# Project Statuses: Volunteering at Tegbare-id PTC, Addis Ababa, Ethiopia  - 1st Quarter

## 1.  Registrar Data Base System

*Description:*

The registrar system is a college data base system, designed for A.A. tegbare-id PTC in the first place. The development started already years before, but still lacks its finalization and a sustainable implementation in the daily processes. Its main functionality is a user-role web-based system for the management of student data, including competencies, marks, addresses, emergency contacts, automatic creation of transcripts, certificates and competency sheets, creating of statistical charts, etc. It is planned to extend the functionality continuously. For example, teachers and students should get access – limited by their needs -, possibilities for corrupt actions should be reduced by an effective user role and control system (4-eyes-principle, need-to-know-princliple e.g.) and company requirement profiles shall be matched with cooperative training and other student data. The system shall be persistent and transparent, so all writing user accesses on the database are logged for example.

*Reached milestones*

- **New mayor features:**
    - **Stability**: Minor bug fixes and extension of form validity checks
    - **Student data**: Addition of student entry type, student registration IDs (including search function) and Amharic full name to student profiles
    - **Printable documents:** Addition of tegbare-id logo, document id (and photo placeholder) to transcript and mastersheet; implementation of functionality to print out *bilingual student certificates* (English and Amharic) for occupational standards
    - **Cooperative training:** As the first step to integrate cooperative training data, the functionality to maintain company and company department data is implemented
- **Installation in Registrar Office**: A laptop that functions as a temporary server is installed in the registrar office. Its works on a fast, stable and secure Ubuntu operating system with an installed wildfly-Server which starts automatically when the laptop is switched on. Thereby, it is installed in such a way that everyone can start the registrar system but it can only be manipulated with a secret password.
- **User and maintenance training:**
    - A small user introduction (~45min) was given in the registrar office. The officers as a team should be able now to use the basic functions of the system.
    - Five ICT students of the tegbare-id PTC showed interest in further developing the registrar system as a private project in their spare time. Some have basic knowledge in Java and coding of web-applications. Mr. Teklay confirmed that I can train them to support in the registrar development and maintenance under supervision.

### Short- term goals (< 3 Month)

- Integration **of cooperative training** data: For this purpose Mr. Biruk can help to create the data design. Management support is necessary to develop the obligatory access rights model.
- **Revision** of current **user role concept**: Preferable are different data responsibilities with a second control unit alsways. E.g., teachers should submit marks for their students and a registrar officer should release them. The user role concept and policies should be worked out in cooperation with the college management.
- Refreshing the registrar test system in the TT-Center and removing personal data from the test database. Afterwards the **five supporting students** can get access to the test system to receive their registrar specific web application development training
- The registrar officers should register at least all newcomer students. It is up to Mr. Teklay to schedule more **registrations**.
- Outstanding **minor adjustments**.

### Medium- term goals (3-9 Month)

- Implementation of the revised user role concept.
- Extension of the statistic functionality: Different kinds of views on the data, with different filters should be possible. An interface for data download should be provided.
- Access for teachers and head of departments with adapted roles shall be given.

### Long-term goals (>1 Year)

- Accounting (finance), resource planning and other ERP functionalities should be added or an interface for those systems should be provided.
- In the long term, the system should run on a powerful server and be connected to the internet in order to provide remote access for students.

## 2.  Coding Tutorials

Recently, I handed a list of 14 possible data carpentry and coding tutorials that I could prepare for the teachers or students to Vice Dean Mr. Teshome and the Dean Mrs. Fitaw. It includes the most common programming languages of the six software fields *Databases, Data Processing and Visualization, Office Macros, Coding, Web-based Programming* and *Mobile Applications*. I suggest starting with two or three weekly trainings. The selection of suitable trainings is up to the college management.

## 3.  City within the City

### Description

*City within the City* is a project launched by the cities partnership of Leipzig (Germany) and Addis Ababa. It started last year as a one-week-event with 50 students participating in the Ethiopian Entoto College and hundreds of students in a college in Leipzig as well. The participants created small wooden houses, created art out of recycling material and other things in inclusive teams (integrating many disabled children). Since it is considered as a success, it will repeated now in the first week of February. This time, tegbare-id will offer a vocational orientation for students of the grades 5-8 with the *topic city within the city* in parallel to the Entoto College. In tegbare-id the Garment & Textile, Electric, Furniture Making &

Construction departments will participate and in the Technology Transfer Center (TT-Center) Mr. Ulrich and me will offer a computer aided design (CAD) and coding course as well. He will do the CAD parts and I'll take over the coding parts.

### Status

The participating tegbare-id departments created a concept for the project week for their department each. The schedule for our course in the TT-Center  is as follows:

> **Day 1:** AutoCAD Basics: *How to create 3D Models*
> **Day 2:** Robot Karol: *Understanding simple programming concepts (conditions, loops, sequences)*
> **Day 3:** AutoCAD: *Build your own innovative city (as a 3D model)*
> **Day 4:** Bring live into your city: *Traffic lights, movements of trains, let robots construct new houses, etc. (Java programming in Unity3D)*
> **Day 5:** Integration of all designs in one project, file export, presentation and conclusion

## 4.  Technology Transfer / Incubation

The Technology Transfer Center (TT-Center) or Incubation Center is arranged at tegbare-id to support cooperative product development / innovations and business ideas and their responsible persons in entrepreneurship and reaching market readiness.

### 4.1. Bamboo Wheelchair Entrepreneurship Support

### Description

One project supported by the tegbare-id TT-Center is run by Abel, a young developer of wheelchairs made out of bamboo.

### Status

The third prototype is made and it is planned to start production in the following Gregorian calender year. I try to support Mr. Ulrich in giving general advice with my experience in economic science and designed a website for the project. At the moment, the website lacks relevant content and media (pictures esp.) which have to be uploaded by Abel. I will support him by doing so and in further steps.

## 5.  Tegbare-id-external Projects – Coding Events / Hackathons

Next to my regular work, I attended external, by GiZ and partner organizations organized (coding) events. They took and take either place in the TT-Center of the tegbare-id College or in different hotels in Addis Ababa.

### NASA Space Apps Challenge (Friday to Sunday, December, 22th – 24th)

The NASA Space Apps Challenge is a 48 hours lasting international competition to solve global challenges on earth and space. In this year, Ethiopia joint it as the first East African country. In the future, the Ethiopian part will probably be organized by the Ministry of Innovation and Technology (MINT). My contribution was:

- Support in organization and coding at the pre-workshop at the tegbare-id TT-Center.

- Technical support for organizers and participants at the main event at the weekend in the Capital Hotel.
- Giving the organizers feedback.

## Technovation

"Nearly 20,000 girls around the world registered to participate in Technovation 2018 building Apps and starting business that solve problems in their communities."[1] In Ethiopia, there will be trainings provided in presentation, analyzing, mobile app development and pitching for several months for young girls in the age of 10-18, before the actual competition starts. I am invited to support in organizing and training, especially for girls from TVET Colleges.

## R-Ladies

R-Ladies is an international group for females (and males as well) for capacity building in data processing and visualization using the script language *R*. There are monthly meetings in Addis Ababa and other Ethiopian cities for training and steering. On 8th of December, there was   the African-wide conference in Addis Ababa. I provided coding support for the participants in the Ethiopian preceeding hackathon on the two days before with the permission of Mr. Teshome.

## Data Carpentry

GiZ and partner organizations provide some data carpentry workshops for data usage skill training at different places in Ethiopia. One of them took place in the tegbare-id TT-Center where I supported by arranging the facilities and providing help with the coding tasks.

## Christmas bazar German Embassy School (Sunday, December, 2nd)

Selling of chocolate and other German Christmas sweets and washing of dishes for a charity purpose: All revenues were collected for the German church and German Church School.

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[1] https://technovationchallenge.org