#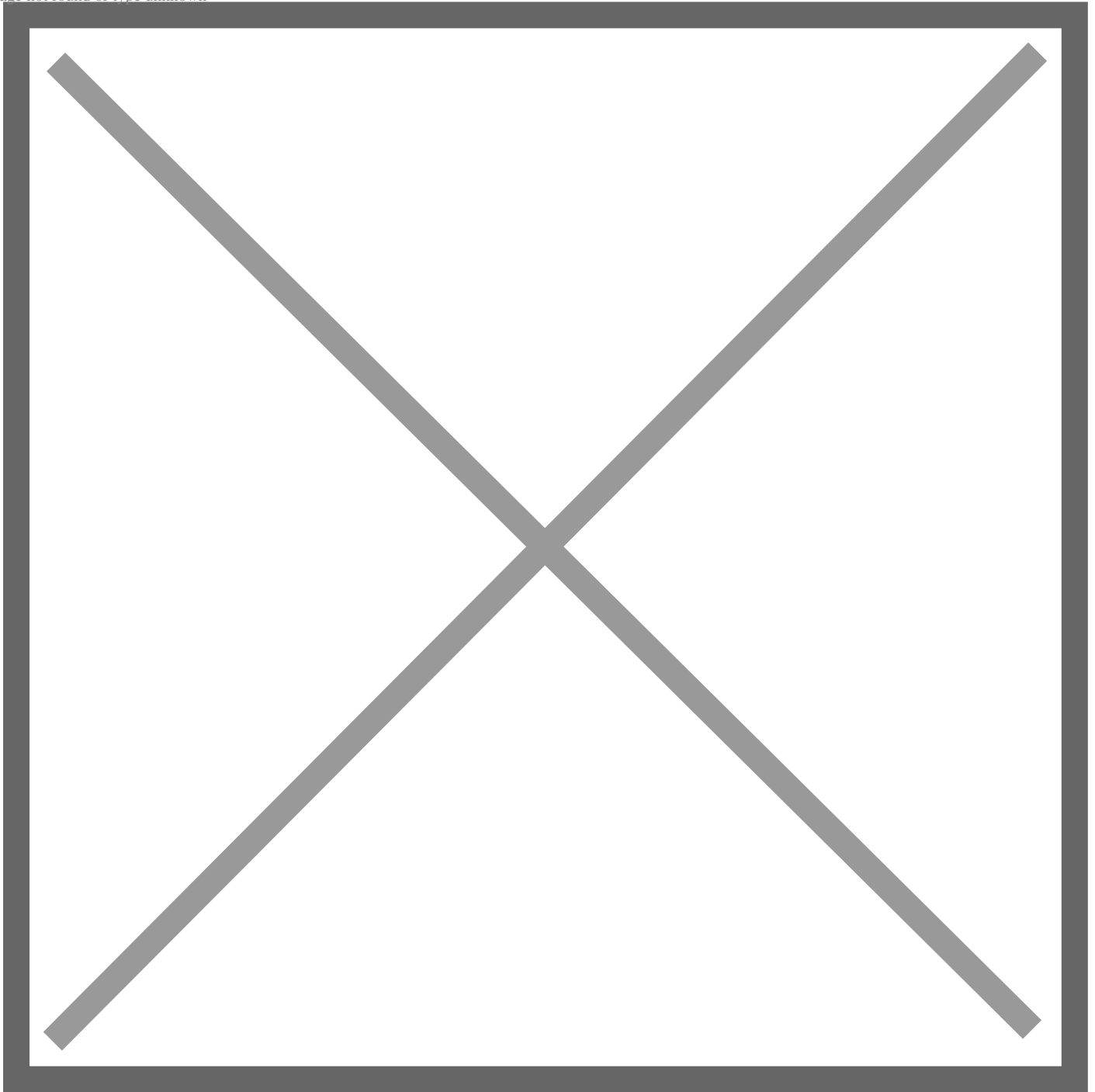 Toyota Research Institute - Advanced Development, Inc. announces it will expand and improve its operations by forming Woven Planet Holdings and two new operating companies, Woven CORE and Woven Alpha

July 28, 2020

Tokyo, Japan, (July 28, 2020) — Toyota Research Institute – Advanced Development, Inc. ("**TRI-AD**") announced today that, effective January 2021, it will expand and improve its operations into a holding company and two operating companies. The holding company will be Woven Planet Holdings, Inc. ("**Woven Planet Holdings**"), and the two operating companies under it will be Woven CORE, Inc. ("**Woven CORE**"), which will develop, implement and scale automated driving technologies at its core, and Woven Alpha, Inc. ("**Woven Alpha**"), which will explore new business opportunities and incubate innovative projects that go beyond today's Toyota Motor Corporation ("Toyota"), such as Woven City, Arene (*1), and Automated Mapping Platform (*2) ("AMP").

BACKGROUND

TRI-AD was established in March, 2018 in Tokyo, Japan, to provide fully-integrated, production- quality software for automated driving. TRI-AD's vision is "Mobility to Love, Safety to Live," and its mission is to create world-class technology and build safe mobility products for the world.

Over the past two years TRI-AD has made great progress in fulfilling its vision and mission, including the development of the latest advanced driving assist technology called, "Teammate (*3)" based on the "Mobility Teammate Concept (*4)." TRI-AD is now embarking on the next phase of its evolution to deliver mobility (including the mobility of people, goods, and information) to everyone, and in order to achieve this it is necessary to expand and improve the company's operations.

In order to effectively and efficiently forge ahead with TRI-AD's advanced development capabilities and to continue creating new value through automated driving, safety technologies, mobility, and Woven City, the Woven Planet Holdings group will focus on a more agile "software-first" development process and Software Defined Architecture (*5).

DETAILS

- Woven Planet Holdings will have the strategic decision-making function for the entire group, expand collaboration with partners, create new business opportunities, and provide corporate shared services to the operating companies.

- Woven CORE will continue to be responsible for the development of the Toyota Group's automated driving technologies, and it will aim to further improve value by developing, implementing, and scaling its automated driving technologies in the market.

- Woven Alpha will explore new areas for business expansion and incubate new innovative projects such as Woven City, Arene, and AMP.

COMMENT FROM JAMES KUFFNER, CEO OF TRI-AD

When President Akio Toyoda announced that Toyota would become a mobility company, we realized that we would need strong software and strong hardware working together in order to achieve that.

We started TRI-AD in March 2018 as a joint venture between Toyota, Denso, and Aisin in order to unify and strengthen Toyota's software capabilities, particularly for automated driving and advanced safety. Two years later, we have made some great progress, hired some wonderful people, made some strategic partnerships, and received strong support from the Toyota Group, which has enhanced our ability to successfully develop cutting-edge software.

Now we would like to take TRI-AD to the next stage and prepare our company for unparalleled growth, speed, and quality, which will lead the way into the future. It is my firm belief that this will all be possible under the new Woven Planet Holdings structure, which will consolidate our efforts and equip us with the necessary ingredients of people, technology, infrastructure, and corporate management to achieve our vision of "Mobility to Love, Safety to Live."

We will work hard with all of our stakeholders and partners to create tremendous new value, new technologies, and new products at a speed and scale that Toyota is famous for, and we will do it with software and services that will power future mobility.

COMMENT FROM PRESIDENT AKIO TOYODA

At the beginning of the year, Toyota announced "Woven City," a city that will serve as a living laboratory to help create an ever-better way of life centered on people and mobility for all.

Now, TRI-AD will be reorganized into three new companies, and, to make clearer what the companies should remember as their mission, the names of all three companies include "Woven" in their titles.

The name, "Woven," was derived from the word "weave." The inspiration partly came from the way the three types of streets for separate forms of mobility looked, crossing one another as if they had been woven together in the planned layout for the new city. However, there is another significant meaning behind the word "Woven."

Toyota's roots extend back to the automatic weaving loom invented by Sakichi Toyoda, the father of Toyota Motor Corporation's founder, Kiichiro Toyoda. Seeing his mother struggling and wanting to provide her happiness by offering relief and help, Sakichi invented the loom.

Later, Kiichiro manufactured automobiles with a strong desire to make society happier by contributing to the prosperity of society at large, starting from Japan. Similar in spirit to that of Toyota's founding members, our starting point should always be to make something that benefits others, or simply, to bring happiness to people.

The prototype city took "Woven" as part of its name then to also signify the desire and action that we have to take to bring happiness to others, especially when we venture into an uncharted future with this continuously evolving project.

TRI-AD was launched 2 years ago to realize Toyota's vision for the future. Based on today's announcement, TRI-AD will take a new leading role as it takes the name "Woven" to further strengthen the idea of "for the happiness of others."

Now, please allow me to elaborate on the names of the three companies.

First, "Woven Planet Holdings." In this company name, the word "Planet" means that it will be of a scale that goes far beyond the conventional concept of just a "city." Woven Planet Holdings will focus on "happiness for the future" from a much broader perspective than ever before.

Next, "Woven CORE." Woven CORE will be responsible for the realization of new mobility. This new mobility will have automated driving technology at its core.

Finally, "Woven Alpha." In this name, the word "Alpha" means "unknown" or "immeasurable." Woven Alpha will be responsible for the R&D needed to pave the way to the future, including the living laboratory work that will be conducted within Woven City.

Reorganized under the name "Woven," TRI-AD will endeavor to become the type of organization that will allow those involved to step on the accelerator in helping realize a future where people can be more happy.

To make it more open and collaborative, the one thing that will purposefully be missing from these 3 new companies, Woven Planet, Woven CORE, and Woven Alpha is the "Toyota" branding.

Regardless, these companies will clear the path for the future of Toyota, as they carry on the legacy of "for the happiness of others" that Toyota has so carefully woven into its own DNA.

NOTES

*1 Arene:
An open platform developed by TRI-AD to create programmable cars. It includes elements and APIs necessary for vehicle safety and enables speedy development from concept to deployment. It also allows developers and OEMs to continuously update their software in an agile way while maintaining a high level of safety and security.

*2 Automated Mapping Platform (AMP) :
An open software platform that allows companies to create and share high-precision maps while companies share data on automated-driving vehicles.

*3 Teammate:
A technology that enables onboard systems for driver status monitoring to appropriately assist the driver with perception, prediction and planning, in accordance with actual traffic conditions. It supports driving capabilities such as keeping the vehicle in its lane, maintaining vehicle-to-vehicle distance, lane splits, lane changing, and the overtaking of other vehicles, when driving on expressways and other motor-vehicle-only roadways.

*4 Mobility Teammate Concept:
Toyota's development philosophy for automated driving technology, an approach built on the belief people and vehicles can work together in the service of safe, convenient, and efficient mobility.

*5 Software Defined Architecture:
A software-defined architecture for application services. This enables the extension of application services and software functionality with ease, allowing hardware to be designed in response to the changing times, while at the same time providing high value with agility.