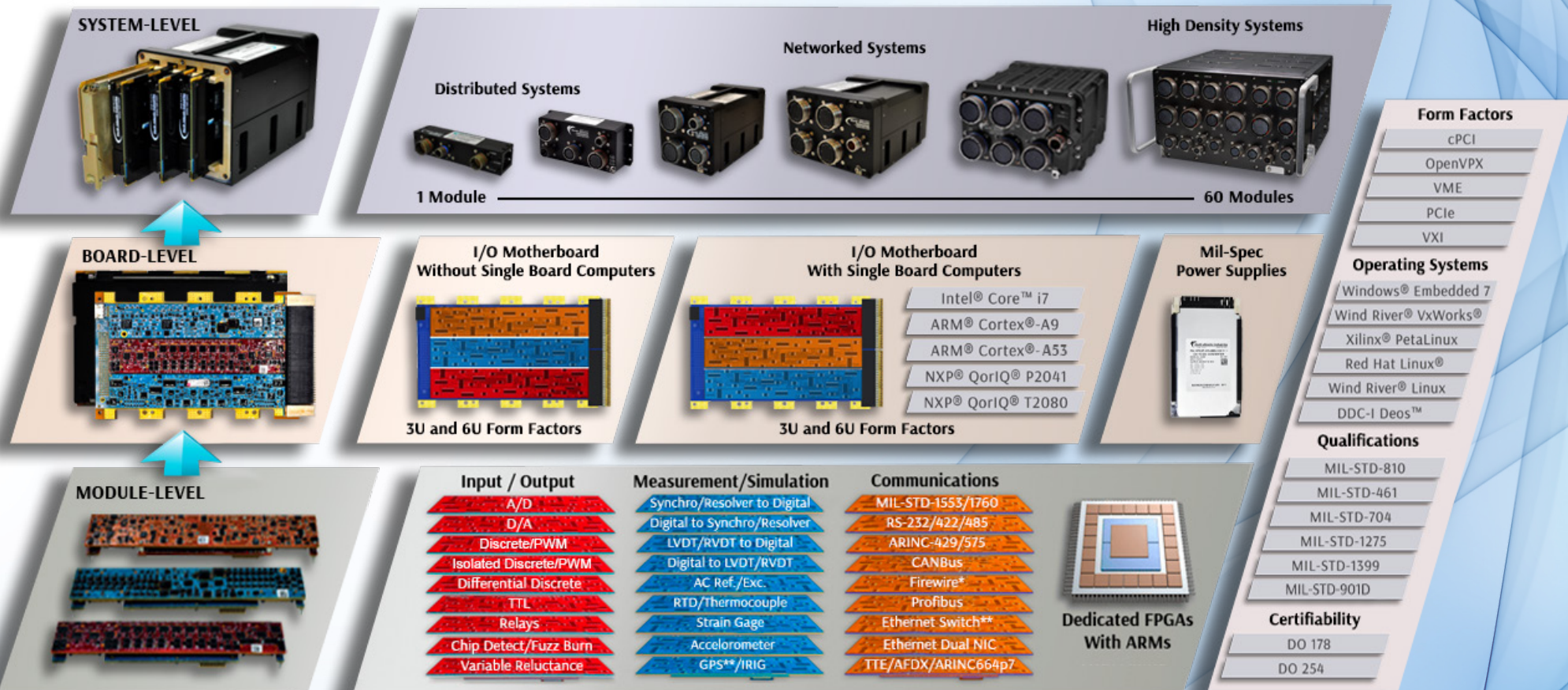# NAI Configurable Open Systems Architecture™ (COSA®) for I/O Boards, SBCs, and Systems

A massively configurable, modular, intelligent approach offering unmatched breadth and scalability. COSA supports a wide range of complex and time-critical requirements in a distributed, intelligent, software-driven architecture that allows you to rethink the way you engineer power-critical and I/O-intensive mission systems.

SYSTEM-LEVEL

Distributed Systems **Networked Systems** **High Density Systems**

1 Module ——————————————— 60 Modules

BOARD-LEVEL

I/O Motherboard Without Single Board Computers
3U and 6U Form Factors

I/O Motherboard With Single Board Computers
- Intel® Core™ i7
- ARM® Cortex®-A9
- ARM® Cortex®-A53
- NXP® QorIQ® P2041
- NXP® QorIQ® T2080

3U and 6U Form Factors

Mil-Spec Power Supplies

MODULE-LEVEL

Input / Output
- A/D
- D/A
- Discrete/PWM
- Isolated Discrete/PWM
- Differential Discrete
- TTL
- Relays
- Chip Detect/Fuzz Burn
- Variable Reluctance

Measurement/Simulation
- Synchro/Resolver to Digital
- Digital to Synchro/Resolver
- LVDT/RVDT to Digital
- Digital to LVDT/RVDT
- AC Ref./Exc.
- RTD/Thermocouple
- Strain Gage
- Accelorometer
- GPS**/IRIG

Communications
- MIL-STD-1553/1760
- RS-232/422/485
- ARINC-429/575
- CANBus
- Firewire*
- Profibus
- Ethernet Switch**
- Ethernet Dual NIC
- TTE/AFDX/ARINC664p7

Dedicated FPGAs With ARMs

*Occupies 2 module slots

Form Factors
- cPCI
- OpenVPX
- VME
- PCIe
- VXI

Operating Systems
- Windows® Embedded 7
- Wind River® VxWorks®
- Xilinx® PetaLinux
- Red Hat Linux®
- Wind River® Linux
- DDC-I Deos™

Qualifications
- MIL-STD-810
- MIL-STD-461
- MIL-STD-704
- MIL-STD-1275
- MIL-STD-1399
- MIL-STD-901D

Certifiability
- DO 178
- DO 254

North Atlantic Industries

NAI Software and Processing Advantages

Dedicated FPGAs embedded on our smart modules enable you to rapidly create configurable mission systems – while reducing or eliminating SBC overhead.
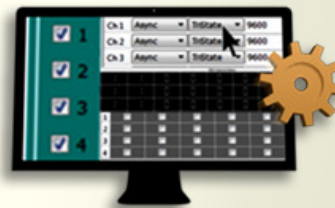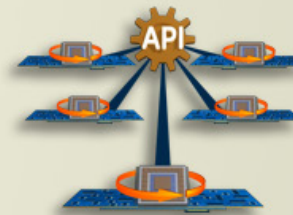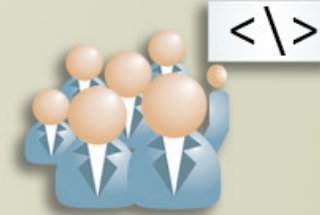

SOFTWARE-LEVEL

- Proven Software Libraries + Source Code
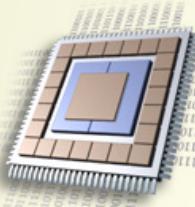- Jump-start Development GUI-Driven Soft Panel
- Distributed I/O with Single API Programmability
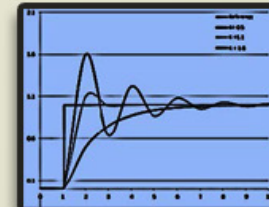- I/O Expertise & Capabilities Reduce SLOC by 30%

PROCESSING-LEVEL

- Dedicated FPGAs
- Memory Map-Based Configurability
- Programmability I/O Including PID Loop Support
- Health-Monitoring & Built in Test

North Atlantic *Industries*