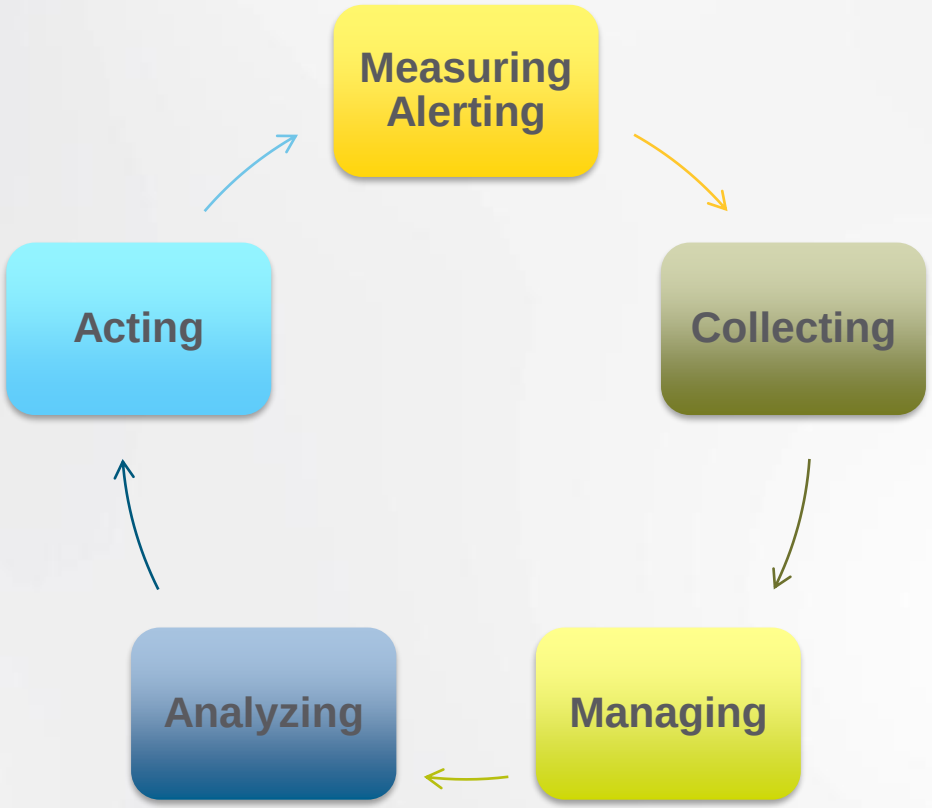
THE CORE OF OUR WATER MANAGEMENT PLATFORM

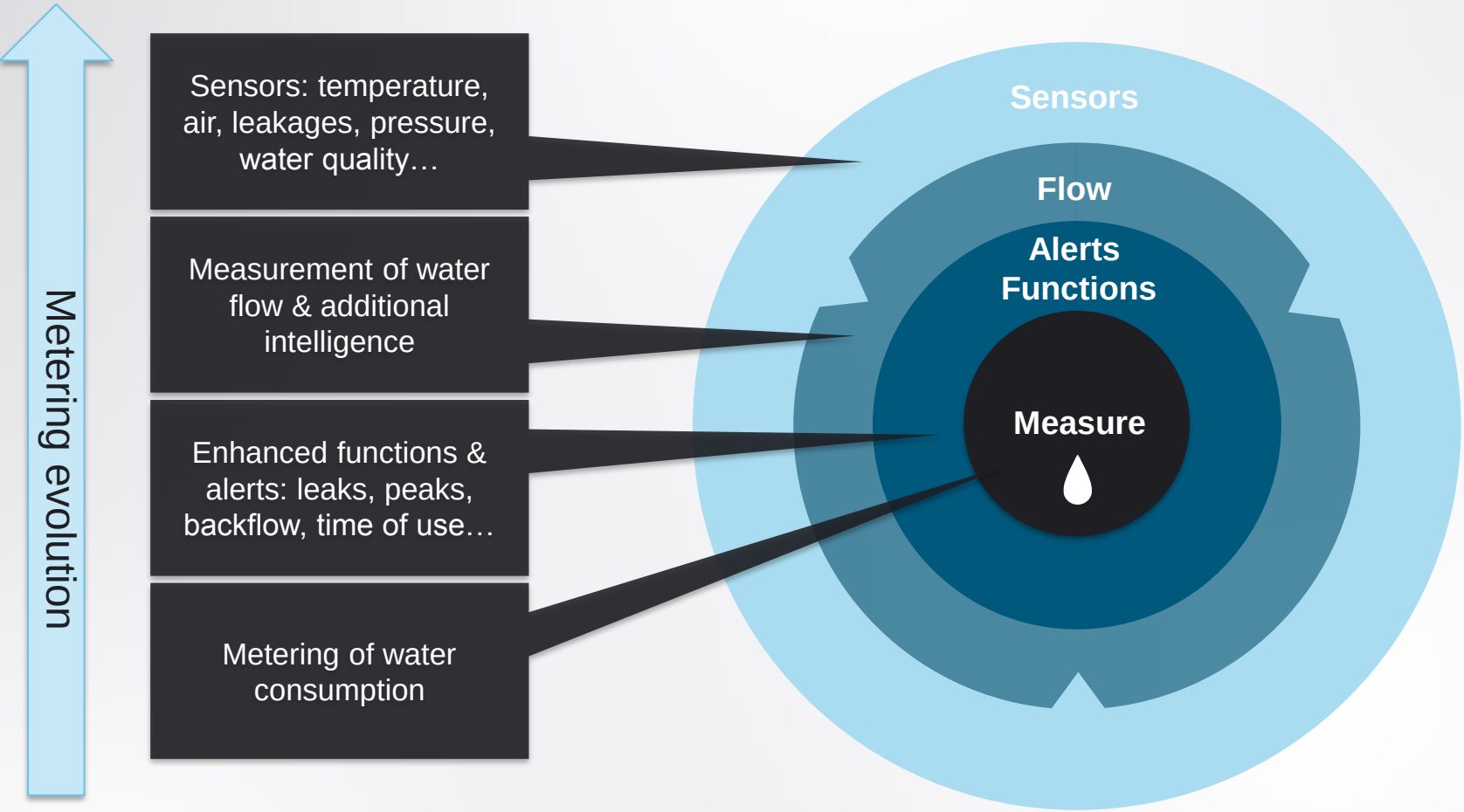
Intelis

WATER MANAGEMENT PLATFORM

WATER MANAGEMENT CYCLE



1/ EXTENDING WHAT WE MEASURE



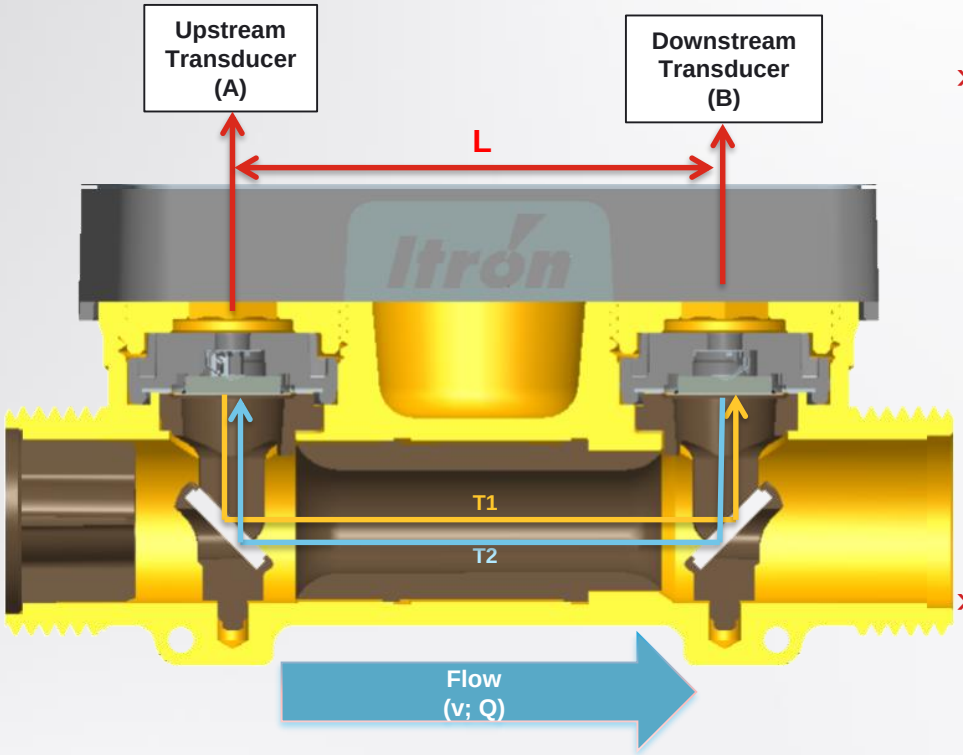
1/ EXTENDING WHAT YOU MEASURE

Sensors

Flow

ULTRASONIC MEASURING TECHNOLOGY

PRINCIPLE OF ULTRASONIC MEASUREMENT



- Transit time principle:
  - The flow meter operates by alternately transmitting and receiving a wave of sound energy and measures the transit time that it takes for sound to travel between the two transducers.
  - The time is directly related to the velocity of the liquid in the pipe.
- Flowmeter accuracy is linked to the precision of the measure.
- X61 precision is 20ps (20 X faster than Intel core micro processor 2,5MHz).

Flow Rate:

$$\Rightarrow Q = S.v = 2SL\frac{T2 - T1}{Transit^2}$$

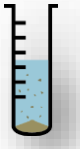
ULTRASONIC TECHNOLOGY KEY BENEFITS

When technology adapts to ALL network conditions

- Different consumption patterns
  - Wide dynamic range
  - Same accuracy in whole dynamic range
  - Not affected by high flow rates and pressure peaks

- Different water temperature
  - Measures the temperature
  - Same accuracy for different water temperatures from 1°C to 70°C
  - Compatible with water up to 90°C

- Water quality
  - Not affected or damaged by particles in loaded water



- Intermittent Water supply (Air)
  - Air does not affect/damage the meter
  - Air is not counted and detected by the meter →alarm

ULTRASONIC TECHNOLOGY KEY BENEFITS

Measure

- Accuracy, reliability and long life time
  - Linear metrology on complete dynamic range
  - Very low starting flow
  - Backflow accuracy
  - 15 years battery life time (20 years with 2 cells)
  - Does not age → long lasting efficiency
  - Consumption volume has no impact on metrology

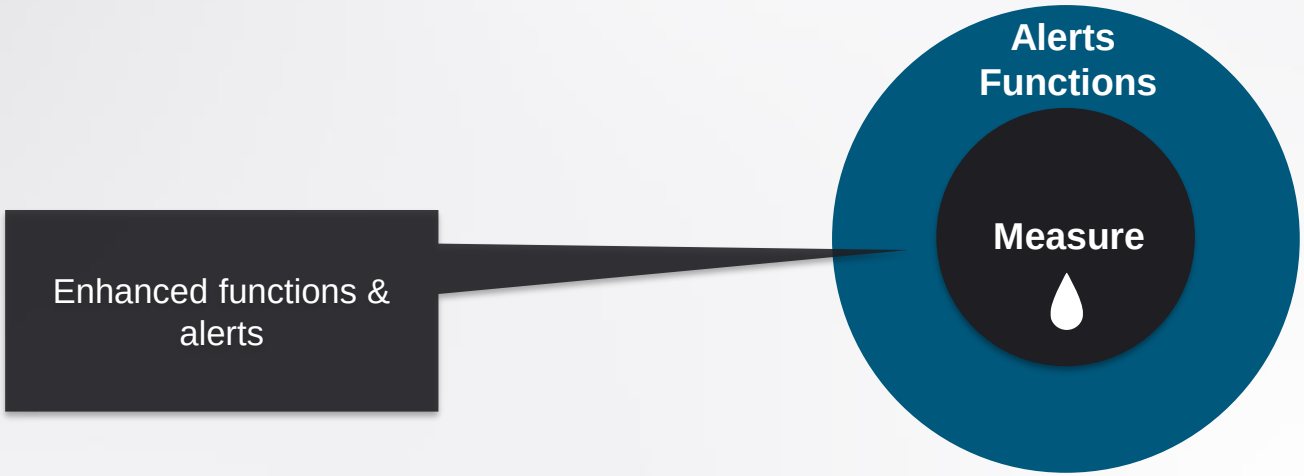
- Installations
  - All positions
  - No disturbances U0/D0
  - Not influenced by electromagnetic fields (pumps, magnets)
  - Low head loss
  - Resistant to peak flow

- Self diagnostic
  - Ensure metrological performances & coherency of the information
  - Why ? Due to variable environmental conditions

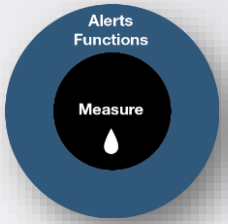
PERFORMANCE SUMMARY

Characteristics			
Permanent flow rate (Q_3)	1,6 m^3/h	2,5 m^3/h	4,0 m^3/h
Nominal size DN	15	15/20	20
Dynamic range (R)	160 - 200 - 250	160-200-250-315 - 400	160 -200-250-315-400-630
Overload Flow rate (Q_4)	2,0 m^3/h	3,125 m^3/h	5,0 m^3/h
Minimum Flow rate (Q_1)		6,4 l/h	
Starting flow		1,5 l/h	
Meter Temperature class		T70 (1°C – 70°C)	
MPA		16 Bars	
Maximum pressure loss at Q_3	0,40 Bar	0,25 Bar	0,63 Bar
Flow profile sensitivity class		Class U0 D0	
Accuracy class		2	

1/ EXTENDING WHAT YOU MEASURE



ENHANCED FUNCTIONALITIES



Peak flow

Leakage

Event log

Time synchronization

Volume below threshold

Minimum Flow

Time of use

Backflow

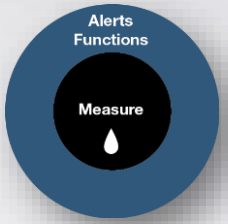
Reversed meter

Meter stopped

Custom Billing period

Logging intervals

- Monitor and alerts
- 100% data secured
- Cyble Inside

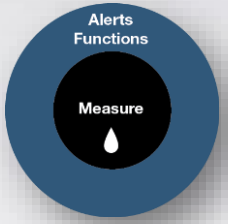


Flow repartition

Logging intervals

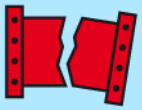
Functionalities from WaterMind

- Real flow rate analysis
- Water balance monitoring
- Consumption pattern analysis



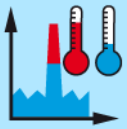
New functions

Air in pipe



Broken pipe

Alarm water temperature



Peak temperature

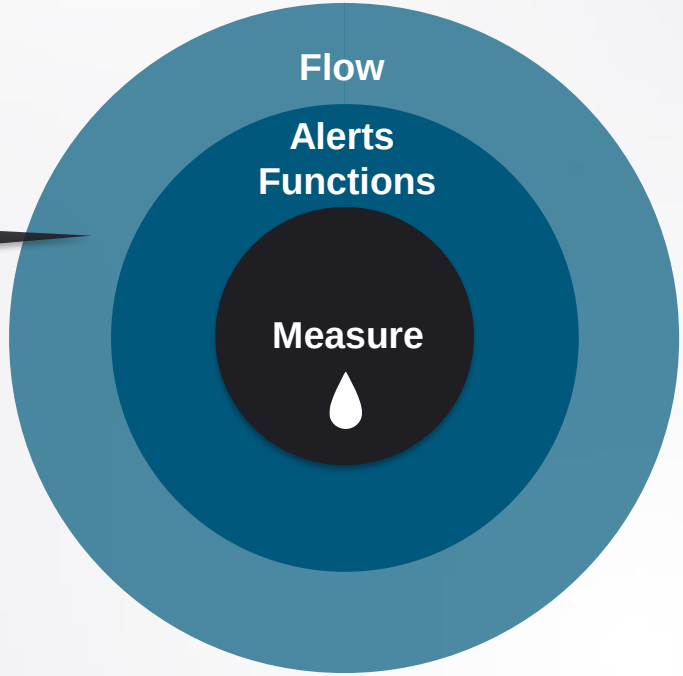
Battery alarm

Alarm reconfiguration

Fraud

1/ EXTENDING WHAT YOU MEASURE

Measurement of water flow & additional intelligence



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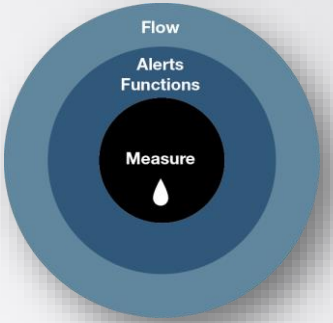
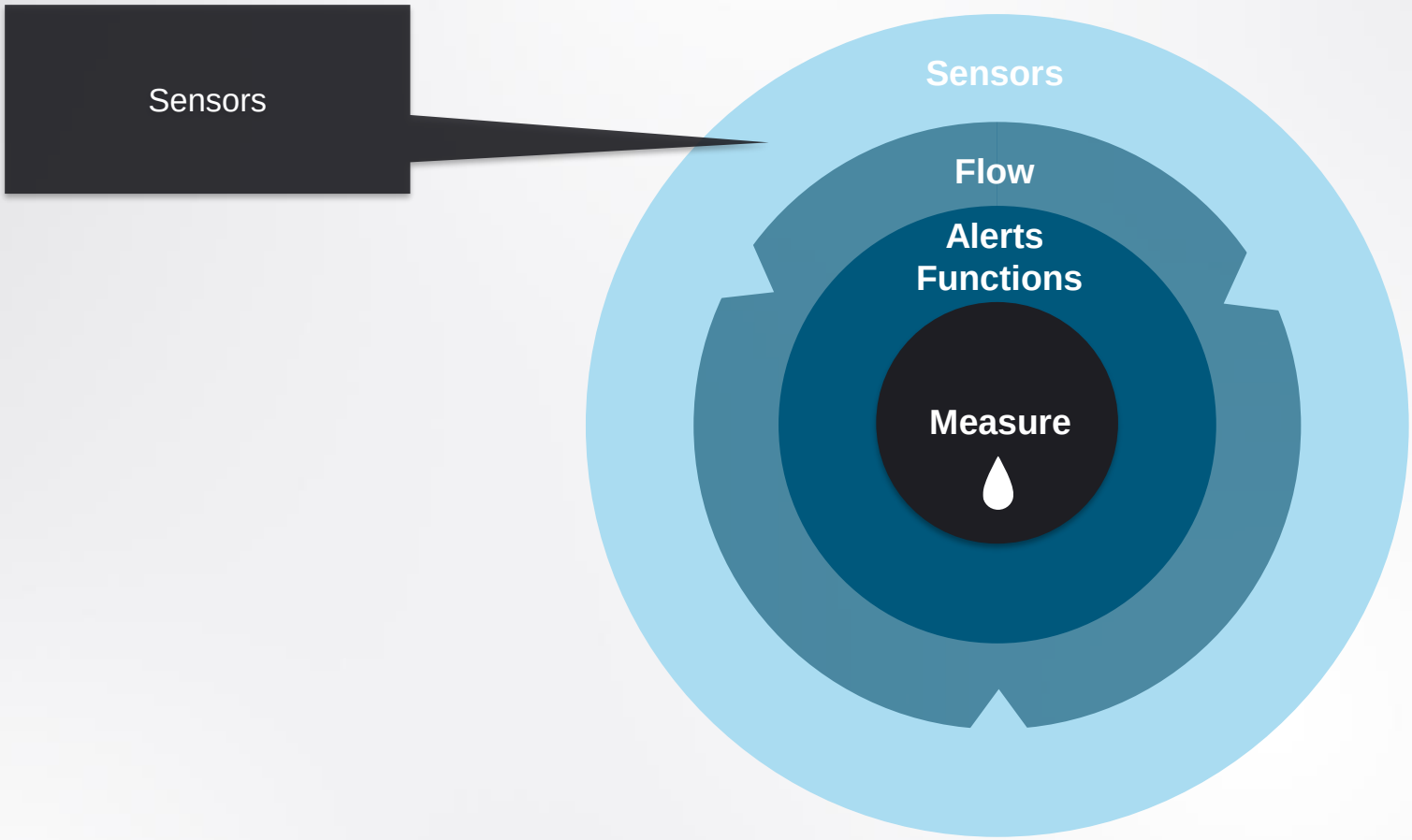


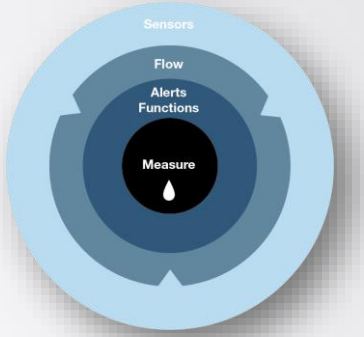
- Flow measuring
  - Instantaneous flow is measured (flow rate is not calculated versus a consumption over a period)
  - Flow rate is measured in both direction
  - Peak & low flow are detected → alarms

- Permanent monitoring solution
  - 100% time monitoring on complete lifetime
  - Not only measure when there is water consumption, flow rate is continuously monitored and detects when there is no water.

1/ EXTENDING WHAT YOU MEASURE



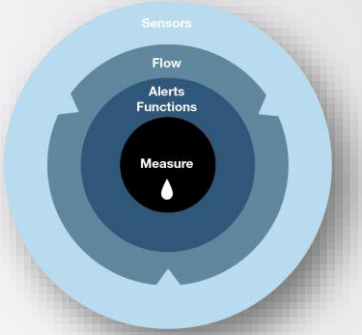
EVOLUTIVE PLATFORM



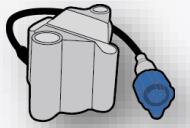
» Temperature monitoring
  - Control water temperature for quality
  - Prevent sanitary risk for inhabitants
  - Prevent water frozen
  - Record operating conditions over the water network

» Air detection
  - When air is detected, Meter Stop counting and alarm is activate
  - No air is counted on the meter Index. Meter records the time spent under Air Operation.
  - Detect zones of the network with non permanent supply

EVOLUTIVE PLATFORM

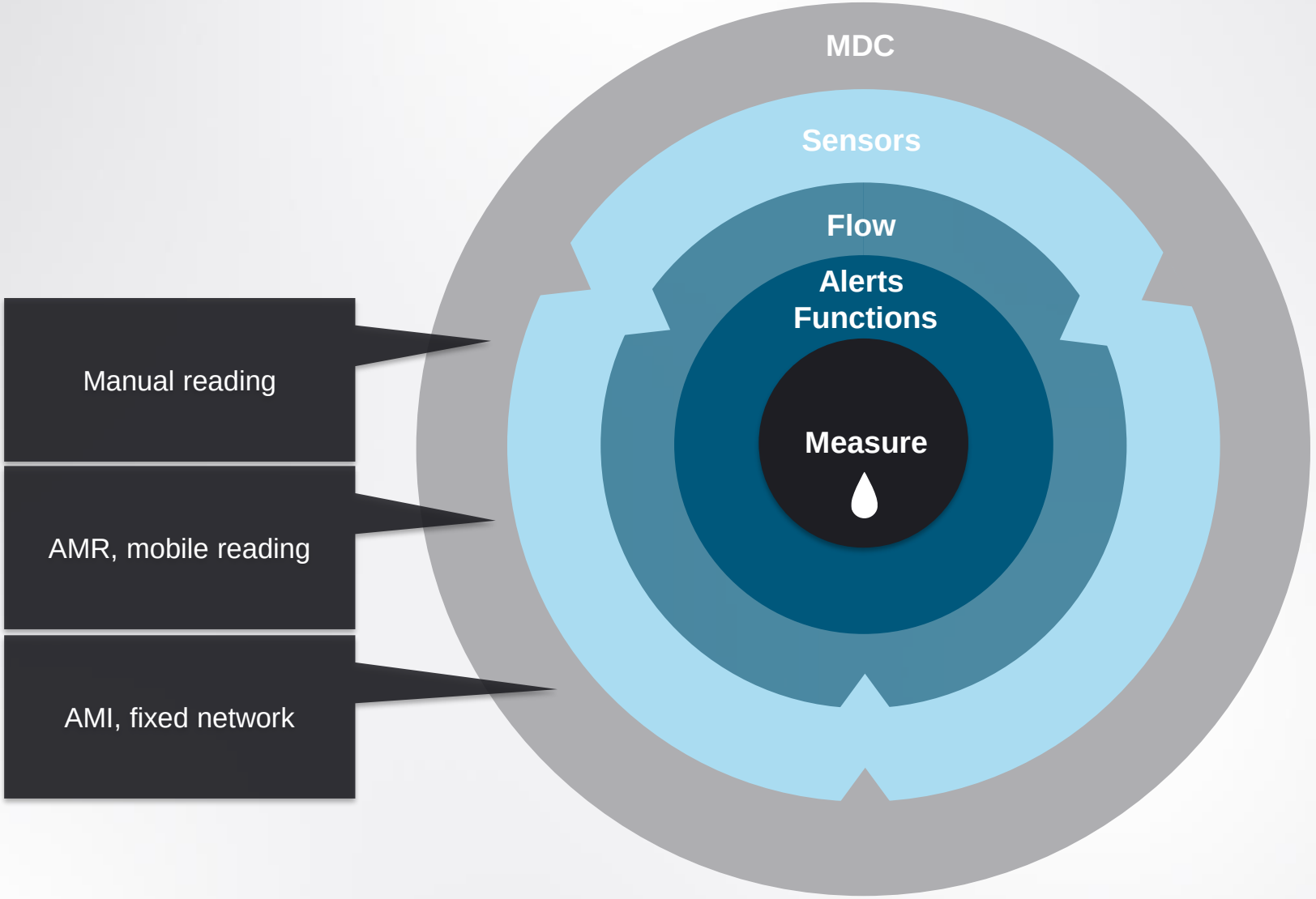


- Pressure (optional feature)
  - Network optimization
  - Detection of weak zones
  - Reduction of leakages and weak zones
  - Energy saving



- Leak sensor (optional feature)
  - Network optimization
  - Detection of weak zones
  - Reduction of leakages and weak zones

2/ SECURING WHAT YOU COLLECT



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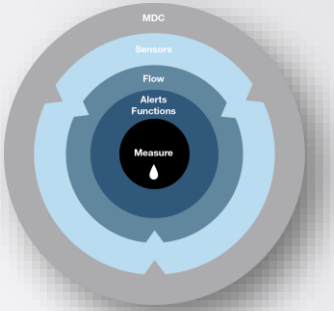
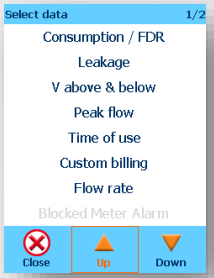
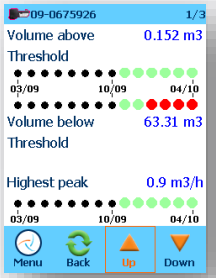
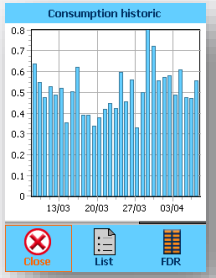


- Global solution
  - Radio embedded
  - Itron RF 433 MHz (radian)
  - AnyQuest & EverBlu enhanced
  - Architecture ready for other radio standard (OMS/DSMR/Zigbee).

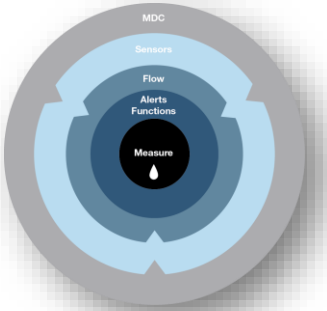


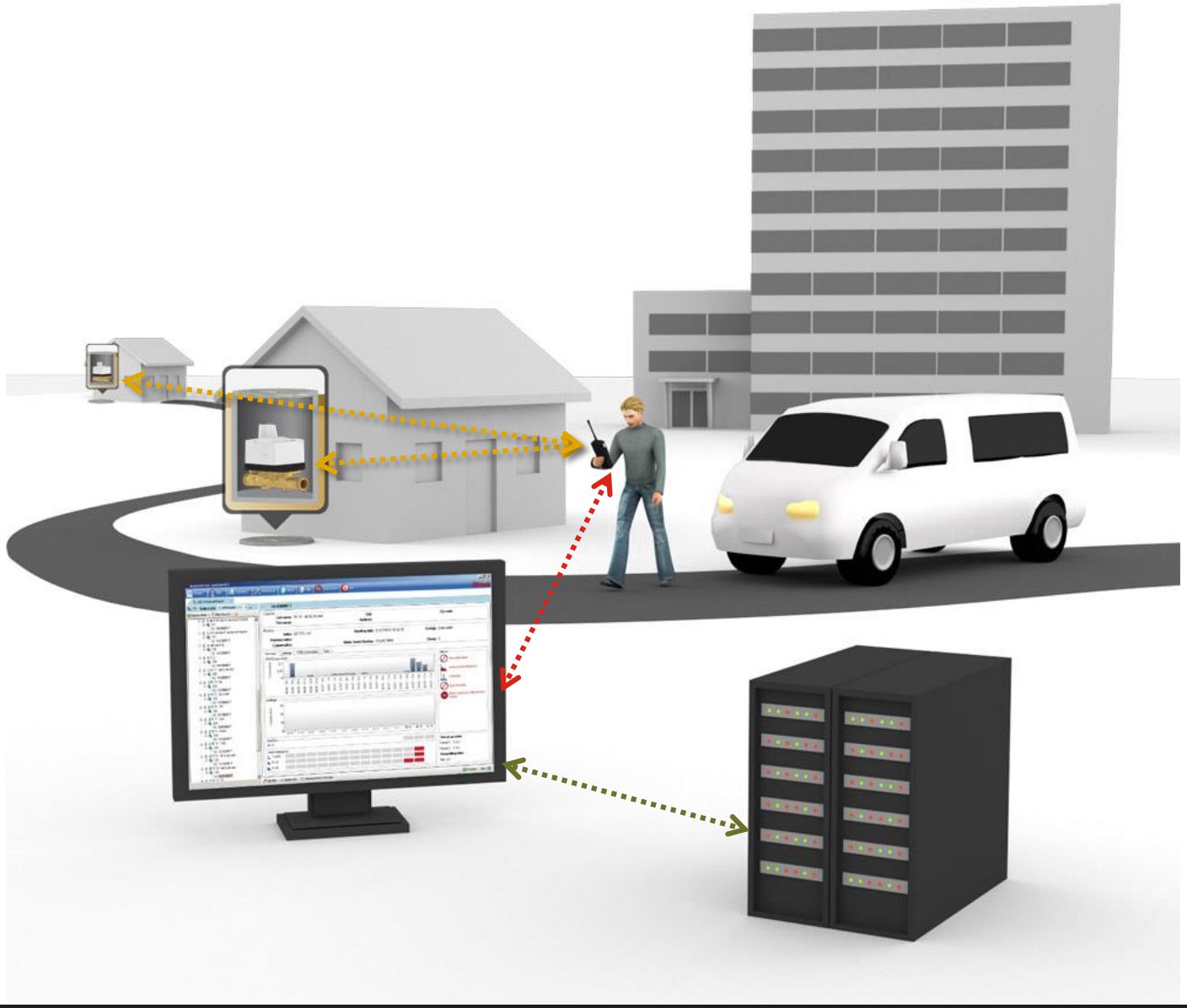




Hand Held terminal for mobile network

2/ SECURING WHAT YOU COLLECT





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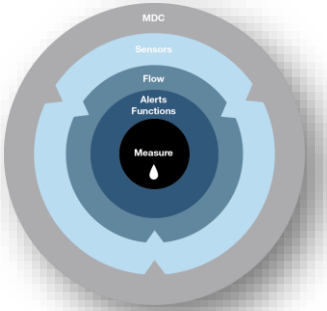
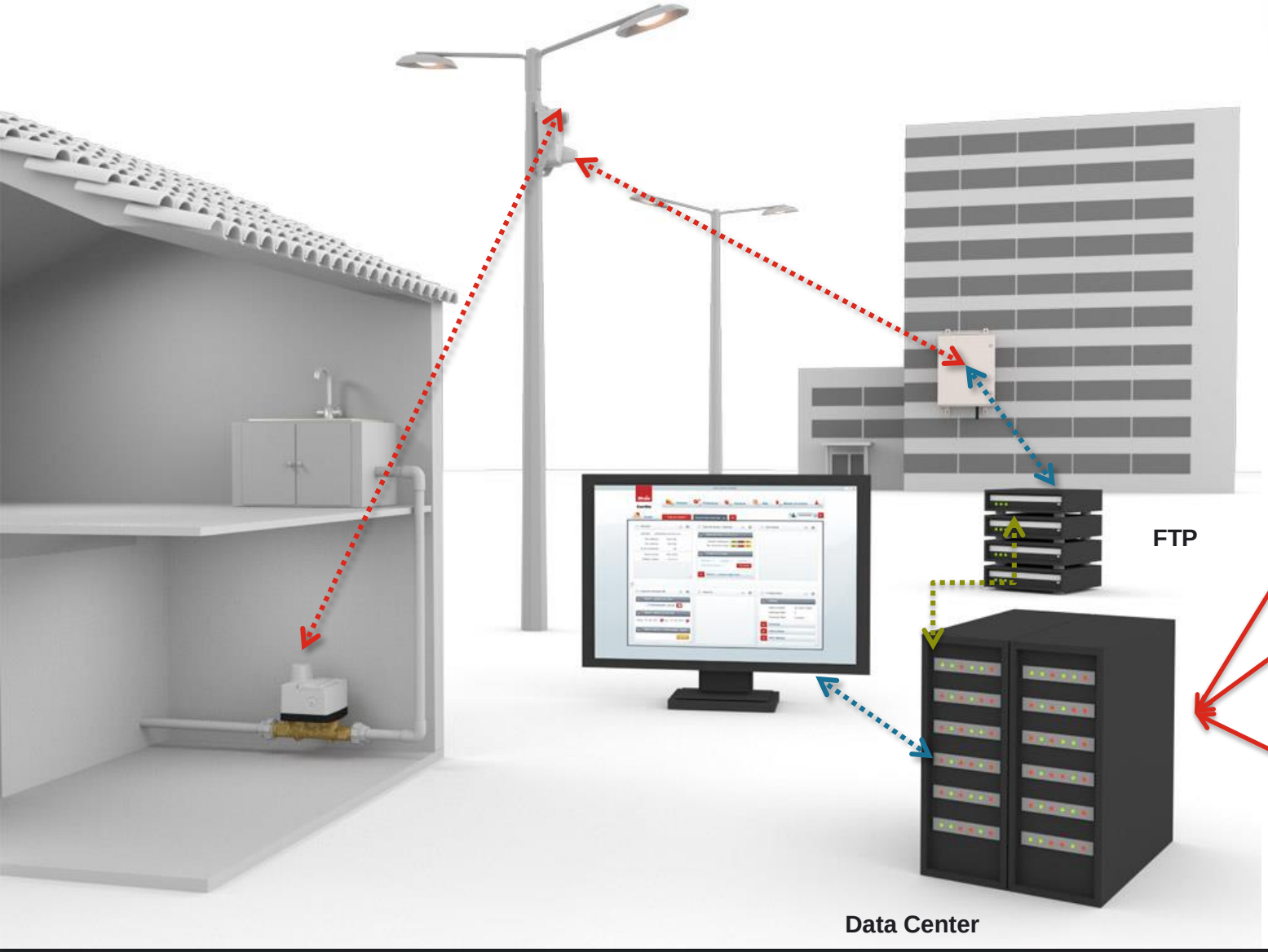


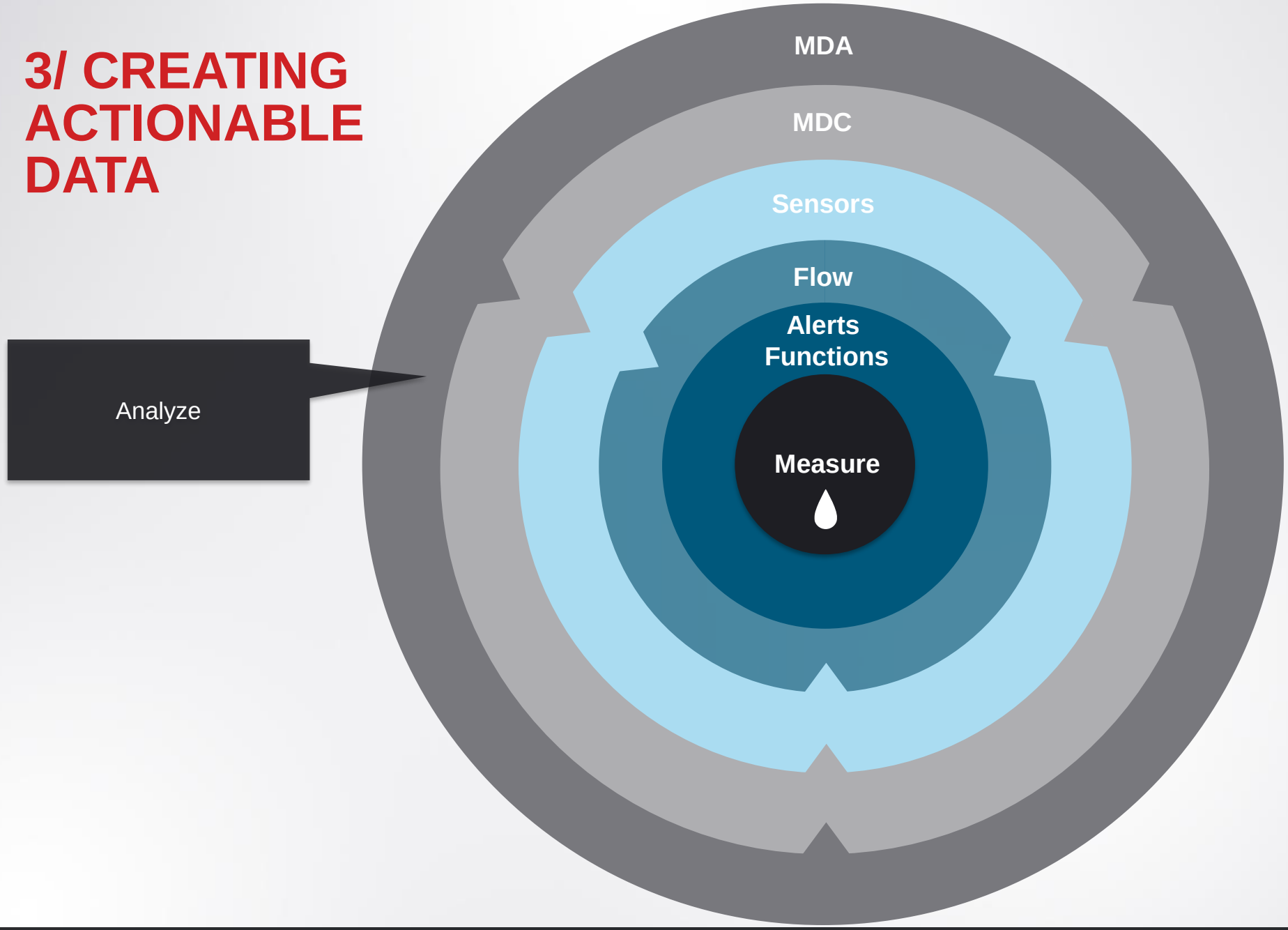


Utility Mainframe (Billing System / Customer Information System)

Customer Care software

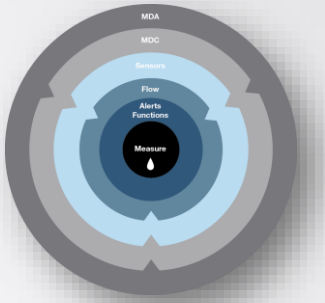
Customer forecasting software

3/ CREATING ACTIONABLE DATA



AMI DATA FLOW

Data repository offers storage and advanced analytics

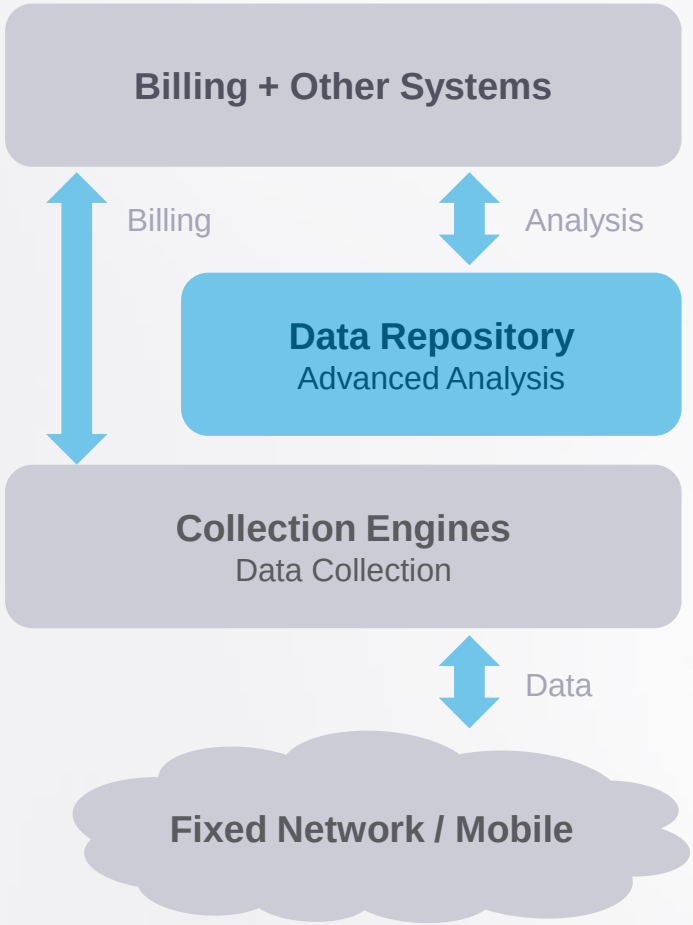


Utilize

Store + Analyze

Collect + Manage

Create + Collect



Billing data delivered to CIS.
Integrate to other systems as needed.

Data Analytics
» Long-term Storage (10 years)
» Advanced Analysis Capabilities

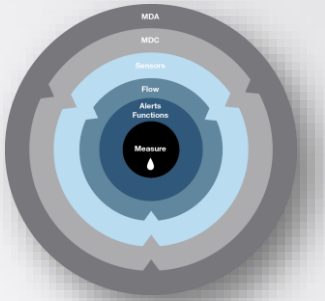
Network Software/MV-RS
» Data Collection / Billing Export
» Network Management
» Basic Analysis Capabilities

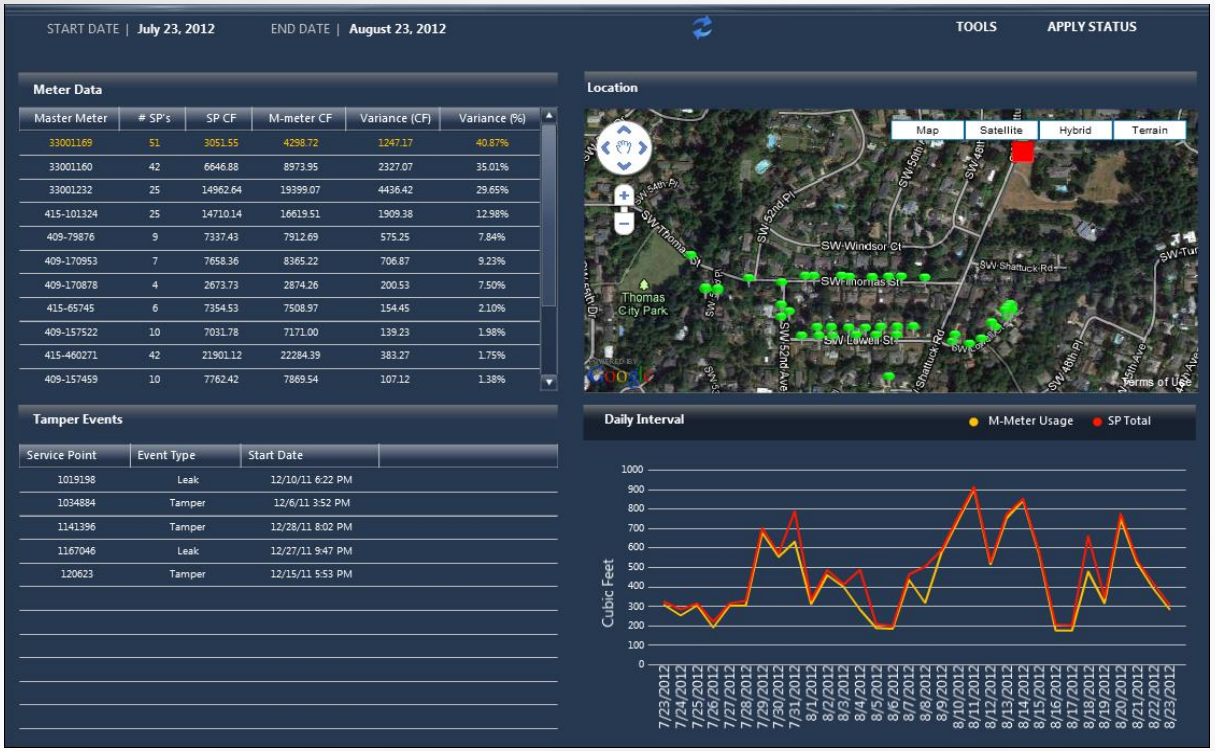
Fixed Network and Mobile
read the meters and collect the data.

Note: Software can be installed locally or hosted by Itron Private Cloud Services.

DISTRICT METERING

Comparative analysis to detect Non-Revenue Water

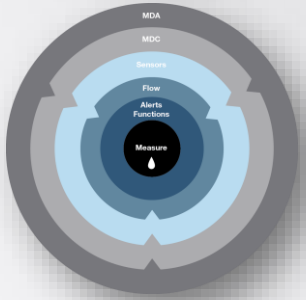


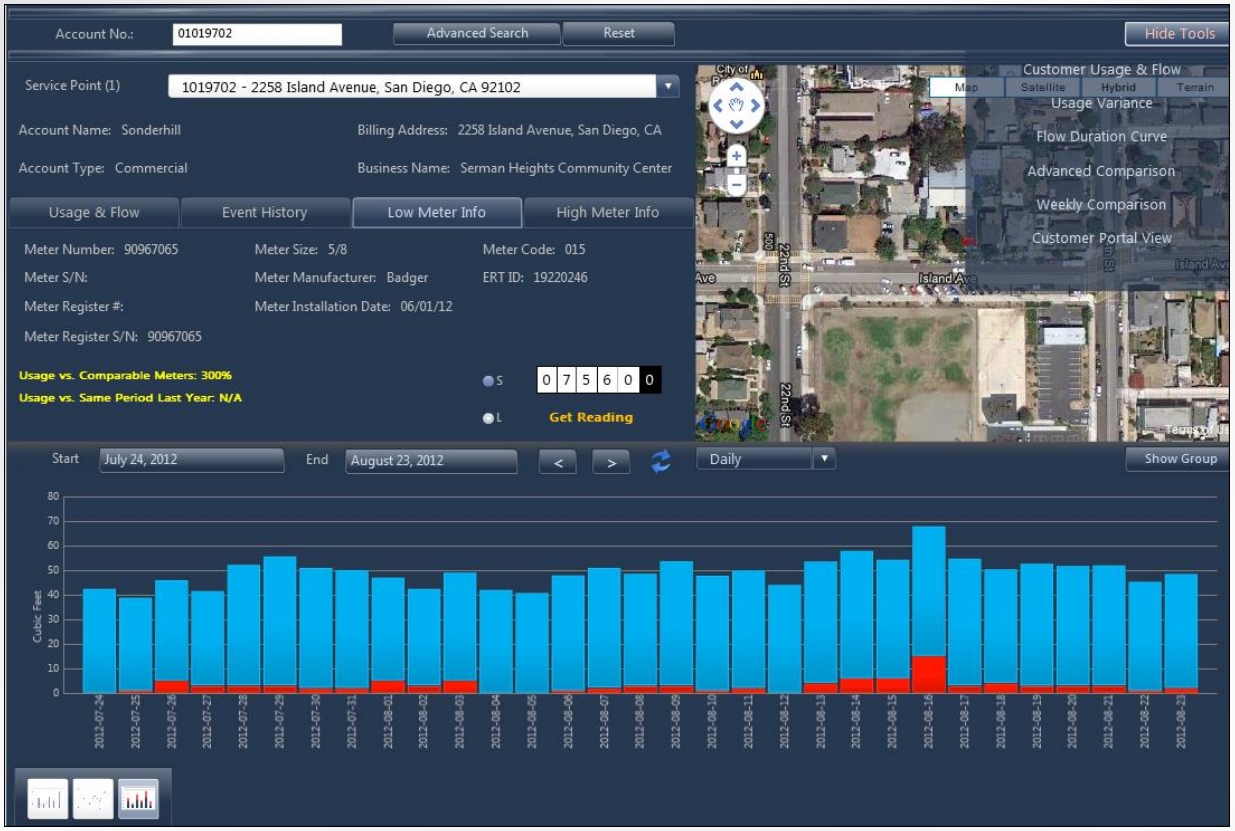


- Detect Non-Revenue Water (“NRW”) system-wide or zone-by-zone by comparing the outflow of a master (or “district”) meter to the aggregated consumption of the corresponding district on a time-synchronized interval-by-interval basis as shown during POC
- Includes enhanced capabilities to import groups directly from GIS as well as create groups based on advanced searches

FLOW ANALYSIS & METER RIGHT-SIZING

Actionable data for meter shop and distribution

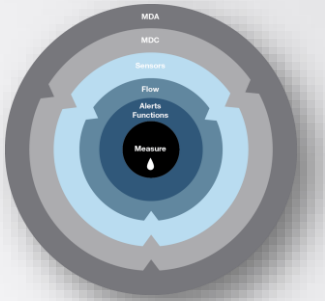


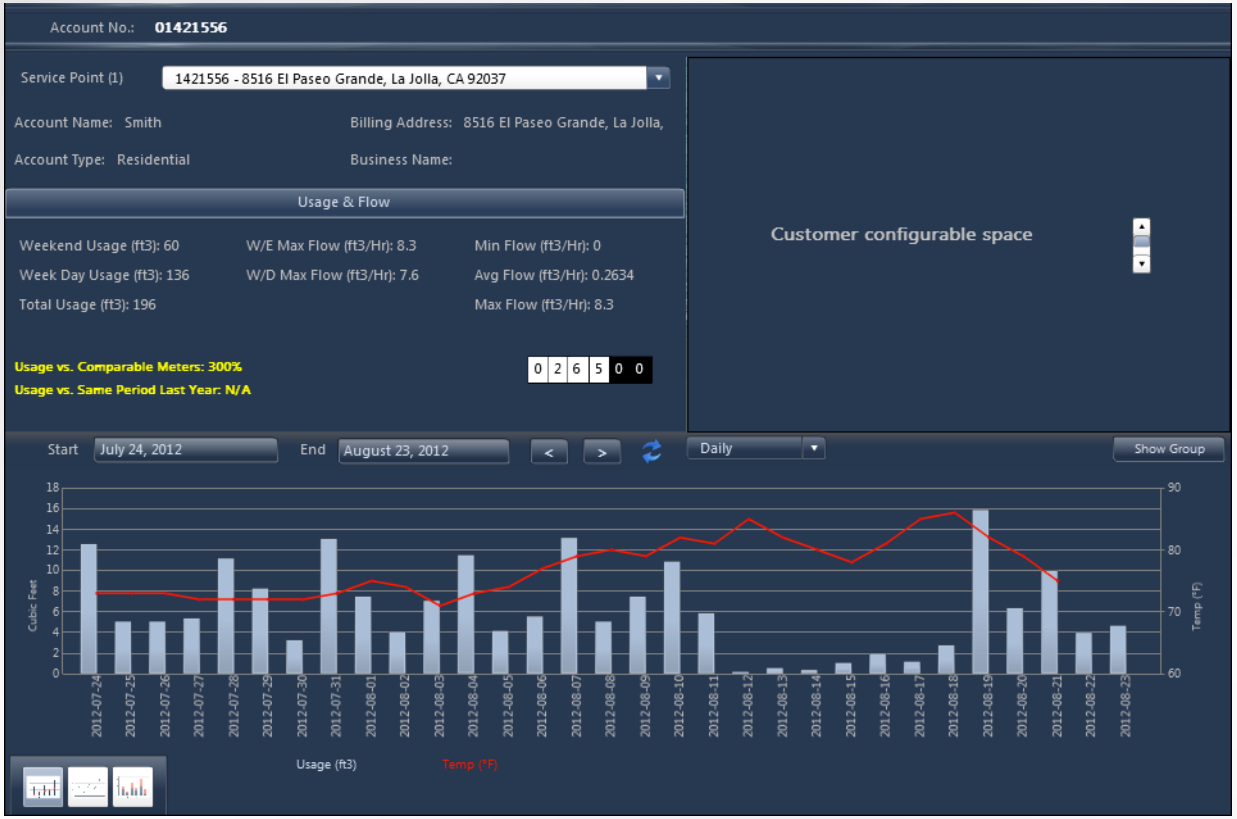


» Also have the ability to compare “high” side to “low” side of a compound meter

CUSTOMER WEB PORTAL

Itron's end-user web portal displays and compares consumption data





»Allow end-use customers to log-on and view their own reads

- Bar or Line Chart Radio Button
- Optional Weather Trend Line

» Ability for customer to view their consumption against pre-selected "averages" groups defined by utility

» Ability for customer to set target consumption limits, and to be notified via email/text when limit is within xx% (10% default) of being exceeded, and when it has been exceeded

THANK YOU

Itron

www.itron.com