



Product Engineering & Electronics Manufacturing



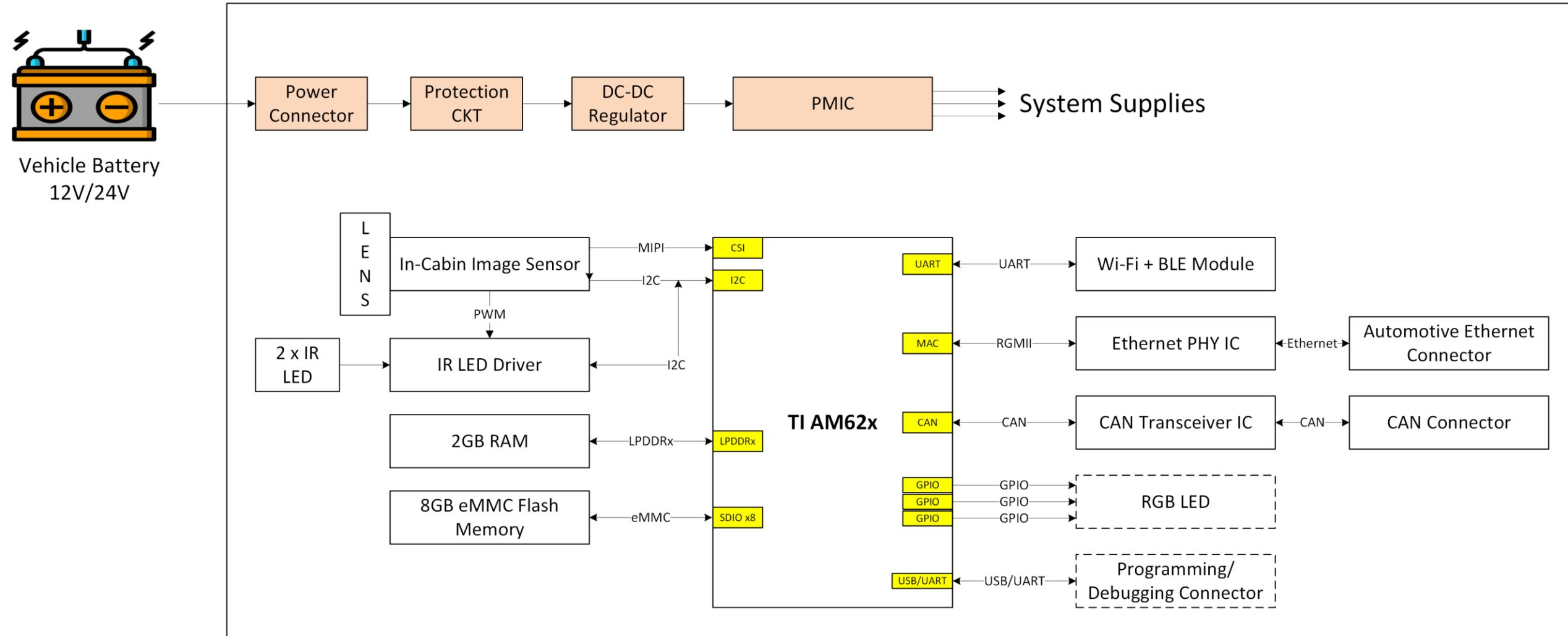
Commercial Presentation For Accolade
DMS Dashcam Development Project

- **Objective:** Accolade is looking to develop a DMS Dash camera from scratch based on their requirements shared, the Dash camera will be mainly used in the OEM Market.
- **Current stage of development:** Development from Scratch
- **Time to Market:**
 - **PVT Build:** April 2026
 - **Market Ready Device:** TBD
- **Tentative Unit Cost:** INR 2500
- **Processor/SOM:** TBD
- **Project LMV Volume:** 500K Qty
- **RFQ Reference Link:** [Click Here](#)
- **Key Features:**
 - On the Edge DMS AI Processing
 - Ethernet Interface
 - CAN Interface
 - 1 MP Camera

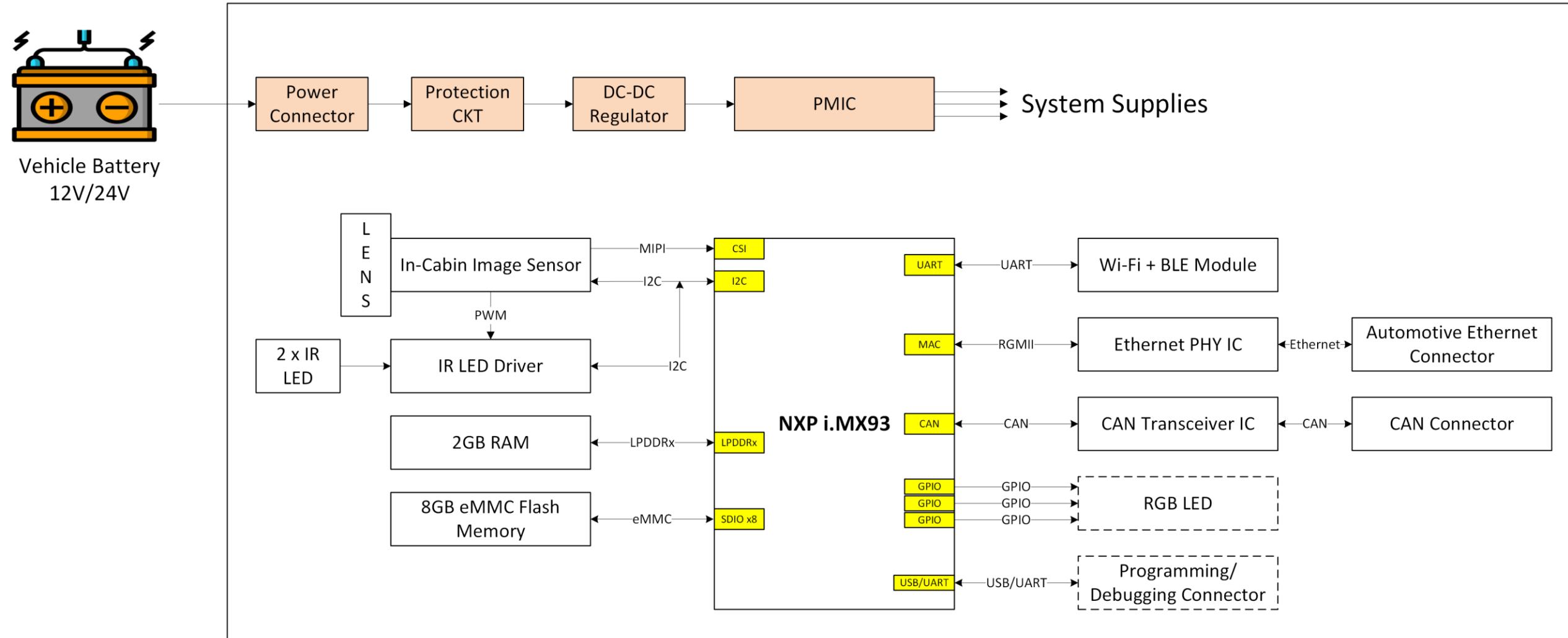
Client is looking for turnkey design partner in the following areas:

Sr	Services	Y/N	Brief
1	Mechanical/ID	Yes	ID Design and Development
2	Hardware	Yes	Custom PCB/PCBA
3	Firmware	Yes	BSP, Middleware and Application Deployment (AI)
4	AI / ML	No	Developed by Accolade
5	Android/iOS	No	Developed by Accolade
6	Desktop App	No	-
7	Cloud Frontend	No	Developed by Accolade
8	Cloud Backend	No	Developed by Accolade
9	Cloud Dev-ops	No	Developed by Accolade
10	UI UX	No	Developed by Accolade
11	Certification	Yes	FCC, UL, RoHS, PTCRB, AIS-184
12	Manufacturing	No	-
13	Testing	Yes	Manual Testing and QA/QC

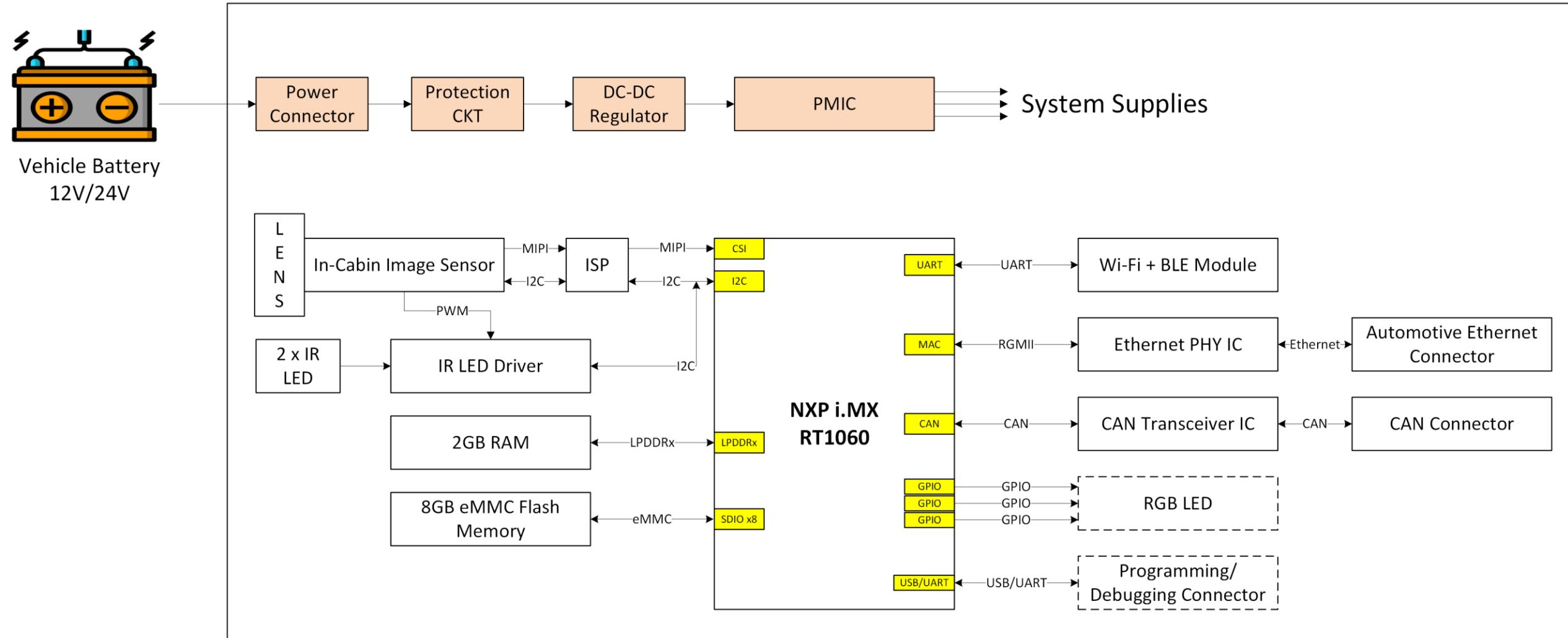
Requirement Alignment : System Architecture Diagram



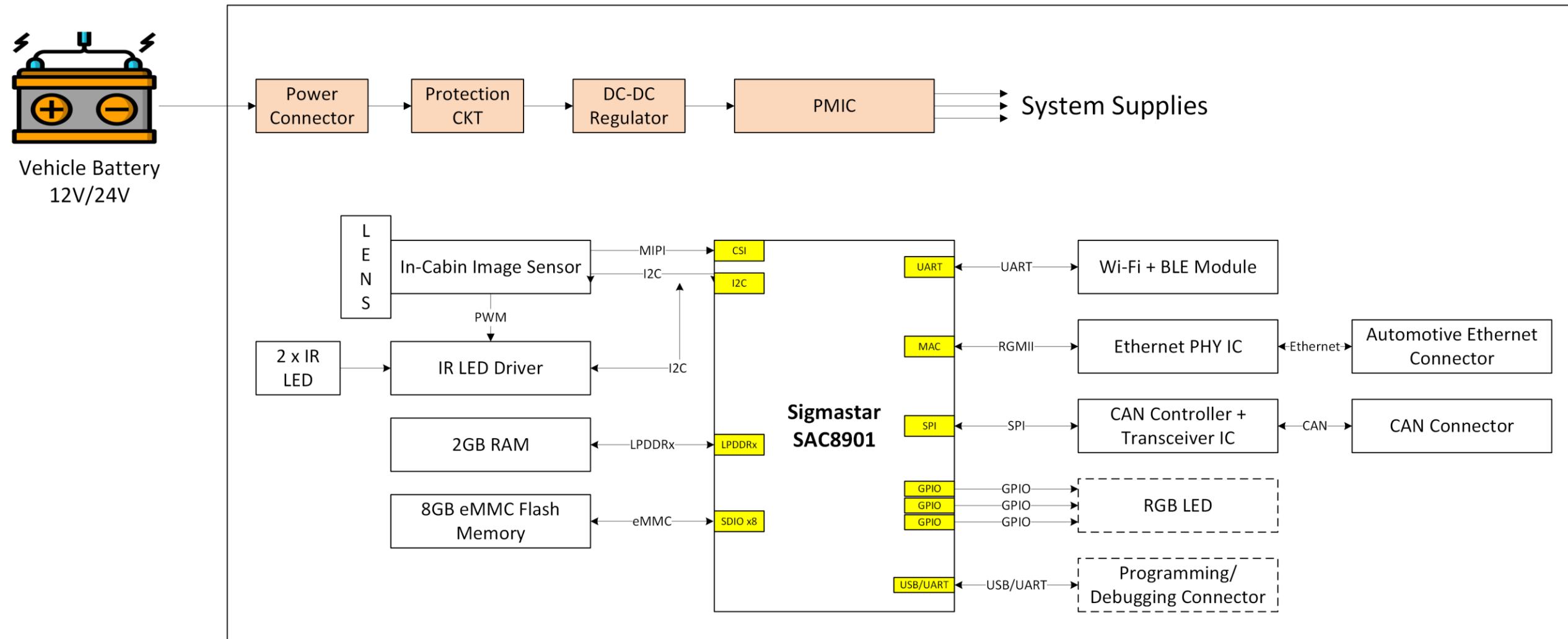
Requirement Alignment : System Architecture Diagram



Requirement Alignment : System Architecture Diagram



Requirement Alignment : System Architecture Diagram



PRD & Technical System Architecture

- Product Requirement Document (PRD) Finalization
 - Functional Requirement Specification
 - Hardware Requirement Specification
 - Firmware Requirement Specification
 - Mechanical Requirement Specification
 - Final Acceptance Criteria
 - Test Cases
- System Requirement Specification (SRS) Finalization
 - Technical Architecture
 - System Block Diagram
 - Evaluating technical options
 - System Technology Component Finalization
 - System Technology Communication Flow
 - Technical Architecture Design and Approval
 - Final Acceptance Criteria

Hardware Development

- Component Selection for Main PCB
 - Power Supply Components
 - Power Connector
 - Protection CKT
 - EMI Filter
 - PMIC
 - Power Management Section
 - Processor
 - In – Cabin Camera Module
 - In – Cabin Camera Lens
 - IR LED Driver
 - 2 x IR LED
 - 2GB RAM
 - 8GB eMMC Flash Memory
 - Wi-Fi + BLE Module
 - Ethernet PHY IC
 - CAN Controller + Transceiver IC
 - RGB LED
 - Automotive Ethernet Connector
 - CAN Connector
 - Wi-Fi Antenna Main CKT + Antenna
 - Programming/Debugging Connector
 - PCBA Mechanical Components
 - Other passive components
- Schematic design for PCB
- Layout design for PCB
 - Footprint design for PCB
 - Component Placement as per the enclosure design
 - Routing
 - Impedance matching and designing
- Gerber files Preparation for PCB
- Prepare hardware test cases and plan for PCB
- DFMEA for Electrical and Mechanical Design
- PCB Fabrication and Component Procurement
- PCB Assembly
- Board Bring-up for PCB and Functional testing

Hardware Development

- Testing and Bug Fixing for PCB
- PCB testing with Enclosure fitment validation
- Pre-Compliance Testing For EVT Units
 - EMI/EMC Testing

Firmware Development

- Development Environment Setup
 - Processor
- Independent Module Development
 - Power Supply Components
 - PMIC
 - Power Management Section
 - In – Cabin Camera Module
 - IR LED Driver
 - 2 x IR LED
 - 2GB RAM
 - 8GB eMMC Flash Memory IC
 - Wi-Fi + BLE Module
 - Ethernet PHY IC
 - CAN Connector + Transceiver IC
 - RGB LED
- Wi-Fi Connection and Establishment
 - Create Wi-Fi Access Point
 - Prepare Read/Write characteristics
- Features
 - Data exchange Preparation with Mobile App/Router
 - Algorithm Development for FIFO based Memory Organization when the Memory is full or when the user deletes it manually
 - AI Application Implementation into the Firmware
 - Frame Capturing
 - Frame Pre-Processing
 - Feed the Frames to the Application
 - Application Deployment
 - DMS Models
 - **Continuous Recording:** Continuous Recording should via ignition data received from CAN
 - **Event Based Recording:** Starting the recording for 20 seconds when there is a trigger from CAN Data
 - **Manual Recording:** Dashcam should start the recording when the Physical Button is pressed or the signal is passed through the mobile application

Firmware Development

- Event Management/Scheduling
 - Developing, maintaining and communicating event schedules
 - Transmitting the Data to the Mobile Application through Wi-Fi
- Integration with the Actual Hardware
- OTA Updates through Wi-Fi From Mobile Application
- Testing
- QA/QC

Mechanical Development

- Product Specification Inputs
 - Implementation and Optimization of Existing Process for Specifications mentioned
 - Generating Inputs according to specifications
- Product Conceptualization
 - Concept Generation and Product Architecture
 - Electromechanical Integration and Implementation
 - CAD Generation and Analysis for Requirement
 - IP Ratings & Degree (IP XX)
- Product Design and Development
 - Finalization of Design after Review
 - Implementation of Engineering Tools for Optimum Manufacturing Concepts.
 - Proto Development
 - Testing and Validation of Product according to Standard of Design.

DVT Development & Certification

- Component Re-Evaluation as per Pre-Compliance Testing
- Schematic Design & Layout Design Revision
- Hardware Noise Cancellation, Cross Talk Removal
- Signal Integrity & Power Integrity
- Power Optimization
- ICT Test Point Implementation
- Gerber Release
- PCB fabrication
- PCB Assembly
- Board Bring up for PCB
- Functional testing
- Documents for PCB
- QA/QC
- Certification – DVT Units
 - FCC, UL, RoHS, PTCRB, AIS-184
- Firmware Support & Bug Fixing (Long run & Corner Cases)
- Software Features Modifications & Optimization
- Bench Level testing

PVT Development

- Hardware Revision 3.0
 - Component Re-Evaluation As per Certification
 - Hardware schematic Design
 - Layout redesign after certification
 - ICT Test points implementation (If any Changes)
- Firmware Support & Bug Fixing
 - User Feedback Implementation & Optimization
 - Functional Test Software (Firmware/Script/Desktop Tool)
 - Health Test Application
- Power optimization from Application Perspective
- Latency Optimization for Video Streaming
- Testing and EOL App
- Product and API Documentation
- PVT Manufacturing and Testing
- Field Trials: Installation in 2 vehicles for extensive field trials for 1–2 months

1. Device side application Development
2. Android/iOS Mobile Application Development
3. Web/Cloud Development
4. Audio Tuning
5. Standalone Application Development
6. Any AI Algorithm Development
7. ICT Architecture Planning and Setup
8. FCT Architecture Planning and Setup
9. Certifications Related Development
 1. Security Testing and Audit
10. Mass Production Related Activities
 1. Automated Testing Activities
 2. Test Automation Framework
 3. Whitebox / Blackbox Testing
 4. Test Jig & Test Automation
 5. Alternate part finding while production
 6. Security and Penetration Testing

#	Variants	Tentative Unit Costs for 500K MOQ
1	Texas Instruments AM62x	~INR 3,380
2	NXP i.MX RT1060 Crossover MCU	~INR 3,310
3	NXP i.MX 9352	~INR 3,630
4	Sigmaster SAC8901	~INR 3,320

Project Development Milestone and Timeline (Phase 1 to Phase 4)

#	Development Milestone	Approximate Calendar Weeks
M0	Official Project Kick-off	T0 + 0
M1	<p>Phase 1: PRD & Architecture Development</p> <ul style="list-style-type: none">Hardware Development:<ul style="list-style-type: none">Component Selection for PCB (Delivered)Schematic design for PCB (Continued...)Firmware Development:<ul style="list-style-type: none">Development Environment SetupMechanical Development<ul style="list-style-type: none">Product Specification Inputs Implementation	T0 + 4
M2	<p>Phase 2: EVT Prototypes Development</p> <ul style="list-style-type: none">Hardware Development:<ul style="list-style-type: none">Component Selection for PCB (Delivered)Schematic design for PCB (Continued...)Firmware Development:<ul style="list-style-type: none">Development Environment SetupMechanical Development<ul style="list-style-type: none">Product Specification Inputs Implementation	
M3	<ul style="list-style-type: none">Hardware Development:<ul style="list-style-type: none">Schematic design for PCB (Completed...)Layout design for PCB (Continued...)Firmware Development:<ul style="list-style-type: none">Development Environment Setup (Continued...)Features DevelopmentMechanical Development<ul style="list-style-type: none">Product Conceptualization	