

## DEPARTMENT OF TRANSPORTATION



# **QUESTIONNAIRE**

## **REGARDING TRANSITIONING FROM THE CURRENT**

## **TITLE-21 PROTOCOL TO A NEW PROTOCOL**

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The California Department of Transportation (Caltrans) is currently considering the development of regulations regarding new technologies and new technical specifications to replace the current automated vehicle identification protocol currently set out in the California Code of Regulations (commonly referred to as the "Title-21 protocol"). Caltrans is very interested in hearing from stakeholders as to their views on the transitioning from Title-21 protocol to a new protocol, most likely the 6C protocol.

Caltrans will be holding two public workshops (July 8, 2015 in Oakland and July 22, 2015 in Fontana) to solicit initial comments on the transition from the current Title-21 protocol.

However, in anticipation and in connection with those workshops and other activities to facilitate public participation in the regulatory process, Caltrans invites you to complete the following questionnaire. This information will greatly assist Caltrans as it begins the process of considering new regulations.

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

Please e-mail your responses to: [Title.21.Changes@dot.ca.gov](mailto:Title.21.Changes@dot.ca.gov).

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

NAME            Stephen Lockhart

AGENCY        Star Systems International, Ltd. (SSI)

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**1. Are there any alternatives to the transition to 6C, including comparable Federal regulations or regulations/protocols in other states?**

[SSI]: I am not familiar enough with State/Federal regulations to comment intelligently on the second part of the question. However, in terms of “alternatives” to a transition to 6C, I suppose that there are a few options:

- No transition (keep T21)
- Transition to a different protocol

Assuming that an open standard protocol is required, in my opinion, the only other “open” protocol is the IAG protocol promoted by Kapsch.

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**2. What are the benefits of the transition to 6C? What are the drawbacks?****[SSI]: Benefits of 6C**

- 6C was developed by a non-profit, user driven organization that promotes the adoption of open RFID standards around the world
- 6C is a “living” specification that continues to evolve to meet requirements of the market
- All new versions of the 6C specification are fully backwards compatible with previous versions
- Royalty free
- Flexible data rates
- Reader-Talks-First
- Robust against noise and interference
- Spectral control of reader and tag transmissions
- Designed for any transponder population size
- Transponder memory organization defined by specification
- Defined compliance and interoperability test procedures
- Multiple manufacturing sources drives cost down
- Passive transponder

**Drawbacks of 6C**

- Not as much time in the market as other protocols
- Over-the-air encryption features only available in most recent version of the standard and not yet proven for high-speed tolling (that said, IAG and SeGo protocols have no over-the-air encryption at all)
- Large number of suppliers providing reader and transponders for a large number of applications. The vast majority of these applications are relating to asset management/supply chain. This leads to the development of 6C products that are specific to these market. Tolling end-users must be aware of the difference between performance characteristics of lower performance 6C products and high performance 6C products.

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**3. Please discuss the factors involved, including projected timetables, for transitioning to a new protocol, with respect to the following:**

- a. Transponder procurements/existing inventories
- b. Toll-system modifications
- c. Agency administrative changes
- d. Public education, outreach, and marketing
- e. Issues regarding certification
- f. Issues regarding three-position transponders.

[SSI]: No comment from SSI.

**4. Please describe how the transition:**

- a. Impacts business and/or employees
- b. Impacts small businesses
- c. Impacts jobs or occupations
- d. Imposes reporting requirements
- e. Impacts individuals.

[SSI]: No comment from SSI.

**5. 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?**

[SSI]: No comment from SSI.

**6. What are the costs that businesses and individuals may incur to comply with this regulation over its lifetime?**

[SSI]: No comment from SSI.

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

[SSI]: No comment from SSI.

**8. Are there any issues regarding fairness of competition?**

[SSI]: No comment from SSI.

**9. Are there any issues regarding individual privacy?**

[SSI]: I would imagine that any issues regarding privacy with the existing T21 protocol would be the same issues with the 6C protocol. There are some features in the new version of the 6C specification that allow more consideration towards privacy. However, as mentioned previously, these new security features have yet to be proven in a high-speed tolling environment.

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

[SSI]: No comment from SSI.

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE**