

Fractional Ownership of RM Assets

Customers of existing rapid prototyping (RP) and rapid manufacturing (RM) service bureaux now have another reason to consider the benefits of fractional ownership. Tangible Express, a global pioneer in fractional ownership of manufacturing assets, has added to its state-of-the-art portfolio of RP and RM platforms with the purchase of a top-of-the-line Sinterstation Pro SLS 230 from 3D Systems Inc. The innovative RP/RM machine is capable of producing quality, durable prototypes and actual short-run manufactured parts without the need for costly and time-consuming machine tools.

"Drawing upon our complete line of machines and platforms, we could, in theory, manufacture and assemble any plastic part for a user-ready kitchen appliance, automobile, plane, or even a rocket without requiring machine-tooled parts," says C. Alex Linde, President and COO of Tangible Express. Best of all, Linde noted, is that Tangible Express makes its entire line of RP/RM machines, including the new Sinterstation Pro SLS, available for ownership at only a fraction of the cost of outright ownership of a single machine. The company's investment in the new machine reinforces its commitment to maintaining an unsurpassed fleet of RP/RM machines and Tangible Express now provides its fractional owners 20 platforms spread across 14 units, all of which are less than one-year old.

Unlike typical service bureaux, Tangible Express not only hosts, operates and maintains all of its equipment; it also sells ownership in the underlying assets. Tangible Express clients are not merely customers using the equipment, they are actually owners with all of the accompanying tax and balance sheet prerogatives afforded to real owners.

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Creaform Launches EXAscan

Creaform recently announced the official launch of the EXAscan, its newest self-positioning handheld laser scanner — during the TCT show held in the UK. The EXAscan laser scanner is equipped with a third high definition camera, located in the upper central section, which greatly increases the scanning resolution as well as the data acquisition accuracy. The EXAscan also boasts a new automatic multi-resolution function enabling it to automatically set the optimum resolution level of the data acquired, according to the type of surface it is scanning. Based on the same powerful technology that made the Handyscan 3D so successful, this self-positioning and truly portable laser scanner offers great cost effectiveness, since it does not require any additional CMM arm or other external tracking devices. It is also very easy and quick to use.

The EXAscan brings a resolution approximately five times greater as well as an accuracy about two times higher than that of Handyscan 3D line-up's first scanner, which proves greatly useful for scanning highly detailed surfaces and small objects in many fields such as aerospace, automotive, biomechanics, consumer, product education, heritage preservation and architecture and multimedia. Its applications run from reverse engineering to design and manufacturing, inspection, digital mock-ups and simulation. Moreover, the fact that the EXAscan is lightweight and can be easily carried in a suitcase the size of a carry-on suitcase makes it extremely practical and versatile. This laser scanner gives the operator great freedom of movements, making it possible to scan objects of virtually any size, shape or colour.

The REVscan (formerly known as the Handyscan 3D) and the brand new EXAscan are part of the new Handyscan 3D line-up of innovative handheld laser scanners developed and manufactured by Creaform.

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A Bottom-up Approach to the Implementation of RM in European Manufacturing Industries

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Prodintec is a northern Spanish Technology Centre created to boost the competitiveness of industrial firms in the region by applying technological advances both to products and their manufacturing processes. Top-level manufacturing companies along with regional government immediately understood the need for creating a centre such as Prodintec, which could give them access to cutting-edge technologies and high-skilled engineers. Prodintec also carries out prospective and technological surveillance studies in order to keep them continuously competitive in their respective fields. Moreover, the technology centre is managed by people coming from industry with strong and relevant experience. The main idea was to have a centre focused on manufacturing but flexible enough to reach a wide range of markets and as a result four departments were created to fulfil that objective — Industrial Design, Mechatronics, Industrial Production and R&D management. Under this premise, the first step was to clearly identify which technologies should be a priority. As active members of the RM Platform and knowledgeable about the Strategic Research Agenda (SRA), it was clear to Prodintec that both Rapid Manufacturing (RM) and Rapid Prototyping (RP) technologies should be at the top of the list within the Industrial Production Department. Thus since its inception in 2004, Prodintec has invested in Direct Metal Laser Sintering, 3D printing systems, vacuum casting and full colour 3D printing machines. Furthermore, in order to keep the above-mentioned flexibility, Prodintec staff are also specialised in working with 5 axis high speed milling and 5 axis micro-milling centres.

With the technology in place the next issue was to attract the interest of companies, mainly SMEs, and to help them realise the potential of RM with the ultimate aim of shifting from the current industry-based regional economy to a knowledge-based economy. On this basis, Prodintec, along with the crucial support of the Institute of Economical Development of Asturias (IDEPA), has promoted a pioneering initiative creating a regional platform called MANUF@CTURIAS with the involvement of SME's and large industries, universities and other public research organisations. Within a year, Prodintec has around 85 stakeholders in this project and is promoting the importance of investing in RP and RM equipment to design and manufacture new, highly-competitive, added-value products. MANUF@CTURIAS has also succeeded in disseminating MANUFACTURE SRA by translating the key concepts and guidelines for a knowledge-based transformation in industry into local language and terminology — paving the way for companies to take part in the FP7 programme; creating a lobby for discussion and definition of R&D priorities for Asturias-based industries; and exchanging experiences among companies and benchmarking practices. The response has been very positive with more companies now interested in taking part.

Prodintec is also actively involved in research projects as a provider of RM technologies. These are mainly related to introducing economically viable ways of manufacturing products with high levels of customisation, to inspire designers and encourage them to design with almost no restrictions. SynTex is a European funded project wherein Prodintec is a full partner and it aims to develop a new measurement method for calculating feelings or emotions associated with texture; a new investigative method for the modelling of human interpretation of visual and haptic textures; and a method to synthesize artificial textures specified to evoke certain feelings and emotions. The goal of SynTex is to provide methods and a theory to objectively measure, model and predict such psychological effects. SynTex, therefore, is not a project strictly devoted to the development of RM technologies. However, it should be seen as one of the best examples for product customisation since specific haptic textures on product surfaces are expected to transmit predicted emotions and feelings to different types of customers. The outcomes of the project are expected to enable a shift from the generation of mass production to the generation of merchandise satisfying an individual customer's emotion. The main issue, from the manufacturing point of view, is how to produce haptic textures in a short period of time, with high resolution, at low cost and in a wide variety of materials. The answer to these requirements is RP and RM technologies. Prodintec has also been heavily involved in running projects, at European level, specifically related to the development of RM technologies. Recently, the company submitted, as a coordinator, a proposal (FIRMa) to the Seventh Framework Programme (FP7) aimed at the full implementation of RM technologies in European industries.

Finally, I would like to acknowledge the priceless work carried out by the "creators" and current managers of the European Platform on RM. Among other valuable achievements, they have raised the awareness and interest of not only public research institutions but also of European industries on RM technologies. Moreover, the RM Platform has become the main meeting point for both researchers and industrialists in Europe interested in developing joint business projects.

Prodintec will host the the next meeting for platform stakeholders in Asturias, Spain on 15-16th April 2008.

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