

# IoT challenges

State of the art

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# Outline

1. Introduction

2. First contribution

3. Conclusion

# Context

What is IoT ?

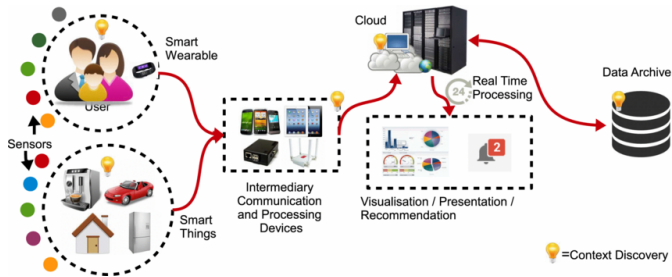


Figure 1: IoT platform.



Figure 2: IoT challenges.

# Problematic

Where is the problem ?

## 1. How to Connect sensors to the best gateway with high QoS [1].

- Decision and optimisation problem.
- Various network acces
- Various configuration of each network acces
- Lake of selection tools

## 2. How to connect sensors to this gateway with high Security level.

- Technical problem.
- Lake of selective tools
- How to select the **best** access point

## 3. How to extract knowledge from sensors data [2].

- a
- Lake of selective tools
- How to select the **best** access point



Figure 3: Key barriers to Industrial Internet of Things (IIoT) adoption

[#industrialinternetofthings](#)

[1] Musa Ndiaye, Gerhard Hancke, and Adnan Abu-Mahfouz. " Software Defined Networking for Improved Wireless Sensor Network Management: A Survey ". In: 17.5 (May 4, 2017). 00053, p. 1031.

[2] Pascal Thubert, Maria Rita Palattella, and Thomas Engel. " 6TiSCH Centralized Scheduling: When SDN Meet IoT ". In: 2015 IEEE Conference on Standards for Communications and Networking (CSCN). 2015 IEEE Conference on Standards for Communications and Networking (CSCN). 00033. Tokyo, Japan: Oct. 2015, pp. 42–47.

# Problematic

Where is the problem [3] ?

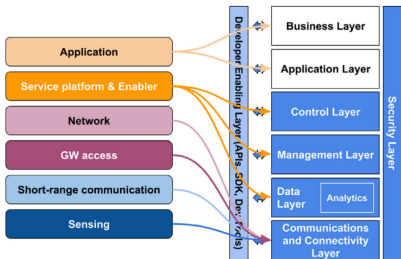


Figure 4: Intel view.

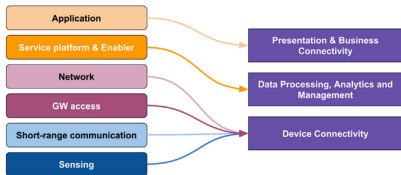


Figure 5: Microsoft view.

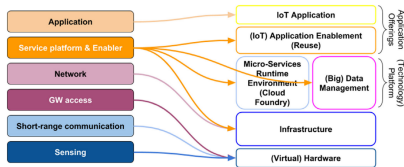


Figure 6: SAP view.

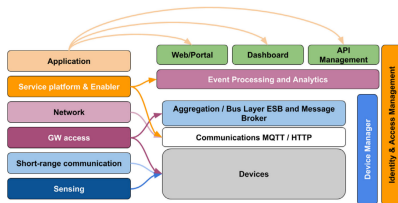


Figure 7: WS2O view.

# Problematic

Where is the problem [3] ?

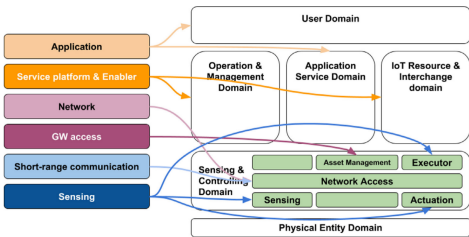


Figure 8: ISO view.

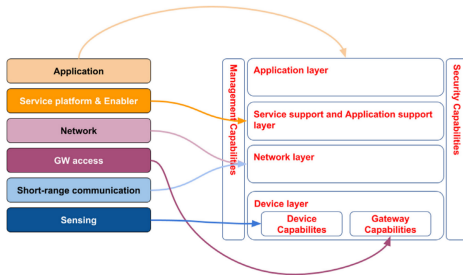


Figure 9: ITU-T view.

# Motivations

Why should we deal with search problems

1. → a  
→ Lack of selective tools  
→ How to select the **best** access point

## 2. QoS Analysis

- a
- Lack of selective tools
- How to select the **best** access point

## 3. Threats

- a
- Lack of selective tools
- How to select the **best** access point

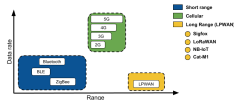


Figure 10: Communication diversity.

# Goal

Is it specific, measurable, achievable, réalistic, for 3 years ?

- ➡ 1. Allow heterogeneous network to communicate
- 2. QoS Analysis
- 3. Threats
- ➡ How to select the **best** access point
  - 1. Allow heterogeneous network to communicate
  - 2. QoS Analysis
  - 3. Threats



Figure 11: wsn-IoT.



# Challenges

Where is the difficulty ?

## 1. Challenge 1

- a
- Lake of selective tools
- How to select the **best** access point

## 2. Challenge 2

- a
- Lake of selective tools
- How to select the **best** access point

## 3. Challenge 3

- a
- Lake of selective tools
- How to select the **best** access point

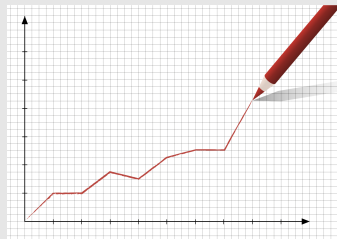


Figure 12: tets.

# Contributions

How could be addressed ?

## 1. Contribution 1

- a
- Lake of selective tools
- How to select the **best** access point

## 2. Contribution 2

- a
- Lake of selective tools
- How to select the **best** access point

## 3. Contribution 3

- a
- Lake of selective tools
- How to select the **best** access point

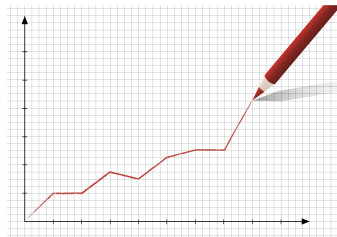


Figure 13: tets.

# Outline

1. Introduction

2. First contribution

3. Conclusion

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1. Introduction

2. First contribution

3. Conclusion

1. Related work

2. Contagion process

3. Experimentation

4. Results exploitation

5. Conclusion

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# Related work

## Comparison

Paper	A1	A2	A3	A4

Table 1: An example table.

# Related work

## Comparison

Paper	A1	A2	A3	A4

Table 2: An example table.

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# ... (step 1)

Methods



# ... (step 2)

Methods



## ... (step 3)

Methods



# ... (step 4)

Methods



# Results

## Comparison


Table 3

# Outline

1. Introduction

2. First contribution

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1. Related work

2. Contagion process

**3. Experimentation**

4. Results exploitation

5. Conclusion

# Experimentation

## Experimentation

➡ a

➡ b

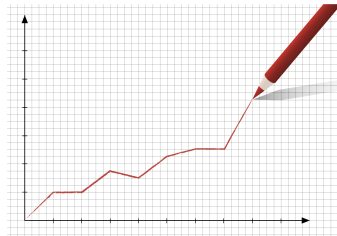


Figure 14: .

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**4. Results exploitation**

5. Conclusion



# Results

## Comparison

➡ a

➡ b

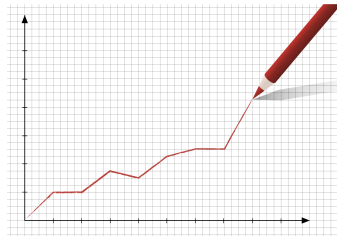


Figure 15: .

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# Conclusion

➡ a

➡ b

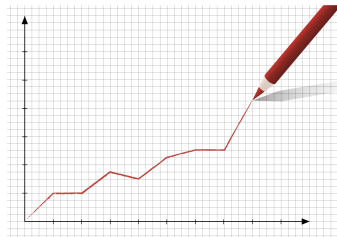


Figure 16: .

# Outline

1. Introduction
2. First contribution
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# Conclusion

Our main goal was



Our main contribution was



Our main results was



# Future Challenges

## Conclusion

Our future goal was



# Future Challenges

## Conclusion

Our future goal was



# Thank you !

# References

- [1] Musa Ndiaye, Gerhard Hancke, and Adnan Abu-Mahfouz. " Software Defined Networking for Improved Wireless Sensor Network Management: A Survey ". In: 17.5 (May 4, 2017). 00053, p. 1031 (p. 4).
- [2] Pascal Thubert, Maria Rita Palattella, and Thomas Engel. " 6TiSCH Centralized Scheduling: When SDN Meet IoT ". In: *2015 IEEE Conference on Standards for Communications and Networking (CSCN)*. 2015 IEEE Conference on Standards for Communications and Networking (CSCN). 00033. Tokyo, Japan: Oct. 2015, pp. 42–47 (p. 4).
- [3] B. Di Martino et al. " Internet of Things Reference Architectures, Security and Interoperability: A Survey ". In: *Internet of Things 1-2* (Sept. 2018). 00006, pp. 99–112 (p. 5, 6).