Engineered Systems Segment Overview
Parent Company Teledyne Technologies

- Headquartered in Thousand Oaks, California with locations across the globe
- $2.39B in 2014 revenues; over 9,600 employees
- Teledyne Technologies is a leading provider of sophisticated instrumentation, digital imaging products and software, aerospace and defense electronics, and engineered systems. For more information, visit Teledyne Technologies’ website at www.teledyne.com.
Teledyne Technologies – Four Segments – $2.39B 2014

Aerospace and Defense Electronics

Instrumentation

Digital Imaging

Engineered Systems

9/23/2015
Established in 1953 to support Dr. Wernher Von Braun’s Rocket Team
First full-service, high-technology firm in Huntsville, Alabama, and the first tenant of Cummings Research Park
Founded Cummings Research Park, the second-largest such park in the U.S., named for Teledyne Brown’s first Company President, Milton K. Cummings
Teledyne Brown has evolved from a defense and aerospace company service contractor to a full-spectrum engineering and advanced manufacturing company.
Approximately 1.4 million square feet in 8 locations in 5 states and the UK
Manufacturing square footage totaling 346,000, including 179,000 in Huntsville, Alabama
1,125 employees
To be a highly differentiated provider of technical services, manufactured products, and engineered systems to our customers in the aerospace, security, and energy markets.
**Engineered Systems Segment (ESS) – TBE**

Full-Spectrum Engineering and Advanced Manufacturing

- Engineered Systems – Concept definition and prototyping through product lifecycle
- Engineering Services – Support the customer at any phase of the lifecycle
- Hardware Manufacturing – Design and analysis through fabrication, assembly and test, production, and installation and operations
Our Value Proposition

- Differentiated, high-end offerings
  - Full-spectrum systems development capabilities

- Culture of excellence
  - Engineering and manufacturing discipline and structure
  - Relentless customer focus
  - Agility
  - Innovation and empowerment
  - Continuous improvement
Our Values define who we are and what we expect of one another. We know that actions yield results and that high standards in our work and interactions are intertwined. Accordingly, we stand firm and bound to the behaviors reflected in our Values. Ethics are the foundation of our Values. We are committed to ethical behavior, and we endeavor to avoid even the appearance of unethical behavior.

**Values**

- **Integrity and Ethics**
  - We act with the highest levels of integrity and ethics.
  - We are committed to an environment of trust and honesty.

- **Respect and Communications**
  - We treat each other with respect and communicate openly and honestly.
  - We are about each other, our families, and the communities in which we live.

- **Commitment and Accountability**
  - We are committed to the success of the Company, our customers, and our employees.
  - We are accountable for our actions.

- **Leadership and Teamwork**
  - We recognize and appreciate achievements by our people.
  - We all share the responsibilities of leadership and teamwork.
# Diverse Customer Base

<table>
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<tr>
<th>NORTHROP GRUMMAN</th>
<th>DEPARTMENT OF THE AIR FORCE</th>
<th>MISSILE DEFENSE AGENCY</th>
<th>NASA</th>
<th>BOEING</th>
<th>LOCKHEED MARTIN</th>
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<tbody>
<tr>
<td>SPAWAR</td>
<td>UNITED STATES SPECIFIC OPERATIONS COMMAND</td>
<td>DEPARTMENT OF THE ARMY</td>
<td>Raytheon</td>
<td>DEPARTMENT OF THE ARMY</td>
<td>COMMERCIAL NUCLEAR PLANTS</td>
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*The listed organizations are selected customers. The inclusion herein does not suggest any express or implied sponsorship or endorsement of TBE by the listed organizations.*
Capabilities and Thrust Areas

- Air and Missile Defense and Weapon Systems Engineering and Integration; Test Planning, Conduct, and Analysis
- SOA-Based Systems and Framework Solutions
- C5ISR Systems, Integration, and Visualization
- Hardware-in-the-Loop/Software-in-the-Loop Distributed Test, Evaluation, and Training
- Technology to System Product Development
- Software Development
  - Simulation Solutions and Architectures (Model-Driven)
  - Embedded and Systems Software
  - Human Computer Interactions
  - Verification and Validation
- Exercise, Wargame, and Experimentation Support

Engineered Systems, Software Solutions, Open Test Frameworks for Technology Applications in C5ISR and Integrated System Products
Capabilities and Thrust Areas

- Advanced Manufacturing of Space Flight Hardware, Ground Support Equipment, and Propulsion Subsystems
- Mission Planning and Control Center Operations
- Space Systems and Payload Training
- Payload/Cargo Integration
- Commercial Space Imaging

Engineered and Manufactured Flight Hardware, Experiments, and Ground Support Equipment

- Research and Technologies
- Systems Concept Development
- Systems Design and Analysis
- Manufacturing and Assembly
- Systems Integration and Test
- Management and Operations
- Sustainment and Recapitalization

Launch Vehicle Stage Adapter (LVSA)
Multi-User System for Earth Sensing (MUSES)
Ares I-X Roll Control System
Materials Science Research Rack (MSRR)
Payload Integration Hardware
Payload Operations Support
Robotic Lander
Ground Support/Handling Equipment
TBE Marine, Aviation, and Manufacturing

From Prototypes to Full-Rate Production

Capabilities

- Fully Equipped Machine Shop
- Fabrication
- Electrical/Electronic Assembly
- Class 100K and 300K Clean Rooms
- Hydro Test and Pipe Cleaning
- Weld Shop and Paint Booths
- NDE Inspection
- Laser Cutters

Design and Analysis

Component Fabrication

Assembly and Test

Production

Installation and Operations
Capabilities and Thrust Areas

- Nuclear Hardware Design/Manufacturing
- Nuclear Enrichment Service Module Manufacturing
- Oil and Gas Hardware Design/Manufacturing
- Design Integration and Analysis of Engineered Systems
- Radiological Laboratory Services
- Petro/Chem Plant Laboratory Operations
- CBRN Process System Design, Procure, Fabricate, Test, and Install

Engineered and Manufactured Systems for Nuclear Power Industry, Decontamination, Nuclear Waste Containment, Oil and Gas Industry, Chemical and Biological Systems Test, and Weapon System Demilitarization
TBE – Quality Focused

Certified and Compliant with Industry and Government Quality Standards

- AS9100C, Third-Party Registered (Aerospace)
- SEI CMMI Maturity Level 3
- NASA SSP-41173 Compliant
- NQA-1 Compliant – Nuclear
- 10CFR50 Appendix B Compliant
- ASME – Section III – Nuclear Vessels:
  - N Stamp, Nuclear Components, #N-2983
  - NPT Stamp, Nuclear Partials, #N-2984
  - NS Certificate, Nuclear Supports, #N-3874
- ASME – Section VIII – Pressure Vessels:
  - U Stamp, Pressure Vessels, #33,360
  - R Stamp, Repairs, #R-2240

AS9100C and ISO 9001:2008 Registered

Nadcap Certified
- Welding
- Non-Destructive Testing – RT, UT, PT

ASNT Level III Certified
Teledyne Brown Engineering has the only individual in the United States with 22 Level III certifications in Nondestructive Testing.
2009 Alabama Large Manufacturer of the Year

2010 and 2011 Boeing Gold Supplier Performance Excellence Award (Highest Possible)

Three-time recipient of prestigious James S. Cogswell Outstanding Industrial Security Achievement Award from Defense Security Service (DSS) (Highest Possible)

2010 Raytheon 5-Star Supplier Award (Highest Possible)
70 employees received Silver Snoopy Awards in last 15 years
Astronauts’ personal award for professional excellence – one of NASA’s highest honors

Won NASA’s George M. Low Award in Large Business/Service Category for 2006 and 2011
NASA’s highest honor for quality and excellence

MSFC’s highest honor for quality and excellence

NASA/MSFC’s 2013 Large Business Prime Contractor of the Year
Recognizes support of Small Business Subcontracting Programs under the Marshall Systems Development and Operations Support contract
Teledyne CML Composites

Capabilities

- Modern 60,000-sq.-ft. facility
- State-of-the-art manufacturing equipment
- Comprehensive composite manufacturing and test capabilities
- High-quality manufactured composite components and assemblies for aircraft structures and systems
- Lean Manufacturing Principles

Setting the Standard for Manufacturing Excellence

Nadcap Certification  Autoclaves  Two Clean Rooms  3- and 5-Axis Machining

Hawker Radome  A350 Leading Edge  A400M NACA Duct

Contract Review
Production Planning and Preparation
First-Off Production and NDT
First Article Inspection
Rate Production and Delivery

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Teledyne Energy Systems, Inc. (TESI)

Capabilities and Thrust Areas

- Advanced Power/Energy Solutions for Harsh Environments
- Electrical Power Generator Cooling via Hydrogen Gas
- Thermoelectric Energy Conversion
  - Heat to DC Power
- Electrochemical Energy Conversion
  - Fuel Cells, Batteries, Electrolysis
- Energy Systems Engineering, Integration, and Manufacturing

Titan™ HMXT H2 Generator
Sentinel™ ST – Stirling 1-kW Remote Military Power
UUV Fuel Cell System
MMRTG – 120 W

Titan™ H2Oasis Hydrogen Plant

Research and Technologies
Systems Concept Development
Systems Design and Analysis
Manufacturing and Assembly
Systems Integration and Test
Management and Operations
Sustainment and Recapitalization
Teledyne Energy Systems, Inc. (cont’d)

- **Quality Focused**
  - ASME U Stamp, Certificate #23,056
  - ASME UM Stamp, Certificate #34,252
  - National Board NB Certificate
  - National Board R Certificate, #R-5426
  - Manufacture License of Special Equipment (People’s Republic of China)
  - GOST-R Certificate of Compliance (Russia)
  - Russian Federal Service for Ecological, Technological, and Nuclear Supervision – Hydrogen Generators operated in hazardous industrial facilities

- **Major Customers**
  - Department of Energy
  - NASA/Rocketdyne
  - US Navy
  - Foreign Military Sales
  - Power Grid Suppliers across the Globe
  - Major Worldwide Industrial Gas Suppliers
Teledyne Turbine Engines

Capabilities and Thrust Areas
- Small Turbine Engines for Tactical/Strategic Cruise Missiles, Decoys, Targets, and UAVs
- Propulsion System Design, Development, and Integration
- Advanced Technology Development for Small Turbine Engines
- Turbine Engine Test Facility Services
- Low-Cost, High-Precision Manufacturing
- Advanced Technology Demonstration Engines and Prototype Flight Engines

Small Turbine Engines for Unmanned Air Vehicles; Propulsion Modules for Weapon System Integration; Turbo Machinery Design, Development, and Manufacturing; Digital Electronic Controls (DEC); Start/Ignition Systems; Electrical Power Generation, Conditioning, and Distribution
Quality Focused

Customer Satisfaction
- Boeing – Gold Preferred Supplier Award

Major Customers
- Boeing
- Lockheed Martin
- USAF/AFRL – Propulsion Directorate
- USN/ONR/NAVAIR

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Our Culture

- Continuing Education
- Wellness Program
- Employee Pancake Breakfast
- Community Support
- Annual Awards
- Summer Barbecue
- Dinner Dance