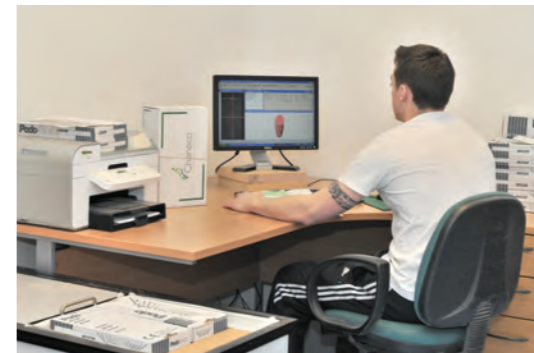
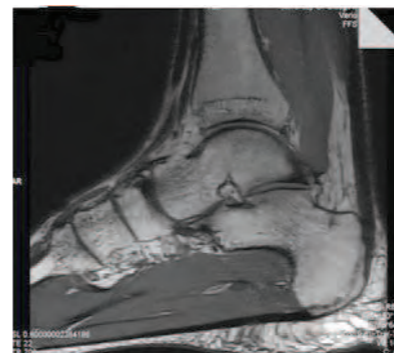
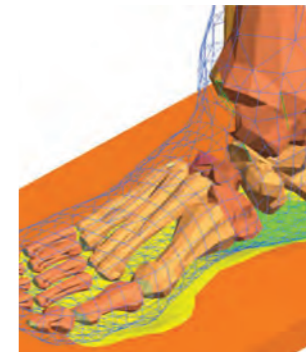
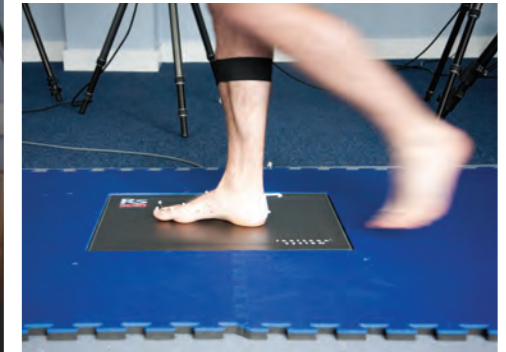
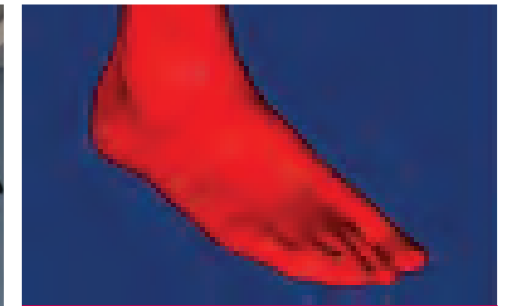



# a-footprint

## Ankle and Foot Orthotic Personalisation via Rapid Manufacturing

A project funded by the European Commission  
Seventh Framework Programme (FP7)  
Grant Agreement Number: NMP2-SE-2009-228893



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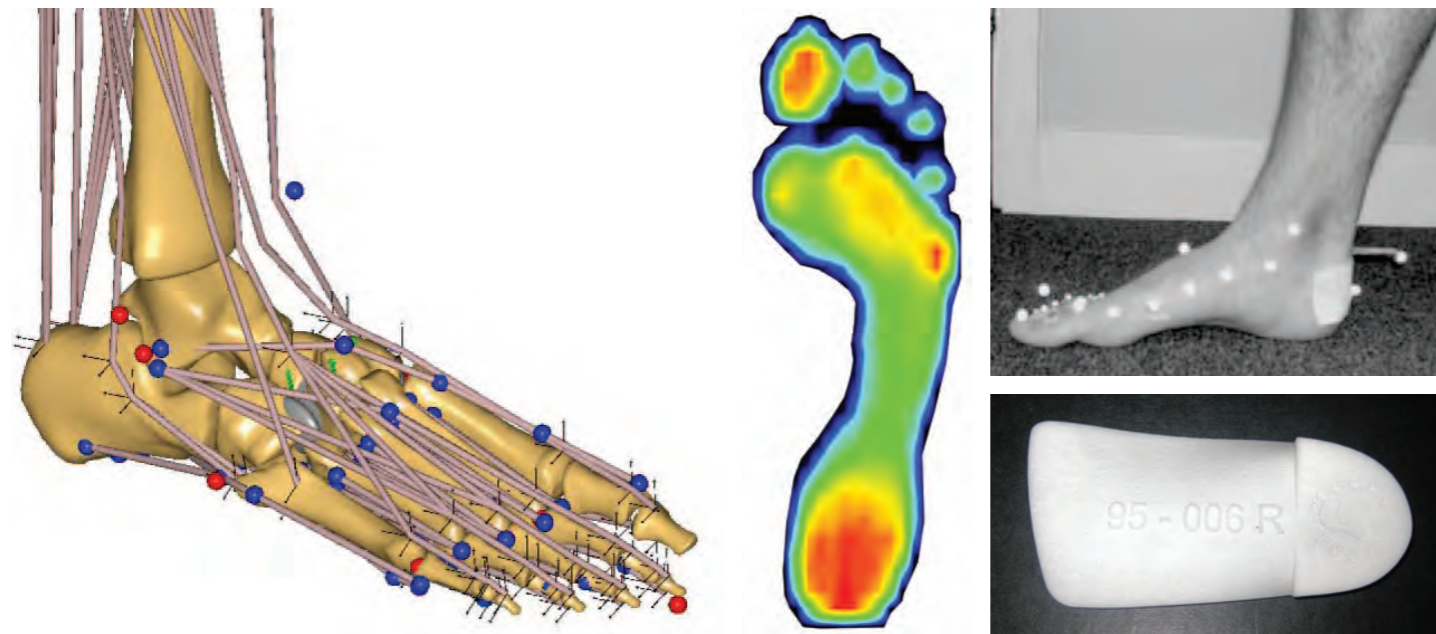
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Disabling foot and ankle conditions affect approximately 200 million European citizens. Over €300M per annum is spent treating many of these people with orthoses and splints, often relying on hand-crafted manufacturing techniques which are slow, costly and difficult to reproduce. The overall objective is to develop novel ankle and foot orthoses for common disabling conditions which are cost-effective, high-speed to market, and personalised for form and function.

### The Project

The **A-FOOTPRINT** approach will automate processes to speed up the manufacture, delivery and supply of personalised devices exploiting digital scanning, computer-aided design and rapid manufacturing. Novel devices will be developed which are cost-effective, yet personalised to provide better fit and comfort and functional performance.

**A-FOOTPRINT** is a highly collaborative and multidisciplinary project drawing on expertise in manufacturing, bioengineering and clinical rehabilitation. Led by Glasgow Caledonian University, the consortium is made up of 12 organisations across 7 EU member states. It consists of 6 SME's, 5 academic institutions and an industrial organisation. Together this consortium will deliver step change research and will establish long-term internationally competitive interconnections between science, industry and clinical practice, leading to significant improvements in patient care.

### Objectives

The main objectives of the **A-FOOTPRINT** project are:

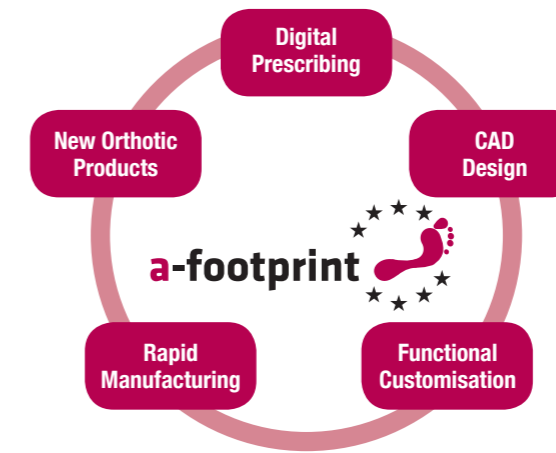
- To develop a software based Patient Information System;
- To develop Computer Aided Design (CAD) software;
- To develop optimisation software routines;
- To evaluate, benchmark and develop rapid manufacturing techniques;
- To integrate these results to produce a fully integrated design and manufacturing solution with prototype devices,
- To address important health and policy objectives.

### Key Facts:

**Duration:** October 2009 – September 2013  
**Total Cost:** €5,305,678  
**Funding:** €3,729,043  
**Grant Agreement Number:** NMP2-SE-2009-228893

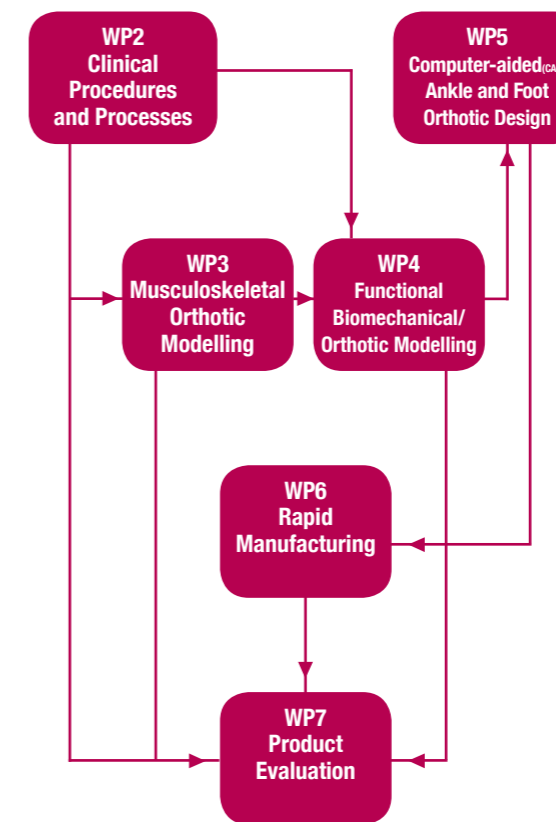
### Anticipated Results

The anticipated results of the **A-FOOTPRINT** project are outlined below.



Rapid provision of better orthotic devices with excellent supporting technologies and services should result in quicker recovery times, reduced symptoms and improved functional ability, which will make a significant impact on the quality of life and well-being of EU citizens.

### Research and technological development work structure



WP1, WP8 and WP9 address consortium management, demonstration and dissemination and exploitation activities.

### WP2 (Clinical procedures and process)

This will investigate the most effective methods to collect, synthesise and process clinical data and investigations digitally to improve clinical prescribing.

### WP3 (Musculoskeletal orthotic modelling) and WP4 (Functional biomechanical/orthotic modelling)

Through new biomechanical modelling techniques, new parameters will be developed for optimising orthotic geometry and function at a personal level.

### WP5 (Computer-aided design) and WP6 (Rapid manufacturing)

Computer aided design and rapid manufacturing will allow unprecedented investigation of complete geometrical design freedom to enable the development of radically new ankle and foot orthoses. Rapid manufacturing techniques will be benchmarked, developed and tested within the pilot factory.

### WP7 (Product evaluation)

Strong evidence-based practice is at the heart of **A-FOOTPRINT** and here the mechanical behaviour of prototype orthoses will be investigated in pre-clinical laboratory tests, followed by field testing in phased clinical trials with patients.

### A-FOOTPRINT Consortium

#### SME Orthotic Companies



#### SME Enabling Technology Companies



#### RTD / Industrial Partners

