Smart Choice for Smart Metering

LAISON— a leading smart water meter and digital billing system provider



HANGZHOU LAISON TECHNOLOGY CO., LTD

www.laisongroup.com

CONTENT



PART 1 **Company Profile**

PART 2 **Smart Water Metering**

PART 3 **Digital Billing System**

PART 4 **Technical Service**





01

Greating Values through Continuous Innovations

PART ONE

Company Profile

Company Profile

LAISON, founded in 2012, is an innovation-driven enterprise specializing in the **R&D, production, sales, and service** of smart water metering and systems. With a global footprint spanning **over 30 countries**, LAISON has partnered with more than 70 water utilities, achieving **over 1 million meters installed** online.

Laison has multiple advanced smart metering solutions for both **Domestic and Commercial/Industrial** fields, together with **Hardware & Data Management System**, mobile payment platform and smart Apps, which aim to realize **Prepaid, AMR/AMI Remote Meter Data Collection, Water Leakage Detection** etc. functions, help water utilities to **improve cash flow, management efficiency, reduce historic debt and Non-revenue water (NRW)**, etc.

With over **130 patents and copyrights** and **70+ proprietary patents**, LAISON continuously drives innovation in the industry. We are dedicated to facilitating the digital transformation of water utilities, with a focus on improving operational efficiency and water supply services while promoting sustainable economic development through **the Internet of Things, big data, and AI** technologies in a low-carbon way.







Innovation | Collaboration | Focus | Agility

QUALIFICATIONS

OF COMPANY

- National High Tech Enterprise in China
- Awarded as The Leading, Professional and Innovative Enterprise
- ISO9001, ISO14001, ISO45001 certified
- MID 2004/22/EC for smart water meter
- OIML R49 Certified
- NRCS Type Approval for water meter
- STS Certificate for prepaid water meter
- LoRaWAN Certification of LoRa Alliance
- WRAS Certified
- 130+ patents and copyrights till 2024



1.3. Business Sectors

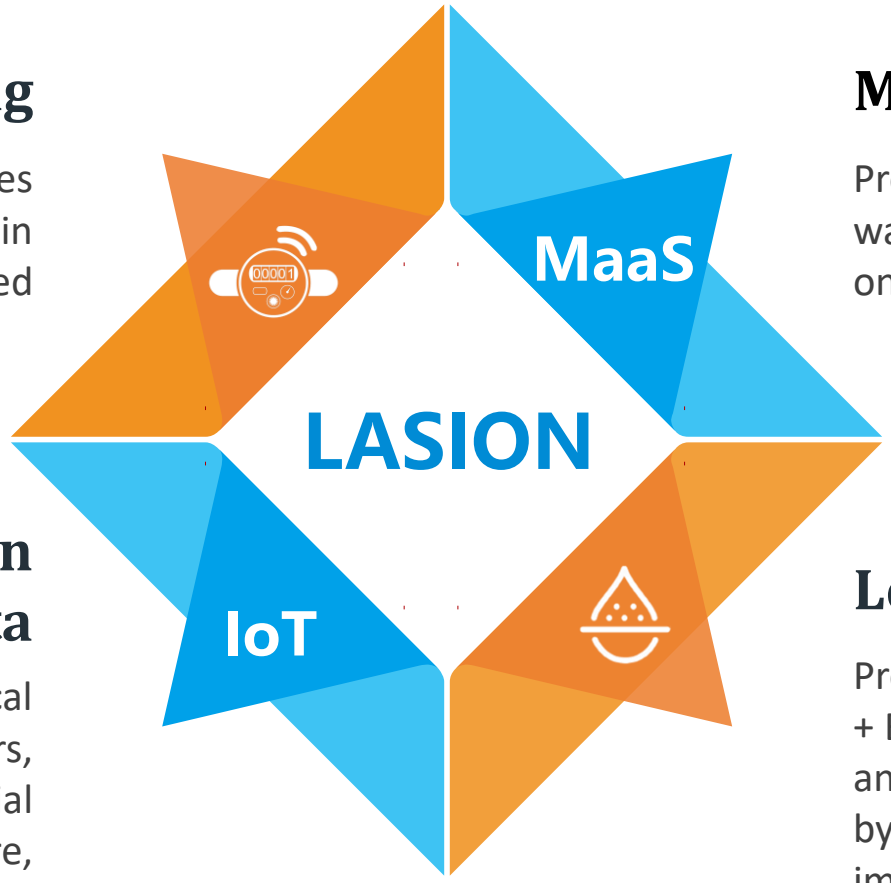
Aims to increase Water Revenue and Improve Operational Efficiency for Global Water Utilities by accurate measurement and fine operation services via digital solutions.

Smart Water Metering

Smart Water Metering, Accessories and other Intelligent Hardware in Water Filed

Metering-as-a-Service (MaaS)

Provides fine operation services for water utilities, either in subscript or once-off mode



IoT Communication O&M, Big Data

Derivative business cooperation with ecological partners such as communication operators, mobile payment platforms, and financial channels based on intelligent hardware, communication network and big data

Leakage Management

Provide leakage control services through IoT + Big Data + AI and other digital technologies, and share the economic benefits generated by production and sales gap/leakage improvement, debt recovery, etc.





02

Greating Values through Continuous Innovations

PART TWO

Smart Water Metering

Main Content



2.1 PARISE LoRa Smart STS Prepaid Water Meter

2.2 PARISE IoT Online Smart STS Prepaid Water Meter

2.3 PARISE Bluetooth STS Prepaid Water Meter

2.4 Bulk STS Prepaid Smart Water Meter

2.5 Bulk Postpaid Smart Water Meter

2.6 Meter Installation & Accessories

Product Portfolio

Electromechanical Metrology Products

1. Residential Meter

- IoT Postpaid Smart Meter



- Multi-jet Smart Water Meter



- Volumetric Smart Meter



2. Bulk Meter

- Bulk Postpaid Smart Meter



- Bulk Prepaid Smart Meter



Electronic Metrology Products

3.Ultrasonic Metrology

- Ultrasonic Prepaid Smart Meter



- Ultrasonic Postpaid Smart Meter



- Bulk Ultrasonic Smart Meter



4.Electromagnetic Metrology

- Electromagnetic Meter



2.1 PARISE LoRa Smart STS Prepaid Water Meter Solution



01

Smart Water Meter with LoRa Comm.



02

CIU (Customer Interface Unit) for Meter Recharge & Query



03

MDT for Remote Water Sale & Walk-by AMR



04

DCU (Data Concentrator Unit) for Fixed DCU AMI



05

LAISON Hardware & Data Management System (HDMS）

2.1.1. Flexible Water Purchase Way





Option 1
Vending Points
Purchase by Cash



Laison Vending System&Printer

Option 2
Vendor
Purchase by Cash



Mobile Vending POS

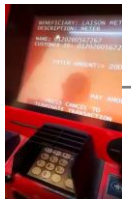


20 Digits Recharge Token

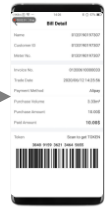
Option 3
Customer self-service
Purchase via E-payment



Smart Phone & Classic Phone



ATM





20 Digits Recharge Token



CIU

Meter Recharge

Data Query

≤200m in residential area



Smart Meter

2.1.2. AMI/AMR FOR REMOTE DATA COLLECTION







≤1Km in Radius
(Residential Area)

Fixed DCU AMI

LoRa



DCU
(Data Concentrator Unit)

LAN/GPRS/3G/4G







HES



MDMS



HDMS Service Center

≤400m in Radius



MDT (Mobile
Data Terminal)



MDC (Mobile
Data Collector)

3G/4G/WIFI

LoRa

Walk-by AMR

2.1.3. Advantages of AMR/AMI

Fixed DCU AMI

Areas with Concentrated household

- Private Network, flexible deployment, technically **100% signal coverage**
- **AC/Solar Panel power** supply optional, easy for construction
- Robust Casing of DCU, IP68, support **outdoor installation**



- **Coverage: ≤1km** Residential
- **Area recommended** to allocate **300 pcs** meter under ONE DCU
- **Installation Height Recommended: ≥10m**

Common Functions

- **Remote Meter Data Collection** (Hourly Consumption Data Record, Meter Running Status etc.)



- **Remote Meter Valve Control**
- **Tamper Event Detection & Alarm** (Magnetic Interference/Water Leakage/Meter Dismantle, etc.)



Walk-by/Drive-by AMR

Areas with Dispersed household

- **Comprehensive solution** with Mobile Data Collector (MDC) and MDT (Mobile Data Terminal) with LAISON self-design AquaRadius APP. for meter data collection
- **GIS Info. Collection** and Intuitively display of each meter's GIS info.
- **Automatic walking/driving route design** on AquaRadius, user-friendly
- **Manual Meter Reading support** for fault meters which fails to communicate via LoRa

AMI and Online Monitoring Attempt in ZINWA, Zimbabwe











Solar Panel Solution

Solar Panel System (Battey capacity 100AH) could support the normal working of DCU for 10 days without any sunshine

**Power consumption of DCU: 4.8W*
Theoretical working days without any sunshine:
Battery capacity 100AH:
*100AHx12V/4.8W/24=**10.4 Days***
Battery capacity 160AH:
*160AHx12V/4.8W/24=**16.7 Days***



Implement Result

***DCU Quantity**: 3*
***Comm. distance defined**:*
600m in radius
***Coverage**: 980 meters*
***One time comm. successful Rate**: 96.43%*

Smart Water Meter In ZINWA-ZIMBABWE









01

19,832pcs
Split Type STS Prepaid Water Meter with AMI function since year 2021

02

Case Study of Revenue Collection
Meter installed in Hotel in Hurungwe, around 220km to Harare, Zimbabwe.
collected **1620 USD** effectively in the past 17 months, around 95$ per month.



Fire Resistence ASA Material for ZINWA Smart Water Meter



The electronic module still works normally after meter's casing being burned



- **Strong Resistence of Fire**
- **High Temprature Resistence**
- **Bearing High Temperature(65℃) in Outdoor Installation**



- **Patented industrial design** with a compact structure for easy Installation
- **Polypropylene** Meter Box, support **outdoor Installation** with **High-Temperature Resistance up to 70℃.**
- Robust and Long Service Life

2.2 PARISE IoT (Internet of Things) Online STS Prepaid Smart Water Meter solution



01

IoT Smart Water Meter with GPRS/NB-IoT/LoRaWAN etc. Comm.



02

LAISON Hardware & Digital Billing Management System (HDMS)



03

Smart Phone APP Customer Self-service Water Purchase, E-payment, Data Query etc.

Smart Water Meter In LUSAKA, ZAMBIA



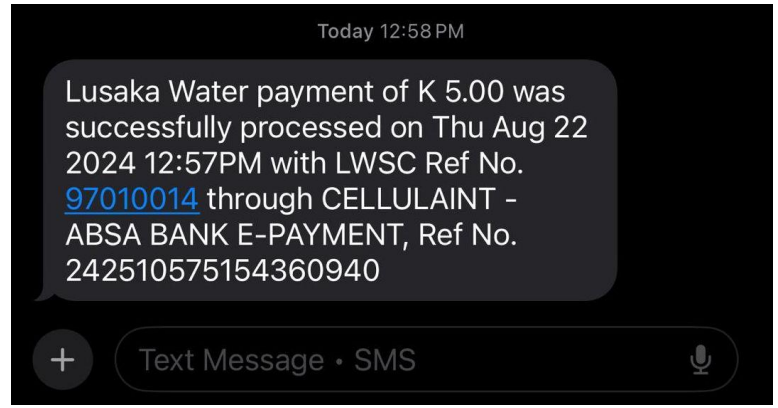
GPRS STS Prepaid Smart Meter Solution

- Meter Online (GPRS)
- Automatic Remote Meter Recharge
- STS standard IEC 62055-41,51 comply
- Self-service Water Purchase by E-payment
- Automatic Meter Data Collection

Data Bundle cost for SIM Card

MTN network, 10M per meter per year, based on daily reporting, costing 2～3 USD

One time comm. successful Rate: 95%



Water Purchase via USSD







2.3 PARISE Bluetooth STS Prepaid Water Meter Solution



01

Parise Bluetooth Prepaid Water Meter



airtel

MTN

M-PESA

02

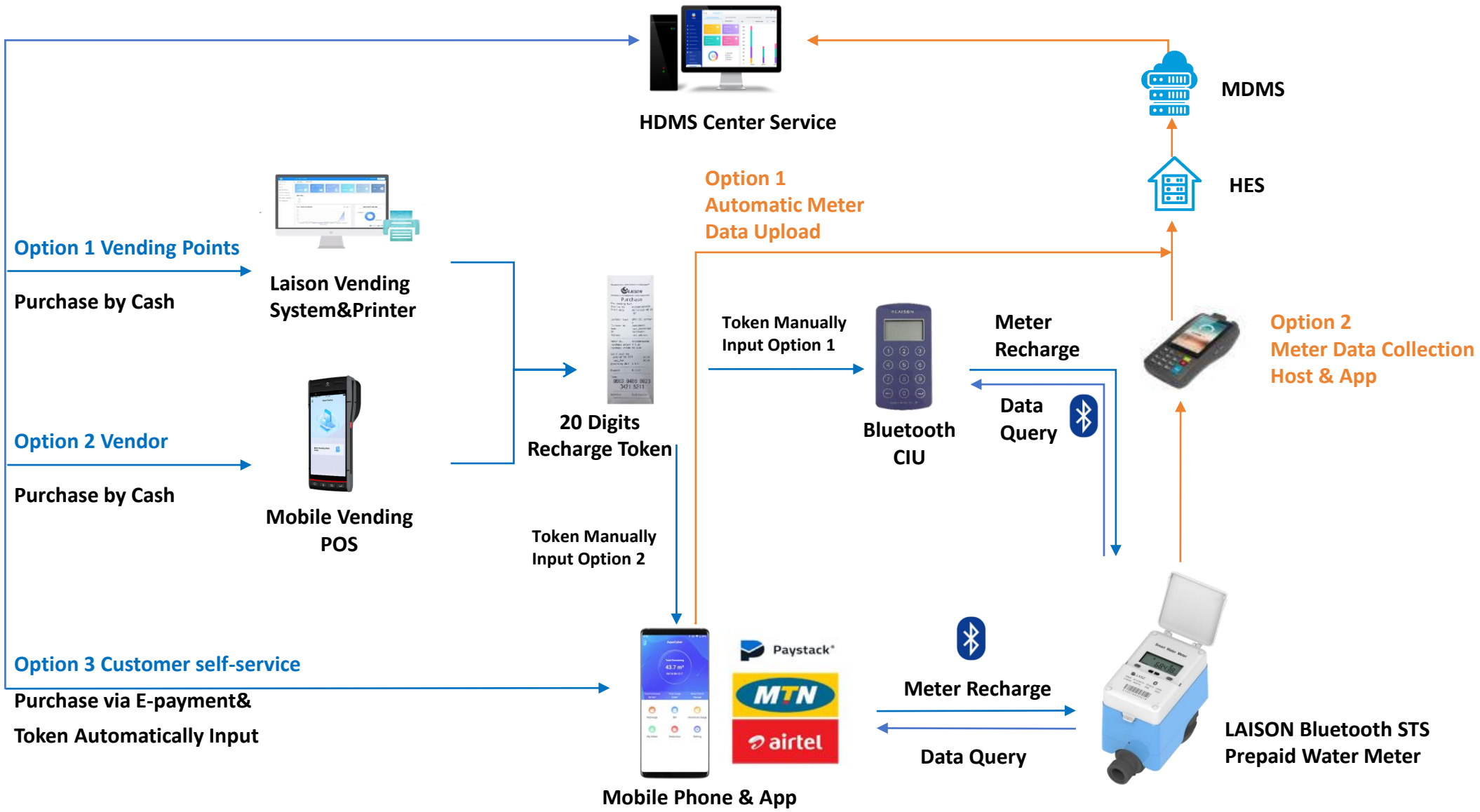
Smart Phone APP for Self-service Water Purchase Meter, Recharge & Data Query



03

LAISON Hardware & Digital Billing Management System (HDMS）

2.3.1. Basic Working Process



2.4 Bulk STS Prepaid Smart Water Meter





Pilot Valve

- DN32-DN150
- Magnetic drive, lower transmission resistance
- Super dry with Copper can Register(IP68)
- Pilot Valve integrated for Water Cut-off, Prepaid Working Mode available
- Woltman Meter, Pilot Valve and Electronic Module separation structure, easy for maintenance
- Split CIU with Touchable Keypad for Meter Recharge & Data Query
- AMR/AMI reserved for Remote Meter Data Collection

Pilot Valve(DN32-DN150)

- *Low Voltage to drive, Working Voltage of Motor: 3V-6V*
- *Utilize the Water Pressure Difference to open/close valve*
- *Working Pressure: 0.3MPa-1.6MPa*
- *Max. open/close times: no less than 8000 times*

2.5 Bulk Postpaid Smart Water Meter



Woltman Type Water Meter, range from DN32-600

Meter+MIU Separation structure, easy for deployment & maintenance

IoT Ready for Remote Monitoring and Data Collection

Electronic Module fully Sealed. IP68

Automatic Meter Data Upload

Real-time Remote Communication with Meter



2.2.4. Ultrasonic Bulk Smart Water Meter

Suitable for precise measurement of urban water supply pipeline, main meter on household metering, DMA for Leakage Management

- Dynamic Range R400 (R800 optional) for Precise Measurement
- No moving parts, no wear, can be long-term and stable operation
- Bi-directional flow measurement
- Water temperature detection & Alarm
- Be installed at any angle, the measurement accuracy is not affected, no air measuring
- The overall IP68 design, long-term immersion in the work

2.2.5. Electromagnetic Flow Meter



Flange-Type
Diameter Range from 15-1200mm



Insertion-Type
Easy to retrofit in existing pipelines without major modifications

- Low Pressure Loss, High Measurement Accuracy ±0.5%R, ±1%R
- Excellent Measurement Repeatability and Linearity
- Good reliability and resistance to interference
- Integrated/split/ insert types optional
- High IP level for outdoor installation
- RS-485, support RTU connectivity for remote monitoring

APPLICATION

- *Outlet and inlet pipes in the water plants for Trade Settlement*
- *Automatic production line at water plant for Water Purification Drugs Adding*
- *Suitable for sewage pipes to realize flow monitoring*

2.6. Meter Installation & Accessories







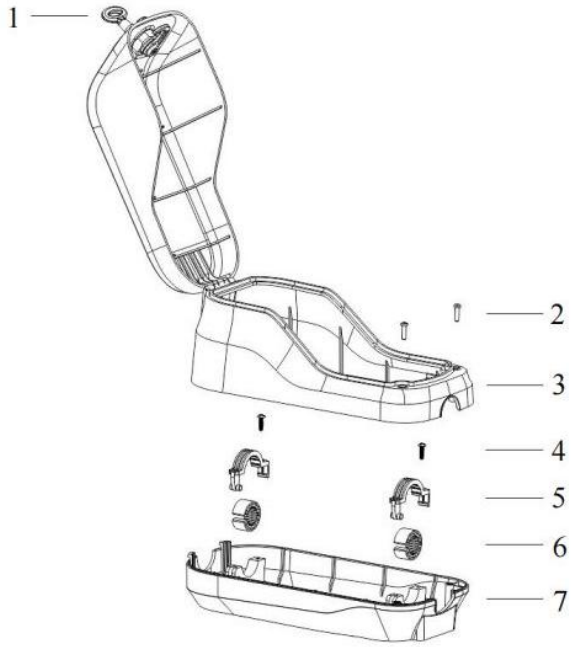


2.6.1. Plastic Meter Box



Dimension: 306 * 146* 169mm

一、Exploded view



1. Key
2. M4*15 Machine Screw
3. The Meter Box Body and Cover
4. M4*15 Tapping screw
5. Buckle
6. Gasket
7. The Meter Box Bottom

二、Component List

Plastic Water Meter Box Component List		
Diagram	**Name**	**Quantity**
	The Meter Box Bottom	1
	The Meter Box Body	1
	The Meter Box Body and Cover	1
	Buckle Seat	1
	Buckle	1
	Gasket	1
	Key	1
	M4*15 Tapping screw	1
	M4*15 Machine Screw	1
Tool List (Prepared in local)		
	Phillips Screwdriver	1

Note: If the product received does not match the illustration, please refer to the actual product





03

Greating Values through Continuous Innovations

PART THREE

Digital Billing System

Main Content



3.1

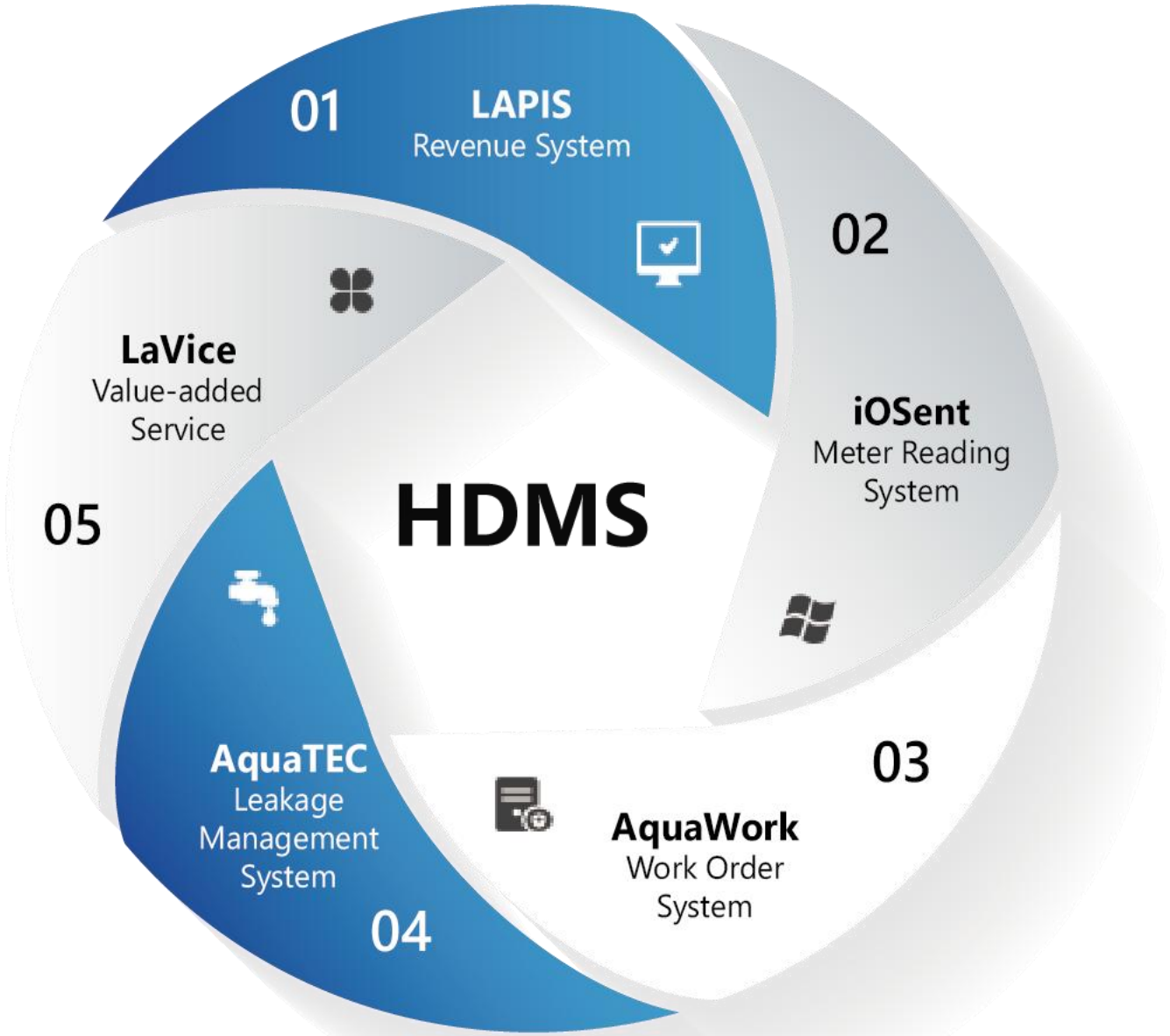
Hardware & Data Management System (HDMS)

- Revenue System LAPIS
- Meter Reading System iOSent
- Work Order system AquaWork
- Leakage Management System AquaTEC
- Value-added system LaVice

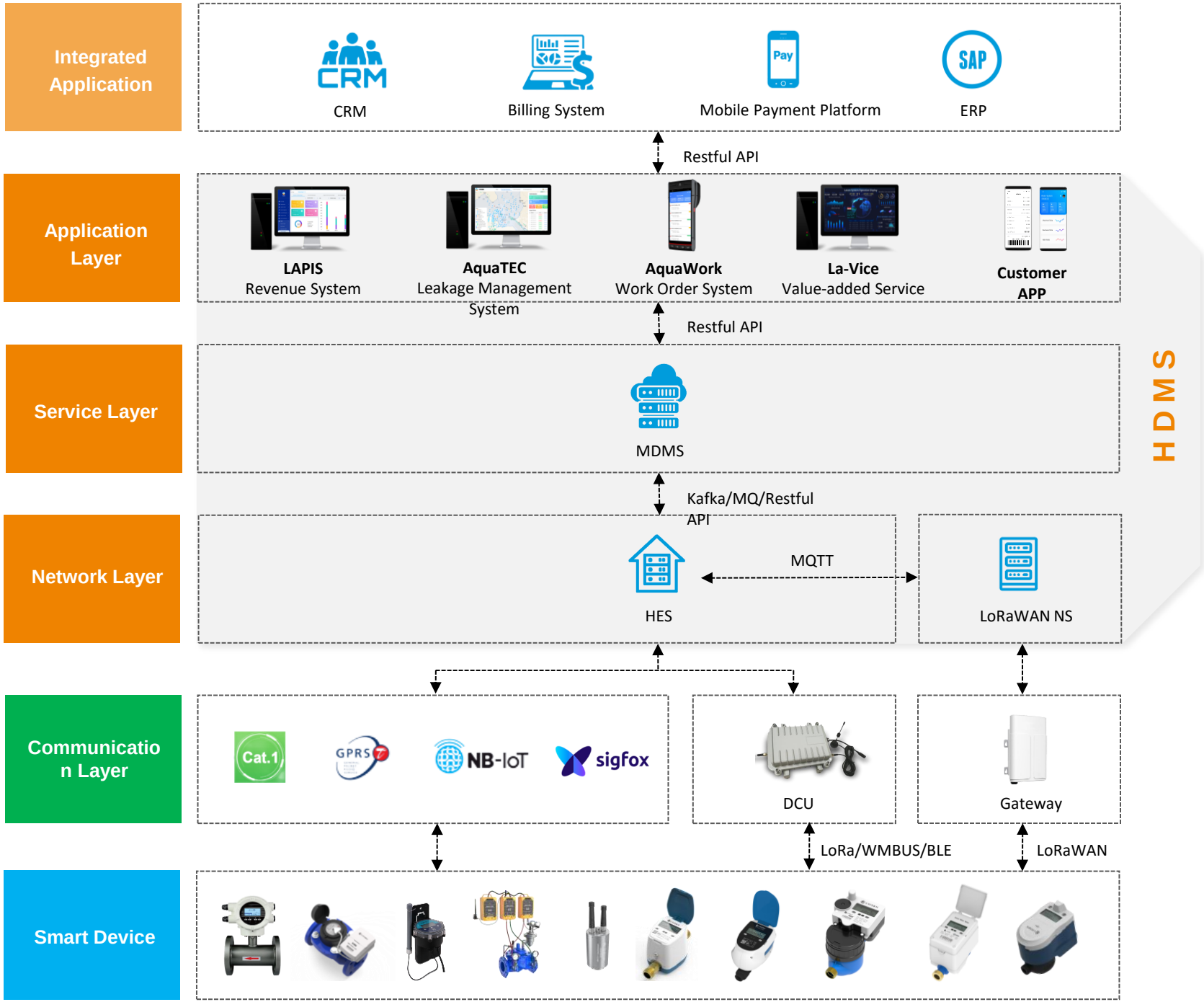
3.2

Integration with the E-payment platform

3.1. Hardware & Data Management System (HDMS)



System Structure of IoT platform & HDMS system



3.1.1. Revenue System LAPIS

Comprehensive Revenue Management

Integrate meter, client, billing, and reporting functions for unified business operations

Prepaid & Postpaid Revenue Collection Optional

Compatible with various meter types (Mechanical, Prepaid, Smart, etc.)

Flexible Additional Fees & Historical Debt Collection

Supports various ways like pay by percentage, times, days, months, etc.



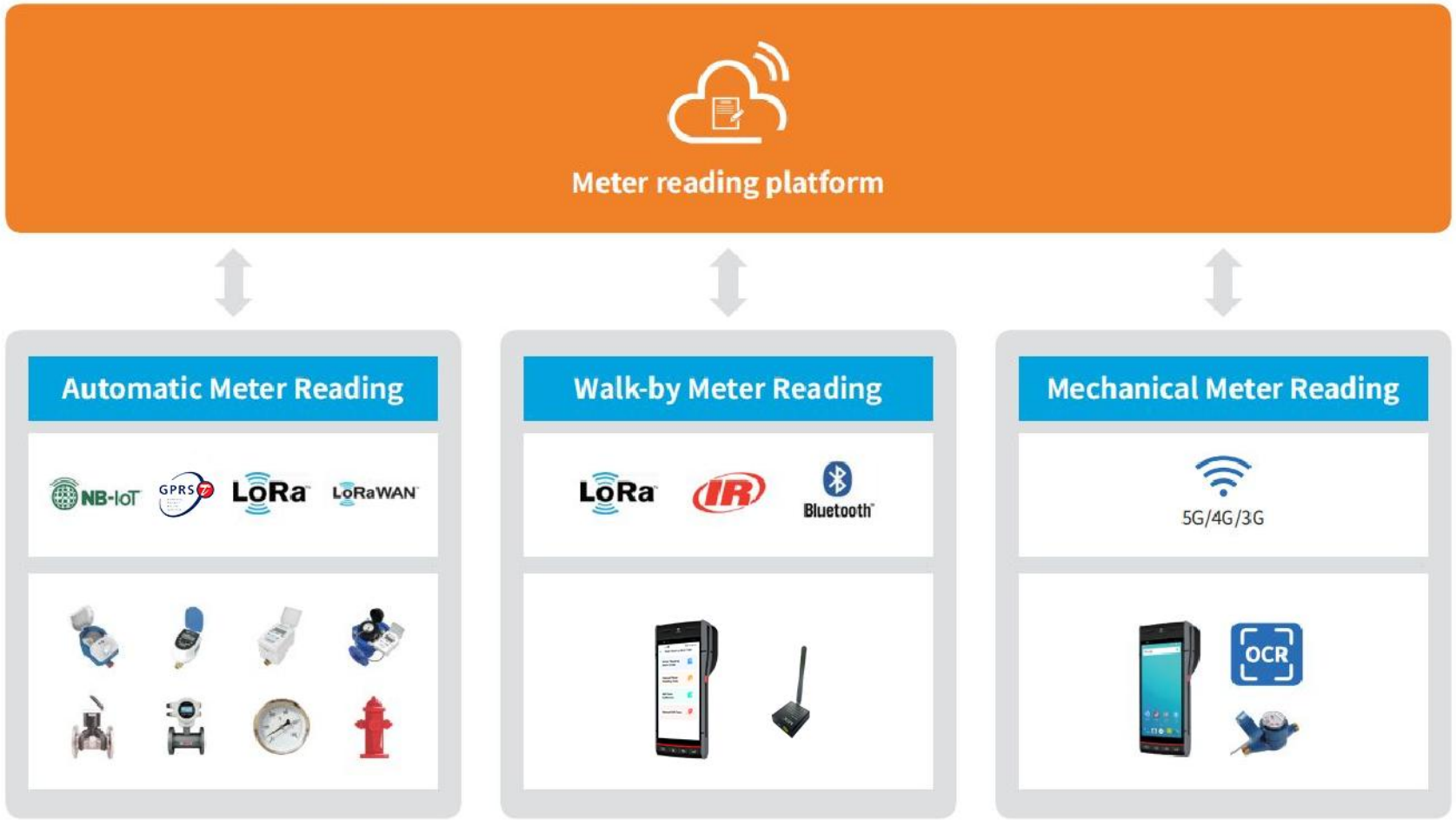
Diverse Water Purchase/Payment Channels

Traditional Vending Station, Appointed Vendor by PoS, Local ATM, Mobile Money via USSD, Self-service APP, etc.

API & ERP Integration

Standard/customized APIs for seamless e-payment integration and ERP/ Billing system compatibility.

3.1.2. Meter Reading System iOSent



Efficient Digital Meter Reading

Automatic or semi-automatic with no manual errors or corruption.

Customer Self-Service

Real-time access to water usage and balance, improving satisfaction.

Remote Data Monitoring & Analyzing

Identify abnormal water consumption like abnormal High/Low Consumption, Continuous Consumption, etc.

Abnormal Event Alerts

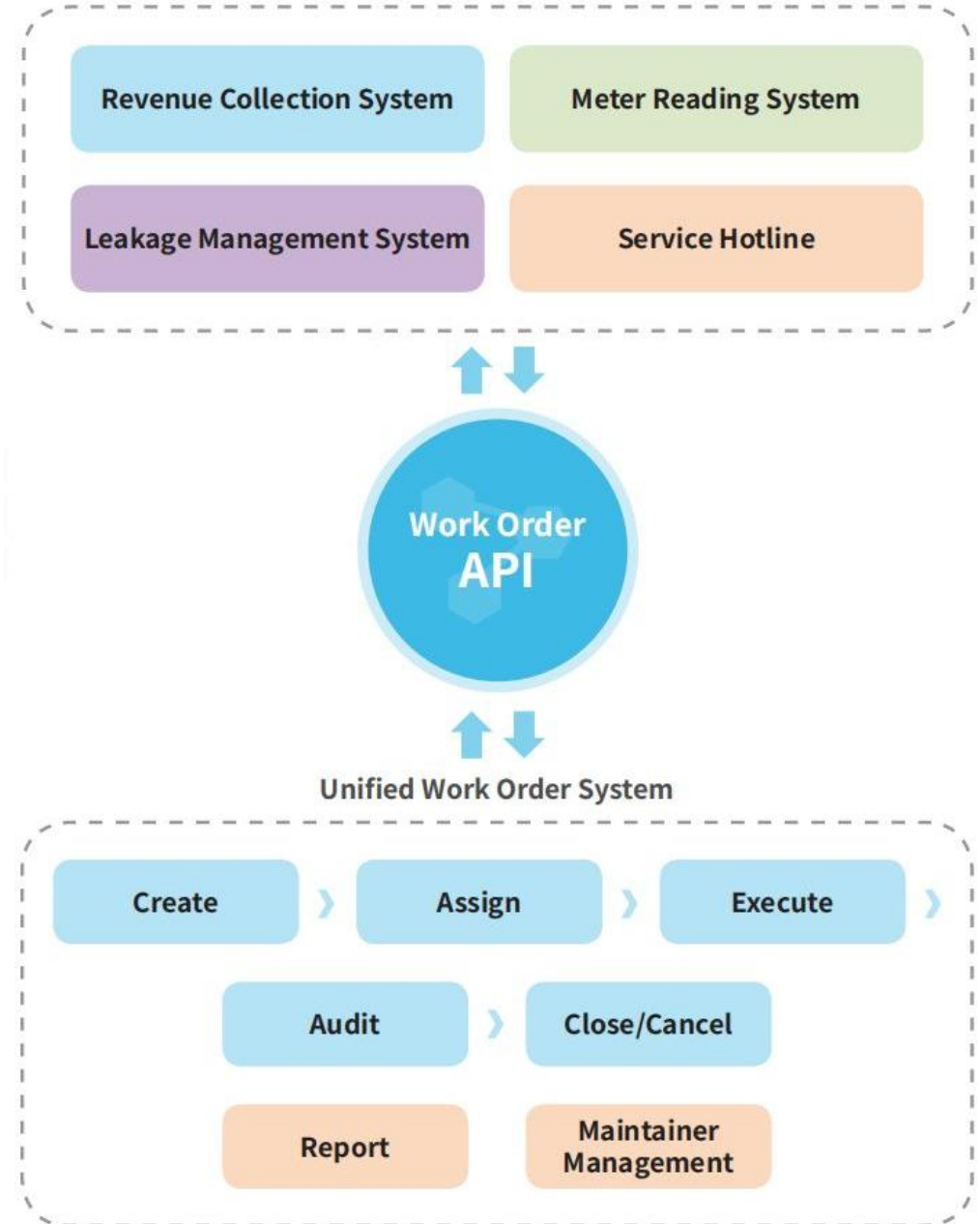
In-time alarms for issues like low battery or leaks, quick action on maintenance.

3.1.3. Work Order system AquaWork

Multiple Source to receive Work Request

Standard Work Order API

Basic Work Request Handling process



3.1.4. Leakage Management System AquaTEC

L'AISON

Digitalization → **Monitoring** → **Detection** → **Location** → **Repair**

Data Application	Water Leakage Analyse	Data Statistic	Dashboard	Predictive Analyzing	Alarm Push
Business Application	Zoning GIS Map DMA	Noise Detection Noise Analyzing Leakage Point Location Leakage Detection	Pressure Monitoring Pressure Analyzing Pressure Control Pressure Control	Leakage by listening Detection Real-time Analyzing Leakage Point Location Leakage Inspection	
Communication	Cat.1	NB-IoT	GPRS	LoRaWAN	LoRa	sigfox	
Smart Meter&Devices							

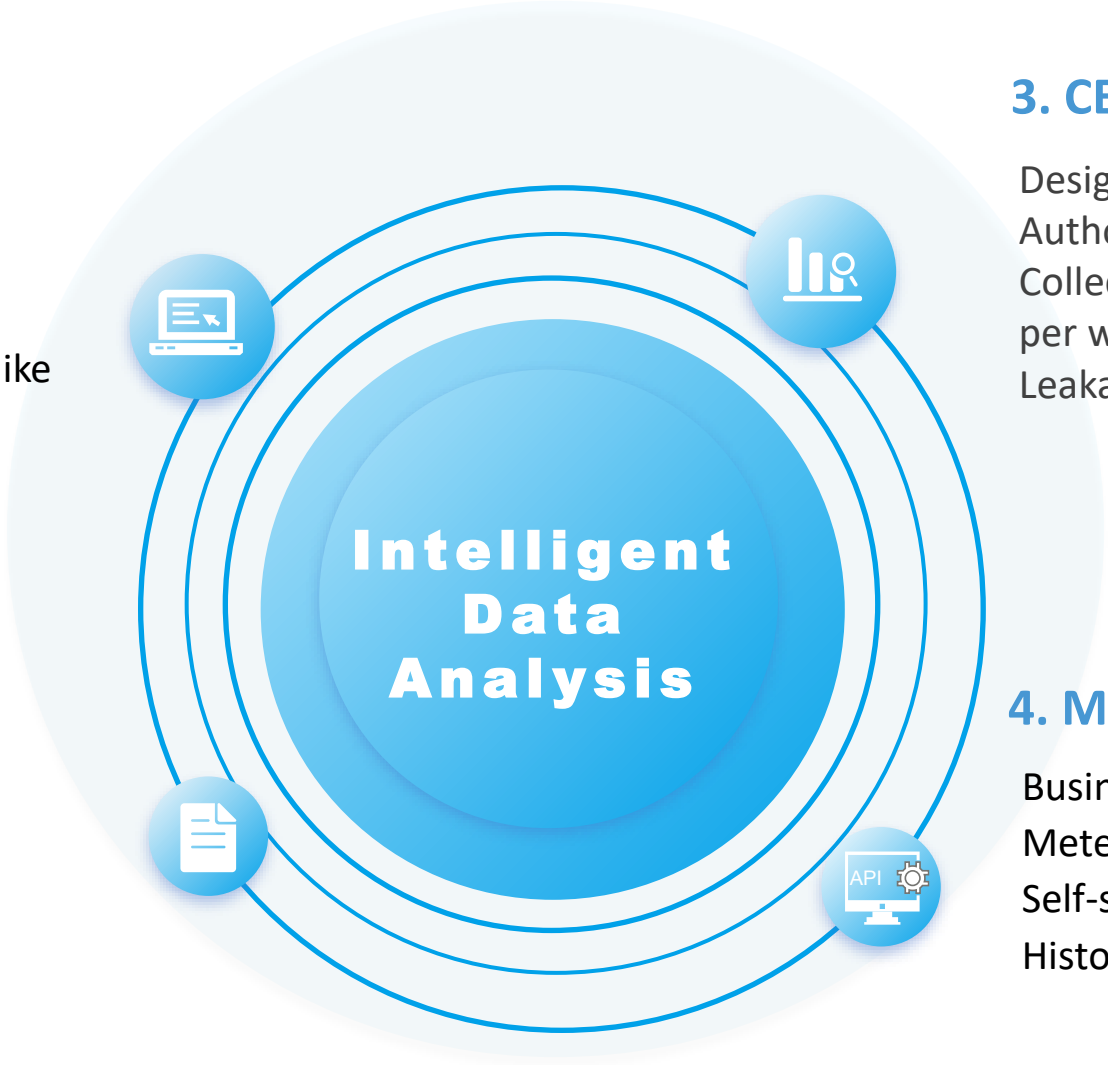
3.1.5. Value-added system LaVice

1. Dashboard

Real-Time Monitoring on Operation Status (Revenue, Consumption etc.)
Instant Alarm on abnormal sceniro like Meter Fault, Water Leakage etc.

2. Data Statistic Report

Various Data Stastistic Report on collected meter data for further anaylizing and decision making



3. CEO Cabinet

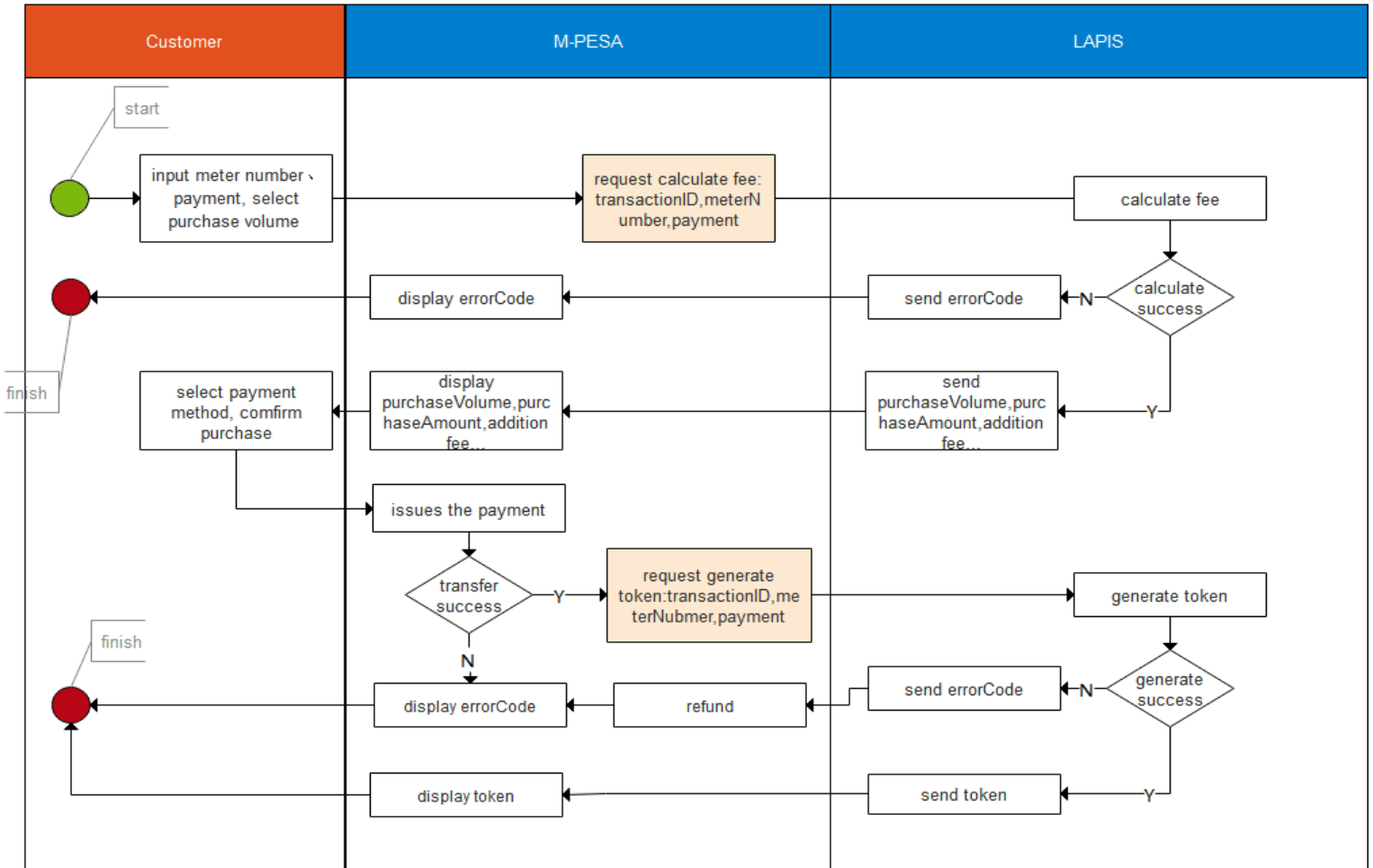
Designed for Management Level of Water Authority, including Water Revenue Collection, Water Consumption statistic per week/month/quarter and Water Leakage Report if any

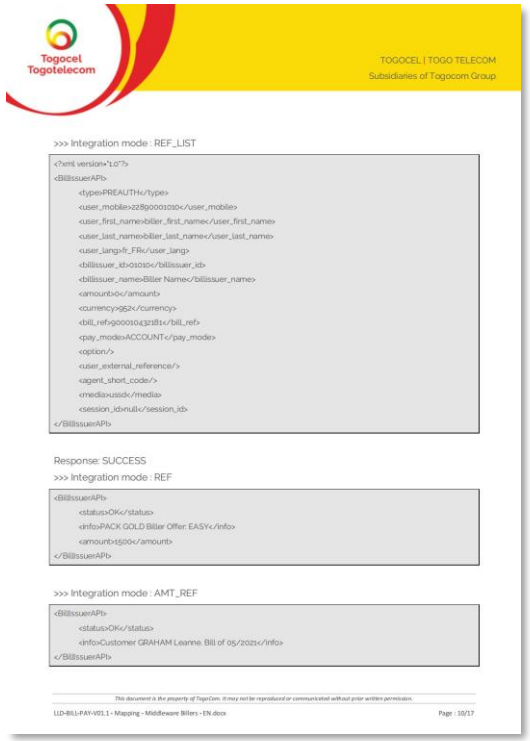
4. Mobile APPs

Business Online (Customer Registration, Meter under maintenance etc.)
Self-service Water Purchase via E-payment
Historical Water Purchase Records Query

3.2. Integration with E-payment platform

- ✓ Integrated mobile payment platforms in Nigeria include **INTERSWITCH, FLUTTERWAVE, and PAYSTACK**
- ✓ **Telecom operators** such as MTN and AIRTEL can be integrated
- ✓ **Online banking** integration is available



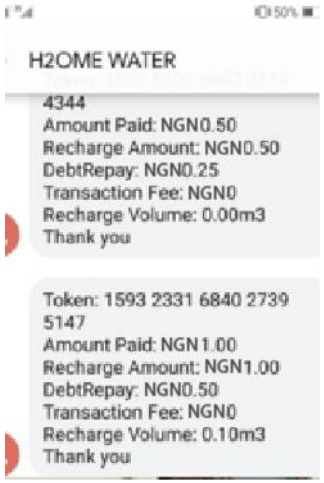


Required Technical Documentation for Integration:

- ✓ API Documentation (Interface Specification)
- ✓ Payment Process specification
- ✓ Testing Guide, along with test accounts and test system access.



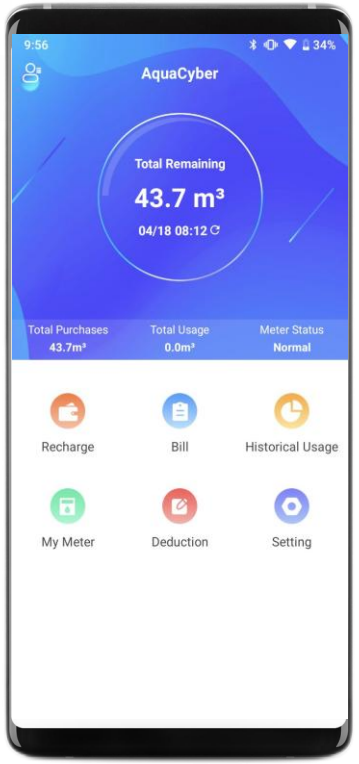
ATM

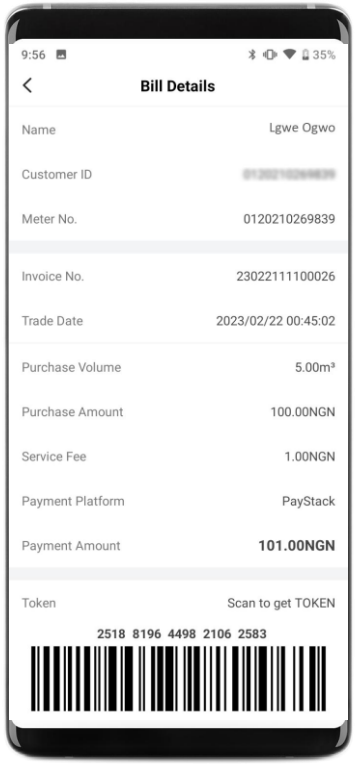


USSD

Easy Water Purchase by Mobile Payment

Interswitch paystack Flutterwave®





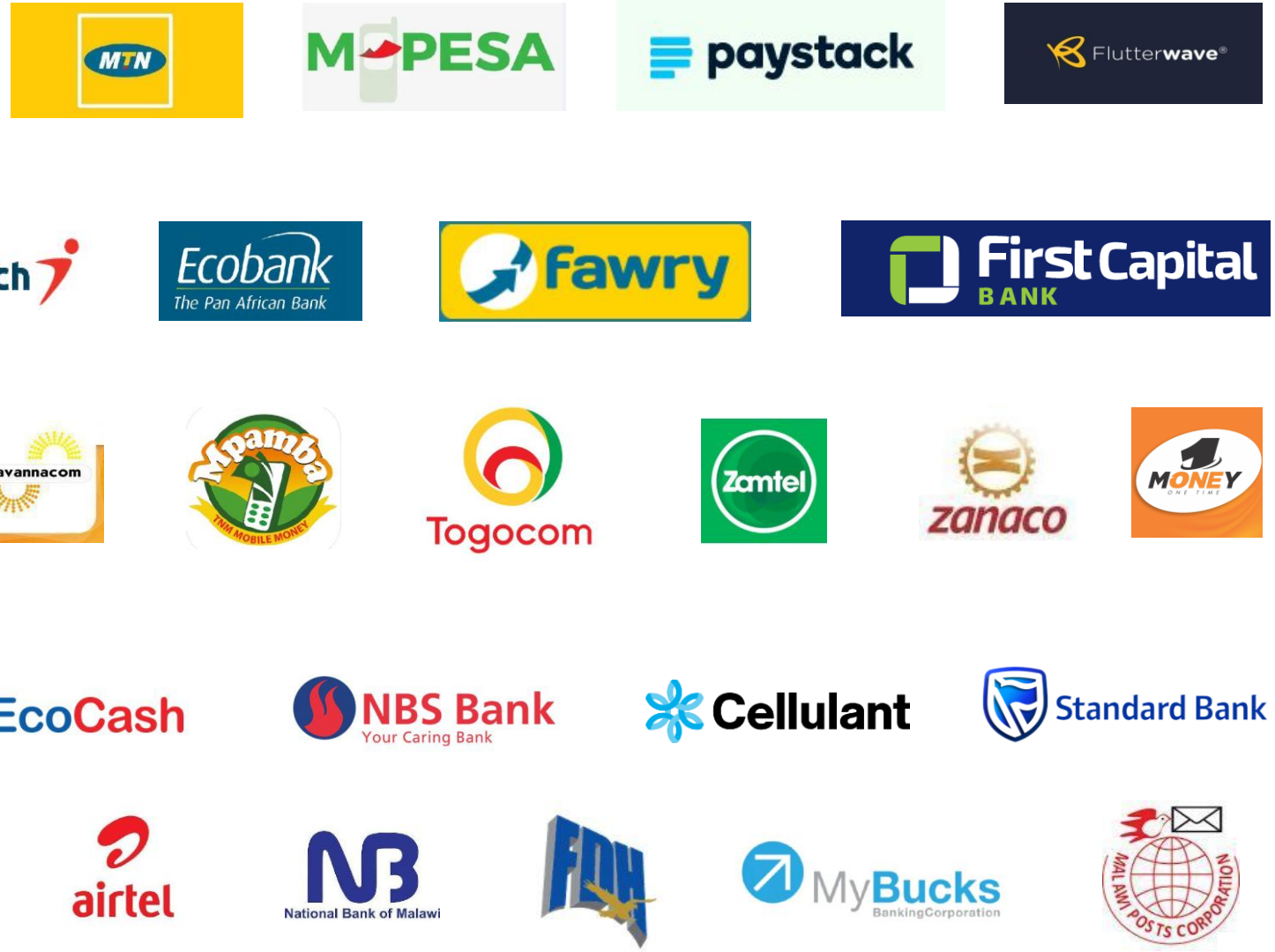
Business Online

Self-service Water Purchase

Instant Alarm Event

30+
Mobile Payment Platforms Integrated

12+
Countries







04

Greating Values through Continuous Innovations

PART FIVE

Technical Service

4.1 Technical Services



Zimbabwe



Egypt



Angola



Kenya



Ghana



Cameroon



Congo



Malawi



Nigeria



Tanzania



Zambia



Mozambique



South Africa



Rwanda



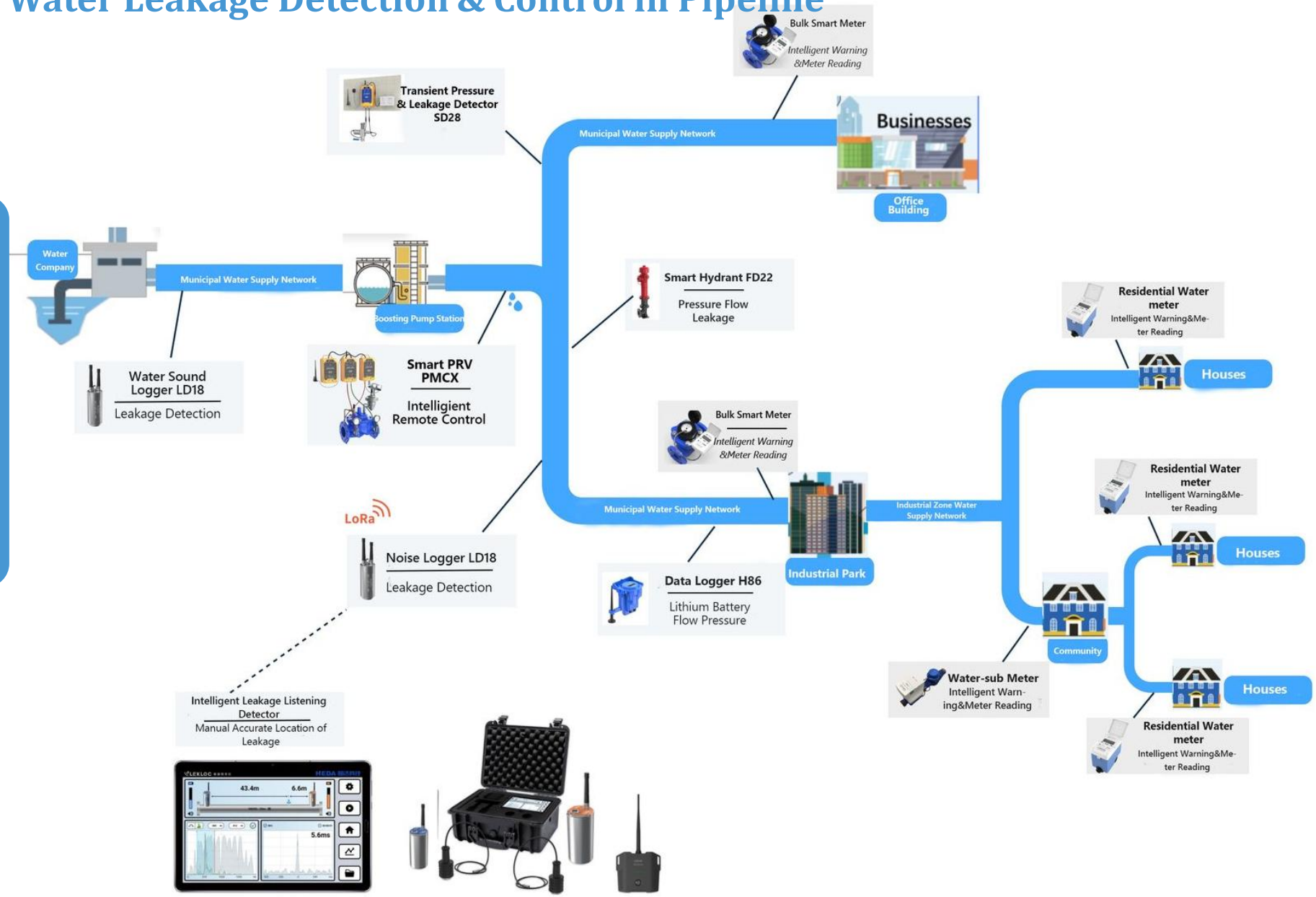
Ethiopia

4.2. Leakage Management

Application case 1: Water Leakage Detection & Control in Pipeline

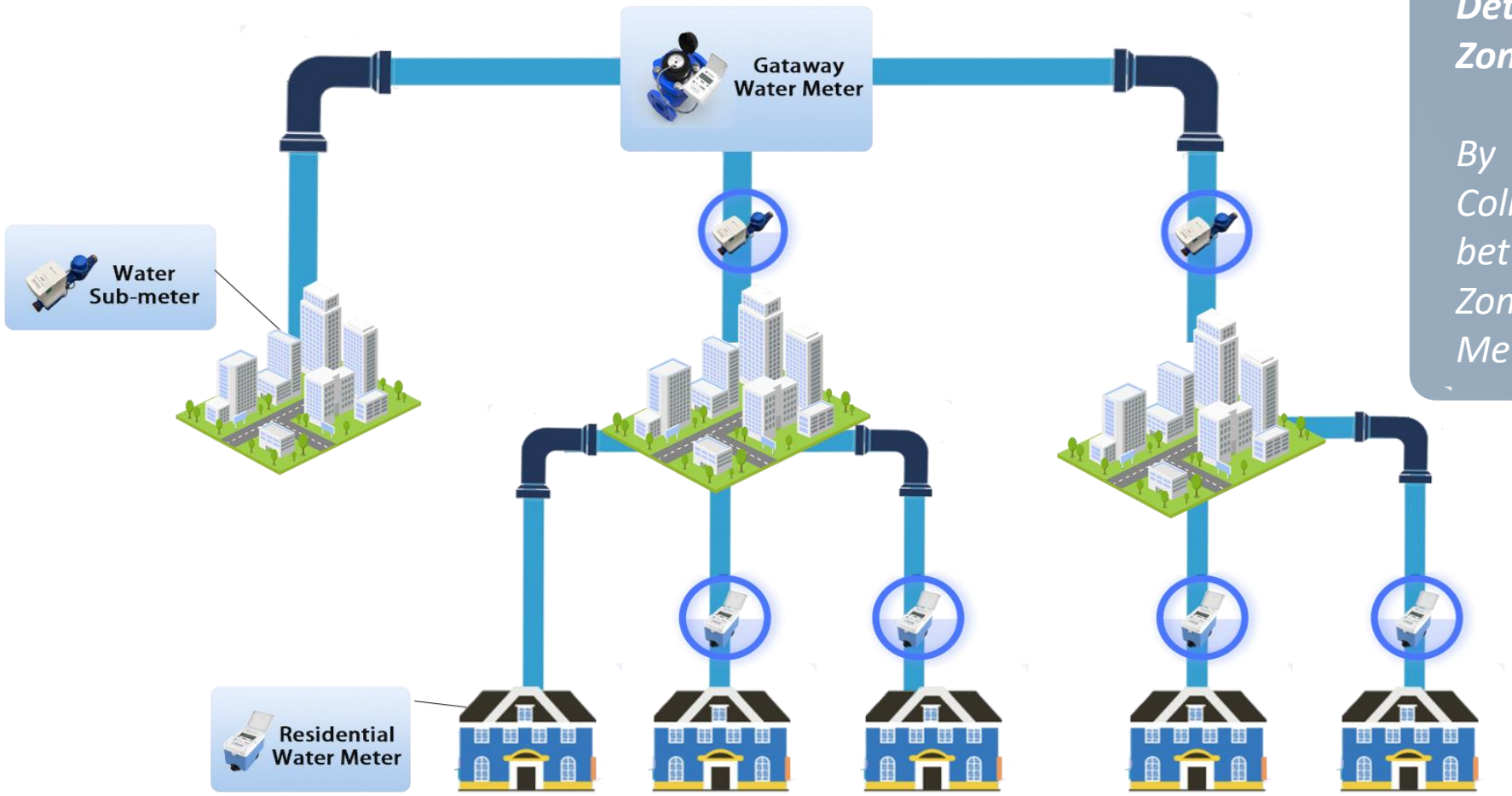
Detect Water Leakage in Pipeline in-time

Basing on Remote Water Pressure Monitoring System, Noise Leakage Detection, District Metering Area (DMA) etc. technologies



4.2. Leakage Management

Application case 2: Water Leakage Detection & Control in Zone



Detect Water Leakage inside Zone

By Remote Meter Data Collection and Comparison between Bulk Meter at inlet of Zone and Domestic Household Meter

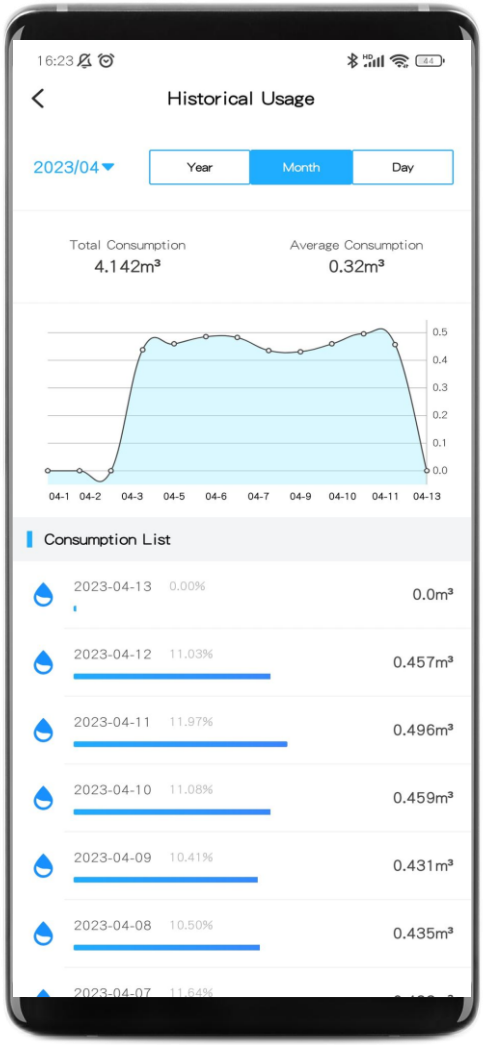
4.2. Leakage Management

Application case 3: Water Leakage Detection & Control in Household

Detect Water Leakage in household

Indentify additional water loss quickly by tracking minimum nighttime flow of domestic water meter





4.3. Project Services

Comprehensive Lifecycle Services



- Technical Consultation
- Engineering Design
- Project Implementation
- Network O&M
- Training Empowerment

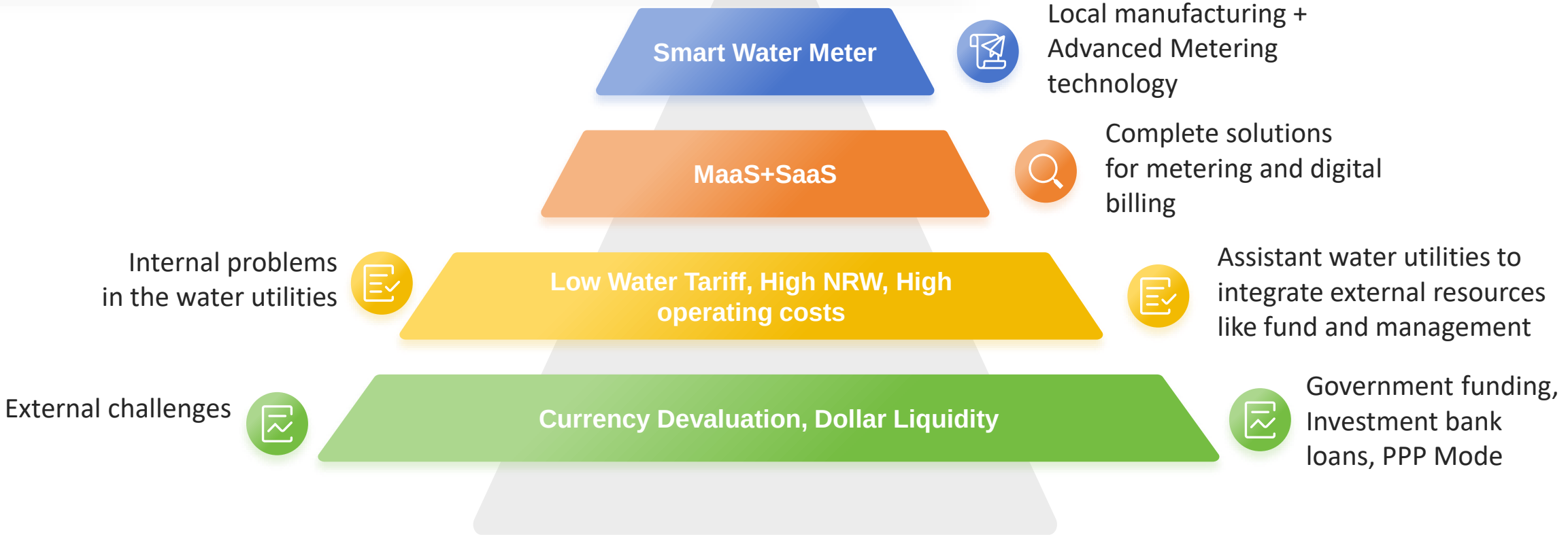







4.4. Pyramid Model of Business Capability

Core value of team: Deep Industry understanding and experience, Unique product design language, Openness, Flexibility, Forward-looking vision



CASE STUDY:

SMART WATER METER IN Indonesia

PDAM Tirtanadi

PDAM TIRTA KERTA RAHARJA KABUPATEN TANGERANG

PDAM KOTA PADANG

PDAM SURYA SEMBADA K0TA SURABAYA

PDAM Karo Malem

MM2100 Industrial Town

PDAM Tugu Tirta

Astra Otoparts

PDAM Bandarmasih















Case Study – HCWW Smart meter Egypt

HOLDING COMPANY FOR WATER AND WASTEWATER

Projects:

1 million: HCWW(National Water Department, responsible for the water supply of Egypt’ s old city)

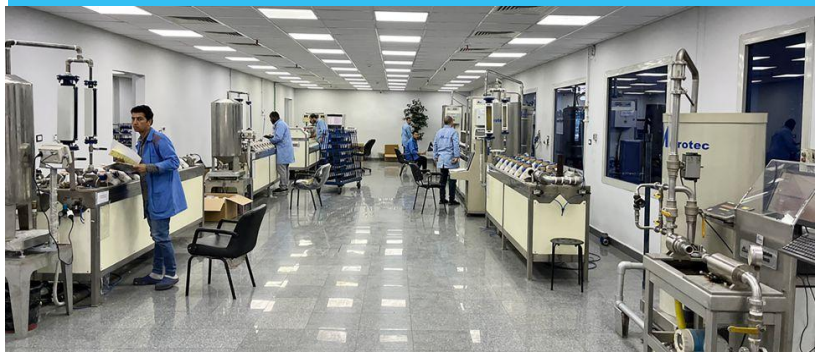
200,000: NUCA(National Water Department, responsible for the water supply of Egypt’ s new city)

Order amount of Laison:
350,000 HCWW + 50,000 NUCA



Product Solution:
Customized prepaid smart card meter solution, Specified water meter management system (unified protocol), Integration with local mobile payment)

Local Factory:
1 million production capacity (including casting +assembly, mechanical meter + smart meter)



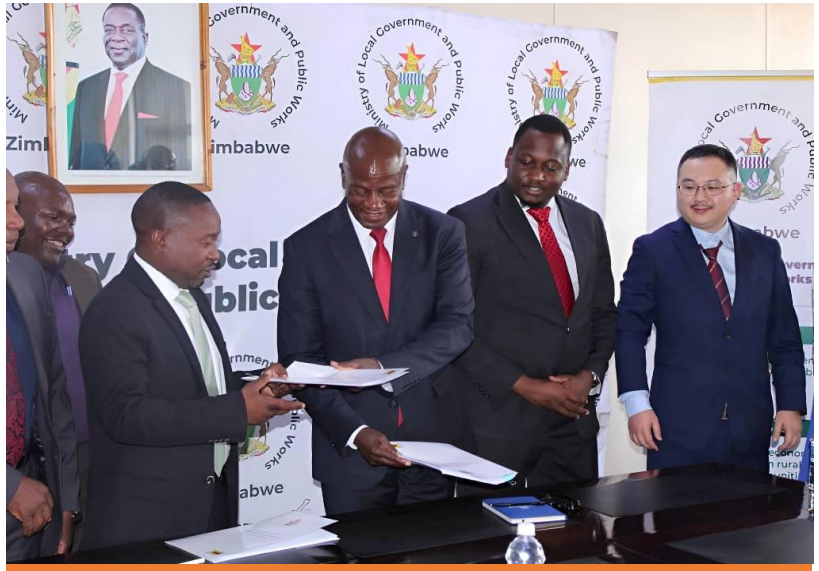
Partner in Egypt

Metrotec EGYPT
المصرية الألمانية لصناعة عداد المياه



Case Study - Harare, Zimbabwe

Project: A comprehensive water privatization project integrating **purification, distribution, smart metering, and billing** with **650,000 smart meters (** 320,000 Harare + surrounding cities) deployed to optimize water resource management and efficiency.

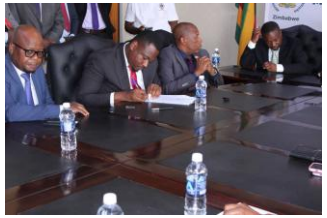


Project Funding: Government funding, African Development Bank

Project Status: **Memorandum of Agreement for a financial solution arrangement meant** already sined between Ministry of Local Government and Public Works, Harare City Council and LAISON through its local partner-Helcraw Electrical;

Water Plant Project Contract signed (Four 250,000-ton water plants)









Product Solutions: LoRa Split STS Prepaid Smart Water Meter, with AMR/AMI for remote meter data collection

4.6 Chinese Water Technology Supply Chain Going Global













Media Reports





Cote d'Ivoire- Xinhua News Agency



Zimbabwe-ZBC TV News Online



Cameroon - Crtv, Canal 2 and Version 4



Zambia-ZNBC (Zambia National Broadcasting Corporation)



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Strategy Product Leading, Scale-Driven , Global Operation

Mission Creating Values by continuous innovation

Vision To be global IoT product and data service provider

Core Valus Innovation, Collaboration, Focus, Agility

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SMART WATER METER PROMOTE

WATER SUSTAINABILITY

Smart Meter，Smart Choice





