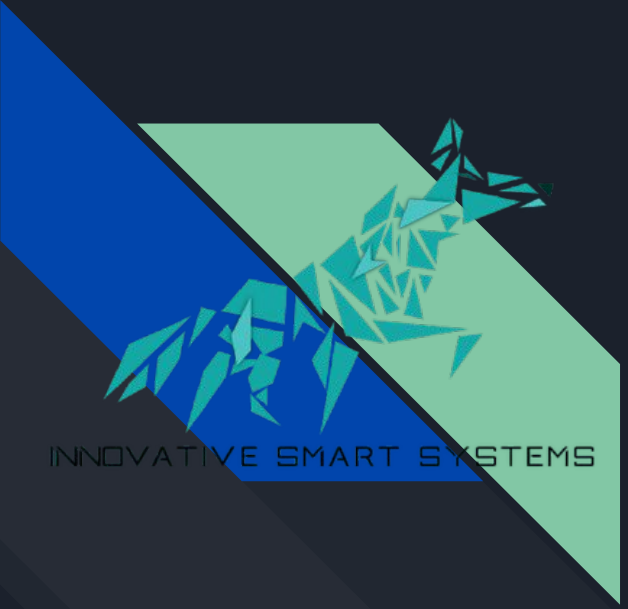


Smart Cabin

CHAUVET Louis
CROS Alexandre
EJIGU Michael
TRUONG Nhat Luan
XU Andy
ZENNARO Thomas

I. A bit of context
II. Some specifications
III. Chosen technologies
IV. Task scheduling
V. Thanking audience

I. Project context

CLIENT

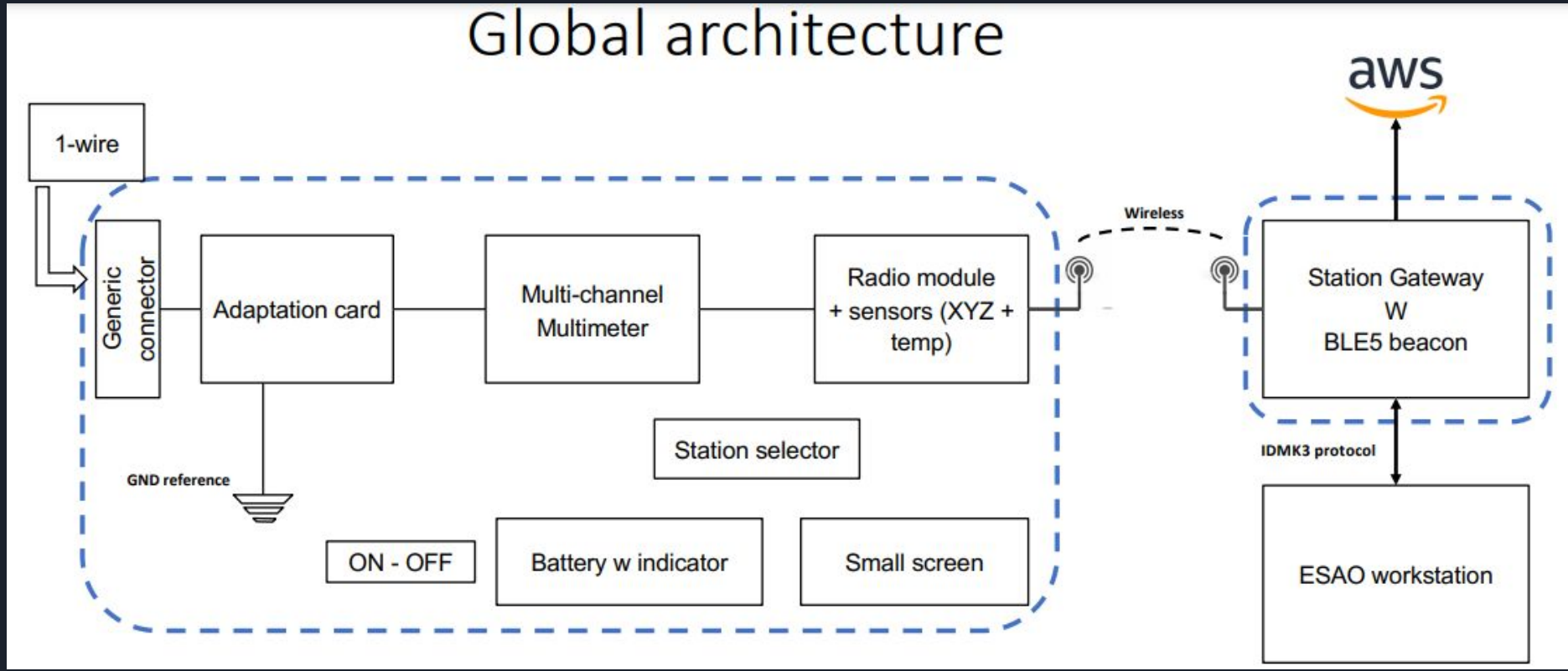
STERELA (subcontractor of Airbus)

NEED

Reduce workforce and time during computer assisted ground tests

EXPECTATION

Proof of concept



II. Specifications

II. Specifications

We want to assemble a gateway that serves the following functions :

- Must be able to communicate with the test box through a radio module
- Must be able to communicate with the ESAO workstation
- Must be able to send data received by the test box to the ESAO system
- Must be able to send commands from the ESAO system to the test box
- Must be capable to do “Over-The-Air (OTA)” update
- Must be able to manage the timeouts
- Must support the radio protocol that we find on the test box side...

III. Technologies

Qt : API for software development

This API provides :

- creation of widgets
- network connections components
- portability
- multi-platform software library

Programming language : C++

- variety of functionalities
- mainly used in Qt
- portability

Continuous integration management : Git

- multiple access
- keeps all versions of the project

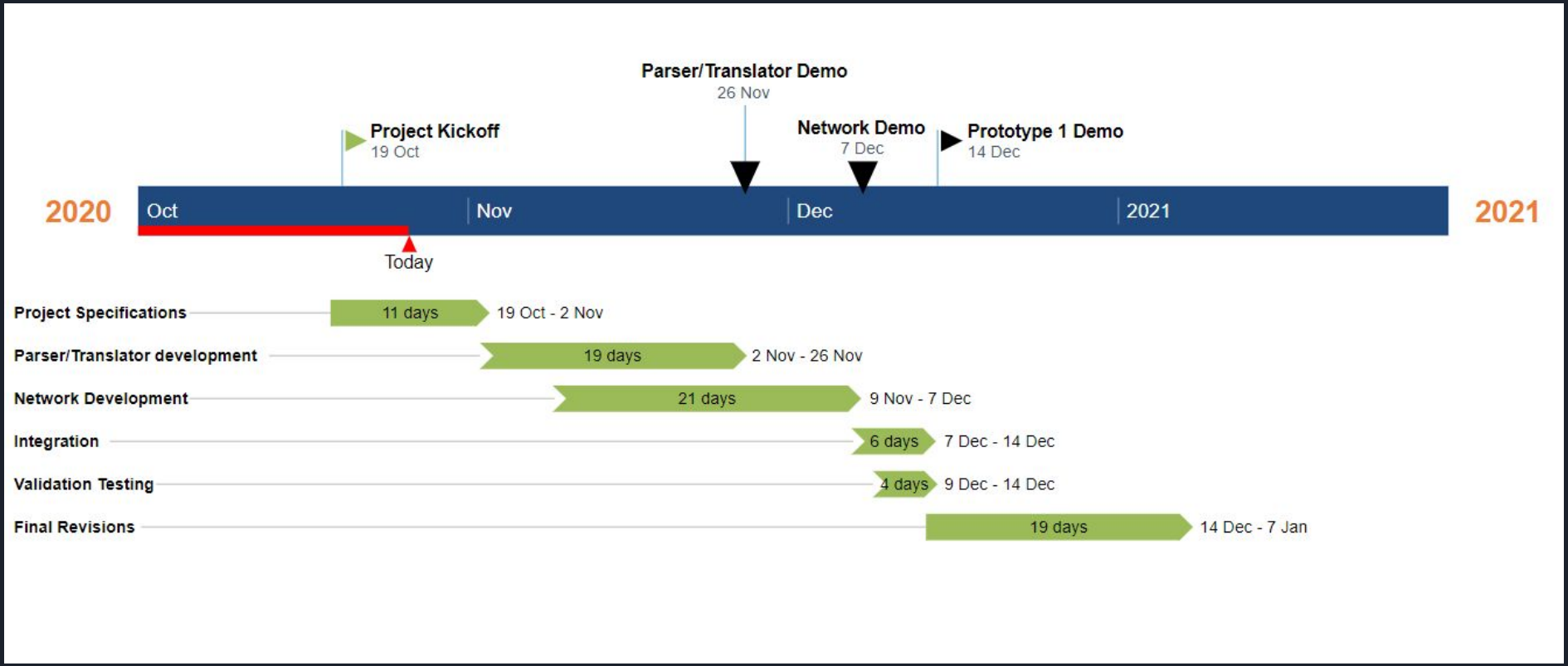
III. Technologies

Hardware for the gateway : Linux PC

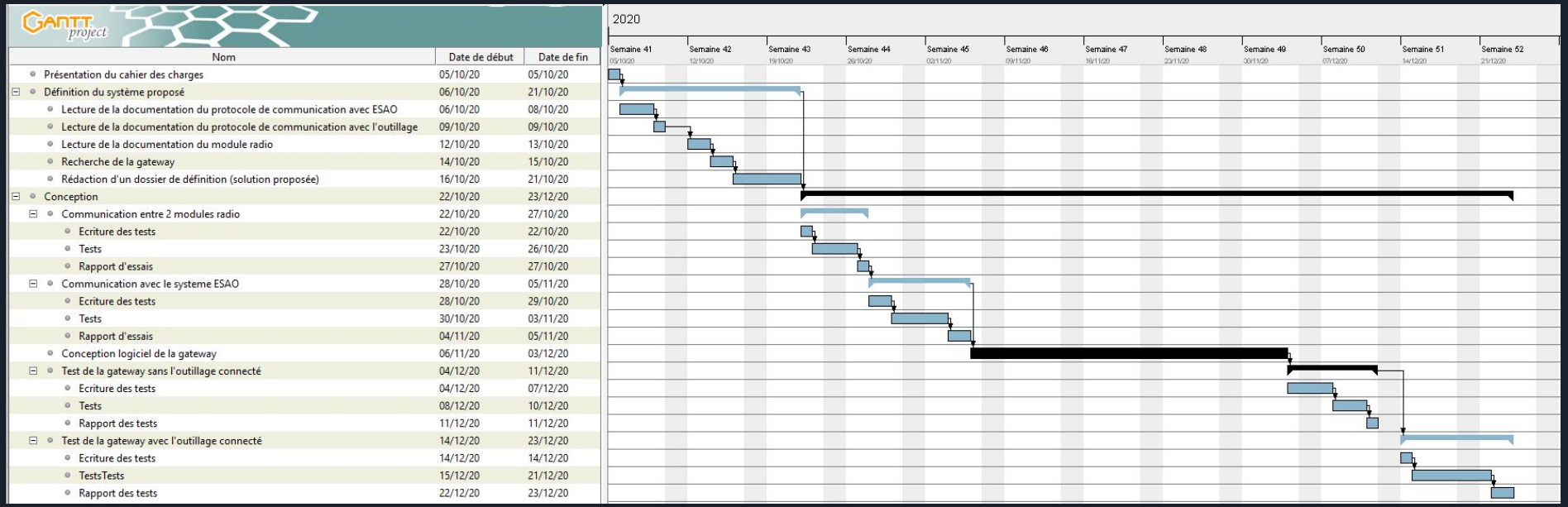
Communication protocols :

- Gateway <-> Workstation => MK3 protocol (developed by Sterela)

- Test Box <-> Gateway => Zigbee (middle distance, low energy)


Parser/Translator Demo
26 Nov
Project Kickoff
19 Oct
Network Demo
7 Dec
Prototype 1 Demo
14 Dec
2020
Oct
Nov
Dec
2021
2021
Today
Project Specifications
11 days
19 Oct - 2 Nov
Parser/Translator development
19 days
2 Nov - 26 Nov
Network Development
21 days
9 Nov - 7 Dec
Integration
6 days
7 Dec - 14 Dec
Validation Testing
4 days
9 Dec - 14 Dec
Final Revisions
19 days
14 Dec - 7 Jan

IV. Timing



Nom	Date de début	Date de fin
Présentation du cahier des charges	05/10/20	05/10/20
Définition du système proposé	06/10/20	21/10/20
Lecture de la documentation du protocole de communication avec ESAO	06/10/20	08/10/20
Lecture de la documentation du protocole de communication avec l'outillage	09/10/20	09/10/20
Lecture de la documentation du module radio	12/10/20	13/10/20
Recherche de la gateway	14/10/20	15/10/20
Rédaction d'un dossier de définition (solution proposée)	16/10/20	21/10/20
Conception	22/10/20	23/12/20
Communication entre 2 modules radio	22/10/20	27/10/20
Ecriture des tests	22/10/20	22/10/20
Tests	23/10/20	26/10/20
Rapport d'essais	27/10/20	27/10/20
Communication avec le systeme ESAO	28/10/20	05/11/20
Ecriture des tests	28/10/20	29/10/20
Tests	30/10/20	03/11/20
Rapport d'essais	04/11/20	05/11/20
Conception logiciel de la gateway	06/11/20	03/12/20
Test de la gateway sans l'outillage connecté	04/12/20	11/12/20
Ecriture des tests	04/12/20	07/12/20
Tests	08/12/20	10/12/20
Rapport des tests	11/12/20	11/12/20
Test de la gateway avec l'outillage connecté	14/12/20	23/12/20
Ecriture des tests	14/12/20	14/12/20
TestsTests	15/12/20	21/12/20
Rapport des tests	22/12/20	23/12/20

IV. Timing

V. Conclusion