

# Lexus to Roll Out Brand New Active Safety Package from 2015

November 28, 2014

Torrance, Calif, Nov. 28, 2014 — In line with the ultimate aim of eliminating traffic fatalities and injuries, Lexus will next year launch the "Lexus Safety System +" package, a newly-developed set of active safety technologies designed to help prevent or mitigate collisions across a wide range of vehicle speeds. While Lexus vehicles already feature a wide range of safety technologies and systems based on the Integrated Safety Management Concept<sup>1</sup>, this latest package is aimed at further encouraging the uptake of safety technologies and will therefore be rolled out across all Lexus models in Japan, North America and Europe by the end of 2017.

Lexus Safety System + integrates several of Lexus's existing active safety technologies: the Pre-Collision System (PCS) helps prevent and mitigate collisions; Lane Departure Alert (LDA) helps prevent vehicles from departing from their lanes; and Automatic High Beam (AHB) helps ensure optimal forward visibility during nighttime driving. As part of a multi-faceted approach to active safety, the Lexus Safety System + package combines millimeter-wave radar with a camera, achieving high reliability and performance.

## Lexus Safety System +

Lexus Safety System + combines LDA, AHB, PCS with a pedestrian detection function, and Radar Cruise Control.

### Pre-collision System with pedestrian detection function (PCS)

This system uses millimeter-wave radar and a camera to detect pedestrians in addition to vehicles. To help prevent or mitigate collisions, the system activates an audio and visual alert in addition to brake assist, followed by automated braking if the driver does not brake in time. Automated braking operates at relative speeds of between 10 to 80 km/h for potential collisions with pedestrians, and can reduce speed by approximately 30 km/h<sup>2</sup>. For potential collisions with vehicles, the PCS system operates at relative speeds of between 10 km/h and the vehicle's top speed, reducing speed by approximately 40 km/h<sup>3</sup>.

### Lane Departure Alert (LDA)

LDA uses a camera to detect white and yellow lane markings. If the vehicle starts to deviate from a lane, LDA alerts the driver with an audio-visual alert and steering wheel vibration. Some vehicles are also equipped with Lane Keep Assist, which controls power steering to make it easier for the driver to remain within lane markings.

### Automatic High Beam (AHB)

AHB helps ensure excellent forward visibility during nighttime driving. It uses a camera to detect the headlights of oncoming vehicles and the tail lights of vehicles ahead, and then automatically switches between high beams and low beams so as not to dazzle other drivers.

### Radar Cruise Control

On highways, Radar Cruise Control uses millimeter-wave radar to detect preceding vehicles and determine their speed. It then adjusts vehicle speed (within a set range) to ensure that there is a safe distance between vehicles. By using a forward-facing camera and millimeter-wave radar to monitor vehicles moving into or out of the lane, Radar Cruise Control helps maintain smooth acceleration and deceleration while driving.

## Lexus Safety System + PCS Capabilities

Hazards detected	Automated braking operational range	Automated braking speed reduction	Sensors
Vehicles	Approx. 10 km/h – top speed	Approx. 40 km/h	Millimetre-wave radar and camera

Pedestrians	Approx. 10 km/h – 80 km/h	Approx. 30 km/h	
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<sup>1</sup>The concept of integrating all of a vehicle's individual safety technologies and systems to provide a more advanced level of support to drivers in all driving situations.

<sup>2</sup>Results achieved during testing using a vehicle travelling at 30 km/h and a stationary vehicle/pedestrian; system operation depends on driving environment (including road and weather conditions) and vehicle circumstances.

<sup>3</sup>Results achieved during testing using a vehicle travelling at 40 km/h and a stationary vehicle; system operation depends on driving environment (including road and weather conditions) and vehicle circumstances.