# CONNECTED CAR SOLUTIONS

# COMPANY PROFILE

Axinom is a leading provider of digital solutions that are shaping the future of connected transportation. Our products enable connected car systems to become more agile and smarter by bringing the power of the cloud on-board.

With Axinom Mosaic, Sync, and On-Board Cloud, we solve the management, delivery, deployment, and security challenges for vehicle data and digital services. The inherent flexibility and standard architecture of our products makes them applicable in varied use-cases and environments including smart solutions for digital cockpit/cabin, on-board connectivity, infotainment, remote monitoring and access, fleet management, OTA updates and distribution, and much more.

For over ten years, Axinom has worked with transportation industry leaders and partners to understand the growing requirements and to create innovative products that span both on-ground and on-board requirements of a vehicle.

Through possibilities of numerous integrations, with third-party or existing customer systems, we provide interoperable solutions that can operate in diverse environments and serve diverse needs of end-users, operators, and manufacturers. Our products are industry proven with hundreds of deployments in some of the biggest companies in aerospace, railway, and automotive.
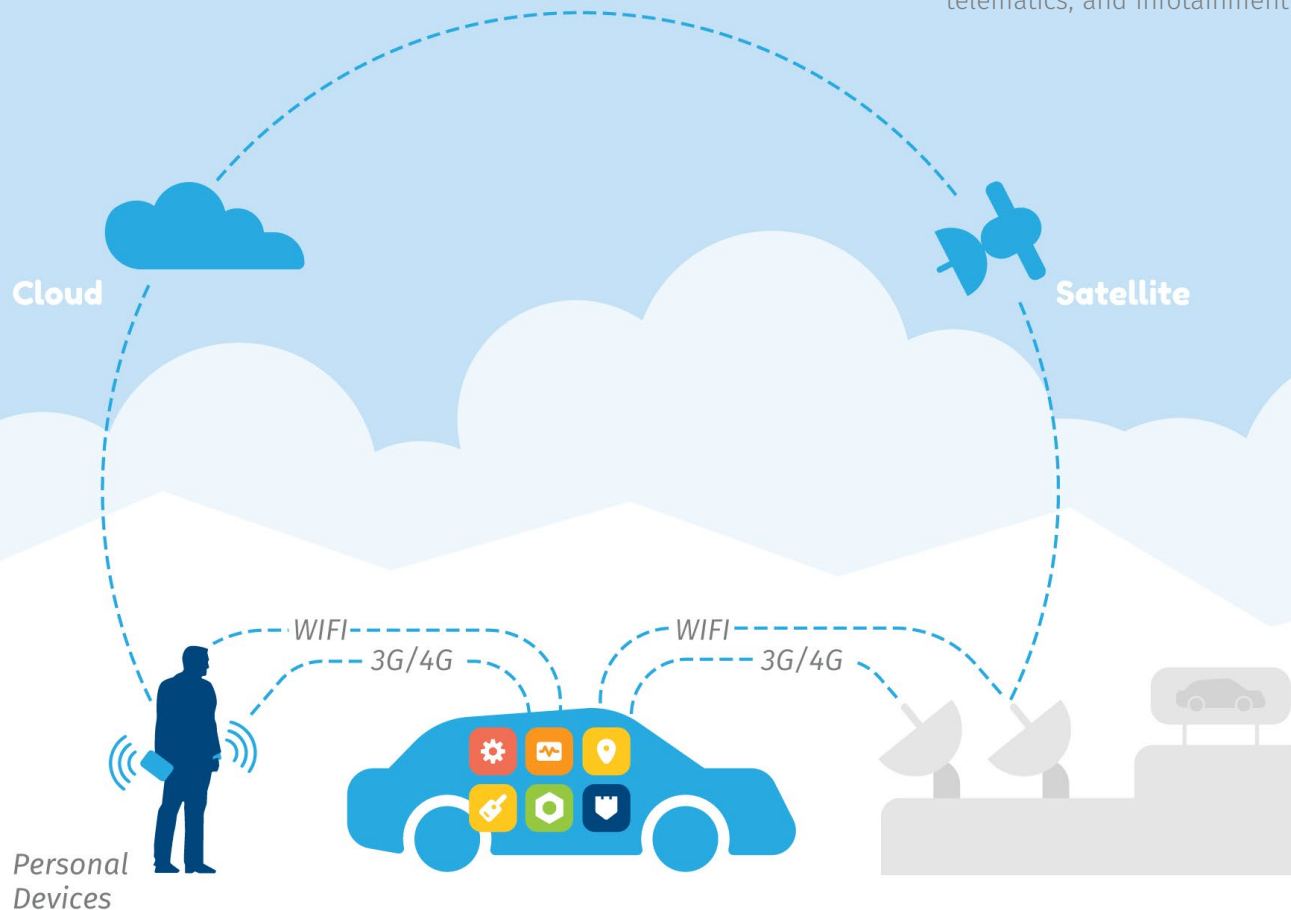
AIR NEW ZEALAND

DELTA

Lufthansa Systems

LUX Express

inmarsat

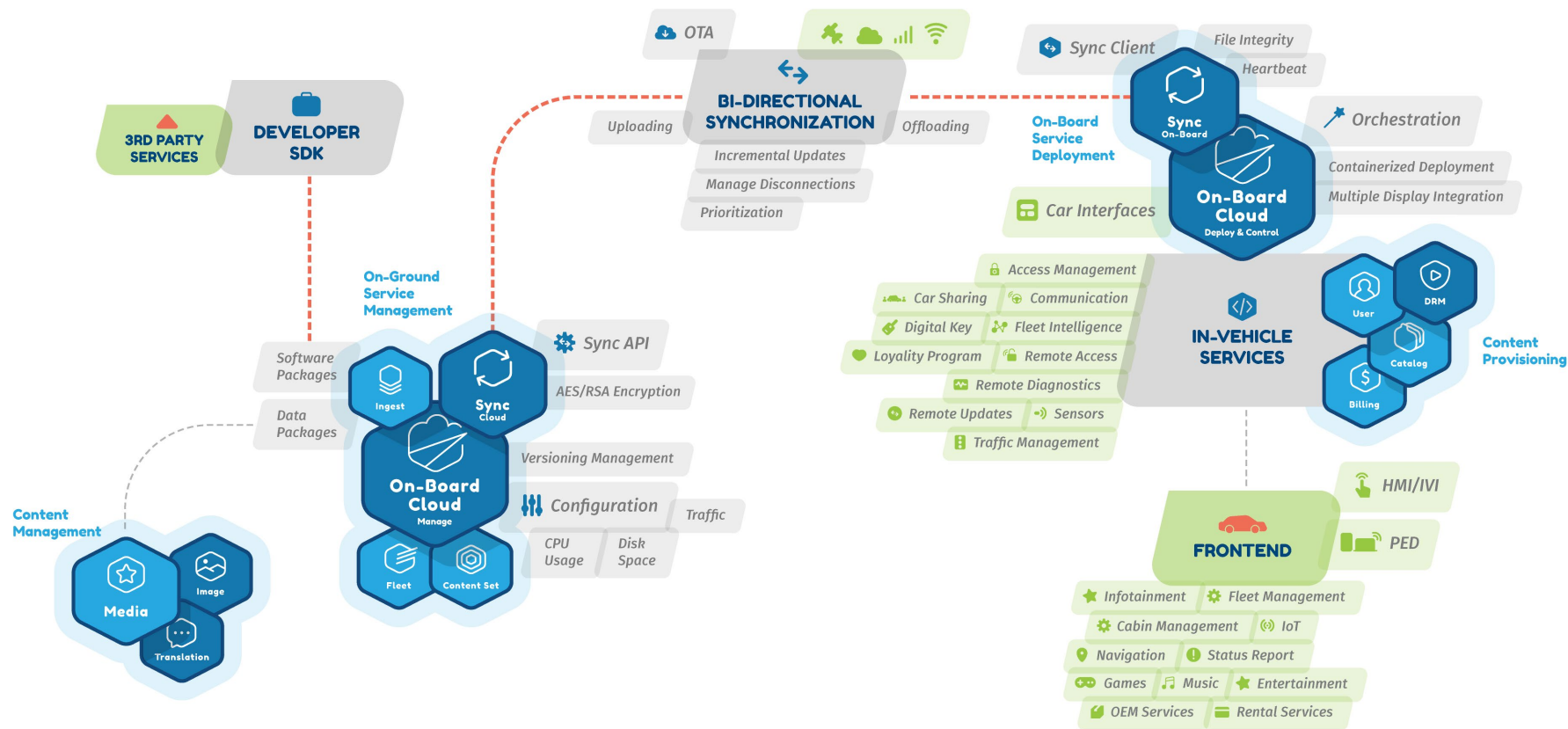SAFRAN
AEROSPACE · DEFENCE · SECURITY

# DIGITAL SOLUTIONS FOR AUTOMOTIVE

OEMs and automakers, today, face the same challenge that sped up the transformation of the consumer device industry, i.e., the need for agility and meeting the growing customer expectations.

The race to develop the vehicles of tomorrow is heating up and it is vital to make the right selection of solutions that will power your fleet. Automakers and suppliers need to aim for a flexible and modular platform that allows for management, delivery, distribution, and deployment of any kind of automotive, telematics, and infotainment data to and from the vehicle.

Cloud

Satellite

WIFI

3G/4G

WIFI

3G/4G

Personal
Devices

# Axinom On-Board Cloud
*(Automotive)*

powered by **AXINOM MOSAIC**

**3RD PARTY SERVICES**

**DEVELOPER SDK**

**OTA**

**BI-DIRECTIONAL SYNCHRONIZATION**

Uploading

Offloading

Incremental Updates

Manage Disconnections

Prioritization

**Sync Client**

File Integrity

Heartbeat

**On-Board Service Deployment**

**Sync** On-Board

**Orchestration**

**Car Interfaces**

Containerized Deployment

Multiple Display Integration

**On-Board Cloud** Deploy & Control

**On-Ground Service Management**

**Sync API**

AES/RSA Encryption

Versioning Management

**Software Packages**

**Data Packages**

**Ingest**

**Sync** Cloud

**On-Board Cloud** Manage

**Configuration**

Traffic

CPU Usage

Disk Space

**Fleet**

**Content Set**

**Content Management**

**Media**

**Image**

**Translation**

**Access Management**

**Car Sharing**

**Communication**

**Digital Key**

**Fleet Intelligence**

**Loyality Program**

**Remote Access**

**Remote Diagnostics**

**Remote Updates**

**Sensors**

**Traffic Management**

**IN-VEHICLE SERVICES**

**User**

**DRM**

**Catalog**

**Billing**

**Content Provisioning**

**HMI/IVI**

**PED**

**FRONTEND**

**Infotainment**

**Fleet Management**

**Cabin Management**

**IoT**

**Navigation**

**Status Report**

**Games**

**Music**

**Entertainment**

**OEM Services**

**Rental Services**

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# SOLUTION COMPONENTS

Axinom On-Board Cloud consists of on-ground and on-board components and leverages Axinom Sync to facilitate communication between the two.

**AXINOM**
**On-Board Cloud**

**AXINOM**
**Sync**

The on-ground component is On-Board Cloud Manage. It manages services and content for further delivery to the on-board components. Published services are synchronized to the on-board part using Axinom Sync.

The on-board components, On-Board Cloud Deploy and Control consist of system services, and managed services that can be deployed as per the defined configurations.

The services are accessible from fleet provider, driver, passenger, or IoT, over BLE, WIFI, cable, or other interfaces provided by the on-board hardware.

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Axinom Sync is a robust solution that manages all aspects of data synchronization, including uploading and offloading of data. It utilizes different pipes (LAN, Wi-Fi, 3G, LTE, satellite networks) with capability to manage interruptions, prioritize important data, and control data transfer costs.

It allows secure and robust bidirectional content synchronization using standardized communication protocols and mediums.
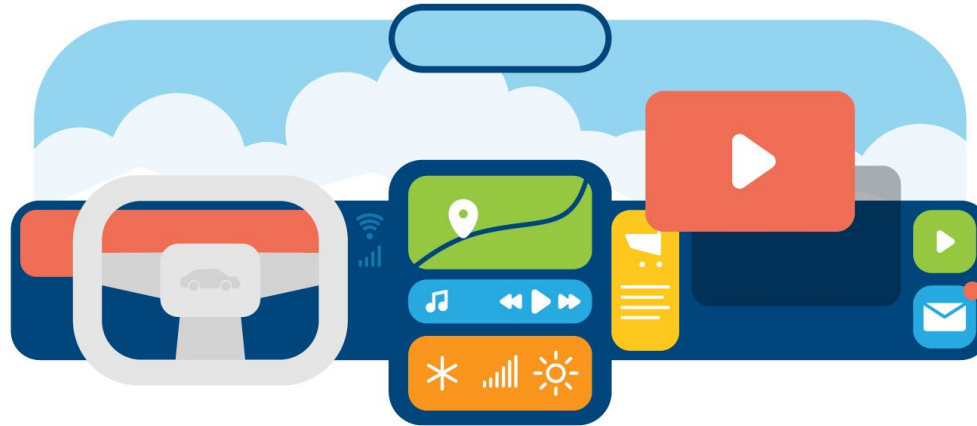
Axinom Sync consists of Cloud Storage and On-board Storage to transfer and synchronize data and services across On-Board Cloud components.

# AXINOM AUTOMOTIVE CAPABILITIES

# CONNECTED INFOTAINMENT



Availability of connected on-board infotainment gives drivers and passengers a possibility to have a centralized hub for controlling multiple vehicular functions and consuming live or on-demand infotainment.

Our in-vehicle digital infotainment solutions allow automakers to develop interactive systems for playback or streaming of movies, TV shows, games, radio, and podcasts from the embedded dashboard or in-seat screens.

The solution also allows for integration of sensors, third-party technologies such as Android Auto™, Apple CarPlay™, Mirrorlink™, navigation and maps, in-car video streaming, vehicle-to-vehicle communication, and much more.

**Several innovative use-cases can be explored, through integration of in-vehicle infotainment services:**

- *Cabin management with integrated sensory data*
- *Digital cockpit and IoT applications*
- *Loyalty programs and dealer/fleet-owner applications*
- *Real-time navigation and traffic updates*
- *Ancillary revenues based on subscription or advertising*
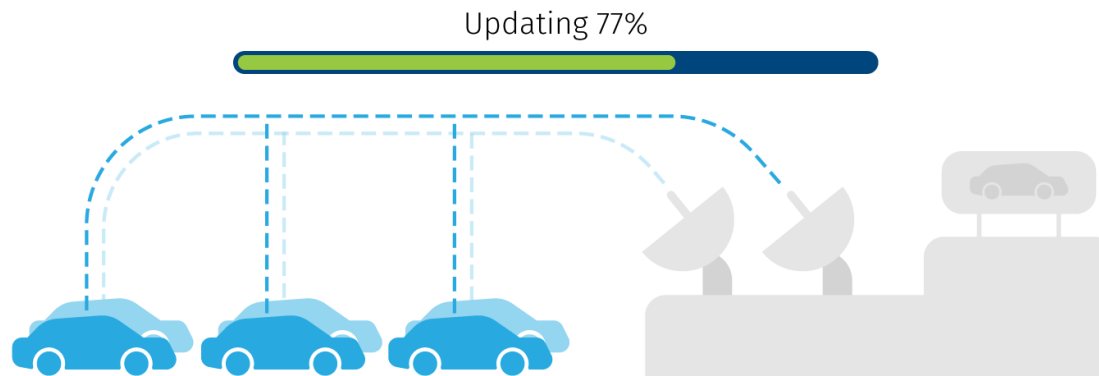
# SOFTWARE DISTRIBUTION

With cars becoming technologically advanced and connected, there's a greater need by vehicle developers to manage, distribute, and deploy software remotely.

Our solution allows you to stay adept  to the growing needs of the consumers. Using our simplified workflows, vehicle developers can manage, distribute OTA and updates (e.g., firmware updates, configurations) and application developers can issue application updates (e.g., delta updates for navigation).

With our robust and secure connectivity management and targeting, you can make sure that the orchestration and deployment can be processed granularly either for a component, application, vehicle, or fleet.
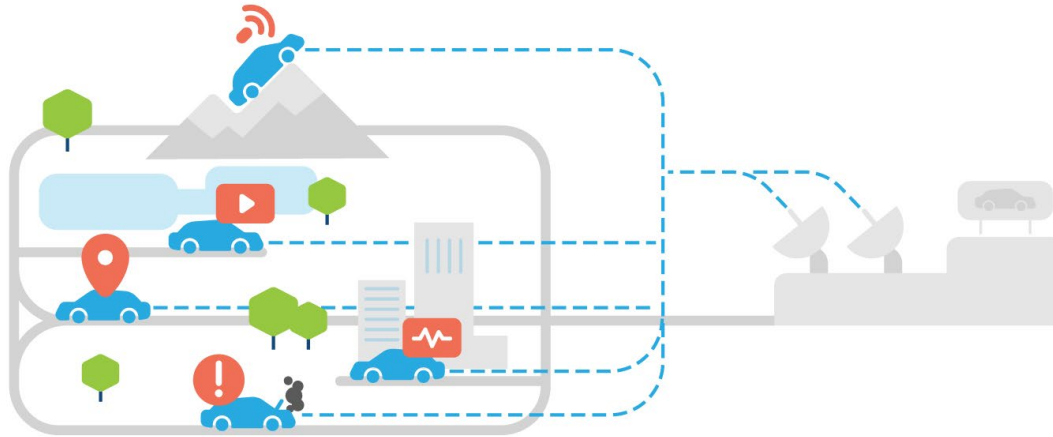
**Notable capabilities of our software distribution solution:**

- *Remote OTA and updates*
- *Granular control over orchestration*
- *Secure containerized deployment*
- *Failsafe with incremental updates, roll-back, and integrity check*
- *Fleet or vehicle targeting*

Updating 77%

# FLEET MANAGEMENT



Advanced large-scale mobility solutions have led to an increase in complexities in management efforts and costs. Fleet managers must always work with the most accurate data possible in order to make binding decisions and control costs effectively.

Our fleet management solution can not only help to manage your fleet, but also allows you to integrate and deploy additional digital services to enhance operations and user experience.

We can also simplify the handovers, coordination, communication between fleet managers, vehicles, and drivers, streamlining processes and ensuring efficient running of the fleet.

**Our digital fleet management solutions translate to:**

- *Centralized monitoring and management of fleet*

- *Location and journey monitoring*

- *Health status and reporting from vehicle*

- *Driver handovers and authorizations*

- *Integration of third-party services for driver experience, maintenance, upselling etc.*
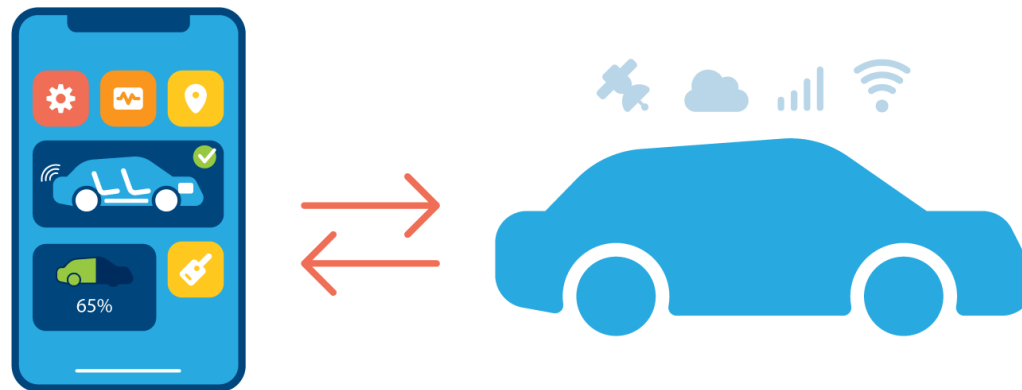
# CAR - DRIVER COMMUNICATION

With personal devices (PEDs) at the forefront of human-machine interfaces, it's imperative for automakers to integrate such devices symbiotically with the vehicle and cockpit systems.

Utilizing the bi-directional data transfer capabilities of our products, automakers can develop native applications that support secure communication between the driver and the vehicle, no matter the environment.

Our robust solution can utilize any available communication pipes (such as Wi-Fi, USB, Bluetooth, 4G, 5G, and satellite) to enable encrypted and robust transfer of information with interruption management and fallback mechanisms.

**Some use-cases involving car-driver communication:**

- *Remote diagnostics and status reporting*
- *Cabin management with integrated sensory data*
- *Vehicle startup/shutdown*
- *Real-time notifications*
- *Digital key*

# VEHICLE-CENTRIC APPS

Axinom automotive solution supports third-party applications, allowing integration of a wide range of vehicle, driver, and journey-centric applications.

An easy management, deployment, and short-time to market cycle also enables development of a marketplace where automakers can distribute the applications to the consumers.

New avenues of monetization can be explored with an array of services. Loyalty applications, e-commerce, video-on-demand, connectivity, navigation, destination services, are just some of the use-cases for innovative applications that can be explored with our solution.

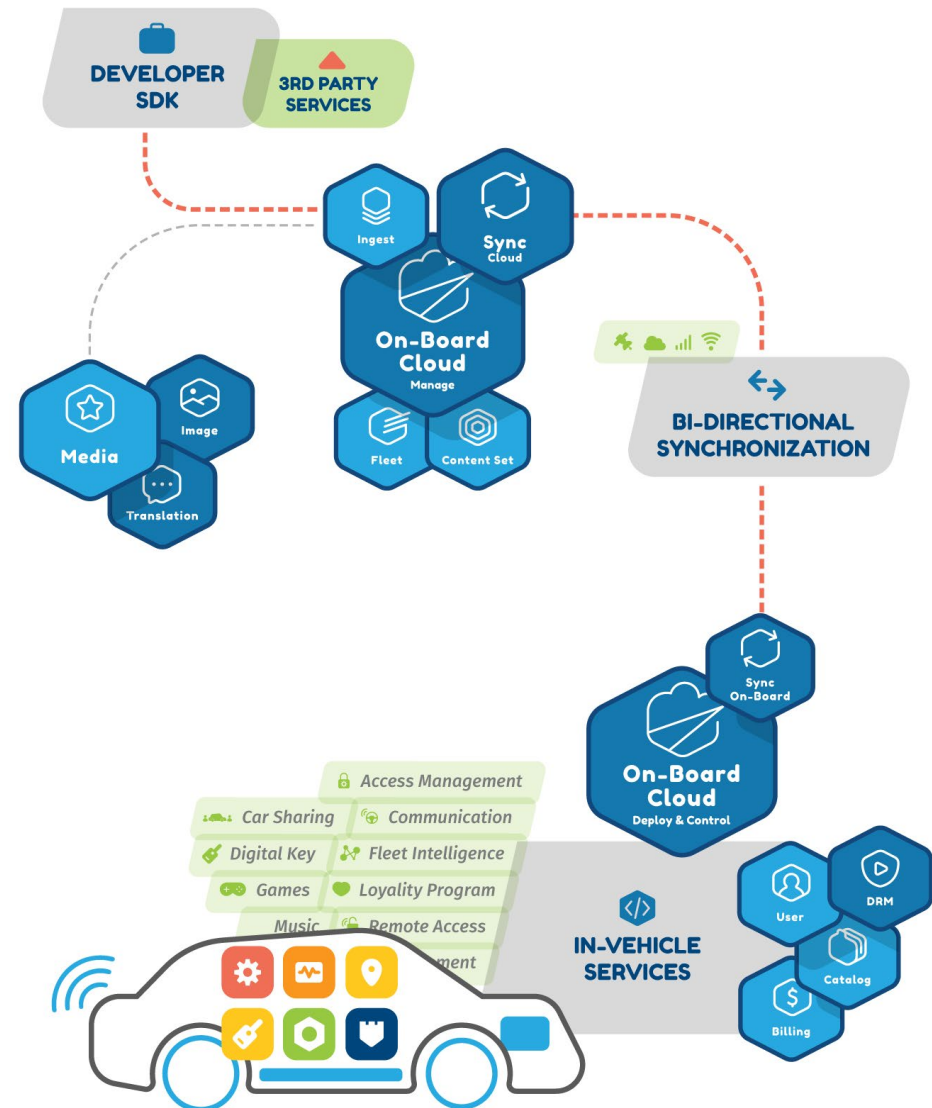**We can enable an ecosystem of applications with following key features:**

- *Developer SDK and APIs for easy application development and deployment*

- *Easy ingest and centralized management of applications*

- *Containerized application deployment*

- *Granular control over resources and application access*

- *Monetization through variety business models*

- *Integration of connectivity and payment providers*

# UNLIMITED USE-CASES

Relying on our core products, our customers can create, manage, and maintain the next generation of entertainment, infotainment, e-commerce, and connectivity services in a simplified, cost-effective, and secure way.

Use-cases are only limited by the imagination. OEMs and suppliers can enrich customer experience through multiple services:

- Connected cockpit with personal device support

- Predictive maintenance and health checks

- Integrated IoT systems and applications

- Rich infotainment with VOD, navigation, and destination services.

- Multiple display support

- Smart fleet management solutions

# axinom!