Helmholtz - OCPC - Programme 2017-2021
for the Involvement of Postdocs in Bilateral Collaboration Projects with China

PART A

Title of the project

The Application of Artificial Intelligence on Data-Driven Autonomous Vehicles: a Comparative Study of Platform Governance Policy in China and Germany

Helmholtz Centre and institute

Karlsruhe Institute of Technology (KIT), Institute for Technology Assessment and Systems Analysis (ITAS)

Project leader

Dr. Miltos Ladikas

Web-address

http://www.itas.kit.edu/english/index.php
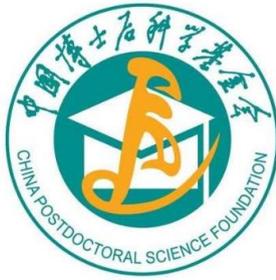
Description of the project:

Autonomous vehicle is the essential application of artificial intelligence. Besides advanced algorithms, a large scale of data acquisition is also the cornerstone of autonomous vehicle development. For the purpose of aggregating the massive data resource needed from the terminal users/drivers, most major online platform firms participate in the data-driven innovation autonomous vehicle industry. For instance, Google Inc. launched the Self-Driving Car Project (Waymo) in 2009 and Uber Advanced Technologies Group (Uber ATG) launched the first self-driving car services in 2015. Even Apple Inc, the world famous American multinational technology company, launched its self-driving research in the Apple electric car project- "Titan". The autonomous vehicles platform is emerging. OECD and European parliament have released the report of the implication of the autonomous vehicle. The governance and regulation are on the way.

The autonomous vehicle platform is the open innovation platform that aggregates data resources, advanced algorithms, and application scenarios. As such, the centralized personal data resource is valued as a structural resource by the network externality of the terminal user's connection. Furthermore, the anonymous personal data from terminal users/drivers is also verified as an innovation resource for the autonomous vehicles industry. Hence, the data-driven artificial intelligence technologies, applied in autonomous vehicles development, absorb large scale venture capital.

The online platform with most aggregation of massive personal data resource generates better market efficiency in autonomous vehicles industry integration. On one hand, the data-driven innovation of the autonomous vehicle platform encounters the potential risk of structural resources anti-competition acquisition. On the other hand, autonomous vehicles platform is a typical multi-sided market with multiple stakeholders. In order to achieve sustainability of the long-term industrial development and a social welfare economy, new regulations will be necessary for the data-driven autonomous vehicles platform as part of the desirable open innovation governance context. Empirical studies have examined the potential risks of the personal data as a structural resource monopoly. The research of data-driven autonomous vehicles platform governance and regulation demands a new paradigm from a multi-disciplinary perspective.

The purpose of this research is to explore the govenance policy of the data-driven autonomous vehicle platforms in a comparative study of China and Germany. The analysis of the comparative study will focus on: 1) the market allocation mechanism of the large scale personal data resources in autonomous vehicle platforms. 2) the market structure of the autonomous vehicle platforms from the perspective of personal data resource allocation. 3) the public awareness of the data acquisition and allocation of autonoumous vehicles platforms in the context of open innovation . 4) the opportunities and social challenges in the innovation of autonomous vehicles.5) the governance policies in the context of the Open Science paradigm and the personal data resource aggregation within the autonomous vehicles platforms.
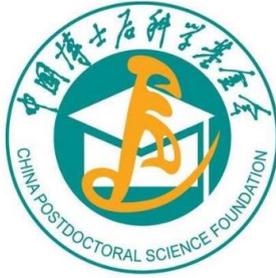
Description of existing or sought Chinese collaboration partner institute:

ITAS has a long standing collaboration with the Chinese Academy of Science and Technology for Development (CASTED; http://cn.casted.org.cn), a national Think-Tank affiliated with the Ministry of Science and Technology. Our collaborations have focused in the areas of S&T Governance issues such as Open Science, Responsible Research and Innovation, Ethics in S&T Policy as well as technologies such as Genomics, Nanomaterials, Food Biotechnologies. We are moreover working closely with CASTED in identifying common Technology Assessment methodologies that can be applied in all areas of S&T cooperation between Germany and China, and can be part of the official Sino-German Innovation Forum that is run regularly between the two countries' Ministries. We would like this project to be part of our ongoing activities with CASTED.

Required qualification of the post-doc:

- PhD in "Science, Technology and Innovation Management" or "History of Science"
- Experience with Technology Assessment, ICT Engineering, Platform Economy
- Additional skills in Data Management and Analysis, project management

PART B

Documents to be provided by the post-doc, necessary for an application to OCPC via a postdoc-station in China, which is affiliated to a research institution like a university:

- **Detailed description of the interest in joining the project (motivation letter)**
- **Curriculum vitae, copies of degrees**
- **List of publications**
- **2 letters of recommendation**
- **Proof of command of English language**

PART C

Additional requirements to be fulfilled by the post-doc:

- **Max. age of 35 years**
- **PhD degree not older than 5 years**
- **Very good command of the English language**
- **Strong ability to work independently and in a team**