

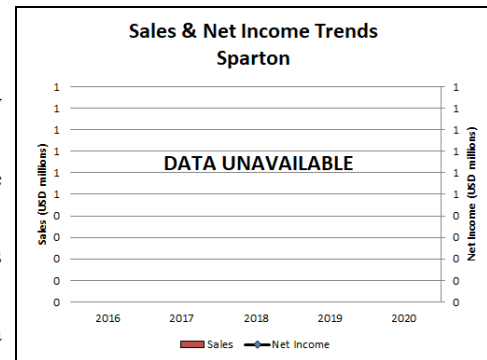
ARCHIVED REPORT

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Sparton

Outlook

- The U.S. Navy has become rather alarmed at the near monopoly Sparton and Ultra Electronics hold on the sonobuoy market
- Elbit Systems acquired Sparton in April 2021 for \$380 million; the deal may give the Navy the diversity in suppliers it seeks
- In 2020, Sparton divested its Manufacturing & Design Services operations, making it a pure-play defense company
- Sparton is primarily focused on the niche market in sonobuoys via its ERAPSCO joint venture with Ultra Electronics



Headquarters

Sparton Corporation
An Elbit Systems of America Company
5612 Johnson Lake Rd
De Leon Springs, FL 32130
Telephone: + 1 (386) 985-4631
Website: <https://sparton.com>

Founded in 1900, Sparton was established to manufacture components for agricultural implements. Sparton was last reorganized in 1919 as an Ohio company.

During the course of business events, the company became a supplier to the Michigan-based automobile

industry. Through leasing and purchases, it obtained U.S. and Canadian properties for oil and natural gas exploration and production. Sparton Technologies, which now has three large facilities in the New Mexico area, was originally formed as Sparton Southwest in 1961. Sparton Electronics, based in Florida, has been producing electro-acoustical devices for over 30 years and has more than 35 years of experience manufacturing electronic assemblies and modules.

In March 2019, Sparton was acquired by Cerberus Capital Management. Elbit Systems of America subsequently acquired Sparton for \$380 million in April 2021.

Structure and Personnel

William J. Toti
President & CEO
Glen Berger
Senior Vice President, Chief Financial Officer
Stephen B. Leisenring
Senior Vice President, Chief Procurement Officer
James R. Wyatt
Vice President, Strategy & Business Development

Randall G. Redondo
Vice President, Programs
Annette Hooker
Director of Human Resources
Scott Anderson
Director of Manufacturing Operations
Samantha Creutzinger
Director of Contracts and Procurement

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Product Area

Sparton is a Tier I and Tier II contractor that operates in one principal market segment: electronics. The company manages its business and product lines in the following manner:

1. Sparton
2. Aydin Displays
3. Stealth

Sparton designs, develops, and produces sonobuoys for the U.S. Navy and foreign governments. The company

is a partner in a 50-50 joint venture agreement with UnderSea Sensor Systems Inc (USSSI), operating under the name ERAPSCO.

Aydin Displays and Stealth manufacture industrial computer components, industrial-grade small form factor PCs. In addition, these units produce ruggedized displays for military and industrial use in ground, air, and sea applications.

Facilities

The following operations of the company generate the bulk of the firm's major government and defense work.

Sparton, 5612 Johnson Lake Rd, De Leon Springs, FL 32130. Telephone: + 1 (800) 824-0682. Develops, designs, and manufactures multiple products for defense and commercial security. Major defense product is sonobuoys. Sparton Navigation & Exploration is also at this address.

Aydin Displays, 1 Riga Ln, Birdsboro, PA 19508. Telephone: + 1 (610) 404-7400. Manufactures industrial displays, rugged military/commercial off-the-shelf (COTS) flat-panel displays, military and industrial panel PC workstations, and air traffic control displays.

Website: <https://www.aydindisplays.com>

Stealth (Sparton of Canada Ltd), 1-7550 Highway 27, Woodbridge, Ontario L4H 0S2 Canada. Telephone: +1 (905) 264-9000. Produces rugged displays, computers, and peripherals.

Website: <https://www.stealth.com/>

Sonobuoy TechSystems, 4578 E Park 30 Dr, Columbia City, IN 46725-8869. Telephone: + 1 (260) 248-3503. Part of the ERAPSCO joint venture between Sparton Electronics (De Leon Springs, Florida) and Ultra Electronics-UnderSea Sensor Systems Inc, which manufactures a variety of sonobuoys. Sonobuoy TechSystems handles international sales and technical support of U.S. sonobuoys.

Website: <http://www.sonobuoytechsystems.com>

Elbit Systems of America, LLC, 4700 Marine Creek Pkwy, Fort Worth, TX 76179 USA. Telephone: + 1 (817) 234-6600. Elbit Systems of America, LLC (ESA) and its subsidiaries provide products and systems solutions focusing on U.S. military, homeland security, medical instrumentation, and commercial aviation customers. ESA serves as the base for the group's interests in the U.S., which include EFW, Kollsman, IEI, and Sparton.

Website: <https://www.elbitamerica.com/>

Corporate Overview

Sparton Corporation is engaged primarily in military electronics manufacturing. In the defense business, Sparton has a niche market in sonobuoys. As part of a growth strategy, Sparton emphasizes future expansion of its commercial electronics capabilities.

New Products and Services

4k24N Ruggedized Display. In May 2018, Sparton, under the brand Aydin Displays, introduced a 24-inch rack/console mount rugged 4k military LCD. The model 4k24N features an ultra-high-definition native resolution of 3,840 x 2,160. This 4k military flat panel display is designed for Rack/Console mounting and features a projected capacitive (PCAP) multitouch screen.

Hammerhead. In November 2017, Sparton received contracts for the further development of Sparton's Hammerhead maritime payload delivery canister system. The contracts include orders for engineering development and delivery of canister systems to customers for field testing. These contracts have a total value of \$1.1 million, with deliveries scheduled for July 2018 and September 2018.

SeaPort-e. In July 2016, Sparton's De Leon Springs operation was awarded a contract under the U.S. Navy SeaPort Enhanced (SeaPort-e) indefinite delivery / indefinite quantity (IDIQ) multiple-award contract. This award allows Sparton to supply a broad range of engineering and technical support services to U.S. Navy

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programs. SeaPort-e is the Navy's electronic platform for acquiring support services in 22 areas, including engineering, financial management, and program management. Sparton states that the SeaPort-e portal provides a standardized, efficient means of soliciting offers from among the diverse population of large and small businesses and their approved team members. Sparton's SeaPort-e team comprises Acorn Science & Innovation, Ceebus Technologies, MIRC, Savi Solutions, Seaside Group, and Triton Systems.

Plant Expansion/Organization Update

HQ Relocated. In September 2020, Sparton relocated its headquarters from Schaumburg, Illinois, to its primary manufacturing facility in De Leon Springs, Florida.

Irvine Consolidation. In November 2015, Sparton announced it would consolidate its Irvine, California, design center into its Irvine manufacturing operations. The consolidation is part of an overall corporate effort to optimize the company's manufacturing and design facility footprint and realize synergies from recent acquisitions. The Irvine Design Center was acquired through the Aubrey Group acquisition in March 2014 and has been operating within the MDS segment.

Lawrenceville Facility Closed. In October 2015, Sparton announced that it would close its Lawrenceville, Georgia, manufacturing operations no later than June 30, 2016. The closing is in line with the effort to optimize the company's manufacturing and design facility footprint. The Lawrenceville facility was acquired as part of the Hunter Technology acquisition in April 2015 and had been operating within the MDS segment. Products manufactured in Lawrenceville would be transferred to the company's other MDS facilities.

Headquarters Moved. In June 2009, Sparton relocated its headquarters to a leased executive office in Schaumburg, Illinois. With the closing of the Jackson production facility, the headquarters was moved to a smaller, more efficient location.

Jackson Facility Closed. In March 2009, Sparton closed its Jackson, Michigan, manufacturing operations in response to the difficult economic and competitive situation in the industries served. The closure was part of Sparton's plan to return the company to profitability. The Jackson facility had served as the company's headquarters and as a manufacturing plant for its Electronics business.

Canadian Facility Closed. In March 2009, Sparton closed its London, Ontario, facility. According to the company, the closing was in response to market and economic conditions that had resulted in the facility

being underutilized because of significantly decreased customer volumes.

Mergers/Acquisitions/Divestitures

Elbit Systems Buys Sparton. In April 2021, Elbit Systems of America completed the acquisition of Sparton Corporation from an affiliate of Cerberus Capital Management, LP for \$380 million. As part of the acquisition, Elbit Systems of America has established an independent U.S. proxy board to oversee all of Sparton De Leon Springs' undersea business activities, allowing it to focus on higher sensitivity solutions and programs for U.S. customers.

Sparton's Aydin Displays and Stealth divisions will operate as part of Elbit Systems of America's existing security structure. Elbit Systems of America operates under a Special Security Agreement with the U.S. Department of Defense that grants the company full rights, privileges, and responsibilities to provide advanced technology for U.S. national security needs. The deal was first announced in December 2020.

Website: www.ElbitAmerica.com

Manufacturing & Design Services Sold. In July 2020, Sparton completed the sale of contract manufacturing unit Manufacturing & Design Services (MDS) to One Equity Partners. In conjunction with the closing of the transaction, the MDS business has been rebranded as Spartronics. The deal was first announced in June. Terms were not announced.

Cerberus Acquires Sparton. In March 2019, Cerberus Capital Management acquired Sparton in a deal valued at \$181.5 million in cash. Cerberus Capital Management is a private equity firm with a strong interest in defense properties. Both military vehicle producer Navistar and defense services contractor DynCorp International are in Cerberus' portfolio.

Website: <https://www.cerberus.com>

Sparton/Ultra Merger Blocked. In March 2018, Sparton and Ultra Electronics terminated their merger plan due to opposition from the U.S. Department of Justice. During the review of the proposed merger by the DoJ, the U.S. Navy argued that instead of merging, both Sparton and Ultra should enhance their individual abilities to independently develop, produce, and sell sonobuoys and, over time, work toward eliminating their joint venture ERAPSCO for such activities. Sparton is Ultra's partner in ERAPSCO, a joint venture originally formed in 1987 to manufacture sonobuoys and transducers for the U.S. Navy. In July 2017, Ultra Electronics announced its plan to acquire Sparton in a deal valued at \$235 million.

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Hunter Technology Acquired. In April 2015, Sparton subsidiary Sparton Hunter Corporation completed a merger with Hunter Technology Corporation in a \$55 million all-cash transaction. Hunter Technology, with operations in Milpitas, California, and Lawrenceville, Georgia, was founded in 1968 and, reports Sparton, "was one of the first electronic contract manufacturing providers specializing in military and aerospace applications."

Stealth.com Acquired. In March 2015, Sparton of Canada acquired substantially all of the assets of Stealth.com for \$12.6 million in cash. Founded in 1990, Stealth.com, located in Woodbridge, Ontario, is a build-to-order manufacturer of ruggedized industrial-grade computer systems and peripherals that include mini-PCs, rackmount server PCs, portable PCs, and LCD touchscreen displays.

KEP Marine Acquired. In January 2015, Sparton subsidiary Sparton IED completed the acquisition of KEP Marine, a \$3 million revenue business, from Kessler-Ellis Products Inc. Founded in 1960, KEP Marine, located in Eatontown, New Jersey, designs and manufactures industrial displays, industrial computers, and HMI software for the marine market. These product lines would be consolidated into the Aydin Displays facility, located in Birdsboro, Pennsylvania.

RTEmd Acquired. In January 2015, Sparton subsidiary Sparton Design Services completed the acquisition of Real-Time Enterprises Inc (RTEmd), a \$4 million revenue business. RTEmd, founded in 1981, is a developer of embedded software used to operate medical devices and diagnostic equipment. RTEmd continues to service its customers out of its Pittsford, New York, location.

Argotec Acquired. In December 2014, Sparton subsidiary Sparton De Leon Springs completed the acquisition of certain assets of Argotec Inc. Argotec, located in Longwood, Florida, develops and manufactures sonar transducer products and components for the U.S. Navy, and provides aftermarket servicing. The products, primarily hydrophones and projectors, are used in test equipment, environmental sensor arrays, and various military and commercial sonar applications. These products would be consolidated into the Navigation & Exploration (NavEx) segment of Engineering Components and Products (ECP) located at Sparton's De Leon Springs facility. Terms were not announced.

IED Acquired. In December 2014, Sparton subsidiary Sparton IED completed the acquisition of certain assets of Industrial Electronic Devices Inc. IED, located in Flemington, New Jersey, designs and manufactures a

full line of ruggedized displays for the industrial and marine markets. These product lines would be consolidated into the Aydin Displays facility, located in Birdsboro, Pennsylvania. Terms were not disclosed.

Aubrey Acquired. In November 2014, Sparton completed its acquisition of the Aubrey Group, an \$8 million business. Aubrey Group is a design and manufacturing company using state-of-the-art technologies to develop new products for OEMs in the medical and biotechnological markets.

Electronic Manufacturing Technology Acquired. In July 2014, Sparton's wholly owned subsidiary Sparton eMT LLC acquired Electronic Manufacturing Technology LLC, a \$25 million revenue business located in Irvine, California, in an all-cash transaction. Electronic Manufacturing Technology manufactures electromechanical controls and electronic assemblies.

Beckwood Services Acquired. In December 2013, Sparton acquired Beckwood Services, an \$18 million revenue business, in an all-cash transaction. Beckwood Services manufactures electronic and electro-mechanical controls and electronic assemblies.

Aydin Assets Acquired. In August 2013, Sparton completed the acquisition of certain assets of Aydin Displays for \$15 million. The acquired business, which became part of the company's Defense & Security Systems segment, develops enhanced flat-panel displays and touchscreens for the military, aerospace, and civil marine markets. These products are currently specified for the U.S. Navy P8A Poseidon ASW aircraft behind-the-cockpit control center, the command and control centers of many U.S. Navy ships, FAA air traffic control systems, and cockpit command centers for various civil marine applications.

Creonix Assets Acquired. In June 2013, Sparton completed the acquisition of certain assets of Creonix for \$2.1 million in cash. The acquired business, which is reported in the company's Complex Systems segment, provides cable and wire harness engineering and assembly expertise. Creonix primarily manufactures products and components for battery monitoring and high-speed optical imaging, in addition to producing imaging and wiring assemblies for military applications and electrical grid transformer protection systems.

Teaming/Competition/Joint Ventures

Coherent Source Sonobuoy. In early 2015, the U.S. Naval Air Systems Command at Patuxent River Naval Air Station, Maryland, issued a sources-sought notice (N00019-15-R-2325) for the Coherent Source Sonobuoy project to build aircraft-dropped sonobuoys with bistatic capability for the Navy's ASW Multi-static

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Active Coherent program. The MAC program is designed to conduct wide-area search, clearance, and battle group screening missions for U.S. Navy combatant commanders, and to enable transition of subsurface detections to localization and target prosecutions. The MAC system is composed of three major airborne subsystems: the SSQ-125 source sonobuoy, the SSQ-101 Air Deployable Active Receiver (ADAR) sonobuoy, and the MAC processing software embedded in P-3C and P-8A aircraft.

ERAPSCO. Sparton has teamed with its major competitor, UnderSea Sensor Systems Inc, a subsidiary of Ultra Electronics (formerly Raytheon, and before that, Hughes Electronics and Magnavox Electronic Systems), to develop the SSQ-101 ADAR sonobuoy. The joint venture is known as ERAPSCO, and has since been expanded to include Sonobuoy TechSystems (see below).

Website: <https://www.erapSCO.com>

Leidos. In November 2018, Sparton teamed with Leidos Maritime Systems to support the Acoustic Device Countermeasure (ADC) Mk 5 program. The Mk 5 is a next-generation countermeasure intended to replace the ADC Mk 3. The ADC Mk 5 is a 3-inch-diameter expendable device that is submarine-launched from internal signal ejectors, and is part of a submarine's defense against acoustic-homing torpedoes. In September 2018, Leidos had been awarded the contract,

which is valued at up to \$36.1 million. Sparton will contribute design, development, fabrication, integration, testing, and low-rate initial production (LRIP) services.

Raytheon. In May 2018, Sparton and Raytheon teamed to support the design, test, and deployment of the next-generation Barracuda Mine Neutralization system. The Barracuda Mine Neutralization system is an expendable, unmanned AUV (autonomous underwater vehicle) intended to identify and neutralize bottom, near-surface, and drifting mines. Sparton will design and develop the deployment packaging and wireless communications buoy supporting Raytheon's mine neutralizer vehicle. Sparton will also provide manufacturing services to support system fabrication.

Sonobuoy TechSystems. In February 2007, Sparton and Ultra announced a broadening of the scope of an existing joint venture agreement between their respective subsidiaries, UnderSea Sensor Systems Inc and Sparton Electronics Florida Inc. Under the plan, the scope of ERAPSCO, which formerly focused solely on the SSQ-101, was broadened to encompass a wider range of sonobuoy types qualified for use by the U.S. Navy and procured by most international customers. Sonobuoy TechSystems is involved in all of ERAPSCO's ITAR-approved international sales and provides technical support of U.S.-specification sonobuoys.

Website: <https://www.sonobuoytechsystems.com>

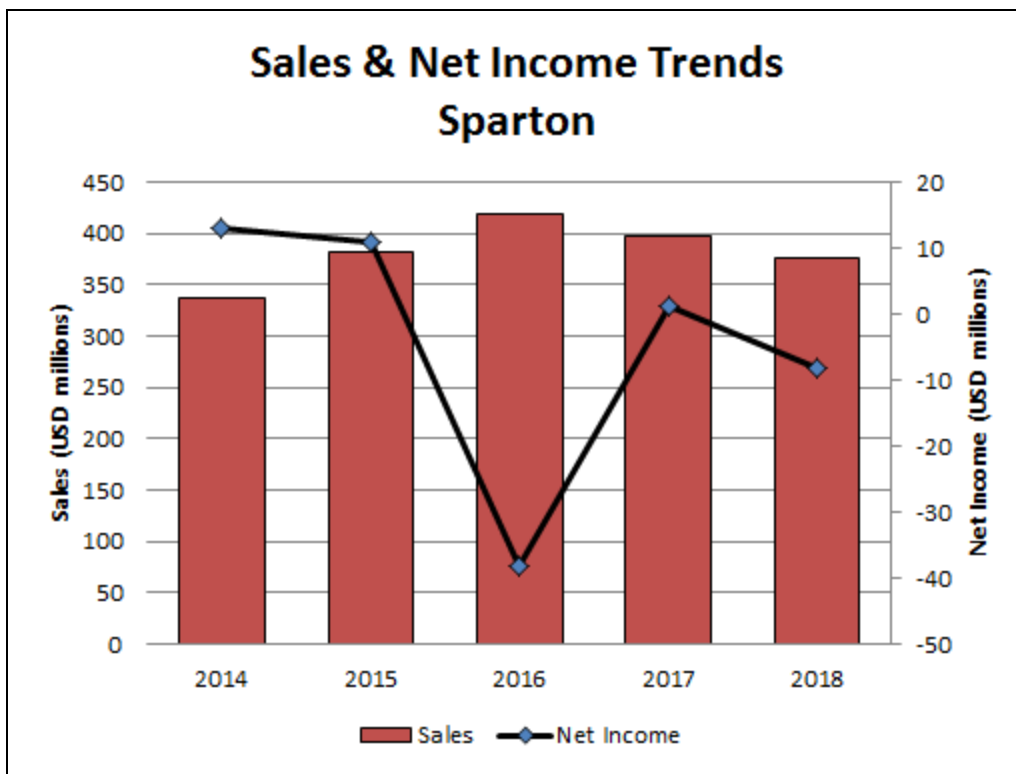
Financial Results/Corporate Statistics

With Sparton now private following its acquisition by Cerberus, financial information is no longer reported. Historical financial results are detailed below.

For the fiscal year ending June 30, 2018, Sparton posted net sales of \$375 million, down 6 percent from the \$397.6 million posted in FY17. The company posted a loss of \$8.2 million, compared to a gain of \$1.3 million in FY17. The company said the FY16 loss was largely attributable to a write-down of goodwill and intangible assets related to a 2006 acquisition of an Ohio medical facility. The write-down was undertaken due to a decision by Siemens, a large customer of that facility, to reduce the amount of work it does with the facility. Percent Gov't Sales are composed of sales to the U.S. Navy, including those made through the company's ERAPSCO joint venture. The latest full-year statistics are provided below:

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Sparton (NYSE: SPA)					
(USD millions)	2014	2015	2016	2017	2018
Net Sales	336.1	382.1	419.3	397.6	375.0
Net Income	13.0	11.0	-38.3	1.3	-8.2
Sales to Gov't	64.0	95.5	92.3	91.4	93.8
Percent Gov't Sales	19%	25%	22%	23%	25%
R&D Expenditures	1.2	1.5	2.3	1.7	2.7
Total Backlog	147.1	313.4	280.7	272.8	319.6
Long-Term Debt	41.0	154.5	97.7	74.5	84.7
Shareholder Equity	110.1	116.9	78.6	81.9	73.6
Debt-to-Equity Ratio	.37	1.32	1.24	.90	1.15
Employees	1,483	1,990	1,400	1,400	1,531



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Industry Segments

Sparton's five-year breakdown of sales and operating income by business segment is provided below.

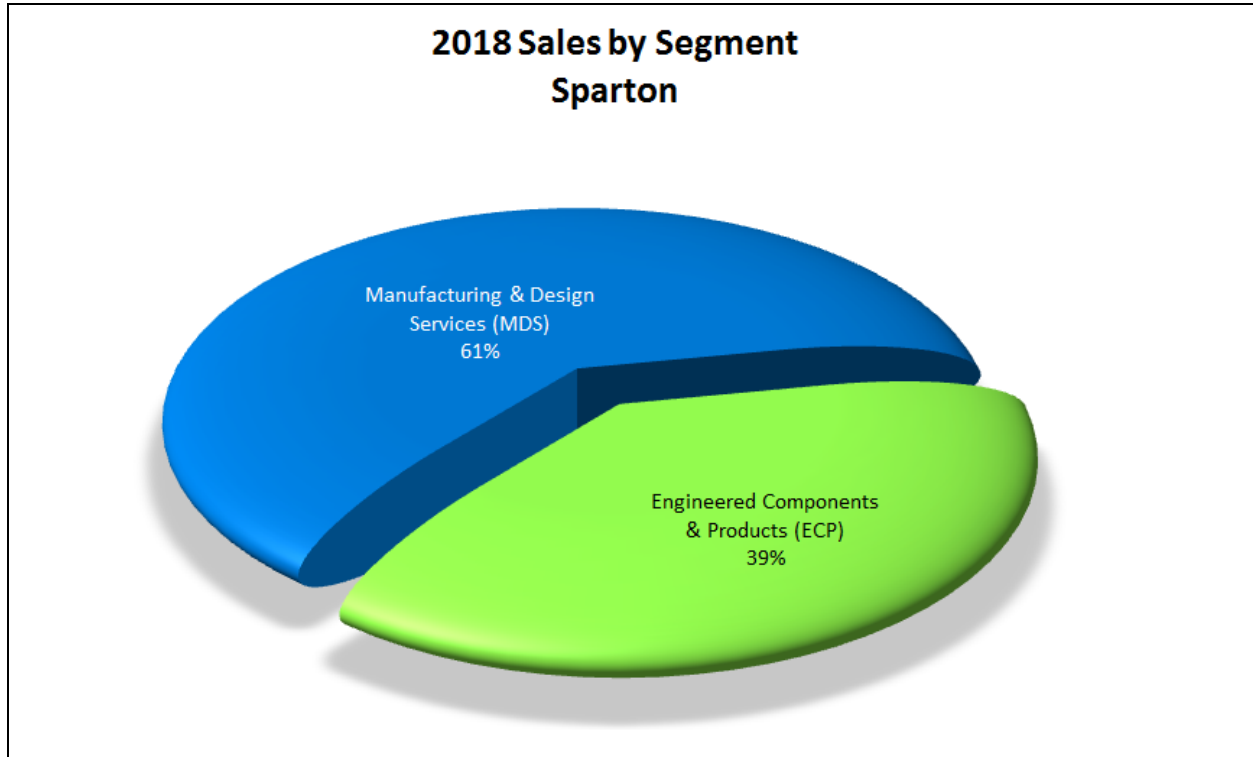
SALES	2014	2015	2016	2017	2018
(USD millions)					
Manufacturing & Design Services	246.1	263.9	282.1	260.5	236.0
Engineered Components & Products	109.1	136.3	154.5	147.2	151.1
Eliminations	-19.1	-18.1	-17.3	-10.1	-12.1
TOTAL	336.1	382.1	419.3	397.6	375.0
OPERATING INCOME	2014	2015	2016	2017	2018
(USD millions)					
Manufacturing & Design Services	17.0	9.5	-61.8	1.3	-2.1
Engineered Components & Products	19.9	25.0	25.9	21.6	32.1
TOTAL	36.9	34.5	-35.9	22.9	30.0

Segment Details

Below is a breakdown of key financial data for the company's major business segments for the past five years.

MANUFACTURING & DESIGN SERVICES	2014	2015	2016	2017	2018
(USD millions)					
Net Sales	246.1	263.9	282.1	260.5	236.0
Operating Income	17.0	9.5	-61.8	1.3	-2.1
Backlog	114.7	170.1	138.5	124.8	148.0
ENGINEERED COMPONENTS & PRODUCTS	2014	2015	2016	2017	2018
(USD millions)					
Net Sales	109.1	136.3	154.5	147.2	151.1
<i>ASW Devices and Engineering</i>	92.8	110.2	119.3	114.3	121.2
Operating Income	19.9	25.0	25.9	21.6	32.1
R&D Expenditures	1.2	1.5	2.3	1.7	2.7
Backlog	32.4	143.3	142.2	148.0	172.0

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GEOGRAPHIC SALES	2014	2015	2016	2017	2018
(USD millions)					
USA	296.3	345.6	369.1	325.4	328.5
Rest of World	40.2	36.5	50.2	72.2	46.5
TOTAL	336.5	382.1	419.3	397.6	375.0

Major Competitors

Most of Sparton's competitors are in the electronic components manufacturing sector. Key competitors include Simatron International Analogic, Kimball International, PerkinElmer, Thales, and Sanmina.

Strategic Outlook

Sparton has found its forever home with Elbit Systems. The Israeli company acquired Sparton for \$380 million in April 2021, putting the firm under the auspices of its Elbit Systems of America division.

"Acquiring Sparton, one of the primary American suppliers of sonobuoys, as well as other undersea warfare products, provides us with another significant franchise and an expansion of our business with the U.S. Navy and within the U.S.," said Raanan Horowitz, President and CEO of Elbit Systems of America.

Elbit Systems of America will look to integrate Sparton with its existing electronics operations in order to expand its business portfolio and capabilities. Elbit Systems of America, which operates under a special security agreement with the U.S. government, has

purchased a number of U.S. firms, including M7 Aerospace, EFW, Kollsman, IEI, and Sparton, among others.

Prior to this, an earlier merger attempt by Sparton to combine with Ultra Electronics was squashed, opening the door for Cerberus Capital Management to buy Sparton outright. Cerberus successfully acquired the company in March 2019 for \$181.5 million and restructured the company on its defense operations, divesting the more commercial-oriented Manufacturing & Design Services operations.

Previously, in early 2018, the U.S. Department of Justice put the kibosh on Ultra Electronics' \$234 million acquisition of Sparton. According to the DoJ, the

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merger would have created a monopolistic supplier of sonobuoy systems to the U.S. Navy.

The ruling went even further – opening an investigation of the two companies' sonobuoy joint venture, ERAPSCO, which they formed in 1987. Ideally, the DoJ would like to see the companies build up their own individual abilities to produce sonobuoys, eventually dissolving the ERAPSCO joint venture. This acquisition by Elbit Systems could see such a plan come to fruition.

In terms of defense contracting, sonobuoys represent Sparton's fundamental strength (as well as its weakness) in that they are pretty much the company's sole product line. Ultra Electronics and Sparton (including their joint ventures ERAPSCO and Sonobuoy TechSystems) dominate the sonobuoy production market, where they hold an almost unassailable position – putting them under the gaze of anti-trust authorities.

This put the government in a quandary, as the U.S. needs a domestic source of sonobuoy systems. In early 2019, a Presidential Determination was signed

authorizing the sustainment and expansion of SSQ series sonobuoys under the Defense Production Act (DPA) Title III. The DoD is now working with the industrial base to address this capability. So far, only Lockheed Martin has entered as a minor competitor in the A-size sonobuoy market.

Sparton anticipates that should the Navy push for dissolution of the ERAPSCO joint venture, the service would in turn assist in funding the company's transition to independently developing, producing, and selling sonobuoys. However, as evidenced by the shipbuilding industry, when there are only two manufacturers, each one tends to get a piece of a contract in order to keep the production lines and facilities viable.

Despite these misgivings from the service, ERAPSCO scored a major sonobuoy contract in July 2019 when the Navy purchased over 750 million sonobuoys of various types for some \$1 billion. These systems will be delivered through 2023 and are aimed at dealing with increased production of submarines by China and undersea warfare activity in the South China Sea.

Prime Award Summary

Neither Sparton nor the ERAPSCO joint venture ranked in the U.S. General Services Administration's System for Award Management (SAM) Top 100 Contractors Report (<https://sam.gov/reports/awards/static>). Information on the company's Federal contracting can be sourced from the database of www.USAspending.gov, the official U.S. government source for data on federal awards. Individual contract awards are listed in the U.S. Contract Awards section of this report (below).

Program Activity

Some important aerospace and government programs currently underway at Sparton are listed below. The briefs are intended to provide a listing of programs that are of major importance to the company. For detailed information on or analysis of specific aerospace and defense programs or equipment, please refer to the applicable Forecast International service (for example, *Civil Aircraft*, *Military Aircraft*, *Military Vehicles*, *Warships*, *Missiles*, *Electronic Systems*, and *Aviation Gas Turbines*).

The company's business interests are in the areas of defense electronics and anti-submarine warfare.

Electronic Programs

SSQ-101 ADAR

The SSQ-101 is an A-size Air Deployable Active Receiver (ADAR) sonobuoy designed as an active source receiver for multistatic operations in shallow water. Development of the SSQ-101 ADAR sonobuoy began in the mid-1990s as a joint venture between

Sparton and Ultra Electronics. The first demonstration test was conducted in 1997, followed by a second successful demonstration in 1998. Operational testing was conducted in 1999, followed by approval for full-scale production. According to U.S. Navy documents, the ADAR sonobuoy did not replace any sonobuoy systems already in existence. It is produced by both Sparton and Ultra Electronics under the joint venture ERAPSCO.

SSQ-110(V) Sonobuoy

The SSQ-110(V) is an extended echo-ranging (EER), active source sonobuoy. The SSQ-110B is used in conjunction with appropriate passive receiver sonobuoys. No major sales of the SSQ-110(V) sonobuoy beyond a November 2014 replenishment order have been identified, deliveries of which were completed by the end of 2019. According to Forecast International's *Anti-Submarine Warfare Forecast*, SSQ-110(V) replenishment contracts (probably for several hundred per production run) are likely to start appearing around 2024.

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SSQ-125 Sonobuoy

The SSQ-125 Air Deployable Coherent Source Sonobuoy is a NATO A-size sonobuoy. The SSQ-125 is capable of generating a variety of waveforms upon command and is designed to work with SSQ-53F, SSQ-77C, and SSQ-101 ADAR sonobuoys.

SSQ-53(V) Sonobuoy

The SSQ-53(V) is a family of passive Directional Frequency Analysis and Recording (DIFAR) sonobuoys. It is used to detect, classify, and localize fast submarines. The sonobuoy is dropped to determine target location after initial contact has been made by passive sonobuoys. The SSQ-53 is used during the

localization phase, where its directional capability provides rapid bearing data. The latest variants are the SSQ-53G and SSQ-53G (GPS).

SSQ-62(V) DICASS

The SSQ-62 is a Directional Command Active Sonobuoy System (DICASS) used for detecting submarines. Using processors and displays such as the AQA-7(V), ASA-76, OL-82/AYS, and Sparton TD-1135/A, it can determine the range and direction of a target relative to its own position. Production of the SSQ-62E and SSQ-62F, a GPS-capable variant, is ongoing.

U.S. Contract Awards

Below is a listing of major contracts awarded to ERAPSCO and Sparton from the United States government in the past several years (contracts as of press date). Note that the Description section is excerpted directly from U.S. Department of Defense listings. For full details on contracts and their associated modifications, visit <https://www.defense.gov/Newsroom/Contracts/>

Date	Award (USD millions)	Contract #	DESCRIPTION
3/9/15	20.4	N00421-14-D-0025	PROCUREMENT OF UP TO 5,000 SSQ-125 SONOBUOYS. AWARDED TO ERAPSCO.
10/26/15	178.6	N00421-14-D-0025	PROCUREMENT OF UP TO 6,000 SSQ-36 SONOBUOYS, 95,000 SSQ-53 SONOBUOYS, 15,500 SSQ-62 SONOBUOYS, 10,000 SSQ-101 SONOBUOYS & 10,000 SSQ-125 SONOBUOYS. AWARDED TO ERAPSCO.
10/17/16	203.7	N00421-14-D-0025	PROCUREMENT OF UP TO 6,000 SSQ-36 SONOBUOYS, 95,000 SSQ-53 SONOBUOYS, 15,500 SSQ-62 SONOBUOYS, 10,000 SSQ-101 SONOBUOYS & 15,000 SSQ-125 SONOBUOYS. AWARDED TO ERAPSCO.
10/10/17	219.7	N00421-14-D-0025	PROCUREMENT OF UP TO 166,500 SSQ-36, SSQ-53, SSQ-62, SSQ-101, SSQ-125 & MK 84 SIGNAL UNDERWATER SOUND SERIES SONOBUOYS. AWARDED TO ERAPSCO.
1/24/18	9.7	N00019-15-G-0008	ENGINEERING SUPPORT SERVICES, SYSTEMS ENGINEERING, DESIGN & DEVELOPMENT EFFORTS FOR NAVY UNDERWATER ACTIVE MULTIPLE-PING SONOBUOY QUALIFICATION & TESTING, AS WELL AS THE DELIVERY OF PRODUCTION-REPRESENTATIVE SONOBUOYS. AWARDED TO ERAPSCO.
12/20/18	220.8	N00019-D0-0-12	PROCUREMENT OF UP TO 18,000 SSQ-125A SERIES SONOBUOYS. AWARDED TO ERAPSCO.
7/18/19	1041.0	N00019-19-D-0032	MANUFACTURE & DELIVERY OF A MAXIMUM QUANTITY OF 37,500 SSQ-36B, 685,000 SSQ-53G, 120,000 SSQ-62F, AND 90,000 SSQ-101B SONOBUOYS FOR FISCAL YEARS 2019-2023. AWARDED TO ERAPSCO.
7/15/20	71.8	?	THIS MODIFICATION INCREASES THE CEILING OF THE CONTRACT TO PROVIDE FOR THE PRODUCTION & DELIVERY OF A MAXIMUM QUANTITY OF 20,000 SSQ-125 SONOBUOYS.

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Date	Award (USD millions)	Contract #	DESCRIPTION
3/3/21	71.3	N00019-19-D-0032	THIS MODIFICATION EXERCISES AN OPTION FOR THE PRODUCTION & DELIVERY OF A MAXIMUM QUANTITY OF 20,000 AN/SSQ-125 PRODUCTION SONOBUOYS IN SUPPORT OF ANNUAL TRAINING, PEACETIME OPERATIONS & TESTING EXPENDITURES & MAINTAINING SUFFICIENT INVENTORY TO SUPPORT THE EXECUTION OF MAJOR COMBAT OPERATIONS DETERMINED BY THE NAVAL MUNITIONS REQ PROCESS FOR THE NAVY & FMS CUSTOMERS.
9/23/21	8.4	N0001919D0032	THIS MODIFICATION ADDS SCOPE FOR THE PRODUCTION & DELIVERY OF 5,000 AN/SSQ-62 PRODUCTION SONOBUOYS IN SUPPORT OF ANNUAL TRAINING, PEACETIME OPERATIONS & TESTING EXPENDITURES, AND MAINTAINING SUFFICIENT INVENTORY TO SUPPORT THE EXECUTION OF MAJOR COMBAT OPERATIONS DETERMINED BY THE NAVAL MUNITIONS REQ PROCESS FOR THE NAVY & FMS CUSTOMERS.

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