



## **4onse: four times open & non-conventional technology for sensing the environment**

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The availability of complete, quality and dense monitoring hydro-meteorological data is essential to address a number of practical issues including, but not limited to, flood-water and urban drainage management, climate change impact assessment, early warning and risk management, now-casting and weather predictions. Thanks to the recent technological advances such as Internet Of Things, Big Data and Ubiquitous Internet, non-conventional monitoring systems based on open technologies and low cost sensors may represent a great opportunity either as a complement of authoritative monitoring network or as a vital source of information wherever existing monitoring networks are in decline or completely missing. Nevertheless, scientific literature on such a kind of open and non-conventional monitoring systems is still limited and often relates to prototype engineering and testing in rather limited case studies. For this reason the 4onse project aims at integrating existing open technologies in the field of Free & Open Source Software, Open Hardware, Open Data, and Open Standards and evaluate this kind of system in a real case (about 30 stations) for a medium period of 2 years to better scientifically understand strengths, criticalities and applicabilities in terms of data quality; system durability; management costs; performances; sustainability. The ultimate objective is to contribute in non-conventional monitoring systems adoption based on four open technologies.