Trident Infosol offers innovative and industry renowned radar solutions for emerging ground, air and maritime threats.

We provide open architecture Commercial Off-The-Shelf (COTS) based solutions for mission computing, electronic warfare, radar and other ISR systems that are more capable, interoperable and affordable than ever before.

**Radar Subsystems and Solutions for Airborne, Naval, & Ground Radars**

**Requirement Management**

**Reqtify** - an interactive application for managing requirement, traceability, and impact analysis across different systems, programs, and project levels. It can be used throughout the hardware and software development lifecycle.

Reqtify helps organizations manage their requirement engineering process and ensure compliance with standards such as DO-178C, DO-254, and CMMI for Aerospace and Defense

**Radar System Design**

**MATLAB and Simulink**

Radar system design, simulation, and analysis is complex because the design space spans the digital, analog, and RF domains. Modeling and simulation tools can improve all aspects of the radar system design workflow. MATLAB, a high-level language for scientific and engineering computing, analyze and design the system and products that are transforming our world.

**Using these tools, you can** -

- Design waveforms and sensor arrays
- Accelerate development with libraries of algorithms
- Model the dynamics of ground-based, airborne, ship-borne or automotive radar systems
- Design end-to-end phased array systems and analyze their performance
- Integrate models for RF components and complex antenna designs
- Debug and test complete radar models
- Generate code automatically
Acquire & Digitize

Our acquisition & digitization products are packed with critical radar features.

Programmable RFSoC
- Integrated RF Data Converters.
- Eliminates Discrete ADCs, DACs, & FPGA - to - Analog Interface
- Reduces Footprint & Power
- RF-design in the digital domain for greater flexibility

FPGAs
- Kintex-7, Virtex-7, Zynq SoC, Kintex UltraScale.
- Wide range of proven front ends – Up to 6 GHz A/Ds & D/As, Digital I/O.

FPGA IP
- A/D acquisition, D/A waveform generation, a controller for all data clocking and synchronization functions, a test signal generator & a PCIe Gen3 interface
- DDCs and DUCs for interfacing to IF ports of RF up/down converters

Timing
- Precision triggering from external signals
- Synchronous Receive/Transmit timing
- Synchronization between channels and boards

Key Features -
- Kintex UltraScale Boosts Resources over Virtex-7, 53% More DSPs & 109% More Logic Cells
- Kintex UltraScale requires about ⅓ the power of Virtex-7 reducing power supplies, board complexity & cost.
- Digital Down Converter IP Cores with O/P BW from few KHz to 360 MHz
- Faster, larger, wider DDR4 SDRAM memory from 5GB to 8GB

Process

High Performance Embedded Computing (HPEC) System delivers supercomputing processing performance in rugged, compact deployable system architectures optimized for harsh military environments.

High Performance Computing Hardware
- Intel: Core i7, Xeon-E3, Xeon-D, Xeon-E5/E7
- PowerPC (now NXP): QorIQ Family
- GPGPU’s (NVIDIA & AMD)

- High speed data interface and protocol (PCIe Gen3, 10/40GbE, Infiniband)
- I/O Connectivity for HPEC
  - RDMA Over Ethernet (iWARP): Low latency, High throughput, Zero copy capability, OS/Stack bypass
  - Multiware: Seamless PCIe data management in multiprocessor system.
  - QPI, allows multiple server-class Xeon processors to be linked into a single SMP processing architecture
- Micro Via Radial Interconnect (MVRI) technology has improved OpenVPX switch fabric interconnect data rates by three-fold, enabling switch fabrics and point-to-point connections to run faster and more reliably.
- 3U / 6U VPX Module Agnostic Cooling
  - Air Cooling can handle up to a around 200W per module
  - Conduction Cooling can handle up to a around 150W per module
  - Air Flow-by Cooling can handle up to a around 200W per module
  - Common to ALL these solutions is just one PWA
**High Performance Computing Software**

- **Processing Libraries**: Hardware agnostic High Performance Libraries MKL, IPP, SAL, OpenCL, OpenMPI, CUDA
- **Diagnostic Support Tools**: Diagnostic Tools, System wide fault detection, Tools to build Built-in Test, Field Maintenance.
- **Distributed Computing Software**: Interprocess Communication Suite (ICS), Multiware (with services such as Virtual Ethernet over PCIe, shared memory, message synchronization with DMA powered transfers).
- **System Management**: Subsystem level System Health Monitors with GUIs, Ethernet, USB and/or RS 232 interfaces, data logging, field upgradable firmware, and data password protection.
- **Productivity Tools**: Open Development Suite, Trace Analysis Tool and Library (TATL), FPGA Development Kit.
- **Operating Systems Support**: Windows, Linux, VxWorks

**Recording Systems – Flexible & Deployable Solutions**

- Ability to capture RF, IF signals, SFPDP, 10 & 40 GbE, LVDS
- Radar & EW System Verification with Data Recorder and Playback System in Lab
- Multi-channel phase-coherent signal acquisition for Direction finding, phase array radars, etc.
- GPS and IRIG options for Precision time and position stamping of recorded signals
- API allows integrators to add a Recorder to their system easily
- Rack Mount, Portable, Rugged, Conduction Cooled options

**Radar Scan Converter, Processing & Display**

SPx software - a collection of application and development libraries for primary radar capture, processing and display.

- **SPx Development** is a package that supports the development of custom server and client radar applications.
- **SPx Server** - for Target Tracking, provides the functions of radar recording, network distribution of radar video, plot extraction and target tracking.
- **SPx Fusion Server** - for the fusion of primary and/or secondary (AIS, IFF, ADS-B) sources.
- **SPx Radar Simulator** - for the simulation of primary radar video, along with secondary sources and navigation data.
- **Radar View Radar Visualisation** - for the visualisation of primary radar video, along with graphics and secondary data.
- **ASD-100 Air Situation Display** - An integrated display application for the acquisition, display and tracking of primary and IFF targets.
- **RDR Data Recorder** - record and replay application for primary radar video, tracks, AIS, ADS-B, video, navigation data, screen capture and other network data formats.
- **VSD Security Display** - for the processing and display of radar and camera video, including camera control, slew-to-cue and integrated radar and video tracking.
Validation and Verification

Our broad array of Development Testing capabilities help organizations reduce the time and effort needed to comply with aerospace and avionics industry standards, meet software assurance requirements, and detect defects and vulnerabilities.

Provides organizations with unprecedented process visibility and control throughout the SDLC for all flavors of C, C++, Java, and .NET code. Development Testing practices featured include static code analysis, unit testing, code coverage analysis, peer code review, runtime error detection, and traceability.

Prototyping & Deployment

System Reliability & Maintenance

Reliability and Safety software

**RAM Commander** - a comprehensive software tool for Reliability and Maintainability Analysis and Prediction, Spare Parts Optimization, FMEA/FMECA, Testability, Fault Tree Analysis, Event Tree Analysis and Safety Assessment.

Its reliability and safety modules cover all widely known reliability standards and failure analysis approaches. It is an indispensable tool for ensuring reliability of sophisticated systems.

**Failure Reporting, Analysis & Corrective Action System**

**FavoWeb** - User configurable Failure Reporting, Analysis and Corrective Action System (FRACAS) that captures information about equipment or a process throughout its life cycle, from design, production testing, and customers support.

FRACAS application which seamlessly communicates with any given ERP system (SAP, ORACLE, MFGpro etc), while proving a user friendly, flexible yet robust failure management, analysis and corrective action platform.

**Life Cycle Cost Analysis**

**D-LCC** - (Decision by Life Cycle Cost) makes the LCC analysis easy and comprehensive. D-LCC is a key tool for managers, decision-makers, engineers, ILS personnel, and other staff involved in system acquisition, proposal writing, management, development, production and through-life support.

LCC analyzes the total ownership costs of various design alternatives and system’s components over the projected life cycle of a system.
Trident Infosol offers system integration services for various signal processing application meeting demanding requirements. From a basic configuration of COTS cards in a chassis to pre configured sub system with software, we reduce the risk of dealing with many suppliers. This minimizes delivery risk and the learning curve associated with post-delivery integration. Integrated systems are delivered with faster turn around time, allowing for higher productivity at the application development level, catering to -

- Electronic Warfare
- Radars
- Mission Computing
- Software Defined Radio
- Sonars
- Small Form Factor (SFF) Computers
- EO/IR
- C4ISR

Integrated System Solutions for Land, Sea & Air applications

Elements of “SWaP^2C^2E^2R”

Quality

Trident Infosol is AS 9100C certified to promise the highest level of quality. Our manufacturing and testing facilities use the latest technologies and practices to promise the delivery of high quality products.