

Summary of SIP-adus Project (FY2016)

Name of the project	Investigation into the International Standardization of Dynamic Map and Overseas Trends
Responsible Organization	Society of Automotive Engineers of Japan, Inc. (JSAE)

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Project Background and Objective

In order for Japan to contribute on the international level in the field of dynamic map, which enjoys high expectations for its use in automated driving, the Cabinet Office SIP and the government have promoted research into automated driving systems. The objective is to promote the international standardization of automated driving systems, including the static/dynamic map components and their data models and lane-level locational referencing methods. The other main objective is to survey overseas trends and similar information in relevant areas. The specific objectives are stated below:

1) International standardization of dynamic map

To propose an original international standardization plan for dynamic map by coordinating with relevant parties, such as auto manufacturers and parts suppliers, all the while advancing international standardization at global conferences.

To translate the original international standardization plan and related materials, to participate in relevant international conferences, and to encourage and facilitate each nation involved in their understanding of our proposal contents.

2) Survey of overseas trends of dynamic map

To research trends and activities of overseas entities, including companies and relevant consortiums, through literature, field work, interviews with domestic and foreign parties, participation in conferences both domestically and abroad, among other sources.

Project Summary

1) International standardization of dynamic map

(1) Static/dynamic map components of automated driving systems and the standardization of related data models

An aim of this project is the international standardization of static/dynamic map data models that the automated driving systems reference. We advanced the creation and proposal of this international standardization by creating a draft of these data models after examining use cases of map utilization (referencing) in automated driving systems and identifying the requirements related to the map components.

Specifically, we started working toward a PWI proposal for the Spring 2017 TC204 Plenary Meeting in Paris. In preparation for this meeting and to encourage understanding by each attending nation, we explained our intent to propose the aforementioned item in Spring 2017 through multiple opportunities, such as a presentation at the 4th Automated Driving Workshop at the Fall 2016 TC204 Plenary Meeting in Auckland.

While we have a track record in the standardization of car navigation map data, for further review, we established a task force within the Kiwi-W consortium in which many relevant domestic companies take part. All the while, we exchanged information with experts and relevant persons outside the consortium according to need.

(2) Standardization of lane-level locational referencing methods

An aim of this project is the international standardization of lane-level locational referencing methods that is applicable to dynamic map. We advanced the creation and proposal of this international standardization by establishing a basic concept for specific locational referencing methods after examining use cases of lane-level locational referencing methods and identifying the requirements.

Specifically, with the goal of finalizing most of the contents within FY2017 (MAR/2018), we proposed an NP at the Fall 2016 TC204 Plenary Meeting in Auckland. To encourage understanding by each nation involved, we actively disseminated information at the ISO/TC204 International Conference and provided individual explanations to relevant entities (TISA, etc.), among other activities. For further analysis, we exchanged information, as appropriate, with members of the Center for Spatial Information Science at the University of Tokyo all of whom have deep expertise in this field.

2) Survey of overseas trends of dynamic map

In order to advance the international standardization work described above, we surveyed the trends of relevant overseas consortiums through literature, field work, interviews with domestic and foreign parties, and participation in relevant conferences. We further analyzed the industry structure and data flow (data architecture) that will become a prerequisite for this work.

Specifically, we performed activities such as the realization of the data architecture and gap analyses of data items based on domestic and international specifications available to the public. Additionally, in order to deepen cooperation with the international community, we participated in OADF (Open Auto Drive Forum), where open discussion in working toward a common foundation for automated driving is encouraged. There, we made a presentation about the current situation in Japan and future plans regarding standardization.

Future plan

1) International standardization of dynamic map

(1) Static/dynamic map components of automated driving systems and the standardization of related data models

In working toward an international standardization coming into existence in 2020 and the prerequisite industry agreement, we must first materialize the domestic system which will prove essential for forming an agreement with European industry associations and make a PWI proposal at the Spring 2017 TC204 Plenary Meeting in Paris.

(2) Standardization of lane-level locational referencing methods

In working toward an international standardization coming into existence in 2018, we must finalize the standards and develop and verify the prerequisite technology in order to get the CD voting approval at the Fall 2017 TC204 Plenary Meeting in North America.

2) Survey of overseas trends of dynamic map

We must materialize the domestic system that will allow the stable development of dynamic map standardization hereafter, while maintaining the meticulous information exchange with overseas regions, such as Europe.