**Group 3**

**Day 2 Task 1**

**ADAS SoC applications**

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| **SI No.** | **Block Available** | **Purpose** | **Significance** |
| 1 | Input Block | Manages external signals from sensors, cameras, and other peripherals, crucial for real-time data acquisition and processing. | It ensures accurate and timely input data acquisition, essential for robust ADAS functionalities like object detection, lane keeping, and adaptive cruise control. |
| 2 | Connectivity Block | Facilitates communication with external devices and networks, enabling data exchange and integration within automotive systems (Communication with other devices). | Supports seamless integration of ADAS functionalities with external sensors, networks, and vehicle communication protocols, enhancing system interoperability and performance.Top of Form  Bottom of Form |
| 3 | Output Block | Manages signals sent to actuators and displays. Important for implementing vehicle control commands and providing feedback to drivers. | Precise and timely control outputs, plays an important role for executing ADAS features such as automated braking, steering assistance and displaying critical information to drivers. |
| 4 | Processors | ARM A15, ARM M4, C66xDSP are used for general purpose computing, real time control and processing in embedded system and handling digital signal processing task. | These processors provide a heterogeneous processing capability, allowing the system to handle a variety of task efficiently and DSP tasks, enhancing the system’s versatility and performance |
| 5 | Memory | 2.5 MB L3 RAM store critical data and instructions that need to be quickly accessed by the core processor. DDR2/3 32b w/ECC primary storage for data and programme code. | ECC ensure reliability by reducing the risk of data corruption. Data stored in RAM is protected against errors, maintaining system reliability. |
| 6 | Vision Acceleration Pac  (embedded vision device) | Vision based applications | Programmable, Off-mainframe processor, Low-latency |
| 7 | Video Front end | helping in park-assist and video assistance with high accuracy | Has front camera, surround view, sensor fusion, image enhancement systems |
| 8 | Display subsystem | ADAS display, surround view, infotainment and driver monitoring | FHD Video support, 3 video and a Graphic overlay with advanced 3D video processing systems |
| 9 | Video Codec accelerator | Real Time video analytics, efficient data handing and transmission | FHD support and integration with other systems |
| 10 | Graphics Engine | HD view support for all video sources and driver monitoring | 3D graphics processing, 2D graphics accelerator, Multiple overlays |