



Mark Casolara

Vice President of Engineering

SUMMARY

Mark Casolara has 29 years of experience having developed expertise in the fields of Technical Management Software Development and Systems Engineering almost exclusively in US Navy-related systems. He also has extensive experience in COTS/GOTS selection, custom HW and SW design and development, systems integration and test, as well as DoD full life-cycle program development. He is fluent in both the Navy Advanced Processing Build (APB) and Technology Insertion (TI) processes for rapid capability insertion. Mr. Casolara is currently the Vice President of Engineering for AFT. In this capacity, he is responsible for overall technical direction on AFT's major projects. He is uniquely qualified to design & manage the development of projects related to US Navy Systems using APB/TI processes.

EDUCATION

B.S. Electrical Engineering

University of Arizona, 1984

CLEARANCE

DoD Top Secret / SCI

EXPERIENCE

Advanced Fusion Technologies, LLC

2009 – Present

VP of Engineering

- Mr. Casolara is currently providing video forensics lab development and analysis services for the Intelligence Systems Support Office. These services include software development using Python and MATLAB, CUDA and analysis of applications using Java, C/C++ and Python as well as several reverse engineering tools and development environments. Mr. Casolara has written and tested in excess of 5000 lines of commented Python for his current effort.
- Mr. Casolara is the inventor/system architect of an innovative approach to 360° imagery: The 360° Persistent Sensor (360PS). The 360PS provides 360° coverage in real-time at 30 frames per second in a compact, affordable form factor leveraging COTS technologies. Mr. Casolara led the 360PS effort from concept to prototype in 9 months and \$300K. In addition, he led the software development effort which provides the image stitching and image processing functionality for the display system

General Dynamics AIS

2000 - 2009

Distinguished Member of the Technical Staff

- DMTS for the Technology Insertion Photonics Mast Workstation (TI-PMW). Mr. Casolara provided overall technical software and systems engineering direction for the TI-PMW for VIRGINIA class submarines, and the Submarine Common Imaging System (SCIS) for 688/SSBN submarines. This included analyzing requirements, defining and implementing system architectures for hardware and software, development and review of system level documentation, including test plans, and integration and testing. In this role he managed a team of twelve engineers in a disciplined hardware and software development process to develop a totally COTS/GOTS-based real-time, high throughput, imaging system that focused on image processing, display and storage based on the APB/TI process. The TI-PMW provides image processing across visible, Infra-Red and Low-light spectra providing a range of IP functionality including edge detection, histogram, equalization and color mapping.
- New Business Development. Mr. Casolara was the Technical Director for the Submarine Warfare Federated Tactical System (SWFTS) and the Integrated Submarine Imaging System (ISIS) proposals.
- Head of Systems Engineering for the Expeditionary Fighting Vehicle. Mr. Casolara led a team of 170 systems engineers in the development of the next-generation Amphibious Assault Vehicle for the USMC. He successfully guided the program through Preliminary Design Review (PDR), guided efforts towards Critical Design Review (CDR) and created policy for all aspects of Systems Engineering, Specialty



Engineering (RM&A & CM) and Systems Integration. He reviewed and developed processes to guide systems engineering efforts across the program and interfaced daily with USMC customers. This program generated in excess of \$200M in annual revenue.

- **Technical Director for the GDAIS Systems Integrator/Design Agent.** Mr. Casolara guided overall technical efforts for this project, valued at over \$95 Million with options. The SIDA was responsible for integration of the Joint Program Office (JPO) Integrated Architecture Behavior Model (IABM), an MDA/MDD –developed joint track manager for Navy surface combatants. The IABM was delivered to the SIDA where it was integrated with host-specific adaptations to develop a Platform Specific Implementation (PSI) for delivery to the US Navy. In addition, the SIDA worked to componentize the Aegis Command & Decision (C&D) to allow for Open Architecture competition. He provided overall technical direction for a rapid development program to port the Aegis C&D operational baseline from a legacy stove-piped architecture to an open, COTS architecture using Linux that focused on development of UML models for the most time-critical thread within C&D for integration. He developed SysML requirements models combined with DOORS for robust requirements dissemination and maintenance.
- **Senior Systems Engineer.** Mr. Casolara provided technical direction for Network Centric Warfare Programs. This included analyzing requirements, performing research and development, defining and implementing system architectures for hardware and software, development and review of system level documentation, including test plans, and integration and testing. In addition, this included interfacing with the customer and the generation of Technical Instructions and proposals for new business. Programs included: US Navy Cooperative engagement Capability (CEC) Processor (CEP) prototype port to COTS, E-2C COTS Insertion, Advanced Sensor Network Technology and the Special Operational Forces (SOF) Technical Information Assistant.

Science Applications International Corporation, Technical Analyst 1998 - 2000

- Mr. Casolara provided systems engineering on the Hydro-Acoustic Data Acquisition System (HDAS) program. This program provided a high-reliability, long term sensor system used by the Air Force Technical Applications Command (AFTAC) and the Comprehensive Test Ban Treaty Organization (CTBTO) to detect and localize nuclear events. Primary responsibilities included all system design functions for the shore portion of the system, including writing requirements, developing design strategies, specifying hardware, and providing detailed design of the equipment layout and cabling scheme. Also assisted in integration and test of the shore system.
- Mr. Casolara provided systems engineering and technical assistance to the development of a prototype Underwater Segment for the Fixed Distributed System – Commercial (FDS-C) Program. Responsible for orchestrating the development and delivery of the design of the shore terminus hardware and software suite for the prototype as well as the development of the Phase II detailed design.

TRW, Inc., Technical Task Lead 1996 - 1998

- Mr. Casolara provided technical management of 14 software engineers in the development of the next generation system for the Internal Revenue Service's (IRS) Tax System Modernization Program. This effort was an intense development and integration effort using COTS and developed applications. Also provided technical guidance in areas such as Secure Dial-In (Encryption), Telecommunications and Enterprise Management.

SIGNAL Corporation, Senior Systems Engineer 1994 - 1996

- Mr. Casolara developed extensive knowledge of the DoD 5000.2 procurement and acquisition process and the lifecycle support of large-scale Navy tactical systems. Supervised four personnel providing SETA support to a Navy Program with a budget of over \$40M annually.

Hughes Aircraft Company, Lead Systems Engineer 1984 - 1993

- Mr. Casolara performed nine years in the development of US Navy Systems including SURTASS, NTDS, and AN/SQS-53-C. Additional details available upon request