



Imagine a group of seasoned Israeli Execs returning home to Israel from the Silicon Valley - to create an Israeli CPU startup that capitalizes on hundreds of years of cumulative experience in CPU design. Awesome, isn't it? Now transfer that thought to Taiwan – and you get Andes Technology! Andes was created by a core team of Taiwanese Execs and Scientists - veterans from AMD, DEC, Intel, MIPS, nVidia, SUN and others in the Silicon Valley - who came back home in 2005 to strengthen the local industry in Taiwan.

Now, fast forward 10 years to 2016 and observe Andes today: a strong IP company with circa 150 employees, more than 100 licensees spread over the entire globe, and 1.5 BILLION chips shipped with Andes Embedded!!!

The way to these impressive results was paved by a well-focused family of CPU cores, which highlights an outstanding power efficiency combined with unique features that are carefully designed into the right AndesCore™, to reach a well-defined distinction between the various cores, each one being designed to fit a specific market and feature-set. Be it compact code density, real-time stack protection, purely digital performance-power tradeoffs, streamlined transition from deep sleep to active state, custom ISA extensions, accelerated flash-resident code processing, or other unique features, each feature is allocated to the right core and adds value precisely to the use case and market segment that it is aimed at. Needless to say, together with the cores, a rich offer of software and tools for a pleasant design experience and system development, and a growing community of in excess of 100 companies in the Andes Ecosystem.

Figure 1 – Andes Technology's products

Another important concept that is preached by Andes is that sometimes less is more: Design as many cores – and only as many cores – as necessary to serve precisely the markets and performance-power points needed by the customers. Avoid a multitude of cores that are poorly differentiated. Provide flexible configurations and the freedom to optimize the cores' usage for the role they will be taking in the design. By learning from prior CPU designs, Andes defines its

own highly efficient and patented instruction set architecture. Together with the careful planning of pipeline features for each core, it enables Andes to offer leading performance efficiency, while securing frequency, size and power consumption that consistently beat the competition. Less power per MHz and more work per mW are real objectives on Andes' CPU cores design.

Andes is good on listening to its customers and being flexible to accommodate their needs. Andes will support you along your design and do its best to keep you well served and your design efficient. Andes is eager to cooperate with its customers and to win new applications, new geographies and new vertical segments.

With giants such as Mediatek as Customer and Investor, and Samsung as a major Customer's Customer, it looks like the future is bright for Andes. TSMC has recognized Andes as Partner of the Year for 2015 in the New IP Partner category, and the Technical Press often publishes some good words about Andes, too.

Andes' President, Frankwell Lin, says: "We will expand our core product roadmap in two directions: one is to make the cores even lower power, that is good for IoT applications; the other end is to have higher performance, which means we will have deeper stage pipelines, more issues and more cores design features. To date more than 1.5 billion SoCs embedded with AndesCores have been shipped. In 2015 the annual shipment of AndesCores in SoCs reached 390 million units, so we believe it is quite successful in terms of market share and world ranking for 32-bit embedded processor industry. Across the world, more than 50,000 engineers have learned how to use Andes' toolchains as the installed base is over 10,000 seats. This means that you can easily find engineers who are already trained to design with Andes."

Dig into your souls and think about your feelings and concerns when doing business with your current CPU IP provider; now think again, this time about a young, ambitious, strong IP vendor, eager to collaborate with you and with a track record of 1.5 Billion units shipped in only 10 years – a world record by all means!

This is the Andes advantage and this is why we should be working together – so raise that phone and let me know when I should be visiting you for a deeper discussion. I will be in my car on my way to your office – fast!