# Tethys: Collecting Sensor Data Without Infrastructure or Trust

Lecture d'article et documentation scientifique


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# OUTLINE

- ➔ Introduction
- ➔ Paper Goals
- ➔ Related Work
- ➔ Contribution
- ➔ Discussion
- ➔ Conclusion

# INTRODUCTION

- What is Tethys ?
- How does it work ?

# PAPER GOALS

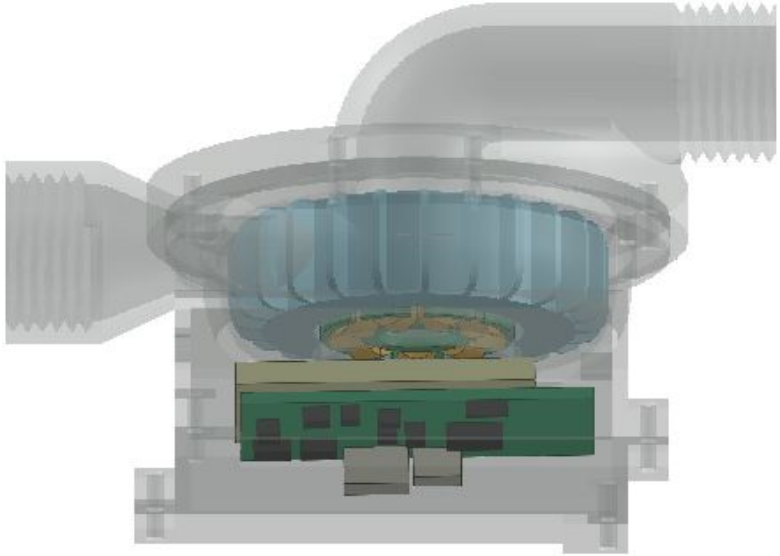
- lack of exploitable information to improve water consumption strategies
- data analysis target shared dormitories
- provide a reliable system  to observe shower use patterns with fine granularity
- preserve occupant anonymity

# RELATED WORK

- Water sensing
- Delay-Tolerant Networking
- Security and Privacy

# CONTRIBUTION

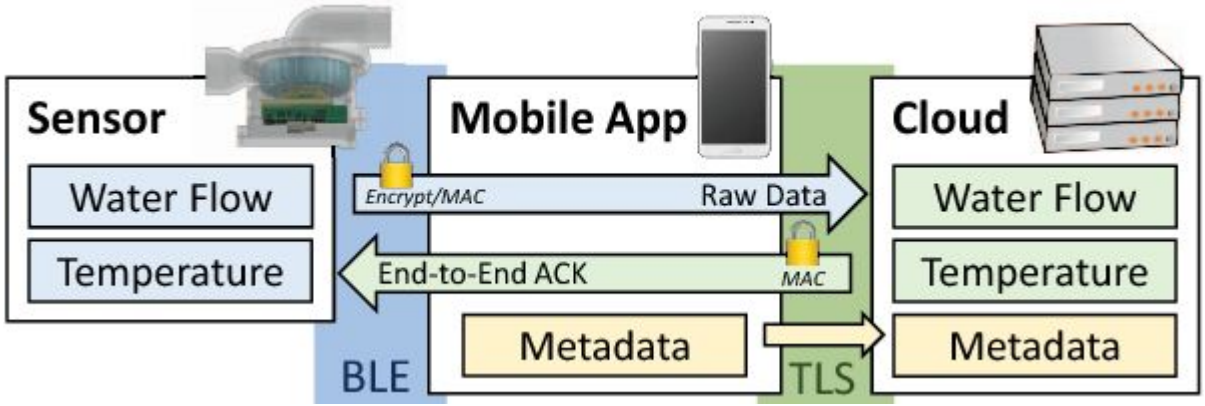
- A thoughtful system anticipating for almost any breakdown
  - Energy Supply self-powered
  - Waterproof Enclosure



*Assembled Tethys Sensor (Source : Original Report)*

# CONTRIBUTION

- Decoupling from network infrastructure
- Provide End-to-End Security Process




*Network design of Tethys (Source : Original report)*

# CONTRIBUTION

- Data analysis over 3 residential halls during 2 weeks
- Identify consumer ratio that have bad showering behavior
- Gives some relevant results on energy harvesting and consumption

# DISCUSSION

- Plus reviews:
  - Independent of existing electrical infrastructure
  - Supports and prevents several flaws
  - Uses electromagnetic energy
  - Uses BLE (Bluetooth Low Energy)
- Minus reviews:
  - Collection of their personal data
  - Need an internet connection
  - Loss of data in case of smartphone failure

# CONCLUSION

- Perfect choice for dynamical collection and measurement of water flow with fine granularity
- Use policy promotes low energy consumption
- Preserves the confidentiality of the data collected
- Could be a reference in the data collection without access to the infrastructure