

# Continental drift

To create a world-leading ITS infrastructure for Europe, we're missing a crucial structural element, and that shortfall needs to be addressed urgently. That's James Foster's summary of a candid interview with Dave Marples, Chief Architect of the European Union's three-year Global System for Telematics (GST) Project

**A**t a wrap-up meeting held in La Hulpe, Brussels, on 27-28 February, the end results of the GST project were showcased. The opportunity to see at first hand an impressive collection of vehicles chatting to each other and the supporting infrastructure which made it all possible underlined that the GST Forum was a lot more than just a talking shop. A global system for telematics had arrived (see report on Page 19 of March/April 2007 issue of *ITS International* or visit [www.gstforum.org](http://www.gstforum.org)).

The urge to ask the chief architect of the project, Dave Marples, just what the next steps are was overwhelming. Just where do we go from here? And how soon will this proven and tested technology be rolled out? His response brought the key issue into stark relief.

Marples is well placed to look at the big picture. He was involved in reviewing the US Vehicle Infrastructure Integration (VII) initiative at the beginning, when security architectures were being assessed. Coupled with his role as the Chief Architect of the GST programme, working closely with many of the major players on this side of the Atlantic for the past three years, it's easy to see why he is well known and respected in both the European and US ITS industries.

Marples is a pragmatist who tells it like it is, which he freely admits sometimes doesn't win him friends on the politically savvy European ITS scene. He sees an important difference in the American and European approaches to establishing ITS standards. There are numerous ITS projects in Europe - to name but a few, CVIS, SafeSpot and SeVeCom all fall under the safety umbrella. And, while the achievements of GST will find their way into those initiatives, effectively they're all standalone projects with their own visions and objectives.

## Piecemeal situation

"GST is only one part of the entire ecosystem. In contrast, VII is much more integrated. It makes the situation we have here in Europe seem somewhat piecemeal," Marples states. "The VII Consortium [VII-C] acts as a very nice point of coalescence. Everything is effectively integrated under one umbrella with the same project partners, and the VII-C acts as a clearing house, the arbiter of what gets implemented."

He believes that European ITS needs a single body that everyone buys into to become the equivalent vanguard for European ITS - and despite the existence of a few hopeful organisations he doesn't see a leading candidate for the throne yet.

It's not that Europe doesn't know how to focus itself in this way. Indeed, it's been done before with fantastic success in the telecoms industry. Some 20 years ago, ETSI (the European Telecommunications Standards Institute) was established and, to paraphrase Marples, interested parties from the telecoms scene would meet in a room, lock the door and not come out until they had decided how something was going to be done.

"In that sense, ESTI has been fantastically good at keeping European telecommunications reasonably aligned for many years. In contrast, I think the Americans look with some degree of envy at what happened with GSM and the ubiquity ETSI helped achieve in Europe. It's something they have never had, with their many and varied standards for mobile phone systems."

ETSI could be the right place to centralise all of this ITS work too, Marples suggests, but it's not yet perceived as the 'go to' organisation. Whatever organisation would, or could, take on the role, there's no doubting Marples's logic: a centralised ITS standards body is certainly needed. ➔

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**Dave Marples**



### ➔ An essential consideration

Again, he demonstrates his pragmatism when he says that the best thing one can say about standards activity is that there'll never be the optimal solution for anyone: "That's just a given. But the fact that you have a way to do it, rather than several different ways, has considerable value which results in reduced equipment, training and deployment costs, and much easier internetworking - an essential consideration when all these vehicles will be talking to each other and their surrounding environments."

And, in this real-world view, it's also a given that no individual automotive manufacturer is likely to produce ITS standards on its own, or even in a bi-partisan relationship. Competitors would balk at what was produced and want to explore their own ways of doing things.

"With projects like GST, we are moving from pure research to pre-commercial implementation for many of these technologies," Marples states and then bluntly positions what has been achieved. For instance, he admits that, in his opinion, GST in its current form is not ready for prime-time deployment as something that can be taken off the shelf, plugged in and implemented.

"As a set of abstractions, architectural

ideas and ways of thinking of systems, it is spot on," he states emphatically. "Most of the fundamental, hard questions about how to do things have not just been conceived and developed, but tried, tested and proven in the field: how I authenticate people; how I pass authentications around; how I upgrade systems when they are in the field without switching them off, because obviously you can't do that with an automobile - those sorts of issues. All of those problems have been solved at the architectural level inside GST and that is precisely what we set out to do."

He adds that the key now is to get this stuff into people's heads and thinking, so the principles permeate through all the other European ITS projects that people are working on.

### Precedents

For the automotive companies, the payback of embracing the results of projects like GST in their product strategies is that they end up with a more open environment with less vendor lock-in and commodity pricing. Again, there are precedents. It's exactly the kind of payback they've already had with low-level vehicle communications infrastructure based around CAN and its friends. All it requires is collaboration. As Marples

points out, automakers don't, for the most part, strive for competitive differentiation on tyres, communications protocols or vehicle infrastructure.

"We collaborate on those because it increases the reliability and the test coverage as well as decreasing the unit cost. Why should we think of software, at least at the architecture and infrastructure levels, any differently to that? Obviously, when it comes to applications and user interfaces, by all means roll up your sleeves and may the best product win," he says.

Given his unique viewpoint, I asked Marples if a European research project with the title of Global System for Telematics is a misnomer or could, indeed should, it be looking beyond Europe? For instance, is there a way that VII and GST could meet and come together?

Marples is clearly more optimistic about that today than he was five years ago. As he points out, the US does look at what has been going on in Europe with such projects, and indeed, from his experience of both projects, he believes that in some ways GST is further ahead.

"VII started after GST so it has been able to take some of the GST ideas and others they developed for themselves which look very similar. That's a real positive, but there's still some disconnect," he notes.

However, in terms of VII and GST meeting, Marples believes if there is the will, then it can happen.

"There are growing commercial pressures being brought to bear on the worldwide automotive industry which encourage me to think that a coming-together is more likely now than ever previously. Whereas in the past car manufacturers wouldn't have worried so much about having to build different things for different global regions, now they are increasingly starting to see such practises, quite rightly, as a real cost that they need to minimise."

### Lamentable waste

And it's not just about commercial aspects and the profit motive. Nor the lamentable waste of a lot of pure research that pushes the boundaries. Because there is no centralised European ITS standards institute to pull these initiatives together, sometimes they fall on the floor.

"We have to start to work together because the opportunities for both in-vehicle and roadside ITS are so huge and the benefits it will deliver are so substantial that we shouldn't be putting these benefits at risk for transitory commercial advantage," Marples concludes. "I know it's a bit trendy to be going for the tree-hugger credentials, but if we can use ITS to make our transport systems better, cheaper, faster and safer, don't we have some sort of duty to do that?" ■

## Track record

Dave Marples is Chief Scientist in the Network Systems Research Lab at US-headquartered Telcordia Technologies. He has worked there since 1999, apart from a spell with Global Inventures Incorporated where he was responsible for the management of the Open Services Gateway Initiative (OSGi). He was responsible for the development of the Networked Appliance research programme at Telcordia and is now working in the field of vehicle telematics and automotive prognostics and diagnostics. He is the Chief Architect of the European Union Global System for Telematics (GST) project and has been working with automotive OEMs on Prognostics and Diagnostics initiatives.

Marples' formal training is in electronics and communications engineering and he has B.Eng (Hons.) and M.Eng degrees from Bradford University, England. His Ph.D. is from Strathclyde University, Scotland. He is an Industrial Fellow of the Royal Commission for the Exhibition of 1851, a Fellow of the OSGi and is Honorary Professor of Communications at Stirling University, Scotland.

