/Wels AMI project

2018

Malaysia Forest City AMI Project, Palestine GEDCO AMI Project,

FOREST CITY

2020

CIE jica

Ivory Coast CIE AMI Project,
Egypt JICA AMI Project

2023

G3-Hybrid Products Launch, Plan for Key marketing POC

G3-Hybrid

International Chipset Manufacturers Partners

maxim integrated · Atmel · Vango · RENESAS · VertexCom

Project Learning & Continuous Improvement

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Austria G3 AMI Project

PROJECT TARGET

Deployment of 1.28 million smart meters under an end-to-end high performance AMI solution with multi-integrated technology providers. More than 600,000 G3-PLC smart meters have been delivered by 2022.

UTILITY

WIENER NETZE

OVERALL PROJECT ARCHITECTURE

REGION

Austria G3 AMI Project

IMPLEMENTATION CHALLENGES

Meters randomly entering in automatic registration mode, and edge meter nodes switching between gateways, causing unstable reading rates.

External interference has been observed in both CENELEC-A and FCC bands. Elevators and water pumps inverters acting as main disruptors. Underground cable routing leading to massive cross-talking issue.

OPTIMIZATION PLAN

- **Optimized network design**

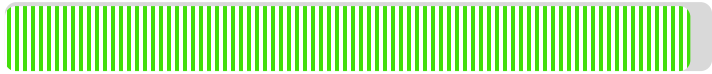
  Site survey, reviewed network planning, repositioning of gateways and added repeaters.

- **Optimized PLC network registration process**

- **Meter nodes switching capabilities to adapt and elect the most effective frequency band.**

  Head end System ability to assess and switch between frequency bands based on the effectiveness of the historical data reading performance.

99% Success reading rate in the installed meters base.



Enhanced Asset management capability!

Combines AMI consumption data with distribution grid topology and equipment indexes and sensors to identify overload on distribution transformers.

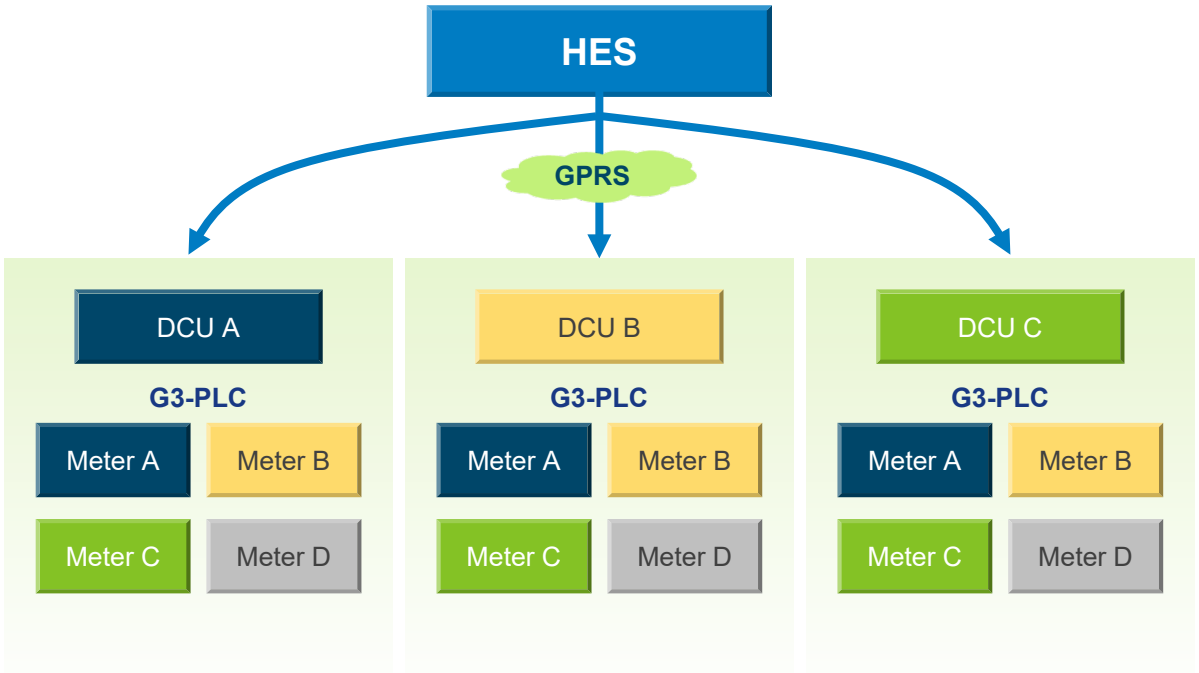
Côte d´Ivoire G3 Smart prepayment AMI Project

PROJECT TARGET

Interoperable multi metering platform project with smart prepayment capabilities in partnership with the main country utility. Wasion has deployed over 500.000 smart meters in the last 3 years with G3-PLC technology.

UTILITY

OVERALL PROJECT ARCHITECTURE



REGION

Côte d´Ivoire G3 Smart prepayment AMI Project

IMPLEMENTATION CHALLENGES

A single DCU connected to up to 600+ smart meters, causing the success rate to drop significantly. A load profile data collection success rate observed in the HES (Head end System) was at 73% level, which was under the expected project KPI.

OPTIMIZATION PLAN

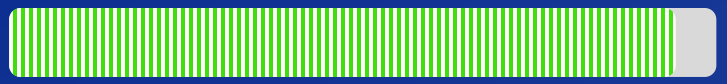
- **G3-PLC Concurrent Meter Reading solution has been implemented.**

  The DCU/CCO module now supports **4 simultaneous readings** by default and an expansion update will be released shortly.

- **To adopt G3-PLC fast network access solution.**

OUTCOME

98% Data collection success rate after the optimization plan.



Technology Evolution

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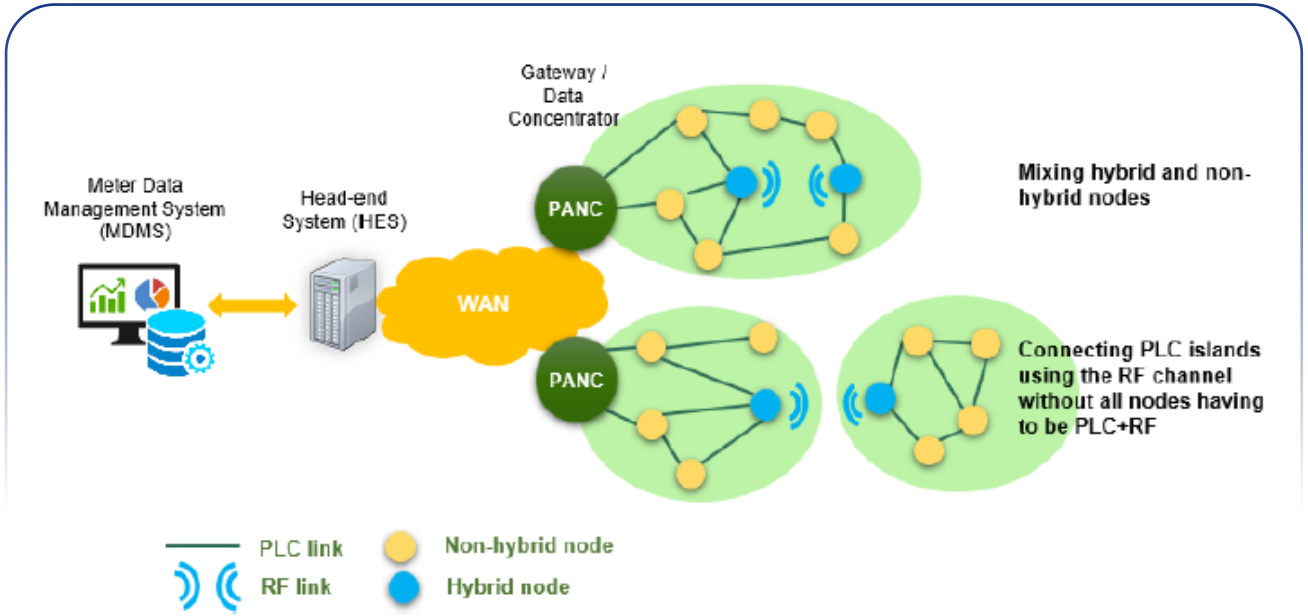
G3-Hybrid

Hybrid G3 PLC + RF Technology to tackle challenging environment, during project implementation, ensuring the best communication performance.

G3-Hybrid



01 Overcoming high-rises with thick walls, underground installations, high electrical noise environment.

02 Improving reading performance, network reformation, and system availability.

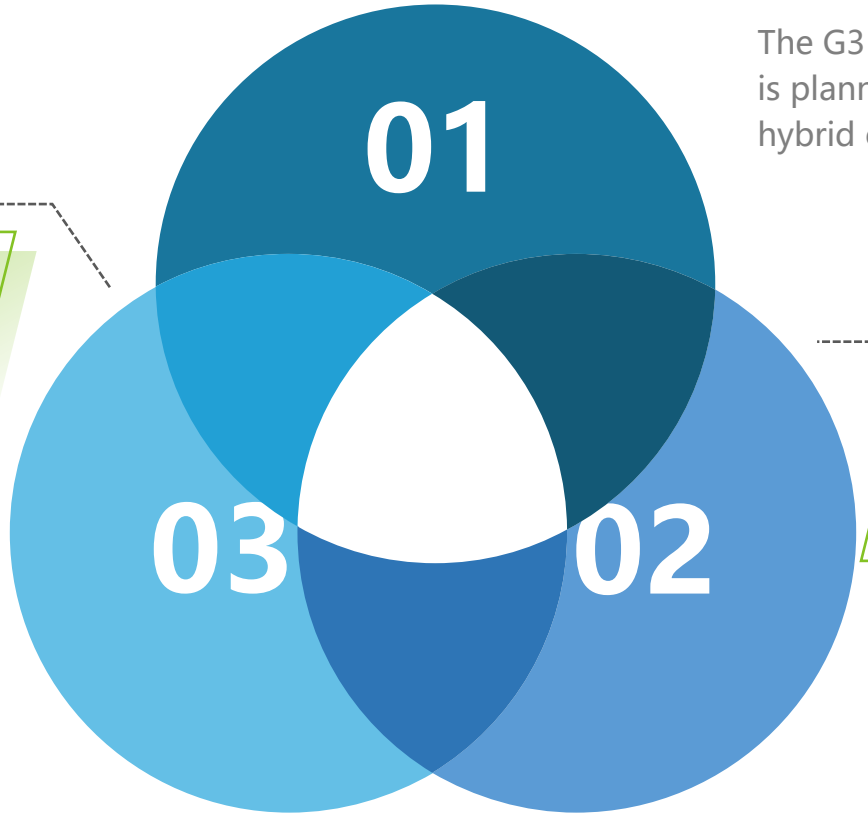
03 Reducing the complexity and cost of network installations.

G3 PLC Hybrid

Performance Enhancements

Optimization of networking processes, frequent network switching and network congestion issues based on different field application scenarios.

Optimizing the reading success rate of DCU minutes level load profile data in large-capacity stations



Certification, Interoperability

The G3 Hybrid product has been developed, and is planning to implemente of the G3 PLC/RF hybrid certification process.

Network planning Toolkits

Establish network planning and optimization toolkits to assist in batch deployment, identify potential problems and optimize network design.

Our Vision:

In the future, each city, each community, each enterprise and each household will enjoy the lasting benefits from utilizing Wasion's products, technology and services.