# Cal/Amp®

# CalAmp Telematics Cloud:

## An Enterprise M2M Application Enablement Platform

# Executive Summary

In today's complex, competitive landscape, it is no longer enough to have a basic M2M solution in place. Increased price and service delivery pressure, stringent security requirements and an ever-tightening marketplace necessitate the adoption of technologies that optimize operations with custom device and asset management applications.

For enterprise, utility and industrial verticals, it is not a question of whether a new solution is needed; it is a matter of how quickly. Older technologies lag in responsiveness and security, and rely on control models that do not scale. A business that fails to move to new technologies that enable smarter solutions is a business that cannot grow beyond a certain point, cannot operate efficiently, and in many cases is vulnerable to the risk of losing the competitive edge.

In cases where new technology must be integrated with significant existing capital investment in legacy assets and systems, a great deal of customization is often required. This leaves two apparent choices: buy off-the-shelf solutions and hope they play well together, or sink considerable money into building a custom solution from scratch.

This white paper explores a third option that alleviates both the risks of off-the-shelf solutions and the expense of custom solution development.
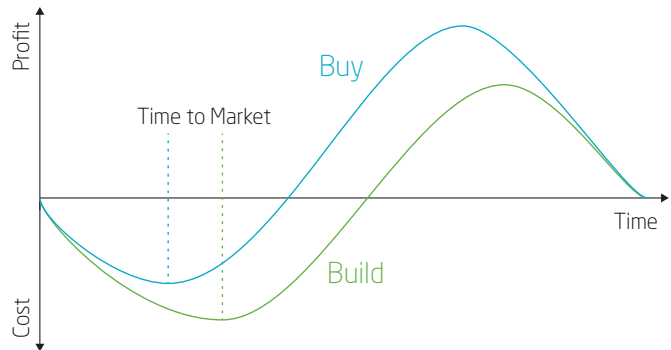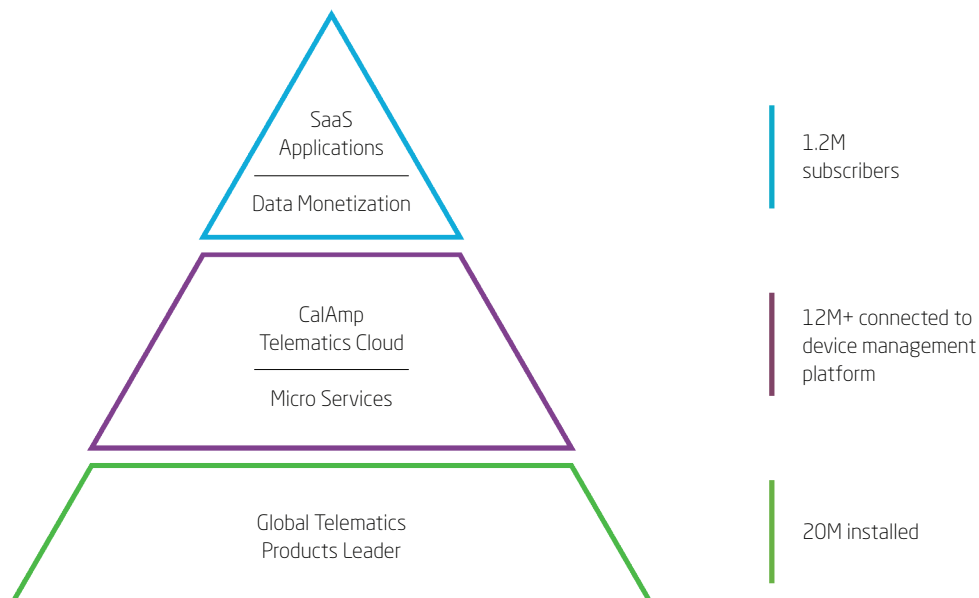


Classic "Time to Market" curves for "Buy vs. Build" shows less profit when Build costs more money and time to get to market.

## The Challenge

Enterprise organizations must consider multiple factors when designing the infrastructure to support an M2M solution for thousands or millions of connected devices and assets. These factors include time to market, support costs, security and perhaps the largest expense, development costs of building the infrastructure.

## Core Technology Platform with Common Stack Across Verticals



SaaS Applications
Data Monetization
— 1.2M subscribers

CalAmp Telematics Cloud
Micro Services
— 12M+ connected to device management platform

Global Telematics Products Leader
— 20M installed

One approach adopted by some organizations is to create a solution piecemeal from whatever is available. The market offers a wide range of off-the-shelf M2M applications for remote device management, fleet tracking or asset monitoring. These single applications are often purchased from different companies and cobbled together to build a complete M2M solution. There are two major risks to this strategy. First, will the applications interoperate with each other? More importantly, can they interoperate with all of the legacy systems that actually run the business? Even in the best cases, a solution built in this way is likely to have gaps. Custom solutions avoid these gaps, because every aspect of development is tailored to the challenges, equipment and systems specific to the organization. The main risks of this strategy are cost and timeline. Unless the organization already has all the necessary competencies in-house, the project will require costly outside help.

## The Solution

An M2M application enablement platform can drastically reduce the cost of developing a tailored solution since it provides tools and interfaces for communication with a broad array of fixed and remote systems and assets. Because the platform takes care of the biggest challenge—communicating with and managing assets—the design and implementation teams of the organization can focus instead on core strategy and differentiation in the end user and business application space.

When researching and narrowing down to a comprehensive M2M platform solution, select a single, tightly-integrated solution for communicating remote asset data, performing remote device configuration and network management.

The CalAmp Telematics Cloud encompasses these requirements and more, and simplifies the complexity between the asset and the application.
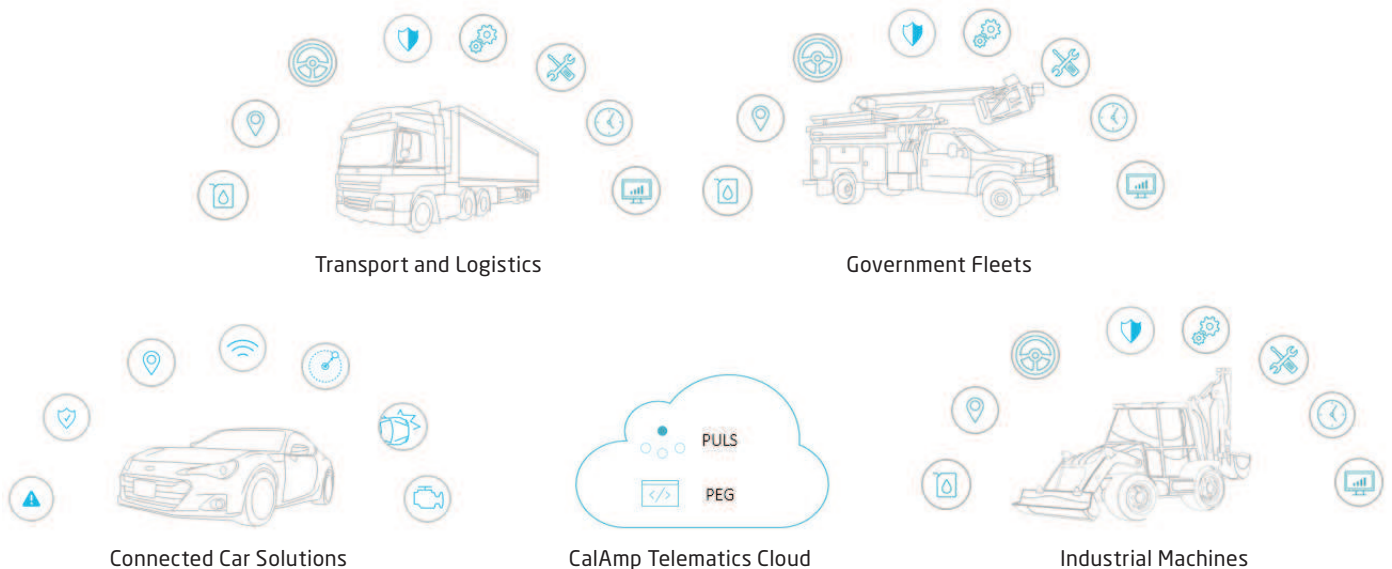
## The CalAmp Telematics Cloud

The CalAmp Telematics Cloud is a cloud-based M2M turnkey solution with a complete set of services designed to connect remote devices and assets to a diverse set of vertical applications. The result is a reliable and secure solution delivered in the shortest cycle at the most economical price from both a component and total cost of ownership analysis.

CalAmp Telematics Cloud enables enterprise organizations to translate business goals into significant ROI and easily roll out a solution across the entire enterprise.

CalAmp Telematics Cloud manages and integrates connected devices and APIs to deliver:

- Scalable service platform featuring enterprise-class device and transaction management to support millions of devices reliably and securely
- Secure data transmission via VPN to CalAmp Telematics Cloud Tier IV data center
- RESTful API for easy adoption and development to unlock business value
- Seamless network management with carrier-agnostic data plans and optimal airtime pricing



Transport and Logistics



Government Fleets



Connected Car Solutions



CalAmp Telematics Cloud



Industrial Machines

In addition to the single pricing models, CalAmp Telematics Cloud offers a hybrid solution, leveraging multiple carriers along with a choice of communications from cellular, satellite or private radio networks.

## Device Management and Business Application Integration

CalAmp Telematics Cloud offers secure administration of remote devices from a centralized location and supports rapid deployment with minimal infrastructure, support and capital cost. This single web-based portal is accessible anytime and anywhere, and simplifies device configuration and management and seamless integrates with existing business tools. The portal provides secure, two-way communication between the platform and remote devices for flexible over-the-air firmware and configuration upgrade campaigns. Additionally, the portal provides device monitoring and dashboards that look at the health of devices, scheduled commands, downloaded status updates, and flexible reporting and analytics. The business application enablement tools allow for easy integration with traditional enterprise applications as well, ensuring a two-way synchronization between the applications and the data store on the CalAmp Telematics Cloud platform.

## Reporting and Subscription Management

CalAmp Telematics Cloud makes reporting easy across all asset types with ad-hoc or automated reporting in CSV or PDF formats and alerts and notifications via SMS or email. Subscription management is also convenient, as the portal supports integration into billing solutions and provides management of carrier subscriptions per device—including activation, provisioning, de-activation and renewals.

## Device Enablement

CalAmp Telematics Cloud works seamlessly with a broad portfolio of the highest-quality devices from CalAmp. CalAmp designs, develops and manufactures a wide array of off-the-shelf and custom devices that provide the technology to enable MRM and M2M applications. CalAmp Telematics Cloud provides easy access to these intelligent devices and their features via APIs, reducing the complexity of device configuration and management at scale. The tools allow custom device handling and data reporting into your custom or third-party management application. Asset grouping allows for ease of management and flexible device configuration via over-the-air update capabilities.

## Integrated Network Management

CalAmp Telematics Cloud works with a portfolio of network providers to enable enterprise organizations to receive optimal airtime pricing based on volume plans and flexible pricing models, which optimize carrier selection based on implementation requirements for coverage, data, cost and geography. The CalAmp Telematics Cloud network management service provides a single point of integration and a single bill for all services, including the bundling of airtime, hardware and subscription services. A secure and reliable API interface for ERP system integration is available independent of carrier, technology or geography.

## Data Management and Services

Highly scalable device data processing and storage within this innovative platform enables customers to deploy and scale M2M systems rapidly. Data processing converts and parses the binary device data messages and stores the data in a web-ready database. CalAmp Telematics Cloud feeds data into applications and reporting systems directly, or into an enterprise data warehouse for post-processing. Additionally, third-party, value-added data such as reported latitude/longitude coordinates, Diagnostic Trouble Codes (DTC), or the service schedule based on a vehicle's VIN can also be associated with the device data.

Customers also have the option to archive and host data within CalAmp Telematics Cloud to allow retrieval of historical data. All inbound, outbound and stored data is encrypted and protected and flexible query services are available to receive, manipulate and analyze the data.

## Application Development

CalAmp Telematics Cloud's API Services are available through a secure and reliable repository for authorized enterprises and users to build, integrate, manage and distribute applications for deployment. The platform features an online tool for visualizing and exercising RESTful APIs. Enterprise organizations also have access to online development and document support, including details on API documentation, Java Framework and consulting, development and integration services.

Data is in a standard XML format, making it easy to integrate with custom or third-party. This helps customers optimize support and capital costs while still taking advantage of numerous third-party applications and data, all through the same platform.

## Data Security by Design

The CalAmp Telematics Cloud platform boasts a data security design that minimizes security risks by secure management and transmission of enterprise organizational data. CalAmp Telematics Cloud provides secure network access via HTTPS to establish secure connections to the services using SSL/TLS. Data travels via secure Virtual Private Network (VPN) tunnels from the device to the customer's data center. CalAmp's carrier agreements maintain that customer data travels on a secure private network, not the public network shared by all commercial users. CalAmp has a private APN connection between the carrier network and the AWS hosted data centers. A VPN connection from CalAmp back to the customer completes the network.

Hosted in the AWS Cloud, CalAmp Telematics Cloud leverages robust and industry-compliant security and redundancy best practices to monitor and protect inbound, outbound and stored data. The sophisticated infrastructure allows for configurable built-in firewall rules, private subnets and end-to-end encrypted transmission. Only authorized users with specific roles and access control policies can access the managed resources with provision for system admin controlled automatic login expiration.

The platform is scanned 24/7 to identify security vulnerabilities and treads and resource efficiency due to real-time monitoring.

## Why Select CalAmp Telematics Cloud?

CalAmp Telematics Cloud is a turn-key M2M application enablement platform with a complete set of services that simplifies the complexity between remote assets and enterprise applications. CalAmp Telematics Cloud is delivered through a commercial-hosting backend to provide peace of mind scalability, security and reliability and enables enterprise organizations to realize the following:

- Faster time to market
- Strategic ability to integrate with custom and third party applications
- Device management and ease of hardware evolution
- Carrier efficiencies and flexible pricing models that optimizes recurring service costs
- Lower up-front investment, reduced costs and minimal infrastructure
- Decreased project risk and technology distractions, enabling greater focus on business process and growth
- Reduced potential security risks for enterprise data and applications

For more information on the CalAmp Telematics Cloud solution, visit calamp.com/products/calamp-telematics-cloud/

Cal/Amp®
Telematics Cloud™

## 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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