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ICT INFRASTRUCTURE FOR EFFICIENT WATER RESOURCES MANAGEMENT: TOWARDS HARMONIZATION OF A FRAGMENTED FIELD

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Abstract

The problem of monitoring and controlling the complex and heterogeneous water distribution networks in urban environments is not new. Existing solutions include high-resilience and availability of telemetry systems where a wired or less often wireless backbone is connecting heterogeneous field devices to a centralized control centre. In the control centre, the administrative personnel of the utility are offered an overview of the system status, presented with possible alarms and may also be able to perform certain configuration tasks. In the ICT solutions for efficient Water Resources Management (ICeWater) project real demonstrations in two different pilot sites are being conducted, using a Service Oriented Architecture (SOA) based communication platform to complement traditional telemetry solutions. It proposes an interoperable and modular architecture design, where through a publish/subscribe mechanism, diverse sensor types may be integrated with the web services through suitable adapters. Proprietary protocols and format of sensor data and meta-data are harmonized into a standard ICT core which is seamlessly integrated with the existing backbone. Several security aspects and their deployment options have been proposed throughout the ICeWater architecture so that security of consumer rights is not compromised in any way. Both pilot sites in ICeWater will obtain significant benefits from such architecture in realizing the foreseen use cases, future challenges and opportunities.

Key words: harmonization, integration, open-source, service oriented architecture, water distribution networks

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