Accredited as a Standards Development Organization (SDO) in June 1993 by ANSI, the VITA Standards Organization (VSO) meets every two months to work on standards issues of importance to the bus and board industry.

In 2000 the VSO was acknowledged as an IEC/ITA (Industry Technical Agreement) submitter. ITAs are a way for industry groups to develop specifications of mutual interest and publish them under the IEC banner. ITAs can be developed and deployed in months rather than the years that some standards processes require.

ANSI recognized standards
The following standards were developed in the VSO and have been recognized as American National Standards by successfully completing the ANSI canvass ballot process.

- ANSI/VITA 1-1994 (R2002), * VME64
- ANSI/VITA 1.1-1997, VME64 Extensions
- ANSI/VITA 1.3-1997, 9U x 400 mm Format
- ANSI/VITA 1.6, Keying for Conduction Cooled VME
- ANSI/VITA 3-1995 (R2002), Board Level Live Insertion
- ANSI/VITA 4-1995 (R2002), IP Modules
- ANSI/VITA 4.1-1997, IP/I/O Mapping to VME64x
- ANSI/VITA 5.1-1999, RACEway Interlink
- ANSI/VITA 6-1994 (R2002), SCSI
- ANSI/VITA 6.1-1996, SCSI Extensions
- ANSI/VITA 10-1995 (R2002), SKYchannel Packet Bus
- ANSI/VITA 12-1997 (R2002), M-Modules
- ANSI/VITA 13-1995, Pin Assignments for HIC on VME
- ANSI/VITA 17-1998, Front Panel Data Port
- ANSI/VITA 19.2-1998, BusNet LLC
- ANSI/VITA 20-2001, Conduction Cooled PMC
- ANSI/VITA 23-1998, VME64x Extensions for Physics
- ANSI/VITA 25-1997, VISION
- ANSI/VITA 26-1998, Myrinet-on-VME
- ANSI/VITA 29-2001, PC•MIP
- ANSI/VITA 30-2000, 2mm Connector Practice on Euroboard
- ANSI/VITA 30.1-2002, 2mm Conduction Cooled Euroboard
- ANSI/VITA 35-2000, Pin Assignment
- ANSI/VITA 38-2003, System Management on VME

* Indicates that the standard has been reaffirmed.

IEC Industry Technical Agreements (ITA)

VITA 30.2, Power Connector Equipment Practice
This working group has developed an implementation specification for a range of power connectors typically used on bus modules. As new power connectors become available they will be added to this specification. The specification was submitted and recognized as an ITA early in 2001.

Reaffirmed ANSI standards
Every five years American National Standards must be revised, reaffirmed, or withdrawn. The VSO has determined that the following standards are technically current and of continuing value to the bus and board community. The VSO has voted to reaffirm these standards via the ANSI canvass ballot process. The canvass ballot process began in March and the reaffirmation ballots for these two standards closed on May 7, 2003. Both ballots were affirmative and ballot results will be submitted to ANSI for recognition.

- ANSI/VITA 4.1, IP/I/O Mapping to VME64x
- ANSI/VITA 6.1, SCSI Extensions

VSO study groups and working group activities
Standards within the VSO may be started in study groups and are developed in working groups. A study group is used to build interest in a standard’s activity and requires only a single VSO member to initiate the study group. The formation of a working group requires at least three companies that are VITA members and the proposed work must fit within the defined scope of VITA’s accreditation with ANSI. The following draft specifications are being developed by their respective study and working groups within the VSO.

VITA 1.5, 2eSST
This draft standard defines a high performance synchronous protocol for VMEbus backplane transfers at 160 Mbytes/sec, 266 Mbytes/sec, and 320 Mbytes/sec. VITA 1.5 completed a 30 month period as a trial use standard under the “Draft Standard for Trial Use” procedures as outlined for American National Standards Developers in June 2002. During the trial use period, Texas Instruments (TI) developed a new VMEbus transceiver (VMEH22501) which should help speed the adoption of VITA 1.5. This draft successfully passed its VSO ballot and has now entered the ANSI canvass ballot process. The canvass ballot ended on May 7, 2003 with all votes affirmative. The ballot results will be submitted to ANSI for recognition.

VITA 17.1, Serial FPDP
This working group has developed a draft standard for transmitting Front Panel Data Port (ANSI/VITA 17, FPDP) signals across large distances. The draft successfully passed a VSO working group ballot in October 2002 and has been moved to the ANSI canvass process. The ballot group has been formed and the ballot started. The ballot closed on May 7, 2003. Several negative ballots were received and discussed at the May 14, 2003 VSO meeting. The draft will be revised and a recirculation ballot will be held.

VITA 31, Serial I/O on 2mm Connectors
The purpose of this effort is to define a standard set of signal pin assignments for the VMEbus P0 connector for high performance serial I/O interconnects. A draft of this proposed standard is posted on the VITA VSO Web page. Mike Thompson, Pentair, is chairing this activity.

VITA 31.1, Gigabit Ethernet on VME64x Backplanes
This standard defines the pin assignments and interconnection methodology for implementing a 10/100/1000Base-T Ethernet.
VITA 32, Processor PMC
This working group has developed a draft standard that will allow PMC mezzanine modules to host different microprocessors. Since PMC modules were originally developed for I/O functions only, there are a number of additional signals that were added to accommodate microprocessors. VITA 32 has been accepted by the VSO and has entered the ANSI canvass process. This draft has completed its initial ANSI canvass ballot. Several negative ballots were received and were reviewed by the committee. The draft has been revised and a recirculation ballot has started which will complete on June 9, 2003.

VITA 34, A Scalable Electromechanical Architecture
The purpose of this activity is to investigate and ultimately develop a new format for embedded systems based on serial interconnects. This framework will be oriented to the high heat loads and serial fabric interconnects anticipated in future embedded systems. Prototypes of this new framework were displayed at the November 2001 VSO meeting and the January 2002 Bus&Board conference. Bob Downing, consultant, is the chairman of this working group. Recently, Larry Thompson, NSWC, assumed the position of chair of the cooling subgroup. This group will develop standards to promote the use of liquid and spray cooling techniques.

VITA 36, PMC I/O Modules
The purpose of this effort is to develop a mezzanine module that will provide for flexible I/O pin assignments for PMC modules. Greg Novak, Motorola, is the chairman of this activity. The draft is being revised and will be submitted to a working group ballot in June 2003.

VITA 38, System Management on VME
The goal of this effort is to develop a standard for a system management bus based on I2C and the IPMI protocol. VITA 38 completed a successful ANSI canvass ballot in November 2002 with all ballots affirmative and was recognized as an American National Standard. Congratulations to the VITA 38 chair, Mike Thompson of Pentair, and the VITA 38 working group for their efforts in making VITA 38 a standard.

VITA 39, PCI-X on PMC
This working group has developed a draft that defines how to implement PCI-X on a PMC module. VITA funded a simulation study to determine how many loads can be handled at 66 MHz, 100 MHz, and 133 MHz. That study is available to VITA members and can be purchased by non-members. VITA 39 finished its first working group ballot at the end of October and was revised based on voters comments and entered the ANSI canvass process. The ballot group has been formed and the ballot started. It closed on May 7, 2003. Several comments were received and will be used to revise the draft. A recirculation ballot is planned.

VITA 40, Service Indicator Standard
The goal of this effort is to define a common set of front panel indicators for embedded systems. No one single standard exists and current products often use similar indicators to mean different things. The working group was formed at the January 2002 VSO meeting based on preliminary work done by Sun Microsystems. Craig Harley, Sun Microsystems, is the working group chairman. VITA 40 passed its working group ballot and has entered the ANSI canvass ballot process. The ballot group has been formed and the ballot started. The ballot 2003 closes on July 2, 2003.

VITA 41.0, VXS
VXS is an effort proposed by a Motorola-led special interest group (SIG) to add serial fabrics to the VMEbus backplane to provide enhanced performance. A basic mechanical framework compatible with VME64 modules has been defined along with specifications for various fabrics. The working group is currently reviewing several areas of VITA 41 to make them compatible with conduction cooling requirements. Bob Tufford, Motorola, is chair of the VITA 41.0 working group and Nils Steffensen, Motorola, is the draft editor. Along with VITA 41.0, the following subgroups have been formed and are working on integrating serial protocols and live insertion capabilities into the VXS framework.

VITA 41.1, VXS InfiniBand Protocol Layer
Draft Editor: Mark German, Motorola
VITA 41.2, VXS RapidIO Protocol Layer
Draft Editor: Eric Yu, Mercury Computer
VITA 41.10, Live Insertion Requirements for VITA 41 Boards
Draft Editor: Steve Paavola, Sky Computers

VITA 42, XMC Switched Mezzanine Card
The goal of the VITA 42 working group is to develop a PMC compatible mezzanine format, to be called XMC, with options for high-speed serial fabrics. The working group is developing this standard in cooperation with the RAPIDIO trade association, which has developed a similar mezzanine form factor called RMC specifically for RAPIDIO. Currently, the working group is developing the initial draft and determining what will constitute an XMC compatible module. Greg Novak, Motorola, is the chair of VITA 42.

VITA 43S, Hot Swap NexGen Mezzanine
VITA 43S is a study group that is looking at the development of a hot swappable mezzanine module. Michael Franco, Artesyn, is the chair of the working group. Initially the group is looking at the challenges of developing a mechanical mezzanine structure that will allow hot swap operations. Michael is coordinating VITA 43S with PICMG.

VITA 45S, Serial VME
At the January VSO meeting, Hermann Strass, VITA Technical Coordinator, suggested that VSO members look at developing a serial VME protocol. This effort is still in the study group stage and Hermann is looking for ideas and supporters.

VITA 46, VME on a High Density Connector
This working group was formed at the March 2003 VSO meeting to investigate the feasibility of increasing the user I/O pin count on the VME board by specifying a denser connector. As functionality per board has increased due to an increase in chip functionality, more and more user I/O pins are needed for certain applications. The working group is in its early stages and requirements are being defined.