Government organizations, including the VA, CBP and the Intelligence Community, seeking to embrace a mobile first mindset, face a number of common challenges—including the need for rapid agile development, maintaining consistency and quality across distributed development and ensuring a common user experience. To meet these requirements, Accenture has built and deployed virtual, dynamic and elastic computational environments known as Mobile Application Development Environments (MADE).

We bring together development standards, operational requirements, IT and the mission to define a collaborative, effective mobile enterprise. This approach supports a dynamic and agile application development environment that can be provisioned and managed using automation. It can support dozens of teams encompassing hundreds of developers and engineers working on numerous discrete projects. It also addresses the full application lifecycle, including application design standards and tools, flexible development environments, continuous integration (CI)/continuous delivery (CD), test automation, developer workspace management, and maintenance and monitoring.

MADE is a DevOps environment designed for mobility which facilitates development at scale through a hosting environment (development, test, and production) while providing project management and development/testing tools, and governance processes.

By adopting standardized processes, common tools and shared work environments, agencies can accelerate application delivery, improve productivity and enhance quality—making mobile application development repeatable and scalable. Increasingly, emerging techniques, such as cloud-based environments and automated testing, are being used to reduce development costs dramatically. At a high level, the Accenture MADE includes:

- Development Processes and Tools
- Governance Processes
- Software Development Kits
- Web Services & Code Reuse Library
- Testing Environments, Processes, and Tools
- Configuration Management Processes

**MADE Workflow**

It is essential to establish a framework for mobile development and governance around an organization’s distributed computing environment. Achieving successful governance and development processes involves defining objective workflows and outcomes, reusing software, facilitating communication, preventing duplication and linking resources. In this way MADE will streamline application development through a formalized request and approval process for application development, development standards and re-use of code, automated QA testing, verification and validation process, simplified app version control, and test, pilot, and production processes and environments. Our design of MADE also allows for the standardization of reusable frameworks like security, connectivity, UI look and feel, and virtualized desktop infrastructure through a shared repository.
The target is to have all mobile applications, regardless of operating system (OS) or device, reviewed and approved in accordance with an agency’s governance standards and supported by an efficient, detailed development process. This framework is adaptive, user-friendly, timely, and transparent, and facilitates effective collaboration across the mobile development lifecycle. The process capitalizes on the expertise and resources throughout an organization while meeting necessary enterprise constraints.

**MADE Hosting**

MADE is designed to be a cloud-hosted solution within Amazon Web Services (AWS) by which an agency can obtain their own dedicated core GovCloud. The full benefits of MADE cannot be realized in an on-premise environment due to the inability to rapidly create development and test environments as demand scales. AWS offers low and moderate certified FISMA environments and is in the process of reaching the FISMA high level. A Dedicated Core Cloud housed in AWS can be completely secured and logically separated from other programs within the cloud, having no shared components with other government users. We have set up customized versions of MADE for numerous federal customers including those in the Amazon C2S Intelligence Community region. Fully populated environments can be stood up anywhere from 30 minutes to 2 hours. Previously, this could take up to several months.

For one intelligence customer, they are leveraging AWS Infrastructure as a Service and MADE capability to crowd source mobile application development from non-traditional developers such as academia. MADE provides the ability for developers to have access to flexible development services while still enforcing the agency’s quality and security standards through automated testing, agency branded UI standards, continuous integration, and automated testing. This engagement also capitalizes on AWS’ mobile specific offerings including AWS Lambda, which automatically manages the compute capacity associated with running code and only does so as needed, making it cost effective to crowd source the building of solution and only have servers running when source code is checked in for scanning and testing. Also, because AWS Lambda is event based, every time that a piece of code is submitted it is automatically tested. The instance is then deactivated as soon as the scans are finished so that malicious code does not contaminate the rest of the system. This engagement is enabling the innovative flow of ideas into this government agency and providing new and unique perspectives on how to tackle their evolving mission.

**About Accenture**

Accenture is a global management consulting, technology services and outsourcing company, with more than 336,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world’s most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US$30.0 billion for the fiscal year ended Aug. 31, 2014. Its home page is www.accenture.com.

Figure 1: Mobile Application Development Environment