

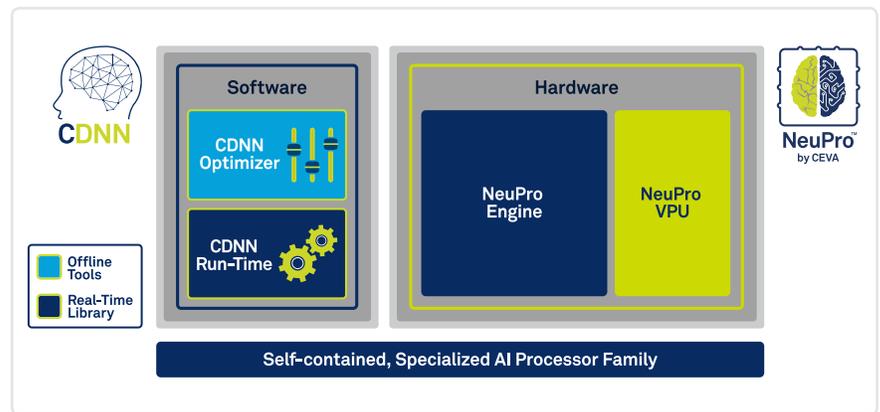
# Neural Network Inferencing Compiler Graph for CEVA-XM and NeuPro AI Processors

**CEVA Deep Neural Network** or in short **CDNN**, is a comprehensive Compiler Graph that simplifies the development and deployment of deep learning systems for mass-market embedded devices. The CDNN Compiler Graph includes the CEVA Optimizer and the CDNN run-time framework.

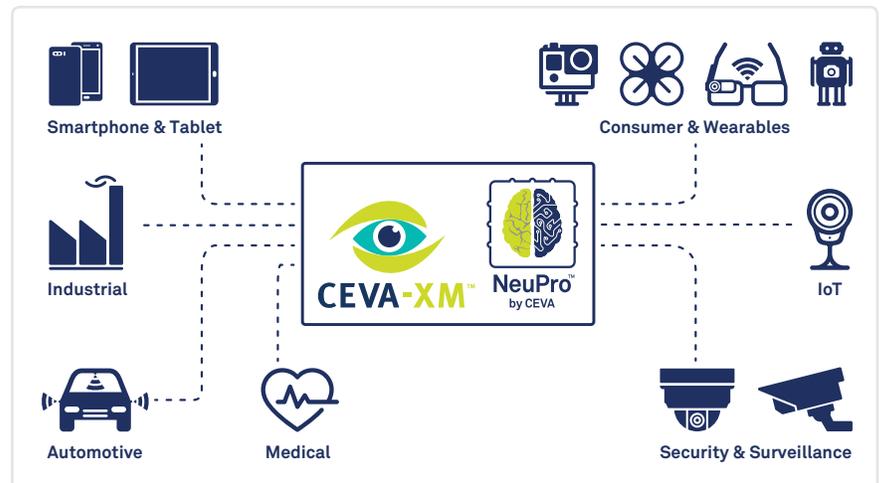
## Key Benefits

- Automatically converting offline pre-trained neural networks to real-time embedded-ready networks for CEVA-XM and NeuPro AI processors
- Enabling real-time high quality image classification, object recognition and vision analytics
- Delivering the flexibility to support various neural network structures, including any number and type of layers
- Greatly reduced memory bandwidth for any network
- Utilizing powerful hardware engine to maximize the processing throughpu
- Mature and robust solution supporting over 130 NN
- Fully optimized for CEVA-XM and NeuPro AI processors

## NeuPro AI Processor



## Target Markets



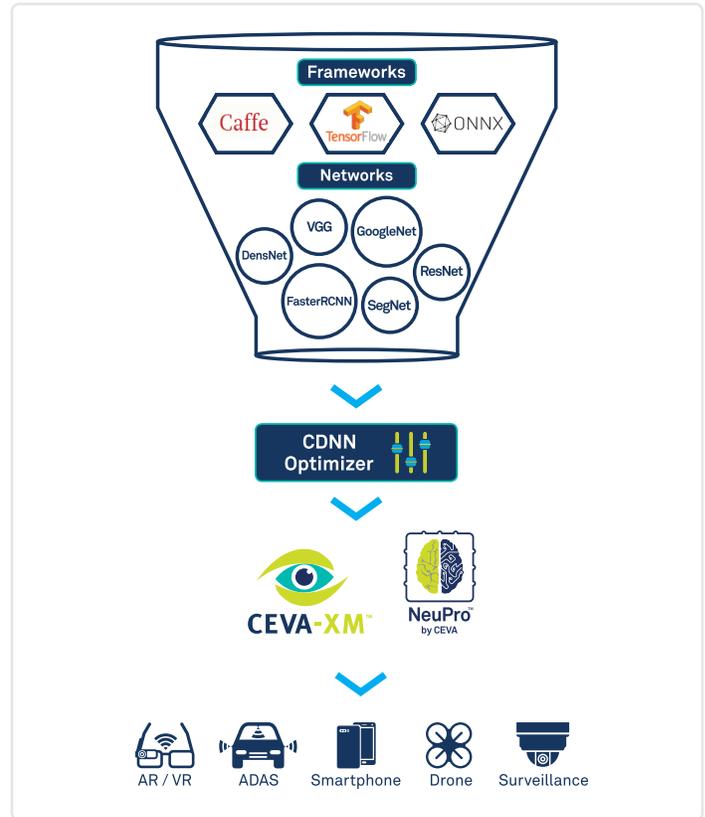
## Key Metrics

- > Precision optimization (FP32 to INT8/INT16)
- > Layers and Tensors fusion
- > Memory and bandwidth optimizations
- > Layer Dispatching
- > Multi-stream execution
- > Retraining INT8/INT16 (Backward propagation)

## CDNN Real-Time Software Framework

Advanced real-time Neural Network Software Framework to Accelerate Machine Learning Deployment in Low-Power Embedded Systems

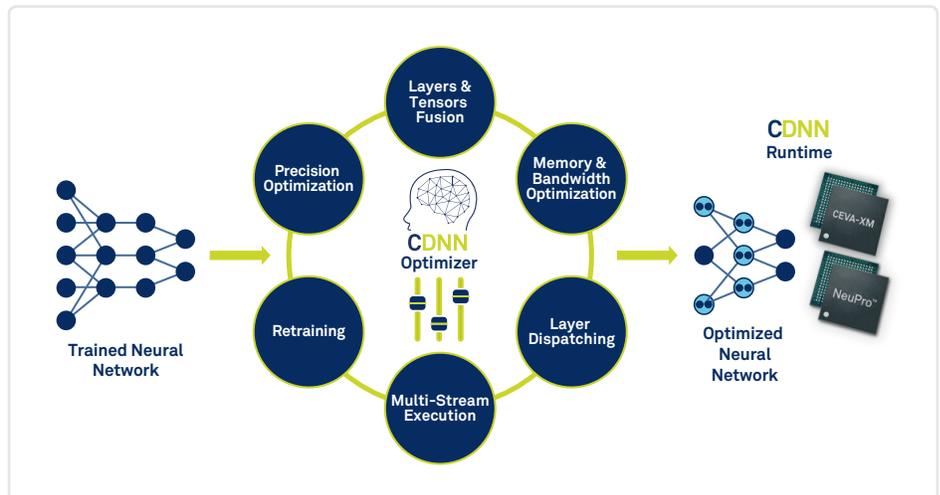
- > The CDNN real-time neural network software framework is harnessing the processing power of the CEVA-XM and NeuPro AI processors to implement deep learning applications.
- > The CDNN enables localized, deep learning-based video analytics on camera enabled devices in real time.



## CDNN Work Flow

### CDNN Optimizer

- > CDNN receives a pre-trained network model and the relevant network weights as inputs from the offline training (e.g. “Caffe”, “TensorFlow”, ONNX etc.), to the proprietary CEVA Optimizer which then automatically converts the network into a real-time network model.



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