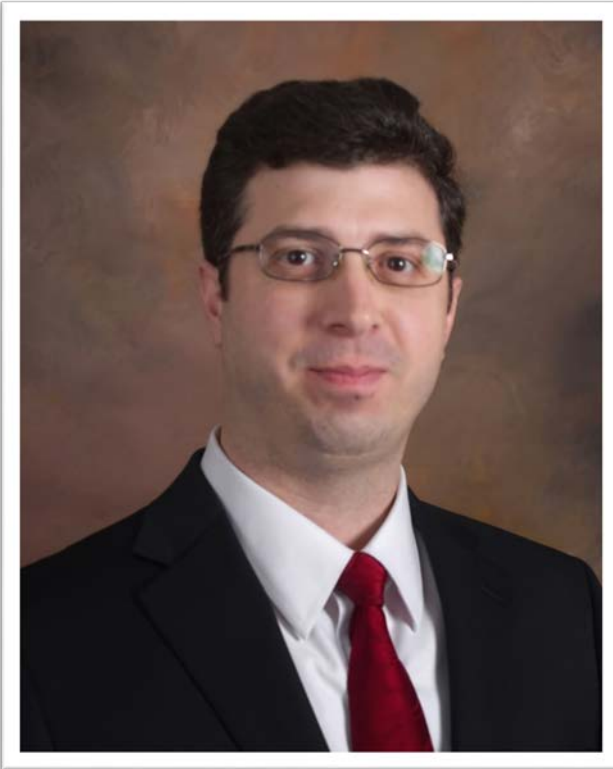


Dr. Radu Pavel – TechSolve, Inc.



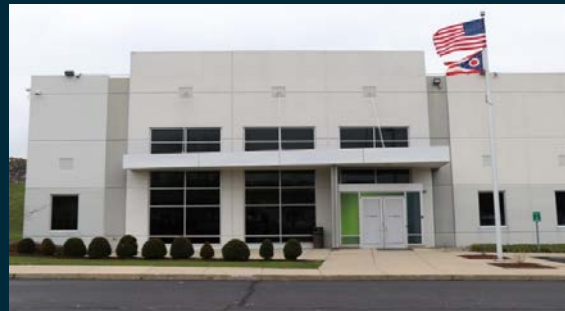
Dr. Radu Pavel is vice president, chief technology officer and chief engineer of TechSolve, Inc. He joined TechSolve in 2004 on a position of machining/grinding research engineer. Dr. Pavel has over 25 years of mechanical and manufacturing engineering experience developed in industry, research laboratories and universities from Europe and United States. He has a master of science and a PhD in mechanical engineering, and a PhD in manufacturing engineering. He has led multiple programs focused on accelerating the adoption of digital manufacturing technologies, including implementation of research and educational programs on Industry 4.0, such as Prognostics and Health Management, Cybersecurity, and the Industrial IoT. Dr. Pavel is participating in the development of standards for smart manufacturing and he is actively involved in collaborations with Manufacturing U.S.A. institutes.

TechSolve's Highlights

- Since 1982, TechSolve has been focused on manufacturing and its emerging technologies
- Privately owned, not-for-profit 501(c)(3)
- State and Federal Manufacturing Extension Partnership (MEP) Center
- Broad Network of Academia and Industry
- Fully instrumented Smart Manufacturing Innovation Lab

Smart Manufacturing Expertise

- Digital manufacturing
- Machine and process monitoring
- IIoT connectivity (MTConnect®)
- Advanced analytics
- Process modeling and simulation
- Smart machine technologies
- Predictive maintenance
- Automation, robotics
- Cybersecurity for IT & OT
- Additive manufacturing



Manufacturing Process Solutions

- Machinability Evaluation & Testing
- Manufacturing Process Development
- Problem Diagnosis & Resolution



IIoT Solutions

- MTConnect® Adapters
- Assessments & Installation
- Data Acquisition Solutions
- Protocol Translation Adapters
- Data Visualization



Business Advisory

- Process Optimization
- Growth Strategy



Cybersecurity

- Cybersecurity for IT & OT
- Plan of Action & Milestone Development
- Incident Response Planning



Data Collection & Reporting

'Shop Floor to Top Floor'

Engineering

Operations/Management



MTConnect[®]

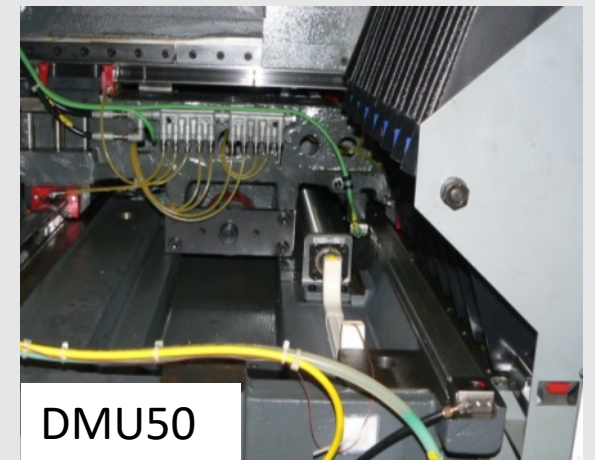
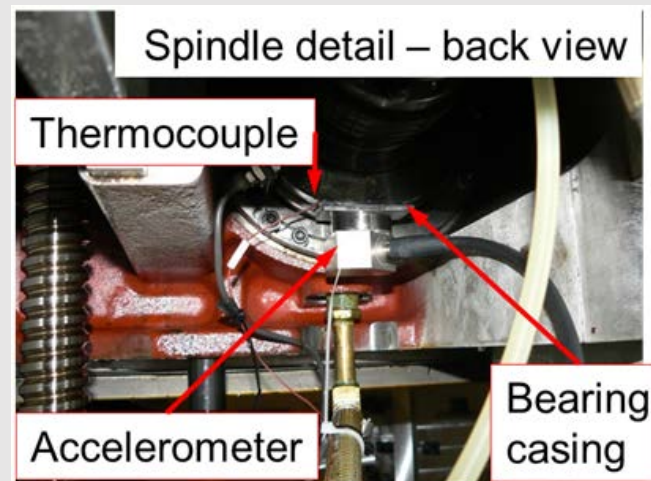
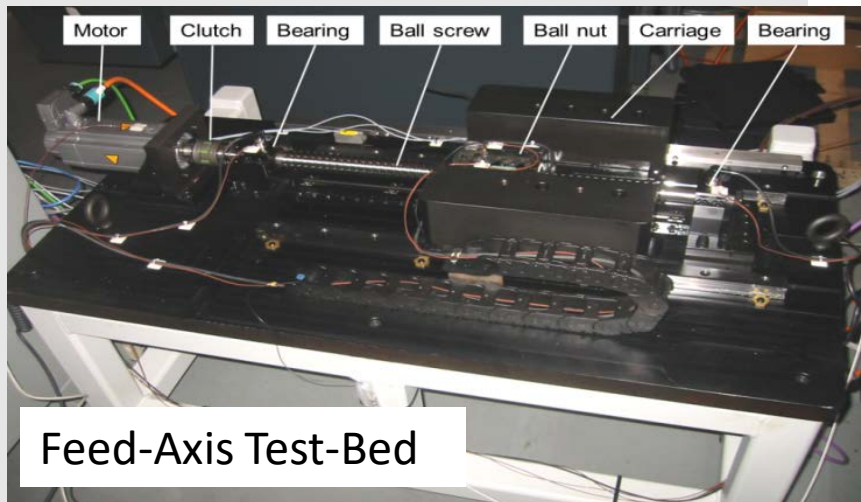
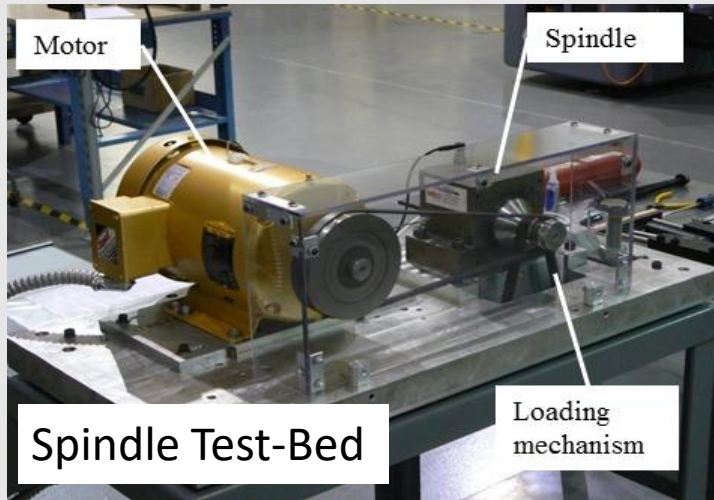
- 100s of standard terms
- Unlimited extension tags
- ANSI Standard ANSI/MTC1.4-2018
- Used on 50,000+ devices in 50+ countries
- 11 years since first release
- 1000's of software solutions
- Developed by 300+ machine builders, integrators, and end-users



Brand A	Brand B	MTConnect [®]
Exec Position Tool_number	EXECUTION:STATE POSITION:ABS TOOL:POT_NO	Execution Position Tool Number
Part_ct Path_feed_ovr Prm_name	COUNT:PART OVERRIDE:PATH_FEED PROGRAM:NAME	PartCount PathFeedrateOverride Program
Estop Rotary_speed Motion_mode	SAFETY:READY VELOCITY MOTION:MODE	EmergencyStop RotaryVelocity ControllerMode

Benefit: Developers & integrators can focus on manufacturing applications rather than translation.

PHM Test-Beds



Thank you !

Radu Pavel, Ph.D.

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