## Fixture Monitoring System

**Customer:**

**Harbor II / Mazak CNC**

**Many installations in UK, EU & USA**

### KEY VALUE PROPOSITION

*Measuring the pressure of hydraulic lines in automated CNC fixtures allows the machine to shut down if a drop in pressure is detected or the pressure drops below alarm levels. This provides an extra layer of machine safety monitoring.*

### MARKET ASSESSMENT

**Addressed market**

- CNC Machine tool manufacturers & operators
- Auto Pallet and Material Handling applications
- Fixture OEMs

**Value proposition**

- Reduces Product Loss through movement of loose workpiece
- Enhances the Safety of the system
- Protects against operator error, for example starting a cutting cycle without first applying the correct hydraulic pressure

### TECHNICAL ASSESSMENT

**Technical requirements for use case**

- Wireless Sensors send data to Local Gateways
- Pressure Sensors range from 0-2 bara to 0-400 barg

**Existing technology building blocks**

- Modified IWT Sensor design for FMS transmitter
- IoT Gateway re-purposed as a FMS receiver with display, alarm relays and cellular connection for Cloud storage

**Internal and external capabilities**

- Internal – Wireless Pressure transmitters, receivers and Cloud storage. FMS System knowledge and highly configurable PC based GUI.
- Internal – Communications including Modbus RTU

### KEY CHALLENGES

1. Obtaining Battery life required with 1s update rate
2. Space requirement for FMS pressure transmitter

### KEY OPPORTUNITIES

1. Global market for wireless FMS systems is estimated at £20M USD in 2019 growing to £23M USD in 2025.

### NEXT STEPS

1. Contact OEM Fixture manufacturers to build systems into the0r Fixtures


***Key highlights of the project***

- Follows on from successful implementation of an FMS for RR Aerospace.
- New custom wireless pressure transmitter designed and deployed in multiple locations