**Subsystem Requirements:**

**NF== non functional requirement F== Functional Requirement**

PP&C:

* **NF** Order delivery: specified delivery dates and number of parts are met with minimal variation (ensure by keeping safety stock) == dependability
* **F** Production efficiency: OEE >= 90% overall
* **NF** Flexibility
* **F** standard working hours 2 shifts/day, 48 weeks/year

PFD:

* **F** maximum walking distance (x) m
* **NF** easy access to safety exits (not blocked by machines/ keep in mind the walking distance)
* **F** safety exits at least 0.7 m wide
* **F** product\_transit\_time/production\_time < layout\_eff % [throughput]

F&IM:

* **F** Regular and reliable raw material order patterns with a < 10% variation
* **F** Safety Stock: <5% of the yearly demand, not more than 5% of the ordered raw materials is unused
* **NF** Order delivery: specified delivery dates and number of parts are met with minimal variation (ensure by keeping safety stock) == dependability
* **NF** Minimize cost due to inventory and warehousing
* **F** Investments should reach the breakeven point in 5 years
* **F** Standard working days 250 per year , 174 hours/month
* **F** Use working wages in accordance with current CAO for metalworking company

QC&RM:

* **NF** Order delivery: specified delivery dates and number of parts are met with minimal variation (ensure by keeping safety stock) == dependability
* **F** Quality: Cpk > 1.5 (the ability of a process to produce output within specification limits)
* **F** Material Usage Efficiency: less than r% wasted product and material == (shaft less than 600 for agriculture part). Statistical analysis and rework allocation
* **F** horizontal displacement of boom tip <= 4mm
* **F** Material Usage Efficiency: less than 5% wasted product and material (QC&RM)
* **NF** failure modes are minimized (FMEA analysis) and (QC&RM) == quantify (numbers and units)
* **NF** ISO standards are met (QC&RM)