

IV&V FOR VIDEO ANALYTICS AND VIDEO CONTENT ANALYSIS SOFTWARE



System Planning Corporation is pleased to offer Independent Verification and Validation (IV&V) services for Video Analytics (VA) and Video Content Analysis (VCA) software. SPC offers full-service IV&V, from testing algorithms and software to analyzing data and briefing results. SPC's services help developers evaluate the efficacy of their algorithms in real-world conditions and allow users of Video Analytics software to understand their capabilities and identify potential shortcomings.

WHY IV&V?

Independent Verification and Validation (IV&V) is an important aspect in the management of software development efforts, aiming to answer two questions:

- Do the project specifications adequately address user requirements (Validation)?
- Does the product performance meet its specification (Verification)?

A US Government Practice Guide phrases these questions as “Are we building the right product?” and “Are we building the product right?”¹ The use of an independent entity to answer these questions ensures that concerns for the developers' reputations or financial interests do not bias the IV&V process.

Many businesses advertise video content analysis with particular capabilities, but few discuss actual performance. SPC's IV&V services will help you understand a VA or VCA system's capabilities and protect your investment by identifying the true performers.

OUR SERVICES

SPC offers full-service IV&V for both developers and end users, evaluating and analyzing performance to support both algorithm development and end-product performance. Our services include:

- Framing operational goals in terms of technical and functional specifications
- Devising metrics to describe system performance
- Devising methods to test the system against specifications
- Devising or identifying data suitable for system testing
- Data truthing

¹ United States Department of Health and Human Services Enterprise Performance Life Cycle Framework Practices Guide: Independent Verification and Validation, http://www.hhs.gov/ocio/eplc/EPLC%20Archive%20Documents/14%20-%20IVV/eplc_ivv_practices_guide.pdf

- Operating VA or VCA software
- Evaluating system performance with respect to performance metrics
- Assessing whether a system meets specifications
- Analyzing system weaknesses
- Side-by-side comparison of VA/VCA software packages
- Creation and presentation of performance report and briefing material

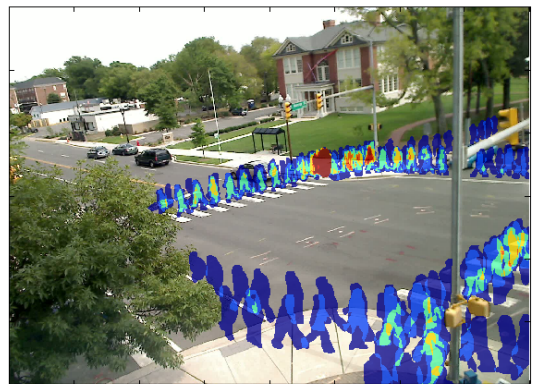
Each of these tasks is performed in consultation with you, the customer, to ensure that metrics and performance assessments are consistent with your particular application. Because our reputation rests on the quality of our analysis, we go to great length to ensure that our process is independent, rigorous, repeatable, and open and transparent.

OUR DATA PRODUCTS

SPC's IV&V produces a variety of data products for visualizing the performance of the system under evaluation. These products include:

- Heatmaps (example at right)
- Receiver Operating Characteristic (ROC) curves
- Precision and Recall curves
- Tabular statistics

By varying software parameters, data quality, or data events, we can provide analysis of the robustness of a VA system or algorithm.



ABOUT SPC

SPC was founded in 1970 with the goal of conducting unbiased national security research for the Department of Defense and other federal agencies. Over the past four decades, SPC's areas of expertise have expanded to include such diverse technologies as Radar Cross Section Measurement Systems, Emergency Preparedness, Supply Chain Visibility and Security, Advanced Systems, and Air Warfare Systems. In addition to working in these technology areas, SPC also provides scientific, engineering, technical, and administrative support to DARPA and other Government organizations.