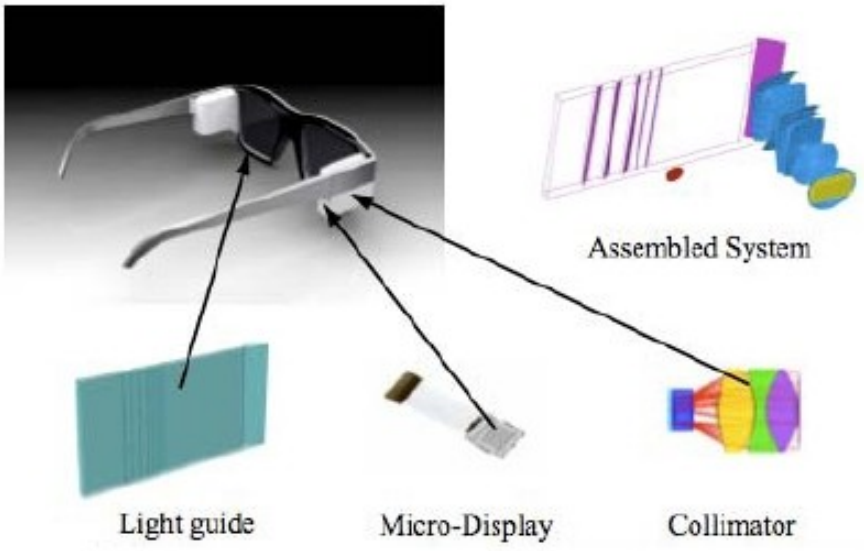
Optinvent Advances See-Through Personal Display

Optinvent (Rennes, France; www.optinvent.com) has advanced its see-through personal display technology, last discussed by Insight Media in the August '08 issue of *Mobile Display Report*. The second-generation Clear-Vu demonstrator, illustrated below, provides better ergonomics and superior optical performance compared with earlier versions. It is configured with Kopin's 0.44-inch VGA AMLCD imagers, though it can also accommodate AMOLED or LCoS imagers.

The Clear-Vu system architecture is illustrated below. The image presented to each eye is generated in a microdisplay, which is mounted on the eyewear temple. The imager output is coupled via proprietary collimating optics to a transparent light guide (less than 2 mm thick). The light guide, a monolithic molded plastic structure, presents binocular images to the wearer, superimposed on the real-world view. It maintains photopic transmittance in excess of 70%, while also enabling wide field of view (FOV) – capable of being as large at 55 degrees, according to Kayvan Mirza, Optinvent cofounder and CEO.



Recent improvements, including a new light guide manufacturing process, have led directly to superior image quality and enhanced performance, including an extended eye motion box (EMB) – to 10 x 6 mm. A large eye motion box is significant, since it permits improved comfort and less design emphasis on precise alignment and control of interpupillary distance.

System FOV is directly linked to the light guide design and is independent of the microdisplay used (AMLCD, OLED or LCoS). Though different-sized imagers require unique collimator optics to achieve the optimal field of view, they can be interchanged directly without any other component changes, at the expense of some reduction in FOV.