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Technical Prospectous

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Need description

New generation Smart Metering Solution, based on open standards for interoperability between different devices supplied by different providers, must offer bidirectional and on demand communication between a Control Room and the remotely operated Smart Meters. All the network devices, regardless of the protocols used, must be compliant and, thus, operable by an open standard compatible Network Manager System for performance reporting and network administration. Provided that the aforementioned requirements will be satisfied by definition, a water leakage detection and investigation tool is definitely a much appreciated capability of the solution itself.

Functional requirements

1. Meter Typology (traditional building meters or traditional dwelling meters) (smart building meters or smart dwelling meters)
2. Bi-directional Communication
2bis. High Frequency Measure Reading (every 1 minute)
2ter. Exchanged information see Requirements-related Data Structure below
2quater. Data Frequency Transmission (at least once in a day)
3. On site measure calibration capability
4. Open Multilayered Interconnection Standard (OSI style)
5. On demand communication
6. Technical Lifecycle 16 years
7. Self Powered Devices
8. Water Tightness protection >= IP68
9. Toxic agents and chemicals protected devices
10. Display for most important register contents
11. Pipe section, room occupation etc. for procurement compliance
12. Anti tampering systems
13. Self diagnostics for battery charge level,
13bis water leaks
13ter water pressure and other relevant messages
14. Front display for direct reading of selected registers of the meter by the customer
15. Meter valve management functionalities (flow limitation, closure, reopening, fast automatic reaction time for emergency)
16. Open Industry standard compliance for interoperability among different devices from different vendors
17. Hydraulic connection system compatible with the actual existing one (such as connections to screw)
18. The metering system dimension must allow easy installation with little or no masonry works
19. The meter should have a measuring solution to minimize frost damages, be it mechanical or electronic
20. The meter should be sediment and abrasion resistant
21. The meter could have a battery self recharging system

22. The hydraulic section, regardless of the measuring technology of the meter have to be apart from the electronic telecom section in order not to break metrological certification in case of maintenance activity
23. The product and the related solution should be as simple as to require no special competences but the usual hydraulic skills to install
24. The communication module should be integrated but still removable from the metering section of the meter itself
25. The solution minimizes the request of equipped sites (e.g. gateways, repeaters, translators, etc.)
26. A full plastic/composite meter housing is not acceptable. At least the joints/threads should be metallic
26bis. The meter must measure flows in both directions
27. The network devices, regardless of the technology, must be compliant to the Network Manager communication standard
28. The communication must remain stable and reliable regardless of meter locations (basements, dedicated meter rooms, technical rooms, etc.)
29. The communication should be wireless from the meter side to the control room side
30. Network Management System provided as part of the solution for monitoring, reporting and administration of network devices
31. Management system (MDM) software functionalities must be defined beside those of Network Management System.
32. The leakage control must be implemented into the MDM.
33. It has to be ensured the automatic centralised backup and synching of configuration parameters from the old meter to the new one at installation time.