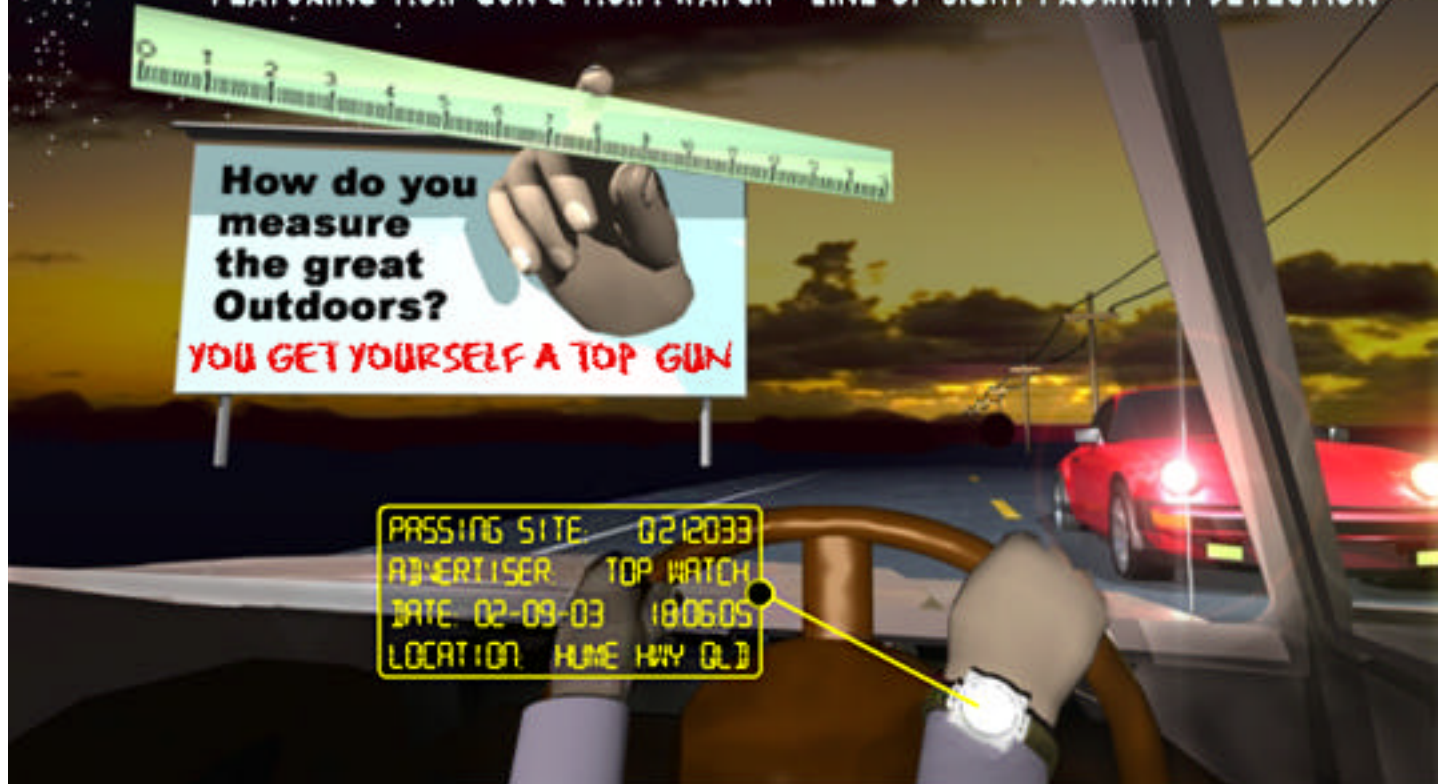


# 'The Out-of-home People-meter' Project

FEATURING T.O.P GUN & T.O.P. WATCH® LINE-OF-SIGHT PROXIMITY DETECTION



## Open Invitation to join the Steering Committee of The Out-of-home People-meter (TOP) Project

Includes additional Technical FAQ

**A Discussion Paper - by Geoff Mills ::** [MFA Marketing, BA, GradDipBusAdmin, DipTeach]

The lack of measurable audience metrics for out-of-home advertising, is considered by many to be a major obstacle to the industry. In order to plan their media campaigns, advertisers need measurable, specific, audience intelligence - which to date, the outdoor advertising industry has found difficult to provide.

It is the contention of this Discussion Paper that with the recent introduction of low-cost 'personal Global Positioning Satellite and miniaturised RF Proximity Detection technologies' the opportunity now exists for the Out-Of-Home Industry to cost-effectively provide accurate 'people-meter' style audience measurement services even more detailed than those currently employed by television and radio media.

The working title of these proposed services will be TOP (The Out-of-home People-meter) and the preliminary findings of this Discussion Paper suggest that such a service will be able to provide...

- both quantitative and qualitative audience metrics
- detailed audience measurement of ALL forms of outdoor media (including billboards, street furniture, transit media, mobile media, kiosks, banners, etc)
- detailed demographics (age, gender, education, salary level, etc) of all measured out-of-home audiences

This Discussion Paper suggests the processes, technology and budgets required to implement such a service and is an open invitation to all those involved in the Outdoor/Out-Of-Home Advertising Industry in Australia to join the Steering Committee charged with investigating the potential for proceeding.

## Basic Implementation/Technology Summary ::

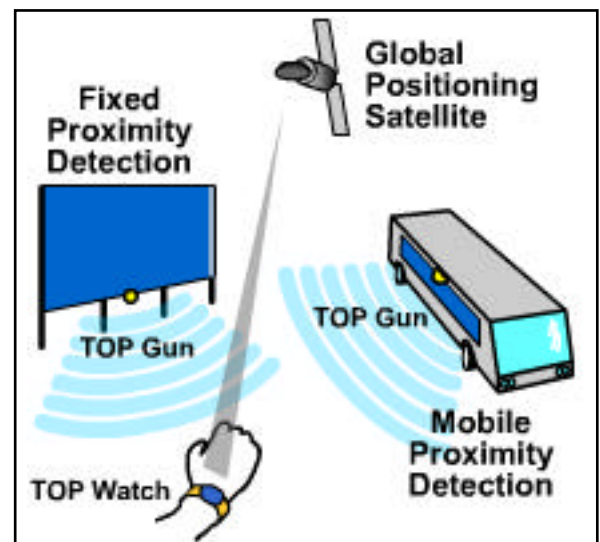
**1. RECORDING OF OUT-OF-HOME MEDIA ::** A list of outdoor advertising media will be correlated into a master NOMD (national outdoor media database). The data collected will include the specific type, size, supplier, advertiser, geographic location(s), RF encrypted ID key and 'exposure field' of all registered plant (including the timed exposure fields of transit media, etc). Most of this data will be provided on a voluntary basis by the supplying outdoor media contractors or agents. Registered plant will be equipped with low cost, low power License-Free RF transmitter (a T.O.P. Gun) broadcasting a unique ID key and timecode.

**2. SELECTION OF SURVEY GROUPS ::** Small sample groups of consumers will be carefully selected to statistically represent the audience makeup of each geographic territory. It is assumed that the same type of statistical market research selection criteria, enlistment processes and payment scales employed by television and radio surveys will be used in the selection of the 'out-of-home media survey audiences'. Statistical data will of course be collected on each survey participant. The exact number of survey participants within each designated territory will be a mathematical proportion of the total population of each territory and be sufficient to obtain 'statistical accuracy'.

**3. SUPPLYING OF T.O.P. Watch TECHNOLOGY ::** Each survey participant, will be equipped with a personal RF receiver and GPS device (in the form of a wrist watch). Since surveys will be conducted one territory at a time, only sufficient TOP Watch units to cover the number of participants in any particular territory (probably between 1,000 and 2,000 individuals) will be required at any one time. The participants of the survey agree to retain the TOP Watch on their person for the duration of the survey and in return will be paid a pre-agreed sum for the one week (typical) duration of the survey.

**4. RAW QUANTITATIVE DATA COLLECTION ::** Once every 20 seconds, throughout the duration of the survey, the geographic location of each of the survey participants, will be logged by the **T.O.P. Watches** together with ongoing 'RF proximity detection' data received from various **T.O.P. Guns** they encounter and a PEL (Personal Exposure List), indicating which out-of-home media they were 'exposed to' will be generated for each survey participant. *(The term 'Exposed to' here is recorded as a score of 1 point for every 10 seconds - to a maximum of 5 points - that a survey participant is defined as being within the 'line-of-sight exposure field' of any plant listed in the NOMD. In the case of a 'hi-way billboard location', if a participant was driving by at a standard speed in the appropriate direction, the result would be a score of 1 point. If a survey participant were sitting at a bus station for several minutes the result might be a score of 5 points for any 'observable' street furniture signs present at the bus stop. Any truck, taxi, bus, etc, that is T.O.P Gun equipped that passes by a survey participant - close enough for the participant to see the media - will also register a 'hit' for that plant. If the 'exposure' was for less than 10 seconds, the result would be a 'fraction of a point'. The purpose of recording 'points' is to establish 'frequency data'.)*

**5. QUALITATIVE DATA COLLECTION ::** On a random basis (so as not to induce the practice of participants paying more attention to outdoor advertising than they otherwise might), individual participants of the survey will be occasionally asked to indicate (via their personal TOP Watch) which of the advertisements on their recent PEL they actually recall seeing. (Participants will respond using a qualitative scale: 0 being 'not recalled at all' to 5 being 'paid particular attention to'). No survey participant will be required to recall any more than the LAST 10 or 20 media items on their 'PEL', so this process should take no more than about 2 minutes and no participant will be required to complete the survey more than once or twice. The 'qualitative' data captured from these surveys will be added to the 'quantitative' data recorded in Step 4 (above).



**6. COMPILATION & CORRELATION OF ALL DATA ::** At the end of the survey, computer programs will extrapolate all recorded data, to provide reach, frequency and qualitative ratings on all plant in the survey area. This data will be correlated with known statistical data for the geographic territory to produce the Official TOP WATCH Ratings for the territory for that period.

**7. CONCLUSION and ROLL-ON OF SURVEY ::** At the completion of the survey period, the TOP Watch devices will be returned by the survey participants who collect payment and complete a short final written survey. At this point, the survey for this territory/period is deemed concluded and the survey moves on...either surveying a different group of participants in the same geographic territory...or surveying a new geographic territory altogether. The result of this 'rolling survey' process, is that over time, multiple markets can be surveyed (or larger numbers of participants in each area can be surveyed) at reduced cost. Unlike television and radio markets which are quite volatile and need to be continually surveyed to reflect the competitive forces at play, the out-of-home media market is considerably more stable and it is therefore assumed that individual territories need only be surveyed once or at most twice a year.

#### **SUMMARY ::**

The main benefits of a proposal like the one outlined above are that apart from being able to measure the performance of a wide range of out-of-home media, it offers the highest degree of detailed audience intelligence at the lowest cost. (GPS technology alone, does not provide the level of accuracy required - especially in small hand-held 'personal devices' - nor does it adequately cover the concept of 'line-of-sight' - nor does it effectively deal with the issues of indoor media and transit media. It DOES however, support the RF 'proximity detection' technology by providing redundancy and a fail-safe backup that will be used to cross-check and verify the 'proximity detection' data.)

The GPS technology and monitoring capacity required for the project is already being employed in the 'personal security' industry in the US and Europe...it's application for our purposes is simply a matter of re-writing the software and database applications that are applied to the resultant data.

Initial estimates of budgets required to finance such a project include...

|  |                 |
|--|-----------------|
| TOP Watch units :: 1,000 @ \$146 p.a. (+ breakage) = | \$0.17 m        |
| Satellite Bandwidth ::                               | \$0.21 m        |
| Manufacturing Toolup Costs ::                        | \$0.09 m        |
| Survey Respondent payments :: 26,000 @ \$55 =        | \$1.43 m        |
| Management, Admin & Marketing ::                     | \$0.62 m        |
| TOP Gun RF Transmitter Units :: (est 100,000 @ \$16) | \$0.16 m        |
| <b>TOTAL COSTS (Annually Amortised) ::</b>           | <b>\$2.68 m</b> |

Based on the cost estimates above, if the confidence provided by a fully qualified audience metrics 'ratings' service were to generate even a 1% increase in marketshare (\$86m) for the outdoor advertising sector, the net result to the industry would be a better than 3200% ROI.

#### **WHERE TO FROM HERE? ::**

Persons interested in participating in the formation of a Steering Committee for the TOP Project, should contact the author (Geoff Mills) via email at ::

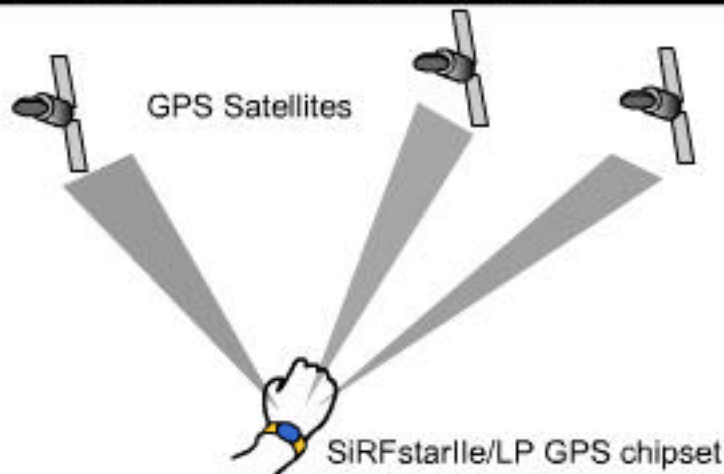
<[geoffm@aus3.com](mailto:geoffm@aus3.com)>

#### **[ADDITIONAL NOTES & FAQ >>](#)**

## Initial Technology Issues and FAQ ::

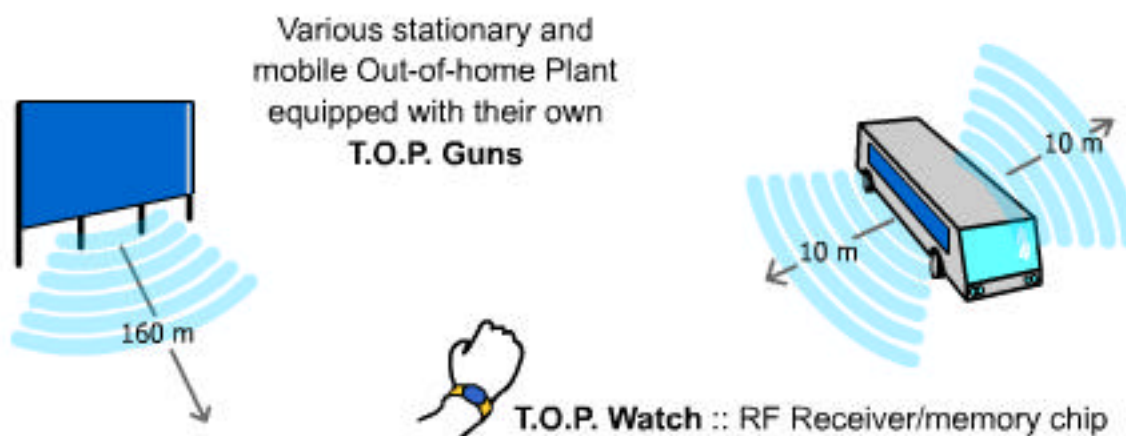
**Why Dual Phase?** :: The selection of a dual phase (GPS and Proximity Detection) method, was based on a realisation that the accuracy of GPS alone (especially when applied to the low powered personal GPS technologies currently available) was inadequate to provide credible data for our purposes.

### PHASE 1 :: The GPS Location Records



- Once every 20 seconds, the TOP Watch containing a SiRFstarIIe/LP chipset module records its exact geographic location (i.e. the location of the survey respondent +/- 5m) into an onboard Flash memory chip.
- On collection of the TOP Watch at the conclusion of the survey, this location data together with other recorded information (qualitative responses, LOSPD data, etc), is downloaded into the NOMD (National Outdoor Media Database) and cross-referenced against known locations of outdoor plant to ascertain 'likely hits' or 'opportunities to view'.
- This data is then cross-referenced against the actual 'Line-of-Sight Proximity Detection' (LOSPD - see Phase 2) and a Certified PEL (Personal Exposure List) is generated for that survey participant.

### PHASE 2 :: LOSPD (Line-of-sight Proximity Detection)



- Stationary and mobile out-of-home plant are equipped with a low cost, extremely low-powered RF transmitter (a TOP Gun) that sets up a controllable 'line-of-sight proximity' field approximating the 'visually observable' field of the plant. The only information transmitted is the date/time and encrypted ID key of the plant. The angle and throw of the transmission approximates the actual 'visual characteristics' of the site. (e.g. Outdoor plant that is not lit can be programmed to drop its field depth to a couple of meters at night.)
- When ever a TOP Watch is within the 'transmission field' of a TOP Gun, the TOP Watch records the duration of proximity and the ID key of the plant. This equates to a 'Line-of-sight Proximity Hit' and implies that the survey respondent has a genuine opportunity to view the Plant's advertising message.

**Why Use GPS at all then?** :: Proximity Detection, though ultimately the most accurate and useful method, is also the hardest to deploy, in that to be able to provide a global service to the industry EVERY single item of plant would need to be equipped with an inexpensive yet properly configured RF transmitter and ID. Though the costs to do this are not necessarily prohibitive, the logistics of doing so are somewhat more daunting. The inclusion of the GPS system allowed us to

1. Instantly deploy a system that can produce interim 'people meter' results, while the LOSPD (Line-Of-Sight Proximity Detection) transmitter network is ramped up.

2. Provide a verification and redundancy system for the more accurate and useful Proximity Detection method, once the LOSPD hardware (transmitter) framework has been installed. (We see the GPS system as an essential component of the 'verification and back-up procedures' required to deliver a 'best practice' service to the industry.)

**Why not use the larger and more accurate 'onboard vehicular GPS systems'?** :: Our objective was to develop an effective 'people meter' system covering ALL out-of-home media, not just those sites observable from a motor vehicle. We also wanted to cover ALL members of a family and develop true 'individualised' demographic breakdowns of audience viewing. Hence a 'personal' people meter system was the only option and that in turn forced restrictions on size, power-drain and accuracy of the available GPS technology.

**Where does the technology for the 'Line-of-Sight Proximity Detection (LOSPD)' process come from?** :: After an exhaustive search for inexpensive yet dependable proximity detection technologies, we decided to build our own based on the least expensive and most commonly deployed data transmission technologies available...License Free Short Range RF (Radio Frequency) technologies in the domestic/industrial bandwidth. Yes the same technology that we use to remotely open a garage door! At the low power required for 'license free' use (under Federal Government legislation), the bandwidth suffers from a range of characteristics all of which by coincidence, suit our purpose...

1. It's very directional and that direction is controllable.

2. It requires 'line of sight' (as do the humans in our survey)

3. Its range is controllable by power output, meaning we can configure a transmitter to broadcast its signal for as little as three meters or as many as two hundred meters.

4. The transmitters (which we call TOP Guns) are available in small chipsets that cost only a few dollars each and can be easily mounted with clock/data generators, (optional solar batteries) in waterproof housings on virtually any out-of-home media...billboards, kiosks, bus shelters and other street furniture, bus sides, taxi backs, building sides, flag poles, bridge sides, etc. It is envisaged, that over time, the cost of adding and configuring the transmitters will become a standard component cost of installing or updating the plant.

5. The power requirements are the same as operating a small (less than 1W) light bulb (in fact, the transformers and power installations required to drop the voltage down to the minuscule levels required, is by far the most expensive component of the hardware.)

6. Though the license-free bandwidth is extremely cluttered with other signals, the inclusion of a simple encryption algorithm allows the TOP Watch to ignore all other information available in this bandwidth and only 'detect' ID signals from our TOP Guns.

7. The same technology can be used both indoor and outdoor...in shopping centres, trade shows, inner city 'canyons', etc, where GPS alone would be ineffective.

8. In essence, the system functions very much like our eyes. If the survey participant can see the TOP Gun transmitter (or more accurately, the plant that a TOP Gun is attached to) then the TOP Watch will be able to detect a signal. If not....it won't!

**How is Qualitative Data obtained?** :: Though there are many ways to do this, we believe that the simplest option, is to at least once during the survey, ask every survey participant (via their personal TOP Watch) to indicate the level of 'cognition' of the last 10 or 20 sites in their PEL (Personal Exposure List). Collectively, this data will build to provide a useful model across all outdoor media. (The TOP Watch can manage this process internally.)

If required, it would also be possible, to program the transmitters on specific outdoor media, to 'ask' the survey participant to make 'qualitative responses' via their TOP Watch.