Wireless IO Tool

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Wireless IO Tool

1. Context
2. Project specifications
3. Hardware design
4. Software design
5. Progress

1. Context

Client

STERELA an Airbus subcontractor

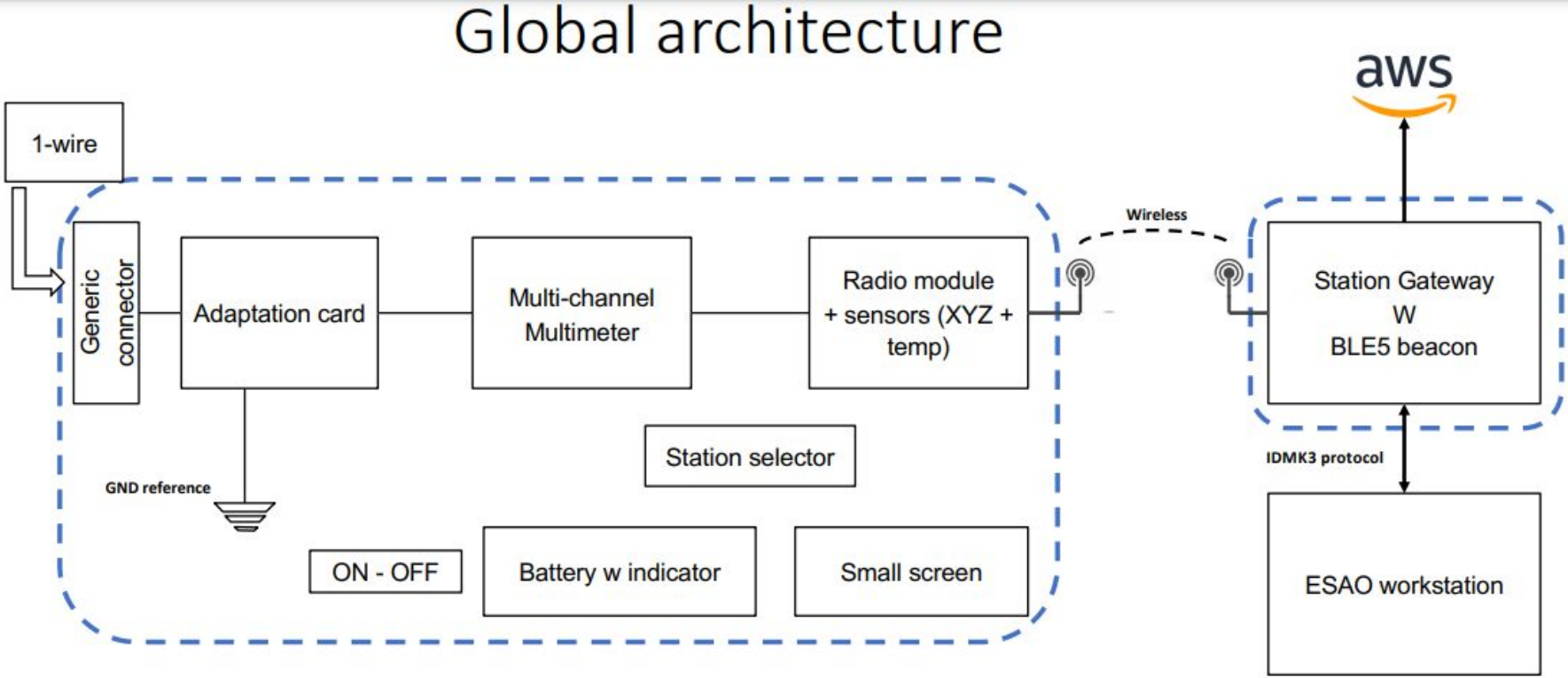
Requirement

Make the ground test sequence wireless to reduce wiring costs, workforce and time

Expected outcome

A wireless proof of concept

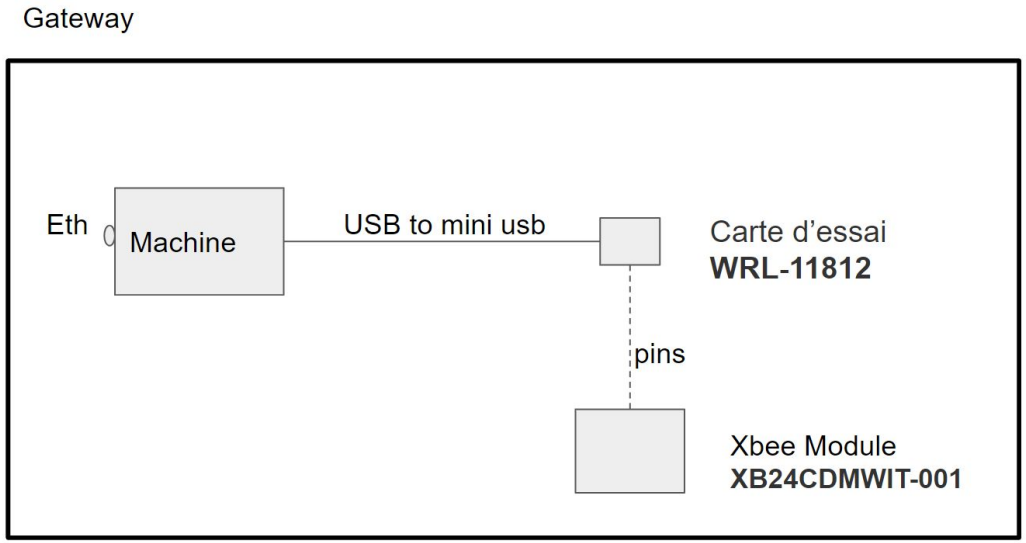
2. Specifications



2. Specifications

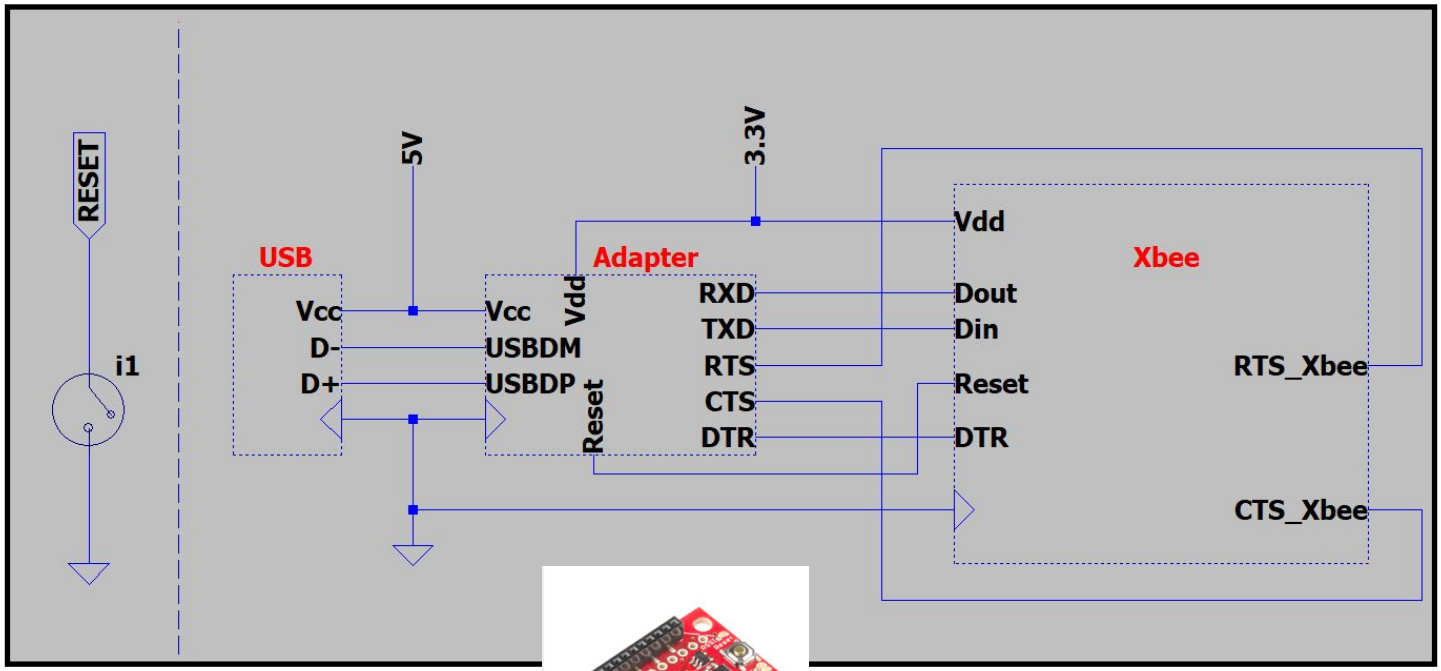
- Hardware: x86 machine Xbee radio module
- OS: Ubuntu
- Language: C/C++

3. Hardware design



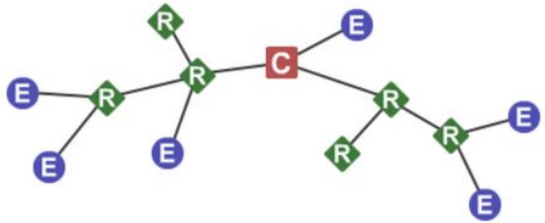
Characteristics:
Speed rate : 250Kbps (RF)
Reach : 60m indoor, 1200m outdoor
Output Power : 5dBm to 8dBm
Sensitivity : 100dBm
Protocol : XBee 802.15.4

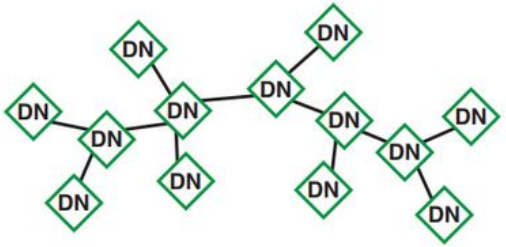
3. Hardware design



3. Hardware design

Which network architecture?





Zigbee:

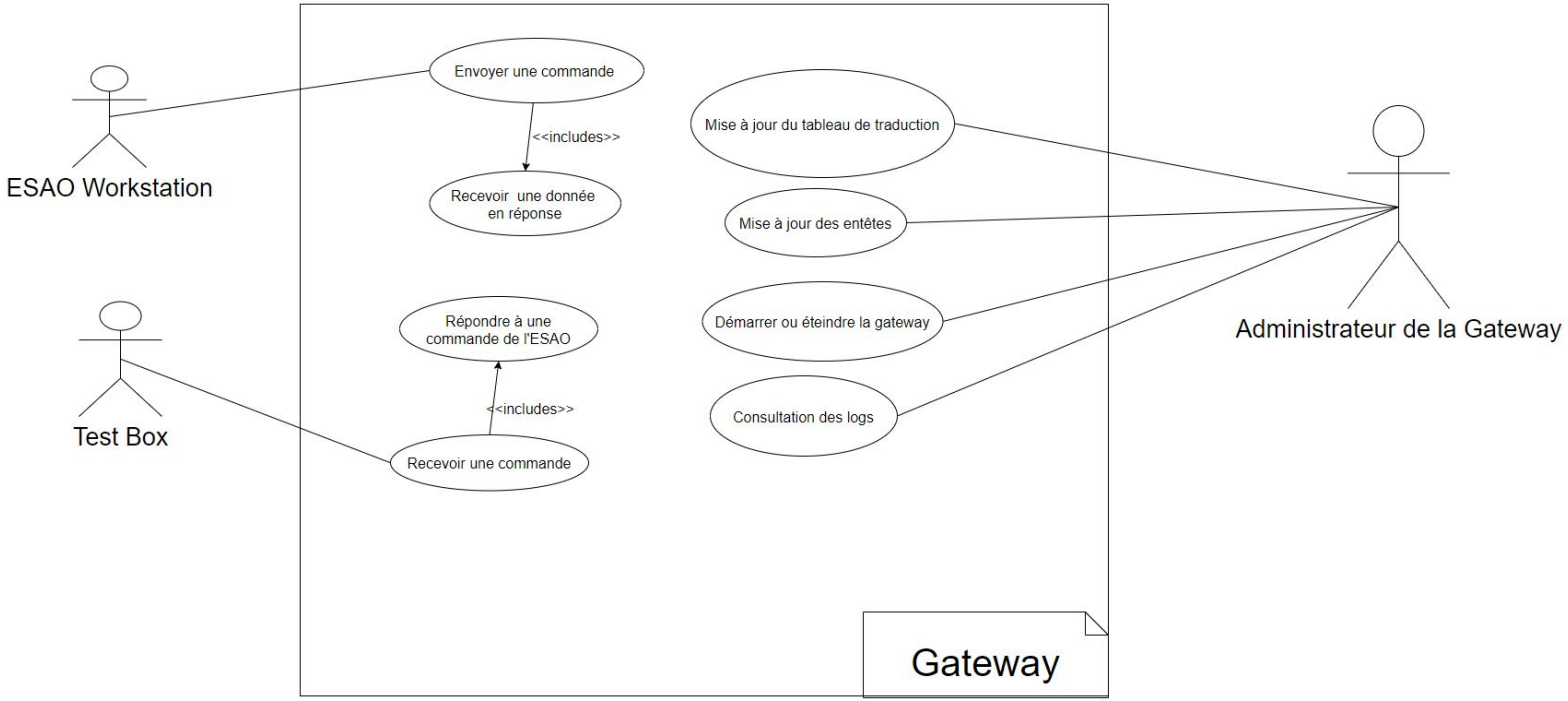
- -Three types of nodes, cheaper
- -Smaller payload size
- -Potential for interoperability
- -Large code size

Digimesh:

- -One type of node, more flexible
- -Larger payload size
- -Proprietary
- -Small code size

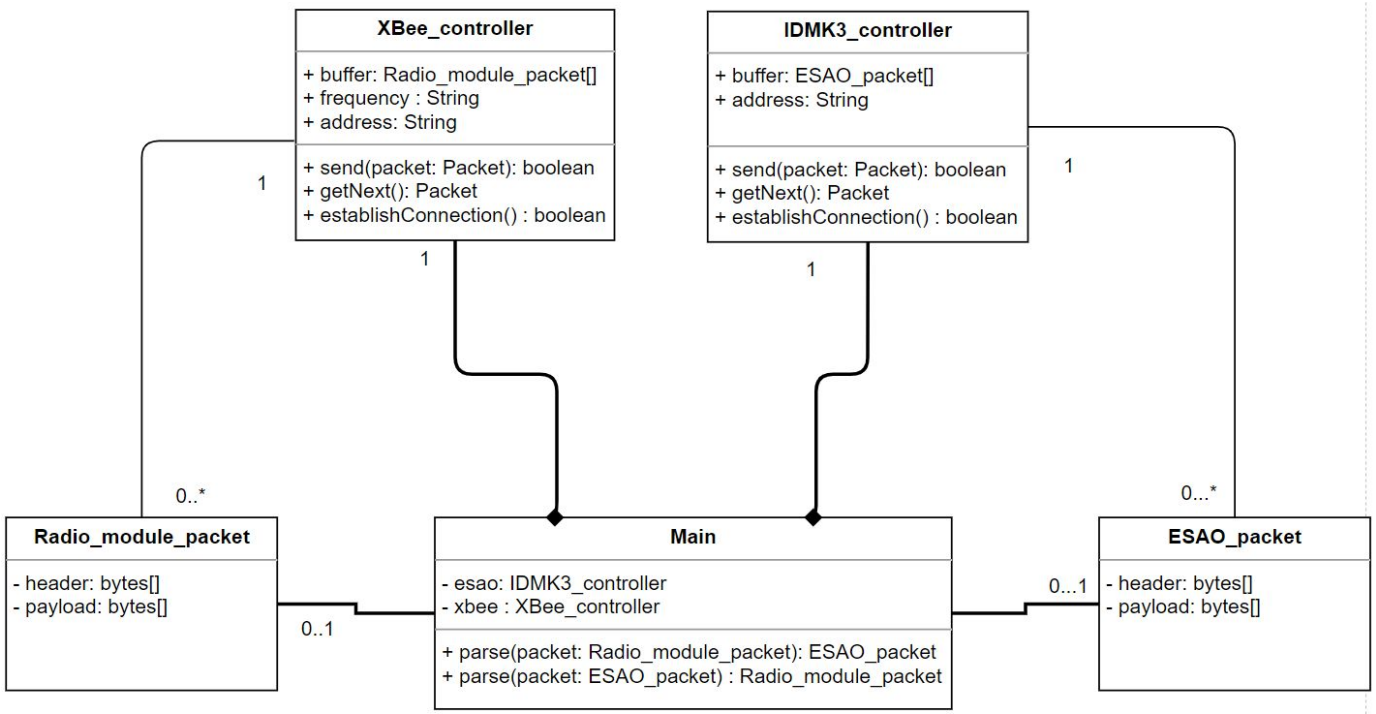
3. Software design

Use case diagram



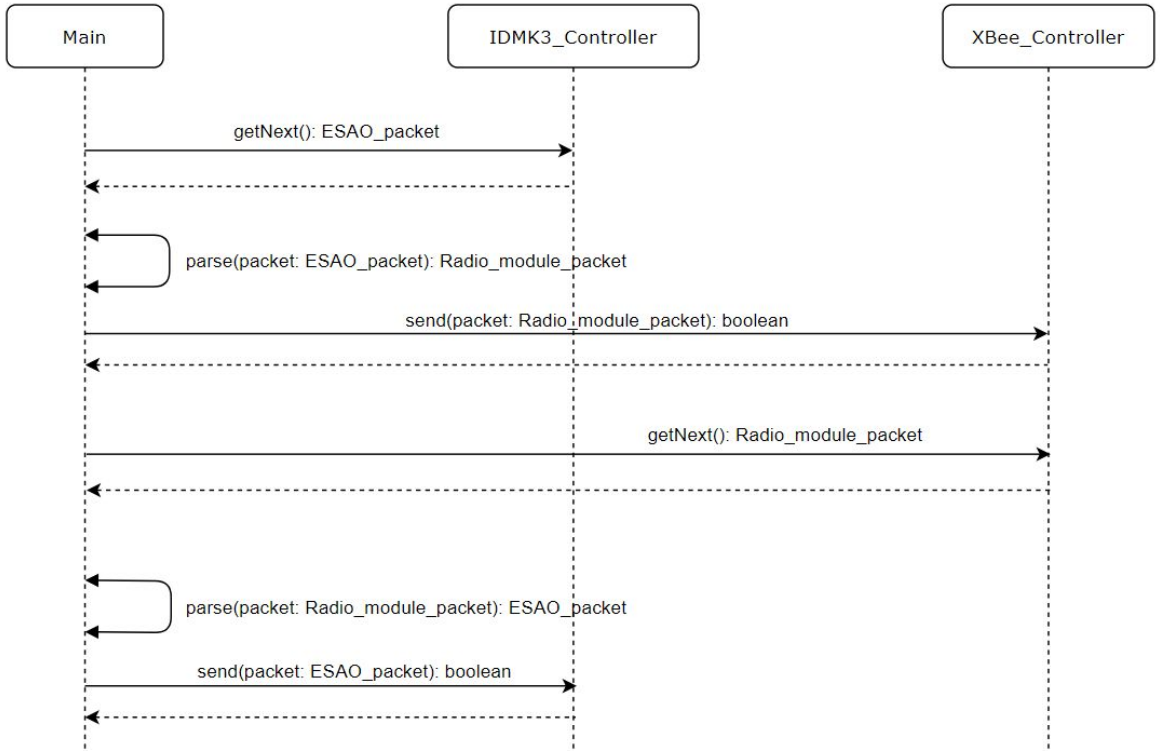
3. Software design

class diagram

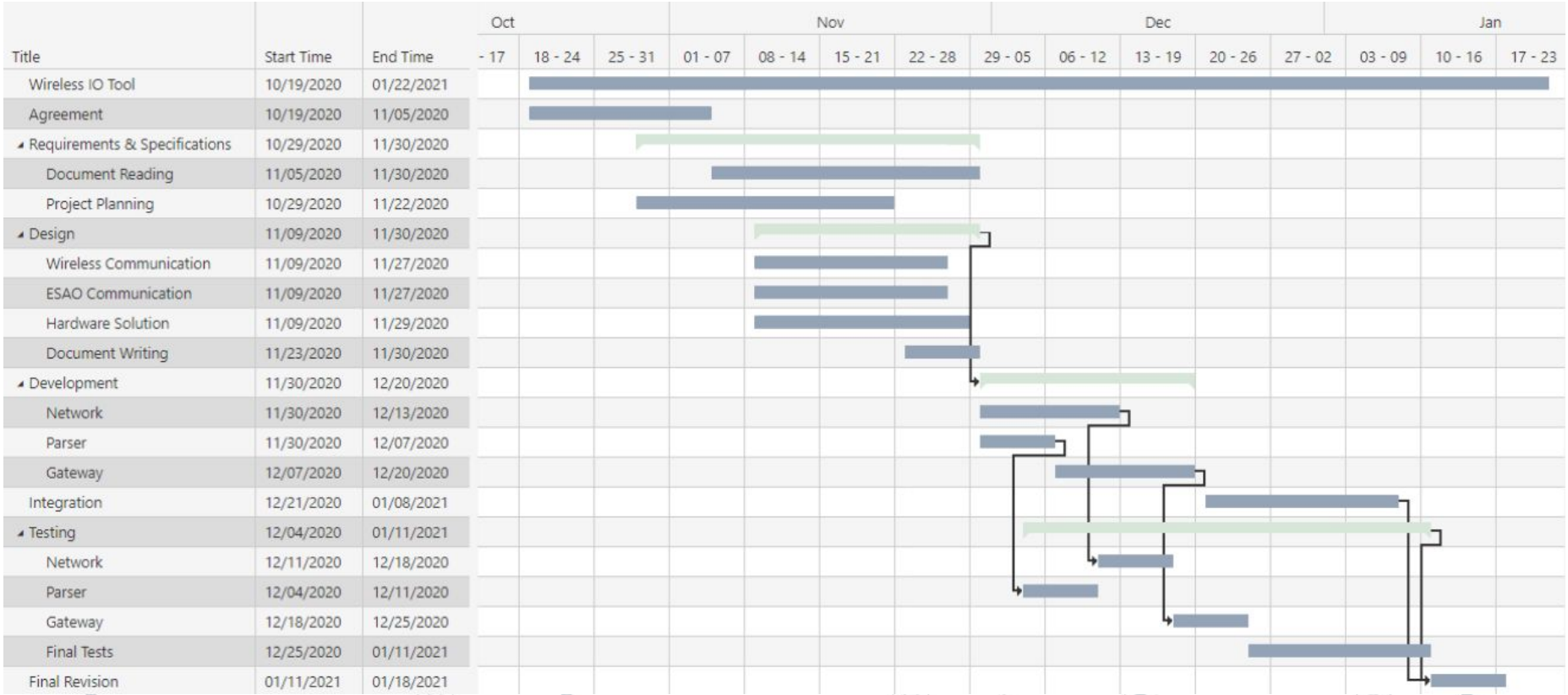


3. Software design

Interactions diagram



4. Progress



Title	Start Time	End Time
Wireless IO Tool	10/19/2020	01/22/2021
Agreement	10/19/2020	11/05/2020
Requirements & Specifications	10/29/2020	11/30/2020
Document Reading	11/05/2020	11/30/2020
Project Planning	10/29/2020	11/22/2020
Design	11/09/2020	11/30/2020
Wireless Communication	11/09/2020	11/27/2020
ESAO Communication	11/09/2020	11/27/2020
Hardware Solution	11/09/2020	11/29/2020
Document Writing	11/23/2020	11/30/2020
Development	11/30/2020	12/20/2020
Network	11/30/2020	12/13/2020
Parser	11/30/2020	12/07/2020
Gateway	12/07/2020	12/20/2020
Integration	12/21/2020	01/08/2021
Testing	12/04/2020	01/11/2021
Network	12/11/2020	12/18/2020
Parser	12/04/2020	12/11/2020
Gateway	12/18/2020	12/25/2020
Final Tests	12/25/2020	01/11/2021
Final Revision	01/11/2021	01/18/2021

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