

Software Design and Development

Achieve endless success with continuous solutions



LATCH develops solutions to identify vulnerabilities and defects in software of high-risk, cyber-physical systems. We tailor our approaches to client needs and emphasize a no-impact approach by promoting productivity and minimizing or eliminating down time. We design, implement, and migrate products; implement Continuous Integration Configuration Management (CICM) tools; and assess logic of devices through software-in-the-loop-testing. We coordinate cost, schedule, and resourcing to ensure there is no loss or impact to services.

Medical Device Verification Using Model-Based Testing

- Identify vulnerabilities and defects in software and firmware of high-risk systems such as sensors, ground vehicles, Internet of Things (IoT) devices, and medical devices.
- Extract binary software code from a target medical device to create a low-level model extracted from software to reconcile with a high-level abstract state model.
- Design, develop, test, and implement a software state controller using a software interface model which allows us to validate the controls of a model.
- Build a hardware interface that enables software to generate and control hardware failures, represent hardware and software states, and exercise the functionality of firmware.
- Perform software-in-the-loop testing by assessing logic of a device and injecting software faults that are tested by the model.
- Ensure controllability by developing a computer-guided software adapter.

Okta Integration

- Coordinate application-specific configurations, dependent infrastructure software, and configurations to ensure consistent and repeatable deployments.
- Migrate and integrate 67 product components with Okta IDaaS to promote a feature rich software.
- Design, implement, and migrate existing integrations to Okta; and diagnose performance issues.
- Use underlying technologies, experience with software and business logic, and an analytical approach to design, engineer, and implement advanced solutions.
- Use CICM tools including source code control, version control, automation servers, and persistent artifacts repositories which promotes streamlining deployment processes and consistency.
- Develop artifacts relating to design and architecture and integration guides.

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LATCH focuses on providing simple architectures in Software Design and Development. We unravel the tangle of interdependencies, mismatched tools, and inconsistent coordination. Whether it is creating a Minimum Viable Product (MVP), starting with Test Driven Development (TDD), or building the right balance of services and micro-services; we promote user-centered designs, effective decision making, cost reductions, rapid releases, and secure operations.

CONTINUOUS DELIVERY PIPELINE

LATCH uses Continuous Integration/Continuous Deployment (CI/CD), a process framework and set of tools and techniques which moves code from developers through the environments while incorporating automated security and testing activities.

CI/CD supports a Continuous Delivery Pipeline which provides the ability to release code to end-users without manual intervention. Our pipeline can be augmented and tailored to client's unique requirements.

DEVSECOPS

LATCH develops and executes a Scaled Agile Framework (SAFe) DevSecOps Playbook which defines a set of technology and management solutions to deliver immersive, usable, and accessible digital experiences using an iterative development lifecycle, continuous security, and integrated operations for rapid release and production support.

We use the SAFe enterprise-scale processes to synchronize Agile software teams into a single unit while maintaining separation of duties.

SAFE DEVSECOPS PLAYBOOK

At the risk of innovation fatigue, clients are being asked to solve the latest IT, data, and security challenges while navigating an ever-evolving technology landscape. Achieving mission success is defined by flexible, adaptable, and highly structured frameworks executed by knowledgeable experts with proven experience.

LATCH redefines what it takes to achieve faster, more consistent, and secure outcomes and deliver business value to internal and external client stakeholders.

UX RESEARCH AND DESIGN

LATCH builds and delivers modern digital experiences to promote accessibility, ease, personalization, and user-centered design.

Users' interactions with digital products requires best practices in user experience (UX), user interfaces (UI), human factors engineering, and information architecture. We support digital experiences and Government policies by providing UX research and designs with measurable impacts that integrate success metrics with web analytics.