Functional Clock Requirements

F000 Every block can pass its internal information to central control for debugging

F001 Supervisory Station
   F001.00 Receive any error or failure alarms from robot
   F001.01 Send work tasks (keep track of clock and time)
   F001.02 Receive robot location
   F001.03 Interact with wireless communication
   F001.04 Request and receive management data
   F001.05 Keep track of completed tasks
   F001.06 Controls the start and stop time of a shift
   F001.07 User I/O

F002 Wired Communication
   F002.10 Communication from supervisory to each zone
   F002.11 Communication from zone to zone
   F002.12 Each node needs to be specially addressed
   F002.13 Able to communicate and bridge with wireless (Tx, Rx)

F003 Wireless Communication
   F003.20 Allow Tx, Rx between ceiling nodes to robots
   F003.21 Able to communicate and bridge with wired
   F003.22 Each node and robot needs to be specially addressable
   F003.23 Branch data with central control on each robot
   F003.24 For robot to robot communication, the steps for communication need to be as follows: robot – ceiling – robot

F004 Navigation
   F004.30 Accepts destination commands
   F004.31 Get position from wireless
   F004.32 Decide how to get to final location from current location
   F004.33 Give motor control requests for movement
   F004.34 Know map of mine

F005 Motor Control
   F005.40 Follow tape and steer accordingly
   F005.41 Take requests from navigation for major movements
   F005.42 Issue control movements specific to each motor
   F005.43 Panic Shutoff
   F005.44 Communicate with safety
   F005.45 Inform navigation of intersections, destination and completion of assigned tasks
   F005.46 Determines speed of motors
   F005.47 Informs power management of power usage