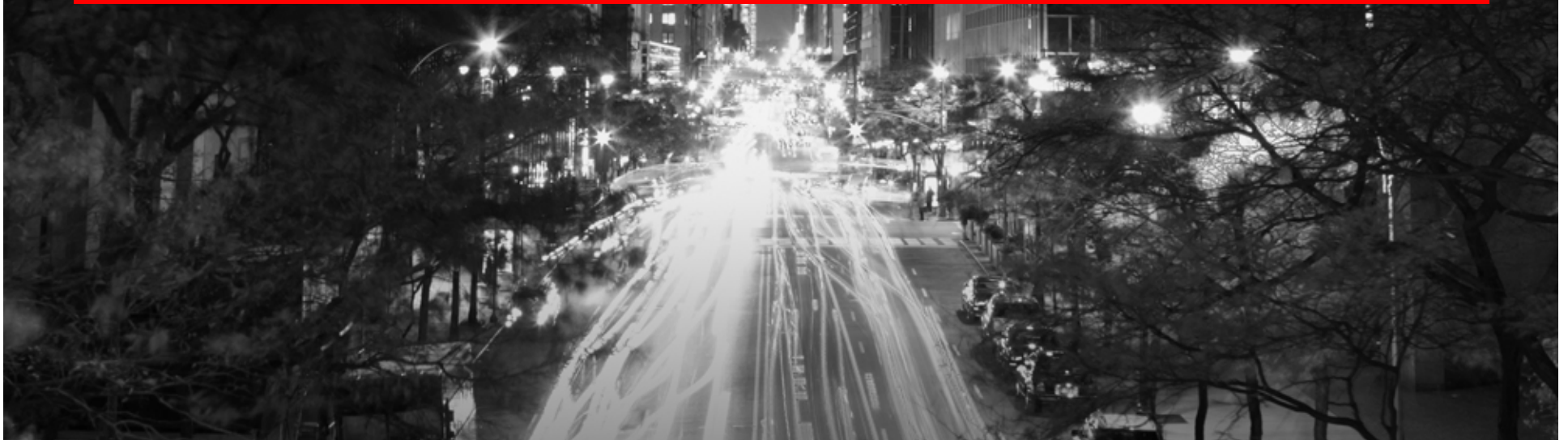


Financial institutions
Energy
Infrastructure, mining and commodities
Transport
Technology and innovation
Life sciences and healthcare

 **NORTON ROSE FULBRIGHT**

Autonomous vehicles webinar

Norton Rose Fulbright US LLP
October, 26, 2016



Continuing education information

- We have applied for 1.0 hour of California and Texas CLE credit and 1.0 hour of New York transitional CLE credit. For attendees outside of these states, we will supply a certificate of attendance which may be used to apply for CLE credit in the applicable bar or other accrediting agencies.
- Norton Rose Fulbright will supply a certificate of attendance to all participants who:
 - Participate in the web seminar by phone and via the web
 - Complete our online evaluation that we will send to you by email within a day after the event has taken place

Administrative information

- Today's program will be conducted in a listen-only mode. To ask an online question at any time throughout the program, click on the question mark icon located on the toolbar in the bottom right side of your screen. Time permitting, we will answer your question during the session.
- Everything we say today is opinion. We are not dispensing legal advice, and listening does not establish an attorney-client relationship. This discussion is off the record. You may not quote the speakers without our express written permission. If the press is listening, you may contact us, and we may be able to speak on the record.

Webinar agenda

Regulation

Cristina Lunders, Houston

Product Liability

Steven Jansma, San Antonio

Cybersecurity / privacy

Boris Segalis, New York

Intellectual property

Paul Keller, New York

Corporate / M&A

Johannes Gabel, New York

German legal landscape

Frank Henkel, Munich
Jamie Nowak, Munich

Speaker: Regulatory



Cristina Lunders

Senior Associate

Norton Rose Fulbright LLP

Cristina Lunders is a Senior Associate specializing in Regulatory and Investigations matters. For over ten years, Cristina has assisted clients in developing compliance policies and procedures on a wide variety of topics, and conducting both internal and government investigations related to alleged breaches of company policies and regulations.

Pre-September 20th, 2016 regulations

- Federal regulations: nearly non-existent
 - NHTSA Levels 0 – 4 (May 30, 2013)
 - NHTSA Regulatory Tools:
 - Change Federal Motor Vehicle Safety Standards: Burdensome and Long
 - Grant Exemptions to Manufacturers to Avoid Regulations: Powerful but Susceptible to Change, Limited Scope (Google Letter)
 - Issue Interpretations to Clarify Current Standards: Temporary and Advisory (Google Letter)
- State regulations: a non-uniform patchwork
 - Less than 10 states have regulated in this area
 - Most regulations only address testing and apply to manufacturers
 - Many require a driver to be able to take over in an emergency
 - Many limit autonomous vehicles to certain geographical areas

The regulatory problem

- For manufacturers and inventors to design, build, and create the next generation of transportation system in the US, a clear regulatory framework is required.
- Cannot be so overbearing as to stifle innovation but also cannot be so unsubstantial as to fail to guide manufacturers around potential liability.
- Problem compounded by federalism
 - State Regulatory Patchwork creates problems with crossing state lines.
 - Uniform Federal Standard could restrict a state's ability to draft and implement novel legislation.

A potential solution: 2016 NHTSA Policy

- On September 20, 2016, the National Highway Traffic Safety Administration issued a 116-page, comprehensive new autonomous vehicle policy, to be updated annually.
- The Policy provides for:
 - New Levels of Automation: Society of Automotive Engineers Levels 0-5
 - A 15-point Vehicle Performance Guidance for Automated Vehicles outlines industry best practices and federal expectations for the testing and development of autonomous vehicles;
 - Ex: Data Recording and Sharing
 - A Model State Policy as a guide for states to follow;
 - Ex: Human Drivers required at SAE Level 0-3, not at 4, 5
 - A Commitment to continue to use current regulatory tools to aid autonomous vehicle development: Interpretations, exemptions, notice-and-comment rulemaking, etc.
 - A Promise to identify and implement novel regulatory tools to better aid autonomous vehicle development.

Cross-cutting regulatory impact

- Advent of autonomous vehicles will impact regulations outside of the regulatory sphere traditionally associated with cars
 - Telecommunications
- Fully autonomous cars will be “connected.” How?
 - Wireless V2V Vehicle Communications
- FCC:
 - Dedicated Short-Range Communications (DSRC): 75 MHz band of 5.9 GHz Spectrum, allocated for use by Intelligent Transportations Systems (ITS)

Looking ahead: regulatory impact

- There is much to be done:
 - A non-uniform patchwork of state regulations still exist;
 - Over 40 states have yet to issue regulations; and
 - The Federal Motor Vehicle Standards have not changed.

“

The development of advanced automated vehicle safety technologies, including fully self-driving cars, may prove to be the greatest personal transportation revolution since the popularization of the personal automobile nearly a century ago.

– Sep. 20, 2016 NHTSA Policy.

”

What does this all mean?

Enormous opportunity

Speaker: Product liability



Steven Jansma

Partner

Head of US Products, Pharma, Medical and Mass Tort
Norton Rose Fulbright LLP

Steve Jansma is the Head of Products, Pharma, Medical and Mass Tort in the United States. In addition to serving as lead counsel in numerous individual matters, he serves as National Trial Counsel, Regional Trial Counsel, National Discovery Counsel and MDL Counsel for automotive and component part manufacturers, distributors, and retailers. Steve has handled matters involving:

- Airbags
- Seat belts
- Glass
- Brakes
- Tire failure
- Steering gears
- Roof crush
- Vehicle stability and handling
- Post collision fuel-fed fires

Product liability

State legislative impact on liability

- Florida
- Nevada
- Michigan
- District of Columbia

Federal preemption

Product liability claims and driverless cars

- Manufacturing defect
- Design defect
- Failure to warn

Litigation considerations

- Who's at fault?
 - Operator
 - Original manufacturer
 - Technology/Programmer
- Evidentiary issues
- Possible defenses



The Model State Policy confirms that States retain their traditional responsibilities for vehicle licensing and registration, traffic laws and enforcement, and motor vehicle insurance and ***liability regimes***.

– DOT guidance
Sept. 2016





- States should consider *how to allocate liability* among HAV owners, operators, passengers, manufacturers, and others when a crash occurs.
- Determination of who or what is the ‘driver’ of an HAV in a given circumstance *does not necessarily determine liability* for crashes involving that HAV.

– DOT guidance
Sept. 2016



Speaker: Cyber security



Boris Segalis

Partner

Norton Rose Fulbright US LLP

Boris Segalis is a US co-chair of Norton Rose Fulbright's Data Protection, Privacy and Cybersecurity practice group. He edits the practice's data protection blog, DataProtectionReport.com.

Boris counsels clients regarding a broad range of privacy, information security, cybersecurity and information management issues. The practice addresses all aspects of information management lifecycle, including its collection, use, storage, disclosure and destruction, as well as the protection of the information and the infrastructure supporting the data.

Autonomous Vehicle Data Processing

- Use of autonomous technology presents significant privacy and security issues
- Vehicles & vehicle-related services already collect personal information (entertainment, charging)
- Autonomous vehicles will likely track & log location, like mobile devices, combined with other data
- Manufacturers, platform providers, service providers
- Purposes – from safety, to product and service improvement, to marketing
- Law enforcement (i.e., ATT) and insurance premiums

Cybersecurity Concerns

- OS and other software upgrades
- Use of vehicles to perpetrate hacks (e.g., DYN)
- Control of the vehicle (e.g., Jeep hacker)
- Privacy concerns

Cybersecurity & Data Protection Legal Landscape

- NHTSA autonomous vehicle & cybersecurity guidelines.
 - Maintain data to be available to entity and NHTSA
 - Anonymize data shared with third parties
 - Layered approach to security and sharing of cyber event data
- State laws protect privacy & security of information and are expanding (e.g., California)
- FCRA
- FTC Section 5 precedent (e.g., Ransomware enforcement threat)
- Media

Mitigation of Cyber Risk & Data Protection

- Privacy-by-Design
 - Context, Fairness, Transparency, Choice/Control
 - Compliance with requirements and guidelines
 - Build in data anonymization
 - Adjust for jurisdiction where the vehicle will be used
 - Consider cross-border transfer risks
- Security-by-Design
 - Build security into products and services
 - Benchmark security to requirements and frameworks
 - Raise awareness by employees
 - Manage vendor and other third party relationships

Speaker: Intellectual property

Paul Keller

Partner

Norton Rose Fulbright US LLP



With nearly two decades of experience, Paul's practice focuses on patent litigation and trade secret litigation. He has represented clients in all stages of IP lawsuits from pre-suit investigations to final disposition of jury and bench trials, including the presentation of arguments at Markman, discovery-dispute hearings, and direct and cross examination of witnesses.

In the automotive area, Paul has handled matters involving:

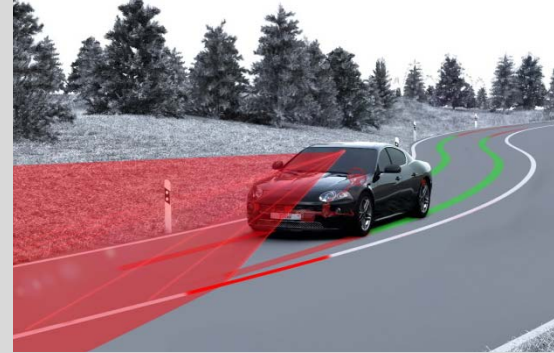
- Braking systems
- Windshield wipers
- Regenerative batteries
- Engine design
- Out of lane detection systems
- Power base station
- Load balancing charging stations
- Global positioning systems

Intellectual property: key technologies

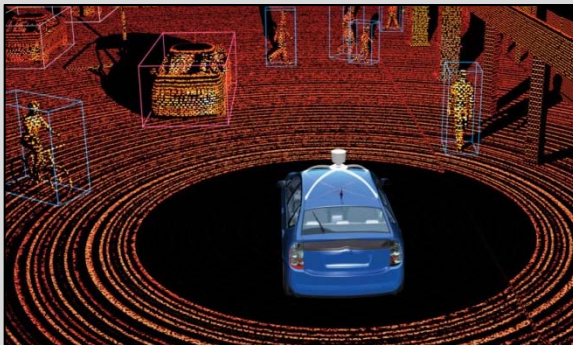
DSRC



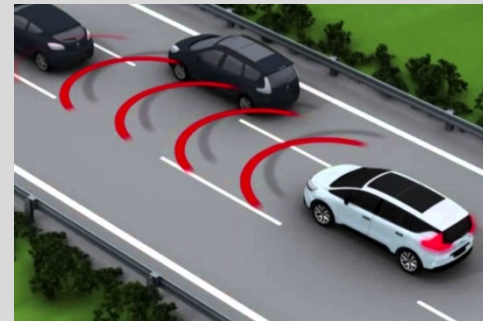
Lane keeping



LIDAR

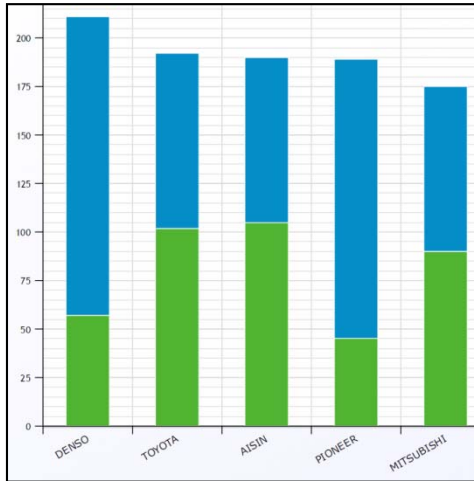


Automatic emergency braking
Adaptive cruise control



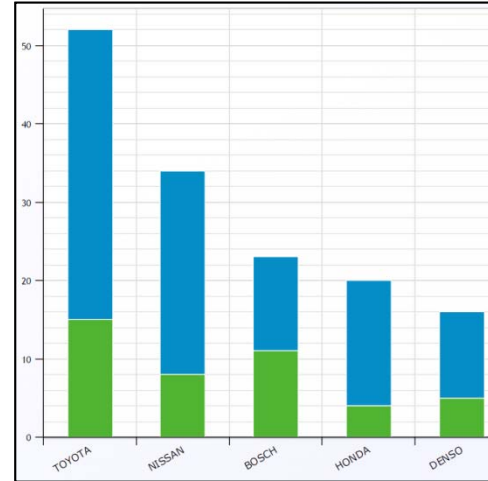
Intellectual Property: U.S. Procurement Leaders

DSRC / V2x (G08G1/09)



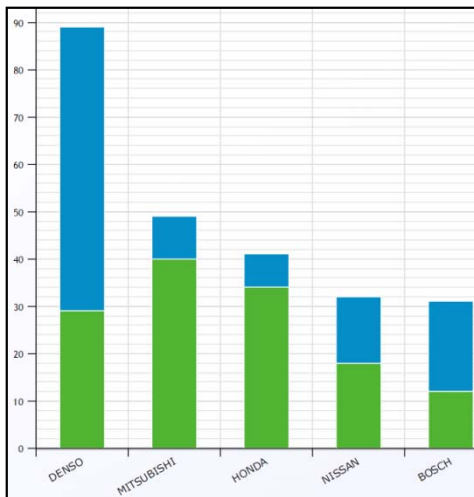
1. Denso
2. Pioneer
3. Toyota
4. Aisin
5. Mitsubishi

Lane Warning/Keeping/Centering (B60W30/10)



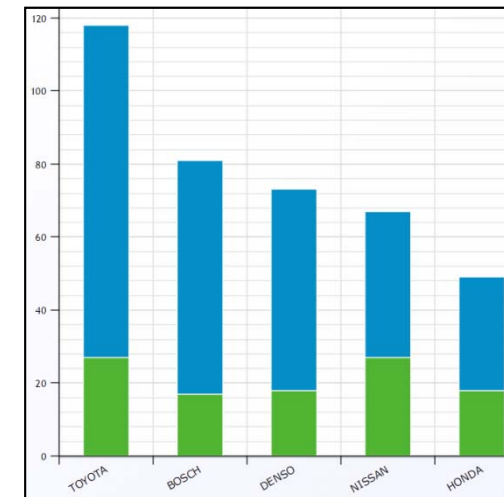
1. Toyota
2. Nissan
3. Bosch
4. Honda
5. Denso

LIDAR (G01S17/93)



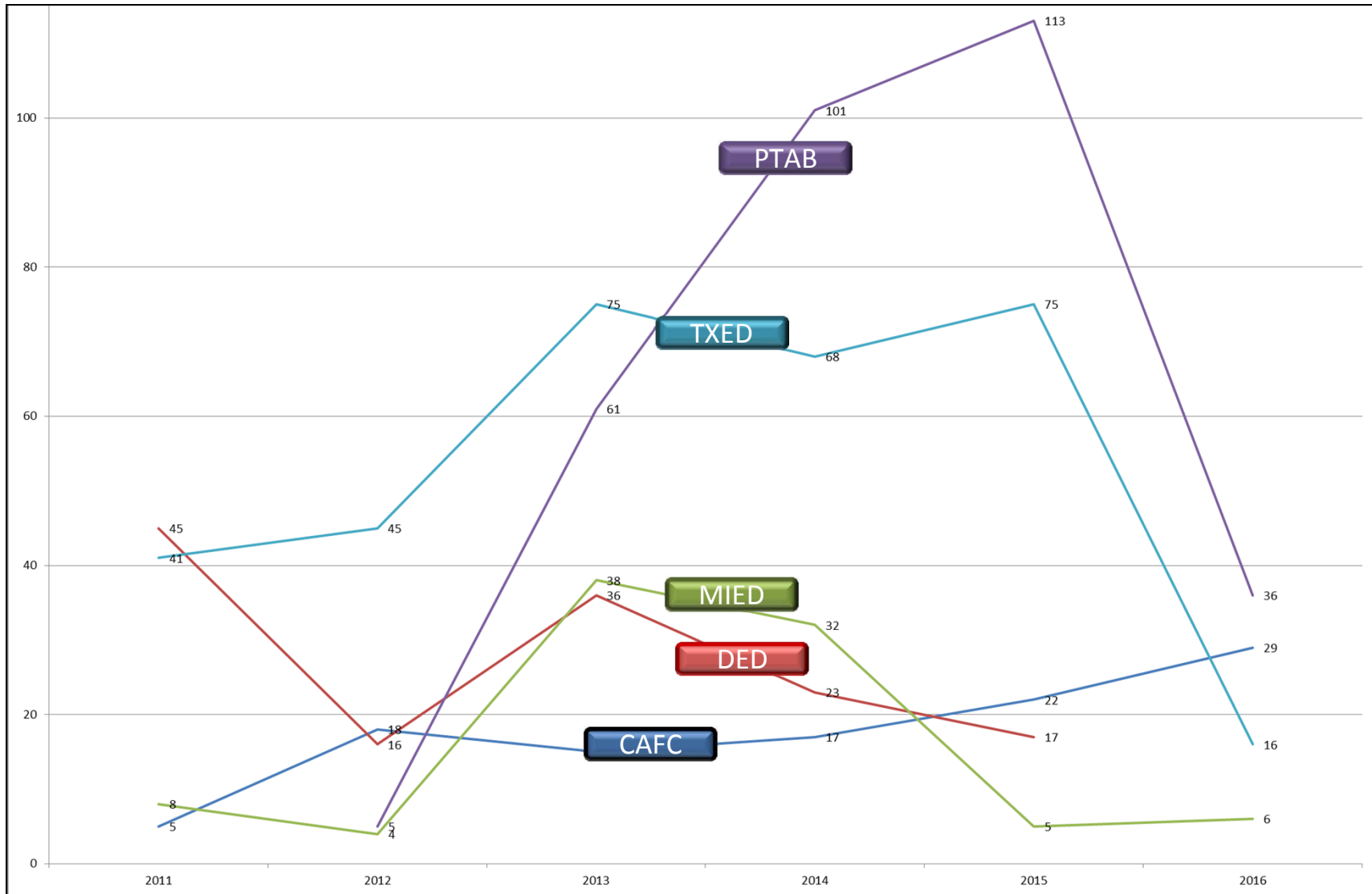
1. Denso
2. Mitsubishi
3. Honda
4. Nissan
5. Bosch

ACC (B60W30/14)



1. Toyota
2. Bosch
3. Denso
4. Nissan
5. Honda

Intellectual Property: IPRs on the rise (OEMs)



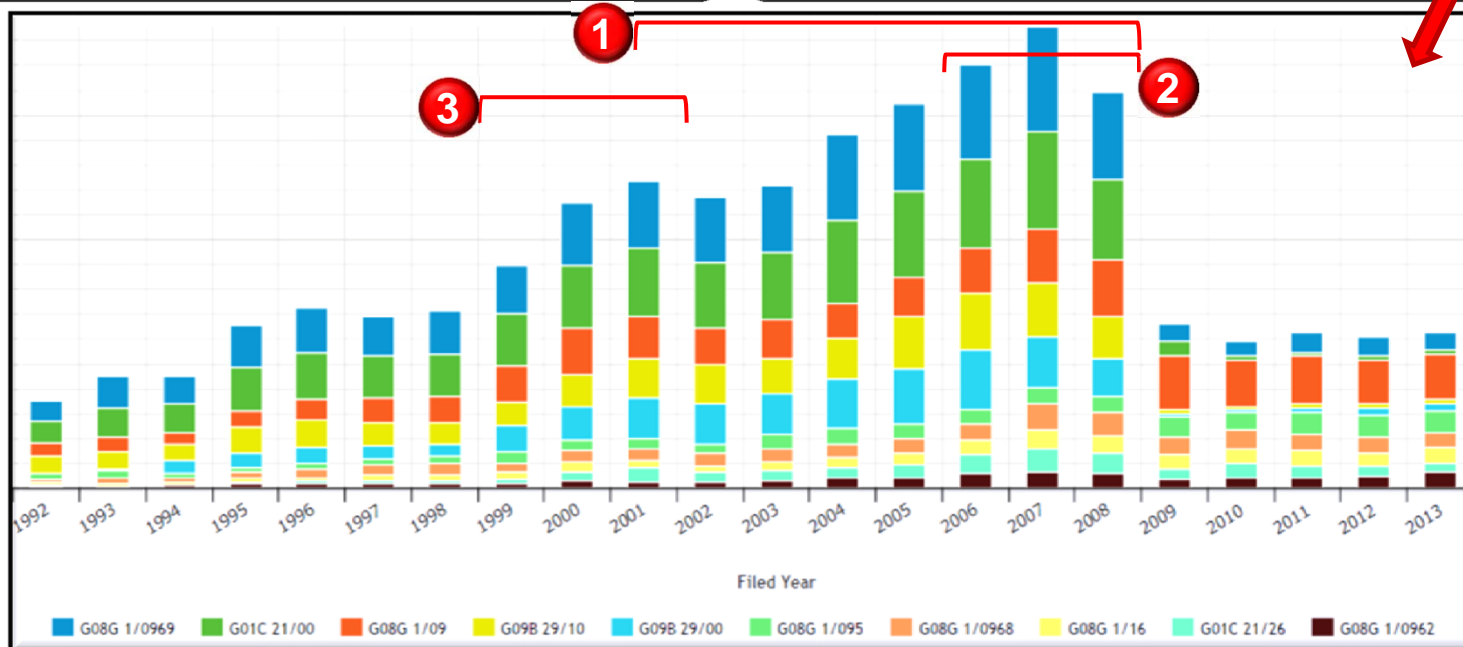
Intellectual Property: V2x Communication (DSRC)

Key Technology

- No one definitive patent class for V2x
 - Graph below uses G08G1/09 as the sample
 - Peak filing was before 2009, at least in G08G 1/09
- Denso has largest volume, 2001- 2008
 - Toyota, Aisin, & Pioneer also had appreciable volume, 2006-2008
 - Panasonic had early peak volume, 1995, 1999-2001

Top IPC Classes

- H04L 29/02* Communication control
- G08G 1/09** Arrangements for variable traffic instructions
- G08G 1/16* Anti-collision systems
- H04W 4/02* Services making use of user location
- B60W 30/14* Drive control system : cruise control
- G08G 1/01* Detecting movement of traffic
- B60W 40/02* Calculation of driving parameters
- G01C 21/26* Navigational instruments
- B60W 30/08* Predicting impending collision
- H04W 84/18* Self-organizing networks



Speaker: Corporate / M&A



Johannes Gäbel

Partner, Head of US Products, Pharma, Medical and Mass Tort,
Norton Rose Fulbright LLP

For more than 30 years, Partner Johannes K. Gäbel has been providing legal counseling to clients from Germany and other German speaking countries in connection with the acquisition and maintenance of their assets in the United States, drawing on his deep knowledge and understanding of US and European legal and cultural structures. A native German and qualified both in the U.S. and in Germany, Johannes has significant experience in all forms of asset and stock deals, including negotiated and auction deals, LBOs, tender offers, and joint ventures, as well as secured and unsecured loans, asset backed and asset based financings, private placements, issuance of equity, and structured capital.

In the automobile area, Johannes has handled matters involving:

- Chassis parts
- Air bags
- Semiconductors
- Braking systems
- Electric car batteries
- Tires
- Infotainment systems
- Sensor technology
- Throttle systems
- Engine blocks
- Wiring systems
- Car seats
- Door locks

Autonomous driving: Corporate/ M&A

Pro: Major Shifts in Automotive Industry Expected

- Component Mfr.
- Typical model year

- Value shift
- hardware

Less important



- **More important**
- Non-traditional Players
- Constant innovation/
immediate response to
consumer preference

- Software / services
- 50% of car price for
digital content?



Autonomous driving: Corporate/ M&A

Con: Versatile Automotive Industry

Time: “Around the corner” or 25 years away?

- Example: DSRC developed some 20 years ago; Transportation Equity Act for the 21st Century (“TEA-21”) in 1998 and Order by FCC in 2003 allocated 5.9 GHz band; technology still not mass produced

Reinvention: Tier 1 component manufacturers are becoming leaders in new technologies

M&A: Acquisitions of niche players plus existing infrastructure ignites established companies

Devil in the Detail: Apple and Google abandoning idea of car in favor of autonomous driving systems

Autonomous driving: Corporate / M&A

Industries That Will Benefit From Self-Driving Cars

Technologies	Purpose	Key Players
LIDAR	Obstacle detection and avoidance	<u>Velodyne</u> <u>Quanergy</u> <u>Leddar Tech</u> <u>ASCar Inc</u>
Imaging Sensors	Viewing objects Reading traffic signs Reading speed limits	<u>Omnivision</u> ON Semiconductor SONY
Compute Power	Si with greater compute power Low Power Consumption	Intel Qualcomm
Big Data & Security	Data Security Systems Traffic Monitoring Systems Communication Systems (V2V)	Google IBM GM, BMW, Daimler, Honda, Audi, Volvo
Artificial Intelligence & Robotics	GPS, Localization Maps, <u>Cognitive Learning</u> , Augmented Reality	Google Trimble CSR Samsung Facebook

Table 2: Industries That Will Benefit From Self-Driving Cars

Autonomous driving: Corporate / M&A

Options for OEMs and Tier 1 Suppliers

1. Develop technology in-house (2/3 of automotive executives viewed this as #1 strategy)
2. Form alliances or partnerships
3. Combine through M&A transactions (likely stock, not asset deals)

All 3 are widely used, but (2) and (3) provide more flexibility and allow immediate implementation of new ideas – radical disruptors?

Autonomous Driving: Corporate/ M&A

Case study

DSRC (dedicated short range communication; part of V2V and V2x; two way wireless communication)

Issue: DSRC and Wi-Fi want to use the same 75 Mhz within the 5.9 Gigahertz band; sharing (Cisco/Denso) or band allocation (Qualcomm)? Safety-of-life vs. ordinary matters

DSRC: Rental car processing; parking location; toll payments; traffic reports; route optimization

WiFi: Infotainment, telehealth

M&A:

Acquirer	Target	Date	Product
Lear Corp.	Arada Systems	Nov. 30, 2015	V2X software/ hardware
u-blox	lesswire	Dec. 4, 2014	wireless modules
Valeo	Peiker GmbH	Dec. 21, 2015	telematics systems

Speaker: The legal landscape in Germany



Frank Henkel

Partner

Norton Rose Fulbright LLP

Frank is a corporate and M&A partner based in Munich with more than 10 years of professional experience with Norton Rose Fulbright. He is the co-leader of the German Automotive Desk of Norton Rose Fulbright.

Frank has advised clients on various domestic and cross-border M&A transactions with a specific focus on the automotive and technology sectors. He is experienced in managing multi-jurisdictional transaction teams throughout all stages of acquisition/disposal processes including the post-merger integration. He has recently advised a strategic investor on the acquisition of a global technology certification services provider in a bidding process.

He is also regularly assisting automotive manufacturers and suppliers as well as technology companies in all ongoing corporate and corporate governance matters. Amongst his technology clients is London Stock Exchange listed IMI plc, which he represents on all German corporate and commercial law matters. Frank regularly advises clients on German stock corporation law, including assistance on shareholders' meetings.

Speaker: The legal landscape in Germany

Jamie Nowak

Partner
Norton Rose Fulbright LLP









Jamie Nowak is a dispute resolution and commercial/technology lawyer based in Munich. As head of the German dispute resolution and litigation and the German technology practice he focuses on contentious matters and proceedings as well as commercial contracts, primarily in technology driven industries.

Jamie's contentious experience comprises a wide variety of national and international litigation, mediation and arbitration matters. He advises and acts for our clients in corporate, banking, insurance as well as general commercial disputes, mainly in the transport, energy and technology sectors. Jamie regularly advises and represents in product liability cases and also assists in internal investigations and cross-border discovery proceedings.

His non-contentious experience includes general contract law (e.g. sales, procurement, service, distribution, agency, franchise and cooperation agreements) and IT/IP matters (e.g. data protection, e-commerce, outsourcing, licensing, copyrights, trademarks, know-how).

Regulatory framework in Germany

Level 0 – No driving assistance	<ul style="list-style-type: none">Automated system has no vehicle control.	
Level 1 – Assisted driving	<ul style="list-style-type: none">Supportive tasks performed by vehicle's system independently within certain limits.System requires constant monitoring and readiness of driver.	
Level 2 – Partially automated driving functions	<ul style="list-style-type: none">Vehicle's system automatically handles steering, braking and acceleration for a certain period of time or in specific situations.System requires constant monitoring and readiness of the driver.	
Level 3 – Highly automated driving functions	<ul style="list-style-type: none">Vehicle's system automatically handles steering, braking and acceleration for a certain period of time or in specific situations.System no longer requires constant monitoring by the driver.	
Level 4 – Fully automated driving functions	<ul style="list-style-type: none">Vehicle's system automatically handles steering, braking and acceleration of the vehicle in a defined scenario.Driver does not need to monitor the system.	
Level 5 – Autonomous driving	<ul style="list-style-type: none">Vehicle's system assumes full control of the vehicle from start to finish.	

Current developments

Regulatory

Europe

- Ambitious timetable under Amsterdam declaration on autonomous driving
- Round table on connected and automated driving
- Changes to EU type approval/ECE homologation announced

Germany

- Changes to German road traffic act (StVG) announced
- Ethics committee of German Federal Ministry of transport and digital infrastructure established

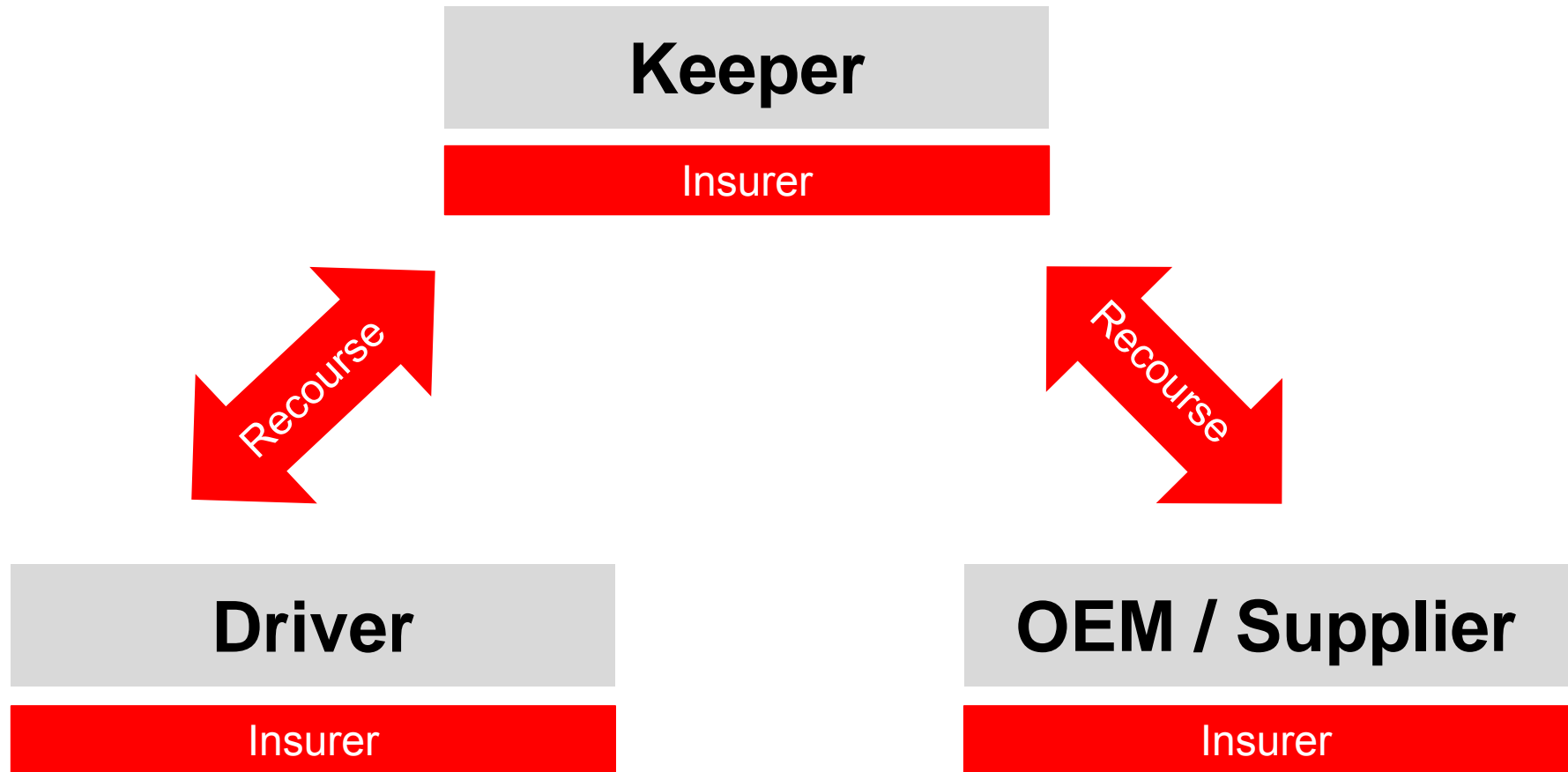
Other

Additional digital “test-beds”
(motorways and intra-city)

5G automotive association

New era for PPP investments

German liability regime for traffic accidents

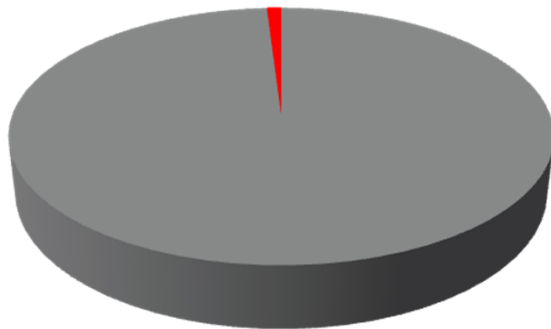


Practical implications?

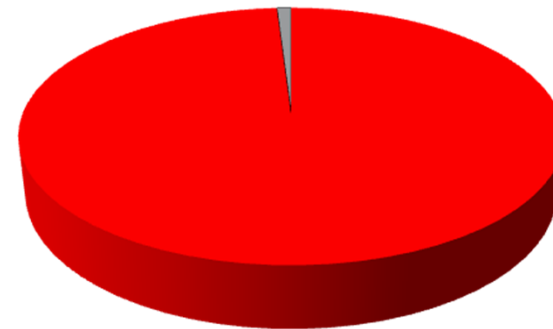
Approx. 2.4 million traffic accidents p.a. causing economic damages of approx. € 30 billion

Accidents caused by technical failure / product defects

Today <1%
(Human driver)



Tomorrow?
(Autonomous vehicles)



Shift of liability to OEMs, suppliers and product liability insurers

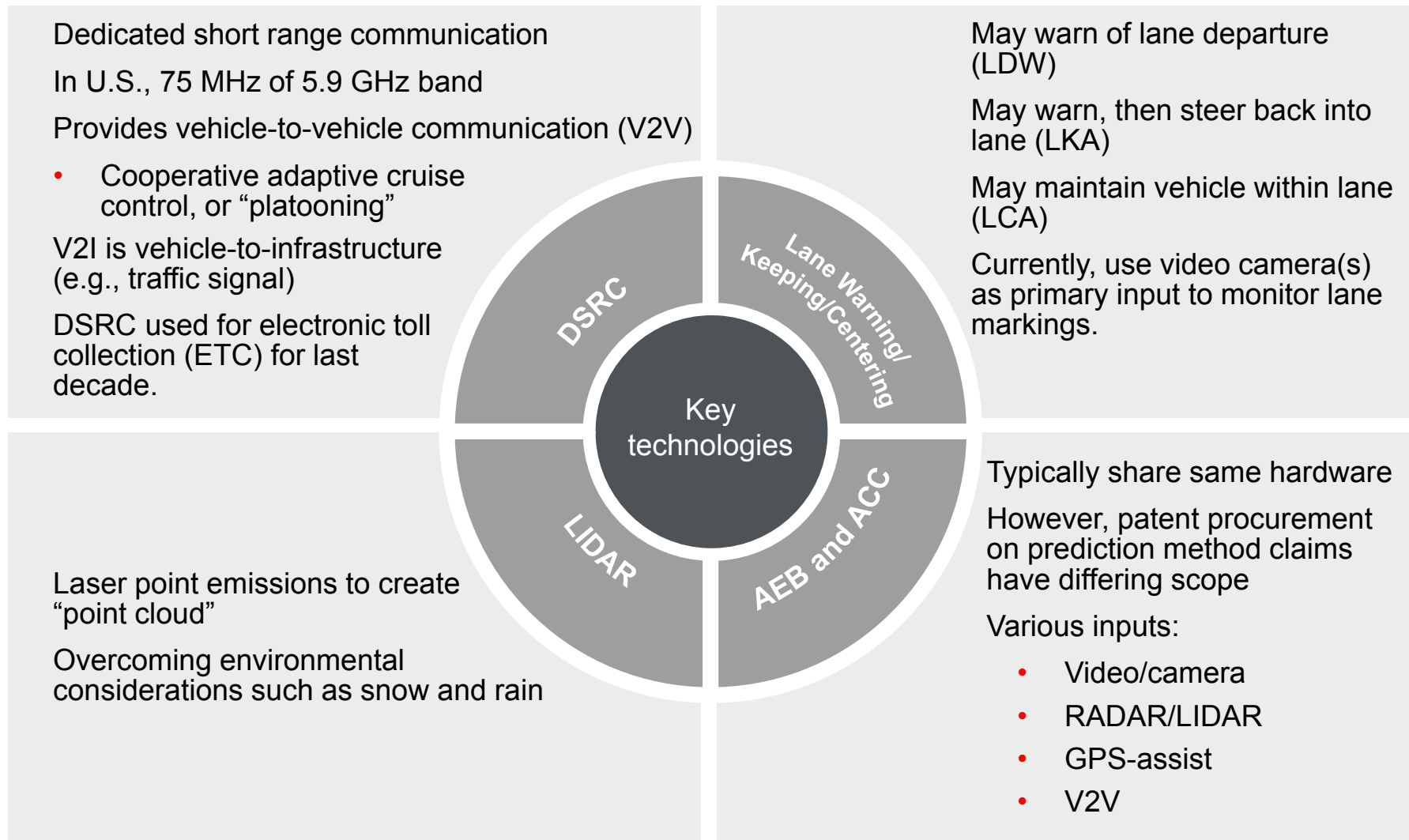
Questions?

autonomousvehicles@nortonrosefulbright.com

The logo for Norton Rose Fulbright, featuring a grey upward-pointing arrow above the letter 'N' and the text 'NORTON ROSE FULBRIGHT' in red, uppercase, sans-serif font.

NORTON ROSE FULBRIGHT

Intellectual property: key technologies



Disclaimer

Norton Rose Fulbright US LLP, Norton Rose Fulbright LLP, Norton Rose Fulbright Australia, Norton Rose Fulbright Canada LLP and Norton Rose Fulbright South Africa Inc are separate legal entities and all of them are members of Norton Rose Fulbright Verein, a Swiss verein. Norton Rose Fulbright Verein helps coordinate the activities of the members but does not itself provide legal services to clients.

References to 'Norton Rose Fulbright', 'the law firm' and 'legal practice' are to one or more of the Norton Rose Fulbright members or to one of their respective affiliates (together 'Norton Rose Fulbright entity/entities'). No individual who is a member, partner, shareholder, director, employee or consultant of, in or to any Norton Rose Fulbright entity (whether or not such individual is described as a 'partner') accepts or assumes responsibility, or has any liability, to any person in respect of this communication. Any reference to a partner or director is to a member, employee or consultant with equivalent standing and qualifications of the relevant Norton Rose Fulbright entity.

The purpose of this communication is to provide general information of a legal nature. It does not contain a full analysis of the law nor does it constitute an opinion of any Norton Rose Fulbright entity on the points of law discussed. You must take specific legal advice on any particular matter which concerns you. If you require any advice or further information, please speak to your usual contact at Norton Rose Fulbright.