

International Flavors & Fragrances

Marco Limited continues to strengthen its association with leading flavours and fragrance manufacturer IFF, following the successful implementation of their fourth Marco Trac-IT factory floor efficiency system at IFF's Haverhill plant. Marco Manufacturing Execution Systems are now operational at IFF in Eire, the UK, The Netherlands and New Zealand. The installations incorporate approx 75 weighing based workstations, which are at the heart of the control and traceability of the complex recipe formulations made up from thousands of different ingredients.

IFF and its predecessor companies have been in the flavour and fragrance business since 1833. The company, which has sales, manufacturing and creative facilities in 31 countries worldwide, is a leading creator and manufacturer of flavours and fragrances used in a wide variety of consumer products as diverse as fine fragrances, toiletries, soaps, detergents, beverages and food products.

Their own mission statement is succinct, but highly focussed: IFF is dedicated to 'The Pursuit of Excellence' in every area of its business, using knowledge, creativity, innovation and technology to continually provide customers with the highest quality products, service and superior consumer understanding. Over the past six years, Marco and IFF have developed a close and very successful working relationship. The Marco systems and equipment have evolved through understanding the client's business and a joint desire for perfection in manufacturing.



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The Solution

The Marco systems are integrated with IFF's global SAP ERP installation, with Marco Trac-IT acting as a 'Thin Client' to SAP. This ensures real time data from the factory floor is used to best effect within SAP to provide a 'measure, control and improve' environment that can provide full traceability and react rapidly to changing business requirements. However the weight based systems provide far more than just recipe formulation and establish the perfect base for the procedural control of other business critical functions, including vessel cleaning control, stock utilisation and stock replenishment.

Given the complexities of the recipes, most of the formulation is based on manual additions, whilst final product blending typically requires the regrouping of up to ten sub-batches. IFF's Business Unit Manager has experienced first hand the differences Marco Trac-IT has brought and as he explains: "Precise recipe instructions are communicated from SAP to the Marco system to ensure product quality, integrity and consistency. Marco Trac-IT takes control of the process, ensuring not only that each sub-batch is correct but also that all those required for a particular end product are placed in the mixing vessels. The new system scans and logs the collected batches and only allows final mixing when all have been confirmed to be OK. A batch vessel cannot be used for another job until it has been confirmed as 'discharged' into the large mixing tank. After filling, this tank in turn cannot be loaded with the next job until CIP has taken place and Quality Control has passed the tank for use."

The system also gives total control over the vessel cleaning routines to ensure that no cross-contamination can affect product quality.

The System

The Stainless Steel DataMaster Workstations have been designed for optimum operator flexibility and installations include fixed and mobile units for operational efficiency. Full ATEX certified units are utilised in designated hazardous areas within the plants. Given the complexity of the routing, all the workstations are connected via industrial specification RF wireless LAN which keeps wiring to a minimum.

The mobile stations are fully independent and use the trucks' power supplies to run the terminal. Where applicable, dual scale DataMaster's offer optimum precision allowing widely differing target weights to be weighed at one location.

The Marco Trac-IT system is aimed at providing full control and traceability at every stage ensuring that the correct ingredient is selected and the correct amount added for each recipe step. Operators can only processed if these conditions are met. The scheduled work plan is downloaded to the workstations automatically from SAP and the batches filtered to ensure the correct permissions are granted. These are then forwarded tot he relevant workstations, depending on the materials and weight requirements to complete the batch.

The comprehensive display at each station shows all manufacturing instructions together with any pre and post weighing prompts that may be appropriate including relevant health and safety instructions and general product information. Operators select the job they wish to complete and are prompted for the first ingredient. They now confirm the correct raw material selection via barcode scanning thus ensuring that the correct batch/lot has been selected and recorded. All the scanners incorporate RF wireless technology to ensure the operators can easily locate the barcodes on bulk containers without the added constraints of a cable. Every time material is used, the system sends the data to SAP to downgrade the stock level.

Although the workstations are PC based, operators have the advantage of an analogue bar graph which guides the pour to target. It has been shown that this is a highly effective method for displaying and controlling operator initiated filling processed. Weights below the target are shown as amber, changing to green in the acceptance zone. In practice, Marco have found that operators rapidly 'tune in' to such displays and stop adding the raw material nearer to the minimum tolerance that the maximum. If the operator allows too much product to be poured, the graph goes red and an out of tolerance message is shown, preventing the operator proceeding further. However, if too much of a raw material has been added, under supervisory control, the batch can be automatically re-sized, whereby all target weights are recalculated without affecting batch composition.

There is no doubt that both IFF and their customers are benefiting from the level of control that Marco Trac-IT has brought to the operators. Toine Blankers has a simple way of summing up the benefits and as he concludes: "[Marco Trac-IT, in combination with the mobile workstations, allows us to securely 'pour where we store'. Marco personnel continue to take the time to listen and understand our requirements. This ability together with the enthusiasm, ingenuity and innovation is ensuring ongoing success](#)".

To learn more about International Flavors and Fragrances click here

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