

Interactive comment on “Understanding and managing large sensor networks” by D. D. Ediriweera and I. W. Marshall

Anonymous Referee #2

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This paper explores the performance of a large area sensor network for the collection of hydraulic data from a water distribution system and seeks to suggest non-specialist design and management rules from this. The paper does not consider the water distribution system or the derivation of information from the data collected, rather it focuses on the performance, reliability and management of the communications network. This is an important aspect that is too easily taken for granted, too many academic studies rely on the assumptions of near perfect data or the use of perfect data generated from simulation tools. This paper highlights the difficulties of obtaining reliable data from distributed infrastructure and should be of good general interest and relevance. The resulting ‘rules for future design’ are not particularly surprising, however all are valid and provide valuable information for non-specialists for the future when such communications networks will become more prevalent, and good design from the outset

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paramount.

General comments: It is surprising that the 'related work' section does not include any water systems examples, for example further details of Stoianov et 2007 mentioned in the introduction. Although, it is exactly this dearth of such literature that leads to the value of this work. It is not made explicitly clear why there is an assumption that weather conditions, and rainfall in particular, would be expected to correlate with sensor failures. In section 4.4 it is suggested that failures correlate with times of heavy communications network traffic, however no data is presented of such other network traffic. The correlations, or lack of, suggested would be improved by some statistical analysis.

Minor suggestions: '4 years data' should be corrected to 'over 3' or '3 1/3 years data' throughout. In the introduction 'near real time' should be defined. In some places it is a little unclear if 'node' and 'network' relate to the distribution system or the communications network, for example section 4.3. This should be checked and clarified throughout.

Interactive comment on Drink. Water Eng. Sci. Discuss., 3, 149, 2010.

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