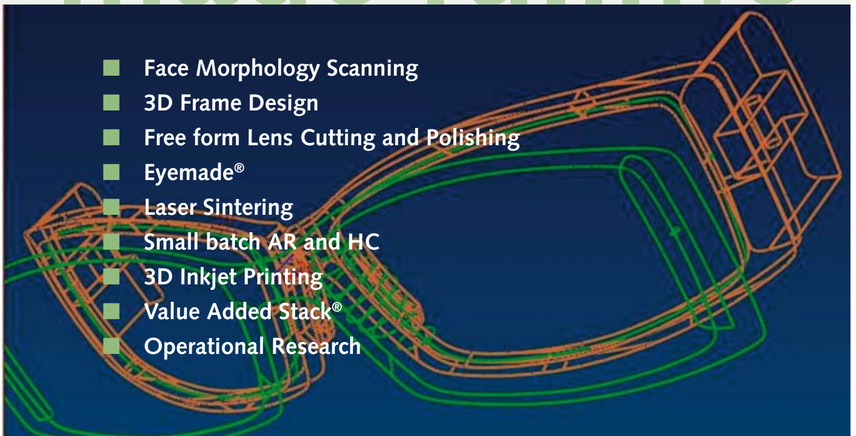
made4u aims to research the key business and technology components for the production and bring-to-market of personalized spectacles. It is about the design & manufacturing of lenses and frames, and the definition of a business-model for bringing these new products to market in sustainable fashion...

made4u.info



- Face Morphology Scanning
- 3D Frame Design
- Free form Lens Cutting and Polishing
- Eyemade®
- Laser Sintering
- Small batch AR and HC
- 3D Inkjet Printing
- Value Added Stack®
- Operational Research

The Consortium

ascamm technology centre
Fundacio Privada Ascamm
Spain

Braecis BVBA
Braecis BVBA
Belgium

eos
Electro Optical Systems GMBH
Germany

indo
Industrias de Optica International S.A.
Spain

IBV
Instituto de Biomecánica de Valencia
Spain

knowledge integration
Knowledge Integration
United Kingdom

OPTIKALCOM
Optica Alcom
Slovenia

ÓPTICAPITA
Optica Pita LDA
Portugal

PLASTIA
Plastiasite S.A.
Spain

satisloh
Satisloh Photonics AG
Switzerland

OPTOMORPH
Tipheret SA
France

UAMS
Universiteit Antwerpen
Management School - Belgium

XENNIA
Xennia Technology Ltd
United Kingdom

SEVENTH FRAMEWORK PROGRAMME

This project is funded by the European 7th Framework Programme (contract number 212002)

www.made4u.info

made4u

business models
for user centred products

What is Made4u?

Made4u is a Collaborative Project within the Seventh Framework Programme (FP7), under the FP7-NMP fundingscheme that supports research work especially focused on Small and Medium Enterprises (SMEs). It started on the 1st of July 2008 and is planned to finish at the end of June 2012.

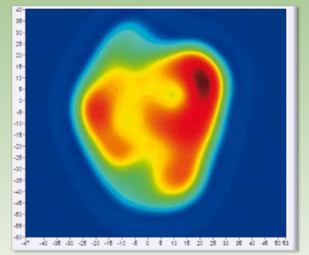
For a large variety of products one strategy that provides end users with innovative added value is achieved via Personalization. Personalization strategies allow manufacturers and marketeers to offer products unique to end-user specifications and build them from the ground up to a given person's needs and desires. In a personalized product situation, end-users typically participate in many steps of the product provisioning chain, usually from the beginning to the end.

The project Made4U aims to research the key business and technology aspects for the production and commercialization of Personalized Spectacles. This involves two principal components: design and manufacturing of personalized spectacles (lenses and frames) and an innovative business model for bringing them to market.

Nowadays, there exist no proven technologies and methods that achieve a high degree of personalization of spectacles. However, this is the goal we have set-out to achieve with our project. Our proposed solution spans over the entire value-chain, also including the end-users themselves. Based on face and head morphology measurements, together with lens prescription data, the target pair of spectacles will be designed in 3D-CAD fashion.

The new designs will include personalized (progressive) lens geometry, 3D frame design, and, selected by end-users, the precise lens and frame surface treatments and decoration.

Manufacturing technologies that will be used to manufacture such personalized spectacles are: free-form lens cutting and polishing, laser sintering for synthetic material and metal frames, small batch surface treatments, and frame decoration with innovative 3D ink-jet printing techniques.



A typical Visual Map® per the Eyemade® Progressive Lens Personalization Process (courtesy of Indo International)

Roles and Responsibilities

Project Coordination	Indo International
User Input Management	IBV
Automatic Design	Indo International
Lens Flexible Manufacturing	Satisloh Photonics Xennia Technology
Frame Flexible Manufacturing	EOS Xennia Technology
Integration and Operational Research	Ascamm Plastiasite Knowledge Integration
The Demonstrator	Ascamm Optica Alcom Optica Pita Tipheret
Business Modeling	Braecis
Dissemination and Exploitation	UAMS

Work Packages

1

Business Modeling

Objectives of this Work Package are to model several business scenarios as value-chains consisting of their interacting processes. Per the Added Value Stack® (AVS) methodology, we shall assemble the cost components of all chain processes and will calculate the individual and consolidated Added Value Stacks. Will also identify potential business risks from changes in the economic environment and the supply chain ecosystem. We will subject our models to variations of the key conditions and parameters, and will forecast sustainability, expansibility and model robustness based on "what-if" simulations with inclusion and/or exclusion of chain processes, roles, actors and interfaces. We shall finally perform stochastic projections of key value-chain parameters varying over time and select a few recommended model(s) that we shall test in the Demonstrator phase.

2

User Input Management

The aim of this Work Package is to develop effective and highly innovative customization environments that will combine both, automatic and assisted codesign processes. In order to achieve that, we shall develop and structure the knowledge about new concepts of personalized visual systems.
This knowledge will be based on a user-to-product interaction and on actual sales situations as described by opticians. It will also be applied in the development of tools to capture user data, in the creation of a knowledge base for personalized product design, and in the development of tools and techniques to guide opticians and end-users through the entire design process.

3

Automatic Design

The objective is to specify, develop and test an automatic design system for ophthalmic lenses and frames. More precisely we shall create and implement design tools and techniques which will adapt pre-designed templates of frames, based on current fashion trends and brands, to a given individuals' morphological characteristics (parameters) as well as aesthetic and emotional (persona) preferences. This process also involves choices of custom decorations and the necessary frame treatments per end-user preferences.

4

Lens Flexible Manufacturing

With relation to lens coatings this Work Package aims to achieve integrated and automated cleaning, hard-coating, degassing, Anti-Reflex and Top-Coating.
The Hard-Coating will be achieved by Spin Coating with UV-curable lacquers, which has advantages such as easy to be automated, single lens treatment, and fast production times. For lens tinting we shall examine and analyze traditional lens treatment materials such as Anti-Reflex (AR) and Hard-Coating (HC) in order to define requirements for suitable tinting inks. We shall research and define the proper ink-chemicals that can achieve durable adhesion to typical lens surfaces.

5

Frame Flexible Manufacturing

The objective of this Work Package is to examine frame requirements and adapt current techniques and materials to the automatic production of personalized frames via 'Rapid Manufacturing' processes. This means that we shall first research and test the capabilities of current state-of-the-art LASER-Sintering methods and related manufacturing equipment to meet design specifications for the production of durable spectacle frames. We shall then proceed to adapt existing LASER-Sintering processes, materials and methods in order to meet the specific product requirements related to the mechanical properties of the sintered frames, and also meet surface finishing and decoration specifications.

6

Integration and Operational Research

Objective of this Work Package, conform the directives and topologies of the recommended value-chain blueprint(s), is to weave together all constituent processes, actors, information, materials, and equipment into one value-chain workflow that will form the base for the demonstrator test.
The popular paradigm of "virtual factory", inspired by Manufuture, leads us also to research new models for integration, management, and control of the production value-chains. With respect to our planned advances of the current State-of-the-art we intent to deliver, a) a definition of standards and "architectures" that will enable the exchange of Ophthalmic Industry design data among B2B supply-chain players, and b) the necessary toolkits that will help ophthalmic industry participants to adapt their ICT and Manufacturing infrastructure and systems in order to connect into the dynamic, scalable and reconfigurable value-chain "networks".

7

The Demonstrator

As a proof of concept, a Demonstrator will be built during this Work Package. During the first six Work Packages all the elements necessary to implement and test the Demonstrator will be defined and prepared. Per the technical scope of the project, they will be grouped into a User Data Acquisition System, Automatic Design System, Lenses System, Frames System, an Integrator System for lenses and frames, and last, the required ICT system. Eventually, this Work Package aims to assemble and integrate manufacturing and user measurement equipment, predefined processes, trained workers and systems in order to test under real life conditions the asumptions about the feasibility of the recommended business model(s).

To this end, we shall actually test a Demonstrator value-chain within a European transnational configuration. Projected benefits, short-comings, and sustainability of individual profit margins of each chain-participant, as predicted by the Business Modeling Work Package, will be finally verified in this phase of the project.

8

Dissemination & Exploitation

Dissemination and exploitation of project will aim to make broadly known to a number of target audiences the results achieved by the different research Work Packages, during the project life-cycle.
All of the Consortium Partners will contribute to this Work Package whereas UAMS as the Work Package leader will assemble content and will administer dissemination events and activities (web presence, leaflets, white papers, press releases, participation in Congresses, "viral" marketing activities, etc...). UAMS will also establish a Dissemination and Exploitation Master Plan which will be regularly revisited and adapted.

9

Project Coordination

The overall goal of the Coordination and Project Management is to ensure that the agreed-upon project objectives will be met within approved time and budget constraints and at the required quality level. As such, this Work Package includes Project Management and Administration, Reports to the Commission, Partner Coordination and all Control and Support activities.