"SME Supply Chain Integration for Enhanced Fully Customisable Medical Implants, using New Biomaterials and Rapid Manufacturing Technologies, to Enhance the Quality of Life for EU Citizens"

Integrated Project for SME's, coordinated by

Custom IMD project Research overview

Esther Hurtós
Ascamm

Introduction

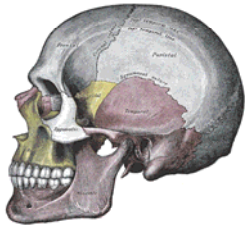
Custom **I**mplantable **M**edical **D**evices

"SME Supply Chain Integration for Enhanced Fully Customisable Medical Implants, using New Biomaterials and Rapid Manufacturing Technologies, to Enhance the Quality of Life for EU Citizens"

Introduction

Custom **I**mplantable **M**edical **D**evices

"SME Supply Chain Integration for Enhanced Fully Customisable Medical Implants, using New Biomaterials and Rapid Manufacturing Technologies, to Enhance the Quality of Life for EU Citizens"



Project Overview: *The Numbers*

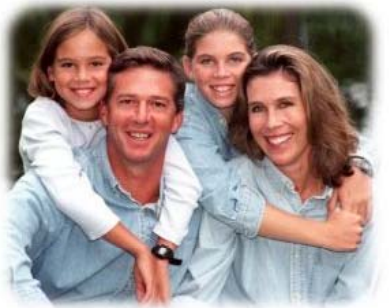
- **Budget:** 9,8 M€ with 5,4 M€ of EU FP6 funding
- **Duration:** 4 years (from 1.2.07 to 31.1.11)
- **Partners:** 22
  - **RTD:** 8
  - **SME:** 12
  - **University Hospital:** 2

- **Countries** 7

  Belgium
  Germany **Switzerland**
  Netherlands **Spain**
  Poland **United Kingdom**

Introduction

Customised implants:



- Improve quality of life
- Reduces health care costs

- Increases EU SME competitiveness

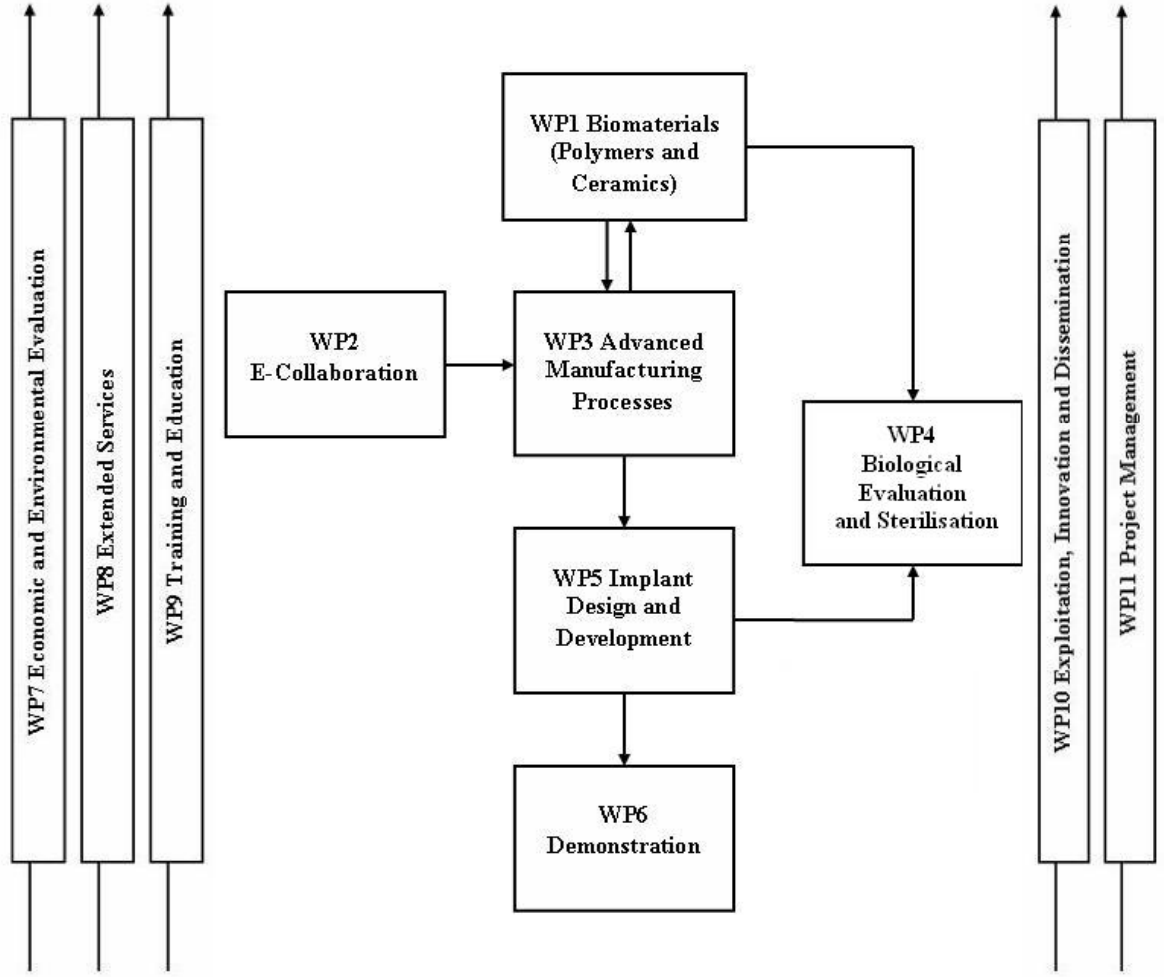
- Increase surgery speed and with less after-effects

Project overview

Objective: development of the complete e-supply chain for the delivery of customised implants and demonstrate those through 3 medical applications.

- Biomaterials
- Manufacturing Technologies
- Biocompatibility
- e-Supply chain
- Data acquisition
- Implant design

Project structure: *The Work Packages*



Sixth Framework Programme

CUSTOM IMD

Project overview

Case 1: Craniofacial reconstruction, AZM

Scanning

Segmentation

CAD design

Verification

Production

Sterilization

Implantation

Project overview

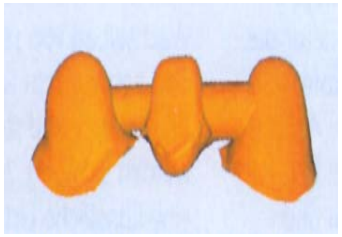
Case 2: Dental restoration, Bego

Bite

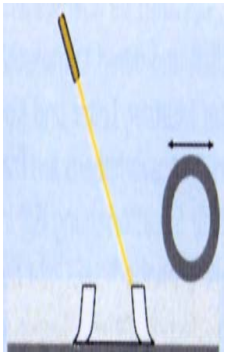
Model

Scanning

can be substituted by intra-oral scanning in the future



CAD design



SLM manufacturing

Veneering

Shipping

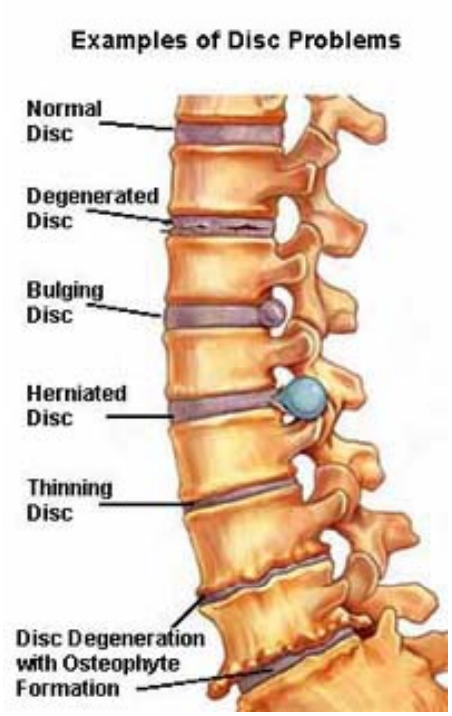
Project overview

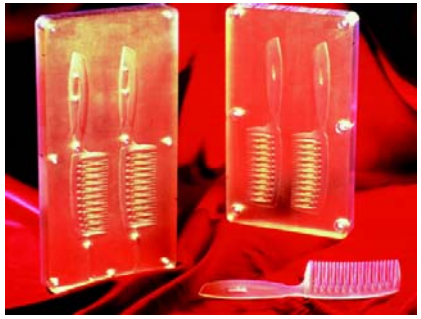
Case 3: Spinal implants

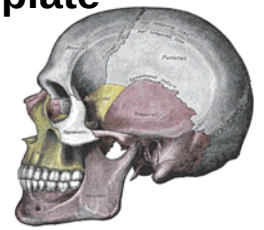
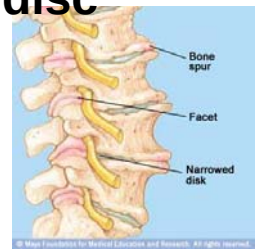
-Custom Intervertebral Disc replacement, Neos

-Degradable spinal cages, DS

-Fiber reinforced cage / Implant, Icotec

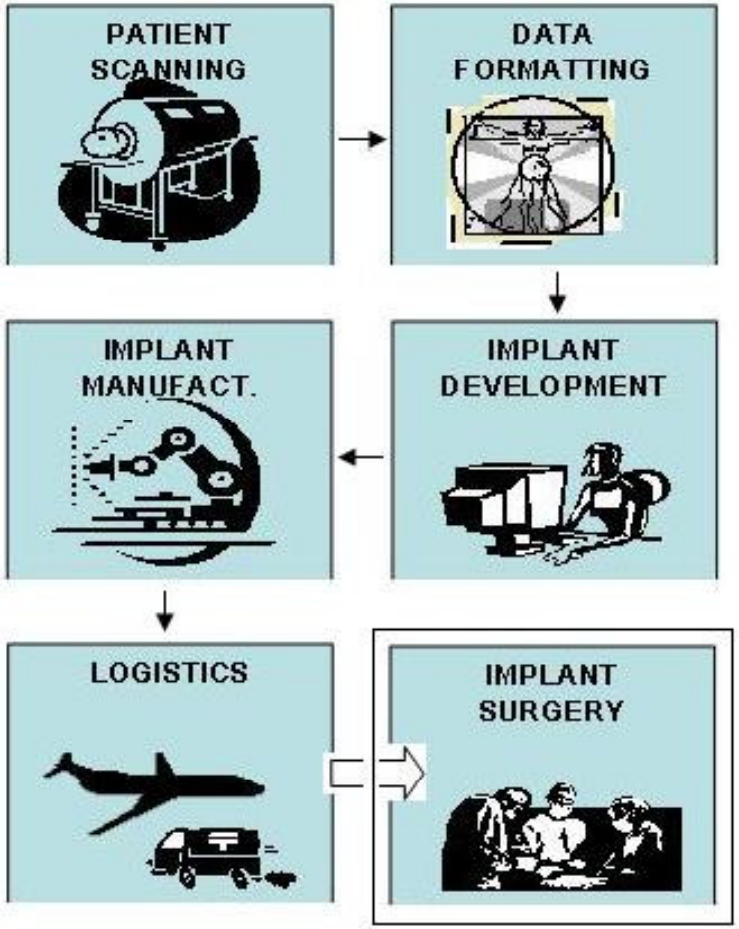




WP1 Biomaterials	WP2 E supply chain integration	WP3 Processes	WP4 Bio Evaluation	WP5 Design
Shape memory materials	Data acquisition	3DPrinting	In vitro testing	Cranial bone plate 
Dental Ceramics for SLM	Collaborative engineering design	FDM	In vivo testing	Dental restoration 
Bioceramics	Collaborative engineering manufacturing	LS	Device and process validation	Lumbar disc 
Reinforced biomaterials	Quality and planning	SLM	Regulatory compliance	
Biopolymers SupraB	Online system integration	RT for Custom moulds		
PEEK				
Endless fibre reinforced polymers				

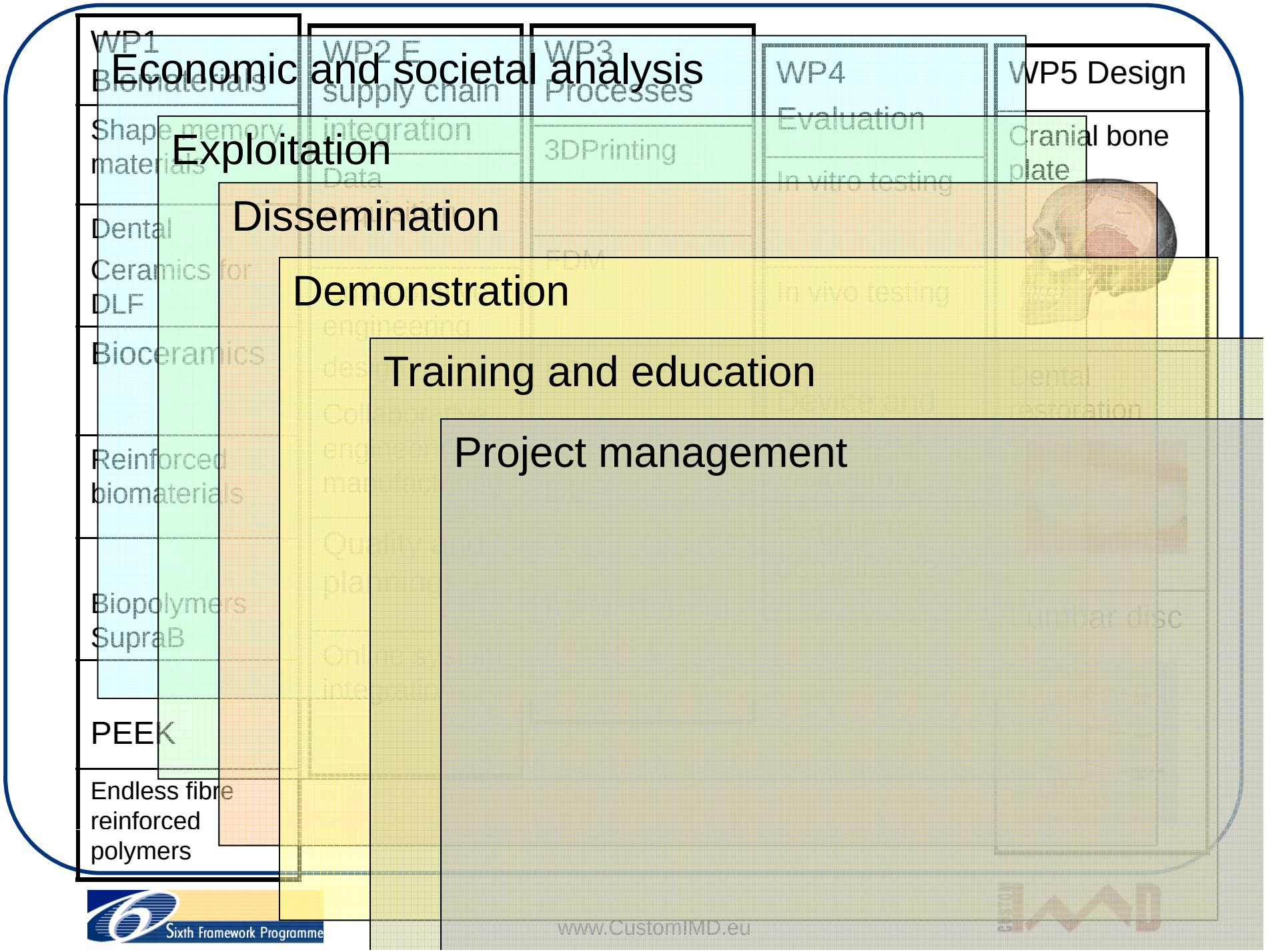
Project overview

E-supply chain integration



Design
Manufacturing
Sterilization
Approval
Delivery

48 hour timeframe


Economic and societal analysis
Exploitation
Dissemination
Demonstration
Training and education
Project management
WP1
Biomaterials
Shape memory materials
Dental Ceramics for DLF
Bioceramics
Reinforced biomaterials
Biopolymers SupraB
PEEK
Endless fibre reinforced polymers
WP2 E
supply chain
integration
Data
engineering
WP3
Processes
3DPrinting
FDM
WP4
Evaluation
In vitro testing
In vivo testing
WP5 Design
Cranial bone plate
Lumbar disc
Sixth Framework Programme
www.CustomIMD.eu

www.customimd.eu

ehurtos@ascamm.com