

# DriveCam

To choose a single SCM solution, DriveCam set out to find one that would meet all its needs. The organization eventually chose Micro Focus® AccuRev to unify development processes.

## Overview

Headquartered in San Diego, California with operations in North America, Europe, Africa, Australia and Asia, DriveCam reduces claims costs and saves lives by improving the way people drive. DriveCam mitigates risk by improving driver behavior and assessing liability in collisions. Combining sights and sounds, expert analysis, and driver coaching, DriveCam's approach has reduced vehicle damages, workers' compensation and personal injury costs from 30 percent to 90 percent in more than 60,000 commercial, government and consumer vehicles.

## Challenge

DriveCam was hitting the limits of using Microsoft Visual SourceSafe (VSS) in 2005 and required a more robust software configuration

**“AccuRev has the best technical support of any software company I’ve ever dealt with, with respect to both timeliness and usefulness. Also, the business support side for rolling out initially and upgrading to new versions has also been much appreciated.”**

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QA Engineer  
DriveCam

management (SCM) tool that could scale with its growing development team needs. Various factors contributed to its decision to change SCM tools, including:

### COMPANY GROWTH AND EXPANDING PRODUCT OFFERINGS

These needs arose as a result of company growth and expanding consumer offerings, such as its new TeenSafe Driver Program, requiring DriveCam developers to sustain multiple code lines simultaneously.

### OFFSHORE DEVELOPMENT PROJECTS

DriveCam required that its offshore team be tightly coupled with in-house development and needed to use a shared code base with daily, and sometimes continuous, integration. Working with an offshore development team meant that DriveCam also required better processes and collaboration than was possible with VSS to effectively communicate and provide better visibility and tighter control over its outsourced projects.

### MULTIPLATFORM ENVIRONMENT

DriveCam's firmware team switched to Linux-based development tools for the embedded code, and this environment would have been nearly impossible to manage with VSS. Standardizing on one SCM system was a logical decision, and a number of SCM tools were evaluated to manage its Windows .NET and embedded firmware environment.



## At a Glance

- **Industry**  
Software & Technology
- **Location**  
United States
- **Challenge**  
The organization needed a single SCM solution after switching to Linux-based development tools.
- **Solution**  
Use AccuRev to unify the software development process.
- **Results**
  - + Introduced a more efficient offshore development process
  - + Provided the ability to flexibly maintain parallel lines of code
  - + Allowed the offshore team to work with the current state of the project instead of working in complete isolation

## **Solution**

With a focus on managing multiple releases in parallel across its multiplatform environment and desiring a tool with a much more intuitive and dynamic development model for improved ease of use and productivity, DriveCam evaluated many SCM tools but ultimately narrowed the field to AccuRev and Micro Focus StarTeam®. At the conclusion of the evaluation, DriveCam selected AccuRev because its stream-based model with built-in inheritance uniquely supported DriveCam's development process.

### **MANAGING PARALLEL DEVELOPMENT IN A MULTIPLATFORM ENVIRONMENT**

DriveCam's development environment includes multiple components. Firmware development for a microcontroller and a system on a chip (SOC) is hosted on both Windows and Linux workstations. The cross-compiled firmware is embedded in DriveCam's palm-sized, exception-based video event recorder that mounts on the windshield behind the rearview mirror and captures sights and sounds inside and outside of the customer's vehicle. Forces (e.g., hard braking, swerving, collision) cause the recorder to save 20 seconds of audio and video footage—10 seconds immediately before and 10 seconds after the triggered event. Precision and quality of code is essential in order for the recorder to function properly and to eliminate the possibility of having to retrofit thousands of devices if any significant defects were encountered.

On the software side, various forms of a front-end interface are developed. A web application is developed using Windows .NET that enables customers to get status of events and review driving event clips remotely. DriveCam also supports a stand-alone version of its front-end application that enables clients to manage the entire process themselves.

It was crucial for DriveCam to use a single SCM application across all development components so that a unified software development process could be implemented. Since AccuRev supports both Windows and Linux and provides a Visual studio integration that allows .NET developers to perform most SCM operations directly within Visual Studio, it was a natural fit for DriveCam's development environment.

### **EXPANDING PRODUCT OFFERINGS AND CREATING NEW BUSINESS OPPORTUNITIES**

One of the drivers for the web-based application is a parallel consumer project known as DriveCam's TeenSafe Driver Program, which would not have gotten off the ground if the company were still using VSS. Teen driving events go directly to a DriveCam-managed database rather than to the teen's parents, who are notified of risky behavior and can visit the web site to view driving event status. While this project continues, DriveCam must maintain features specific to it separate from its main web application. At the same time, developers

must also be able to apply relevant bug fixes for the main web application to this project as well. AccuRev provides the flexibility that DriveCam needs to maintain these parallel code lines.

At times, customers may request a special feature. With AccuRev, DriveCam can easily create separate streams of development off the main line for special one-offs, thus isolating the main line of development from custom code.

### **BRINGING ENHANCED VISIBILITY AND CONTROL TO OFFSHORE DEVELOPMENT PROJECTS**

AccuRev allowed DriveCam to begin utilizing a more efficient offshore development process. Since the offshore development project was tightly coupled with in-house development, the outsourced team needed to be integrated as much as possible with the main development team. At the same time, it was important for DriveCam to enforce a strict code review process to ensure that only quality changes from the offshore team were integrated into its core development. AccuRev satisfied both objectives.

The lightweight AccuReplica product allowed DriveCam to set up the offshore development repository in minutes. The AccuReplica model provided a faster, more reliable solution and required nearly zero maintenance in comparison with the previous replication solution for VSS, SourceGear SourceOffsite. To enforce the code

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review, the offshore team was restricted to checking changes into code review streams off of the integration stream used by the core team. Since the AccuRev stream hierarchy has built-in inheritance, changes promoted into integration by the core team were automatically inherited into the offshore development stream. This allowed the offshore team to work with the current state of the project instead of working in complete isolation and having to perform a large merge later.

At the same time, a member of the core team was responsible for code-reviewing changes checked in by the offshore team before promoting them to integration. When the outsourced

project was complete, DriveCam was able to immediately change the process within the StreamBrowser without any disruption to its daily development work.

**BUSINESS VALUE GAINED MOVING FROM MICROSOFT VISUAL SOURCESAFE TO ACCUREV**

- New business opportunities were made possible by allowing additional parallel projects to run concurrently with no increase in development team size.
- Developer productivity has increased—examples include instantly reverting unsuitable code changes before a release

build that would take hours in VSS; eliminating blockages to the code on parallel projects; the ability in AccuRev to easily navigate through code changes and see all relevant information (what changes were made, by whom, when and why)—all from within one comprehensive graphical user interface.

- Builds are created more quickly and easily, allowing more time for QA resources to focus on testing them. Because less time is spent on testing and fixing build problems, more focus can be diverted to testing the software. This translates into an overall improvement in quality.

**“The graphical StreamBrowser within AccuRev allowed us to much more easily support our outsourced development process and changes we made to the process did not impact developers and were easily visible to everyone, reducing questions and increasing productivity.”**

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