The migration of military tactical systems to higher performance technologies such as ATCA® and rugged servers has reduced the total space required for the computational element of these C4ISR systems.

**ATCA Systems**

ATCA platforms from SMART Embedded Computing are ideal for these applications, having gone through certifications for surviving harsh environmental and vibration conditions. SMART EC is delivering the latest blades with a variety of application profiles. When placed in a ruggedized rack, taking advantage of COTS architecture with rugged features has never been easier!

**Rugged COTS Servers**

Our growing range of Rugged COTS Servers use the latest long lifecycle Intel® processing technology to combine high performance with configurability, data storage and longevity. PCI Express add-in card slots allow additional CPU processing, GPU processing or I/O to be added to the server using standard PCIe cards. These servers also use hot-swappable EDSFF storage modules, the latest in data storage technology.

**VME**

As VME remains an ideal architecture for mission-critical applications requiring high reliability and extended life cycles, SMART EC continues to be committed to the technology, with a particular focus on Power Architecture processor SBCs. As part of the group of innovative companies that invented VME technology over 35 years ago, SMART EC has laid the groundwork and consistently worked to enhance and extend VME technology.

**SOSA Products**

SMART EC is playing an active role in the definition of the Sensor Open Systems Architecture (SOSA) specification. The SOSA Consortium includes participants from the US Air Force, Army and Navy as well as other US government agencies plus a diverse group of Department of Defense (DoD) supply base commercial partners. The consortium provides a vendor-neutral forum for members to work together to harmonize, align, and create open standards to facilitate the development of agile, interoperable, and affordable sensors. The SOSA approach establishes guidelines for C4ISR systems. SMART EC will provide solutions aligned with the SOSA specification when the specification is released.
Product Application Fit

**ATCA® Platforms**

AdvancedTCA technology is widely deployed in defense applications and is ideally suited for bandwidth-hungry, high-performance applications that cannot allow for downtime such as land or ship based control systems and compute farms that combine sensor data or have the need to execute massive calculations.

**Rugged COTS Servers**

Applications needing high performance processors and some configurability, in environments that require more ruggedization than a typical enterprise server, are the sweet spot for Rugged COTS Servers.

**VMEbus Products**

VME is the historic lively COTS champion of military computing. Proven in applications ranging from ground-based to airborne, space and ship board, VME still remains a cornerstone of modern design. For developers it remains a solid choice with its enduring advantages of low power, small system size and experience in deployment.

<table>
<thead>
<tr>
<th></th>
<th>VMEbus Products</th>
<th>Rugged COTS Servers</th>
<th>ATCA® Platforms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Height</strong></td>
<td>6U typical</td>
<td>Currently 1U</td>
<td>3U - 15U depending on cooling and assembly requirements</td>
</tr>
<tr>
<td><strong>Designed for Harsh Environments</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Compute Core Density</strong></td>
<td>System dependent</td>
<td>Up to 32 cores/server</td>
<td>Up to 432 cores/13U</td>
</tr>
<tr>
<td><strong>Compute Architecture</strong></td>
<td>NXP® (PPC)</td>
<td>x86</td>
<td>x86; DSP</td>
</tr>
<tr>
<td><strong>Bus Architecture</strong></td>
<td>VME320 - parallel</td>
<td>Expansion Slots - PCIe Gen 3x16</td>
<td>Redundant 40G Ethernet</td>
</tr>
<tr>
<td><strong>Interconnect Bandwidth - One Way</strong></td>
<td>Up to 320 MB/s</td>
<td>Up to 16GB/s</td>
<td>4GB/s</td>
</tr>
</tbody>
</table>

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