Cal/Amp®

Automating FNOL and Claims for Property and Casualty Insurers:

Reliable Event Filtering as a Building Block for Crash-Grade Insurance Telematics

Reaching the Goal of Reliable Claims Automation

Insurance claims, and the cost of processing them, are expensive. At up to 80 percent of premiums earned, they are the single largest expense for carriers[1]. At the same time, competition in a mature market is forcing insurers to become more efficient at claims processing and, with a wide selection of carriers for policyholders to choose from, the ability to increase policy prices is limited. Addressing all these issues and remaining profitable is a tough order.

Full automation of accident event reporting, a long-sought objective of auto insurers, would revolutionize claims processing, enhance the policyholder experience and significantly improve carrier profitability.

Of course, automation of the claims process has been ongoing for years. Digitization of documents has greatly improved user interfaces on web platforms, enabling more policyholder self-service, much improved analytics and better anti-fraud functions--all of which contribute to lowering the cost of claims. However, certain functions within claims remain labor-intensive, in particular, the initial step in the process, First Notice of Loss (FNOL). Lessening reliance on call centers to perform this function requires that the car, using embedded telematics, or a crashworthy aftermarket telematics device, provide immediate, accurate and reliable crash data to the claims processing system. An immediate crash report from the vehicle to a remote claims processing center is defined for the purposes of this paper to describe the event location, date, time, VIN, severity and to be delivered within 40 seconds or less. An automatic crash report and associated event data, or automated FNOL, in turn requires

a crash-grade telematics system that incorporates a robust discrimination algorithm installed on the vehicle at all times.

The Telematics Revolution

Telematics has already made its mark in insurance underwriting. Industry pioneers such as Progressive in the U.S., Mapfre in Spain, and Generali in Italy-just a few examples of the carriers working to advance this space-have demonstrated telematics' measurable advantages with pay-as-you-drive and pay-how-you-drive, usage based insurance (UBI) programs. While UBI programs in their current state are generally not crash-grade solutions, these programs are continuing to mature and evolve. Several major insurers-one of which is AXA Winterthur, Switzerland's leading motor insurer and notable for their advanced work and considerable in-house expertise in this area-are exploring the role telematics can play in crash prevention, crash analysis and claims.

AUTOMATED FNOL VS POLICYHOLDER REPORTS VIA CALL CENTER; COMPARING KEY DIFFERENCES			
FNOL Reporting Method	Time Elapsed from Event to Report to Claims	Report Characteristics	Policyholder Experience
Traditional	3-5 days on average[3]	Delayed, subjective, qualitative	Burden is on the policyholder to make the report
Automated FNOL	Immediate	Real time, objective, and quantitative. Specific with respect to vehicle VIN, location, date, time and impact severity.	Improved policyholder experience. On board crash grade telematics device automates the reporting process. Shortens the time to finish the claim process.

[1] Sarah Butler, Paul Francis, "Cutting the Cost of Insurance Claims," http://www.strategyand.pwc.com/media/file/Strategyand_Cutting-the-cost-of-insurance-claims.pdf
[2] The actual time incurred from the instant of the crash event to when the data is received at a remote server varies by a few seconds, to approximately 40 seconds in multiple vehicle crash and lab tests performed by CalAmp. The time required, or latency, is a function of many factors including mobile network conditions and server location.
[3] CalAmp data based on interviews with P/C insurers.

The next, logical step in the insurance telematics revolution is claims processing and management with the ability to execute immediate, reliable, and automated crash detection, event data reporting and analysis. Shorter claims cycle times, automated FNOL, fraud reduction, predictive estimates for collision repair and bodily injury probability including soft tissue damage such as whiplash, are just a few of the many areas where efficiencies can be realized.

The cost savings and benefits to insurers can be significant, as the following data illustrates.

EFFECT ON CLAIMS PAYMENTS WHEN MORE DATA IS RECEIVED AT FNOL[1,2]	
Type of Claim (Third Party)	Reduction in Payments (Severity)
Bodily injury settlements	15-25%
Bodily injury settlements (involving a lawyer)	25-49%
Property damage claims	10-15%

EFFECT ON CLAIMS CYCLE TIME WHEN MORE DATA IS RECEIVED AT FNOL[1,2]	
Type of Claim (Third Party)	Reduction in Claims Processing Time (Cycle Time)
Bodily injury settlements	5-15%
Property damage claims	8-15%

Notes: [1] Two groups were compared for this study; one group had less data (e.g. a phone number and one more element such as address or VIN), and the other group had more data (e.g. a phone number and two more data elements) [2] Source: Lexis Nexis Risk Solutions referenced in Carrier Management August 18, 2014

Claims Automation: It's Not Just for P&C Insurers

Insurance carriers certainly will be the primary beneficiaries of a telematics claims solution. But a number of other audiences will also benefit:

- Insurance Industry suppliers
- Estimating and claims management companies
- Self-insured companies
- Fleets
- Telematics system suppliers seeking to add more value
- Aftermarket Connected Car system developers and manufacturers

Improve Customer Loyalty Through Improved Claims Performance

The volume of business involving policyholders switching insurance carriers is estimated to be around $5.8 billion annually in the US alone. Customer retention is a key objective of insurers, and the claims experience is crucial to persuading the policyholder to stay; merely making a claim increases the customer's likelihood of switching from 22 percent, to 41 percent. Policyholders are clear about what they expect of the claims process; 95% say speed is important, 94% rate transparency as crucial.

Source: Accenture Claims Customer Survey, 2014

Reliable Crash Detection: The Key to System Performance

The consequences of event detection devices or systems with basic or inadequately engineered discrimination routines are well familiar to insurers, fleet operators and consumers. False positives from car theft alarms, home intrusion alarms and even some OEM lane departure warning systems on late model vehicles are just a few examples of products that can erode consumer confidence in the product and even the underlying brand. Consumers have even less tolerance for systems that fail to perform as expected in a low-frequency, high-consequence event such as a vehicle crash.

To counter these issues when engineering vehicle collision detection and reporting systems, developers must consider several key components. To begin with, a crash-grade telematics device must have a suitable self-calibrating accelerometer with a dynamic range and sample rate to accommodate crash events. But it also requires a reliable crash algorithm to process signals accurately, and in real-time. A robust crash algorithm must be able to discriminate between actual crash events and non-impact events. In other words, it must recognize and filter out things such as potholes, hood slams, door slams, rumble strips and speed bumps to name a few.

A Tested, Science-Based Solution

With over 5M devices on CalAmp systems in active service globally, CalAmp has long been recognized as the leading developer and manufacturer of wireless products, services and solutions for fleet telematics. We also have significant crash engineering know-how and intellectual property in this field. We have pioneers on staff with extensive experience in vehicle OEM safety systems, including airbag system and vehicle structure engineering, who have developed CalAmp CrashCode™, our proprietary embedded crash application installed on CalAmp devices. CrashCode operates on the same principle that allows vehicle airbags to distinguish reliably between must fire/no fire conditions, a key performance attribute of modern vehicle safety systems (See Figure 1). The CrashCode application discriminates between actual crash events and non-crash noise, delivering high-fidelity crash event data to CalAmp Connect in real time. Connect is CalAmp's advanced solutions deployment platform, which enables telematics systems providers (TSPs) and other partners to access our broad range of insurance telematics solutions, including instant crash alerts, predictive analytics for material damage to the vehicle and bodily injuries to the frontal occupants, using APIs.

CrashCode is engineered to meet the demands of insurers and fleet managers who want to automate accident reporting and access reliable, actionable intelligence in real time for claims operations. It has been tested extensively using controlled and instrumented vehicle-to-barrier, vehicle-to-vehicle and field data from a large number of crashed cars. Reliability is essential, and in testing, CrashCode achieved a 98.6 % success rate in discriminating between crash and non-crash events.

ELIMINATING AMBIGUITY

To eliminate ambiguity for insurance telematics crash applications, instruments such as OBDII dongles and hard-wired devices need a triaxial accelerometer with dynamic range (+/- 16Gs is adequate) and a sample rate that can capture the majority of crashes, which last an average of 200ms in total, but have periods which may last just 2 or 3 ms. A crash algorithm, embedded on the data acquisition device, that can discriminate between collision events and non-collision events, is also necessary for reliable system performance (See Figure 2).
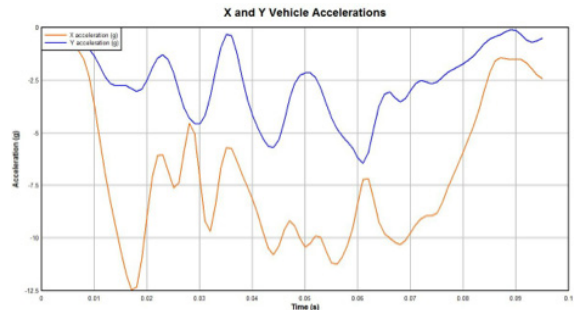

Figure 2 - A typical vehicle crash pulse showing Acceleration vs Time for both X (longitudinal) and Y (lateral) axes.

Figure 1 - The CrashCode application discriminates between actual crash events and non-crash noise, such as pot holes, speed bumps, and hood or door slams.

CalAmp Insurance Telematics Solutions

For truly automated claims processing, telematics solutions must provide more than just the critical crash discrimination capabilities discussed in this paper. CalAmp is focused on advancing crash discrimination while also expanding beyond initial event data to provide a comprehensive solution that includes these products:

- AFNOL™- **A**utomated **F**irst **N**otice of **L**oss for immediate crash detection and alerts. It includes Instant Crash Notification (ICN) via text and email and ICN+, a report which contains key crash metrics for accident reconstruction professionals and forensics applications.
- DENT™ - Collision **D**amage **E**stimates in **N**ear real **T**ime.
- BITE™ - **B**odily **I**njury and **T**rauma **E**xpert predictive analytics to facilitate triage and significantly reduce the BI claims process to days, not months.

Why CalAmp

CalAmp (NASDAQ: CAMP) is a proven leader in providing wireless communications solutions to a broad array of vertical market applications and customers. CalAmp's extensive portfolio of intelligent communications devices, robust and scalable cloud service platform, and targeted software applications streamline otherwise complex M2M deployments. These solutions enable customers to optimize their operations by collecting, monitoring and efficiently reporting business-critical data and desired intelligence from high-value remote assets.

For more information, call (805) 987-9000 or visit www.calamp.com to learn more about CalAmp's insurance, fleet and connected car solutions.

CalAmp: An Industry Leader, High Volume Manufacturer & Provider of World Class Enterprise Solutions

- Industry leader in MRM and M2M communications
- Connecting business-critical data and transforming it into actionable intelligences for people, systems and machines
- Extensive portfolio of devices, scalable cloud platforms and targeted software applications
  - 5M+ devices on CalAmp systems
  - Well over 1M annual device run rate
  - ~500K unique SaaS subscription units

Making Fully Automated Claims Processing Now Possible

The future of fully automated claims processing is here. Insurers now have the means to greatly reduce the time and resources needed to process and close claims for material damage and bodily injury quickly and accurately with CalAmp's automated crash solutions:

- Developed by OEM vehicle and safety systems veterans
- Tested under controlled laboratory and field conditions
- Provided by an industry leader in Mobile Resource Management and Machine-to-Machine communications

About CalAmp

CalAmp (NASDAQ: CAMP) is a telematics pioneer leading transformation in a global connected economy. We help reinvent businesses and improve lives around the globe with technology solutions that streamline complex IoT deployments and bring intelligence to the edge. Our software applications, scalable cloud services, and intelligent devices collect and assess business-critical data from mobile assets, cargo, companies, cities and people. We call this The New How, powering autonomous IoT interaction, facilitating efficient decision making, optimizing resource utilization, and improving road safety. CalAmp is headquartered in Irvine, California and has been publicly traded since 1983. LoJack is a wholly owned subsidiary of CalAmp. For more information, visit calamp.com, or LinkedIn, Twitter, YouTube or CalAmp Blog.

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