

# Smart Cells in Medical Device Manufacture

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## Project Background

Medical device regulation places large demands on admin and QA resources. This coupled with complicated product builds in low volumes, with high variation in products, can lead to quality issues and an increase in production demands. The large nature of the products have also raised H&S concerns

## Project Aim

Increase quality, traceability, H&S and productivity in the manufacture of low volume, high variance medical devices

## Project Objectives

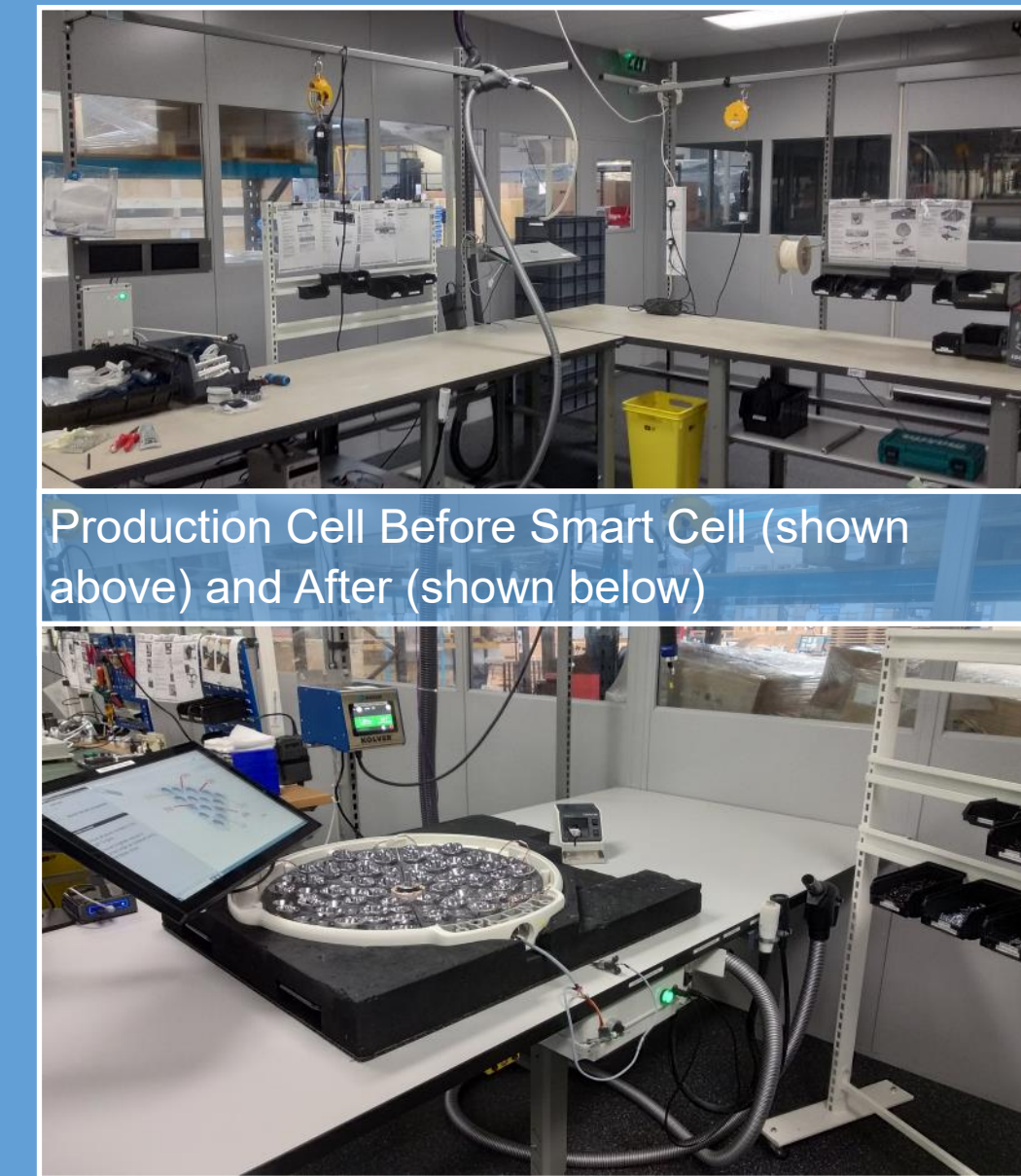
- Remove manual handling of completed products
- Introduce a greater degree of control over assembly process
- Achieve automatic shop floor data collection
- Remove requirement for 2nd operator QA checks

## New Smart Cell Equipment



COG - Complete Operator Guidance

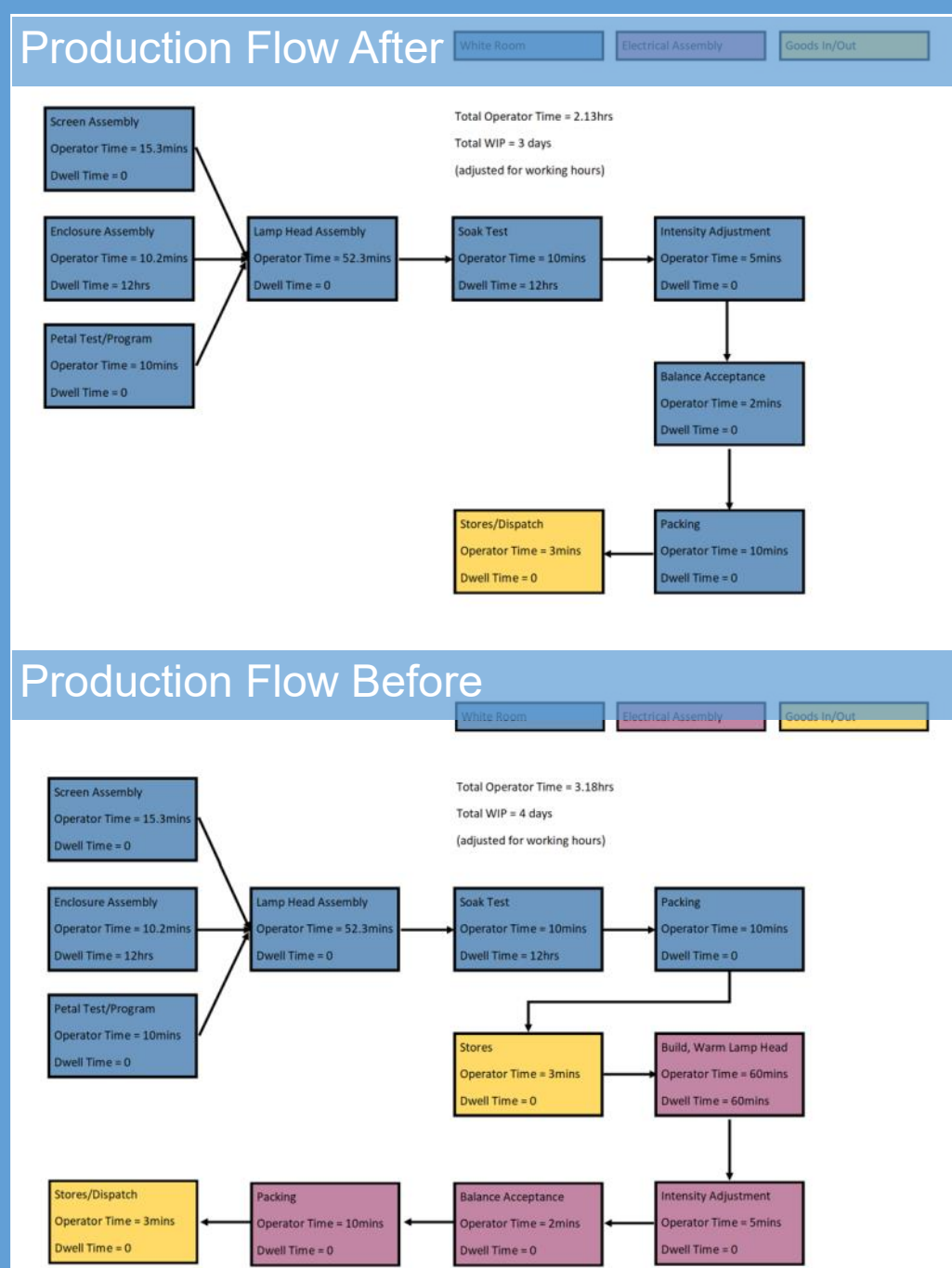
The COG system enables complex, high variation, low volume production with direct shop floor data collection. Number of screws, torque values, firmware version programmed, in process checks and image data is all captured automatically. This guarantees the validated system is used consistently, ensuring quality & traceability.



Production Cell Before Smart Cell (shown above) and After (shown below)

The COG system allows a single user to complete all assembly tasks, reducing the footprint of the cell. As shown opposite the footprint has been halved, and all QA checks that were previously completed by a second user are now done automatically. This has reduced the labour costs and increased capacity. The COG equipment is estimated to save Brandon Medical £15,600 a year.

## New Final Quality Assurance Test Equipment



After completing a full production audit, final QA was identified as a possible time saving operation during production. Using the new equipment removed a day from WIP and an hour of operator time, and removed the requirement for an entire department to be involved.



PET - Product Elevation Transport

In conjunction with a student placement from the University of Huddersfield, equipment has been produced for QA testing.

The PET and SERF are both bespoke items, when used together remove manual handling of the final product. The equipment is estimated to save Brandon Medical £13,000 a year.



SERF - Soak Equipment Rotation Fixture

## Further Progression



Robotic Smart Tool Mounting

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Further automation, mounting smart drivers on a robotic arm controlled by the COG. Robotic arm to be mounted to allow Shared Asset for Flexible Operation. The SAFO system will allow quick, easy movement around the factory, keeping accuracy & repeatability high. Other areas for further research; Implement the COG system into other products. Introduce pick to light into the COG, and integrate the system to MRP.