



Project No:**530510-TEMPUS-1-2012-RS-TEMPUS-JPCR**

Project title:

Assisting humans with special needs: curriculum for
HUman-**TO**ol interaction **Net**work

Acronym: HUTON

Deliverable 3.2:

Preparation of the tender documentation

in the scope of

Development of the Laboratory facilities that supports the new curriculum

Due Date: **Month 12**

Submission date: **Month 12 for Preparation of tender, Month 18 for purchase of equipment**

Start date of project: **15/10/2012**

Duration: **36 months**

Lead beneficiary for this deliverable: **SUNP**

Responsible Person: **Dr Lana Popović-Maneski, SUNP**

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Revision: **1.0**

Dissemination Level		
NL	National level	√
IL	International level (including the Commission Service)	

Deliverable 3.2: **Preparation of the tender documentation (Tender released and the new equipment purchased)**

This deliverable is the second action of the WP3: **Development of the Laboratory facilities that supports the new curriculum**

Introduction: The wider objective of the project "Assisting humans with special needs: Curriculum for **HU**man-**TO**ol interaction Network (HUTON)" is the development of interdisciplinary and multidisciplinary curriculum with the laboratory educational support and the educational training network for the optimized use of technology that improves the quality of life of humans with special needs

The specific objectives in the project are:

- Development of the **new interdisciplinary and multidisciplinary accredited curriculum (MECHATRONICS FOR REHABILITATION)** leading to the master degree in the domain of technologies for humans with special needs.
 - Setup of the training **network in Republic of Serbia (RS) in the domain of mechatronics, rehabilitation engineering and medicine, and neurorehabilitation** that enables the delivery of the new interdisciplinary and multidisciplinary curriculum.
 - Training of staff for providing on-the-job education and use of appropriate technologies which increases **new employment opportunities**.
 - Training of staff for providing **better medical services** for humans with special needs.
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The project is planned with eight workpackages, where the first four are the development activities. The workpackage (WP) 3 is dedicated to the development of laboratory facilities which will optimize the training within the new curriculum.

The WP3 plan addresses the planning, purchasing and setup of the laboratory instrumentation in the clinical partners and their university partner in Belgrade, Novi Sad and Novi Pazar.

The instrumentation that is planned for HUTON needs to be the basis for the laboratory education within the courses. In parallel, the value of the instrumentation will be seen in its future exploitation by the trained professionals who receive the appropriate education through the curriculum after the program is finished.

The staff training planned in HUTON will ensure the required high skills profile assistance for the optimal use of the laboratory instrumentation. The new instrumentation was planned with the aim to integrate it into the available equipment of the participant institutions. The plan was made to allow the implementation of the curriculum, and all instruments are to be used as part of at least one course within the new curriculum. The planning was considering the expertise of EU partners in the project, and the principles of good practice in medicine. The instrumentation planning considered modern trends of the inclusion of tele-medical applications in cases where this was feasible.

The approved project proposal started from the following assumptions: 1) laboratory space is available at partners sites where the instrumentation will be installed and used and 2) staff is available at partners sites that can be trained to use new equipment. The RISKS have been envisioned in the availability of the staff; hence, the WP3 activities will provide necessary training to the staff in the cases when necessary.

The **second phase of the activities** that led to this Deliverable was the **preparation and release of tender documentation for the lab equipment for three partner universities**. For that purpose, based on the list of the equipment prepared within WP3.1, the WP3 responsible person searched for the potential equipment suppliers, compared prices and contacted those who were able to provide the best offer. In several cases, e.g. ReJoyce upper extremity workstation, the bargain was achieved to reduce the price to almost 50% of the regular price, per each unit, which saved ca 10.000€.

The original project plan included the following laboratory equipment: 1) computer support for the instrumentation; 2) Movement analysis hardware and software; 4) electrical stimulation hardware; 5) robot assistant for upper extremities; 5) walking assistant for the training of the walking; 6) biofeedback for the rehabilitation based on virtual reality; and 6) hardware/software (signal processing, image processing, etc.) for biomedical signals acquisition.

There were, altogether, four tender call released in order to meet all the specified requirements and acquire all of the planned equipment. In some calls, some of the parties were not responded, therefore these had to be repeated.

Some minor changes had to be applied in tender requests for the equipment because some of the devices were unavailable on the market and/or the suppliers did not respond to tender requests. E.g. this was a case with Movement analysis hardware and software, with original plan to include two separate units - Movement assessment system (max planned 2000€ each) and Ground reaction force assessment system (max planned 1500€ each), but as no supplier offered any of the envisioned systems we found a new supplier who offered merged version of these two units for a price of 4490€ per system, which was still the cheapest available option on the worldwide market.

The initially planned financial summary is in the Table (in €)

Instruments	UB	UNS	SUNP
Arm/hand assistant	5000	0	5000
Walking assistant	5000	5000	5000
Movement assessment	2000	2000	0
GRF system	1500	1500	0
Biofeedback system	5000	5000	5000
DAQ and simulators	0	5000	2250
Muscle stimulator	0	0	1250
TOTAL	18500	18500	18500

The realized financial summary is in the Table (in €)

Instruments	UB	UNS	SUNP	model	producer	supplier
Arm/hand assistant	5050	0	5050	ReJoyce	Rehabtronics Inc.	Ortho tech
Walking assistant	5050	5050	5050	WalkAssist	Ortho tech	Ortho tech
Movement assessment & GRF system	4490	4490	0	SmartWalk	Dazoni	Dazoni
Biofeedback system	5000	5000	5000	Smarting	mBrainTrain	mBrainTrain
DAQ	0	4145	894	various	National Instruments	UnoLux
General lab equipment (part of DAQ)			1276	signal generator, power source, 2 oscilloscopes	various	MikroPrinc
Muscle stimulator	0	0	1480	Mi-Theta 600	CefarCompex	Dazoni
TOTAL	19590	18685	18750			

The financial summary is in accordance with 90% of the approved funds for the Laboratory instrumentation approved by the TEMPUS office.

The equipment has been installed at three University partner sites and at three corresponding teaching bases at clinical partners sites. It is envisioned to use this equipment as teaching material for the students during hands-on exercises within both, laboratory and clinical facilities. The selected equipment has possibility for mechanical, electric and program upgrade that can be implemented by students during curriculum related projects realisations.