

# PD Interview

Program Director Interview  
12 Leading Experts Who Accelerate SIP



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## Implementation of world's leading automated driving technology

### Construct implementation schemes in accordance with the evolution of communication technologies

Implementation of automated driving technology has entered the phase where FOTs (Field Operational Tests) are conducted for expansion to general public roads. In Japan, Level 3 privately owned vehicles (passenger cars) have been released on the market and further implementation of technology has been required. Even in the logistics and mobility services, there have been growing expectations toward the implementation of automated driving technology for solving social issues such as driver shortages. We interviewed Program Director (PD) KUZUMAKI Seigo.

Through industry-academia-government collaboration, Level 3 automated vehicles were introduced on the market.

**Q:** Commercial vehicles rated as Level 3 automated driving were released in Japan. How has the automated driving project in SIP been involved in such social implementation?

**PD:** Automated driving has six stages from Level 0 to 5. In Level 3, the system performs all operations in a certain condition and drivers don't need to monitor the situation when the system is driving the vehicle. The automated vehicles that had greatly advanced in such points as whether drivers need to monitor the situation or where the responsibility lies were released in Japan for the first time in the world.

Since the first phase of SIP- Automated Driving for Universal Services, or SIP-adus, started in 2014, we have set 2020 as a milestone and worked on the implementation of automated driving technology. As a result, the Road Traffic Act and Road Transport Vehicle Act, which were amended in 2019, were enforced in 2020. This legally clarified the safety standard for an automatic operation device (automated vehicle). Level 3 automated vehicles using high precision 3D map of Dynamic Map Co. were given type approval certification and released on the market. We believe that collaboration among industry, academia and the government in coordinating each role made this happen, and it is one of the achievements of SIP-adus. And it worked together with the Cabinet Secretariat's "Public-Private ITS Initiative/Roadmap".

The second phase of SIP-adus aims at realization of auto-

ated driving that is possible in broader conditions and has worked on four themes as the most important challenges for that: building and distributing the traffic environment data associated with dynamic map; building a safety evaluation environment in virtual space; establishing a method for cybersecurity technology evaluation; and building distribution portals of geographic data. Through these, we would like to contribute to the realization of Society 5.0 by implementing and commercializing automated driving technology.

Provide broad traffic environment data with evolving cellular communication.

**Q:** Could you tell us about the progress of FOTs in Tokyo waterfront area and the insights and perspectives from that?

**PD:** Toward realization of automated driving on general public roads, a more complex traffic environment, we are verifying broad information distribution in the FOTs by providing traffic signal information from about 30 places. Also, as for motor highways such as expressways, we are working on developing more advanced cooperative driving automation by distributing merging lane assistance information, traffic congestion tail location information at the lane level, etc.

Twenty-nine domestic and international bodies participated in FOTs and provided feedback about the effectiveness of information and the ideal data formats, etc. Automated driving requires communication that is much more precise and less delayed than conventional driving assistance. Requirements for this were identified. We will verify its effectiveness by



distributing traffic signal information with cellular communication called V2N (Vehicle to Cellular Network) as well as distributing traffic environment data generated by vehicle probe data, etc., through V2N.

**Q:** In the situation where competition in the automated driving area is becoming globally fierce, we have heard that you have worked on joint research development with Germany in some areas.

**PD:** Indeed, the competition in developing automated driving is very fierce. However, the biggest challenge toward implementation lies in how we can evaluate the safety of automated vehicles and ensure safety and security. Each automobile company cannot individually solve this issue. Considering the fact that cars are global products, this is an issue beyond borders.

Some automobile companies from Germany have participated in FOTs in Tokyo waterfront area and we have discussed various topics with them about safety. Also, we regard dynamic map, safety assurance, cybersecurity, and impact assessment as joint research themes and exchange information with them about these themes. As Japan has taken leadership in the standardization until now, we would like to continue collaborating with Germany and help Japan take leadership in the international community.

### Try diversified approaches for fostering public acceptance.

**Q:** Could you tell us about concrete efforts for fostering public acceptance and their effects?

**PD:** Although there are limitations to fostering public acceptance with only SIP-adus activities, for two years, we have enriched the content from which the general public can more easily understand automated driving. For example, through movie content, we had motor journalists talk about SIP-adus activities and their significance in an understandable manner. We published the status reports and columns on these activities in the website “SIP-café” (<https://sip-cafe.media/>) that we opened two years ago. Also, in April 2021, we had nine companies including automobile companies and suppliers who participated in FOTs in Tokyo waterfront area prepare about 20 automated vehicles, and held a joint test drive event for journalists. That was very favorably received.

Furthermore, we hosted a regional automated driving summit online. During the summit, we heard messages from re-

gional heads and engaged in various discussions to exchange opinions with business operators. We felt the new potential of an online discussion. From now on, we will work on fostering public acceptance using various approaches.

**Q:** Could you tell us about the goals and visions for 2022, the deadline of the second phase of SIP-adus?

**PD:** In FOTs in Tokyo waterfront area that we are going to conduct this year, we will newly distribute traffic environment data that will be associated with emergency vehicle information, weather information, and dynamic map. Although these data items are generated with probe data from vehicles currently driving on general public roads, we plan to construct schemes, while anticipating that the precision of location information will improve and the communication environment will evolve into 5G or 6G in the future.

We will create the environment of FOTs in Tokyo waterfront area in virtual space so that simulation can be done for safety evaluation. We will proceed with implementation and commercialization, and work toward the realization of Society 5.0 by having everyone try, receiving feedback, and improving the precision.