AnyConnect

The *Smarter* AI™ Camera Platform

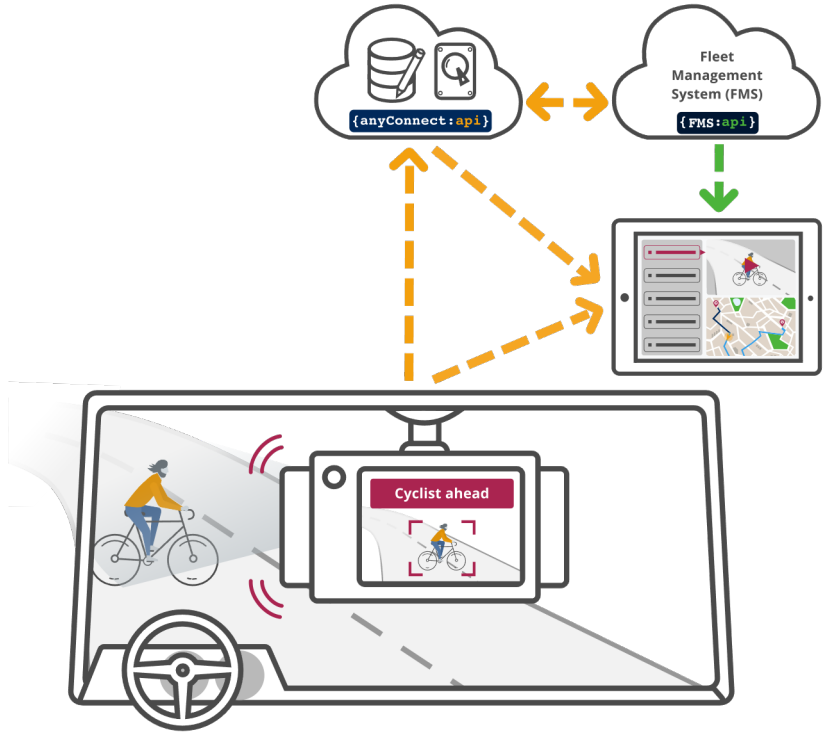
Video Telematic Solutions for Fleet

Version 1.2 | As seen on Video Telematic Solutions for Fleet

How to add Video Telematic capabilities to your fleet?

Video Telematic is rapidly becoming a must for Fleet Management Systems as well as Taxis & Ride Hailing services. AnyConnect Smarter AI™ Camera Platform, with its field proven, industry leading functionalities, like Device Onboarding, Access Control, Instant Connections, Adaptive Bitrate Streaming, Recording & Playback, Console & Video Analytics, is the best choice for Smarter Telematic Solutions for Fleet Management Systems.

The integration between AnyConnect Smarter AI™ Camera Platform, the Dashcams the Operator Clients and a Fleet Management System works on multiple levels. This page will go more in depth about how this solution works from a software and a hardware perspective.



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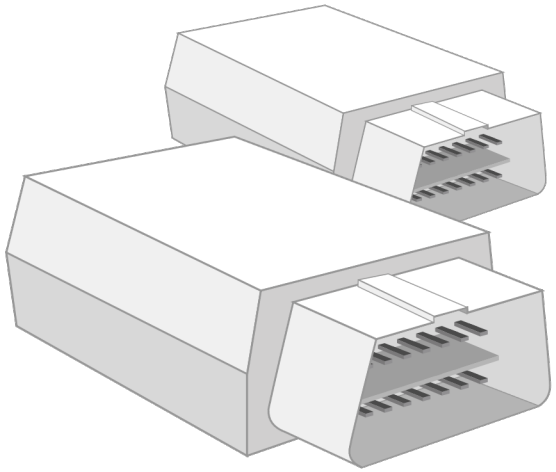
In Vehicle



For fleet applications, having access to the vehicle data (driving parameters, speed, car health state etc.) is key. The car Controller Area Network (CAN buses) provides a deep access to all of these parameters and more. Most Fleet Management Systems use the On-Board Diagnostics port of cars and trucks to access the vehicle health and driving data. This port exposes the vehicle's CAN buses.

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What is an On-Board Diagnostic port?

Almost Every vehicle on the road has a form of On-Board Diagnostic port. It has been made mandatory in different markets:

- 1991 OBD for vehicles sold in California
- 1996 OBD-II for vehicles made in the US and sold in the US
- 2001 EOBD for Gasoline vehicles sold in the European Union
- 2003 EOBD for Diesel cars sold in the European Union
- 2008 OBD imposed for some vehicles sold in China
- 2010 HDOBD for selected heavy-duty commercial vehicles in the US

On-Board Diagnostics interfaces are slightly different from a region to the next. Europe has EOBD, the North America has OBD-II & HDOBD, Japan has JOBD, etc. Most OBD interfaces will work with a large proportion of the different systems. From now on, we will be using OBD to represent all flavours of Onboard Management.

Let’s explore 3 ways to add Video Telematic to a Fleet Management System with AnyConnect.

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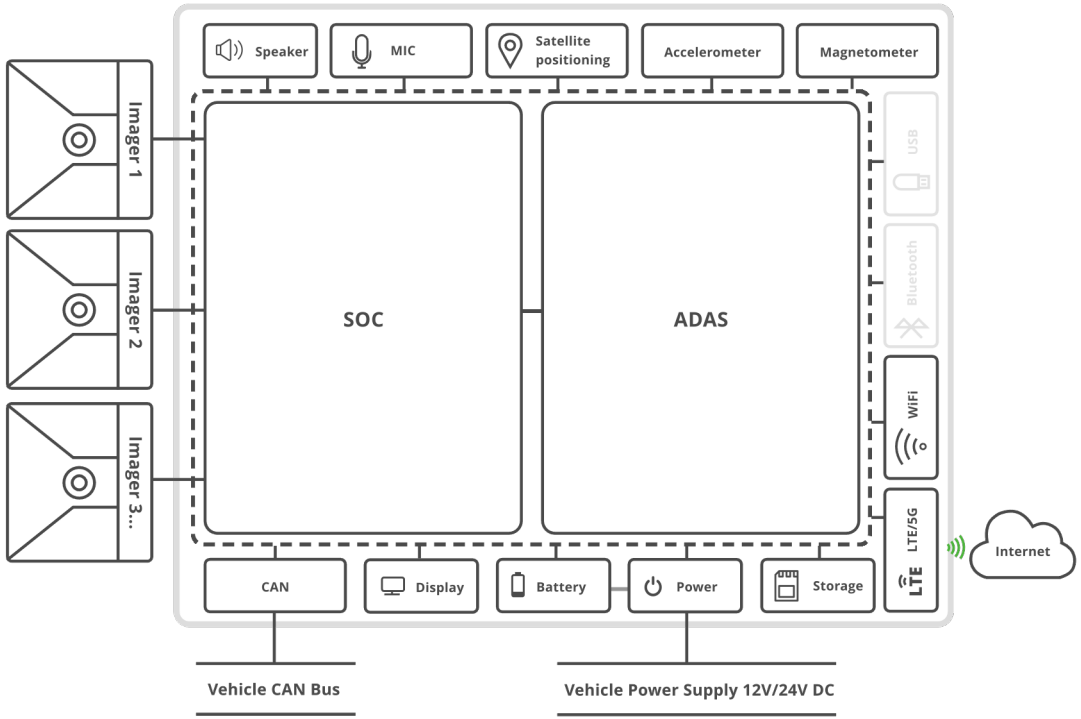
1. Smarter Dashcam Only

In this configuration, the interfaces with the vehicle (CAN Bus interface, etc) is done by the Dashcam only. It handles communication to the cloud as well through LTE or 5G. The Dashcam provides the vehicle's location as well as kinetic data (accelerometer etc.). Advanced Driver-Assistance System (ADAS) services could be provided as well by the dashcam in this configuration. This configuration provides the most elegant, better integrated solution with the best feature set.



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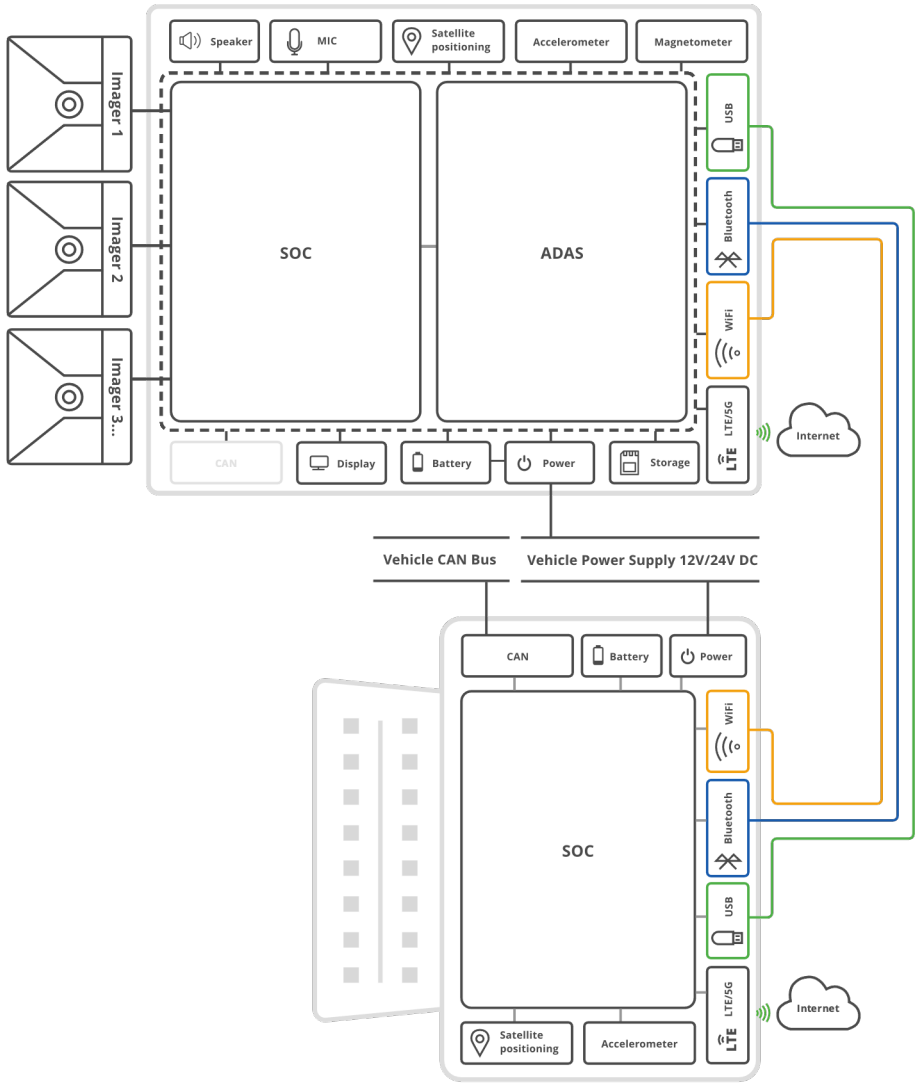
2. Smarter Dashcam & OBD device

In this case, both the OBD interface and Dashcam are used at the same time. The OBD device is responsible for collecting non-video telematic data, like vehicle state, through the CAN bus interface as well as Satellite Positioning, accelerometer and even network through its own 3G/4G/5G network interface. Both Dashcam and OBD device could be connected to each other through Wi-Fi, Bluetooth, USB or not connected together at all. In this configuration both devices have some redundant functionalities. Selecting one or using both is possible for each task. For instance, both might have a 3G/4G/5G network interface, thus leaving two choice: both using their own connection independently, one could share its network connection with the other or both connections could be used at the same time for redundancy purposes.



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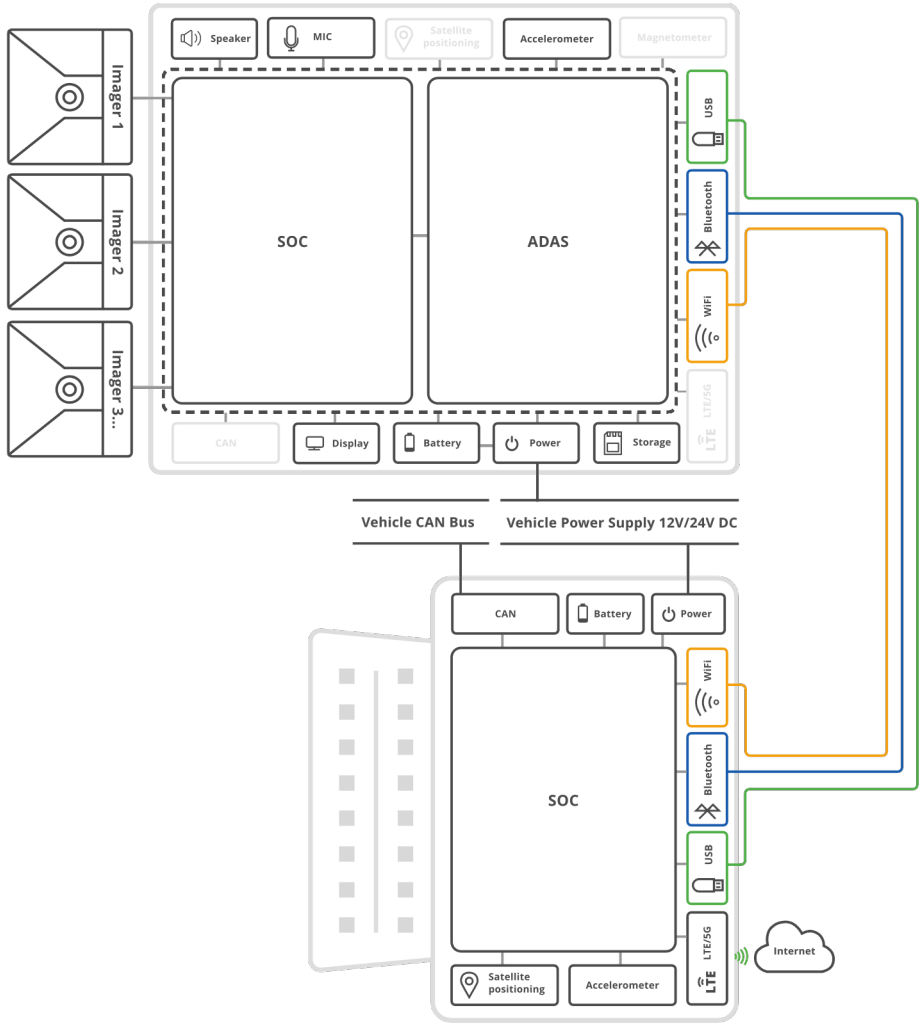
3. Smarter Dashcam & OBD-II device with internet access

In this case, the OBD-II device is the lead device, providing internet access through 3G/4G/5G, Satellite positioning, CAN bus Interface, etc. The Dashcam uses the internet connection of the OBD-II device. In this configuration, the Dashcam is only used as a video sensor. Both Dashcam and OBD device could be connected to each other through Wi-Fi, Bluetooth or USB.



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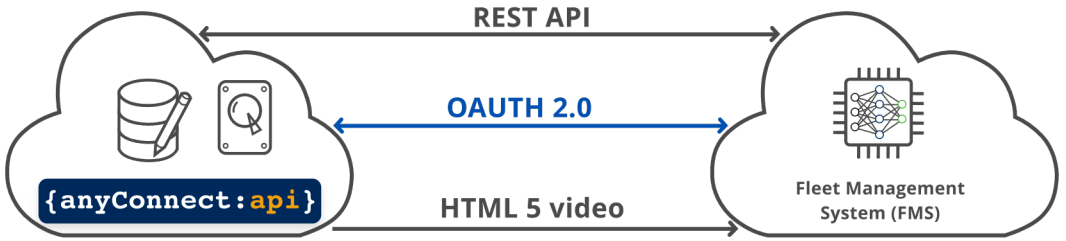
In the Cloud/Backend

At the backend level, the integration between AnyConnect Smarter AI™ Camera Platform and a Fleet Management System works with 3 main components:

1. OAuth 2.0

OAuth 2.0, with using JSON Web Tokens is the method of choice for Fleet Management System and its users to authenticate to the AnyConnect Smarter AI™ Camera Platform. This method supports Social Logins like Google, Facebook, Amazon, Apple etc.

OAuth 2.0 is also used across the AnyConnect Smarter AI™ Camera Platform (clients, cameras etc.).



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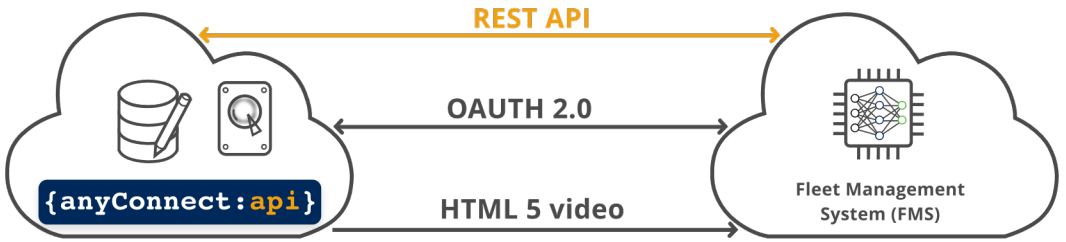
2. AnyConnect REST API

Here is an overview of AnyConnect Smarter AI™ Camera Platform data structure:

- Tenants: Each customer has a one or multiple dedicated tenancy(ies).
- Cameras: Each camera connected to the system belongs to a Tenant. In the case of fleets, a camera means a vehicle [a camera can have multiple imagers (video sensors)]. Cameras generate events, metadata and video/audio, which can be streamed live & recorded.
- Users: Tenants create users in AnyConnect Smarter AI™ Camera Platform. Users have rights regarding cameras viewing and/or configuration.



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Here is a non-exhaustive list of capabilities that AnyConnect REST API provides for integrating a 3rd party Fleet Management System.

User Creation, Deletion & Management

Fleet Management Systems have a user database which needs to be synchronized with the AnyConnect Smarter AI™ Camera Platform. When a new Fleet Management user signs in, this user must be created in AnyConnect Smarter AI™ Camera Platform (and deleted when the service to this user is terminated). Sign-on remains the same between both platforms, thanks to OAuth2.0.

Device Creation, Deletion & Management

AnyConnect REST API enables to create and delete cameras, as well as configure system parameters, like, video retention, video quality etc. AnyConnect REST API allows to monitor the system's state (communication log, health info etc.) as well as to push Over-the-Air (OtA) updates to cameras in the field, get an overview of the system's health and the customer's experience as well as drill down to resolve problems quickly.

Notifications & Metadata

Event Notifications coming from cameras in the field are exposed through AnyConnect REST API. It provides access to most of the metadata recorded by the cameras. The remaining part of the metadata, as well as audio and video is available through an easy to integrate HTML5 Video interface. Audio, Video and Metadata are also available through AnyConnect libraries.

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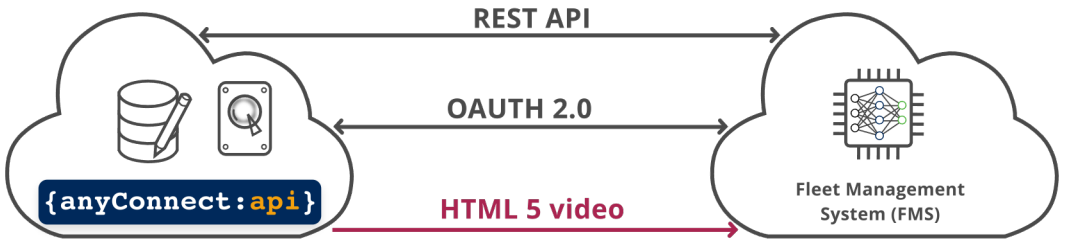
3. HTML5 Video Playback

- Audio, Video and Metadata playback is usually managed by operators & Fleet Owners/Managers on operator consoles. Fleet Management Systems have multiple reasons to access Video, Audio & Metadata at the backend level. One reason is, running video analytic algorithms on this data to infer if an event is a false alarm or not and its priority level.
- AnyConnect offers video, audio & metadata playback through HTML5, making integration a breeze. It is also possible to use AnyConnect libraries to get access to all functionalities of the system. AnyConnect libraries are available for Linux, iOS, Android, Web and Windows.



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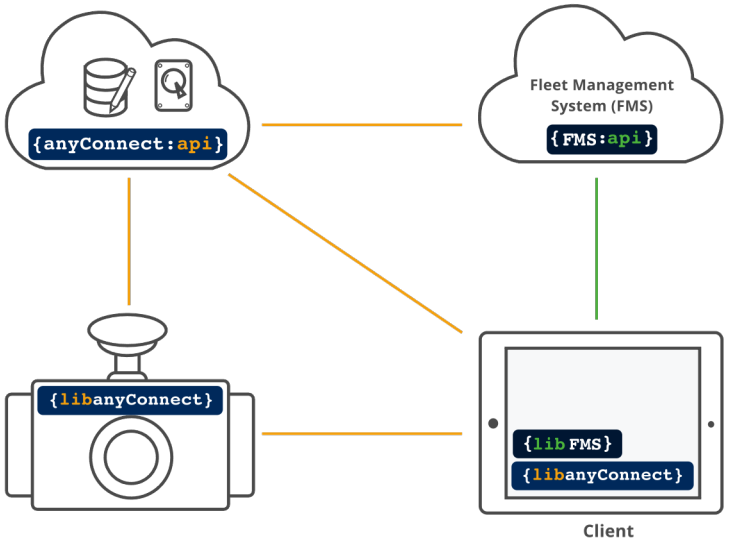
User & Operator Clients

With AnyConnect Smarter AI™ Camera Platform, Users & Operators can access Video Telematics data (playback, live, etc.,) through different types of clients:



iOS and Android Apps

libAnyConnect works on all versions of iOS and Android that are officially supported by Google and Apple.

iOS and Android Apps

Two options are available:

- An HTML5 player, which is extremely simple to integrate, however, it doesn't provide access to all the features and functionalities of AnyConnect Smarter AI™ Camera Platform.
- A web plugin version of libAnyConnect, providing almost the same level of functionalities as the Android and iOS libraries.

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Windows, MacOS & Linux clients

Windows, MacOS & Linux libraries for AnyConnect Smarter AI™ Camera Platform can be provided upon request, enabling to use AnyConnect Smarter AI™ Camera Platform on fat clients.

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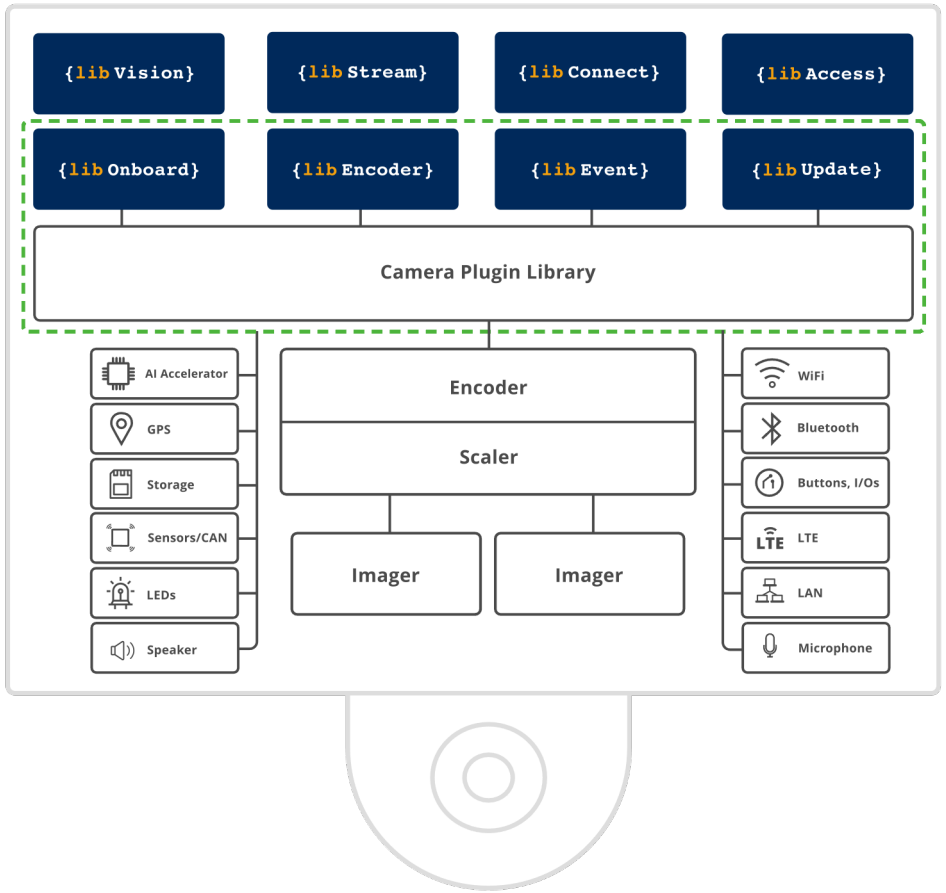
Which Dashcam should I use?



From ruggedized, to a lot of imagers, to entry level features and pricing; from buses to taxis, trucks and other vehicles, AnyConnect Smarter AI™ Camera Platform provides an unmatched flexibility in the choice of dashcams for Fleet Management Solutions. There are two high level paths:

AnyConnect's already integrated Dashcam

AnyConnect has partners, providing a wealth of different dashcams, having different specifications, price points, interfaces and features (e.g. ADAS, Display etc.). All those dashcams are available, enabling a very short time to market.

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Bring your Own Dashcam

Whether you're manufacturing Dashcams or you have a supplier offering the perfect camera for your application, AnyConnect supports the integration of your cameras in AnyConnect Smarter AI™ Camera Platform. There are a few conditions for the integration:

- The camera meets the minimum specs required by AnyConnect Smarter AI™ Camera Platform.
- The manufacturer of the camera supports this port.

Note: Different cameras can be integrated/used, at the same time, by the same tenant.

Conclusion

AnyConnect Smarter AI™ Camera Platform has been designed to be easily integrated with Fleet Management Systems at the camera level, back-end level and client level. It provides flexibility in the choice of cameras.

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