

# The 5<sup>th</sup> screen by ImageDisplay® & EASL liquid memory

## Green ID™ modules enabling PolyDisplay® & Vindaugé™ concepts

Our concept of Digital Light Management exists as PolyDisplay® to look at, and Vindaugé™ to look through. Both versions may use one, two or many ID™ modules arranged in a SmartGrid® matrix.


**Vindaugé™**
**PolyDisplay®**
**SmartGrid®**

ID™ modules filled with our unique liquid, needs energy only for changing positions of molecules. Text, graphics, shading, hiding and revealing are provided by applying energy only for alterations. An Image stays polystable, in any position, for ever. The liquid provides optional read-back to the computer, because capacitance is analogue to molecular position; an optical, polystable liquid memory named EASL DMD™ (Electrically Addressed Smectic LCD for Daylight Memory Displays).


**EASL DMD™ liquid**
**ID™ module**
**AutoDisplay® VMS by 2 & 4 ID™ modules**

Our technology is developed over 25 years, and enable a new paradigm of displaying; by single, arrays and matrix of ID™ modules, and whole systems of such ID™ module terminals. When used outdoor and when information is changed seldom, power supply may be achieved by solar panels for integrated Solar Displays. Each ImageDisplay® and pixels within that display may be controlled for shades of transparency, from clear (90 %) to full scatter. This provides a bright display in direct sunshine, with infinite memory, no other energy, and unlimited viewing angle. These properties are unique, compared to all other flat panel technologies of today, and may be used for display, sunlight protection (with up to 50% heat reduction), camouflage, projection and much more.

In the period from 2006 to 2009, a cooperation project between Fjord International AS, Saab AB and the Scandinavian Road Authorities have been carried out, where AutoDisplay® VMS (Variable Message Signage) has proven a very suitable application area. This includes both traffic signs and large boards. The technology is field tested in real traffic conditions in both Norway and Sweden.

The market for traffic signs alone, is estimated to be 5 billion EUR over the next 5 years, based on experience with LED traffic signs. AutoDisplay® VMS may complete, replace and enlarge this, as LED may be used for night time and bright signalling as backlight or sidelight. The ID™ modules may also fit small shelf displays (European & US market of ESL is estimated to 3,5 billion EUR/year), large information boards (JCDecaux/CC have over 2 million Abribuses), and even whole facades. Energy and information requirement are low, so any radio or line connection may provide signals and even power supply. This opens for a new and better Cluster of Civil Security.

The potential application market is similar to the market of today's LCD and plasma technologies that was non-existing 25 years ago, and is 130 billion EUR per year as of today. In addition, we expect a large market for dynamic windows and facades, in both buildings and vehicles.



The 5<sup>th</sup> screen – after cinema, TV, PC & Mobile



Real-time digital visualization & warning for Civil Security

EASL requires less materials and process steps for ID™ module production than traditional LCDs, is superior in daylight readability, and has low environmental footprint. The only practical limitation of today is the speed of change, which is between 20 and 250 milliseconds, ruling out video.

The development within electronics should make profitable industry possible, and search the best suitable owner(s) and partner(s). We will produce the liquid as supply from Norway. Glass based industry is foreseen in a combination of European and Asian partnering perspective, and we search for a nation/company, that will be ready to take a leading position in this new market possibility. Business opportunities for glass based solutions are demonstrated, and further possibilities exist within plastic foils, “paint” and vertical integration to solar power and processing.

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