

Deliverable D6.4: Prototype description and test results

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Project acronym: CREATIF

Project full title: Digital creative tools for digital printing of smart fabrics

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SEVENTH FRAMEWORK PROGRAMME

FP7-ICT-2013-10: Objective ICT-2013.8.1 Technologies and scientific foundations in the field of creativity

Publishable short non-confidential summary

The realisation and testing of the modular blind and exhibition stand is described.

Three modular blinds have been realised consisting of sixteen, 25 cm diameter, discs arranged in a square array. The CREATIF software, written by Grafisoft, was used to design the functional elements on the discs and then the discs were printed from the CREATIF software, using the University of Southampton printer. The disc designs were created by Diffus Design. The functions achieved are light emission, sound emission, colour change and proximity sensing. The discs are linked together electrically and coupled with the CREATIF modular electronics, designed by the University of Southampton. This, when programmed from the CREATIF software, allows the functionality to be adjusted (e.g. loudness of sound) and interactivity of each of three functions (light, sound, colour change) with the proximity sensor. For example the proximity sensor can be used to turn off the light emission or turn it on.

An exhibition stand has been realised consisting of a cube with 0.5 m x 0.5 m smart fabrics on five faces of the cube with the sixth face being mounted on a plinth; the cube is electrically coupled with a 3 x 1 m smart fabric banner. The CREATIF software was used to design the functional elements on the discs and then the discs were printed from the CREATIF software using the University of Southampton printer (0.5 m x 0.5 m smart fabrics) and the Institute of Textiles Aachen printer (3 m x 1 m smart fabric). The fabric designs were created by Zaha Hadid Architects with BASE Structures advising on the mechanical design.

Passive colour inkjet patterns were first printed on all the smart fabrics with the 3 m x 1 m fabric being printed using inkjet technology supplied by Ardeje and which has been integrated within the Institute of Textiles Aachen printer. The cube panels consist of 2 light emission panels, 1 sound emission panel, 1 colour change panel and 1 proximity sensor panel. The 3 m x 1 m banner has three proximity sensors printed on it. Within the cube the CREATIF electronics is housed and activates the light and sound emission functions, and the colour change function each of which can be controlled by the proximity sensor function on the cube in a similar way to the blinds. Further the cube is coupled electrically to the 3 m x 1 m banner allowing the proximity sensors on the banner to control the three functions on the cube.

Operation of both the exhibition stand and the blinds has been successfully demonstrated. Further information is available on the CREATIF website (www.ecs.soton.ac.uk) and the CREATIF forum (www.creatif.cc).

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Project partners:

UoS – University of Southampton (ECS) – <http://www.ecs.soton.ac.uk/> - UK

ITA - RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN -
<http://www.ita.rwth-aachen.de/> - Germany

GSoft - Grafisoft - <http://www.grafisoft.com/> - Bulgaria

Diffus – Diffus Design - <http://www.diffus.dk/> - Denmark

Base – Base Structures Ltd - <http://www.basestructures.com/> - UK

Zaha – Zaha Hadid Architects - <http://www.zaha-hadid.com/> - UK

Ardeje – Ardeje - <http://www.ardeje.com/> - France