LOCAL MANUFACTURING OF OPEN-SOURCE DEVICES FOR MEDICAL LABS IN AFRICA:

PROTOTYPING STAGE IN CAMEROON

Hello!

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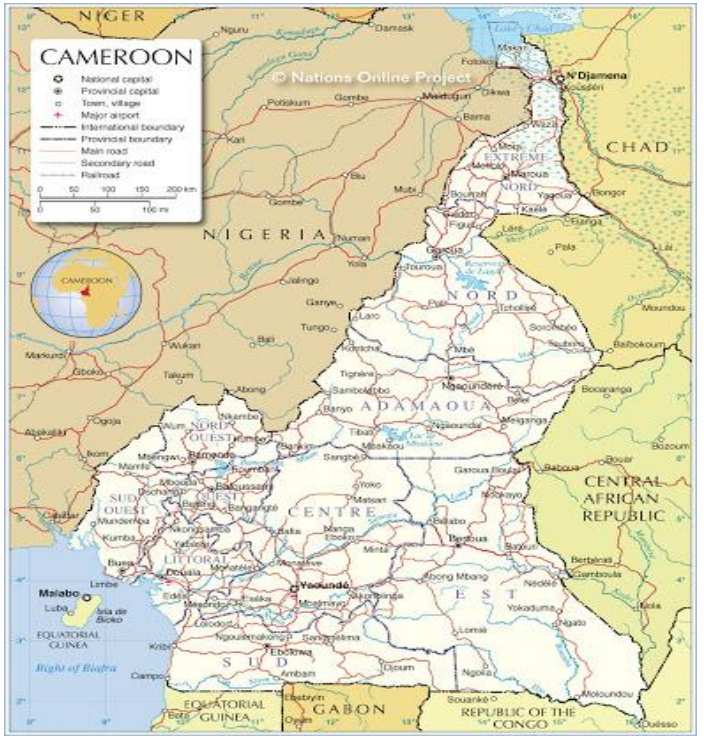
"The Pessimist Sees Difficulty In Every Opportunity. The Optimist Sees Opportunity In Every Difficulty."

Winston Churchill

AFRICA

CAMEROON

- German colony: 1884-1914
- French and British rule : 1916-1960
- Independence : 1960
- 25 millions of inhabitants in 2020
- “Africa in miniature”
- 5 times winner of the male AFCON.



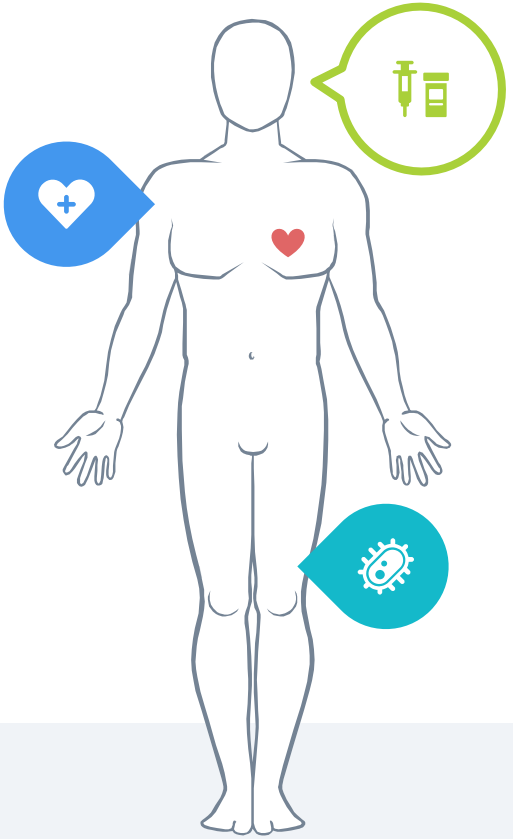
MBOALAB






CATALYZE LOCAL SUSTAINABLE DEVELOPMENT THROUGH OPEN SCIENCE

PROJECT DESCRIPTION



RATIONALE

- Scarcity of medical devices;
- Expensive and limited healthcare facilities;
- Lack of training to maintain equipments locally;
- Unavailability of spare parts and service engineers may need to charge thousands of dollars for international travel;
- Licenses and patents for available equipments.

CONTEXT / NICHE

Local manufacturing addresses :

The infrastructural barriers that prevent imported or donated equipment from being properly used, and can facilitate the diffusion of innovation into healthcare practice.

It also allows to fit products to particular context. for example building in resilience to power outages, or working with non-proprietary, locally-available consumables.

PROJECT OBJECTIVES

01

Objective 1

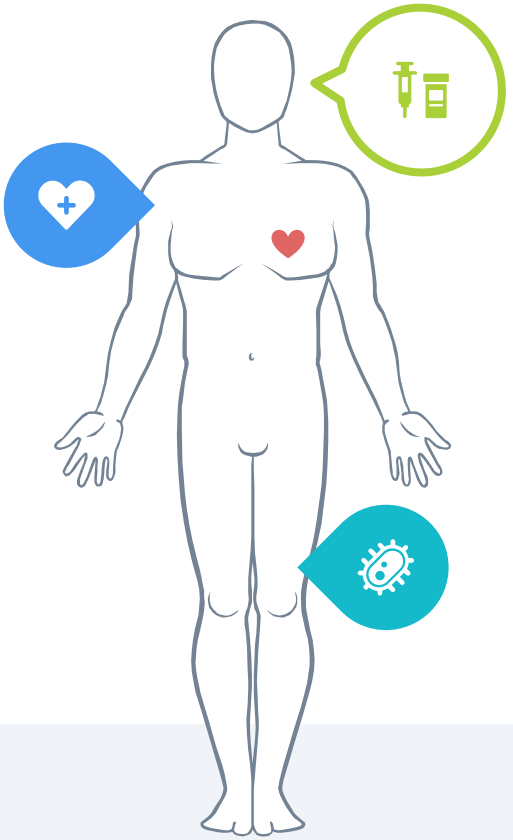
- ✔ Build capacity of local biomedical engineers to produce, maintain, and develop open-source medical devices.
- ✔ Contribute to the empowerment of young talented Africans involved in STEM.

02

Objective 2

- ✔ Promote the use of open source hardwares that can rapidly diffuse across the continent ;
- ✔ Facilitate the strong engagement between biomedical engineers, healthcare professionals and other stakeholders.

THE SET OF PROTOTYPES OF HIGH QUALITY AND INEXPENSIVE OPEN-SOURCE DEVICES WE ARE GOING TO BUILD



EQUIPMENTS TO BE BUILD

HEMATOLOGY

- Tabletop centrifuge
- Hematocrit
- centrifuge with scales
- Rotator
- Orbital Shaker
- Differential counters for microscopy
- Microscope

BACTERIOLOGY

- Autoclaves (Pressure Pot)
- Magnetic heating stirrer
- Incubator
- Sterile hood/ Safety cabinet

BIOCHEMISTRY

- Hemoglobin electrophoresis tank

OTHERS

- 3D printed pipettes
- DIY Incinerator
- 3D printed Pipettes and tube racks
- 3D printed DIY Automatic antibiotic disk dispensers

CAPACITY AND CAPABILITY BUILDING DIMENSION OF THE PROJECT

The progress of the project will be measured through :

- Empowerment of young Cameroonians;
- Collaboration with communities;
- First diagnosis tests performed at the Mboalab with the prototype.
- Outreach activities

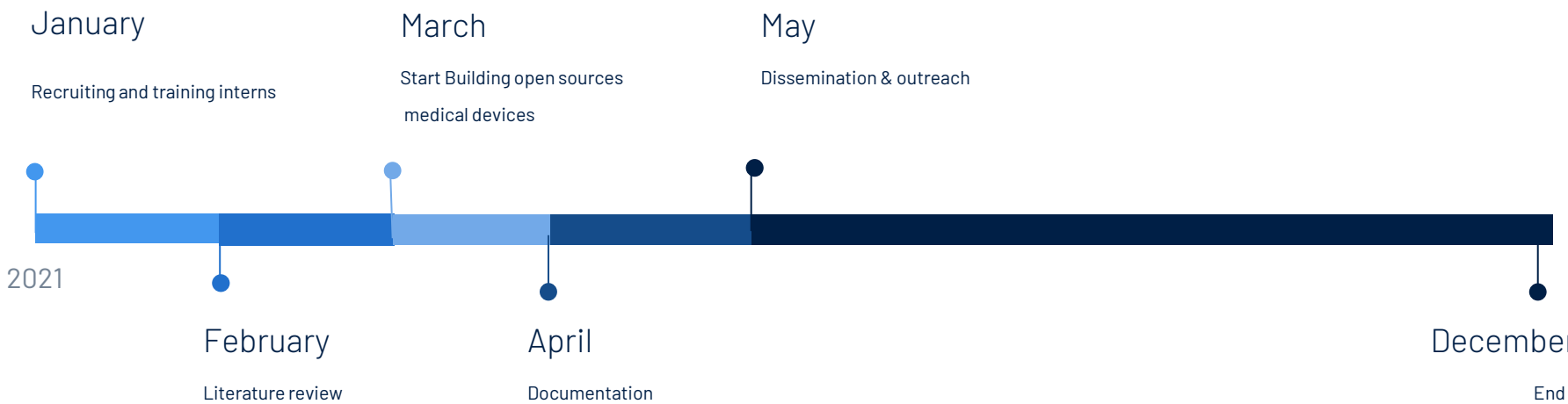
EXPECTATIONS OF THE PROJECT

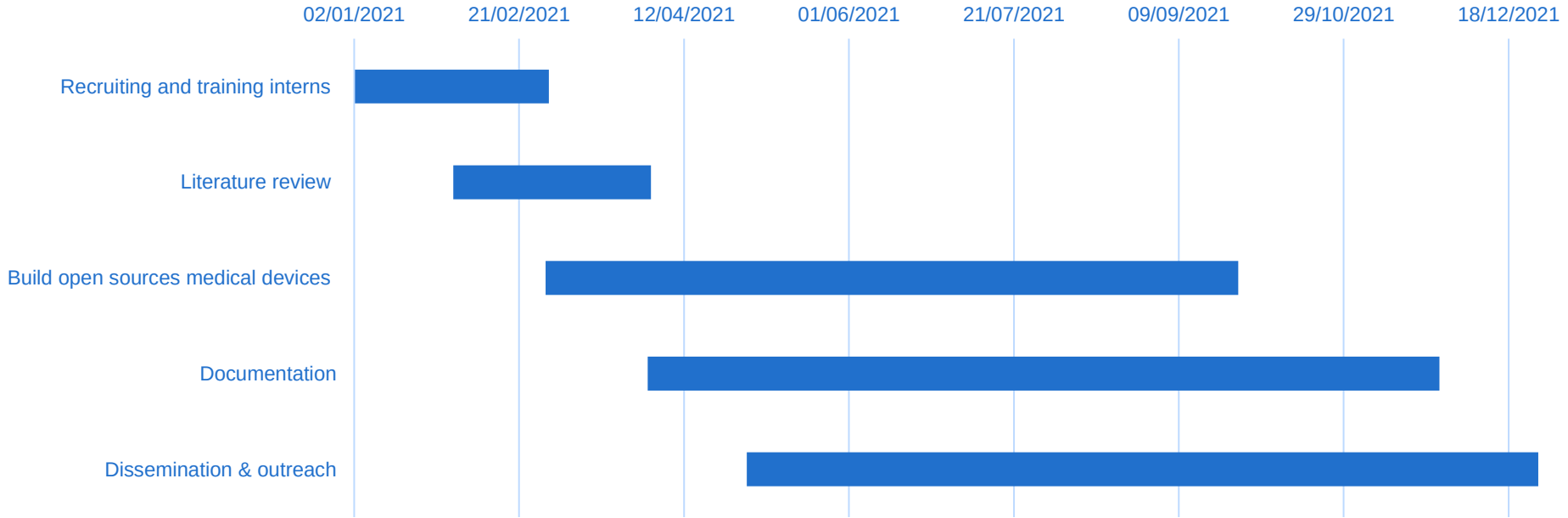
- Accessible designs of open-source medical devices using local resources (in English and French).

- Proof-of-concept for a local manufacturing of open-source devices for medical labs ;

- Book reporting stakeholder engagement, detailing capacity/capability building and pathways to impact for local manufacturing of open source hardware in Cameroon and in Africa.

OUR PROCESS IS EASY

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Recruiting and training interns
Literature review
Build open sources medical devices
Documentation
Dissemination & outreach

Timeline

MERCI!

Any questions?

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