

SAE J2735 DSRC Messages

A Few thoughts on Extending & Linking to/from other messages

Presented to

Codecs Workshop on I2V message architecture for Long-Term Road Works

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The MAP message, summary Status

- Growing Success, now in 3rd generation
 - Planned maps now number in the multiple thousands
 - SAE is actively gathering up new requirements for a next release
 - US Map creating deployments asking many questions now
 - Many have requested fairly simple additional attributes be added
 - Some have asked to be able to include signage, an overlap with this work
- There is also need for effective curve modeling to reduce size
 - Likely to allow simple bezier curve or spline models
- Several topic areas where advice and further best-practices guidance are now being developed
 - A volunteer web site is being brought up: <http://dsrc-tools.com/map-spat/>

Summary, continued

- A revision to the MAP work is planned but we need to learn what timeline *this* effort will require to better plan it to support you.
 - Question: Is an early 2018 revision too aggressive to reissue?
- The document J2945/10 will be created by SAE DSRC TC
 - To document known errors and provide some best practices
 - To guide work on new material to be added to the MAP part of J2735
- There is a known need for how to better integrate this work with other messages, both in the US and elsewhere
 - Your meeting in April reflected US thinking on this in many ways
 - Several J2735 messages also need this ability
- The core design goal of the MAP message was to be able to use it efficiently to represent any type of road geometry of interest
 - Intersections were just the start.
 - The goal was to use it (and its primitives) for incidents, pre-planned construction, and various non-vehicle needs (overlay maps)

TIM / BIM / RSM

(traveler information message, now road safety message)

- In the US DSRC work we have a message called “**TIM**” (whose new name is under consideration at this time)
 - For the US, this combines many of the use cases that DEMN and IVI are used for.
 - TIM make extensive use of the US “ITIS” codes (which are much like RDS and TPEG phrases) to describe common events, causes, detours, advice, etc. to travelers
 - All of the US regulatory signage and warnings are expressed with well defined ITIS phrase sequences
 - The revised TIM will include some MAP elements directly and (more typically) point to a supporting MAP message for detailed topology data.

TIM / BIM / RSM

(cont.)

- As you might expect, the “new TIM” (called *RSM* henceforth) needs a linkage system as well
 - It is a segmented message to allow adding or removing content based on needs/use
 - The segmentation plan is to develop a more universal *indexing method* to allow pointing/linking to:
 - Pointing to content in the same message payload
 - Pointing to another message (i.e. MAP)
 - Pointing to messages in several other external out of band communications
 - One could place a MAP inside this, but at present that is not seen as the best approach, rather it is best to link to other maps.
 - Any “inside” map is likely to just describe the affected coverage area which the message contents pertain to
 - Our goal is for the basic system design and key content to be ready for Day-1 deployment, while adding other segments (called *containers* by some) thereafter.

TIM / BIM / RSM

(cont.)

- Some of the needs and issues that have come up in early discussion include
 - One could place a MAP inside this, but at present that is not seen as the best approach, rather it is best to link to other maps.
 - Both static and more ad hoc,
 - A layering approach is desired but not well understood at this time
 - Other base maps from other parties will always exist, and will need to work with short term incident event maps
 - So this problem has the aspect of needing a *location referencing system*.
 - Not all maps describe the roadways of an event; some are used to link to alternative detours or to explain a broad area of relevance to the event (consider weather).

Final Thoughts

- Final Remarks

In many general respects the known US needs and the goals of the SAE DSRC committee are well aligned with the proposed work plan

And therefore we would be very supportive of solving this in a coordinated way to mutual advantage

We expect this to be a topic at next week's ISO TC-204 meeting as well.

How shall we begin?

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