



# Intel® FPGA Military, Aerospace, and Government (MAG) Solutions

**U.S. Based Company, Products and Solutions**



# System Expertise



## Military Communications

- 116 Gbps serializer/de-serializer (SERDES) transceivers
- Cryptographic partner intellectual property (IP) cores
- Government-approved design methodologies
- Assured design for information assurance



## Radar, Electronic Defense, Intelligence, Surveillance and Reconnaissance (ISR)

- Solution for digitization of phased-array antennas
- Industry Leading DSP blocks
- Comprehensive floating point and linear algebra library
- Modular Open Systems Architecture — commercial off-the-shelf (COTS) solutions
- Platform Designer: System integration framework for rapid system development



## Aerospace, Avionics, and Missile Defense

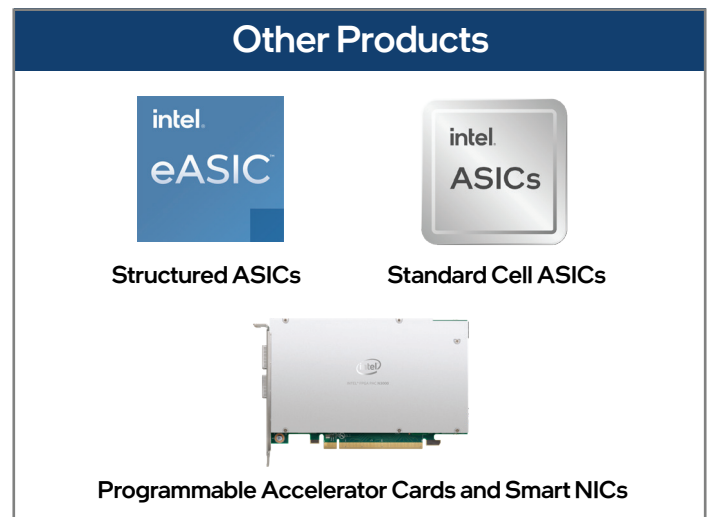
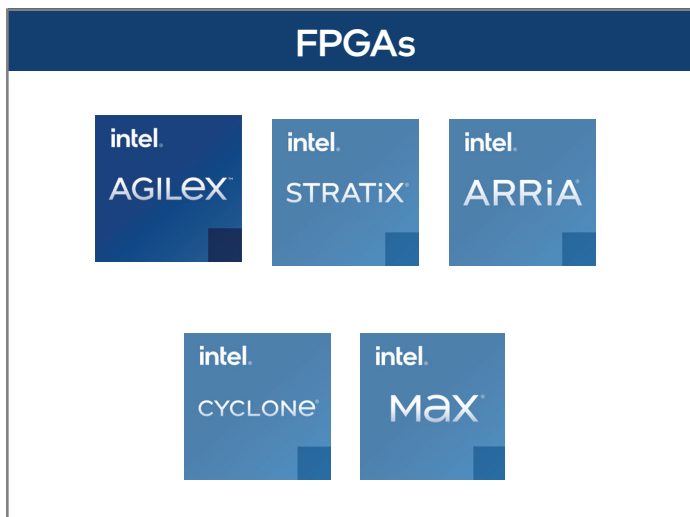
- Support for DO-254
- Reliability and SEU FIT rate report
- Typical 15+ years product life cycles
- Guidance and control IP with reference designs



## Government Analytics, High-Performance Computing (HPC), Cybersecurity, Artificial Intelligence (AI)

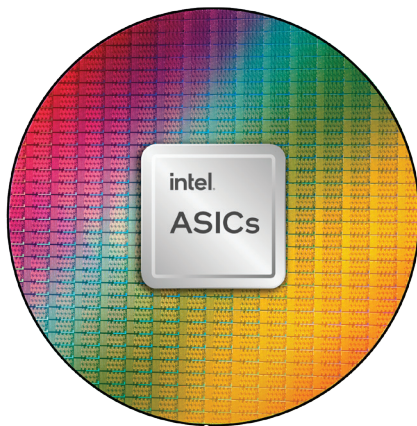
- FPGA programmable accelerator cards and Smart network interface cards (NICs)
- AI acceleration with CPU + FPGA acceleration
- Enable software developers to target FPGA accelerators transparently

# Intel Platform Solutions Portfolio



# Productivity and Technology

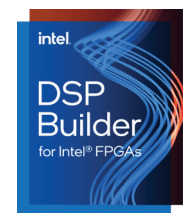
## On-Shore State-of-the-Art Foundry and Custom ASICs



## Leading-Edge Productivity Tools

1  
oneAPI

OpenCL™



## Ease of Programming

- OneAPI and OpenCL™ C/C++ based programming model for heterogeneous platforms including FPGA
- OpenVINO™ toolkit heterogeneous software targets different Intel platforms for machine learning-based applications

## Full-Throttle Performance

- Industry first single and half precision floating-point FPGA
- Up to 40 TFLOPS FP16 DSP performance
- Up to 92 TOPS INT8 performance
- Industry-leading 116 Gbps transceiver data rates

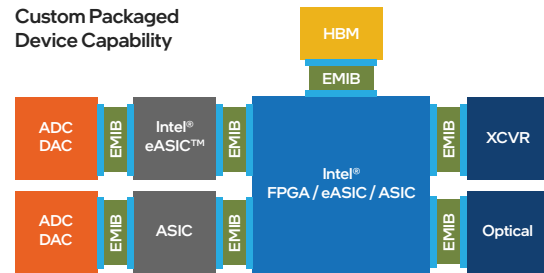
## Wide IP Portfolio and Design Examples

- Monobit analog-to-digital converter (ADC), digital-to-analog converter (DAC)
- Digital channelizer / oversampling channelizer
- Adaptive / time delay digital / fast Fourier transform (FFT) beam forming
- Linear solver with QR decomposition
- Linear solver with Cholesky decomposition
- Image formation in Synthetic Aperture Radar
- Space Time Adaptive Processing (STAP)
- Gaussian Noise Generator
- Pulse compression
- Pulse doppler
- JESD204A, B, and C

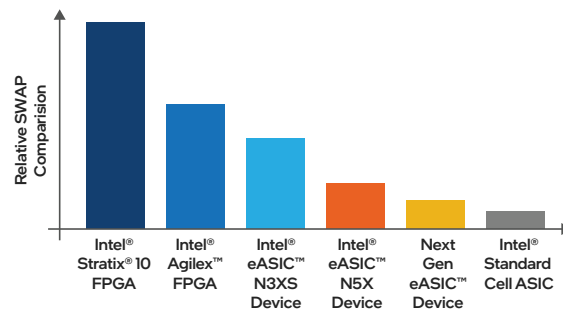
# Accelerate Detection, Tracking, Identification, and Decision Making with Intel FPGAs

- Only US-based high-end FPGA fabric
- Only US-based state-of-the-art foundry
- Only US company offering flexible solutions across product lifecycle from FPGA to structured ASIC to standard cell ASIC
- Industry-leading triple mode redundant secure device manager
- First single and half precision floating-point FPGAs
- Up to 40 TFLOPS FP16 digital signal processing (DSP) performance
- Up to 92 TOPS INT8 performance
- Industry-leading 116 Gbps transceiver data rates
- First memory-coherent accelerator for Intel® Xeon® Scalable Processors
- Unified programming model across diverse architectures (OneAPI)

## Size, Weight, and Power Solutions



## Proof of Concept



# Get Started with Intel Today!

MAG design examples: [www.intel.com/content/www/us/en/programmable/solutions/industry/military/design.html](http://www.intel.com/content/www/us/en/programmable/solutions/industry/military/design.html)

Customer training: [www.intel.com/content/www/us/en/programmable/support/training/catalog.html](http://www.intel.com/content/www/us/en/programmable/support/training/catalog.html)

Acceleration hub: [www.intel.com/content/www/us/en/programmable/solutions/acceleration-hub/overview.html](http://www.intel.com/content/www/us/en/programmable/solutions/acceleration-hub/overview.html)

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