



MISSION REPORT – Nyanza, Rwanda 5 - 9 September 2022

- First training mission in **3D cad/cam technology** in the history of SwissLimbs!
- **4 orthopedic technicians** trained
- Manufactured orthoses for **3 patients** with disabilities

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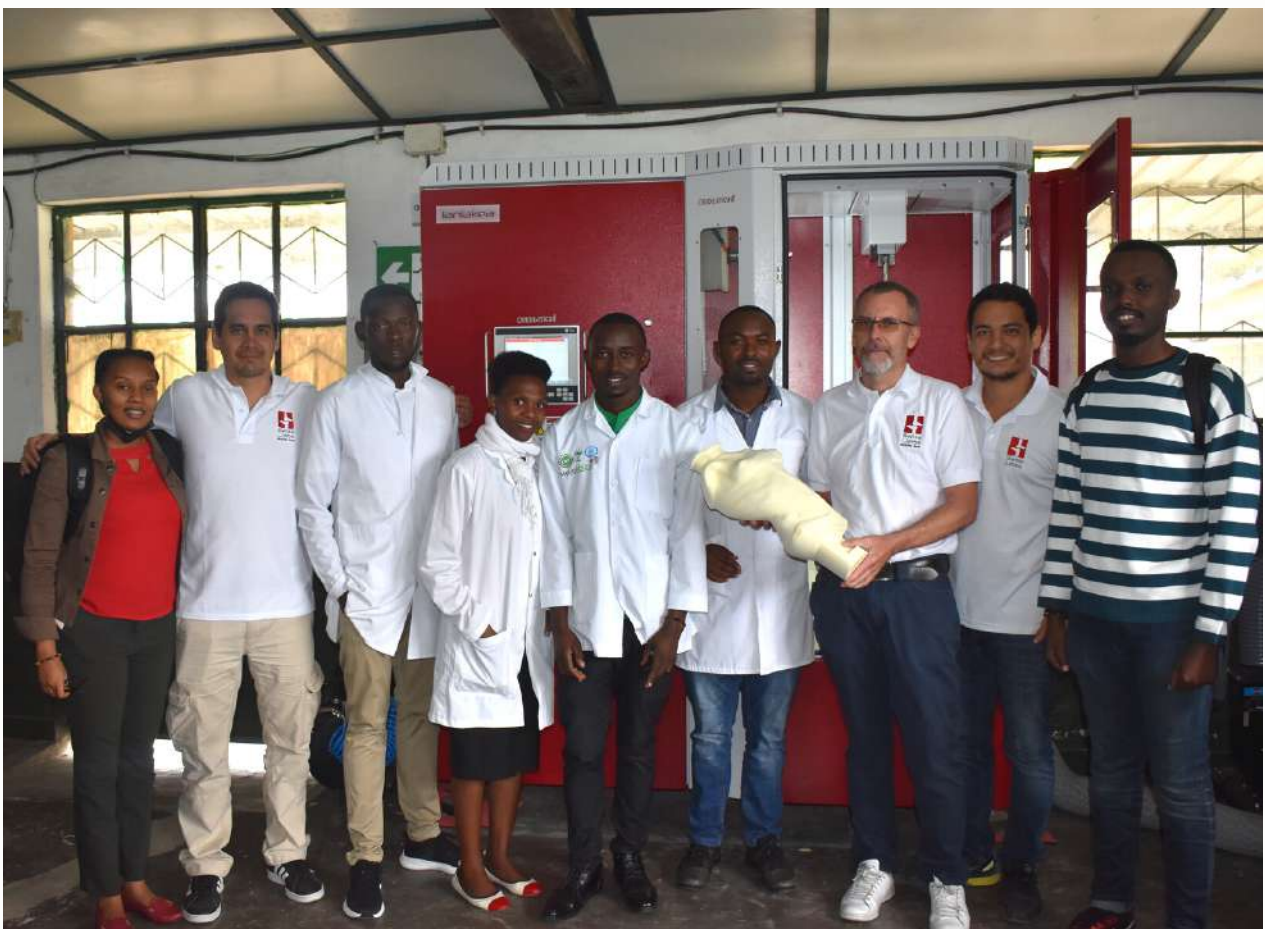
The mission

From **September 5-9, 2022**, SwissLimbs organized the first mission in its history in 3D cad/cam technology at **HVP Gatagara Orthopedics & Rehabilitation Hospital** in Nyanza, Rwanda. In the months before this mission, SwissLimbs sent all the necessary machinery and materials to fabricate prostheses with the **3D cad/cam technology**.

Four orthopedic technicians, all working at HVP Gatagara Orthopedics & Rehabilitation Hospital in Nyanza, participated in the training. The invitation to the 3D training was extended to these selected technicians so that their performance and output during the week would be optimal. The idea is that, once these same orthopedic technicians have mastered the technology, they will be responsible for imparting training to their colleagues at other orthopedic workshops in the region.

Three patients were visited during the training. Patient case histories were also carefully selected so that the training program on the use of 3D cad/cam technology could be best implemented. Thus, the training focused on the creation of orthoses (orthopedic corsets and AFO tibial splint), although of course 3D technology can also be used for the fabrication of prostheses, as well as other orthoses.

This mission was attended by **President Filippo Nishino**, orthopedic technician **Hervé Schmidt**, Operations officer **Nicole Rossi** and volunteer **Gianluca Nishino**. Some representatives of **UNDP Rwanda**, the funder that requested SwissLimbs to bring the 3D cad/cam technology to HVP Gatagara Orthopedics & Rehabilitation Hospital, also attended the training: trial manager **Christa Uwamahoro Munezero**, Executive Associate **Alice Kayibanda**, and intern **Ghilain Kajyibwami**.



Training times

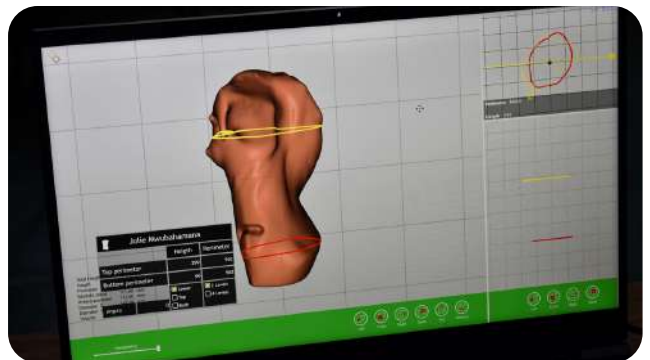
On Monday, September 5, the orthopedic technician Hervé Schmidt began the training by explaining the **3D cad/cam scanning technique**. To do this, he benefitted from the presence of the two scoliosis patients to whom SwissLimbs donated an orthopedic corset, so that he could show the orthopedic technicians-in-training in a practical way how to perform an on-patient scan. After calibrating the machine to allow the program to have depth and light intensity parameters, the patient's back was scanned. The scanning was also accompanied by taking manual measurements, for double checking. All the orthopedic technicians had the opportunity to practice scanning, both on patients and colleagues.

On Tuesday, September 6, it was the turn of the **3D corset modeling using the Picasso system**. Hervé Schmidt first gave theoretical training on the use of the system, while also giving a practical demonstration of how to model a corset using Picasso. The technicians were then divided into two groups to learn how to practically use the program.

On Wednesday, September 7, we proceeded with the **3D milling of the models** on which the corset will then be made.

On Thursday, 8, the orthopedic technicians-in-training continued practicing and also scanned a third patient in need of a tibial splint and milled his model as well.

Finally, on Friday, September 9, they **thermoformed** the models for splint and corset fabrication. This was followed by the delivery of certifications for the technicians-in-training.



3D cad/cam technology in orthosis manufacturing



3D scanning of the patient



3D modeling of orthosis using the Picasso system



3D milling of models



Thermoforming of milled models with 3D cad/cam technology

Presentation of certificates

At the end of the training, the orthopedic technician Hervé Schmidt and the SwissLimbs President Filippo Nishino presented the certificates to the technicians in training, at the presence of UNDP Rwanda representatives.

Congratulations to all for this first major milestone in the export of 3D technology to the Global South by SwissLimbs! A first step that will soon become the progenitor of a long march.



The 4 participants



Jean Pierre Hakizimana
HVP Gatagara



Aline Niyonkuru
HVP Gatagara



Emile Niyonkuru
HVP Gatagara



Isaac Rukundo
HVP Gatagara



The SwissLimbs technical trainer



Hervé Schmidt - Orthopedic technician and SwissLimbs volunteer

Hervé has been working in the orthopedic branch since 1996 and is currently employed as an orthopedic technician at Ortotecnica SA in Lugano.

He graduated in 2001 by attending courses at the Ecole Professionnelle EPSIC in Lausanne and has a particular passion for information technology applied to the orthopedic branch.

Hervé is a volunteer for SwissLimbs and the mission to Rwanda is his first mission to Africa.

The beneficiaries



Jolly Mwubahamana

Jolly is 12 years old and lives in Nyanza together with her parents and six siblings. She is an elementary school student: she really enjoys learning and would like to become a doctor. She suffers from a severe form of scoliosis, a condition that Jolly has had since birth, although doctors did not notice it until a year later. Before today, Jolly has already had two orthopedic corsets, but these have not helped to regulate her problem.



Delphine Uwamahoro Ishimwe

Delphine is 9 years old and lives in Nyamagabe District, a neighboring district to Nyanza District, where HVP Gatagara is located. She lives together with her parents, and her sister and brother. She studies at elementary school, is a good student and would like to become a teacher herself.

She has suffered from scoliosis for two years, and the one she received during the SwissLimbs mission is her first orthopedic corset.



Jovia Mushikiwabo Duhirwe

Jovia is 5 years old and lives in Ruhuha, Ruhango District, north of Nyanza District. She was not initially scheduled as a patient for the mission, but was gladly visited in order to produce an orthosis for her with the 3D technology.

She suffers from a congenital malformation of the foot characterized by inward curvature of the metatarsals relative to the axis of the foot. During the mission, she was fabricated an AFO Ankle Foot Orthoses pes adductus splint.