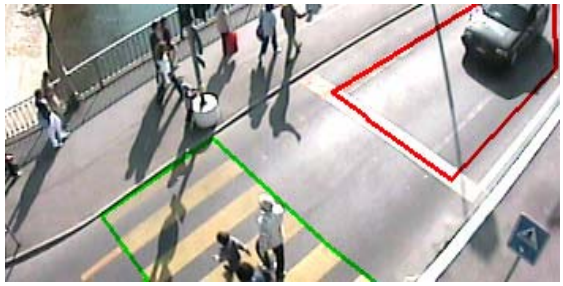
**… cameras benefiting the individual …**

**viacam** is transforming life at intersections.

At a time of budgetary restrictions, it is essential to try to get the most out of our infrastructure. **viacam** solutions are joining this quest and aim to make it easier to take account of road traffic and pedestrians, with the result that traffic is smoother-flowing and at the same time has more respect for the individual.

Conventional vehicle detection technology uses detection loops set into the road surface. Civil engineering works are needed for their installation, as well as regular maintenance. These loops are in fact located in the vehicle braking zone, and they are liable to breakage as a result of deformation of the road surface. This technology, which is reliable in the detection of vehicles, is not capable of detecting the presence of pedestrians as well.


However, taking pedestrians into account proves to be beneficial in more than one respect. By replacing pedestrian push-buttons, automatic detection avoids the difficulties in reaching them experienced by the disabled and people whose hands are occupied with their toddlers or their bags. There is another advantage. Imagine an elderly person or a school class crossing an intersection. Would it not be beneficial to be able to adjust the period of the green light to their needs? That would mean much less anxiety for the people involved. Moreover, is it not annoying for a motorist to have to stop at a red light because a pedestrian has indicated his need to cross, and to observe that the pedestrian has crossed at a run, or even on the red? Avoiding such situations contributes to improving the smoothness of the traffic-flow.



The technology offered by **viacam**, based on visual data and therefore the use of cameras, demonstrates its flexibility as much in the installation of the equipment as in the use of the data (images). The equipment is usually installed on existing posts, also making use of existing connections. It is possible, technically, to detect pedestrians and vehicles on several lanes with a single camera. The detection distances are sufficient to provide, for example, the "green wave" so popular with motorists and so sought-after by traffic engineers.

Supporting the camera is a computer with image processing software which analyses the views. Zones are defined by the traffic engineer according to the requirements of the intersection, and the occupation status within each zone is detected. The engineers who developed the algorithms had to deal with the many situations which arise when taking images in the open, in all weather, by day and by night. This is quite apart from disruption caused by spiders, frost and certain human behaviour. It is not without reason that the solution arrived at is the result of more than five years' co-operation between companies and academic institutions. Most notable is the involvement of the group led by Professeur Heinz Hügli of the *Institute of Microtechnology (IMT)* at the University of Neuchâtel and that of Professeur Cédric Bornand of the Embedded Information Systems Institute at the School of Business and Engineering Vaud *(HEIG-VD).* The development has been co-financed by the CTI (Agency for the promotion of innovation, Federal Office of vocational training and technology).

In its products now on the market, **viacam** offers a system equipped with an on-board PC. A version integrated within a DSP (digital signal processor) will appear in 2006, with the advantages of a reduced size and energy consumption compatible with the use of batteries. From then on, **viacam** will offer portable traffic measuring equipment for hire or sale.

In the course of its activities in the detection of vehicles and pedestrians **viacam** is involved in co-operation with firms of traffic engineers, companies responsible for the installation of intersections and state organisations linked to transport in Switzerland and abroad.
Several other areas of activity are under research within the company, including secure access, public transport, surveillance, etc. Partnerships with companies which can offer **viacam** complementarities in the fields of marketing, sales or technology are under negotiation.

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