

## 1. Big Data Traffic Lights Executive Summary

Since the 1970s, the era of Electronic Information Industry 3.0, computers have been applied in the numerical control of machine manufacturing. The CNC visual information control system can display important information on the screen that gives timely feedback of the status of the production and equipment condition. This resembles the traffic light signal system which displays the equipment running status - Green is normal, yellow is risky, and red is failure. The operator can repair the failed equipment and solve the problem rapidly according to the feedback from the traffic light signal system. This rapid response mechanism offered by the traffic light system promotes quick judgment and efficient correction in manufacturing operations field. Similarly, this traffic light system can be integrated with big data to deploy its rapid reaction and high efficiency re-correction characteristics into the current Industry 4.0 era and make use of the information physics system to solve the operations and management issues.

In the operations and production management process, the operation period will be divided into multiple time slots where the corresponding data from each time slot will be collected and the operation status will be displayed by the traffic light management system (TLMS). The data will be collected and uploaded into the database for future reference. The traffic light system will make use of the big data platform to integrate and analyze the performance level of operations in certain periods and deliver feedback to the management team to help them make rapid reaction and re-correction so as to achieve the improvement of productivity, quality, efficiency and the control of the production cost in the organization. This report is going to introduce the innovative application of the traffic light system associated with the big data platform to improve the operation efficiency.