http://www.arm.com/community/partners/company_list/rw/ProductTypes/4/

SoC IP [providers in ARM Connected Community Program]

System-on-Chip Intellectual Property, or SoC IP, plays an important role in the design of today's advanced silicon products. SoC IP Providers that use ARM Artisan Physical IP can join the [Artisan] IPNet Partner Program [+].

Below is a list of SoC IP providers in the ARM Connected Community. (* TSCM IP Alliance Program members)

1. **Allegro DVT**: a leading provider of H.264/MPEG-4 AVC solutions, including industry standard compliance test suites and real-time audio/video encoders and transcoders. Allegro products have been chosen by more than 55 major IC providers, OEMs and broadcasters.
    - AH264-IP
2. **Alvaview Technology Inc**: the leading provider of low power / low cost video codecs such as MPEG-4 and H.264 multimedia IPs that power innovative services for revenue generating and bandwidth saving applications in the broadcast, mobile, enterprise and IPTV markets.
    - Multi-standard HD video decoder IP (JPEG, MPEG1/2/4, H.264)
3. **Analog Bits***: the leading supplier of low-power, customizable analog IP for easy and reliable integration into modern CMOS digital chips. Our product range includes precision clocking macros such as PLL's & DLL's, programmable interconnect solutions such as multi-protocol SERDES/PMA and programmable I/O's as well as specialized memories such as high-speed SRAMs and T-CAMs.
    - Low Power Wide Range PLL - Common Platform 32LP
4. **ANHUI USTC iFLYTEK CO. LTD**: the leading provider of Chinese speech and language technology, serving consumers, businesses and government organizations.
    - Chipset for Chinese speech synthesis: The chip for Chinese speech synthesis developed by iFLYTEK is able to take text inputs through any one of the three interfaces, i.e. UART, SPI or I2C, and generates excellent speech outputs.
5. **Arasan Chip Systems, Inc.**: a leading provider of Total IP solutions for mobile storage and connectivity applications. Arasan's high-quality, silicon-proven, Total IP Solutions include digital IP cores, analog PHY interfaces, verification IP, hardware verification kits, protocol analyzers, software stacks and drivers and optional customization services for MIPI, USB, SD, SDIO, MMC/ eMMC, CF, UFS and many other popular standards.
    - CSI-2 Receiver IP Core
    - CSI-2 Transmitter IP Core
    - DSI Device IP Core
    - DSI Host IP Core
    - ONFI 3.0 NAND Flash Controller
    - SD3.0 / SDIO3.0 / eMMC4.5 Host Controller IP
    - USB 2.0 Device IP Core
6. **Archband Labs, Inc.** : Archband provides low-power, high performance mixed-signal IP solutions for audio, video, and communication applications.
    - Audio CODEC IPs
7. **Arteris***: Arteris invented Network on Chip technology, offering the world's first commercial solution in 2006. Arteris connects the IP blocks in semiconductors from Qualcomm, Samsung, TI, and others, representing over 50 System on Chip devices. ... Arteris is a private company backed by a group of international investors including ARM Holdings, Crescendo Ventures, DoCoMo Capital, Qualcomm Incorporated, Synopsys, TVM Capital, and Ventech.
    - C2C™ Chip to Chip Link™ Inter-chip Connectivity IP
    - FlexNoC Network-on-Chip Interconnect IP
    - FlexWay Interconnect IP

8. **ASIC Design Services**: offers a broad range of design services and is a leading distributor for technically complex electronic components and EDA software.
    - SmartFusion intelligent mixed signal FPGAs are the only devices that integrate an FPGA, ARM® Cortex™-M3 and programmable analog, offering full customization, IP protection, and ease-of-use. Based on a proprietary flash process, SmartFusion FPGAs are ideal for hardware and embedded designers who need a true system-on-chip (SoC) solution that gives more flexibility than traditional fixed-function microcontrollers—without the excessive cost of soft processor cores on traditional FPGAs.
9. **Aurora VLSI, Inc.** +: provides AMBA specification-based SoC/ASIC IP components, peripherals, subsystems, and platforms. ... Aurora provides a full set of popular communications and SoC IP cores for ARM and AMBA Bus-based SoCs.
    - AMBA Peripherals- Ethernet, PCI, USB, IEEE1394, memory and flash controllers, interrupt controller, timers, counters, GPIOs, etc
    - AMBA SOC Platform (Configurable)
10. **AuthenTec** *: a leading provider of mobile and network security. ... AuthenTec's products and technologies provide security on hundreds of millions of devices, and the Company has shipped more than 100 million fingerprint sensors for integration in a wide range of portable electronics including over 15 million mobile phones. Top tier customers include Alcatel-Lucent, Cisco, Fujitsu, HBO, HP, Lenovo, LG, Motorola, Nokia, Orange, Samsung, Sky, and Texas Instruments.
    - SafeXcel™ IP-06 KASUMI Crypto Core Family
    - SafeXcel™ IP-115 HDCP2 Content Protection Crypto Module
    - SafeXcel™ IP-123 Secure Platform Crypto Module
    - SafeXcel™ IP-154 Public Key Infrastructure Cores
    - SafeXcel™ IP-16 3DES Crypto Core Family
    - SafeXcel™ IP-160 MACsec Security Engine w/ Classifiers
    - SafeXcel™ IP-18 CAMELLIA Crypto Core Family
    - SafeXcel™ IP-197 Inline Security Packet Engine
    - SafeXcel™ IP-28: Public Key Accelerator Cores
    - SafeXcel™ IP-3X AES Crypto Core Family
    - SafeXcel™ IP-46 SNOW 3G Crypto Core Family
    - SafeXcel™ IP-48 ZUC Crypto Core Family
    - SafeXcel™ IP-57 HASH/HMAC Core Family
    - SafeXcel™ IP-60 MACsec Frame Engine
    - SafeXcel™ IP-62 MACsec/IPsec GCM Packet Engine
    - SafeXcel™ IP-76 True Random Number Generator
    - SafeXcel™ IP-97 Look-Aside Security Packet Engine
11. **Bluespec, Inc.**:
    - AzureIP Bus Fabric Libraries for AMBA AXI and AHB: enable modelers and designers to quickly and correctly create and connect to AMBA AXI and AXI interfaces and channels.
12. **CAST, Inc.**: provides over 100 popular and standards-based IP cores for ASICs and FPGAs, plus pre-integrated SoC Kernels for a head start on embedded system design.
    - IP Cores and SOC Kernels: Our interface cores make it easy to connect your system to the world or to other components. ... Use our image compression, video compression, encryption, and other cores to readily incorporate specialized expertise into your system. These include the widest range of JPEG compression types you'll find anywhere, the advanced H.254 video, and

proven functions for security-related applications. ... Get a significant head start on system development with CAST SoC Kernels. These pre-verified subsystems integrate multiple hardware cores with essential software to rapidly flesh out your ARM-based system. Start with a lean SoC Kernel, or choose a pre-expanded PIP that adds more peripherals and functions for your ARM 7 or ARM 9 family processor.

13. **CEVA, Inc.** *: the leading licensor of digital signal processor (DSP) cores, multimedia and storage platforms to leading semiconductor and electronics companies worldwide. ... This portfolio includes a family of programmable DSP cores, DSP-based subsystems and application-specific platforms including multimedia, audio, Voice over Packet (VoP), Bluetooth, Serial ATA (SATA) and Serial Attached SCSI (SAS).
    - Application Platforms: for Mobile Multimedia Applications
      The Only Silicon-proven Programmable Solution Supporting H.264 codec up to D1 resolution! ... Complete, Low-Cost Audio Solution ... Complete, Single Processor VoIP Solution
    - DSP Cores: The CEVA-X family of cores is based on CEVA's latest pioneering DSP architecture. This architecture offers best-in-class performance, scalability, and lowest cost-of-development for DSP deployment ... CEVA-TeakLite Architecture DSP core.
    - System Platforms: Broad set of DSP peripherals extendible through APB ... tailored for specific cores of the CEVA-X architecture framework ... High performance multimedia platform ... CEVA-TeakLite Architecture DSP subsystems
14. **Chips&Media,Inc.** *: video codec technologies cover the full line-up of video standards such as MPEG-2, MPEG-4, H.263, H.264/AVC and VC-1 from CIF to HD resolution.
    - BODA7Series-HD Video Decoder IP
    - BODA9Series-Dual HD Video Decoder IP
    - CODA7Series-HD Video Codec IP
    - CODA9Series-Dual HD Video Codec IP
15. **Cognovo Ltd**: supplying a Software Defined Modem (SDM) platform which enables manufacturers to create flexible multi-mode wireless devices capable of operating a dynamic mix of cellular, connectivity and broadcast standards such as TDD / FDD, CDMA, HSPA+, LTE, LTE-A, WiFi, DVB, DMB.
    - Modem Compute Engine MCE120
    - Modem Compute Engine MCE160
16. **Coresonic AB**: the most silicon and area efficient solutions for next generation modem applications enabling its customers to quickly add WiMax, LTE, DVB-T/H, ISDP-T, T-DMB, DAB or 802.11 functionality to their own products. This is achieved using our unique patented programmable baseband processor technology optimized for WiMAX and 4G wireless modems.
    - The Worlds Smallest and Lowest power WiMAX PHY solution
17. **Denali Software, Inc.** +: Databahn™ products provide optimal control and data throughput for external DRAM (DDR2, DDR3, LPDDR1, LPDDR2) and Flash memory devices.
    - Databahn NAND Flash Controller
    - Databahn(TM) PCI Express Controller IP Core
    - Databahn(TM) SDR/DDR1/DDR2/DDR3/LPDDR2 Solutions
18. **Digital Blocks, Inc.**: IP cores for embedded processor and video system designers. We offer synthesizable RTL VHDL and Verilog IP cores for System-on-Chip (SoC) ASSP, ASIC, and FPGA designers.
    - Android - TFT LCD Controller (AHB)
    - Bit Block Transfer (BitBLT) 2D Graphics Engine IP Core (AXI)
    - Bit Block Transfer (BitBLT) 2D Graphics Engine IP Core (AXI4)
    - I2C Master Controller (APB)
    - TFT LCD Controller IP Core (AHB)
    - TFT LCD Controller IP Core (AXI)
    - TFT LCD Controller IP Core (AXI4)

19. **Discretix Technologies Ltd.**: embedded security co-processors deployed in mobile and flash memory devices
    - CryptoCell
    - CryptoFlash
20. **Elliptic Technologies Inc.**: a leading provider of embedded security Intellectual Property including hardware cores and software to SoC manufacturers, OEMs, network operators and content providers.
    - CLP-02: DES/3DES Cipher Core
    - CLP-04: ARC4 Cipher
    - CLP-08: High Throughput DES/3DES Core
    - CLP-100: Hash Flow-Through Core
    - CLP-11: Tiny AES Core
    - CLP-17: High Performance Elliptic Curve Cryptography (ECC) Point Multiplier Core
    - CLP-19: Ultra-high Throughput DES/3DES Core
    - CLP-20: High Throughput AES-CCM Core
    - CLP-200: Pipelined GCM-AES Core
    - CLP-26: Hash Look Aside Core
    - CLP-27: Compact True Random Number Generator
    - CLP-28: 802.16/WiMAX AES Core
    - CLP-30: High Throughput Pipelined IPsec Core
    - CLP-300: High Performance RSA and Elliptic Curve Cryptography Public Key Accelerator Core
    - CLP-34: AES Key Wrap Core
    - CLP-38: KASUMI Flow Through Core
    - CLP-400: Snow 3G Key Stream Generator
    - CLP-401: Kasumi Cipher
    - CLP-402: Kasumi Look Aside Core
    - CLP-403: Snow 3G Look Aside Core
    - CLP-41: Snow 3G Flow Through Core
    - CLP-410: ZUC Key Stream Generator
    - CLP-411: ZUC Look Aside Core
    - CLP-412: ZUC Flow Through Core
    - CLP-42: DVB CSA2 Descrambler Core
    - CLP-43: MULTI2 Cipher Core
    - CLP-45: Configurable Lookaside AES Core
    - CLP-47: Configurable XTS-AES Core
    - CLP-600: Security Protocol Accelerator (SPAcc + SPAcc-QoS)
    - CLP-620: Security Protocol Accelerator – LTE (SPAcc-LTE)
    - CLP-630: Multi-Packet Manager (SPAcc-MPM)
    - CLP-700: DVB CSA3 Descrambler Core
    - Elliptic Family of Security IP
21. **eMemory Technology Inc.** *: focused on the development of logic embedded non-volatile memory (NVM) such as OTP, MTP, and Flash. eMemory has published 186 patents. There are over 120 companies who have implemented our technologies and IP's worldwide.
    - NeoBit
    - NeoFlash
22. **Evatronix SA**: develops digital and mixed-signal Intellectual Property (IP) cores with complementary software and supporting application environments. ... Over a period of more than 20 years, provided over 500 licenses for 8051, USB, NAND Flash, SDIO and multimedia solutions. We are headquartered in Poland, and employ more than 90 people worldwide.
    - NAND Flash Controller
    - PANTA DP20 Display Processor

23. **Faraday Technology Corp.**: With more than 800 employees and an annual revenue of 156 million USD in 2007, Faraday is the largest fabless ASIC design service company in Asia. It is also a leading vendor of proven silicon IP. Faraday has already completed over 3000 successful designs and helps customers ship thousands of million chips.
    - Net Composer: a highly integrated SoC platform that combines Faraday's industry leading Metal Programmable Cell ArrayTM (MPCA) Structured ASIC technology with intelligent system blocks.

24. **HDL Design House**: with a focus on offering design and verification services for SoC projects, providing IP cores and eVC based verification solutions. ... The company is located in Belgrade, Serbia and Montenegro (South-East Europe).
    - AMBA APB SV Monitor/Checker
    - DSI IP Core - HIP 3500
    - Serial RapidIO IP core - HIP 3300
    - SPI Flash Memory Controller
    - UniPro IP Core (HIP3600): implements the Physical-Adapter Layer (L.15), Data Link Layer (L2), Network Layer (L3) and Transport Layer (L4) as well as support the M-PHY Layer of the UniPro specification version 1.4. ... exhibits a complete set of component with bus-master and slave interfaces using AMBA AHB and AXI Version 2.0.

25. **Hilscher GmbH**: Founded more than 20 years ago Hilscher is today one of the world leaders in industrial communication, developing and manufacturing solutions for fieldbus and industrial Ethernet as for example PC cards, gateways, ASICs for all kinds of communication protocols used in the industry. Hilscher is a global company with its headquarters in Germany and wholly owned subsidiaries in France, Italia, Swiss, USA, Japan and China and distribution partners in 20 further countries.
    - netX – networX on Chip: highly integrated network controller with a new system architecture optimized for communication and maximum data throughput.

26. **Intrinsic-ID***: semiconductor IP and embedded software products based on Hardware Intrinsic Security. Our solutions revolve around patented Physically Unclonable Function (PUF) technology, where a secret key is extracted like a silicon biometric or fingerprint from silicon hardware directly and only when required.
    Attackers have nothing to find because no key is stored nor present in the power down state. ... Headquartered in Eindhoven, The Netherlands, Intrinsic-ID was founded in 2008 as a spin-out of Royal Philips Electronics and has been deployed in Philips' production environment.
    - AES
    - HMAC-SHA-256
    - iRNG
    - Quiddikey™ in Hardware
    - SHA-256

27. **Intrinsix Corp.**: an IP-enabled ASIC/SoC design solutions company. ... have completed dozens of ARM technology-based SoC projects successfully.
    - Intrinsix AMBA SoC Platform: full computing platform which forms the processing core of a System-on-Chip IC. It is well suited for high integration, low power applications, and can be extended to include custom digital and analog processing for a target application. ... The platform is supplied with Intrinsix designed and proven IP. However any AHB/APB compliant peripheral (e.g. ARM prime cell) can easily be integrated into the design. ... The entire platform (with the exception of the ARM7 and internal SRAM/ROM) is supplied as synthesizable RTL that may be easily customized to fit the required application.

28. **IP-Maker**: specialized in digital IPs for ... memory controllers ... ECC modules ... complete PCie to SSD and USB to SSB controllers ... interconnection blocks ...
    - Universal Nand Flash Controller Full version

29. **iWave Systems Technologies Pvt. Ltd.**: established in 1999, focuses on Product Engineering Services involving Embedded Hardware, FPGA and Software.... headquartered in Bangalore, India with offices in Tokyo, Japan; Munich, Germany and London, UK.
    - iw-GPS Receiver Module
30. **Kaben Wireless Silicon Inc.**: a leading developer of reconfigurable transceivers that enable Next Generation wireless communications based on multiple standards (FM, WiMax, Wi-Fi, W-USB, GPS, Bluetooth).
    - Bluetooth
    - FM Tuner
31. **Kilopass***
    - XPM: embedded, one-time programmable (OTP) non-volatile memory (NVM). ... Over 70 customers have integrated XPM™ in over 200 designs from 180nm to 40nm. Applications range from a few hundred bits for unique ID to prevent cloning to multiple instances of 1Mb for program code storage.
32. **Lionic Corp.**
    - LA2352 Content Inspection Core (DPI) : for current security/content-aware network equipments. Many of such applications rely on content inspection (or deep packet inspection, DPI) to achieve their functionality, such as anti-virus, IPS, traffic classification, and so on. The CIE supports pattern matching for in-and-out bound data and utilizes patented technologies to provide excellent performance with minimal memory and signature maintenance requirements.
33. **MonolithIC 3D Inc**
    - 3D Repair and Redundancy
    - Monolithic 3D Gate Array
34. **NEC Engineering, Ltd.**
    - AMBA(AHB)対応IPコア(IPマクロ)
35. **Northwest Logic**: provides high-performance, silicon-proven, easy-to-use IP cores for standard cell ASICs, structured ASICs and FPGAs
    - Memory Interface Solution
    - PCI Express Solution
36. **PLDA, Inc.** *: a leading provider of semiconductor intellectual property (IP) specialized in high-speed interconnect protocols and technologies.
    - AMBA 2 AHB to PCI Bridge
    - AMBA 2 AHB to PCI Express Bridge
    - AMBA 2 AHB to USB 3.0 Device
    - AMBA 2 AHB to USB 3.0 Host
    - AMBA 3 AXI to PCI Express Bridge
    - PCI Express IP Core with AXI interface
37. **PLX Technology**: the world's leading supplier of PCI Express and other standard I/O interconnect semiconductors to the communications, server, storage, embedded-control, and consumer markets.
    - PCI Express I/O Interconnect Switch: High performance, low power, low latency PCIe Switches featuring ARM SerDes.
38. **Posedge Inc**: is a world leader in intellectual property (IP) and services used in communications, networking, memory and I/O semiconductor design.
    - Posedge SD/SDIO/eMMC Host Controller
    - Posedge SDIO Device Controller 3.0
    - Posedge Switching & Routing Solutions
    - Posedge Universal Flash Controller
    - Universal Flash Controller
39. **Rambus Inc.** *: one of the world's premier technology licensing companies specializing in the invention and design of high-speed memory architectures.
    - XDR Memory: architecture ... proven in high-volume, cost-competitive applications. Operating at 3.2Gbps, XDR DRAM provides 6.4GB/s of peak memory bandwidth with a single, 2-byte wide device.

40. **Renesas Technology America, Inc.** *
    - Renesas Application Specific Products: SoC Architecture for Multimedia Controller Chip. Features: Multiple ARM 9 cores, Graphic Controller on chip, USB on chip, Memory Card Interface, Standard high-performance MCU peripherals, JTAG. Easy to customize with proven architecture and IP.

41. **Research Centre Module**: established in 1990 and is an innovative Russian development company designing high-end RISC/DSP processors, mixed-signal ASICs and real-time videoimage processing systems.
    - IP Core HDTV Video Controller
    - IP Core MPEG-2 Transport Stream Demultiplexer
    - IP Core Multichannel Sound Controller
    - IP Core NAND Flash Controller
    - IP Core Smart Card Interface

42. **Samplify Systems**: ... Samplify's APAX technology accelerates software applications which are performance-limited by I/O, storage, or memory bandwidth bottlenecks in the computing, consumer, and mobile device markets.
    - APAX Application Acceleration IP Block for AXI: a hardware IP block that connects to the AXI bus to accelerate data flow among the ARM CPU complex, on-chip peripherals such as graphics processors, display processors, and image sensor interfaces, and DDR memory.

43. **Sidense Corp.** *: Sidense Corp. provides secure, dense and reliable non-volatile, one-time programmable (OTP) memory IP for use in standard-logic CMOS processes, with no additional masks or process steps required and no impact on product yield. Sidense's patented one-transistor 1T-Fuse™ architecture provides the industry's smallest footprint, most reliable and lowest power Logic Non-Volatile Memory IP solution and offers an alternative solution to Flash, mask ROM and eFuse in many applications.
    - SiPROM
    - SLP:
    - ULP

44. **Silicon Hive B.V.**
    - HiveFlex CSP: ANSI-C programmable, extremely parallel, yet low-cost embedded communications processor ... optimized for complex algorithms, particularly for OFDM (wireless) applications.
    - HiveFlex VSP: a high performance C-programmable vector processor optimized for video pre-/post- processing and encoding/decoding. HiveFlex VSP2200 series services the needs from low (CIF) to high-end (1080p HD and beyond) video displays by using a unique scalable tiled architecture.

45. **Silicon Image GmbH** *+
    - Multimedia Platform IP: complete system solutions for Mobile Communication including MPEG-4 Encoding and Decoding for video chat and video conferencing applications. For Multimedia the offering incudes solutions for DVD Players and Set Top Boxes. Other leading edge technologies include a broad portfolio of security IPs and IP cores of professional networking applications.

46. **Silicon Interfaces** +
    - Silicon Cores - Core to the Intelligent Systems(TM): 12+ IP cores targeted to areas such as Networking, Wireless, Communication and Interconnect, and around 5+ Verification IPs using Industry standard Verification Methodology

47. **SmartChip Integration**
    - S901: highly integrated wireless LAN (WLAN) Baseband and Medium Access Control (MAC) processor that provides the combined functions of the IEEE Standard 802.11b Direct Sequence Spread Spectrum (DSSS) and 802.11a/g Orthogonal Frequency Division Multiplexing (OFDM) baseband modulation.

48. **Socle Technology Corporation**: founded in 2001 and invested by GLOBALFOUNDRIES since December 2009, is well-recognized as a leading-edge provider of SoC design and implementation services as well as an architect for more complicated SoC design technology in advanced process nodes.
    - Leopard 6 SoC Design Platform: constructed by ARM11-based platform architecture. There are powerful ARM11 CPU processor, high performance and bandwidth platform core, OpenGL ES 2.0 & OpenVG 1.1 compliant graphic accelerator, multimedia and wireless connectivity subsystem.

49. **Sonics, Inc.** *+: a pioneer of network-on-chip (NoC) technology and today offers SoC designers the largest portfolio of intelligent, on-chip communications solutions.
    - MemMax AMP: an intelligent Dynamic Random Access Memory scheduler designed for use with any AMBA AXI compliant bus fabric and memory controller.
    - MemMax Scheduler: an intelligent Dynamic Random Access Memory scheduler designed for use with an OCP compliant memory controller.
    - SonicsGN: Sonics' 4th generation, configurable, on-chip network enabling the design of advanced SoC communications networks using a high-speed scalable fabric topology structure. As the industry's highest frequency NoC available today, SGN allows SoC designers to deliver high-performance, simultaneous application processing for smart phones, mobile video and tablets.
    - SonicsLX: On-chip Network contains a high performance advanced fabric with data flow services for the development of complex SoCs.
    - SonicsMX: an actively decoupled, non-blocking, intelligent internal interconnect that enables designers to implement multiprocessor SoC architectures using combinations of similar or heterogeneous processing elements.
    - SonicsSX: On-chip Network contains a high performance, advanced fabric and a comprehensive set of data flow services for the development of complex, multicore and multi-subsystem SoCs.

50. **Stellamar, LLC**
    - All Digital, Fully Synthesizable ADC Family: a digital only silicon technology without using any of the analog IP blocks traditionally used for ADC designs. This reduces the design cycle time and cost of integrating ADCs in to ASICs, and can be implemented in fully digital microchips such as FPGAs avoiding the use of external costly ADCs and saving board space.

51. **Sydaap Technologies Pvt. Ltd.**: Headquartered in Bangalore, India, is a rapidly growing start-up Organization, creating Hardware/Software/Embedded IP and offering design services for the global electronics market addressing both the system and IC design space.
    - LDPC Encoder Decoder: generates code words of the specified block length n for an binary information sequence of length k based on Parity Check Matrix (PCM) that has very low density of 1's per rows and columns. ... The core accepts soft information that is stored in memory and generates decoded information bits. ...

52. **Synopsys** *+: world leader in electronic design automation (EDA), supplying the global electronics market with the software, intellectual property (IP) and services used in semiconductor design, verification and manufacturing. ... Synopsys is headquartered in Mountain View, California, and has more than 70 offices located throughout North America, Europe, Japan, Asia and India.
    - DesignWare Cores: Synopsys is a leading provider of high-quality, silicon-proven interface and analog IP solutions for system-on-chip designs. Synopsys' broad IP portfolio delivers complete interface IP solutions consisting of controllers, PHY and verification IP for widely used protocols such as USB, PCI Express, DDR, SATA, Ethernet, HDMI and MIPI IP including 3G DigRF, CSI-2 and D-PHY.

The analog IP family includes Analog-to-Digital Converters, Digital-to-Analog Converters, Audio Codecs, Video Analog Front-Ends, Touch Screen Controllers and more.

- DesignWare System-Level Library: a portfolio of tool-independent transaction-level models (TLMs) for the creation of virtual platforms. Virtual platforms are fully functional software models of complete embedded systems enabling pre-silicon software development and software-driven system validation.

53. **TES Electronic Solutions Gmbh**
    - D/AVE 3D: a complete OpenGL-ES 1.1 compliant IP core for 3D graphics application. This core is available in 2 versions FPGA and for ASIC. This IP has been specifically designed for embedded, automotive and infotainment market with a big emphasis on flexibility both in hardware and the software.

54. **True Circuits, Inc.**
    - High Performance PLL and DDR DLL Hard Macros: family of standardized general purpose, clock generator, deskew, and spread-spectrum PLLs and DDR DLLs spans nearly all performance points and features typically requested by ASIC, FPGA and SoC designers.

55. **Uniquify Inc.**
    - AHB Bus Interface IP: AMBA AHB-Lite ... bus interface that supports a single bus master and provides high-bandwidth operation.
    - AXI Bus Interface IP: with AMBA AXI protocol ... targeted at high-performance and high-frequency system designs. It uses a channel architecture to allow data transfer, command and response signaling to happen simultaneously for greater efficiency.
    - DFI Compliant DDR2/3 PHY: a complete DFI compliant PHY solution that eliminates tough timing problems such as data / clock skew, setup / hold time, and complex physical implementation issues.
    - Digital DLL: the perfect compliment to Uniquify's DFI compliant PHY solution and DDR Controller eliminating the need, in most cases, to license an expensive analog DLL solution.
    - mDDR/DDR2/DDR3 Memory Controller IP: for a complete DDR3, DDR2, DDR, mobile DDR SDRAM solution including memory controller, DFI PHY physical interface, digital DLL, AXI / AHB bus interface.

56. **Verayo**: range of security and authentication solutions based on a breakthrough technology called Silicon DNA (TM) . Silicon DNA bring three fundamental capabilities to semiconductor ICs:
    - Silicon DNA make ICs effectively unclonable
    - Silicon DNA make it possible to securely authenticate any IC
    - Silicon DNA can generate virtually unlimited number of unique cryptographic root master keys from each IC
    - Silicon DNA IP core

57. **videantis GmbH**
    - v-MP2000 M: next-generation v-MP2000 M mobile video solution enables highest quality video on mobile devices at very low silicon cost and extended battery life at the same time. It supports the widest range of video encoding and decoding standards plus value-add image/video processing features and is field-upgradeable for extended product lifetime.

58. **W&W Communications (now Cavium Networks)**: W&W Communications has developed special optimizations for the implementation of the H.264 / MPEG-4 AVC standard. These enable us to efficiently implement very low-latency, low-delay, low-power, multi-channel, multi-resolution software and hardware-based H.264 codecs and multi-format transcoders, transraters and transsizers. Our H.264 codecs make no compromises, delivering highest picture quality at 1080p resolutions, in a very small footprint, and dissipate minimal power.
    - Synthesizable H.264 video encoder and decoder processor cores