Short description

Tunisia is an emerging economy with a large pool of medical and engineering talent. The Glia Tunisia office aims to integrate medical and engineering expertise to create a high caliber domestic medical device research, development and manufacturing sector.

Objective(s)

- Set vision for Glia Tunisia's work in the next 1 year
- Create a coordinated strategy between Faculté de Médecine de Tunis (FMT), Ecole Supérieure Privée d'Ingénierie et des Technologies (Esprit), and Glia International to implement Glia Tunisia's visionEnsure sufficient stock for all prehospital and hospital stakeholders
- Build five 3D printers for the manufacture of medical devices
- Manufacture one hundred stethoscopes for distribution and use by medical students in Tunisia
- Gain Conformité Européenne (CE) certification for Class I devices

Intended beneficiaries

- Ministry of Health (Tunisia) – delivery of low cost stethoscopes to students, physicians and allied health care professionals
- Faculté de Médecine de Tunis (FMT) – provision of low cost stethoscopes to students and engagement in medical device development
- Ecole Supérieure Privée d'Ingénierie et des Technologies (Esprit) – practical biomedical engineering and production experience

Schedule

Table 1. Expected activity timeline

Activity	Start date	Duration (days)
Introduction and icebreakers	July 1	2
Visioning	July 3	2
Construct five printers	July 6	5
Print stethoscopes	July 11	15
Printer sessions for medical and engineering students	July 8	10
Medical licensing (CE)	July 1	120

Note: Weekends in Tunisia are Saturday and Sunday

Outputs and deliverables

Printers and fabrication lab

In the first stage of this project, a fully functional fabrication lab with 3D printers will be commissioned to ensure high quality prints can be manufactured on site.

Stethoscope manufacturing

Stethoscopes will be the anchor product of Glia Tunisia, providing a visible marker of medical devices for physicians, nurses and allied health professionals. These stethoscopes will be manufactured and assembled in the Glia Tunisia fabrication labs at Esprit.

Printer training sessions

To ensure sustainability, medical and engineering students and other interested personnel will be trained in the manufacture of stethoscopes by the Glia Canada team.

Class I device certification

Training on the use of tourniquets will be covered in a separate complementary proposal.

Group cohesion and vision

A cohesive group with a clear vision is essential to ensure success of the project in the longterm.

Resources and budget

Table 2. Capital equipment requirements

	Quantity	Cost (EUR)
3D printers (Prusa MK3)	5	3.500
Total		3.500

Table 3. Consumable material requirements

	Quantity	Cost (EUR)
Filament (PETG)	10kg	240
Filament (PLA)	10kg	200
Silicone Tube (large)	50m	100
Silicone Tube (small)	20m	100
Total		640

Table 4. Projected personnel costs

	Cost (EUR)
Travel for 2 Gaza engineers	2.000
Travel for 2 Glia Canada medical personnel	2.500
Travel for Dr. Tarek Loubani	1.200
Total	5.700

Communication strategy

Intra-group communication will be done with mattermost, kanboard, whatsapp, email, telephone and in-person meetings coordinated by Glia Tunisia for local matters and Glia Canada for international matters.

External communication will be via twitter, facebook, instagram and public talks in Tunisia and internationally.

The group will pursue newspaper, radio and television interview opportunities in July during the kickoff of the work.