

Date: 1 Feb 2017

Kapsch Comments to the Notice of Proposed Action on California Code of Regulations, Title 21, Division 2, Chapter 16, concerning Compatibility Specifications for Automatic Vehicle Identification Equipment

Kapsch TrafficCom has reviewed the rulemaking package, posted on Caltrans' Title 21 webpage, <http://www.dot.ca.gov/trafficops/tech/title21.html>, and has comments specifically to the "Proposed Text of Regulation".

Kapsch TrafficCom is providing the comments in the form of recommended changes, specifically to Article 6, clause § 1705.1 and Article 8 clause § 1707.1 of the Proposed Text of Regulation. Kapsch has replicated the text for these articles herein and used ~~strikethrough~~ to denote deletion and underline to denote insertion. Kapsch has also provided the rationale for the change proposed following the clause.

Article 6. Summary of New Automatic Vehicle Identification Equipment

§ 1705.1. Summary.

The compatibility specifications for automatic vehicle identification (AVI) equipment have been developed around two principal components: a reader and a transponder. The minimum role of the reader is to:

- 1) ~~Trigger or a~~Activate a transponder.
- 2) ~~Pol~~Interrogate the transponder for specific information, ~~and~~
- 3) ~~Provide an acknowledge message to the transponder after a valid response to the polling message has been received.~~

Note: Authority cited: Section 27565, Streets and Highways Code. Reference: Sections 27564 and 27565, Streets and Highways Code.

***Rationale for changes proposed.** The original text proposed reflects the operation with a Title 21 transponder which requires a Trigger to activate the transponder, a Poll Command to obtain the transponder information, and subsequently an Acknowledge Command to silence the transponder from responding to subsequent identical Poll Commands for 10 seconds.*

The 6C protocol does not have direct equivalence to the Title 21 messages. There is no Trigger; instead activation is by illumination by continuous wave carrier. There is no Poll Command that obtains the transponder specific information; instead an interrogation method is used to identify the presence of transponders. Finally while 6C has an acknowledge command which forms part of the interrogation process, this is used to trigger the transponder transmission of the 6C UII/EPC, but not complete the communication process, especially where other memory is required to be read and/or written, nor does it stop the transponder from responding to the next interrogation sequence.

Article 8.0. Reader and Transponder Specifications

§ 1707.1. General.

The automatic vehicle identification equipment shall be compliant with Type C of the International Standards Organization document: ISO/IEC 18000-6 First edition 2004-08-15 AMENDMENT 1 2006-06-15 Information technology—Radio frequency identification for item management—Part 6: Parameters for air interface communications at 860 MHz to 960 MHz AMENDMENT 1: Extension with Type C ~~and~~ or subsequent amendments and additions.

Supplemental toll agency specifications will detail the optional functions, technical specifications, environmental, operational and other specific needs for each site installation.

Supplemental CTOC specifications will detail the optional functions, technical specifications, environmental, operational and other specific needs for transponder models.

All readers shall operate with any transponder model that meets the requirements in this section and has passed testing and certification in Article 9. No reader shall operate in such a way as to harm or diminish the performance of any transponder.

All toll agencies collecting any information shall observe and follow all applicable legal authority, including but not limited to Streets and Highways Code section 31490, regarding the collection and dissemination of personally identifiable, and other private, confidential, and sensitive information. All toll agencies collecting any information shall observe and follow all applicable legal authority regarding intellectual property

Note: Authority cited: Section 27565, Streets and Highways Code. Reference: Sections 27564 and 27565, Streets and Highways Code.

***Rationale for changes proposed.** By requiring “and subsequent amendments and additions” requires that all product must be certified to the latest version of the 6C standard even though amendments or additions are not required for AVI. Further much of the product available on the market is only certified to the cited version above. Any features required from amendments or additions can be addressed via the specific toll agency specifications also cited above.*

While the title of Article 8 is “Reader and Transponder Specifications” the only transponder specification in the Article is conformance with the ISO/IEC 18000-6 specification which is incomplete for the purpose of defining transponder interoperability for toll. While individual toll agencies may be able to specify site specific requirements for the reader side, as cited above, it is recognized that the additional transponder specifications needed must be common and thus controlled by CTOC to ensure interoperability across all toll agencies in California. Therefore specific reference is required to those transponder requirements.

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