

The background of the slide is a deep space scene. It features a dark blue and black sky filled with numerous bright stars of varying colors, including blue, white, and yellow. A prominent feature is a large, reddish-brown planet, likely Mars, which occupies the right side of the frame. The planet's surface is detailed with craters and darker patches. In the upper center, a smaller, pale planet or moon is visible. The overall lighting is soft, highlighting the textures of the planets and the density of the star field.

**NASA/MARSHALL SPACE  
FLIGHT CENTER**

**JOINT COUNSELING SESSION**

***Streamline Automation***  
***Alton Reich, MS, PE***

**2026**

<b>COMPANY NAME:</b>	<b>Streamline Automation</b>	<b>ADDRESS:</b>	<b>3100 Fresh Way SW Huntsville, AL 35805</b>
<b>OWNER:</b>	Alton Reich	<b>CONTACT NAME:</b>	Zach Golden
<b>EMAIL:</b>	<a href="mailto:Zach.golden@streamlineautomation.biz">Zach.golden@streamlineautomation.biz</a>	<b>YEARS IN BUSINESS:</b>	24
<b>CAGE CODE:</b>	3FYU0	<b>DUNS NUMBER:</b>	CLW2B8WVV1D4
<b>WEB SITE:</b>	<a href="#">Streamline Automation</a>	<b>NAICS CODES:</b>	541330, 541715 and many more...

<b>TOTAL EMPLOYEES:</b>	<b>15-20</b>
<b>AVERAGE SALES:</b>	<b>\$7,000,000</b>

<b>CLASSIFICATIONS (select from list below):</b>	<b>Yes/No</b>
<b>SMALL BUSINESS</b>	Yes
<b>SMALL DISADVANTAGED BUSINESS</b>	No
<b>NATIVE AMERICAN-OWNED</b>	No
<b>ALASKAN NATIVE CORPORATION</b>	No
<b>WOMEN OWNED</b>	No
<b>ECONOMICALLY DISADVANTAGED WOMEN OWNED</b>	No
<b>VETERAN-OWNED</b>	No
<b>SERVICE DISABLED VETERAN OWNED</b>	No
<b>HUBZONE CERTIFIED</b>	No
<b>8(A) CERTIFIED</b>	No
<b>8(A) EXPIRATION DATE (if applicable)</b>	



# Streamline Automation

SA's engineering team can handle a variety of tasks, from product ideation to prototyping and testing, from structural design and analysis to ASME certification.

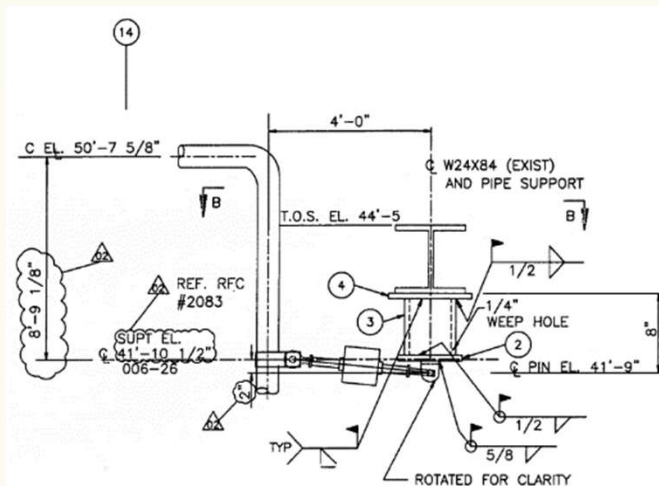
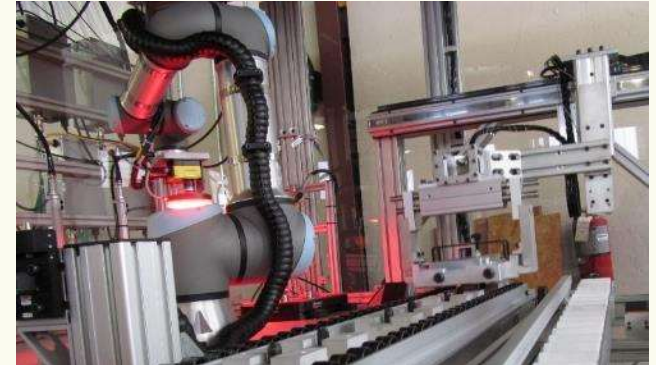
Presented by:  
**Alton Reich, PE, FASME**

Streamline Automation, LLC  
3100 Fresh Way SW  
Huntsville, AL 35805



# Streamline Automation, LLC

- Occupy 15,000 ft in two buildings in Chelsea Industrial Park in Huntsville, AL
- Fully equipped wet chemistry labs for propellant and nanomaterial synthesis
- Office and workshop space for:
  - Custom machining and fabrication
  - Prototyping and production projects
  - System fabrication, assembly and testing
- ISO9001-2015 certified

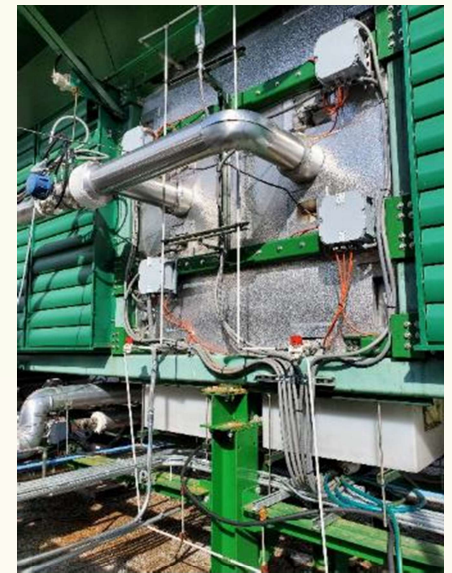
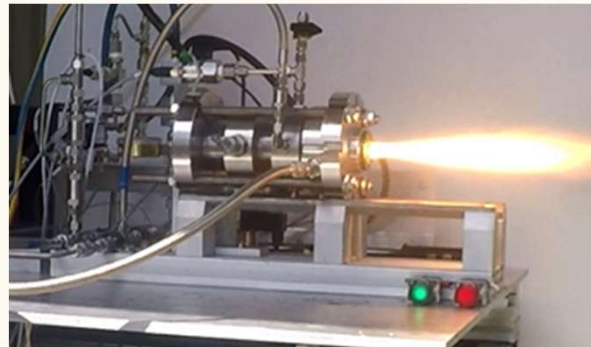


- Expertise in Power and Process:
  - System design
  - Piping design and stress analysis
  - Structural design and analysis



# Streamline Automation, LLC

- Specialized capabilities
  - Computational Fluid Dynamics (CFD), Finite Element Analysis (FEA), and Fluid Structure Interaction (FSI) analysis
  - ASME Section III and VIII component qualification
  - Rocket propellant and propulsion system design, fabrication and testing
  - Machine learning and model-based data acquisition
  - Quantum processor development
- Automated system design and manufacturing
  - Integrated assembly and inspection systems
  - Fixturing and manufacturing aids
  - Thrust measurement test stands
  - Test lifting and handling equipment

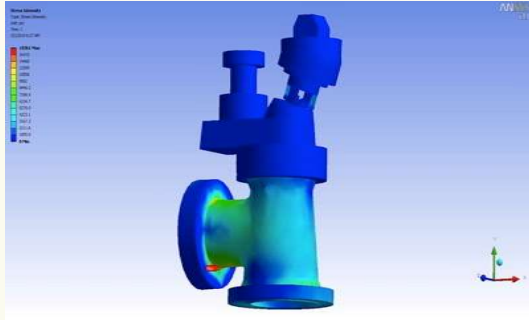


# Supporting the Development of Small Modular Nuclear Reactors

- Currently supporting the design efforts for 3 SMR systems that use different underlying reactor technology
- In-core CFD analysis for light water and sodium cooled SMRs
- Structural and seismic analysis for reactor and other structures using classical and finite element analysis
- Balance of plant design, analysis, and qualification for a high temperature, gas cooled reactor
- In discussions to apply our industrial automation expertise to manufacturing SMRs and advanced reactor fuel

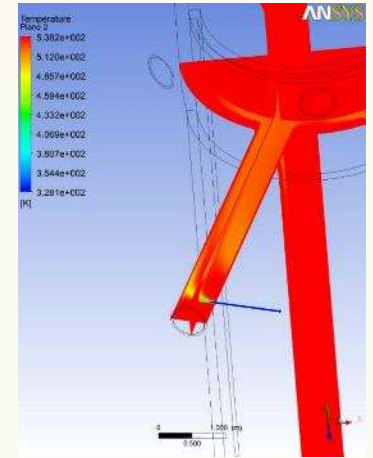


## Analysis for Nuclear Power Applications



ASME Section III Class 1 Steam Relief Valve Qualification Including FEA for Seismic Loads and Fatigue Analysis

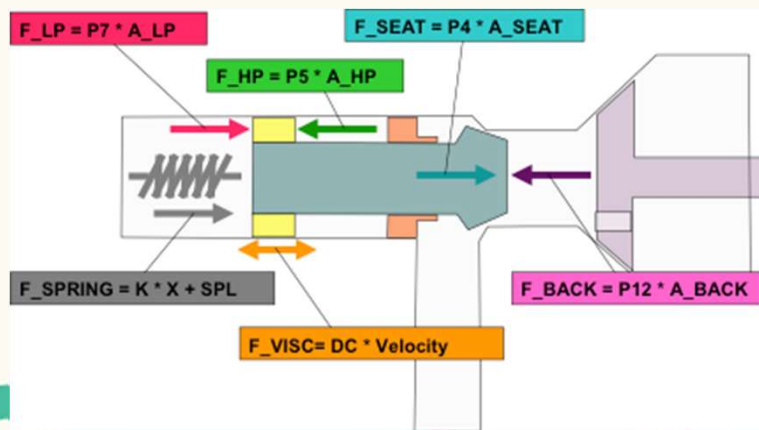
Transient Flow and Thermal Analysis of an Armenian VVER-440 Reactor Vessel for Thermal Shock



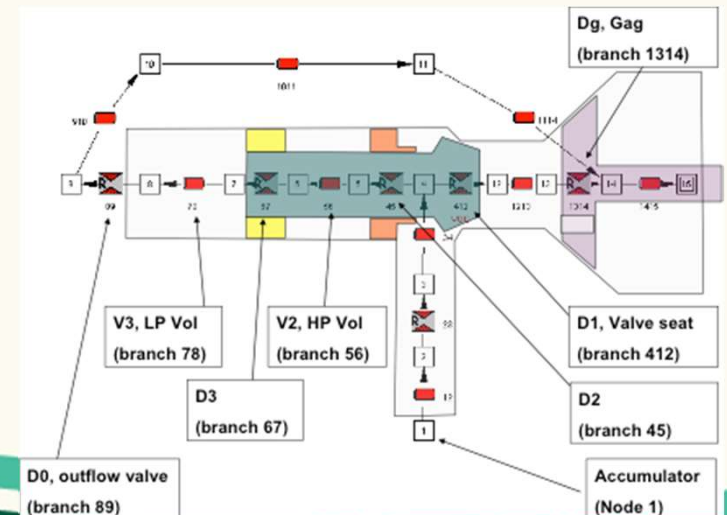
## CFD and Dynamic Model of a Steam Relief Valve

- Performed as a failure mode analysis after damage was noted during post-testing inspection
- CFD -> Dynamic -> Stress analysis

Coupled Dynamic Motion Model



Transient 1D CFD Model



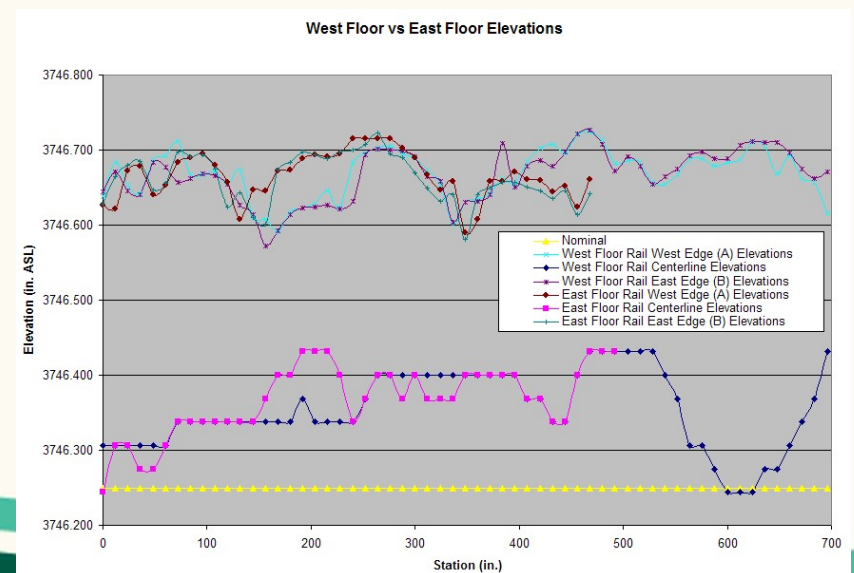


# Root Cause Analysis and Recommendation Development – TEF Shield Doors



- A pair of 70-ton shield doors were installed at the DOE's Tritium Extraction Facility (TEF) and suffered from rapid, premature wear of the rails
- The doors were supported by a main, load bearing rail at the bottom, an “outrigger” at the bottom to provide seismic stability, and a guide rail at the top
- The installation was not performed in accordance with the specified tolerances

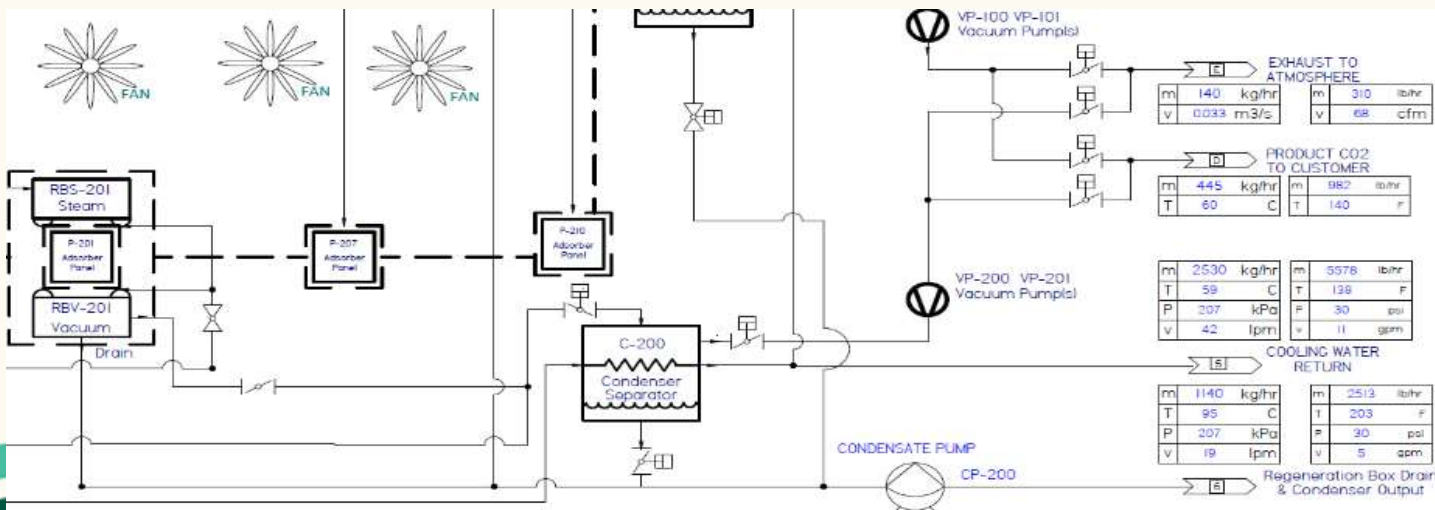
Lower rail top surface elevations along the length of the rail. The yellow line is the design elevation.



## Design of a CO2 Capture System

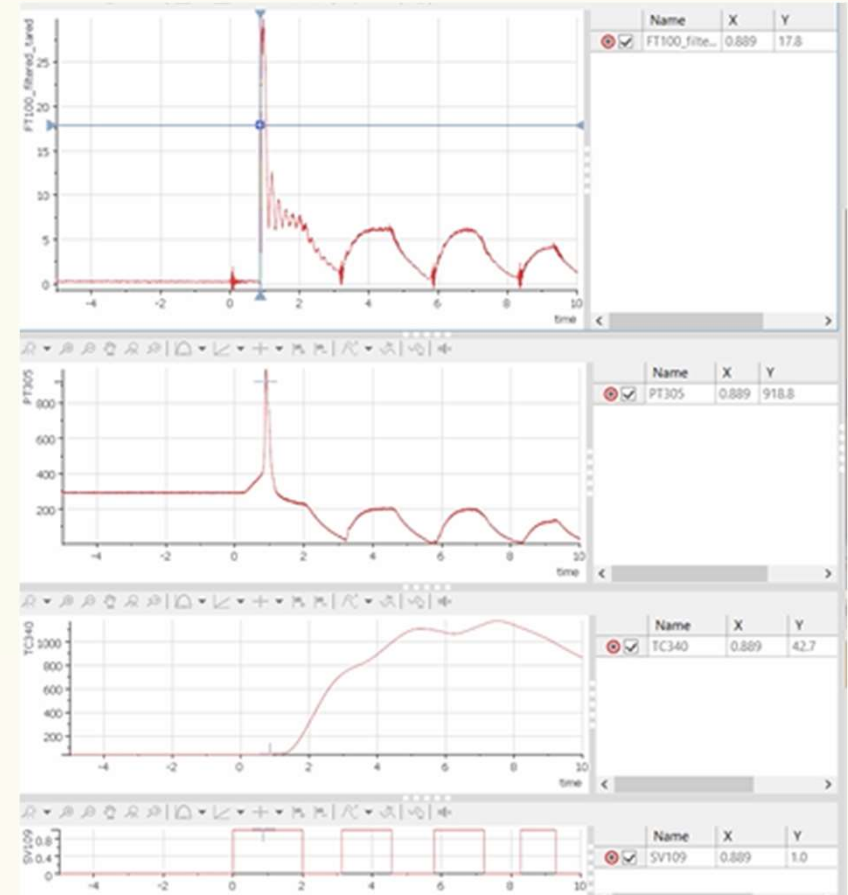
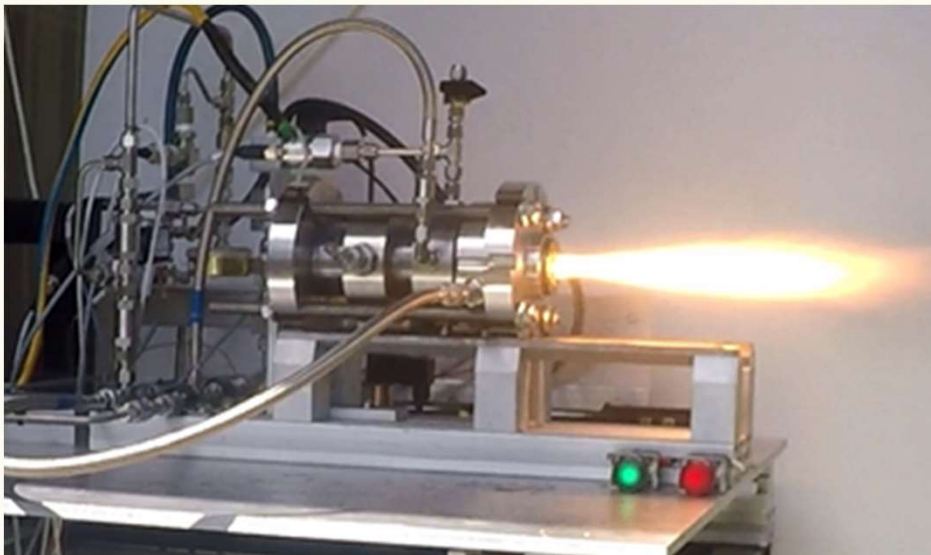


- Packaged in 40' ISO form factor containers
- Designed, assembled, and tested
- Includes gas fired boiler and generators



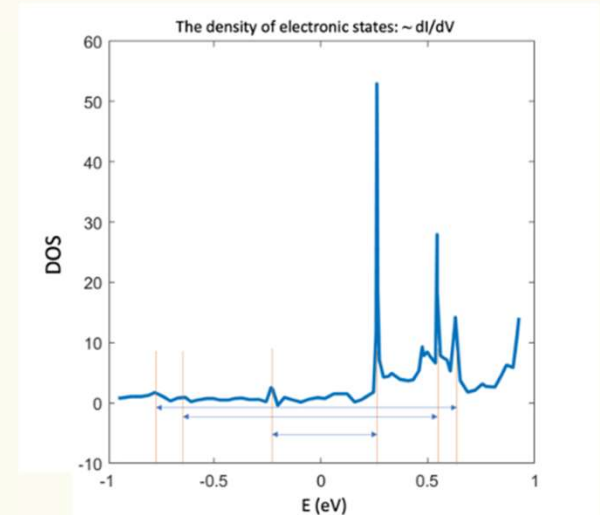
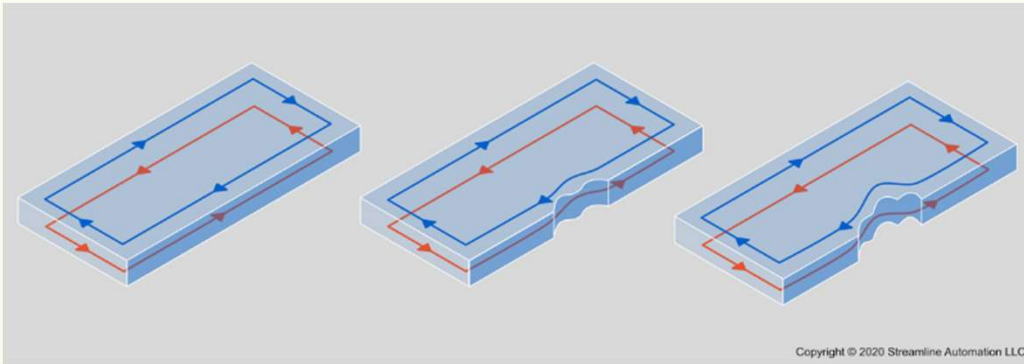
## Hybrid Propulsion Systems

- Air breathing and convention hybrid propulsion systems
- Energetic polymer fuel with a throttleable oxidizer
- Suitable for hypersonic applications
- Pulsed operation for divert and attitude control systems

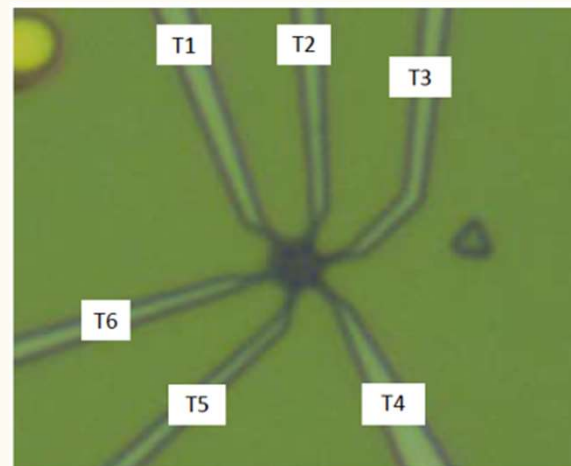


## Quantum Processor Development

- Supported by US Air Force, SOCOM, and NASA
- Designed for edge computing applications
- Based on topological insulators

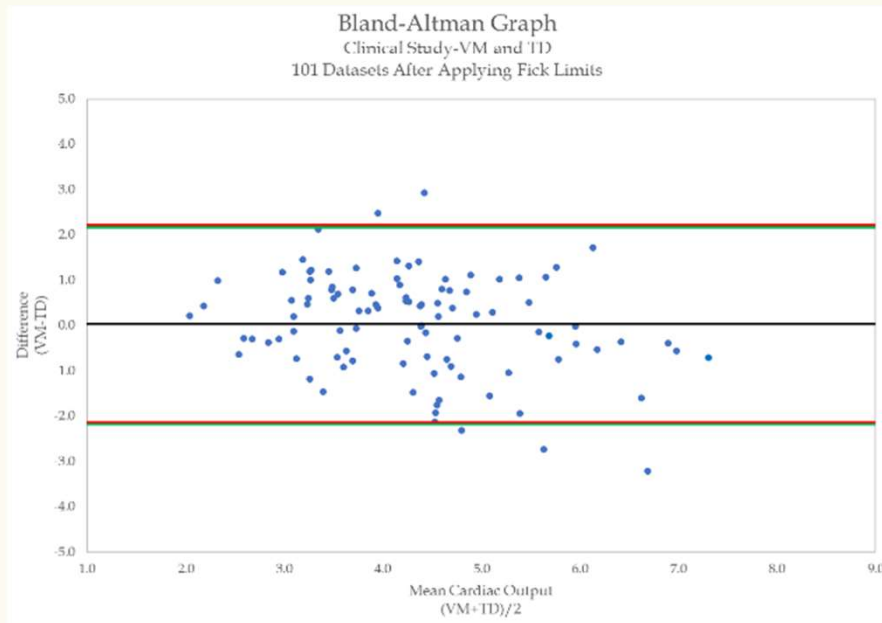
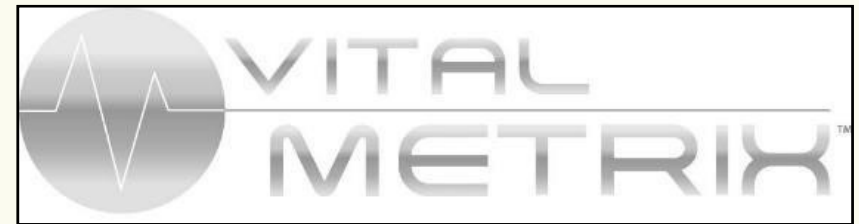


Topological insulators are highly conducting along their edges and insulating at their core.



## AI/ML Model Based Data Acquisition

- Noninvasive measurement of cardiac output (blood flow pumped by the heart)
- Uses a mathematical model of the cardiovascular system and noninvasive measurement devices
- Spun off from SA in 2015



### VM-Thermodilution Performance:

- Bias is 0.04 L/min, Standard Deviation is 1.10 L/min
- 95% Limits of Agreement are -2.14 to 2.22 L/min
- N=101



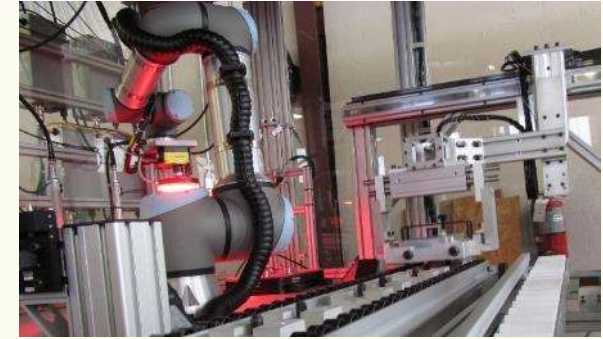
## Robotic Systems Configurations

### The Right Tool for the Job



Robots working with robots – 6-axis robot  
[SA design for TE Connectivity]

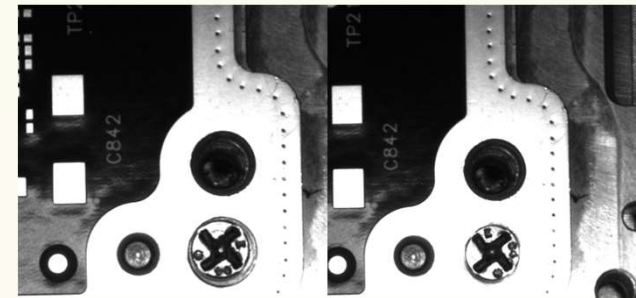
- 6- axis robots manipulate parts in multiple planes or through complex angles
- Collaborative robots have safety features that enable them to be used near humans



Slide mechanisms allow for pick and place to move parts. Can be mounted to a slide.  
[SA design for Sanmina]



- Jigging and fixturing is important – parts placed in a consistent location and orientation, allow robot to operate faster

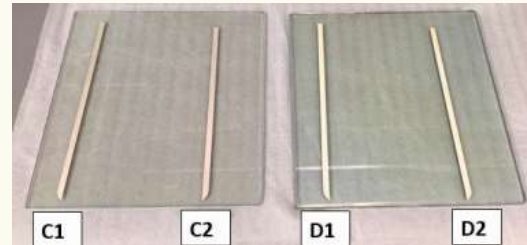
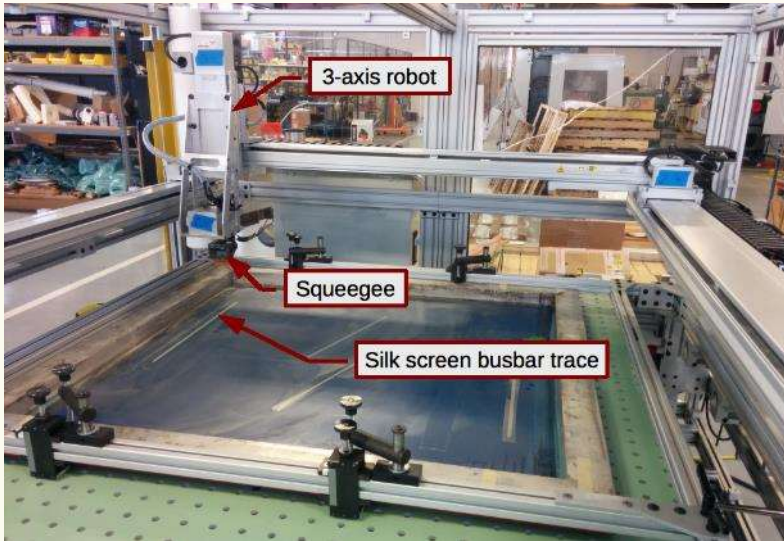


[SA design for Sanmina – Stormbreaker/SDB-II]

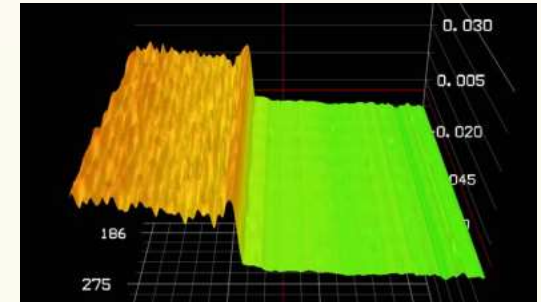
3-axis robot. Overhead camera (not shown) and vision system guide robot to parts to be picked up.  
[SA design for Machine & Hydraulics, Inc.]



# Automated Aircraft Window Busbar Screen Printer



Busbar on window glass

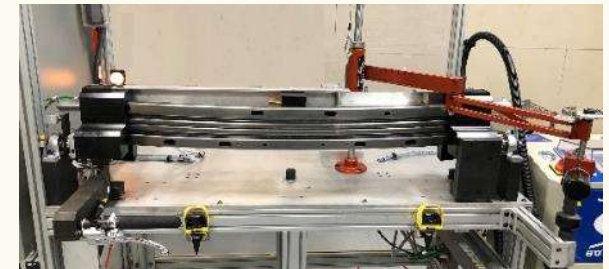


Non-contact thickness profile showing uniformity

[SA design for PPG Aerospace]

# Rivnut Installation Station with Error Checking

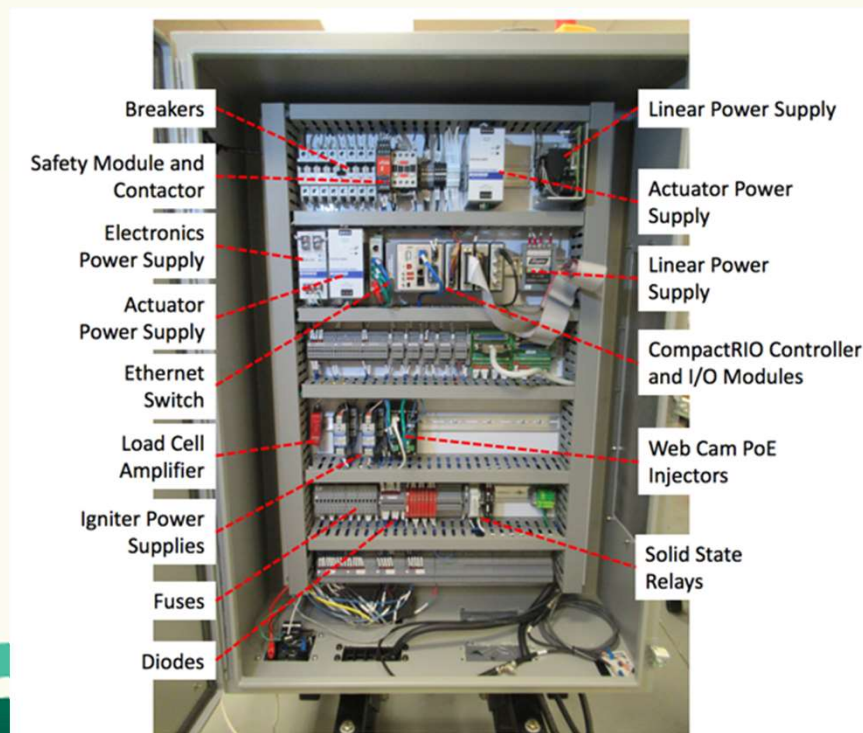
- Part is clamped in a consistent position for each operation
  - Real time verification that each rivnut is installed properly
    - Part is not released until all operations are complete
- [SA design for Shape Corp.]



## Test Stands

- Support for all instrumentation necessary for monopropellant, bipropellant, solid, and hybrid rocket motor testing, including
  - Thrust measurement (with an option for multi-axis measurement)
  - Supply and motor pressure measurement
  - Supply and motor temperature measurement.

- Data acquisition and control
- NEMA 4X enclosure mounts directly to the test stand
- Generates synchronized test data and video



[SA design for NeoSpace]



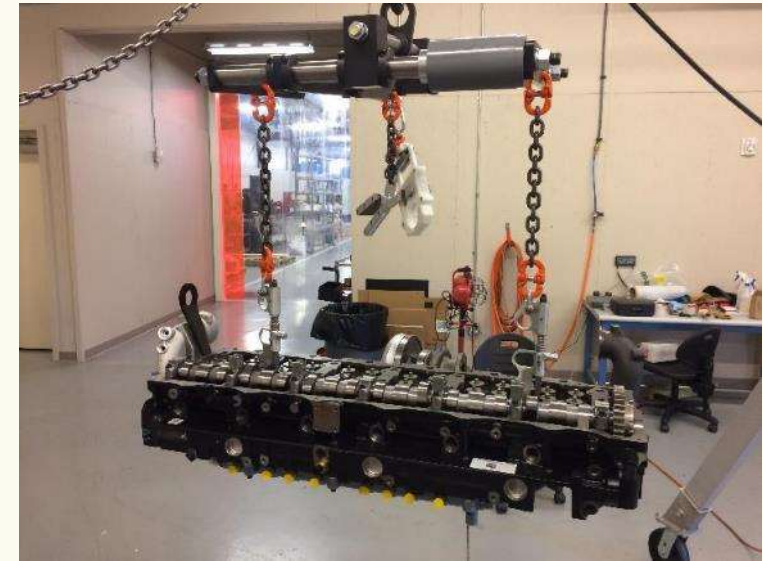


## Lifting / Handling Equipment



Navistar Transmission Lift Tool

- Used to load ~60 lb. lathe tool for engine block machining
- The unusual shape is driven by location of a row of building columns near lathes



Navistar Diesel Engine Head Lift Tool



# Custom Part Design and Fabrication

- Design to specification and build to print parts





# STREAMLINE AUTOMATION

3100 Fresh Way SW  
Huntsville, AL 35805

[StreamlineAutomation.biz](http://StreamlineAutomation.biz)

Streamline  
Automation LLC

## Company Information:

**ISO-9001:** 2015 Certified

**DUNS:** 124289294

**CAGE:** 3FYU0

**SAM UEI:** CLW2B8WVV1D4  
Small Business

Streamline Automation, a certified small business, with over 140 contracts performed for the federal government in Industrial Automation, Engineering, Design & Build and Research & Development. Streamline has successfully provided solutions and solved problems for the DOD, DOE, NASA, and the NSF along with Boeing, Lockheed Martin, Zachry Nuclear and Curtis-Wright in the private sector.

Streamline offers Engineering Services in Nuclear Power, Power Plant Engineering, Process Engineering, Artificial Intelligence, Finite Element Analysis, Computational Fluid Dynamics, Rocket Propulsion with our rocket engine test stands and production of solid, liquid, and gelled propellants onsite at our 15,000 sq ft facility.

Our Automation Solutions make space and manpower more efficient, increase production, and achieve 100% quality inspection. We provide custom Automated Solutions that simultaneously Inspect as they Assemble and aid with Ergonomics and Warehouse Automation.

### Primary Point of Contact:

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### NAICS Codes:

541330	Engineering Services
541380	Testing Laboratories and Services
541420	Industrial Design Services
541511	Custom Computer Programming Services
541512	Computer Systems Design Services
541519	Other Computer Related Services
541614	Consulting Services
541690	Other Scientific and Technical Consulting
541714	R&D in Biotechnology
541715	R&D In Physical, Engineering & Life Sciences
541713	R&D In Nanotechnology
238990	Other Specialty Trade Contractors
238290	Other Building Equipment Contractors
332710	Machine Shops
332911	Industrial Valve Manufacturing
333922	Conveyor and Equipment Manufacturing
335314	Relay and Industrial Control Manufacturing
336415	Guided Missile Propulsion

## Core Competencies:

- Nuclear Engineering
- Process Engineering
- Power Plant Engineering
- Nuclear Power
- Computational Fluid Dynamics
- Finite Element Analysis
- Modular Reactor Design
- Custom Automated Solutions
- 100% Inspection Systems
- Warehouse Automation
- Ergonomic Solutions
- Design and Build
- Mechanical, Electrical Instruments and Controls
- Quantum Computing
- AI Drones
- Gelled Liquid Rocket Propellants
- Rocket Propulsion
- Rocket Engine Test Stands



Principle Point(s) of Contact

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<b>Sam Gallagher</b>	Business Development	(561) 872-2688	<a href="mailto:Sam.Gallagher@streamlineautomation.biz">Sam.Gallagher@streamlineautomation.biz</a>