VITA

Market Research

VITA Market Developments

4Q 2022

Brian Arbuckle

Embedded Market Research

Contents

Brian Arbuckle Autobiography

Brian Arbuckle is a market analyst specializing in embedded computing. Brian has an engineering degree from the University of Warwick and an MBA. His career has spanned marketing management roles in industry for electronic and mechanical components and systems and communications networks. He has worked in analyst roles for technical market research organizations, IHS Markit and Informatech and in recent years has authored an annual market research report on the embedded computing industry.

Forward

VITA has commissioned this market research to gather information on data related to the most popular of VITA standards. This report reviews highlights and developments during the fourth trading quarter of 2022 and the trends that are driving technology development for VITA technology boards and systems.

U.S. Defense Spending

Each year, the National Defense Authorization Act (NDAA) authorizes funding levels and provides authorities for the U.S. military and other critical defense priorities. The $858 billion NDAA for 2023 amounts to an 8% increase over FY22 defense levels and is $45 billion more than the White House requested in its budget proposal last spring.

Importantly the program provides funding for the federal government to pay industry to produce weapons and security assistance to send to Ukraine, rather than drawing directly from current U.S. stockpiles of weapons. One of the key concerns throughout the ongoing conflict in Ukraine has been whether the industrial bases of the U.S. and other allied nations can meet the demand required to support Ukraine. The program is focused on reducing bureaucratic red tape to help industry produce those weapons for Ukraine faster.

The authorization provides stocks of munitions to U.S. allies and partners, as well as increase the number of munitions that would be needed if China were to take action against Taiwan. It also provides the largest number of multi-year procurement contracts for munitions that the defense bill has authorized in recent history, if not ever.

The NDAA for 2023 has been passed by the House and Senate and was signed by President Biden in December.[1]

Financial Results

Results published by Curtiss-Wright and Mercury Systems in the last quarter provide an insight into the general health of the VITA market.

Curtiss-Wright Corporation

Curtiss-Wright Corporation released its third quarter report for fiscal 2022 on November 3, 2022.[2] Lynn M. Bamford, Chair and CEO of Curtiss-Wright Corporation commented on the results. "Curtiss-Wright delivered solid third quarter results, despite continued supply chain challenges, as the strength of our combined portfolio, coupled with the benefits of our company-wide operational excellence initiatives, enabled us to generate stronger than expected profitability with 70 basis points in operating margin expansion and double-digit EPS growth. Sales in our Commercial markets increased 9% during the quarter, led by double-digit growth in our general industrial and process markets, while sales for Aerospace & Defense markets were relatively flat. We once again experienced robust order activity, as bookings increased 32% year over year, and both bookings and backlog grew 19% on a year-to-date basis. This was driven by strong demand across the majority of our defense and commercial markets, including record level quarterly orders within our Defense Electronics segment."

Curtiss-Wright reports supply chain challenges, including increased lead times, as well as heightened levels of inflation in material and transportation costs due to availability constraints
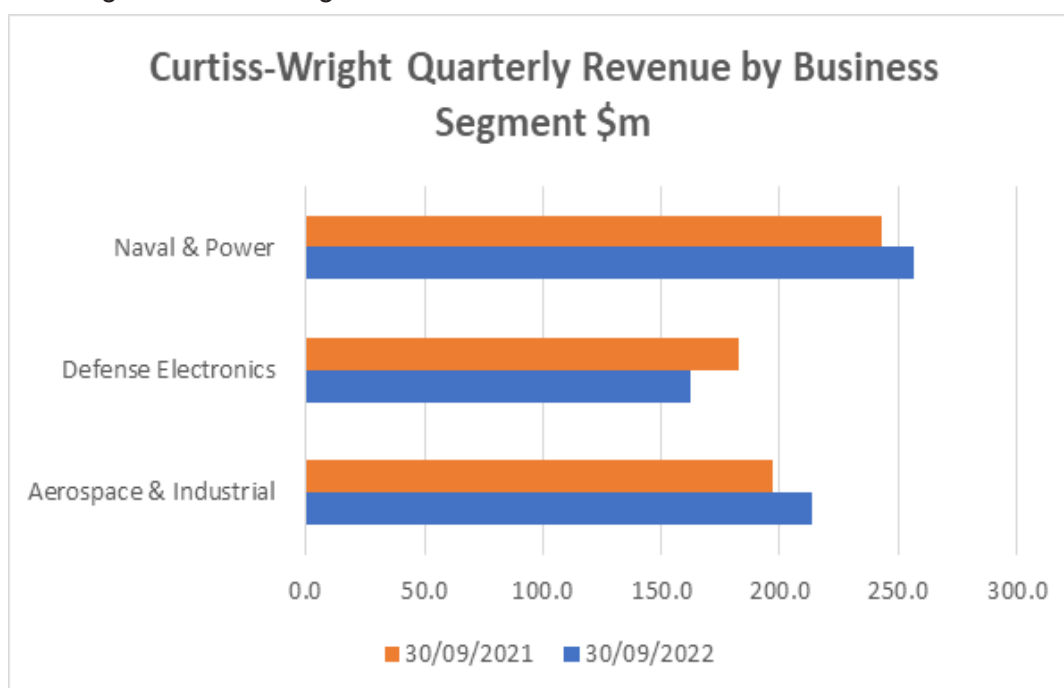
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1   https://edition.cnn.com/2022/12/15/politics/defense-bill-ndaa/index.html
2   https://curtisswright.com/investor-relations/financials/sec-filings/sec-filings-details/default.
     aspx?FilingId=16174255

and high demand. Certain parts of its business have been adversely affected by disruptions that have hindered its ability to timely obtain raw materials and components from suppliers in the required quantities, or on favorable terms. In certain instances, these disruptions have delayed the ability to convert backlog into net sales in line with historical performance. Curtiss-Wright expects inflationary and supply chain constraint trends to continue throughout at least the remainder of 2022 and impact the timing of revenue within defense markets.

Results by business segment

Sales in the third quarter increased $10 million, or 2%, to $631 million, compared with the prior year period. On a segment basis, sales from the Aerospace & Industrial and Naval & Power segments increased $17 million and $13 million, respectively, with sales from the Defense Electronics segment decreasing $20 million.

Defense Electronics segment

Sales in the Defense Electronics segment are primarily to the defense markets and, to a lesser extent, the commercial aerospace market. Sales in the third quarter decreased $20 million, or 11%, to $161 million from the prior year period. In the aerospace defense market, sales decreased $14 million primarily due to ongoing supply chain headwinds, which contributed to lower sales of embedded computing and flight test equipment. In the ground defense market, lower sales of tactical communications equipment were experienced, primarily due to the supply chain headwinds. New orders increased $76 million against the comparable prior year period, primarily due to an increase in new orders for ground defense and aerospace defense equipment.

Aerospace & Industrial segment

Sales in the Aerospace & Industrial segment are primarily generated from the commercial aerospace and general industrial markets, and to a lesser extent the defense and power & process markets. Sales in the third quarter increased $17 million, or 9%, to $213 million from
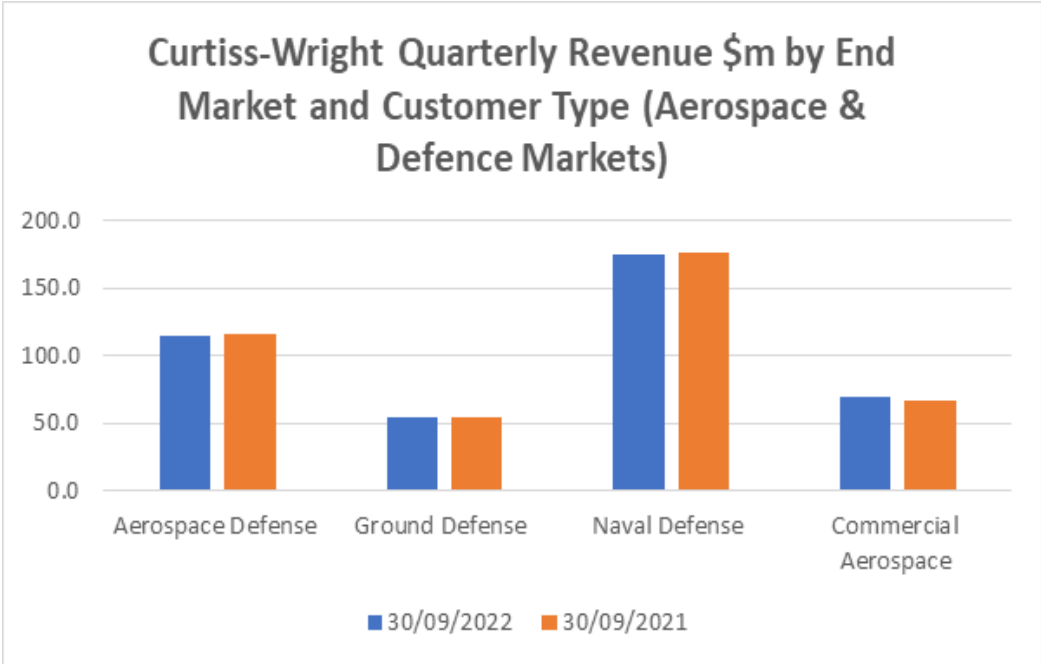
the prior year period, primarily due to higher sales in the general industrial and commercial aerospace markets. Sales in the general industrial market increased $11 million primarily due to higher demand for industrial vehicle products. In the commercial aerospace market, sales increased $5 million due to higher demand for sensors products as well as surface treatment services on various narrowbody and widebody platforms.

Naval & Power

Sales in the Naval & Power segment are primarily to the naval defense and power & process markets. Sales in the third quarter increased $13 million, or 6%, to $256 million from the prior year period, primarily due to the impact of the arresting systems acquisition in the aerospace defense market, which contributed incremental sales of $14 million. In the power & process market, higher nuclear aftermarket sales were more than offset by the wind-down on the China Direct AP1000 program.

Sales disaggregated by end-user markets (Aerospace & Defense)

The following chart represents a closer look at Curtiss-Wright Corporation Aerospace and Defense sector sales disaggregated by end market. It excludes the Commercial end-user market (Power & Process and General Industrial).

Sales in the third quarter decreased $1 million, or less than 1%, to $414 million against the comparable prior year period. The incremental impact from the arresting systems acquisition was more than offset by lower sales of embedded computing and flight test equipment, primarily due to ongoing supply chain headwinds.

Commenting on the outlook Lynn M. Bamford, Chair and CEO said, "Looking forward, the business fundamentals in the Defense Electronics segment remain quite strong, driven by record bookings, strong profitability and favorable long-term secular tailwinds."

Mercury Systems

Mercury Systems reported third quarter fiscal 2022 results on November 1st 2022. "Mercury's bookings increased 34% year-over-year in the first quarter, following 27% growth in the fourth quarter of fiscal 2022," said Mark Aslett, Mercury's President and Chief Executive Officer. "We believe we are entering a multi-year period of accelerated growth and profitability, similar to post-sequestration. We expect the first quarter will be the low water mark for organic revenue growth and cash flow in fiscal 2023, setting the stage for strong fiscal 2023 bookings, positive book-to-bill and a return to organic growth in the second quarter and for fiscal 2023 as a whole."[3]
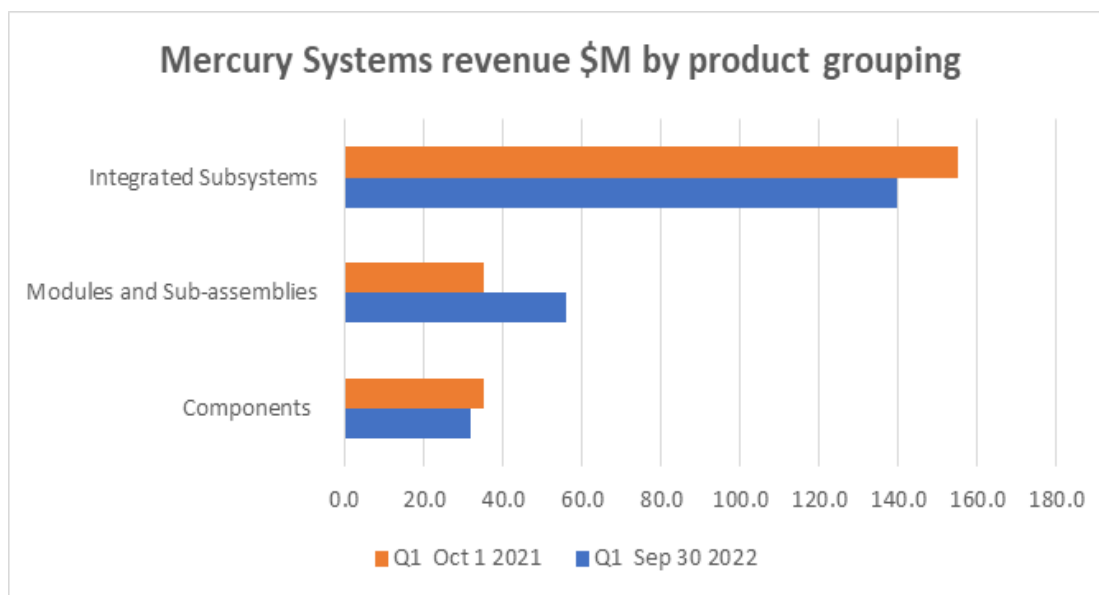
Revenue Analysis

Revenue analysis of fiscal 2022 results (to September 30, 2022) is illustrated in the following charts and tables. (Data is from the quarterly 10k report, charts have been created for trend analysis.) [4]

Total revenues increased $2.6 million, or 1.1%, to $227.6 million during the first quarter ended September 30, 2022, as compared to $225.0 million during the first quarter ended October 1, 2021, including "acquired revenue" which represents net revenue from acquired businesses that have been part of Mercury for completion of four full quarters or less (and excludes any inter-company transactions).

The increase in total revenue was primarily due to an additional $11.8 million of acquired revenues from the Atlanta Micro and Avalex businesses, partially offset by $9.2 million less organic revenues.

Revenue by product grouping

Modules and sub-assemblies increased $20.9 million or 60%, partially offset by decreases in integrated subsystems and components product groupings of $15.2 million and $3.1 million, respectively.

Mercury Systems revenue $M by product grouping

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3   https://ir.mrcy.com/news-releases/news-release-details/mercury-systems-reports-first-quarter-fiscal-2023-results
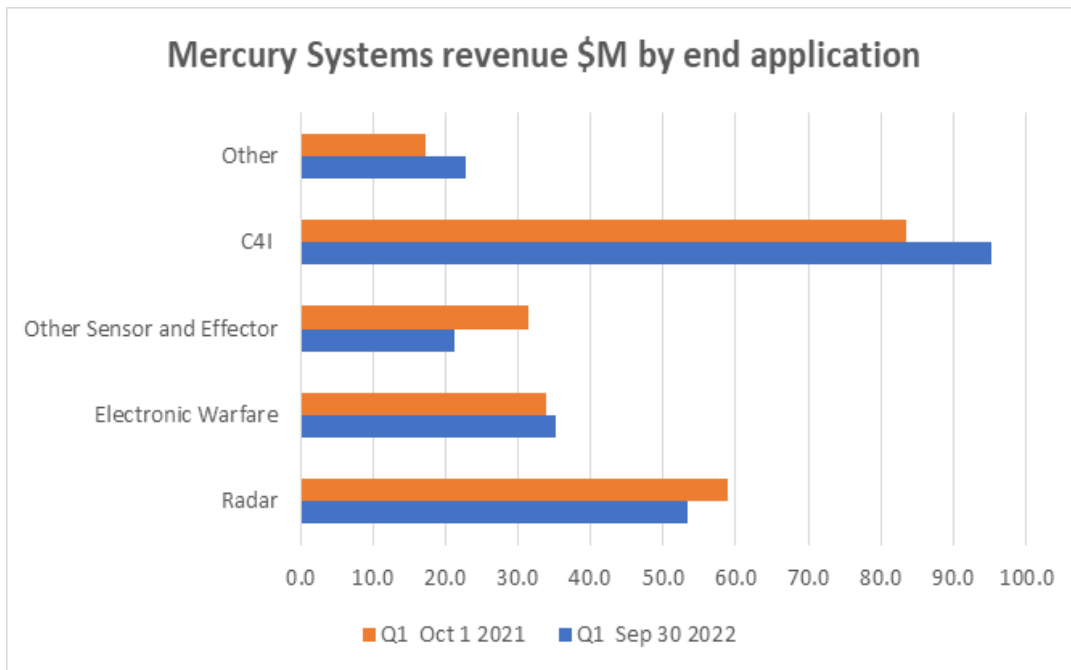4   https://ir.mrcy.com/static-files/465ddf8b-7d51-42ca-a8c8-60fcb790d50f

Notes:

1. *Components are the basic building blocks of an electronic system. They generally perform a single function such as switching, storing, or converting electronic signals. Examples include power amplifiers and limiters, switches, oscillators, filters, equalizers, digital and analog converters, chips, MMICs (monolithic microwave integrated circuits) and memory and storage devices.*

2. *Modules and sub-assemblies combine multiple components to serve a range of complex functions, including processing, networking, and graphics display. Typically delivered as computer boards or other packaging, modules and sub-assemblies are usually designed using open standards to provide interoperability when integrated in a subsystem. Examples of modules and sub-assemblies include embedded processing boards, switched fabrics and boards for high-speed input/output, digital receivers, graphics, and video, along with multi-chip modules, integrated radio frequency and microwave multi-function assemblies and radio frequency tuners and transceivers.*

3. *Integrated subsystems bring components, modules and/or sub-assemblies into one system, enabled with software. Subsystems are typically, but not always, integrated within an open standards-based chassis and often feature interconnect technologies to enable communication between disparate systems. Spares, replacement modules, and sub-assemblies are provided for use with subsystems sold by us. Our subsystems are deployed in sensor processing, aviation, and mission computing and C4I applications.*

Revenue by end application

The increase in total revenue was primarily from C4I and electronic warfare end applications which increased $11.7 million and $1.1 million, respectively, partially offset by decreases to other sensor and effector and radar end applications of $10.2 million and $5.5 million, respectively.
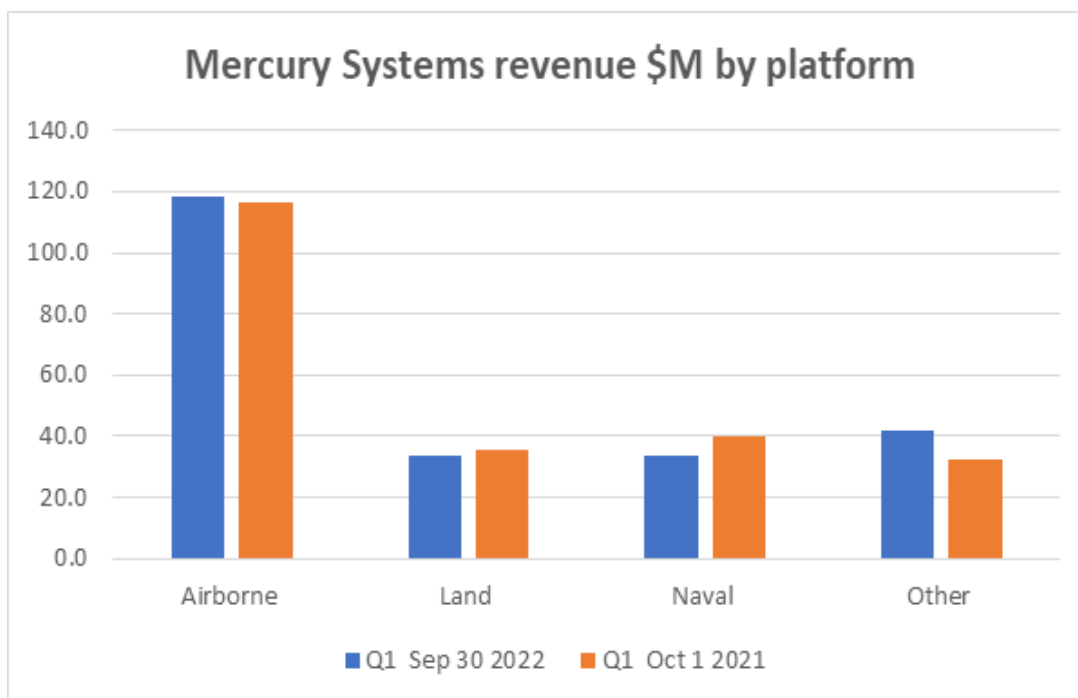

Notes:

1. *The aerospace and defense electronics marketplace consists of two primary subsegments: C4I and sensor and effector mission systems. C4I encompasses platform and mission management, which include avionics and vetronics, C2I, which includes command and control and intelligence, and dedicated communications processing.*

2. *Sensor and effector mission systems are primarily different types of sensor modalities such as EW, radar, EO/IR and acoustics as well as weapons systems such as missiles and munitions.*

Revenue by platform

The increase in revenue was primarily across the airborne platforms and other which grew $1.8 million and $8.9 million, respectively, partially offset by a decrease to naval platforms of $6.2 million during the first quarter ended September 30, 2022. The largest program increases were related to the LTAMDS, a secure processing program, F-35, SEWIP and P8 programs.

Notes:

1. *Airborne platform includes products that relate to personnel, equipment, or pieces of equipment designed for airborne applications*

2. *Land platform includes products that relate to fixed or mobile equipment, or pieces of equipment for personnel, weapon systems, vehicles and support elements operating on land*

3. *Naval platform includes products that relate to personnel, equipment, or pieces of equipment designed for naval operations*

4. *Other represents all platforms other than Airborne, Land or Naval.*
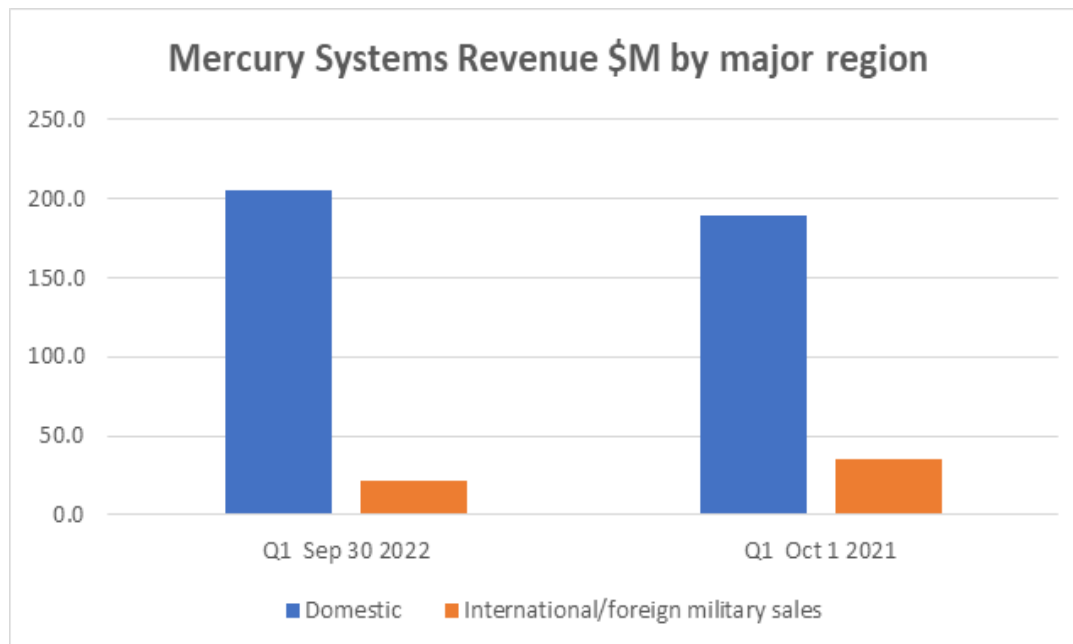
Revenue by key customers

Customers making up 10% or more of Mercury Systems' revenues for the periods shown are as follows:

Key Customers (> 10% of revenues)	1Q2022	1Q2021
Lockheed Martin Corporation	16%	13%
Raytheon Technologies	13%	14%
U.S. Navy	12%	17%
Northrup Grumman	10%	-
Total	**35%**	**31%**

While the Company typically has customers from which it derives 10% or more of its revenue, the sales to each of these customers are spread across multiple programs and platforms. There were no programs comprising 10% or more of revenues for the first quarters ended September 30, 2022 or October 1, 2021.

Revenue by major region

Notes:

1. *Domestic revenues consist of sales where the end user is within the U.S., as well as sales to prime defense contractor customers where the ultimate end user location is not defined.*

2. *International/Foreign Military Sales consist of sales to U.S. prime defense contractor customers where the end user is outside the U.S., foreign military sales through the U.S. government, and direct sales to non-U.S. based customers intended for end use outside of the U.S.*

Contract and Design Win Announcements

New contracts and design wins are good indicators of future revenue and growth potential. Not all contracts are announced publicly and for those that are, not all identify details of embedded computing technology utilized in the design. VITA encourages members to be as explicit as they can in their news releases to reinforce customer confidence in the standards through highlighting examples of deployments. Only contract wins that specifically mention VITA standards are reported in this section.

As reported by John Keller in Military and Aerospace Electronics, U.S. Navy combat aircraft experts are asking Lockheed Martin Corp. to set up a program to mitigate obsolescence of electronic components over the lifetime of the nation's fleet of F-35 combat jets. Officials of the Naval Air Systems Command -- the purchase agent for all U.S. F-35 aircraft -- announced a $25 million order last month to the Lockheed Martin Aeronautics segment in Fort Worth, Texas, to provide diminishing manufacturing source (DMS) management for the F-35. Lockheed Martin is the primary F-35 designer and manufacturer. DMS refers to the obsolescence of electronic components such as computer processors, field-programmable gate arrays (FPGAs), power supplies, and databus interface chips. This order calls for Lockheed Martin to review and identify

actual and potential DMS issues of components, parts, materials, assemblies, subassemblies, and software items, and recommend solutions to mitigate issues in support of the F-35 aircraft.[5]

Product Announcements

VPX Technology

VPX is a broadly defined technology utilizing the latest in a variety of switch fabric technologies in 3U and 6U format blades. OpenVPX is the architecture framework that defines system level VPX interoperability for multi-vendor, multi-module, integrated system environments.

❑ AMETEK Abaco Systems introduced its first 3U VPX form factor graphics and video processing card at the 2022 AUSA Annual Meeting and Exposition, The GRA116S is based on the NVIDIA® Ampere™ general-purpose graphics processing unit (GPGPU) and aligned to the SOSA™ Technical Standard. Delivering higher speeds and more bandwidth, the rugged, commercial-off-the-shelf (COTS) card simplifies avionics, ground transportation, radar, and other installations and reduces integration risks. It features PCIe Gen 4 connections for much faster data transfer when compared to previous generations, reaching up to 16GT/s.[6]

❑ Another AMETEK Abaco Systems introduction at AUSA was the SBC3513 3U OpenVPX single board computer. Offering increased processing performance and bandwidth over previous models, the SOSA-aligned I/O-intensive SBC features the new Intel® Xeon® W processor, formerly known as Tiger Lake H. The new SBC offers on-board Xilinx Zynq® UltraScale+™ MPSoC's built-in security capabilities, including an unclonable function (PUF), user-accessible hardened cryptographic blocks, asymmetric authentication, side channel attack protection, and other silicon-based AT features. It also features a thermal management design which allows deterministic performance even at extended temperatures typical of deployment on space-constrained platforms.[7]

❑ Additionally, AMETEK Abaco Systems introduced its VP461 6U VPX FPGA SOSA-aligned carrier card at AUSA. The VP461 is designed with two Xilinx Virtex® UltraScale+ FPGAs and two Xilinx Zynq UltraScale+ RFSoCs, allowing for closer proximity to the sensor for lower-latency and higher precision signal processing. A single slot populated with a VP461 can replace many different acquisition and processing boards that traditionally occupy multiple slots in a system.[8]

❑ Finally, AMETEK Abaco Systems launched its VP891 3U VPX FPGA SOSA-aligned carrier card at AUSA. Built around the Virtex UltraScale+ FPGA from Xilinx, the VP891 is available air-cooled and conduction-cooled, The VP891 is designed to operate in some of the harshest environments and applications, including electronic warfare, radar, DRFM, telecommunication base stations, semiconductor manufacturing equipment, autonomous vehicles, renewable energy stations, and more.[9]

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5   https://www.militaryaerospace.com/computers/article/14287097/obsolescence-electronic-parts-combat-jets
6   https://www.abaco.com/news/ametek-abaco-systems-graphics-and-video-processing-card-delivers-sosa-aligned-nvidia-ampere
7   https://www.abaco.com/news/ametek-abaco-systems-boosts-processing-performance-and-bandwidth-new-sbc3513-single-board
8   https://www.abaco.com/news/ametek-abaco-systems-releases-vp461-dual-rfsoc-dual-fpga-card-aligned-sosa-standard
9   https://www.abaco.com/news/ametek-abaco-vp891-sosa-aligned-3u-vpx-virtex-ultrascale-fpga-carrier-card-offers-performance

❏ Curtiss-Wright's Defense Solutions division, introduced the VPX3-673A at AUSA 2022. The company claims this is the first rugged module that delivers an Assured Position, Navigation and Timing (A-PNT) solution that includes both Alternative RF Navigation and the pntOS architecture.[10]

❏ Also at AUSA 2022, Curtiss-Wright introduced the VPX3-4936, its first 3U OpenVPX GPGPU processor module to feature the combination of NVIDIA's Ampere GPU and a configurable Gen4 PCIe Switch. The NVIDIA Ampere architecture offers a significant boost in performance and efficiency over the previous NVIDIA Turing™ generation.[11]

Chassis/Development Systems

❏ In October, Concurrent Technologies launched Vulcan – a new VPX-based development system, designed in alignment with the SOSA Technical Standard. Vulcan is based on the 3U VPX form factor and provides a solution for customers starting VPX projects based on Intel processor PICs. Providing support for both 100G Ethernet and PCIe Gen 4, Vulcan can accommodate four conduction-cooled and four air-cooled PICs, enabling a range of fully adaptable and customizable configurations to suit multiple customer application requirements.[12]

❏ At AUSSA 2022, Curtiss Wright Defense Systems debuted a MIL-rugged 3U OpenVPX 5-slot chassis enclosure that shares a common mounting solution with its PacStar 400-Series 4-Slot Smart Chassis for PacStar 400-Series Modules. With ~50,000 PacStar 400-Series Modules and Chassis currently fielded by the DoD, the new PacStar VPX Smart Chassis enables system designers to integrate CMOSS/SOSA aligned OpenVPX plug-in-cards via the same transportation and mounting solutions used by PacStar 400-Series tactical battlefield communications products.[13]

❏ Elma Electronic has increased the selection of popular chassis and development platforms available for quick shipment through the company's Express List offering. A broader range of chassis platforms that support the new SOSA standard and OpenVPX are now part of the program.[14]

❏ Pixus Technologies has a new 10U RiCool chassis that supports single, dual, or N+1 redundant power supplies that plug in from the rear of the enclosure. The 10U RiCool chassis features a 6U OpenVPX or SOSA aligned backplane in up to 16 slots at 1.0" pitch and speeds to 100GbE. The enclosure is extra deep to allow rear pluggable power supplies. This additional space also allows RF devices or other modules to fit within the rear of the chassis. The enclosure also supports a pluggable SOSA aligned chassis manager or a rear mezzanine approach that fits behind the backplane without taking up any slot space.[15]

❏ Pixus Technologies announced a new development kit for an OpenVPX/SOSA Chassis Management Card. The SHM300-10 development kit is currently shipping to customers as an early prototyping tool for future deployable versions of Pixus' SHM300 SlotSaver

10   https://www.curtisswrightds.com/media-center/news/sosa-aligned-pnt-module
11   https://www.curtisswrightds.com/media-center/news/sosa-aligned-nvidia-ampere-gpu-processor
12   https://www.gocct.com/2022/10/24/concurrent-technologies-launch-vulcan-our-new-vpx-based-development-system/
13   https://www.curtisswrightds.com/media-center/news/innovative-5-slot-vpx-chassis-delivers-integration-glide-path-sosa-aligned-solutions
14   https://www.elma.com/en/News-and-Events/News-Releases/2022/11/Updated-Express-Lists
15   https://pixustechnologies.com/assets/Press-Releases/Pixus-PR-10U-RiCool-Chassis-with-Dual-Swappable-PSUs.pdf

mezzanine-based chassis manager. The SHM300 is a SOSA aligned "Tier 3+" board designed for MIL rugged applications on aircraft, shipboard, or ground vehicles and utilizes software/firmware exclusively from the United States. It affixes to the rear of a SOSA/OpenVPX backplane.so that the unit does not consume any slots in the system.[16]

❑ Pixus Technologies has developed a high-performance backplane with signals above 28Gbaud across the backplane slots. The design leverages the 6U OpenVPX form factor and VITA 66/67 RF and optical interfaces but utilizes a special high-speed connector for the fastest data rates.[17]

New partnerships

❑ Concurrent Technologies has entered into a partnership agreement to offer a range of General Purpose Graphical Processing Units (GPGPU), AI-enabled, capture and video processing boards from EIZO Rugged Solutions. Concurrent Technologies' plug-in processor cards have an onboard expansion mezzanine site (XMC) or PCI Express lanes to adjacent cards (or both) to allow high bandwidth connections to GPGPU cards from EIZO. In addition, Concurrent Technologies' plug-in processor cards and EIZO Rugged Solution's OpenVPX modules integrate together to make a complete CPU + GPU solution in SOSA aligned systems.[18]

Webinars

❑ On November 16, Mercury Systems broadcast a Webinar on how the SOSA technical standard works with VITA standards. One of the key differentiators of the Technical Standard for the Sensor Open Systems Architecture (SOSA) Reference Architecture, Edition 2.0, Snapshot 1, is that it looks to adopt existing standards first, to benefit from years of design and development experience (one such standard is OpenVPX). This webcast featuring SOSA members explored how VITA standards influenced the SOSA development process and examined how VITA standards were adopted for SOSA Technical Standard 2.0, Snapshot 1.[19]

❑ On November 30th Military & Aerospace Electronics hosted a webinar sponsored by Elma Electronic, Concurrent Technologies, and EIZO Rugged Solutions. Version 1.0 of the SOSA Technical Standard has been out for a year now and with Snapshot 1 of version 2.0 recently published, implementations are starting to unfold. One of the key tenets of the SOSA technical standard is the ability to design open standards-based solutions using commercially available, best in class products to accelerate and lower system development costs. Starting with the AI solution recently demonstrated by EIZO Rugged Solutions, Concurrent Technologies and Elma Electronic, this webcast showed how easy it is to use the same SOSA aligned chassis and backplane as a starting point to then reconfigure PICs for alternative applications and new technology requirements. Such interoperability relies on all the hardware vendors and their PICs and system elements working together seamlessly.[20]

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16 https://pixustechnologies.com/assets/Press-Releases/Pixus-PR-Development-Chassis-Manager.pdf
17 https://pixustechnologies.com/assets/Press-Releases/Pixus-PR-6U-OpenVPX-Backplane-with-VITA-67-interfaces-13-slot.pdf
18 https://www.gocct.com/2022/12/14/concurrent-technologies-enhance-solutions-capability-with-launch-of-new-partnership-agreement-with-eizo-rugged-solutions-inc/
19 https://www.mrcy.com/company/news-insights/events/webinar-how-sosa-technical-standard-works-vita-standards
20 https://www.militaryaerospace.com/home/webinar/14285116/leveraging-sosa-to-implement-functional-systems-with-reconfigurable-ecosystem-plugin-cards-pics?sti=Concurrent

❑ On December 13th Concurrent Technologies sole-sponsored a second Military & Aerospace Electronics hosted webinar discussing the latest technology trends of mission-critical navigation and timing using GPS satellites, as well as trends in navigation and time in GPS-denied military environments amid GPS system outages, jamming, and electronic spoofing. The webinar embraced trends in military M-code GPS signals for precision in navigation and weapons guidance in difficult conditions in which GPS signals may be intermittent or not available, and alternatives to G-code and civilian-code GPS signals. Technologies involve RF and microwave GPS signal propagation, offensive and defense electronic warfare (EW) where GPS navigation and timing are concerned, and about ways to safeguard sensitive military GPS signals in global conflict.[21]

❑ On December 14th a further Military & Aerospace Electronics hosted webinar was sponsored by Elma Electronic and Mercury Systems. A key part of the SOSA Technical Standard includes how conformance to the standard should be met for hardware, or SOSA modules, and how that certification process will take place. During this webinar, experts involved in the SOSA Consortium and the standard's development discussed the elements of conformance to the Technical Standard, how the upcoming 1.0 release will address it, and considerations for the certification process.[22]

Events and Expos

Association of Old Crows (AOC)

The 59th Annual AOC International Symposium and Convention was held from October 25 - 27, 2022 at the Walter E. Washington Convention Center in Washington, D.C. It is the leading event for electronic warfare, electromagnetic spectrum operations, cyber-electromagnetic activities, and information operations professionals from around the world.

John Keller, writing in Military and Aerospace Electronics, reported comments made at the AOC conference by Dr. Ilya Lipkin, who chairs the SOSA steering committee for the Open Group, and is an open-architecture technical expert for the U.S. Air Force Research Laboratory at Wright-Patterson Air Force Base, Ohio.

"The SOSA 1.0 standard was unveiled one year ago, yet ways to enforce conformance and certify compliance are still in progress. SOSA compliance testing, to ensure that embedded computing components conform to the standard, could start as early as next year".[23]

AUSA 2022

The Association of the United States Army's (AUSA) Annual Meeting is the largest land power exposition and professional development forum in North America. Taking place over three days, the Annual Meeting is designed to deliver the Army's message by highlighting the capabilities of organizations and presenting a wide range of industry products and services.

VITA members attending AUSA took the opportunity to launch new products of interest to the U.S. army and its prime contractors, The next generation fighting vehicles and equipment on display competing for Department of Defense contracts were also being showcased for the fast-growing export market.[24]

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21 https://www.militaryaerospace.com/home/webinar/14285983/trends-in-navigation-and-timing-using-the-global-positioning-system-gps
22 https://www.militaryaerospace.com/home/webinar/14285831/learn-about-conformance-to-the-sosa-technical-standard
23 https://www.militaryaerospace.com/computers/article/14285517/sosa-compliance-testing
24 https://www.ausa.org/2022-annual-meeting-news

Defense Security Cooperation Agency director, James Hursch, announced the total U.S. arms (cleared)* sales at AUSA. Sales to allies and partners bounced back with a total of about $50 billion in fiscal 2022, a big jump from the total of about $35 billion last year. This brings FY22 in line with annual sales from before the COVID-19 pandemic. "I would say that we have enjoyed a rebound in arm sales," he said. "I think that there will, over the next three years or so … be continuing increases. I'm not sure how steep the slope will be."[25]

The sales amount cleared by the State Department and DSCA doesn't always reflect the actual value of a deal once it is negotiated by a country and a defense contractor later in the process.

EURONAVAL 2022

Euronaval took place October 18-21, 2022 at Paris Le Bourget and brought together political, military and industrial decision-makers in the naval defence sector. The entire naval community meets at Euronaval to showcase the latest innovations and prepare for the future of navies and administrations operating at sea.[26]

U.S. Army Network Technical Exchange Meeting (TEM) 9

U.S. Army Network Technical Exchange Meeting (TEM) 9 took place December 7-8, 2022 in Nashville, TN. The Army's Network-Cross Functional Team, in collaboration with Program Executive Office C3T, hosted the network-related meeting to discuss Capability Sets 25 and 27 development priority efforts and focus areas. The TEM 9 discussion focused on unified network and data centric modernization priorities and experimentation. This included network transport, Unified Network Operations (UNO), CMOSS, waveform development, data/cloud, and modern security architecture.[27]

Talking at this meeting, Army Undersecretary Gabe Camarillo said he was particularly impressed by the service's adoption of the C5ISR Modular Suite of Standards program, a platform that will allow soldiers to plug in cards embedded with networking and EW capabilities. Reflecting on last December's CMOSS Plugfest, Camarillo said "I think that really unlocks limitless potential. To me, you know, it is a challenge in the future, not just in terms of providing the defensive and offensive capabilities, but also integrating them onto the wide range of platforms that the Army has."[28]

Embedded Tech Trends

January 23-24, 2023, Crowne Plaza San Marcos, Chandler, AZ

Embedded Tech Trends is an industry-wide forum where suppliers of component, board and system level solutions can meet exclusively with members of relevant industry media to discuss technologies, trends, and products. he goal of Embedded Tech Trends is to educate the media covering the community of embedded computing developers in target vertical markets on the application of system, board, and switch fabric technologies.[29]

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25   https://breakingdefense.com/2022/10/us-arms-sales-rebound-back-to-50b-in-fiscal-2022/
26   https://www.euronaval.fr/118/replay
27   https://www.govevents.com/details/59445/us-army-network-technical-exchange-meeting-9-capability-sets-25-27-and-beyond/
28   https://breakingdefense.com/2022/12/open-systems-architecture-can-unlock-limitless-potential-army-undersecretary/
29   https://www.vita.com/EmbeddedTechTrends

Summary

As expected, the 2022 AUSA Annual Meeting and Exposition was the main event of the season for a raft of new product launches in the world of VITA standards. New processor modules, SBCs, graphics and video cards, assured position-navigation-timing cards, carrier cards harnessing process technologies from Intel, nVidia and Xilinx featured strongly. There were also several new chassis and development-based solutions launched this quarter based on various VITA VPX standards and aligned with the SOSA Technical Standard.

The significant 8% increase in funding of the U.S. National Defense Authorization Act for 2023 should trickle down into yet stronger order intake for military embedded computing systems. Order intake reported by the VITA standards-based product market leaders is already very strong with actual deliveries struggling to keep up, largely due to ongoing supply chain issues. This may well be the "low water mark" for organic sales growth which is reported higher for modules and subsystems than systems this quarter.

Listening to the end-user community, it is encouraging to see pro-activity on behalf of the U.S. Naval Air Systems Command to fund a program to specifically address future component obsolescence in the F35 program. Likewise, the encouraging comments made by the U.S. Army Undersecretary complimenting the CMOSS standards program should be welcome to VITA members who continue to work hard to support the open systems philosophy.

Finally, looking forward to 2023, January will see the return of VITA's own annual Embedded Tech Trends conference. See you there!

World Market for VITA Standards-based Board and Systems Report

M&A executives actively seeking opportunities and eager to better understand the dynamics of this industry sector may find some help in our recently published market report, 2021 Edition of World Market for VITA Standards-based Board and Systems Report.

VITA released the 2021 Edition of World Market for VITA Standards-based Board and Systems Report. The research and analysis were conducted over the past summer through data collection and discussions with companies supplying merchant products based on key VITA standards. The report was prepared by Brian Arbuckle, Principal Market Analyst at Embedded Market Research on behalf of VITA. The full report is available for purchase from the VITA website at www.vita.com/Market_Research.

Executive Summary of Report

Annual sales of VITA-standard based products (VME, VPX and PMC/XMC) to the merchant market are estimated to have increased on average 6.3% from 2019 to 2020. Boards are the highest in revenue while systems sales are the fastest growing aspect. 6U VPX systems are the fastest growing form-factor from 2019 to 2020.

The majority of VME and VPX boards and systems are sold to defense prime contractors that in turn, sell to governments. The largest customer for defense electronics is the United States with the U.S. Department of Defense budget having the greatest impact on market growth. U.S. Defense spending in total remains relatively steady but the budget allocation emphasizes compute-heavy technologies and has supported the increase in demand for VME and VPX boards and systems.

Market trends reported by VITA suppliers include the Open Systems DoD mandate; sensor proliferation using artificial intelligence (AI); and an increased emphasis on security by offering trusted computing solutions. The OpenVPX standard being championed by VITA aligns well with the U.S. Department of Defense demand for improved implementation of open standards and interoperability. VITA members are also harnessing the latest AI chip technology and developing accelerator boards for intensive data-processing applications. VITA market leading companies also offer a rigorous approach to supply chain security.

Business challenges in the reporting period include the supply chain interruption caused by COVID-19 and in particular the global semiconductor shortage. Continuing challenges include product obsolescence particularly regarding VMEbus, already in its 40th year of production. The use of COTS servers and virtualization of applications rather than using dedicated hardware is an ongoing challenge in some markets.

VITA member companies continue to grow both organically and by acquisition and there has been some M&A activity during the period which has placed a significant value on the expertise and capabilities of these VITA-standard suppliers.

The report contents are as follows:

- Executive summary
- Recent mergers and acquisitions
- Report introduction and method
- Market Analysis by VITA standard (VME, VPX, PMC/XMC)
- Trends affecting business
- Risks to business operations