Week-2 Day-2- Task-1
Submitted by

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S.No.	Block	Purpose	Significance
1.	**ARM-A15**	To handle high-performance computing tasks	Image Processing, Decision Making and Connectivity and Integration with GPS modules, cellular networks, and cloud services.
2.	**ARM-M4**	Real-time control and handling of safety-critical tasks.	Real-Time Control: Emergency braking, and lane-keeping assistance. Integrating data from multiple sensors.
3.	**C66x DSP**	Signal Processing, Algorithm Acceleration, Machine Learning and AI Sensor Calibration and Fusion	Parallel Processing, Energy efficiency, Scalability and Flexibility, support ML models and AI algorithms, support evolving ADAS features and requirements.
4.	**DDR2/3 32b**	Memory Storage and Access,. Data Transfer Efficiency, Compatibility	Performance Enhancement, Cost-Effectiveness, Versatility and Application
5.	**EDMA (Enhanced Direct Memory Acces)**	data transfers between peripherals without involving the CPU, EDMA supports multiple simultaneous data transfers	offloading reduces CPU overhead and allows the CPU cores to focus on executing critical tasks such as image processing.
6.	**Vision AccelerationPac Up to quad EVEs**	Object detection, classification, tracking, and image processing algorithms crucial for real-time decision making in ADAS. parallel processing of multiple vision algorithms	Enhanced Safety Features Scalability and Flexibility Industry Standards and Integration

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7.	**DDR2/3 32b w/ ECO**	Memory Storage and Access, Energy Efficiency and Reduced Power Consumption, Environmental Considerations	Performance and Reliability, Sustainability and Corporate Social Responsibility (CSR), Cost Savings
8.	**Watchdog Timer (WDT)**	WDT's main function are Fault Detection and Recovery, System Integrity Maintenance, Preventing System Hangs	System Reliability and Safety, Monitoring System Health
9.	**Connectivity and I/O**	To connect the SoC with other part of car	It offers UART, I2C,SPI etc. communication protocol. It also offers GPMC for external memory interfacing, McASP for DSP and multiplexed streaming.
10.	**Graphics Engine SGX544**	Efficient power management and image quality improvement	Popular graphics support and compute standards as OpenGL ES 2.0, DirectX9_3, Renderscript and Filterscript.
11.	**Video frontend**	Capturing,processing and converting signals from various camera and sensors in vehicle	Contains ADC,video signal processing,image sensor interface,data compression,synchronization,image scaling and resampling
12.	**Video Codec Accelator IVA HD**	RVC or Animation in one single Jacinto/TDA	Uses open source gstreamer framework for any multimedia player use case.
13.	**Overlay**	Information Layering: Contextual Display Enhanced Perceptio	Safety Enhancements Navigation Aid Driver Assistance Personalization
14.	**DVOUT HDMI**	Digital Transmission, High Definition, Compatibility	Quality and Clarity, Single Cable Solution, Versatility
15.	**Display Subsystem**	Overlay Functionality, Graphics (GFX) Pipeline, Video Pipeline	Integration of real-time data and visual feedback, supports complex rendering tasks.
16.	**System mailbox**	Ipc,task synchronization,data exchange between components	Contains control structures for data management,

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			synchronization mechanisms for multiple processing