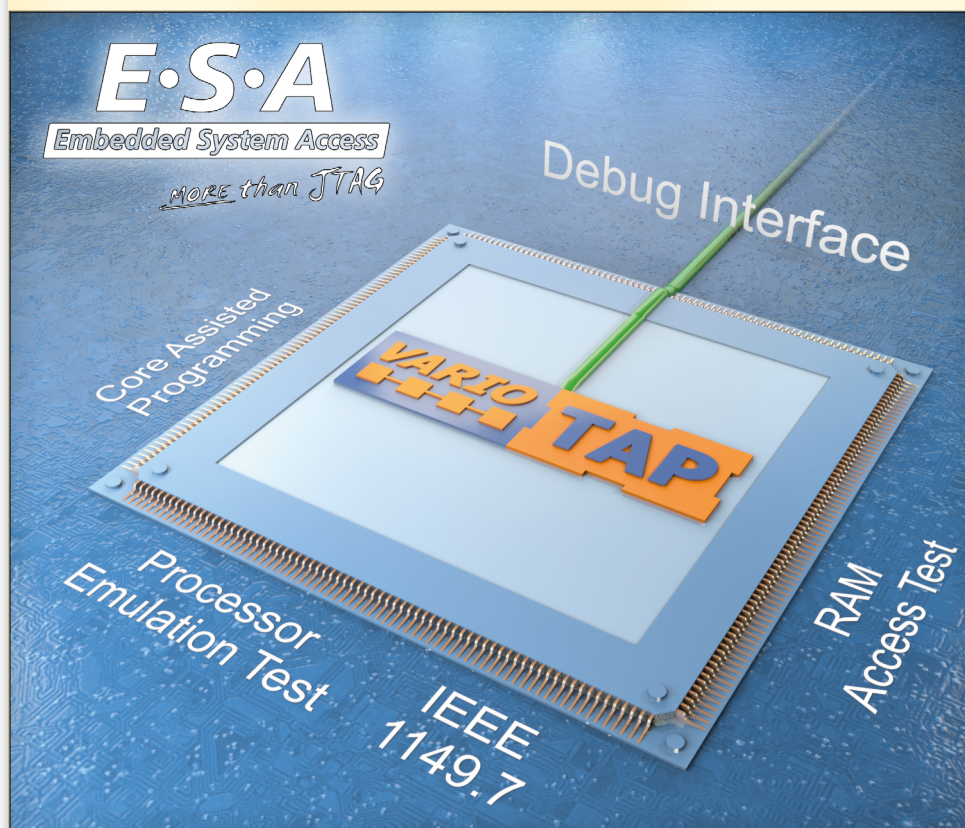
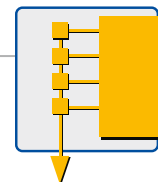


# VarioTAP®

## Basics and Applications



- ✓ Technology for processor control through debug port
- ✓ Enables at-speed functional tests without firmware
- ✓ High-speed programming of flash and MCU
- ✓ Software IP re-configurable solution without special pods
- ✓ Tool suite completely integrated in SYSTEM CASCON™

**VarioTAP®** is a revolutionary technology for the utilisation of design embedded processors as intelligent control units for versatile test and programming operations.

The technology is the first fusion of Boundary Scan and Processor Emulation Test, and does not require any firmware. The processor's native debug port is used for external control, supporting JTAG as well as additional protocols.

VarioTAP is based on the concept of software re-configurable instrumentation, i.e. all tools and associated hardware are adapted for the target processors by special IP (VarioTAP models). That makes it a completely open solution, not requiring any processor specific hardware (pods).

## Embedded System Access (ESA) through VarioTAP

Continuously dwindling test access, paired with high-speed signals, complicate the test of modern boards. Latest technologies for Embedded System Access offer completely new solutions for this problem. Complementing IEEE Std 1149.1 (JTAG/Boundary Scan), Processor Emulation Test (PET) and Core Assisted Programming (CAP) are important ESA technologies for functional at-speed test and for flash programming. VarioTAP is the world's first technology that allows a true fusion of Boundary Scan, Processor Emulation Test, and Core Assisted Programming in one system platform.

## Debug, Test and Programming Applications

Direct access to the processor in most modern designs provides de facto a universal test center, able to execute various operations under VarioTAP control, such as:

- Dynamic access test of RAM (DDR2/3/4) with pin diagnostics
- Test of bus connections and bus components
- Test of peripheral I/O (analog/digital)
- Test of gigabit interfaces (LAN, USB, ...)
- Hardware debugging/troubleshooting
- Programming of flash (NAND/NOR, SPI, I2C)
- Programming of micro controllers (MCU)
- Custom real-time tests
- Interactive tests with Boundary Scan operations

Many of these procedures can be created with automatic test pattern generators. For flash programming, VarioTAP offers significantly higher speed than Boundary Scan.

## Supported Debug Interfaces

SCANFLEX® is a hardware platform that provides up to eight serial interface ports, which can be controlled in parallel and can be configured individually to adapt to the respective debug protocol, including:

- JTAG (IEEE 1149.1) und cJTAG (IEEE 1149.7)
- BDM (Background Debug Mode, by Freescale)
- SBW (Spy-Bi-Wire, by Texas Instruments)
- SWD (Serial Wire Debug, by ARM)
- and many other variants

For gang programming in high-volume production, SCANFLEX offers solutions with up to 16 interface ports.

## Supported Processor Architectures

VarioTAP is currently available for approximately 20 different architectures, with continuing development. Latest VarioTAP model information is available at [goepel.com/variotaap](http://goepel.com/variotaap).