# Firmware Over-the-Air (FOTA)

Last Updated: Nov 16, 2023

The FOTA application allows vehicle ECU firmware to be updated in the background. The FOTA gateway is physically connected with in-vehicle networking and has the ability to communicate with ECUs capable of FOTA updating; and it is typically the controller that performs firmware updating management for the whole vehicle.

A typical FOTA system consists of three components:

- FOTA server: responsible for the management of vehicle software release, and optionally to customize updates for every vehicle client based on OEM policies.
- FOTA client: application responsible for communication with a backend server and updating campaign management for all the other ECUs in the vehicle. Typically runs on FOTA gateway.
- FOTA agent: application that performs final updating of firmware for ECUs during run-time. It sometimes also runs on FOTA gateway to support self-updating.

FOTA System Block Diagram
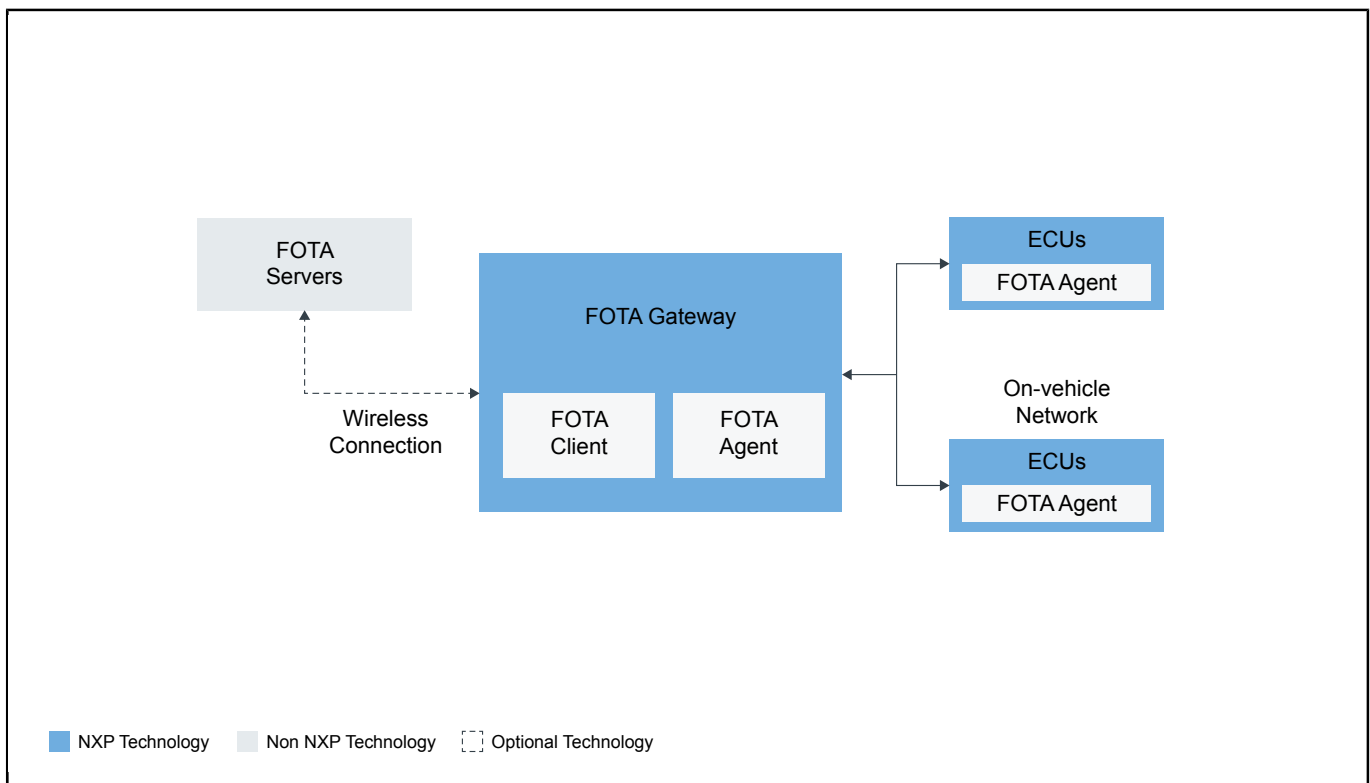
Recommended Products for FOTA System	
FOTA Gateway	• S32G3: S32G3 Processors for Vehicle Networking • S32G2: S32G2 Processors for Vehicle Networking • GOLDVIP: S32G Vehicle Integration Platform (GoldVIP)
ECUs	• S32K3: S32K3 Microcontrollers for Automotive General Purpose • S32K1: S32K1 Microcontrollers for Automotive General Purpose

FOTA Application Block Diagram
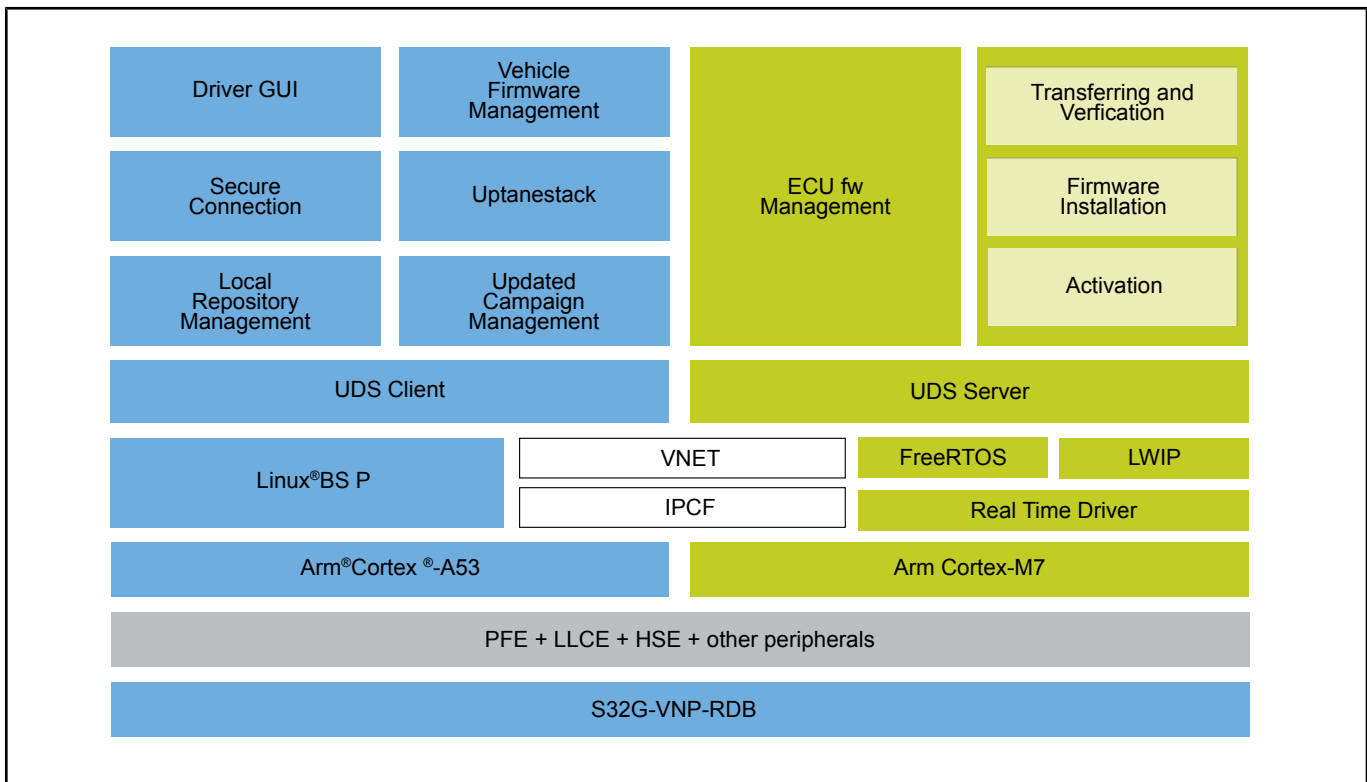
Recommended Products for FOTA Application	
FOTA Application	• S32G3 Vehicle Networking Reference Design • S32G2 Vehicle Networking Reference Design

View our complete solution for Firmware Over-the-Air (FOTA).

Note: The information on this document is subject to change without notice.