

Smart Sensors plus OEMs equals a PHM Paradigm Shift...

Ed Spence

Consultant and MEMS Accelerometer Evangelist

Smart Manufacturing PHM Panel Discussion

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Leveraging Disruptive MEMS Technology...

Solid state MEMS accelerometers are 'game changing' as performance achieves parity with PZT...

21kHz MEMS Accelerometers introduced April 2017

Triaxial low power, low noise MEMS Accelerometers introduced May 2017



MEMS ACCELEROMETERS PROVIDE LOW POWER VIBRATION MEASUREMENTS, ENABLING WIRELESS CONDITION MONITORING

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

ADXL356
ADXL357

LOW NOISE, HIGH FREQUENCY MEMS ACCELEROMETERS FOR CONDITION MONITORING

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

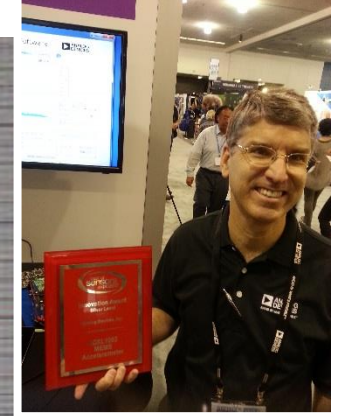
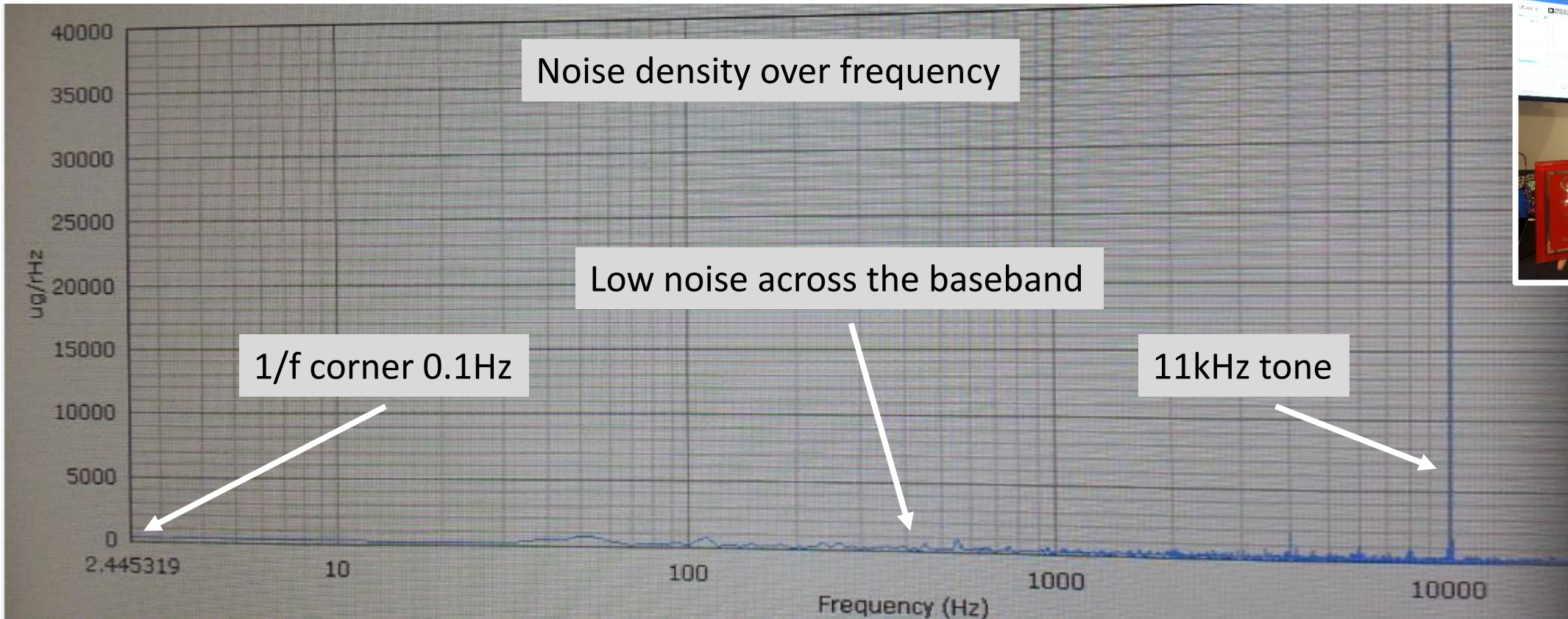
ADXL1001/
ADXL1002

CONDITION MONITORING

TIME

MEMS Accelerometer Spectral Response

(Innovation Award winner, Sensors Expo, San Jose, June 2017)



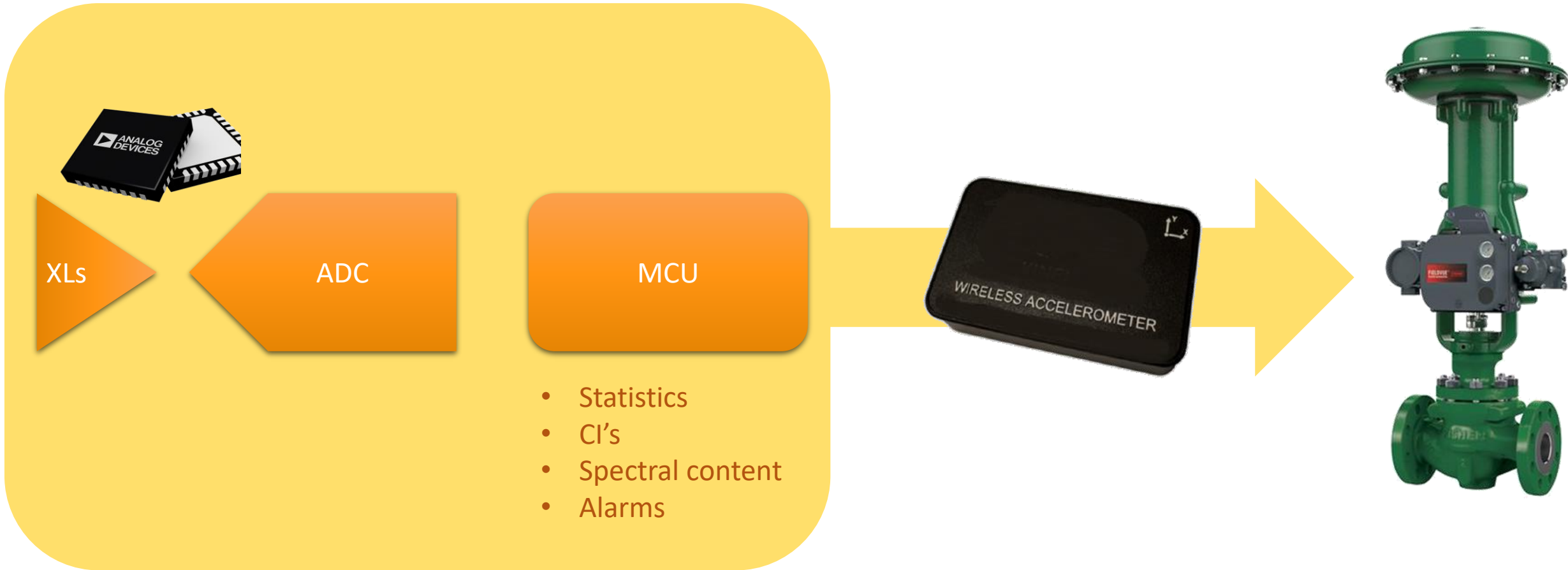
- **Single supply signal conditioning electronics**
 - Reduce industrial voltages
 - Easier to interface
- **Extends battery life**
- **Smaller form factors**
 - Dominated by battery size, antenna



Legacy → MEMS technology

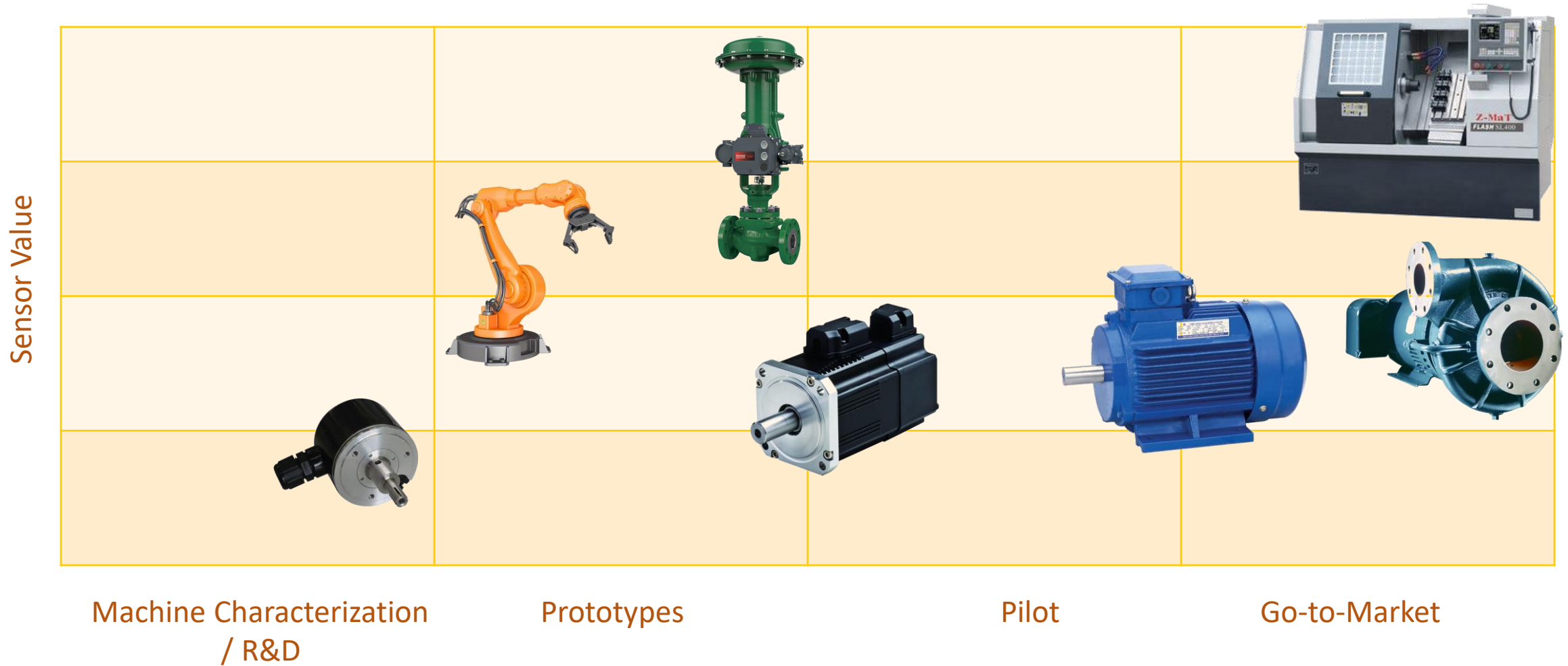
Embedded Smart Sensors

Enabled by Solid State Electronics



CBM Instrumented Industrial Component Pipeline...

OEM Capture of CBM Value with Embedded Vibration Sensors



Note: Images are for demonstration purposes, not necessarily representative of actual OEM Programs

CBM/ PdM Modalities

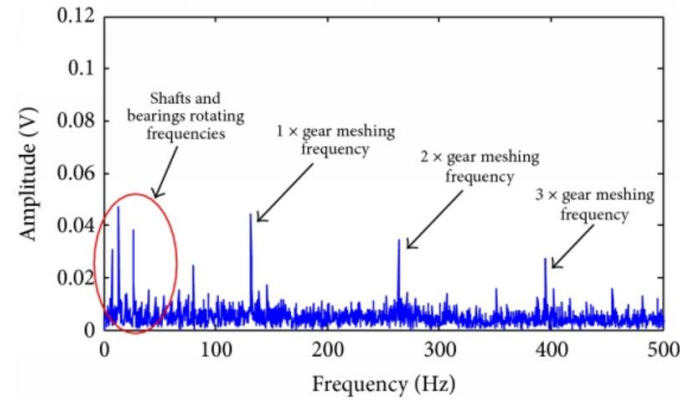
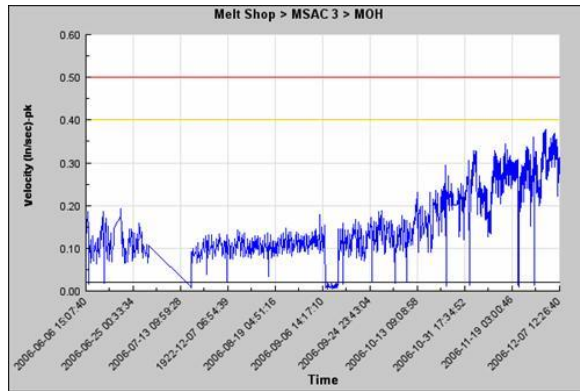
OEMs Begin Contribution...

Data Processing Complexity

PROGNOSTICS or PREDICTIVE MAINTENANCE



DIAGNOSIS



CONDITION MONITORING



Amount of Data / Modeling / Characterization (was Accelerometer Resolution / Frequency)

Thank you.

Contact information:

Ed Spence

ed.spence@mems4cbm.com

+1 (781) 439 1277