Tethys's report : Collecting Sensor Data Without Infrastructure or Trust

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Index Terms—Internet of Things, . . .

1 Introduction

The purpose of this report is to summarize a document published during 2018 IEEE/ACM Third International Conference on Internet-of-Things Design and Implementation. It's about Tethys, a system collecting sensor data without infrastructure. This paper will allow us to clear subjectively the relevance or not of this report.

First of all, we will contextualize the paper and present some related works raising existing approach on some meanfull terms of that subject. Then we'll clear goals of the paper, explain their contribution and some reviews before concluding.

2 Context and Related Work

2.1 Context

At the time of digital transformation, all innovative technologies are connected. Analysis and exploitation of the digital data that results from these devices provides axes of study to improve daily habits. In this case, this paper focuses on the consumption of water in residential buildings using Tethys. It's a "*wireless water flow sensor that collects data at perfixture granularity without dependence on existing infrastructure and trusted gateways*". From a physical point of view, Tethys strongly decouples the energy dependence of the device to the infrastructure where it is deployed. It uses the water flow to mainly feed the proper functioning of its system and thus prevents any failures not correlated to infrastructure. Tethys uses crowdsourcing to collect all related data from residential consumers such as students. This process can present some inconvenient cause they can trust on consumer's phone reliability, so they need to enforce security between the sensing device and backend system ("*reliability end-to-end*").

The first results they obtained show that this device is able to identify significant behaviors in the shower use. They placed about several sensors and collected data during 2 weeks. The analysis of these data makes it possible to sensitize a consumer punctually on his water consumption. This approach revealed a significant variation in average water consumption for a shower. The first results they obtained show that this device is able to identify significant behaviors in the shower use. They placed about several sensors and collected data during 2 weeks. The analysis of these data makes it possible to sensitize a consumer punctually on his water consumption. This approach revealed a significant variation in average water consumption for a shower.

Appendix A

Terms definition

Here we define some terms that need to be explained.

References

[1] H. Chiang, J. Hong, K. Kiningham, L. Riliskis, P. Levis, and M. Horowitz, *Tethys: Collecting Sensor Data Without Infrasctructure or Trust*, 2018 IEEE/ACM Third International Conference on Internet-of-Things Design and Implementation.