

California Department of Transportation

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Questionnaire

Regarding Adopting the 6C Coalition AVI Standard Version 4.0 In the Title 21 Protocol for Automatic Vehicle Identification (AVI) Regulation

The California Department of Transportation (Caltrans) is currently considering the development of a regulatory change that would replace the "California Electronic Toll Collection Standard" with the "6C Coalition AVI Version 4.0 Standard" as a Document of Reference in the AVI regulation found in Chapter 16 of Division 2 of Title 21 of the California Code of Regulations.

Caltrans would like to receive input from all interested stakeholders as to their views on this proposal and will be holding a public workshop on July 25, 2024, to solicit initial comments.

In anticipation and in connection with this workshop and other activities to facilitate public participation in the regulatory process, Caltrans is providing this questionnaire to all potential stakeholders. This information will greatly assist Caltrans as it begins the process of considering a regulatory change.

Please provide your responses following each question. Please feel free to forward this questionnaire to any other interested parties.

You may e-mail your responses to: Title.21.Changes@dot.ca.gov.

You may also submit written responses to:

Joe Rouse
Caltrans Division of Traffic Operations
1120 N Street, Mail Station 36
Sacramento, CA 95814

**Questionnaire Regarding Adopting the 6C Coalition AVI Standard Version 4.0 In the
Title 21 Protocol for Automatic Vehicle Identification Regulation**

Page 2

Please list the name of the person completing the questionnaire and the name of the agency or company you represent.

NAME: Alastair Malarky

AGENCY: Kapsch TrafficCom

- 1) Are there any alternatives to the replacing California Electronic Toll Collection Standard with the 6C Coalition AVI Standard?

The only alternative foreseen by Kapsch would be for California to update the California Electronic Toll Collection Standard to align it to the 6C Coalition AVI Standard to the extent wished by California. This would only make sense if California were not willing to incorporate specific parts of the 6C Coalition AVI Standard.

- 2) What are the benefits of the replacing California Electronic Toll Collection Standard with the 6C Coalition AVI Standard? What are the drawbacks?

The benefits foreseen by Kapsch are:

- *Changing to the 6C Coalition AVI Standard will ensure all products used in California will support nationwide inter-operability and compatibility.*
- *California does not have to expend effort and resources to maintain a separate Electronic Toll Collection standard.*
- *The current California Electronic Toll Collection Standard does not include the 6C Coalition AVI Standard v4.0 feature of a CRC inside the Ull data. This functionality will allow bit-flip tags to be identified/ignored in the system. The change will remedy this.*
- *The 6C Coalition AVI Standard v4.0 changes to the User Memory allow newer generation 6C chips with built-in error correction but less User Memory to be utilized. The current California Electronic Toll Collection Standard requires 64 bytes of physical User Memory to be present on the chips and would limit the possibility of using these newer generation chips.*

The following potential drawbacks have been identified by Kapsch:

- *If any California agency currently encodes information into the Agency Use bits in the Ull (28h-34h), then the agency would have to change the agency use of the bits.*
- *At time of release of the California Electronic Toll Collection Standard, no California Agency read or wrote to the User memory. If any California*

Questionnaire Regarding Adopting the 6C Coalition AVI Standard Version 4.0 In the Title 21 Protocol for Automatic Vehicle Identification Regulation

Page 3

agency has since started to use the User Memory, and requires it, the fact the 6C Coalition AVI Standard v4.0 agency makes the user memory optional will require changes to the Agency's use of the 6C User Memory.

- 3) Please discuss any effects, including projected timetables, from replacing California Electronic Toll Collection Standard with the 6C Coalition AVI Standard.

Kapsch does not see any effects other than the need to update readers and/or roadside to support v4.0 and the changes in tag procurement to use v4.0 going forward. The timescales for reader updates will be Agency specific. The changes to transponders can be affected immediately by changes in the procurement documentation.

- 4) Please describe any impacts replacing California Electronic Toll Collection Standard with the 6C Coalition AVI Standard.

Kapsch foresees the primary impact will be to either the deployed readers or the roadside controllers within California. These will need an update to support the 6C Coalition AVI Standard v4.0 improvements. Note that the standard identifies backward compatibility to earlier versions so there would be no impact on existing consumers.

Kapsch foresees the only impact to transponders will be in the procurement information so that future orders are encoded to the v4.0 standard. The standard is backward compatible so existing transponders would not be affected.

- 5) Would you support Caltrans also adopting the latest versions of the International Organization of Standardization (ISO) standard for radio frequency identification devices as part of this rulemaking?

Kapsch does not have specific opinion on this topic. It is noted that the current California regulations reference version up to ISO/IEC 18000-63 Second edition 2015-10-15, while the ISO/IEC is now updated with a 3rd edition (2021) but the main changes in the 3rd edition were:

- incorporation of the Technical Corrigendum;*
- incorporation of a new sensor class for snapshot sensors*

These changes should have no impact on the products being used for tolling.

- 6) Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here?

Kapsch foresees no impact.

**Questionnaire Regarding Adopting the 6C Coalition AVI Standard Version 4.0 In the
Title 21 Protocol for Automatic Vehicle Identification Regulation**

Page 4

7) What are the fiscal impacts on state and local government?

Kapsch assumes that the states or local government will require to fund toll agencies to update the deployed readers or the roadside controllers within California.

8) Are there any issues regarding fairness of competition?

Kapsch foresees none.

9) Are there any issues regarding individual privacy?

Kapsch foresees none.

10) Please provide comments on any other relevant issues not addressed above.

Just a comment - the proposed language is limited to "6C Coalition AVI Version 4.0 Standard". Perhaps phrase as "6C Coalition Standard", to limit continual amending as the versions update.

Thank You for Completing This Questionnaire