

Summary of SIP-ADUS project (FY2015)

Name of the project	Research and Development Project for Automobile Security for Utilization of Information obtained by Communication such as V2X
Responsible Organization	Japan Automobile Research Institute
Name Atsushi Ohba	
Object of the Project	
<p>Utilization of communication such as V2X is expected for Automated Driving to obtain information such as dynamic map and surrounding situation. Meanwhile, the connection to external world through the wireless/wired communication makes Cybersecurity an important issue. So, requirement for Automotive Security will be summarized by building common model of Automated Driving System followed by threat analysis, and to study validation/evaluation technologies, methods, and criteria for component level to vehicle level, then summarize the requirements for test beds. In addition, the methods of omitting certificate vilification of V2X communication is studied.</p>	
Project Summary	
<p>Four (4) research subjects are set.</p> <ol style="list-style-type: none">1) As a preparation for threat analysis with use of common system architecture, use case formulation and its model for automated driving, previously-achieved projects information were compiled and analyzed. Also, preliminary common system architecture is formulated and confirmed if the requirement for the use of threat analysis was satisfied.2) To study validation/evaluation methods and criteria in every layer such as component level, in-vehicle system, external-vehicle cooperative system and vehicle level, in this year, security evaluation methods and attack cases in the other industries were investigated. In addition, as a component level, preliminary evaluation environment was formulated and the attack test to the ECU was done.3) In order to study the method of certificate-verification omission for V2X communication, we investigated the case examples that have been reported so far and simulation in PC was executed to evaluate the performance of the methods. As a result, a concern against DDoS attack was confirmed with currently proposed methods.4) With a focus on the security of V2X communication, technical trend and opinions to the legal regulation in overseas were investigated.	
Future plan	
<p>Through the study of threat analysis and validation/evaluation technology, the direction of third-party validation/evaluation and third-party certification system for an automotive security should be investigated and based on the obtained results, activity for global alliance (cooperation/coordination) is considered. In addition, for the large-scale demonstration test scheduled in 2017, security validation/evaluation which are necessary for the automated driving vehicle and building test-bed will be studied. Regarding the method of signature-verification omission, the method to reduce the device load with satisfying necessary security level is also studied. Obtained results are studied to cooperate in the global alliance.</p>	