

### Application Study – AGD 645 Pedestrian Detector Enhanced Detection with larger pedestrian wait areas

#### Requirement

As 'smart' cities work to manage congestion and necessarily become less vehicle friendly, the need to move more pedestrians safely across higher traffic densities with even more efficiency has grown. As volumes have expanded, pedestrian wait areas have needed to grow and require ever-larger detection zones.

Detectors in larger zones need to reliably detect people and bicycles, and mask out background clutter such as bollards and fences. They must also cope with diverse lighting changes such as sunlight, cloud, rain, shadows and headlights and dependably ignore unwanted distractions such as birds, crisp packets and puddles.

Building on the success of its 640 Pedestrian Detector, which has delivered reliable detection over a 3 x 2m zone across 15,000 installations worldwide, AGD saw the need to develop a product that would detect within a larger 10m x 3m wait area. A pedestrian detector that would not just have improved detection over a larger zone, but that could connect straight into 'smart' city IP networks for real-time intelligence.

#### Solution

The result is the first of AGD's IP-capable Traffic and Pedestrian Control detection solutions, the AGD 645 Pedestrian Detector features a unique to market WiFi Touch-setup. The 645 is an optical platform that will make crossings safer by delivering robust detection within a larger zone than was previously possible with multiple units comfortably covering the new style 'super-crossings'.

The new 645 uses powerful 3D HD imaging technology for accurate well-defined detection and it's quick to configure with AGD's secure no-software WiFi Touch-setup. It is a high performance product that processes information on board with new chip-set and sophisticated algorithms for automated decision-making providing ultra-reliable detection. Being IP-capable allows the 645 to feed information and video down the wire straight into ITS control rooms to empower truly informed decision making.

More than this, though, the IP capability offers extra functionality, which enables control room operators to see what is happening on the crossing in real time while the 645 continues to operate. This capability will become a requirement of all future detection solutions.

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- Larger 10m x 3m detection zone
- IP and Real-time video capable
- Simple WiFi AGD Touch-setup
- AGD 3D HD Stereo-vision
- Compatible with New & Legacy Controllers
- Quick-mask Zone Tool



Traffic & Pedestrian Control



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**Outcome**

With improved safety addressed as a first priority, thanks to a larger enhanced detection zone and its IP communications capability, the new 645 will meet current and future demands. It is both easy and very quick to deploy - bringing substantial savings on installation costs.

**Trials Exceed Expectations**

The AGD 645 has undergone rigorous trials and results have exceeded even AGD’s expectations. Testing at pedestrian crossings across the UK have shown that the 645 has an outstanding capability to detect people while also rejecting shadows and small objects such as birds walking through the zone.

A special trial to demonstrate the capability of the low light sensitivity sensors has also been undertaken at a very poorly illuminated crossing (<18 lux). This trial demonstrated that even in these near dark conditions people were still accurately detected, and crucially when vehicles did drive by headlights were safely ignored.

Finally, the robustness of the AGD 645 has been further highlighted by successfully working with snow and also in pitch darkness with the aid of a near-infrared illuminator.

*Richard Booth. Senior Design Engineer AGD Systems*

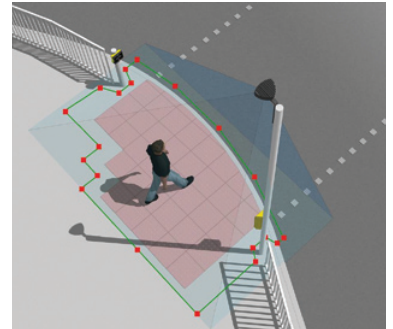
By design, the 645 also delivers on the important total-cost-of-ownership issue. Designers, integrators and stakeholders are used to the low-maintenance, long-life and cost-effectiveness of AGD products, but the new WiFi Touch-setup of the 645 is a game changer. It makes the complex simple. The three-step Touch-setup allows installers to: (1) name device, (2) select zone, and (3) click to calibrate – using a WiFi-enabled smart phone or tablet to securely ‘talk’ directly to the device. It can be adjusted for zone changes just as quickly in the same way.

**The Future**

The future of the 645 is clear, with many interesting developments designed into the product’s internationally focused road map. For example, the ability to radically improve efficiency by integrating with the ‘smart’ radars AGD is investing heavily in. Combining smart Pedestrian Detection devices with Non-Intrusive Traffic Management radar reduces intersection infrastructure costs, installation time and road space occupancy.

**AGD, product solutions for Intelligent Traffic Systems**

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AGD Quick-mask ‘zone’ tool

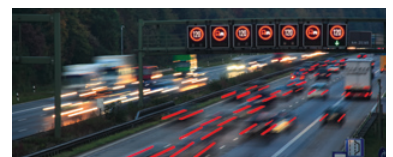
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Highways



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