The evolution of Gen**IViVe**

Before DO-178, there was General Digital. In 1992, we were contracted by Hamilton Standard (now Collins Aerospace) to perform unit testing for a new avionics application. We soon learned that doing the process by hand (and later using only COTS testing software with multiple manual steps) was impractical and time consuming.

Before the FAA-defined IV&V standards, General Digital recognized the need for improved traceability and process optimization to ensure that code can be tested in a way that is fast, safe, and reportable. Our engineers developed the **GenIViVe** suite of IV&V tools, which has been iterated and augmented since its inception to be reliable, comprehensive, and efficient.

WE'LL MAKE SURE YOU GET TO MARKET—AND STAY THERE

Codes & ID Numbers

CAGE
1JA77

DDTC
Registered

DUNS
06-551-9563

SAM/CCR
Registered

PSC
7010, 7021, 7025

NAICS
541511, 541512, 541519

Corporate Structure
SBA Small Business Concern

Standards

Quality Management
ISO 9001:2015 QMS Certified

Avionics Compliance
RTCA DO-178, DO-326, DO-254; **IAQG** AS9100

Medical Compliance
IEC 62304; **ISO** 13485; **CFR** 820.30; **CE/MDR**
FDA 510(k) Premarket Notifications

Industrial Compliance
IEC 61508, 61131

Transportation Compliance
IEC 62279, 61508; **ISO** 26262

General Digital Corporation
60 Prestige Park Road
East Hartford, Connecticut 06108
Phone 860.282.2900 | 800.952.2535
E-mail gdc_info@generaldigital.com

ISO
9001:2015
QUALITY
MANAGEMENT
SYSTEM
CERTIFIED

SOFTWARE ENGINEERING SERVICES

INDEPENDENT VERIFICATION & VALIDATION WITH Gen**IViVe**™

GD GENERAL DIGITAL
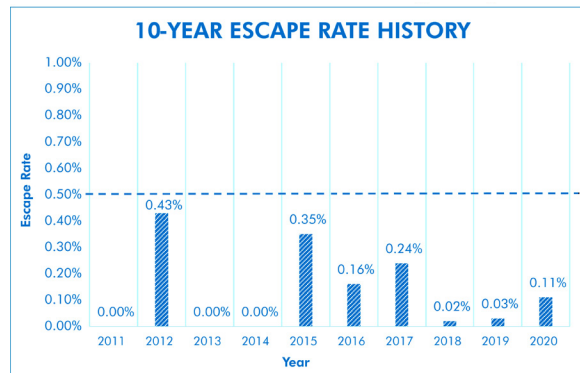*Engineering What's Next*

Get to know Gen**IViVe**

Gen**IViVe** is our proprietary suite of IV&V tools. Together, they predetermine many of the necessary conditions to meet the specific code requirements.

Gen**IViVe** originated three decades ago to support our aviation work and other certified environments. It's continued to evolve, giving us a 20-year head start when it comes to unit testing in support of medical device compliance.

The Gen**IViVe** suite:

» Automates test cases and reduces manual steps, saving time and money.

» Standardizes quality by reducing user error.

» Ensures 100% independent coverage to the requirements — every time.

» Gen**IViVe** interfaces with tools such as VectorCAST, LDRA, and TRACE32 to give auditors a clear picture of what is being tested.

» Forecasts testing hours for timely, accurate quotes.

GenIViVe** lets our testers do what they do best—build and execute test cases.**

10-YEAR ESCAPE RATE HISTORY

Year	Escape Rate
2011	0.00%
2012	0.43%
2013	0.00%
2014	0.00%
2015	0.35%
2016	0.16%
2017	0.24%
2018	0.02%
2019	0.03%
2020	0.11%

The dotted line represents General Digital's ISO 9001:2015 goal of maintaining less than 0.5% escapes annually.

Process overview

» Requirements development and analysis

» Tool validation/qualification

» Test planning and execution

› System testing

› Regression testing

› Integration testing (HSIT, SSIT)

› Unit/module testing for safety-critical embedded systems

› Code review

» Project coordination

» Discrepancy reporting and resolution

» Results reporting

Reporting

Gen**IViVe** generates clean, clear test data that's ready to run through a specific COTS tool, resulting in submission-ready reports.

It identifies independent test cases and gives the auditor a detailed picture of what is being tested.

With no certification reporting standard, the FAA and FDA consistently provide positive feedback on our reporting format, traceability, and consistency.

Quality first

Certification doesn't guarantee safety. Recalls of safety-critical software happen all too often due to poorly formatted test reports that misrepresent coverage and hide potential errors until they occur in the field. This harms consumers and opens up companies and regulators to potential litigation.

Our experienced team of on-shore engineers, combined with the power of Gen**IViVe**, account for every possibility, ensuring 100% product reliability, above and beyond the standards of certifying bodies.

We have an ISO 9001:2015-defined quality standard to maintain an escape rate below 0.5%. We've consistently exceed that objective by maintaining a 0.1% escape rate for more than a decade.

WE'VE MAINTAINED AN ESCAPE RATE OF 0.1% FOR MORE THAN A DECADE

A proven track record

Our team of electrical, mechanical, software, and optical engineers operate under one roof in East Hartford, Connecticut. The agile environment promotes collaboration to provide unparalleled tester training and resources.

For more than 30 years, we've independently verified and validated software for aviation, defense, medical, drones, autonomous vehicles, and other safety-critical applications—and never once failed to facilitate our customer's product certification.

In addition to our extensive testing capabilities, we have two dedicated testing labs for Integration and Systems testing. We'll come to you if testing requirements dictate.