Title of the Research Proposal/Project

To study the effects of lean production system on the materials and manufacturing of automotive components

Lean (Lean manufacturing or Lean operations) is a concept derived from the Toyota Production System (TPS) developed by Japanese quality pioneer Taiichi Ohno in the Toyota Motor Corporation. The term “Lean” was coined by Jim Womack, Daniel Jones, and Daniel Roos, who introduced the TPS concept to the Westerners in their book “The Machine That Changed the World”. Lean is a generic version of TPS that centers on waste elimination.

The elimination of waste is the basic principle of Just in Time (JIT) and lean manufacturing as a whole. Through waste elimination, the risks of production stoppage while implementing JIT will be greatly reduced. The seven types of waste are: defect waste, overproduction waste, motion waste, transportation waste, waiting time, inventory waste and over-processing waste.

The elimination of waste must be seen as a continuous improvement activity. The employees’ involvement and cooperation is essential in eliminating waste throughout the value chain.

Established in the year 1985, ABC Sdn Bhd is now Malaysia leading auto parts manufacturer, with total employees of 613 head counts and production capacity of 18,000 vehicle seats per month. The manufacturing processes in seat making include wire and pipe cutting, wire and pipe bending, wire and pipe forming, gas metal arc welding and spot welding in general.

The research project aims to study the implementation of Toyota Production System (TPS) or Lean Manufacturing at ABC Sdn. Bhd. The current production system is suffering from inefficiency and ineffectiveness due to poor process and manpower planning, no standardization on process flow, large lot size and WIP stock, high set-up time, imbalance line capacity and poor communication between each sections of processes. All the above problems are all rooted down to one root cause – incompetence of the production system control.

Thus, under the influence of the Japanese manufacturing system - Lean Production System, the objective of this research project is to improve the current production system to be another step closer to Lean Production System.