

Rotary Pentangular Project RC Leuven

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Rotary support for project in Congo: O&PforRDC

The acronym O&PforRDC stands for Orthotics and Prosthetics(Orthèses et Prothèses) for the Democratic Republic of Congo (République Démocratique du Congo). The project links to the project “Formation d’ingénieur et d’ingénieur technicien” supported by VIIR UOS (2010-2013) and is also a direct response to the call for collaboration issued by Prof. Léonard KABEYA MUKEBA YAKASHAM on behalf of ISTA and UNIKIN (attached). ISTA is the Institut Supérieur des Techniques Appliquées, UNIKIN is the Université de Kinshasa (formerly known as Lovanium).

Background: Formation d’ingénieur et d’ingénieur technicien

The Flemish Inter-university Council VIIR has approved a project to improve engineering education in the Kinshasa area of the Democratic Republic of Congo, worth 180 000 Euro. This project should serve as an exemplar project for engineering education in Congo as a whole. There are five major lines in the project:

1. To re-think the education of university engineers (ingénieurs civils - UNIKIN) and of university college engineers (ingénieurs technicien - ISTA) and bring this education more up to date and in line with modern engineering education concepts where a.o. project based learning is considered of prime importance. Also, to provide transitory programmes between graduates of the two curricula.
2. To introduce project based learning, combined with group assignments into the engineering curriculum.
3. To establish a laboratory for measurement and control, both at ISTA and at UNIKIN, using National Instruments equipment (the company National Instruments is also supporting the project).
4. To reinforce ICT in education and in research.
5. To boost research and development in a number of crucial areas that are relevant to Congo in both institutions.

At the beginning of 2012, the project is realizing mainly objectives 2 and 3. Objective 4 is making good progress, since ICT infrastructure in Congo is becoming mainstream. During a mission of Prof. Jos Vander Sloten (biomechanics) and Prof. Greta Dereymaeker (orthopaedic surgeon – foot and ankle specialist) in March 2011, problems with clubfoot abnormalities in children were identified as a major problem. These deviations are often not treated at birth, although a simple treatment with an orthotic device is possible. An orthosis is a device that is worn parallel to the body and provides stability and guidance of motion. Because of the unavailability of these orthoses, surgery is often required but could easily be avoided.

The project that is submitted to Rotary aims at kicking off development activity for prosthetics and orthotics in Congo. A start will be taken at ISTA and at UNIKIN (a prosthetic workshop is available at UNIKIN hospital). Particular attention will be paid to the development of prosthetic and orthotic solutions using local materials (bamboo, coconut fiber reinforced plastics).

Proposed plan of action

The provision of patient with prosthetics and orthotics in Congo is still in early stages of development.

We propose to install a teaching lab at the premises of ISTA for prosthetics and orthotics, in collaboration with the Faculty of Medicine at UNIKIN and the Faculty of Engineering at UNIKIN. The advantage of choosing ISTA as the site for this lab is the central location in Kinshasa. The campus of UNIKIN is outside of the city centre. Collaboration will be sought with several non-governmental organization of rehabilitation technology that are active in Congo. Besides of using the P&O teaching lab for the students, also patients will be treated at this facility. This combines two advantages:

- Students are trained in real-life conditions
- Patients are provided with treatment that they would not have access to otherwise

A key success factor in this project application is the contribution that will be made by Prof. Louis Peeraer. Prof. Peeraer is a specialist in prosthetics and orthotics, with teaching responsibilities both at the Faculty of Movement Science and Rehabilitation (K.U.Leuven) and at the Department of Health Care and Chemistry (K.H.Kempen). He is also the director of MOBILAB, a research and development center for rehabilitation technology and ambient intelligence at K.H.Kempen. Moreover, Prof. Peeraer was born and raised in Congo, and still maintains good operational contacts with several humanitarian organisations that are active in RDC.

Budgetary implications

A budget is applied for to install a decent, sustainable teaching facility at ISTA for prosthetics and orthotics, that at the same time will be used to treat patients. We propose to provide a budget for:

- Installing basic equipment for manufacturing of prosthesis and orthosis
- Training staff on state of the art techniques in this area. This staff will
 - teach students
 - treat patients

Training ensures sustainability: the staff will be able to maintain the equipment and train further generations of students.

- Travel of key personnel between Belgium and RDC

Details

- Basic equipment (details to be provided): 20000 Euro
- Consumables for production of devices (decreasing over three years): 9000 Euro
- Training staff: two persons from RDC, one month in Belgium: 4000 Euro
- Travel of Prof. Peeraer to Congo (two trips): 5000 Euro

Total: 38000 Euro

Pro memory: travel of Prof. Vander Sloten is charged to the VIIR UOS project. Prof. Dereymaeker, orthopaedic surgeon, regularly visits Congo and Kinshasa supported by Artsen zonder Vakantie.