

A STICKING POINT?

Some people will have you believe that the huge deployment of sticker tags in recent times suggests that, for the moment, DSRC might be too complex, power-hungry and ahead of its time for the toll collection market... for now at least

➔ Over-predicting the adoption of next-generation technology is as easy as under-predicting it: many times we're enticed by the promise, eager to jump on board and adopt the conventional wisdom. A year has passed since the 'great debate' erupted on emerging technology at the 2005 IBTTA Annual Conference session. Back then, the merits of sticker tag technology were argued, while others pushed for optimistic expectations of DSRC. The debate was colorful and certainly not dull, but what's happened since that time?

Tremendous work is being conducted for DSRC at a steady clip: standards are near approval, but product engineering teams keep uncovering new issues to tackle. The fundamentals, however, have not changed: DSRC has been designed to achieve wonderful objectives, but ones that require a communications technology that is far more complex, power-hungry and expensive than is needed to meet the requirements of the toll collection market.

The required infrastructure very likely depends on government funding that has not been appropriated, and the sources of that funding are completely unknown. Will we require a tax increase or more deficits? The timelines are fuzzy but clearly depend on OEM integration, development, test and roll-out on the part of the auto manufacturers. No reasonable scenario can yield a conclusion that anything more than 20-25 percent of vehicles will be equipped with DSRC devices within the next decade.

So, what about sticker tags? Not only has Houston's Harris County Toll Road Authority adopted the technology for high-speed tolling, but Puerto Rico has also exceeded a five-year sticker tag deployment goal in less than three years. The Texas DOT opened its new toll roads using sticker tags and the Washington DOT will use sticker tags for its Tacoma Narrows Bridge. Early adopters such as Georgia 400 continue to add to their deployment, while Jamaica and Mexico strengthen the international use.



📌 TransCore's sticker tag shipments will exceed those of hard-cased tags for all transport applications

Just shy of a year, this increased demand for TransCore's sticker tag shipments will exceed those of hard-cased tags for all transportation applications. All this in a year when the company will meet a massive industry milestone – shipping 25 million tags!

WHAT THE MARKET'S TELLING US

Irrespective of one's preference for a certain technology, demand for ETC has never been greater. A system that once favored cash payment has shifted dramatically towards wireless, with 70 percent of tolls being transponder based on most urban commuter toll roads during peak hours and 60 percent overall. Even the venerable *Town & Country Magazine* – one of those barometers of high society – named ETC alongside consumer powerhouses such as Blackberry, iPod and TiVo in its *10 Gadgets We Love* feature.

Evidently, we've reached a tipping point in consumer acceptance and sticker tags can

be a strong element to support this increased acceptance. The long-term potential for new toll roads, open-road tolling, road use charge systems to replace fuel taxes, and urban road pricing systems could drive the growth of ETC and related systems more dramatically.

Critics conjure up objections to sticker tags, but their arguments don't hold up. More than 2,000 hours have been dedicated to stringent testing in both test track and live traffic environments. Rigorous testing scenarios and qualification requirements for customers have demanded that the performance and accuracy of lower-cost sticker tags meet the same levels of their existing technology.

No question, the performance of sticker tags exceeds and meets today's performance requirements. Side-by-side performance comparisons provide the facts, but the data tells the whole story, and it tells us that the sticker tag systems meet or exceed industry

performance standards. Critics of sticker tag performance have no data and, at best, are venturing speculation based on decade-old experience with passive tag technology.

MIGRATION TO 5.9GHZ DSRC

Industry pundits may think this is a criticism of 5.9GHz. Far from it – TransCore has and is investing heavily in its development. But there has to be some realism about the nature of the technology. In time, DSRC will have its place: it is a powerful technology, but one designed specifically to support advanced safety and control applications. No one is immune to the promise of technology, or likewise to the letdown of long, lingering adoption cycles, complications in testing, floundering business models and costs too high to consider. DSRC needs time to prove itself for the applications for which it was designed, applications that justify its complexity and cost. If and when that happens, toll agencies should then consider the merits of its adoption as it is phased in based on known facts.

REALITY CHECK

If you compare DSRC to another telematics device, on-board navigation devices and its path to mainstream, the reality of what we're facing becomes practical.

The first automotive navigation system was introduced in 1983. Seven years later, the first GPS-based automotive navigation system was introduced. Six years after that, we saw the first navigation systems offered by an automaker in North America. Now, another decade later, ABI Research estimates that if we add up the aftermarket and OEM-installed base of dedicated on-board navigation systems in use in the USA right now (excluding GPS-enabled handsets, but including portable navigation), we would come up with a penetration rate of roughly 1.7 percent of all registered vehicles in the USA. After virtually two decades since inception, there is less than 2 percent penetration. DSRC has a long way to go.



📍 Puerto Rico's tag usage exceeds expectations



📍 Early tag adopters include the Georgia 400

While current tag technology doesn't have the whiz-bang, communicate-anything data rates that we'll see emerge, it does have plenty of horsepower to provide the safe, secure, economic collection of tolls for the foreseeable future.

A toll authority can safely defer its decision on 5.9GHz DSRC for perhaps a decade and wait for the technology to mature and reach a penetration level that warrants considering changing infrastructure and business models. Until then, toll authorities have to serve their patrons and meet the pressures of their constituents now and manage capacity. DSRC cannot support near-term decisions, with an estimated 20 million tags to be purchased by 2015.

With manufacturing and development costs significantly reduced, toll authorities can realize these savings. The math is simple: why buy a more expensive tag when you can get equal performance at a fraction of

the cost? Current hard-cased tags can range from approximately US\$20 to US\$30, while sticker tags are less than US\$10. It doesn't take a genius to figure out that US\$10 is less than US\$30, or half the cost of US\$20 tags. Conservatively, if a toll authority expects to purchase two million tags a year at, say, US\$20, the cost would be US\$40,000,000. If the same two million tags are purchased at US\$9 the cost would only US\$18,000,000 – a cost saving of US\$22 million, or more than half the cost.

Collectively, if current ETC systems expand at 4 percent per year over the next decade and with a seven-year tag-life cycle, the toll industry could need more than 20 million tags through 2015.

LAST WORD – THERE'S NO DEBATE

The discussion distills down to three points. Migration to DSRC will not be immediate and will take place over a number of years. Millions of tags will be purchased before that time. Toll authorities can either continue to purchase hard-cased tags at substantially higher prices, or consider low-cost tag alternatives, redirecting the sizeable savings to support operations.

With demand comes added pressure for toll authorities to make ETC accessible, convenient and particularly affordable. If we've learned anything from consumer electronics, customer adoption will increase considerably once the price has come down. Likewise, if we've learned from the dot.com bombs and telecommunications fall-out, we cannot prematurely bank long-term business decisions on something that has not materialized. ❌

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