Using 'People Counters' in Site Design to Determine Pedestrian and Cargo Throughput

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One uncertainty in the site-design process for the Second Line of Defense (SLD) program is the amount of pedestrian and vehicle traffic through the chokepoints where radiation portal monitors (RPMs) will be installed. Currently the SLD team is only able to approximate this data by direct observation during brief, infrequent, visits to the sites during initial site surveys. We propose to install 'People Counters' - which can be used for both pedestrian and vehicle traffic - to quantify traffic levels over longer periods of time (days, weeks, months). This more reliable throughput data will significantly improve programmatic ability to predict the success of installations. We recommend at least two weeks of data from each counter, although we can work with less – and as always, more is better.

The benefits of knowing the traffic flow with increased accuracy include: determining the required number of RPMs, determining the appropriate level of traffic control (man traps, turnstiles, drop bars, etc.), and to insure SLD is making the best recommendations based on real-world factors on a case-by-case basis. These systems will be installed in doorways and across lanes of traffic, essentially providing the same data as the RPM occupancy sensors, prior to installation.

The counters we recommend installing are simple infrared break-beam counters. Two sensors are installed on opposite sides of a hallway and the count is incremented as people walk through the break-beam. The counters can easily be transported in luggage and installed at the site by anyone on the SLD team. There are no electrical cables, wireless access points, or databases. The sensors are simply attached to the wall and operate through battery power. All the data is stored in the sensors until it is extracted directly to Microsoft Excel via USB cable. The simplicity of these counters allows them to be utilized with minimal impact to the regular site survey operations.

The initial cost for this technology is small (about $1000 for each counter) and the increased accuracy of the data will pay dividends in a number of ways. This data will help Country Manager's deploy fewer systems where they are not required, pay for fewer return visits for alterations or additions, and increase confidence among stakeholders. Furthermore, the counters are both commercial-off-the-shelf systems and reusable.

We propose to purchase a set of counters for a pilot installation during a site survey. The counters can be placed during the initial site survey and later collected during the scoping meeting visit. This pilot installation will allow us to indirectly observe the actual throughput of the site and compare this with what is observed during the site survey. By using these counters the SLD program has the opportunity

to more accurately assess the needs of the site and be more confident the installation will function as expected and be sustainable.

One question that we are not in a position to answer is “who is the appropriate owner of this technology”. If SLD owns the equipment, it can be reused for any site where throughput data is needed (this is the cheapest and most philosophically defensible option). If on the other hand, there is some problem with transferring ownership between Labs, contractors, and USG then perhaps the equipment can be left behind to the country.