



Team 504: Aftermarket Workflow and Process Creation and Implementation

David Bishop | Julian Villamil | James Wilson | Kyle Youmans

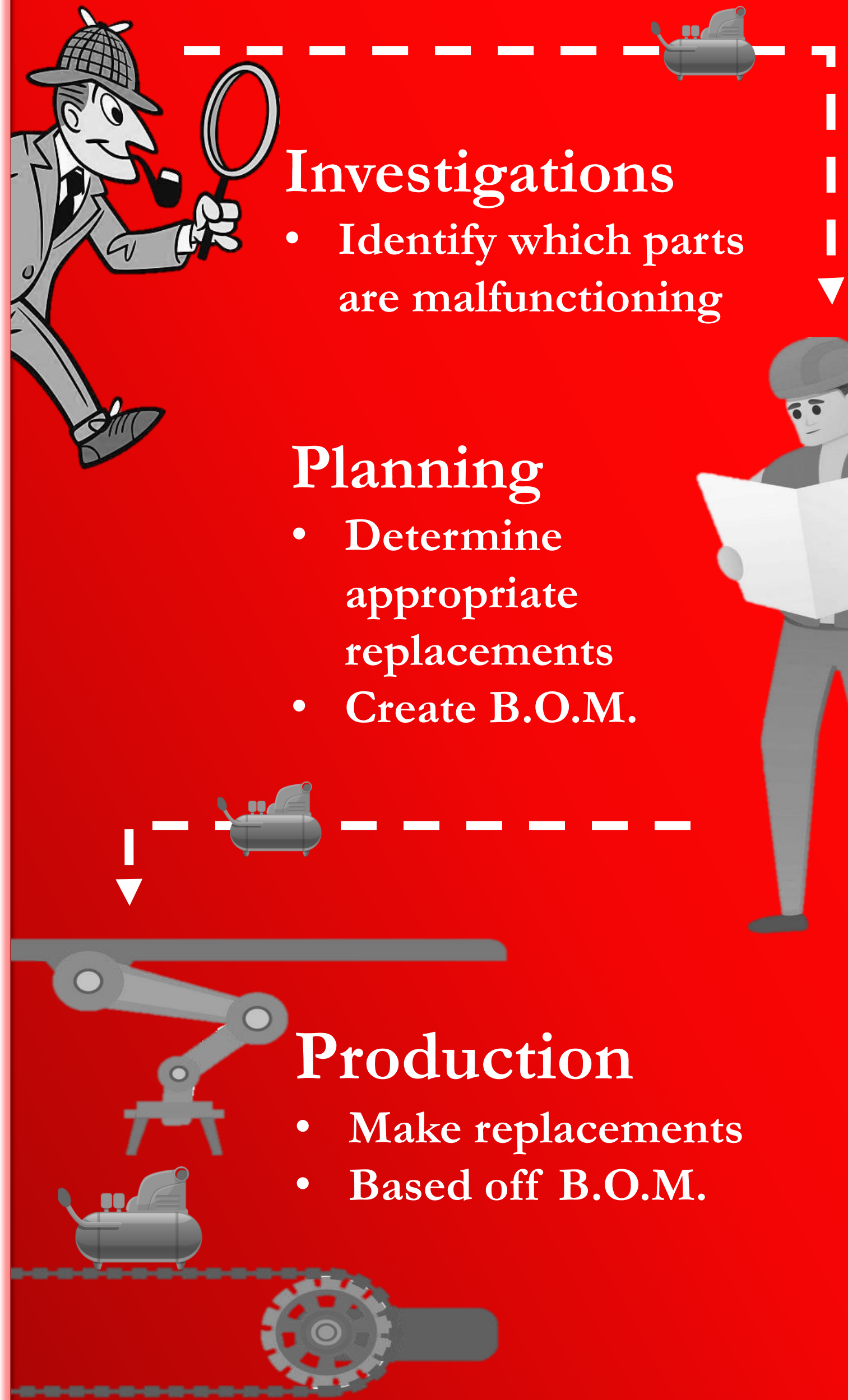


Objective

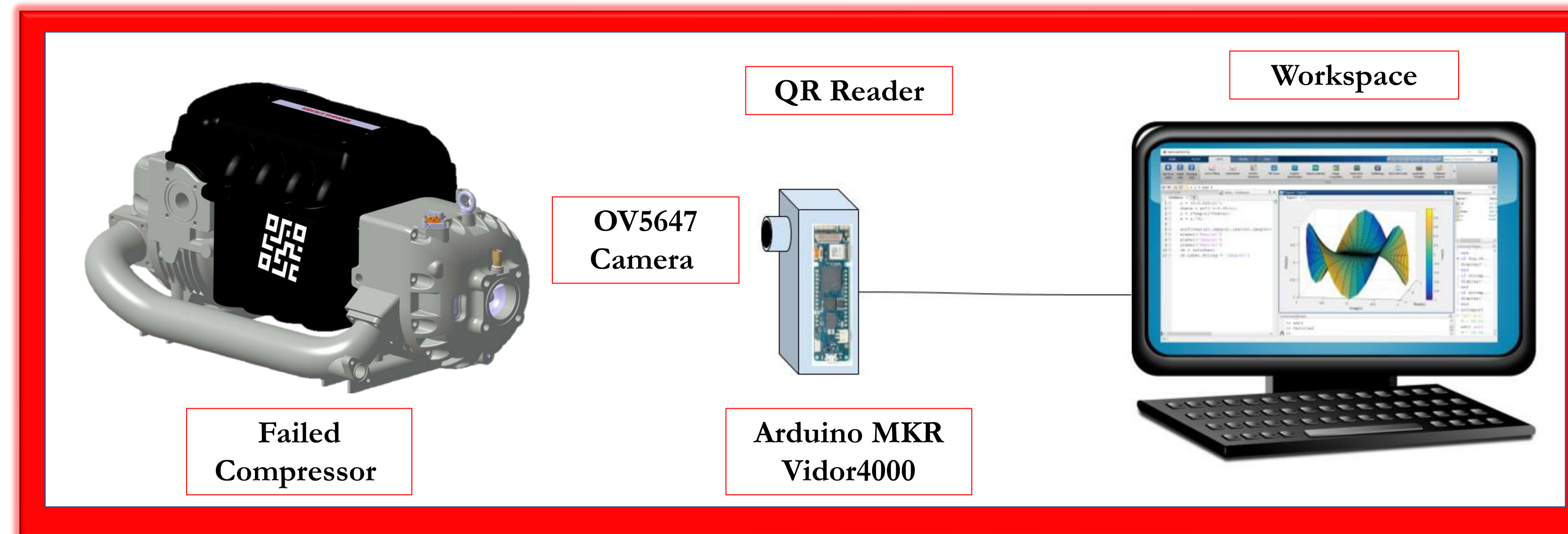
A system that coordinates existing record keeping subsystems to organize aftermarket production, preventing aftermarket parts from entering new production.

Background

Danfoss is revamping their aftermarket repair program.



Final Concept: Part Replacement System with QR Reader



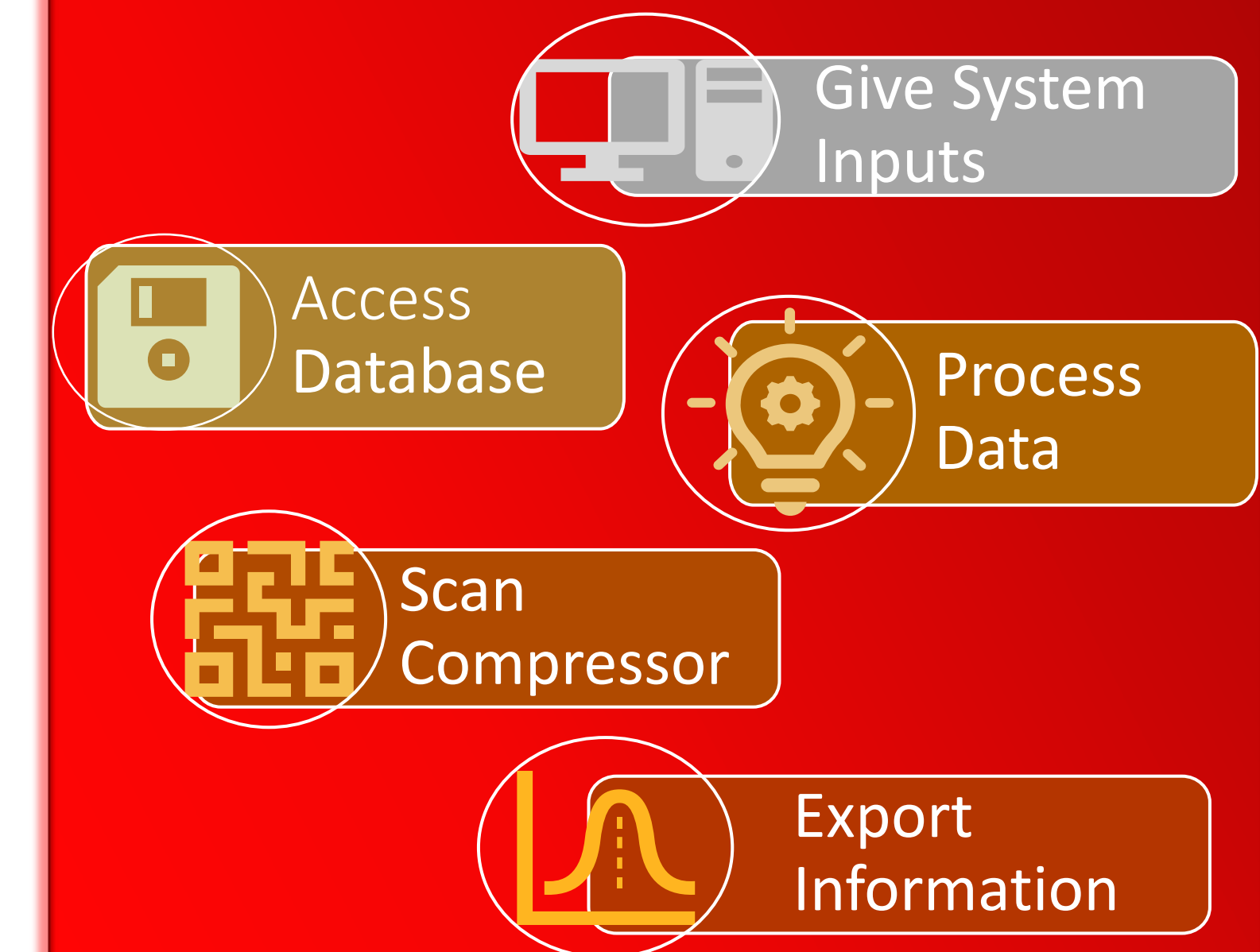
Key Goals

- Handled by technicians and operators with little to no prior knowledge of compressor parts
- Automates the planning process to reduce human error
- Accounts for obsolete part replacements
- Organizes a list of replacement parts and prints a B.O.M.
- Streamlines the aftermarket repair process

System Design

- QR codes are designed to be adaptable to the changing conditions of the compressors, centralizing information about compressor maintenance and repair on the QR code.
- QR reader consists of a camera and Arduino to process the QR code information and pass the information to the script.
- Script interprets information and creates an updated copy with each scan of the processed data.

Functions

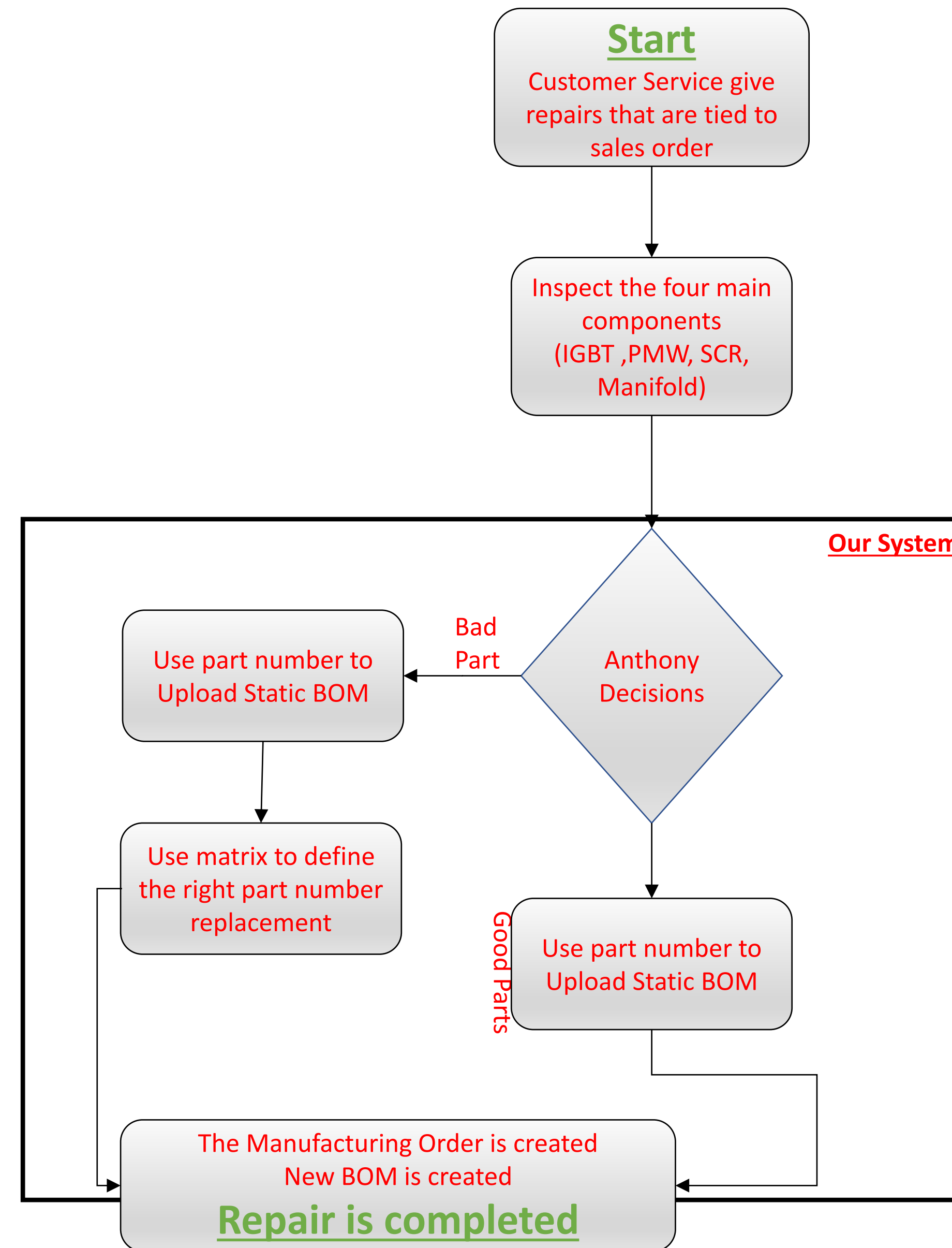


- System inputs are generated in an excel file by Danfoss's Investigation Team.
- Script reformats inputs into a database and writes information to a QR code
- Script processes the data and gathers statistical and part failure data.
- QR code is placed on compressor for record keeping and is scanned when information is needed.
- QR codes takes the user to a link where all relevant part replacement and maintenance information is located.

Future Work

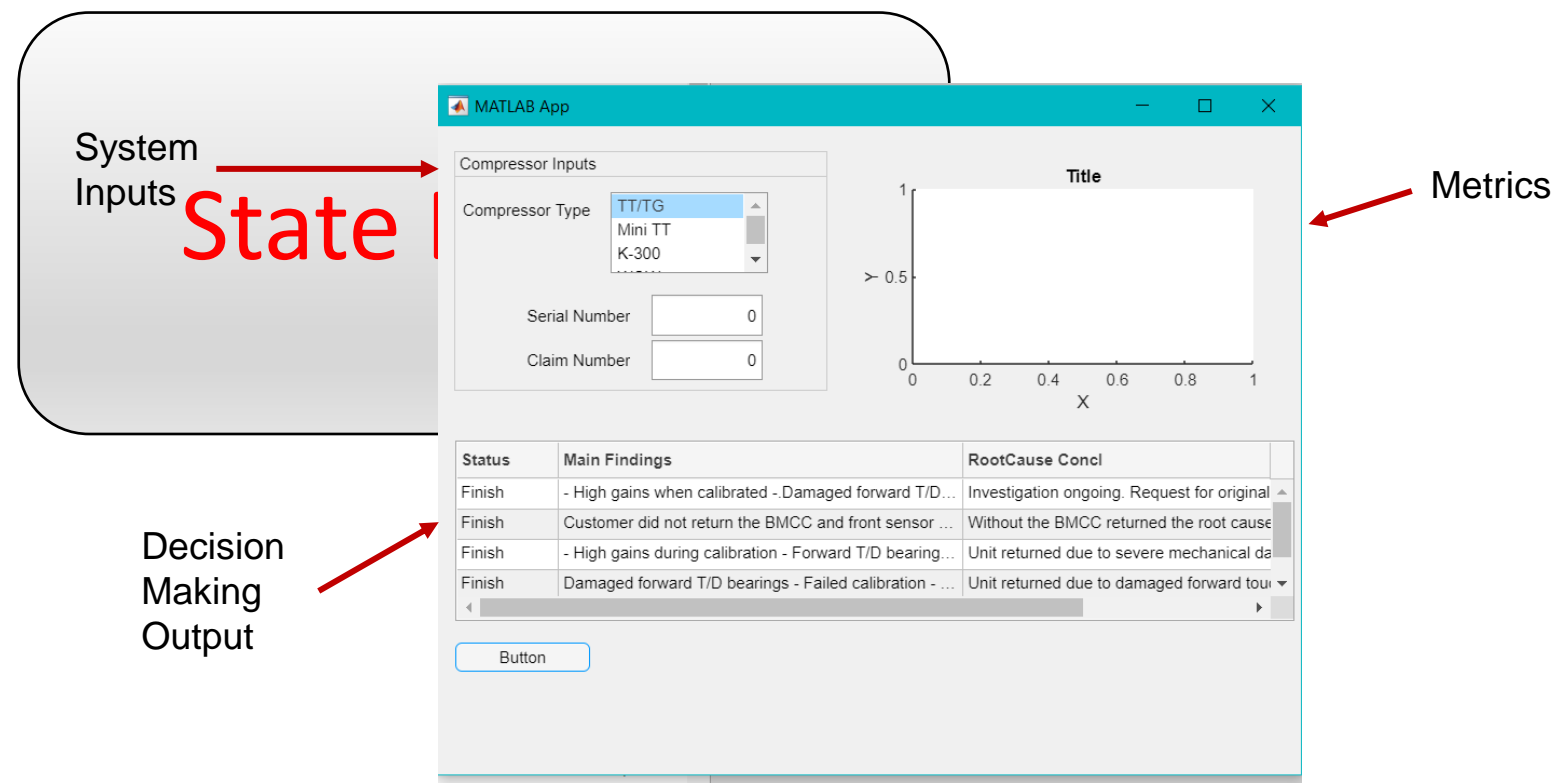
- Build QR scanner system
- Build script and database
- Test and validate on aftermarket production line

State Diagram



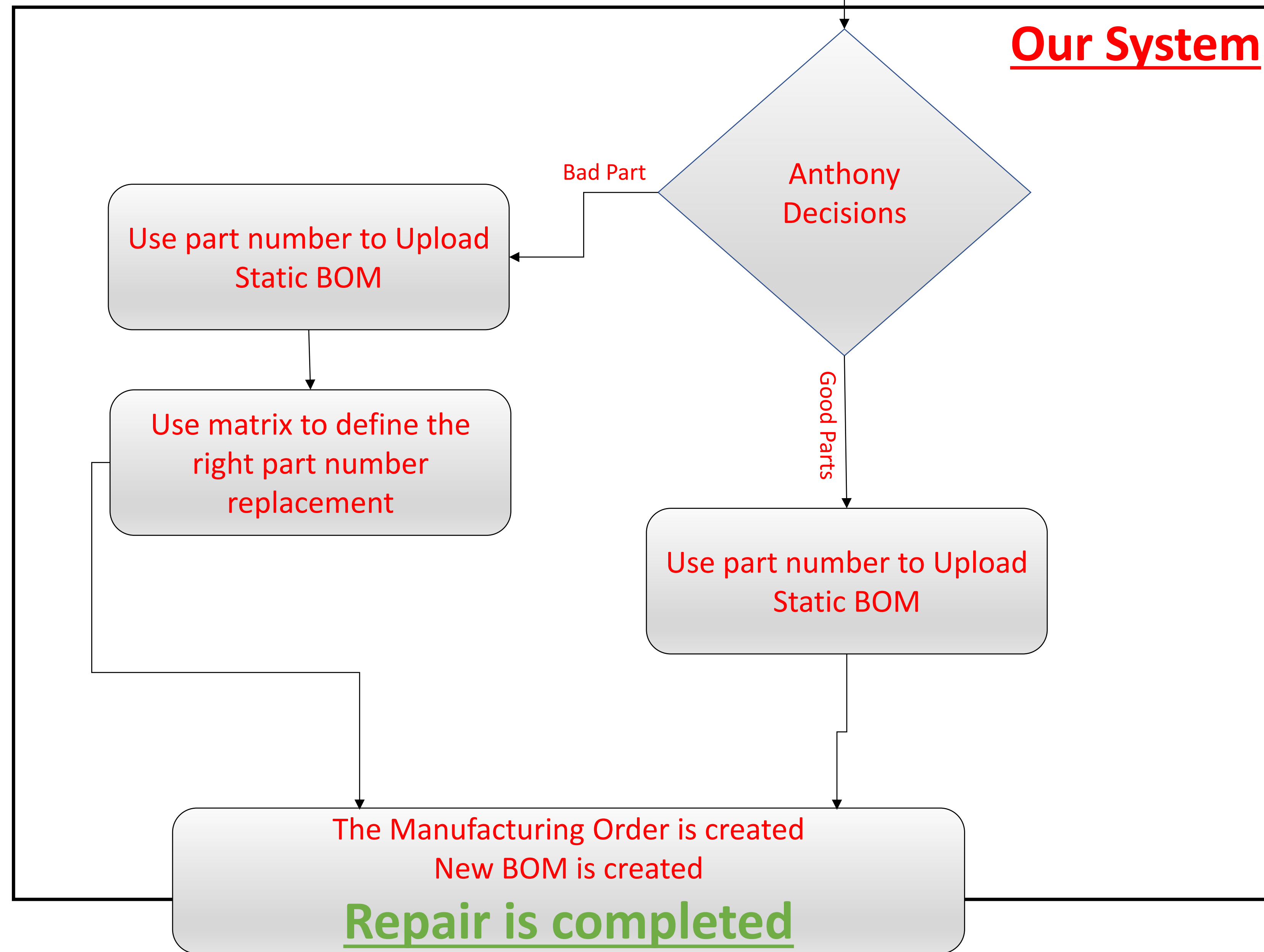
We may not need to add the step with “Anthony Decisions”. I think we should focus mainly on the functionality of our script and the decisions it makes

Part Number
And Serial Number



Start
Customer Service give repairs that are tied to sales order

Inspect the four main components (IGBT ,PMW, SCR, Manifold)



We may not need to add the step with “Anthony Decisions”. I think we should focus mainly on the functionality of our script and the decisions it makes **Part Number And Serial Number**