



## Creating value from Machine-Driven Big Data

The increased scope of connectivity has spread from domestic and personal devices to include industrial machines and the “Internet of Things” in the consumer market has now developed into “The Internet of Machines” in the industrial world. Cars, aircraft, trains, medical devices, manufacturing robots etc. are becoming increasingly connected and are able to provide access to their data to enable the creation of new applications and revenue streams for professional users and consumers.

With exponential connectivity and data growth, industrial players will be faced with new Big (and small) Data-related challenges: technological choices, costs optimisation, safety and security issues, as well as data mining and analytics.

Beyond the purely technical challenges, the key questions being asked by industrial players are “what can I do with this data?”, and “what kind of services and experiences can I bring to the market – and to my end-users?”

VueForge™ is a unique end-to-end offer that combines technology, usage and profitability with an in-depth industry understanding, key in-house accelerators and a supporting ecosystem. This offer has been designed to help clients in all industries to reap the benefits of the industrial Machine-Driven Big Data revolution and forge their view of next-generation of connected machines.

# Offer Description

VueForge™ is composed of five blocks designed to transform machine data into value and new business: data is harvested from machines then transported and transformed into information, which in turn is converted firstly into services, and ultimately into new business

DATA	TRANSPORT	INFORMATION	SERVICES	BUSINESS
Connecting Machines	Transport Network	Industrial Cloud, Analytics & Intelligence	Product & Service Innovation	Business Model Innovation
Integrate and implement the technologies to connect machines and devices, sense and harvest the data including local processing and regulation management.	Provide the adapted network technologies needed to take advantage of the device/machine mesh and send data to an infrastructure, possibly Cloud-based.	Turnkey analytics and Business Intelligence solutions, including self-service analytics and ubiquitous access, built on public, private or hybrid infrastructures.	Create and enhance services with connected machines and address technology and usage thanks to ideation and rapid-prototyping technologies.	Create innovative business models for the new/enhanced services and ecosystem setup (including players from other industries).
SECURITY				

VueForge™ comprises:

- Altran's all-industry, packaged offers providing end-to-end solutions in the fields of **Connectivity, Embedded Systems, Safety & Security, Information Technologies & Big data** (including Hadoop and Cassandra), **Analytics, and Innovation Management**. See our Industry pages on our website for an extensive presentation of the Group's specific Intelligent Systems' expertise
- Partner ecosystems, such as **SAS** and **Institut Open Innovation** – As a global integrator, Altran provides the most relevant technologies to suit its clients' needs
- In addition to the technologies already provided by **Intelligent Systems / Altran**, VueForge™ includes a set of dedicated in-house accelerators

## VueForge™ Sense

Sensors everywhere! An extremely low-consumption, sensing technology designed to turn smartphones into complex sensors.

## VueForge™ Play

Try, Play, Innovate! Rapid-prototyping and a light-weight IoT, Cloud-based platform.

## VueForge™ Think

Everybody can be a Data Scientist! Extract valuable information from data – in a simple way.

## VueForge™ Innovate

Find the "killer" app and the right business model! A design-thinking approach used for the purposes of creating new services and business models

# Key to success

The key to success in Machine-driven Big Data is having the ability and the experience to combine technology expertise, usage innovation and ecosystem setup. Altran has the expertise required to ensure this success:

- As an industrial company, Altran has a deep vertical understanding of machine technologies and regulations.
- As a global integrator, Altran integrates key players, partners and clients at the global level to build the right type of ecosystem.
- As an engineering company, Altran builds, integrates and delivers bespoke solutions based on industrialised platforms and methodologies.

## Case Reference: Half a million cars in the Cloud!

### Objective

What if car manufacturers had 500,000 of their cars connected to the Cloud, with their vehicle-data accessible? Altran has worked closely with Microsoft to explore a range of new application possibilities for OEMs and end-users. To achieve this, Altran connected its Open & Connected Car to Microsoft's Cloud so as to harvest the data from the car's CAN bus. In order to attain Big-data scale, Altran has created a synthetic environment for a fleet of 500,000 vehicles in the Cloud, which is also based on Microsoft's cutting-edge technology used in the video game industry.

### Results

This VueForge™ for Automotive system demonstrates how OEMs can acquire a greater understanding of the real usage of their cars, analyse auto data (Hadoop-based) and identify anomalies (so that they can improve overall vehicle maintenance) – using the straightforward touch interface provided by the Surface tablet. The demonstrator also integrates end-users by offering new services on their smartphones or car head-units. Cloud enables community-based services, enhances loyalty, or can offer a recall notification service to hundreds of thousands of cars at the mere push of a button!