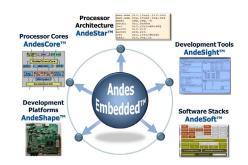# ANDES in Sight

ANDES TECHNOLOGY Newsletter

Andes Technology Records 1 Billion SoC Shipments in 2018 Based on Its CPU IP and 3.5 Billion Since Inception

Andes Technology Corporation (TWSE:6533)—the first public listed CPU IP company in Asia, specializing in low-power, high-performance 32/64-bit processor IP cores and SoC platform—announced an extraordinary record of **1 billion annual SoC** shipments containing its CPU IP in 2018. The cumulative SoC shipments surpassed 3.5 billion. Applications in which Andes CPU IP performs include AI and machine learning, audio, Bluetooth, gaming, GPS, MCU, sensor fusion, SSD controllers, touch screen and TDDI controllers, USB 3.0 storage, voice recognition, Wi-Fi, and wireless charger.

Andes Technology Announces RISC-V Single-Core and Multicore Processors with DSP Instruction Set

At the **RISC-V Workshop Taiwan** cohosted by Andes Technology on March 12, 2019, Andes debuted its 32-bit A25MP and 64-bit AX25MP RISC-V multicore processors. The A25MP and AX25MP are the first commercial RISC-V cores with comprehensive DSP instruction extension. With the addition of cache-coherent multiprocessors and the DSP ISA based on the RISC-V P-extension draft Andes donated to the RISC-V Foundation, Andes brings powerful solutions to address the new market and further enriches its RISC-V lineup.

Imagination and Andes Collaborate to Enable Ultra-Low Power Connected Microprocessors for IoT

On February 26, 2019, **Imagination Technologies and Andes Technology** announced they are working together to integrate the new N22 RISC-V MCU IP from Andes with Ensigma low-power IP for Wi-Fi, Bluetooth, IEEE 802.15.4 and GNSS to provide a fully integrated, off-the-shelf solution for the IoT market. During Embedded World 2019 at the Exhibition Centre Nuremberg, Nuremberg, Germany from 26 February to 28 February 2019, Andes Deputy Director of Business Development, Tommy Lin, presented **"Introducing AndesCore and Development Tools to Ease Domain Specific Acceleration"** in which he discussed the N22 and the collaboration with Imagination Technology.

Andes and SEGGER Partner to Deliver Professional Development Solutions for RISC-V

Andes Technology, a founding member of the RISC-V Foundation and the leading supplier of 32/64-bit embedded CPU cores with solutions serving in excess of 1-billion diversified SoCs in 2018, and SEGGER Microcontroller, a leading supplier of software, hardware and development tools for embedded systems, today announced the availability of **SEGGER powerful development solutions** support for Andes RISC-V processor families.

Andes Technology Strengthens the RISC-V EasyStart Alliance to 15 ASIC Design Service Partners

As the first public CPU IP company in Asia, specializing in low-power, high-performance 32/64-bit processor IP cores and SoC design platform, Andes Technology Corporation (TWSE:6533) created a RISC-V promotion program called the "**EasyStart**" in July, 2018. The goal of the RISC-V EasyStart program is to help Andes' design service partners catch the emerging opportunity in RISC-V based SoC design and development. The expanding global alliance now has 15 members and is on the way to its target 20 members in the near future. The alliance in alphabetical order includes **Alchip, ASIC Land, BaySand, CMSC, EE solution, INVECAS, MooreElite, PGC, SiEn (Qingdao) Semiconductor , Silex Insight, Socle , XtremeEDA** and 3 unnamed partners.

Andes Sponsors Successful RISC-V Workshop Taiwan

The RISC-V Foundation held the **first workshop in Taiwan** on March 12th and 13th, and there were more than two hundred attendees that joined this great event. The workshop began with an overview of the RISC-V Foundation by Rick O'Connor, Executive Director of the Foundation. Then followed the panel discussion "Opportunities & Challenges in AIoT", moderated by Dr. C.Y. Lee, the professor of NCTU. Panelists Frankwell Lin, president of Andes Technology; Todd Lin, COO of Egis Technology; Ted Marena, Chairman of the RISC-V Foundation marketing committee from Western Digital; and Ted Speers, RISC-V Foundation board member from Microchip Technology, provided an in-depth discussion. Dr. Charlie Su, the CTO and SVP of Andes Technology delivered the keynote speech "RISC-V: From Hype to Ripe." It described the hypes, expectations, and challenges RISC-V is facing and explained Andes approaches to help customers harvest the emerging RISC-V opportunities. Experts from Andes Technology: Dr. Kevin Chen, Dr. Chuan-Hua Chang, Kito Cheng, Greentime Hu, Alan Kao, Shiva Chen, Hsiang-kai Wang, contributed 5 sessions in the Workshop. Dr. Charlie Su also officially announced new members of the AndeStar V5 architecture – A25MP/AX25MP, 32/64 bit multi-core processor with Cache coherence, as well as first RISC-V processors with rich DSP ISA during the workshop. In addition, the demonstration of the high-efficiency facial recognition system powered by Andes DSP instructions and algorithms from NCTU Si2 LAB also received highly praised.

Join "Getting Started with RISC-V" Free 4-Cities Event

Getting Started with RISC-V®

North America Road Show

Boston-Waltham: Monday, April 1st
Austin: Tuesday, April 2nd
Irvine: Wednesday, April 3rd
Bay Area: Thursday, April 4th

Learn more at: https://riscv.org/getting-started-riscv-events/.

The RISC-V Foundation will be hosting a series of free, "Getting Started with RISC-V" events in North America beginning April 1 and concluding on April 4. On April 1 RISC-V members—Andes Technology, Antmicro, Dover Microsystems, Hex Five, Imperas, Microchip Technology, SiFive and Western Digital—will appear at the Conference Center in Waltham. **Click here to register.** On April 2nd, join the group at the Commons Conference Center in Austin. **Click here to register.** On April 3rd, attend the sessions at AV Irvine. **Click here to register**. And on April 4th, join the members at the Western Digital campus in Milpitas. **Click here to register**.

Evaluate Andes IP Cores

Andes has over 130 licensees and in 2016 Andes-embedded products shipped in more than 430 million devices around the globe from licensees in Taiwan, Japan, Korea, China, Europe, and USA. The company is expanding into the Americas.

If you have an SOC design in need of a low power, low memory footprint CPU with full toolchain and peripheral support, contact us to arrange a free evaluation. Let us help with your next design. E-mail us at **info@andestech.com**. Andes Technology USA Corporation 2375 Zanker Road, Suite 210, San Jose California 95131

Andes Technology Corp.

Founded in March 2005, Andes Technology Corporation with headquarters in Hsinchu, Taiwan is a leading Taiwan CPU intellectual property (IP) supplier, with over 120 licensees in Taiwan, Japan, Korea, China, Europe, and USA that have shipped over 3.5 billion units. Its products include the entry level **N7** and **E8**, **S8** and **N8** with 2- and 3-stage pipelines and high-end **N13**, **N15**, **D15**, **N25 and NX25** with 5-stage to 8-stage pipelines. The mid-range N9 has the highest customer shipping volume while the mid-range N10, D10, and high-end N13, N15 and D15 support Linux and floating-point coprocessor.

Configurable and extensible Andes cores enable designers to create unique designs. AndeSight™ IDE enable customers to efficiently develop, debug, tune and regress their software. AndeSoft™ provides customers optimized fundamental software such as OS, drivers, standard C libraries, middleware, etc. for rapid application development. The company has sales offices throughout Asia and the U.S.