

ABSTRACT**A THREE LAYER SYSTEM IN PACKAGE AND A METHOD OF ENABLING
THEREOF**

The problem of low-speed interconnections and limited processing capacity is solved by using a heterogeneous integration of various components along with high-speed transceivers and processors that are coupled with memory. The opto-electronic engine 100 comprises three layers: a first layer 101 housing processors 104 and optoelectronic connectors 707 surrounding the processors; a second layer 103 connected to the first layer, featuring first memories 709A and electronic components 124 on its first surface 123 and different memories (709B) and components (126) on its second surface 125; and a third layer 105 connected to the first or second layer, possessing different electronic components (128) on its first surface 127 and distinct components (130) on its second surface 129. Each layer presents a unique set of electronic elements, allowing for diverse functionalities and interactions within the opto-electronic engine.

Figure 1