

Tokyo Motor Show 2017

DENSO to develop first-of-its-kind high-performance semiconductor Data Flow Processor, offer faster in-vehicle recognition processing

KARIYA (Japan) — [DENSO Corporation](#), one of the world's largest automotive technology, systems and components suppliers, plans to develop a high-performance semiconductor, that will advance the field of automated driving technology. Called the Data Flow Processor (DFP) it is a next-generation, high-performance semiconductor processor that offers faster recognition processing while allowing for lower power consumption at higher speeds. The DFP will be produced at NSITEXE, Inc., a new company DENSO established in August 2017 to design and develop semiconductors. DENSO aims to commercialize the DFP by early 2020

DENSO's DFP sets the bar for processors of its kind with unique characteristics different than those of conventional central processing units (CPUs) and graphic processing units (GPUs). Semiconductor processors used in automated driving are required to perceive and process critical information instantly and perform human-like reflexive decision making, which includes receiving data from traffic recognition sensors, communication devices and other road-safety systems.

Conventional CPUs can handle complex calculations, but their current processing is relatively slow. Conventional GPUs can simultaneously execute large numbers of similar calculations for image processing, but they are not ideal for complex calculations. The DFP optimizes the technologies of both while using lower levels of power.

The DFP has multiple processing cores capable of efficient parallel processing of different calculations by area, meaning it can reflexively perform multiple complex calculations. Moreover, the DFP can instantaneously optimize calculating areas depending on the amount and content of information, which reduces power consumption and heat generation. These advantages enable the DFP to meet the requirements for in-vehicle usage.

By taking advantage of in-vehicle semiconductor technologies that have been refined over many years, DENSO remains committed to developing advanced technologies and to helping achieve a safe and secure automotive society.

*For more information about new company, go to

<https://www.denso.com/global/en/news/news-releases/2017/20170808-g01/>

Data Flow Processor (DFP)

