

# Future-proof VMS

Variable message signs will be an integral element of ITS for many years to come – so road authorities should choose the safest, most environmentally friendly technology

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Intelligent transportation systems have created a completely new world for traffic safety and the management of traffic flows. In this new world the need for flexible and cost-efficient systems to communicate with road users is enormous.

As data-collection technology develops and becomes more economical, the need to display correct information, gleaned from the data, to drivers increases.

For example, it is important for drivers to be informed about current and upcoming hazards, such as wind speeds on bridges, the presence of ice or snow on roads, accidents and road works, so they can make more informed decisions about their journeys.

### Data sharing

A variable message sign (VMS) is an ideal choice to communicate such information to drivers instantly. It is therefore highly important for road authorities to choose the most efficient, versatile, environmentally friendly and safest VMS solutions.

The Triplesign prismatic VMS does not consume any power when displaying information, unlike LED VMS, which require constant and significant power to display messages.

It may display the same image or message for long periods, but the Triplesign VMS is also always ready to display new information – in a matter of seconds – when it receives new

Right: Triplesign VMS can now be powered using only solar panels



**1.5W**  
The average energy consumption of the Triplesign VMS

data, all while maintaining low power consumption.

Triplesign has developed communication systems for integration with V2I and I2I networks, as well as traffic management centers. In developing these systems, Triplesign has managed to reduce the power consumption of a new remote

communication system drastically. This breakthrough reduces the average power consumption for a Triplesign VMS in standby ready for command to 1.5W.

### Solar power

The sign is able to operate 24/7 almost anywhere in Europe, equipped with only a 30-70Ah battery and a 20-60W solar panel. It can be installed into existing traffic applications in a matter of hours and

does not need to be connected to a power supply. It therefore greatly reduces time and costs for road authorities wishing to deploy it as no digging for the electric supply is needed - keeping risks and costs of road work to a minimum.

It is very important for authorities to take responsibility for their environmental impact and they must work toward minimizing their carbon footprint. Triplesign VMS integrated into ITS solutions can help minimize carbon footprints, because installation does not require heavy machinery and the sign itself does not consume power from an external source. The VMS sign's role in traffic management and helping to make traffic more efficient can also help to reduce the carbon footprint.

### A standalone system

The Triplesign prismatic VMS is safer than traditional LED VMS, because they rely on an external power source – and if the power source disappears, then the sign is unable to display information.

The top graph shows a comparison between the maximum power consumption of a traditional LED VMS (which uses 600W/m<sup>2</sup>) and a Triplesign VMS with a maximum power consumption of 2W, regardless of the display area.

VMS signs will be required in ITS for as long as human drivers are on roads. The door is now open for developments to be made in V2X and I2I in ITS applications. Triplesign is now focusing on co-operation with other ITS-companies to deliver complete solutions that can be easily and efficiently integrated into existing transportation systems while adding intelligence and functionality to road networks. ■

Top: The maximum power consumption of the Triplesign Prismatic VMS compared with a full matrix LED VMS, 600W/m<sup>2</sup>

Middle: Values are based on an average of the solar irradiation for the largest capitals of North Europe

Below: Battery capacity needed is based on daily power consumption doubled

