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PRODUCTION SCHEDULING BASED ON CUSTOMER ORDER

Waldemar Małopolski
Cracow University of Technology
Al. Jana Pawła II 37, Cracow
Poland

Paloma Gallach Montalt
Universidad Politecnica de Valencia
Camino de Vera, Valencia
Spain

ABSTRACT
The creation of a production schedule using IFS and based on a customer order is possible and presented in this paper. To verify this possibility a virtual factory was created. This virtual factory is based on real data from industry.
Keywords: ERP, MRP, scheduling

1. INTRODUCTION

All manufacturing organisations need to control the types and quantities of materials they purchase, plan which products are to be produced and in what quantities and ensure that they are able to meet current and future customer demand with lowest possible cost of course. Making a bad decision in any of these areas will lose the company money [3, 4]. The IFS is one of the most important providers of business software developed using open standards, so IFS Applications can be easily integrated with other business software, as well as to new technology. IFS also work with a component-based architecture that changes a big business solution into a smaller easier to use. Besides IFS components help to define responsibilities. In this paper the Production scheduling based on customer order in IFS Applications is presented. It is based on experience with IFS Applications at Cracow University of Technology.

2. IFS APPLICATIONS

IFS Applications simplifies specific industry processes to deliver reduced costs and shortened time-to-market, which makes a real difference in today's competitive marketplace. IFS Applications also support the company's core processes by providing a lifecycle perspective focusing on the three main aspects of business: customers, products, and assets. The IFS company's strategy of building for change allows new standards and technologies to be introduced as they become established. Technologies such as UML, XML, J2EE, .Net, and Web Services are all fundamental to IFS Applications. The IFS Applications are based on component architecture. This type of software architecture lies on a high performance and maximum agility with extraordinary scalability. IFS offers business solutions that can be configured to meet the needs of rapidly changing industries facing challenges in an international marketplace. IFS Applications component-based architecture (figure 1) allows us to custom build our own dream ERP solution. Achieve rapid payback by choosing only the components we need right now. As our business needs change and grow, we can add new functionality easily without a messy and protracted overhaul of the whole system. IFS has created an integration architecture that is oriented to EDI (Electronic Data Interchange) solutions [2].

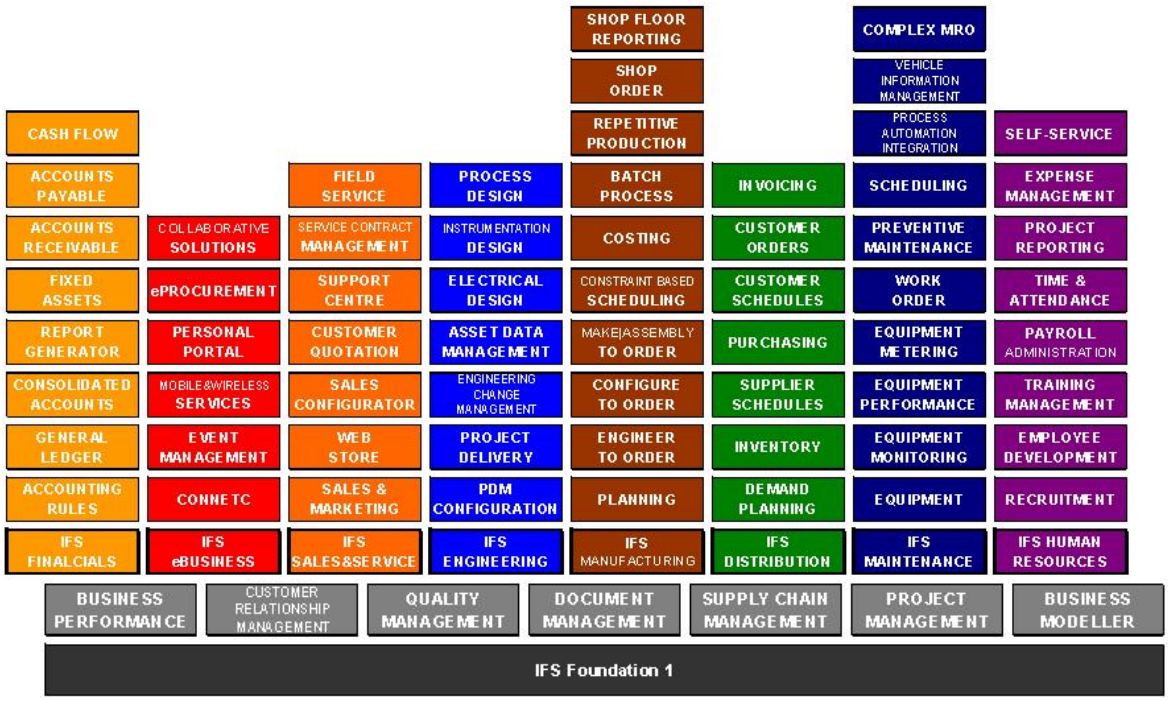

Figure 1. IFS Applications components chart [2]

3. VIRTUAL FACTORY AND FINAL PRODUCT

The virtual factory layout with operations names is presented on figure 2. This factory produces assist mechanisms. Based on this data a new company in IFS Application was created. In next steps all data about inventory locations, inventory parts, product structure and routings and others necessary data was introduced.

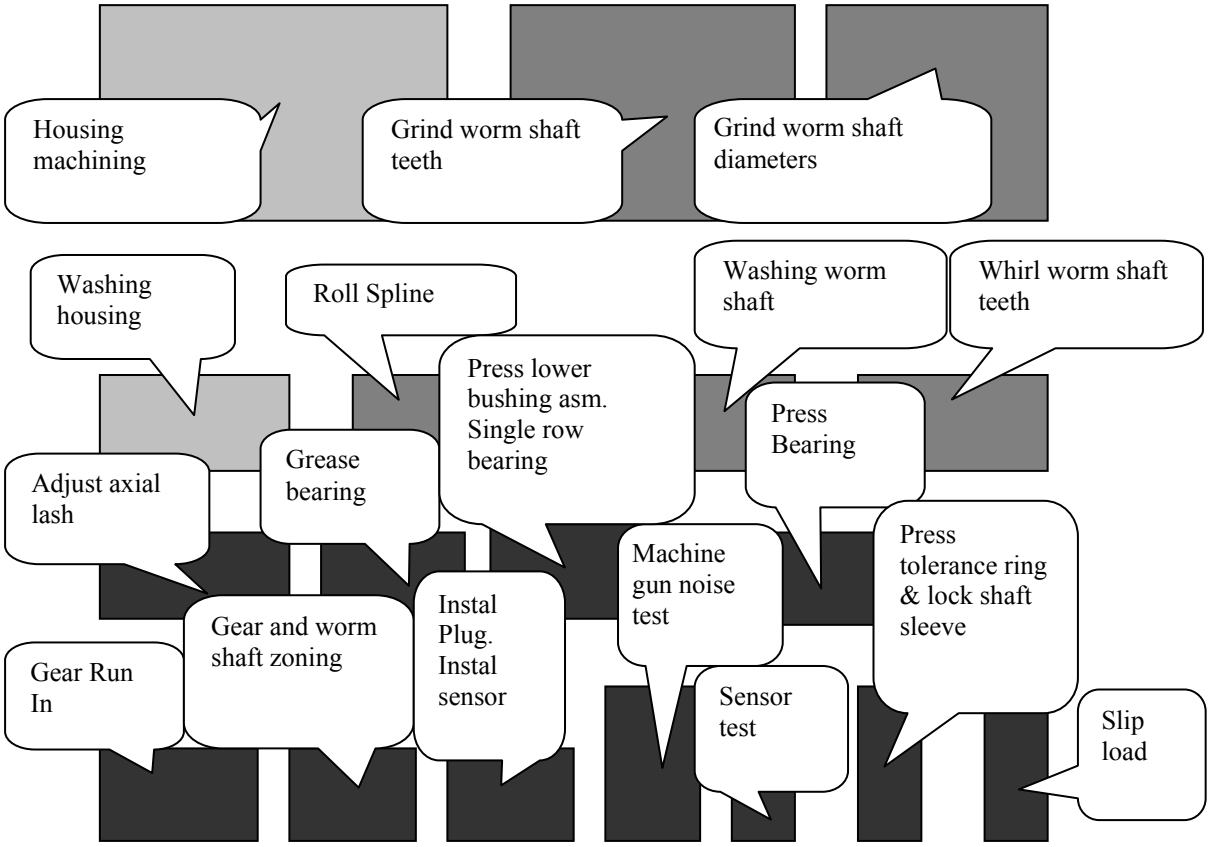

Figure 2. Factory layout

In order to assembly the assist mechanism two different pieces are manufactured: Housing and Worm Shaft [8]. The final product is shown in the next figure.

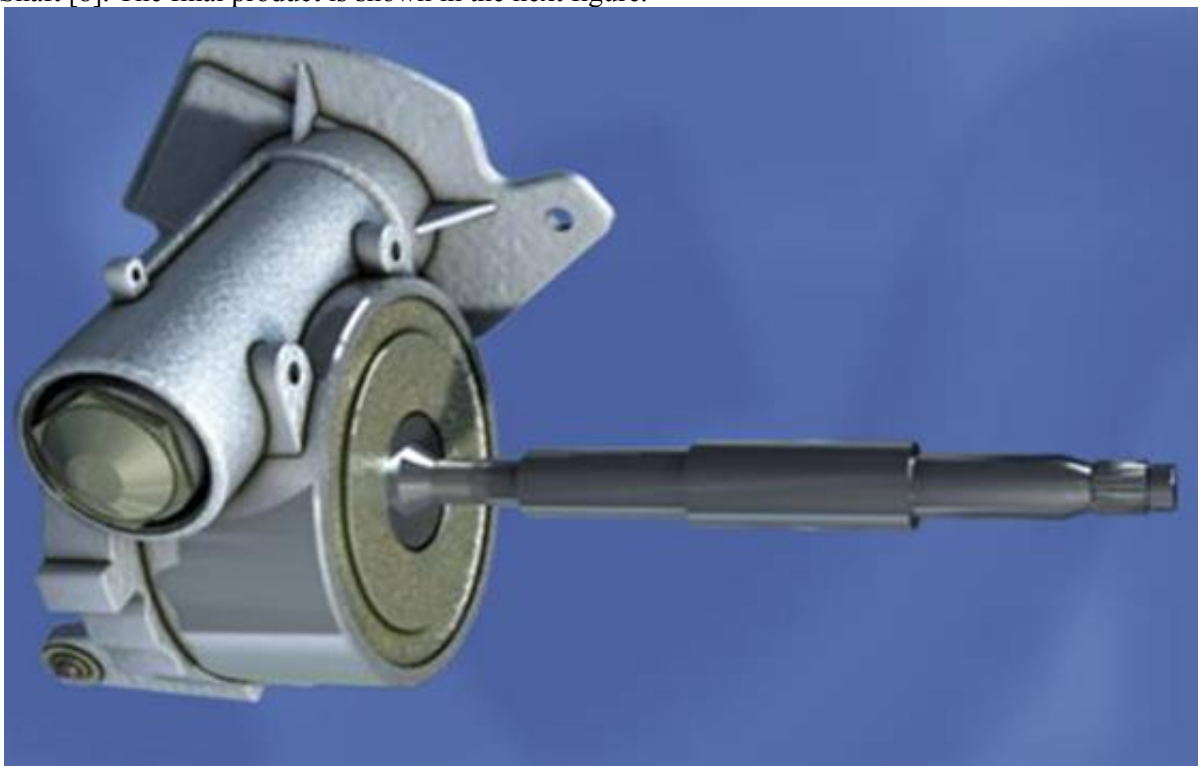

Figure 3. Final product [12].

4. PRODUCTION SCHEDULING

IFS have different applications and to create the Customer order the Repetitive and Quality Management application is used. In this case the order consisted in 200 pieces of assist mechanism (figure 4). We have to fill in also all the information about customer, coordinator, etc.

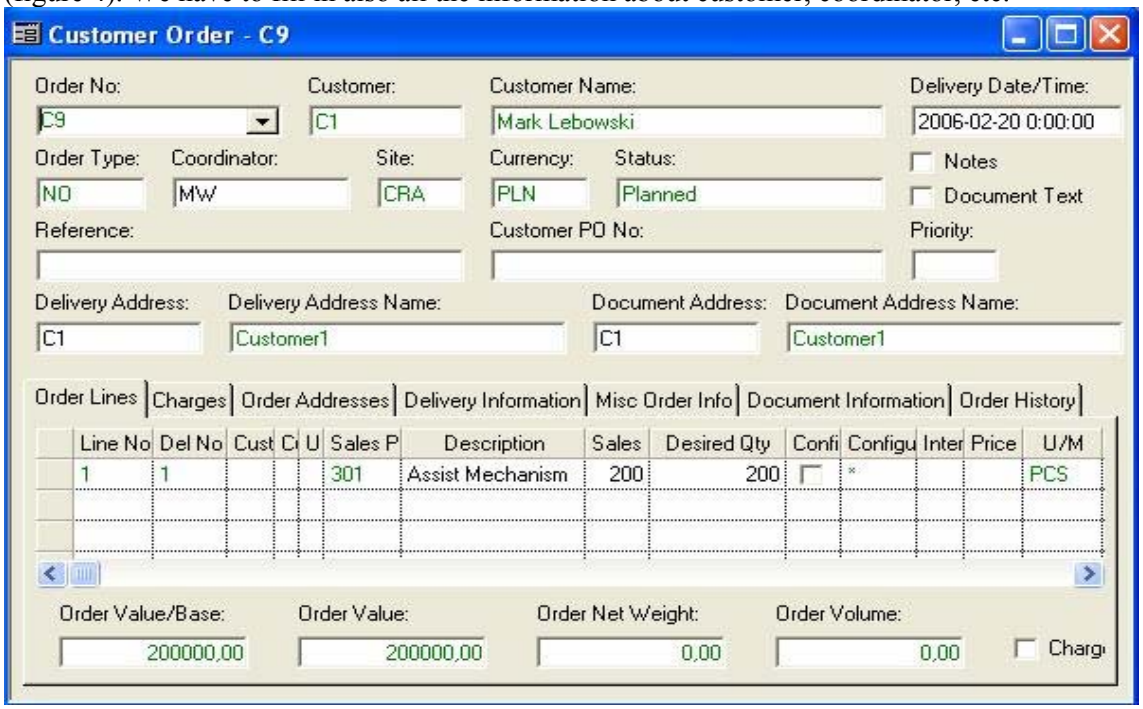

Figure 4. Customer order

After saving this information the MRP is run to know the results of its proposal. If the proposal it is considered suitable then the result should be changed from Purchased Requisitions to Purchase

Orders. Next step will be to register the purchase order arrivals and move the pieces in to the stock locations where they should be. Once we have all the bought pieces in their location we can start manufacturing the housing and the worm shaft. Then it will be possible to produce the same quantity of final product. The production schedule by line is presented on next figures.

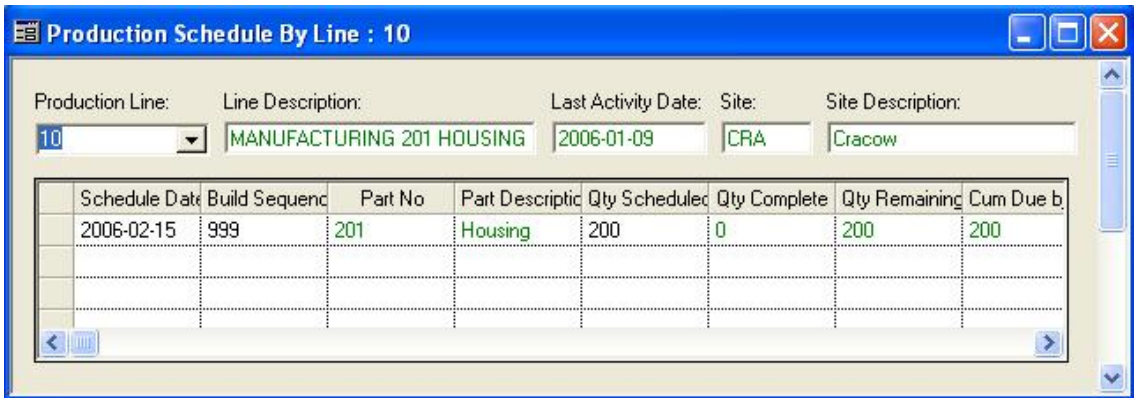

Figure 5. Production schedule by line 10

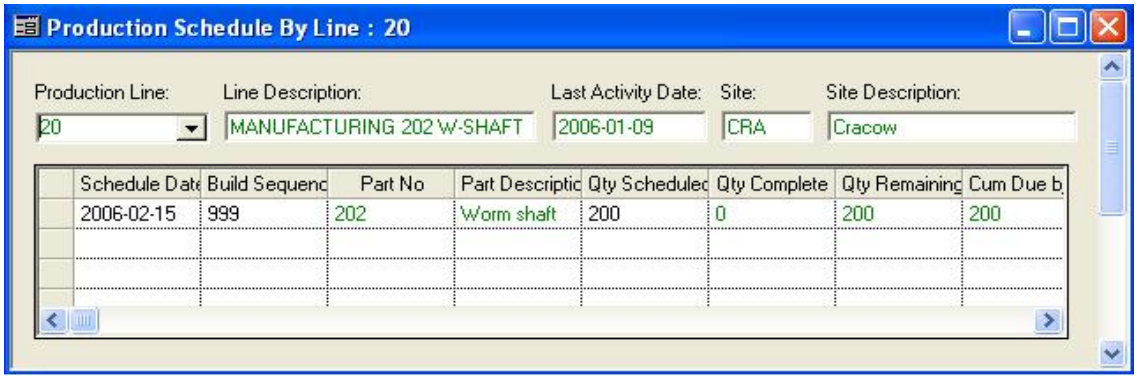

Figure 6. Production schedule by line 20

5. CONCLUSIONS

It is possible to create a production schedule based on a customer order by using IFS application: After all the information about the production system was introduced the MRP was run, and it was verify that the IFS generates a suggestion of the purchase order and a suggestion of the manufacturing orders, giving details of products, quantities and dates. Like final result it shows the availability of the final product.

6. REFERENCES

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