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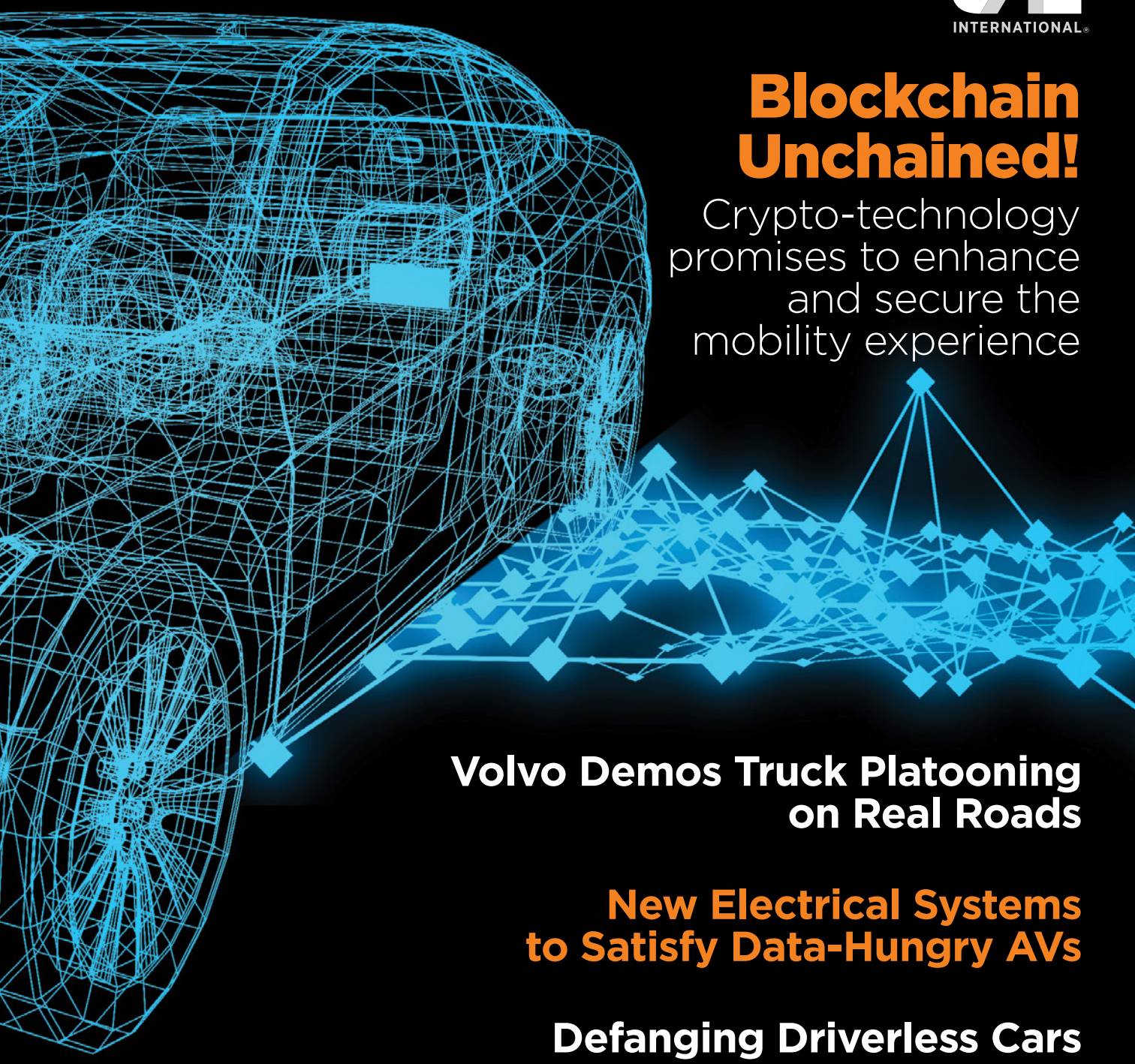

## Blockchain Unchained!

Crypto-technology promises to enhance and secure the mobility experience

## Volvo Demos Truck Platooning on Real Roads

## New Electrical Systems to Satisfy Data-Hungry AVs

## Defanging Driverless Cars

SUPPLEMENT TO **AUTOMOTIVE ENGINEERING**

# Are Blockchain and 'Smart Contracts' the **Secure Future**?

**Legal risk and reward of blockchain and smart contracts as a prescription for automotive applications**

By Jennifer Dukarski and Ashley Glime

**Can blockchain,** the digital distributed ledger technology so closely associated with the cryptocurrency Bitcoin, be used to mitigate the inherent risks of manufacturing automotive components? Can a hacker-branded technology be trusted to secure our connected and autonomous systems and drive a new mobility future?

If blockchain and smart contracts can provide an avenue for expanding the mobility economy while mitigating legal risks, they may be right for you.

## Smart contracts, fortified by blockchain!

Most identify blockchain with the shadowy realm of cryptocurrencies, yet blockchain is simply a digital ledger system incorporating protocols that validate transactions across a decentralized network of computers, using computer logic to automate the tracking of performance events. Simply expressed, the code in smart contracts executes the logic of the legal agreement to exchange and transfer value or information—and the results are recorded on the blockchain.

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For example, the French airline AXA has a smart contract that addresses flight insurance. If a flight is more than two hours late, app users are notified with compensation options.

Recently, more than thirty automotive companies joined forces to create MOBI, the Mobility Open Blockchain Initiative (see page 10). Chris Ballinger, MOBI's founding chairman, said: "Blockchain and related trust-enhancing technologies are poised to redefine the automotive industry and how consumers purchase, insure and use vehicles."

MOBI has started assessing key use cases including:

- Supply-chain tracking
- Usage-based mobility pricing and payments for vehicles, insurance, energy, congestion charging, pollution and infrastructure

## Blockchain, smart contracts and the law

As smart contracts and blockchain emerge as potential solutions to mobility challenges, risk-related questions arise:

### Can my code cause legal headaches?

The person coding the smart contract is creating an interpretation of the contract logic. That's where technical professionals can run into trouble.

- *When the contract says one thing and the code says another.* It's a troublesome world when contract provisions inside the same agreement collide (conflicting clauses that fall within the "four corners" of the contract) or when two competing contracts collide (the "battle of the forms"). Each of these problems has its own complex body of law. The issues where

a smart contract competes with traditional drafted forms have not yet been resolved.

- *When the contract doesn't execute at all.* Traditionally, errors in coding lead to either warranty concerns or potential recalls. In fact, as many as 15% of all automotive recalls find software as the root cause. But what happens if a contract fails because either the platform or code doesn't work? Depending on the contract, nothing may happen or something may not have happened that should have. If you have provisions that don't execute properly, you may be in breach of a larger contract and liable for any resulting damages.

**Blockchain will mitigate security and privacy risks—right?**

Blockchain technology is seductive from security and privacy standpoints because it is decentralized and distributed. But blockchain is not invulnerable to fraud, hence the loss of over $500 million in digital coins in a hack of Coincheck. Further, this decentralization may impact data privacy by adding a requirement to comply with applicable laws, including the recently adopted EU General Data Protection Regulation (GDPR). As an example, under the GDPR, a company may be required to remove data which may be placed on a technology designed to be immutable.

**Blockchain is new. Will we have to worry about regulations?**

At present, there are no federal laws regulating non-cryptocurrency uses of blockchain in the U.S. Arizona has passed legislation to promote smart contract usage and states such as Nebraska have debated similar proposals. This currently equates to a regulatory uncertainty that mirrors the autonomous-vehicle regulatory scheme. Right now, it appears the main regulatory push will be towards the currency applications, with less restriction contemplated on non-cryptocurrency uses—which stresses the importance of continued monitoring.

**Finally, with smart contracts, we can avoid the lawyers... can't we?**

In lawyer humor, William Shakespeare's quote "Let's kill all the lawyers" often reigns supreme. Many blockchain and smart contract advocates see this technology displacing lawyers for creating contracts. Despite the hype, smart contracts will not replace your lawyer. You will still need to address:

- *Enforceability*. A contract must be legal, binding and enforceable. To make it so, you must meet all requirements under the law. If anything, your lawyer's knowledge is even more irreplaceable in the move toward smart contracts.
- *Jurisdiction*. With decentralized systems, it's challenging to determine where the transaction occurs and what courts would seek to enforce within their realms. This risk can be minimized with the use of detailed governing-law provisions in agreements, stressing the importance of involving legal professionals.
- *Limitation of Liability and Allocating Risks*. There is risk conflicting code and coding errors. With uncertainty in how these conflicts might be treated under the law, it's best to address these considerations in the legal contract.

Whether blockchain and smart contracts become the ultimate solution for protecting autonomous vehicle data and enabling mobility transactions—or just one of a number of solutions—the "need" remains: to create a system that is private and secure while being both effective and friendly. Blockchain and smart contracts provide a potential solution that, with proper diligence, may mitigate practical and legal risks. ■

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