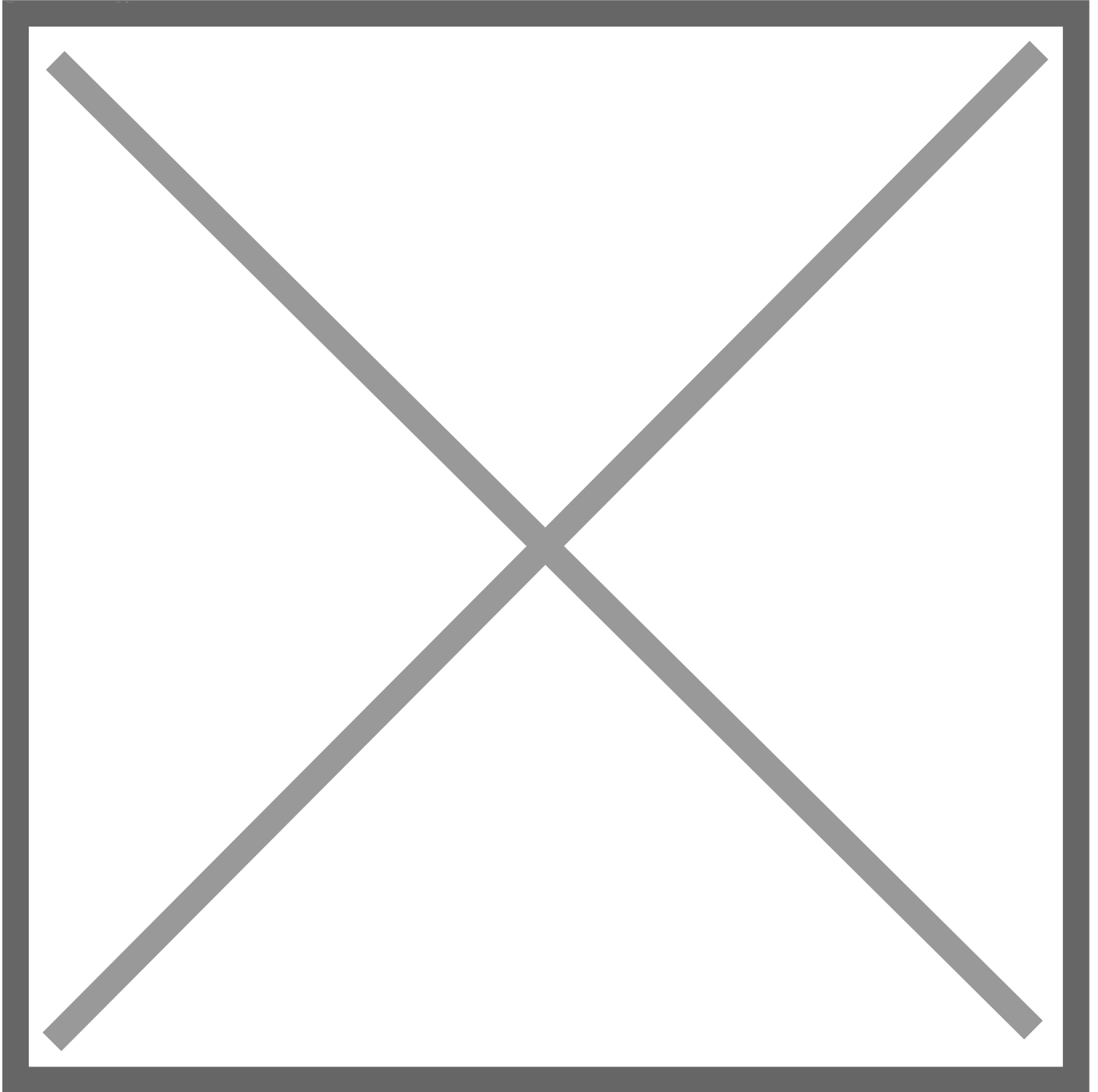


2014 Toyota Advanced Safety Seminar - Seigo Kuzumaki

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As prepared for

Toyota Advanced Safety Seminar

Wednesday, Sept. 4, 2014

Seigo Kuzumaki, Chief Safety Technology Officer Secretary, Toyota Motor Corporation

Good morning everyone. Thank you all for joining us today.

Zerotraffic fatalities ... on US roads.

Zero.

That's a goal that may sound impossible.

But it is a goal constantly in our sites.

And the pace with which we approach it as an industry is about to accelerate significantly.

With the rapid development of integrated technologies...

- we, as a global society, are entering a *new mobility era*.

Of all the things we do at Toyota, our number-one priority is safety;

- **preventing** crashes from happening in the first place...and
- **protecting** all involved should a crash occur.

We've made good progress since the 1960s.

But still, based on most recent information from NHTSA...

- the National Highway Traffic Safety Administration...
- more than 32,000 lives were lost on US roads and highways in 2013.

Vehicle crashes were again...

- the number-one cause of death among US teens.

And, one-in-ten highway deaths... were attributed to distracted driving.

Every year our industry continues to introduce

- new technologies
- that further help reduce traffic casualties.

Technology is important.

- But technology alone is not the answer
- to zero fatalities.

We see traffic safety as a holistic blend...

- of **vehicles**,
- **people**...

- and the **traffic environment**...
- as individual parts ...of an integrated whole.

Important on their own, but substantially more effective when integrated,

- each element is a critical component.

As the **vehicle** continues to increase its abilities

- to recognize, judge and operate to a situation,
- its **driver** must likewise be smarter,
- ever alert and always in control.

Finally, the **traffic environment** will have an ever-increasing role in this relationship, including;

- the design and condition of the roads,
- the appropriate signage and signals to drivers
- and its ability to assist with communications,
- to and from vehicles and infrastructure,
- and even pedestrians.

With vehicle, people and the traffic environment as the 3 key players ,

- identifying how the *mobility game* is played...
- and how the players interact...
- becomes most important.

Our strategy, especially in the area of advanced safety research and development...considers five mobility scenarios.

They include;

- the initial time the driver and vehicle begin their journey from a **parked position**...
- to the **active safety** systems designed to help avoid a crash...
- to **pre-collision** aimed to prepare for a crash...
- to **passive safety** to help survive a crash...
- to **response** and rescue after a crash has occurred.

We call it, our “Integrated Safety Management Concept.”

Today...and tomorrow,

- we will share with you where we have been,
- and where we will go in these key areas...
- and how they interact
- within what is often called the internet of things.

In the near term, how do Intelligent Transportation Systems...

- Vehicle-to-Vehicle and Vehicle-to-Infrastructure communication—
- integrate with automated driving technologies?

What about future mobile devices, smart houses

- and *wearables* that deliver information on the “quantitative self”?
- How will they safely migrate from being novelties or even distractions
- to features consumers learn to trust....and demand?

These are questions that are challenging our fundamental research...as you will see today.

For the last 100 years,

- the automobile has played the role of a functional tool,
- responding to our human needs and input.

That relationship has now... forever changed.

Not only can vehicles see things and react quicker than humans...

- they are becoming intelligent.

In fact, we now find ourselves at a point

- where perhaps the most important focus of all...
- may be on what is often called...
- the *driver-vehicle interface*.

In truth, it should be called... the driver-vehicle ***relationship***.

People relate to electronic devices—such as cellphones— socially.
They build personal bonds with them.

We are now capable

- of creating a true inter-relationship between the driver...
- and an intelligent vehicle.

And it will have a profound effect on highway safety.

Today, I want you to start thinking of the vehicle...

- and the driver...
- as *teammates*;
- sharing the common goal of travelling safely.

The best teammates learn from each other;

- They watch, listen and remember.
- They communicate.
- And they assist, when needed.

Over time, a foundation of trust is built.

And as trust is built,

- more tasks can be shared or re-assigned.

Anti-lock brake system and electronic stability control...

- are early examples of automated....active safety technologies
- that are now commonplace.

Customers have come to understand their function and importance

- and how they step-in
- and step-out of....our driving experience...
- to assist when needed.

They are perceptible in performance ...but physically invisible.

To achieve similar acceptance...

- automated and connected technologies must be integrated;
- their performance significantly improved;
- their size, weight and cost substantially reduced;
- and their presence, for the most part, imperceptible.

As you heard last night from Mr. Bill Fay of Toyota Motor Sales, we have a plan.

Very soon, we will accelerate the introduction

- of all-new multi-feature active safety systems,
- that include pre-collision,
- to the U.S. market,
- well in advance of a government mandate.

In fact our goal, is to be the world's first full-line manufacturer

- to offer such a package on all of its vehicles
- across our entire Toyota lineup,
- driving down costs to customers
- from luxury vehicles, to trucks and SUVs,
- to our most affordable compacts.

We plan to begin the rollout of these technologies in 2015,

- and hope to have them widely available
- across our product line by 2017.

Such high-level driving-assist technologies...

- make driving easier and simpler;
- enhance the driver's **perception in the traffic environment...**
- **his decision-making** process...
- and his overall **safety skills.**

We believe that a more skillful driver...

- is a safer driver.

And that this reliable, added-edge of safety...

- **can** make the driver more confident...
- and the driving process... more enjoyable.
- Even...more fun to drive.

But for all the benefits we see on the horizon,

- we believe that the pace of advancement in these areas
- could be confusing to some customers.

And so, we plan to address this concern

- **with one of our most successful ...products,**
- **which I believe you will find newsworthy.**

Nearly four years ago, Akio Toyota announced at the Detroit Auto Show

- the formation of a new business model to be launched here in the US;
- a concept and a facility unique to the industry
- in its approach to open and shared research
- in the area of automotive safety.

The Toyota Collaborative Safety Research Center, the CSRC,

- was funded with \$50 million dollars
- to conduct research over a five-year period in the areas of
- active safety
- distracted driving
- and at -risk populations,
- such as children, teens,
- seniors and pedestrians.

Currently it is engaged in 34 research projects with 17 universities and research centers.

- **As you already heard from Mr. Simon Nagata at yesterday's reception,**
- **Toyota will extend the CSRC charter for another five years...**
- **and that its focus will shift**
- **to address a simple question, with complex answers:**

Will these trends toward automation and connectivity

- enhance our safety or amp-up our anxiety?

Equally important,

- how can researchers, government agencies, and industry
- work together and across disciplines

- to guide our transition to the future of mobility
- along a path that is truly safer, cleaner and more convenient.

Later this morning, Chuck Gulash, director of the CSRC,

- will offer some answers to these questions from his unique perspective.

Chuck has also assembled a panel

- of diverse credentials...
- and direct experience in these areas
- to offer “other voices”
- beyond our Toyota point of view.

The CSRC is but one of many

- research and development engineering facilities
- we have established globally.

As new automated and connected technologies are developed,

- it is imperative that they are universally applicable
- in the Europe, Asia, Japan and the US. .

For example, traffic environments are distinctly different

- on the very high-speed autobahn in Germany,
- congested roads in Asian cities
- the tight boulevards around the Imperial Palace in Tokyo
- And the back-roads not far from here in Michigan.

Equally important will be the need to work closely

- with city, regional and national governments
- to achieve a collaborative approach to roadway infrastructure
- at the earliest possible timing.

In Japan, Toyota is taking part in the cross-ministerial Strategic Innovation Promotion Program

- started by the government in June 2014.

The program aims to bring technology to

- market from ten research
- and development fields with a total budget of \$500M,
- for work being conducted all over the country.

One of the fields is automated driving technology

- and Hiroyuki Watanabe, Advisor of Toyota Motor Corporation,
- is the program director.

This is being researched in three approaches:

- development and verification of automated driving systems;
- basic technologies to reduce traffic fatalities and congestion
- and International cooperation.

Here in Michigan, our growing R&D facilities

- are a vital part of Toyota's vision for a next generation mobility society.

In fact, Toyota will be a major supporter

- of the University Michigan's Mobility Transformation Project,
- which will help us further accelerate the pace
- with which we bring automated and connected technologies...
- from farm to table,

It is good fortune that last year's Intelligent Transport System...

- ITS World Congress was held in Tokyo and this year in Detroit.

I honestly had nothing to do with that decision,

- but I am happy it occurred.

However, the fact that this safety seminar is being staged

- just prior to the Sunday opening of the ITS World Congress is not a coincidence.

Later this afternoon,

- you will have the opportunity to explore on your own,
- many of the projects we have on-going in North America.

Tomorrow, we will *move our nomadic devices* to downtown Detroit,

- where you will have the opportunity to experience the semi-automated vehicle
- we will showcase at next week's ITS- World Congress

I would like to, at this time

- turn the microphone over to Ms. Kristen Taber
- from Toyota Engineering and Manufacturing North America,
- who will offer insight into our plans for that event next week...
- and why we are so supportive of this organization's efforts.

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