

## INTERGRAPH SMART® PRODUCTION MANUFACTURING EXECUTION SYSTEM (MES)

The Intergraph Smart® Production Manufacturing Execution System (MES) manages and cutting works of prefabrication shops. Smart Production MES is easy to introduce, and it includes efficient real-time tools for production managers, planners and workshop operators. The status of orders and parts can be monitored in real time, and production information travels with orders all the way from order creation to the completion of parts.

### Efficient Work Planning

Smart Production MES includes versatile tools for work planning. Parts can be imported to the system from different CAD applications or drawn with the tools included in Smart Production MES. Technology information such as cutting order, starting points, quality classes, piercings and beveling can be added directly to the drawing. The system automatically checks the imported and drawn parts and notifies if there are errors to be fixed. In this way, errors are found in the earliest possible stage. Nesting can be done manually or by using the semi- or fully automatic nesting tools. Several plates and remnants can be open in the same nesting area, allowing the material to be used more efficiently and reducing material loss.

### Flexible Work Queue Control

With the work queue management application, the production manager can schedule works according to need dates, move high priority works to be the first ones in the queue, and even out workload between cutting machines. All different production events, such as pauses, rejections and completed works, can easily be monitored in real time.

### Faster Cutting

After work queues are sorted and timings are made, NC programs are visible at the cutting workshops. Information about orders and possible attachments (CAD geometries, drawings, files or even photos) are always attached to the works in the workshop.

The cutting machine user starts a work and reports it completed. All parts in the work are completed at once, allowing fast reporting. When needed, it is also possible to easily complete parts in smaller sets or to reject defected parts. When the work is completed, its time and material consumption can be distributed to parts and/or orders for later calculations.

Charge numbers are inherited from material to parts and remnants, allowing easy traceability and export of information to other systems. Rejected parts are automatically moved to be re-nested and cut. The production manager always sees the current situation with machine breaks and production events as well as their duration. When needed, these can be used to calculate e.g. average throughput times or machine utilization ratios.



Stickers can be printed for all parts in a nesting with just a few clicks. Labels can include order, part, and drawing numbers, material information, barcodes and information about coming work phases. The geometry of a part can be added to the label to ease the picking and packing of the correct parts.

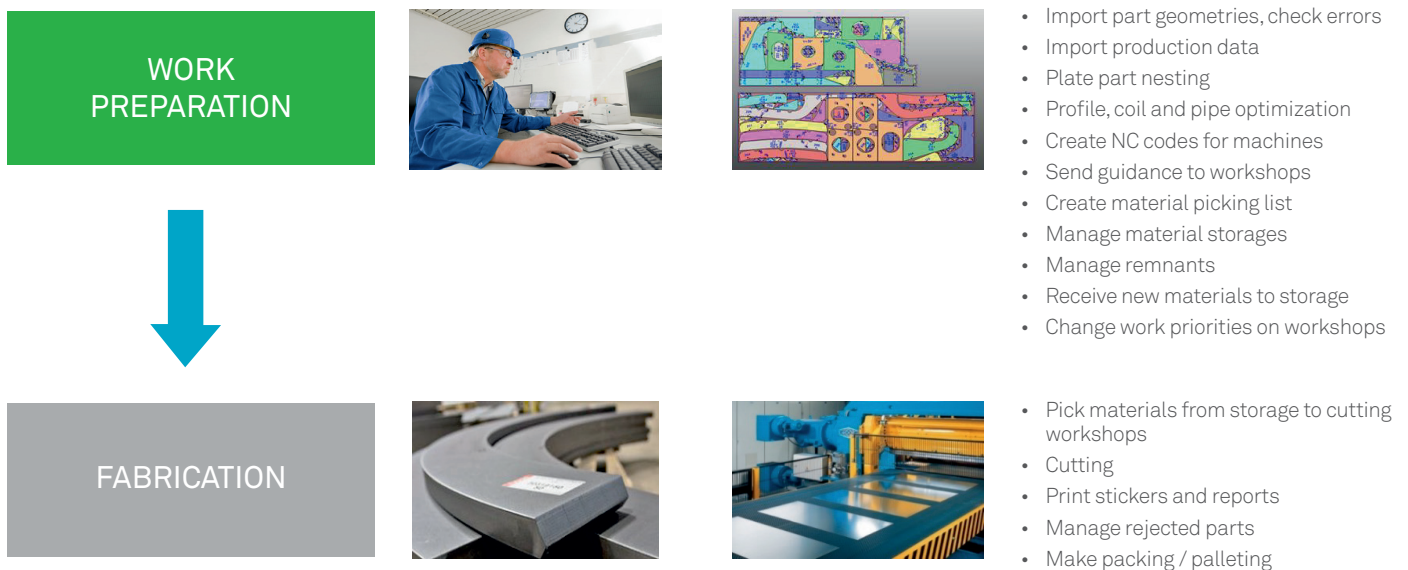
## Interfaces with Other Systems

Smart Production MES is based on an SQL database, and is thus easily connectible to the financial and storage management systems of prefabrication shops. In this way the data is always real time and there is no need for manual input from system to system.

## Extends to the Entire Production Process

Smart Production MES can be later expanded to the steel service center production control system. In shipyards, Smart Production MES can be expanded to the Smart Production Enterprise system. With these systems, it is possible to also manage other production work phases than cutting, such as drilling, blasting, beveling, packing and dispatching. Typically, the expanded production control systems also include tools for quotation calculation, storage management and management of assemblies and welding, as needed.

## STEEL SERVICE CENTER PROCESSES MANAGED BY SMART PRODUCTION MES



## About Hexagon PPM

Hexagon PPM is the world's leading provider of enterprise engineering design software and project control solutions. By transforming unstructured information into a smart digital asset, our clients are empowered to visualize, build, and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire life cycle.

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