

Toyota Motor North America Introduces Next-Generation Multimedia System To Deliver Best In-Car User Experience

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PLANO, Texas (June 11, 2021) – As the need for a more personalized and intelligent in-vehicle experience continues to grow and be a driving force behind vehicle selection, Toyota Motor North America (TMNA) is proud to unveil a new multimedia solution delivering an exceptional in-car user experience.

Developed in North America

As a result of listening to customers' requests and anticipating their future desires, TMNA turned its focus in-house to develop a superior solution. With the philosophy of One Toyota in mind, the formation of the Connected Technologies group took shape in 2018. The new group aimed to unify customer experience, in-vehicle technology, value chain and connected revenue process – functions previously scattered across the organization. Connected Technologies invested in the expansion by building an agile, cross-functional team of more than 400 dedicated team members and business partners. From the outset, the team began development of solutions that would meet and exceed customer needs and deliver amazing and personal connected experiences.

“With the new multimedia system, we focused on the needs and wants of the customer and what would enable a more seamless and enjoyable experience on the road,” said Charan Lota, executive chief engineer and vice president at TMNA Connected Technologies. “We brought multiple groups from electrical engineering to software development and business planning together into one team with one common goal – enhancing the in-vehicle experience.”

The significantly advanced technological solution represents true collaboration across the TMNA Connected Technologies group as well as with teams from partner companies Toyota Connected and Toyota Motor Corporation – involving hundreds of team members working over the course of three years while devoting thousands of hours to testing.

“The development of this new system represents a fundamental shift in the way we design products,” said Daniel Hall, global chief UX designer, TMNA Connected Technologies. “With the adoption of over-the-air (OTA) updates we are able to develop software in smaller, more manageable pieces – with the ability to provide updates to customers even quicker.”

Enhanced Technologies and User Experience

The new system features multiple touchscreen options from 8- inches up-to 14-inches, which all feature the same newly enhanced design cues and functionality, while retaining a volume knob. The system also offers five-times the processing power of the previous generation system, an incredible leap in processing capability that provides faster and more responsive touch functionality. All screens feature modern designs with optically bonded, glare reducing technology allowing a customer experience that mirrors smartphone-like capability.

An all-new native navigation system featuring 100% cloud capability allows faster, more accurate directions and mapping. OTA updates will allow real-time updates for navigation mapping, enriched media experiences and other enhancements across the system's lifetime.

The new **Human Machine Interface (HMI)** provides an enhanced user interaction through sight, touch and voice thanks to improvements in the graphical user interface (GUI), voice interface and unique North American animation. It delivers a unified feeling and ease of use, while balancing accessibility needs. Additionally, the voice interface is designed to use advanced graphics to distinguish between listening and processing states, and the appearance matches the new and improved capability of cloud processing. Another significant advancement is the animation incorporated into this multimedia solution, which brings it to life. These unique, leading designs can be seen everywhere from interacting between functions, sliding menus and dropdown banners.

Whether selecting from AM or FM, standard SiriusXM® stations or connected streaming music sources, such as Amazon Music®, the audio HMI is also significantly improved. Occupants can now select from available music sources based on music genre or frequent preference. AM and FM station dial numbers are displayed along with logos when available. Sourcing information from the cloud, the native music system is always up to date and features enhanced programming details. Speaking of connected sources, the new multimedia system now brings standard wireless Apple CarPlay® and Android Auto™ compatibility.

Structured with a customer first approach, the newly developed **Voice Assistant (VA)** is intended to be the primary way occupants interact with the new multimedia system and is designed to enable a voice first application. Combining a hybrid developed structure of in-house Toyota Connected engineered machine learning with a cloud-based platform featuring up to date content, VA aims to provide a natural and easy to use interaction for vehicle occupants. Designed with dual-microphones, enhanced noise-cancellation, speaker location and seat detection capabilities, the approach allows front seat occupants an expanded and interactive functionality to access navigation, media, phone and select vehicle settings.

In the age of digital transformation in mobility, having a more personalized experience that moves from vehicle to vehicle with the driver is essential. Through the new multimedia system's **User Profile** feature, the driver's personalized settings and experience, from preferred media or radio station to climate settings in some models, will be retained and accessible when the driver next returns to the vehicle.

Key Features of the New Multimedia Solution*:

- **Enhanced Navigation**– The updated navigation system brings a beautiful design, trusted sources and the Voice Assistant together to create a customer-first solution. It allows drivers and passengers to use the voice-activated commands or touchscreen to search for directions, find points of interest or explore local businesses – Google points of interest (POI) data is integrated to ensure up-to-date search capability. Navigation is also available to passengers with or without network connection, with offline mode designed to detect when the vehicle is near or entering an area with low connectivity and download applicable maps and services in advance.
- **Voice Assistant (VA)** – VA provides a natural and easy-to-use virtual companion that enhances the traditional voice command system thus providing the vehicle occupant with an industry leading native VA native engine and a revolutionary way to interact through a voice-first approach. Voice recognition with natural language understanding enables driver interactions with their vehicle that are more advanced and personalized than ever before. With simple wake up phrases such as “Hey/Hi/Hello/OK” to make connection simple and seamless. Intuitive and natural VA responses allow for audible replies by the vehicle occupant creating a human-like conversation experience.
- **User Profiles**- To help improve the user's overall driving experience, a user will receive the same personalized settings in new vehicles making it portable from vehicle to vehicle. The new profile system is stored on the cloud, meaning users can access and take their experiences on the go with them across vehicles featuring the new multimedia system. Once created, users can use a Bluetooth handheld device such as a smartphone or tablet, smart key, or manual login to access their profile.
- **Digital Key** – To make road trips even more convenient, vehicles equipped with this new system enable owners access to a digital key. An extension of the User Profile feature, through their smartphone when within Bluetooth proximity to the vehicle, owners can lock/unlock and start/stop their vehicle motor through the Toyota or Lexus App. In the future, the Digital Key will be able to be shared with up to seven different guest users at one time. No passwords or PINS are required, creating a seamless guest experience for users registered on the Toyota or Lexus App.
- **Over the Air (OTA)** – By placing less dependence on third-party suppliers and through the adoption of agile development processes and Over the Air (OTA) program updates, which enable cloud-based upgrades to in-vehicle software in real-time, the team was able to develop a system that gives drivers and

passengers what they want in record time.

- **Safety Connect** – Provides peace of mind for when unexpected emergencies occur by connecting drivers with a 24/7 emergency response agent who can quickly request dispatch of emergency services to a vehicle's exact location or assist authorities in locating a stolen vehicle.
- **Service Connect** – Drivers receive personalized maintenance updates, vehicle health reports and maintenance reminders to help them maintain their vehicle through various subscriptions available on the smartphone App.

“With this new system we are jumping into the future, from larger touchscreens up to 14 inches to having a 100% cloud-navigation for more accurate and faster directions, we are thrilled to deliver this amazing and connected experience to our Toyota and Lexus guests,” said Steve Basra, group vice president, TMNA Connected Technologies. “We want all of our customers to experience this in-vehicle advancement, and that is why this system will eventually be offered across our vehicle line-up – regardless of screen size or model grade. This is another first in company history.”

The new system will make its debut as **Lexus Interface** multimedia system with the launch of the all-new Lexus NX in the fourth quarter of 2021. An all-new Toyota multimedia system will debut in the fourth quarter of 2021, with more information available closer to launch.

**Certain features include a trial period at no extra cost upon original date of new vehicle purchase or lease. After the trial period ends, a paid subscription is required. More detail on trial-periods and subscription-based features will be available at the on-sale date.*

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