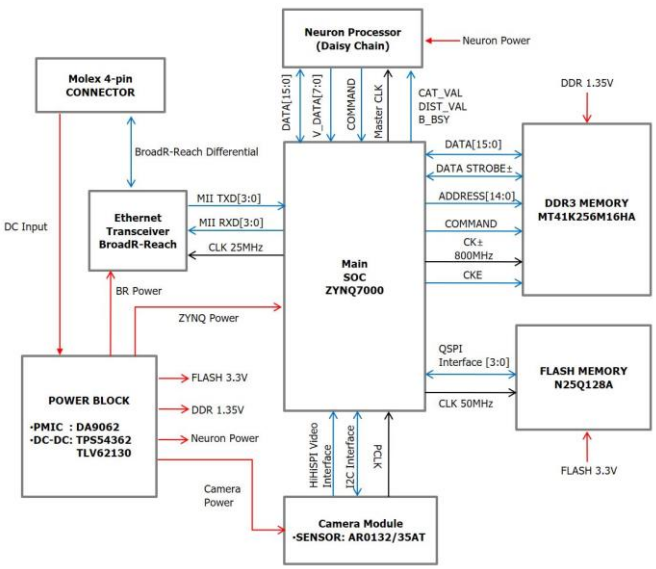
Automotive Vision Sensor
Driver Monitoring System

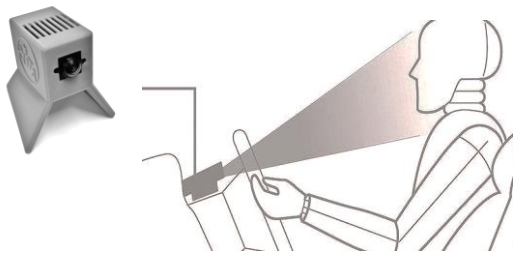
❑ Features

- The alarm level of the driver's attention is estimated using computer vision based image processing and RBF neural network.
- This technology detects the Gaze, Eye and Nose ROI areas on the driver's face and measures the degree of fatigue and concentration to generate an alarm or signal for other machine controls.
- RBF(Radial Basic Function) neural network to monitor driver fatigue by processing Gaze and Eye and Nose position and eye state classification algorithms.
- First, after detecting the Gaze of the face, the ROI region of the Eye is positioned. Then, the eigenvector relation for the features of the Eye region is extracted and input to the RBF neural network to classify the Eye states.
- This can be achieved by securing many driver's data while driving and constructing a Knowledge Database, which can be used to distinguish more accurate states through the learning phase.

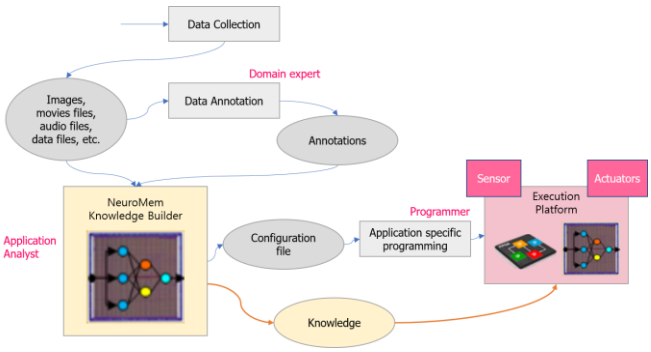
❑ BLOCK DIAGRAM



❑ DMS Camera Sensor

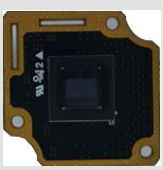


❑ Neuron Processing using Knowledge Builder



❑ DMS Evaluation Kit (Xilinx ZYNQ)

❑ Modular Camera for DMS Application

ATUS Modular Camera (38mm x 38mm)						
						
Lens (M12, IR FLT)	**Sensor** (ASASHM_V1)	**ISP** (ASAIPM_V1)	**SOC** (ASCZ20_V2)	**PMIC** (ASBPMIC_V1)	**Neuron Proc.** (ASBNM_V1)	**BR-R PHY** (ASBRN_V3)

https://youtu.be/zEYH-V9mxyE