

Training Programme for Industry 4.0 implementation in machine shops was attended  
22/01/2020 at Marshall Industry 4.0 Center, IMT Manesar, Gurugram.

The Program focused on the TWO PILLARS of Industry 4.0 i.e. Universal Machine Monitoring (UMM) and Predictive Maintenance (PdM) •

To generate higher competitiveness & profits, the IIOT or Industry 4.0 movement has the objective of solving the problems like Low OEE of machines caused by frequent breakdowns & inefficient use.

SmartFAC – Universal is a cloud based universal machine monitoring technology that gives users the ability to track OEE in real-time. For machine shops, installing wireless GSM Web-enabled SmartFAC-Universal is the first step in Industry 4.0 implementation. It can be installed on any machine (CNC or non-CNC) of any make or age, including presses, bandsaws, injection moulding, etc.

SmartFAC is a cloud-based technology and is very easily accessible from anywhere around the world. The basic working principle comprises

- Data Extraction from M/c and accessories
- Transmission of Data to Cloud
- Cloud-based Data Analytics
- Time-bound instructions to concerned persons.

#### Autonomous Alerts & Notifications

Manufacturers can set limits/thresholds for various parameters being measured and SmartFAC-Universal sends SMS or Email alerts to designated managers if any limit is crossed. This ensures that performance of machines is being monitored 24x7 without any human beings to watch them or gather data.

#### Detailed Production Analysis

The driver of Data Driven Manufacturing is Data Analysis that gives insights for improvement. SmartFAC-Universal provides in depth information of each connected machine as desired, i.e., hourly, shift wise, or over a period of days/weeks. Information includes Availability, Performance, OEE (Overall Equipment Efficiency), Utilization and composition of down time. This provides basis for initiating actions which lead to improvements.

SmartPredict module with vibration, temperature, flow & pressure sensors can be integrated with SmartFAC-Universal to monitor health & provide alerts.

The outcome of Workshop was that we as an Education institute can have more liaison with Marshall Industries for increasing employability of our students. The curriculum related to IIOT can be enhanced and demo of UMM/PdM can be incorporated in the curriculum of ME/Production branches. The marshal

industries has shown their willingness to assist GNDEC in ventures that can increase the knowledge and employability of our stakeholder



Dr. Amit Kamra



Mr. Amrinder Singh Pannu



Mr. Gulvir Singh



Mr. Gulraj Singh