Over the Air (OTA):

Over the air technologies enable automobile manufactures to fix, maintain and improve vehicles through remote software updates downloaded to the vehicle from a cloud based server.

This feature allow carmakers to correct software bugs, deliver capabilities (including apps) and assess the vehicles operation manage preferences and update their vehicle software at a scheduled time or on demand with appropriate notifications of update availability and status.

How do OTA updates work?

* OTA updates are downloaded automatically in the background while the car is in use and connected to WI-FI or a cellular network.

Why Car needs OTA updates?

* Modern cars are designed with embedded system that control the electrical system in car.
* The ECU is the brain of the car and thus its automotive software needs to be updated to avoid errors and for better transmission.

3 Methods have been used to facilitate OTA updates.

1. Update from External Storage:

In this scenario, new software images are buffered in an external gateway that communicates with the cloud through a cellular modem. It does not require additional memory in the domain controller or in sensors. However, there is no ability to revert back to previous imaged if a failure occurs.

1. Update from Local Storage:

In this scenario, new software images are downloaded to local storage within the ECU. An update process copies the new image from local storage to the active flash memory.

1. Update from Double Flash Memory:

In this scenario, the processor contains enough memory to hold both the old software image and the new image in an A/B configurations. Once the download is complete and verified, switching to the new image is nearly instantaneous. The switch over has no impact on system availability. If a failure, reverting to the previous image is also instantaneous.