

Progress at 12 months for the *A-FOOTPRINT* project

Baltic Orthoservice hosted the 12 month review meeting of the A-FOOTPRINT project on the 23-24th September 2010 in Kaunas, Lithuania



A-FOOTPRINT SME partner Baltic Orthoservice (www.orthobaltic.lt/en) was founded in 2001 and is one of the largest central fabrication companies producing individual orthopaedic devices in Europe. Ortho Baltic produces individual and standard foot orthoses from carbon fibre. In 2002 the company started to produce drop-foot orthoses using pre-preg technology. The whole product group ranges from ordinary FO's (Foot Orthosis) to complicated KAFO's (Knee Ankle Foot Orthosis). Baltic Orthoservice also produce individual carbon fibre insoles for diabetic patients and ankle fixation systems for orthopaedic footwear. The company also acts as a wholesale company selling high quality products of many leading companies to orthopaedic customers in Western Europe, largely

Benelux, Germany, Switzerland, Scandinavia and Finland. Baltic Orthoservice currently employs 104 staff combining the experience of footwear technicians, footwear engineers-technologists, physicians orthopaedists, and IT engineers. They have extensive input to the *A-FOOTPRINT* project in WP2, clinical procedures and process, contributing to 3D scanning and patient diagnostics and data capture. In WP3 they are providing their expertise and experience towards the development of the CAD system and orthotic designs as well as rapid manufacturing in WP5. Baltic Orthoservice will also be involved in evaluating prototype orthotics (WP8) as well as contributing to demonstration and dissemination activities.

The 12 month *A-FOOTPRINT* project meeting was kindly hosted by Baltic Orthoservice in September 2010 in their offices in Kaunas, Lithuania. Consortium partners were able to discuss progress during the first 12 months and to plan work ahead. The meeting provided an excellent opportunity to share ideas and exchange knowledge and experiences during formal meetings as well as on the 'shop floor' during factory tours and technology demonstrations. Overall the project has made excellent progress in the first 12 months. Consortium management has run smoothly. Withdrawal by TNO has led to a redistribution of work package activity within the Consortium with tasks shared between Maastricht University and KH Kempen. Key tasks in WP1 related to monitoring activity including periodic reports and the evaluation of project deliverables and milestones have been successfully undertaken. Internal communication between the consortium partners has been excellent, aided during months 9-12 by increased functionality of the project website. In WP2, there has been excellent progress towards the development of an integrated Patient Information System to provide a digital platform to store, retrieve and process data necessary to diagnose and prescribe customised orthotic products. Highly personalised anatomical and biomechanical datasets

employing advanced medical imaging techniques including CT and MRI and 3D gait analysis have been collected and successfully processed within the orthotic and musculoskeletal modelling systems in WP3 and WP4. These data also contain 3D surface scans capitalising on knowledge gained through an evaluation of existing and novel scanning techniques. These are rich datasets which have resulted in the initial development of a detailed foot model in WP4, led by AnyBody Technology from Aalborg, Denmark. In WP5, the development of a *Personalised Orthotic Design CAD/CAM System (POD)* has progressed well. Working closely with SME partners, Materialise NV have defined nine user requirements with seven of them to define the generic design (features) of the Personalised Orthosis Design (POD) software and two of them to define the user interface and the co-creation application / interface respectively. These high level requirements are defined with a focus to reproduce the process employed by the technician to design an orthosis traditionally in a user-friendly CAD environment with possibilities of co-creation with clinical personnel and patients.



In WP6, the project has yielded three major results. Firstly, working closely with SME partners the basic performance requirements for the manufacturing facility in terms of required product dimensions, mechanical properties, accuracy, surface finish and productivity have been established. These specifications are given in the form of a product PDS for AFOs and FFOs and will be matched against rapid manufacturing capabilities in subsequent tasks in terms of build size and basic fabrication parameters. Secondly, the specifications for three types of intelligent orthosis, identified by the consortium as (i) providing clinically relevant information, and (ii) with the potential to be delivered as working devices within the timescales and resources of the project have been developed. The three applications of interest are compliance, proper use, and pain and ulceration. Three specific types of sensor have been investigated to meet these applications: and initial trials suggest that all three are able to provide sufficient information to determine compliance. Thirdly, the manufacturing process evaluation and development of both existing manufacturing techniques for orthoses and the assessment of new capabilities based on rapid manufacturing techniques have been addressed. In WP7, a successful market survey has been undertaken by Firefly Orthoses, an SME partner from Sligo, Ireland, to enable the development of a business plan for the *A-FOOTPRINT* concept. A web-based survey tool was employed using the clients of Firefly. Key findings indicate strong interest in the project concept, high interest in knowledge-based products and new devices in the sector, a strong interest in new manufacturing techniques and the development and use of new technologies, and willingness to pay. Dissemination activity via scientific publications, conference presentations and face-to-face activity at workshops, trade conferences and exhibitions has been excellent in the first 12 months, backed up by the project website and promotional material. The portfolio of current dissemination material can be accessed via the project website.

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A-FOOTPRINT is a thirteen partner Consortium comprising six SMEs, five HEIs, one large-industry, and one research organisation partners from seven EU member states. The project is funded under **FP7 Cooperation Work Programme: Theme 4 - Nanosciences, Nanotechnologies, Materials and New Production Technologies** (Grant Agreement NMP2-SE-2009-228893) with a total cost of €5,305,678 and an EC contribution of €3,729,043. This is a 48 month project which started on 01-10-09.

