Plan Overview

A Data Management Plan created using DMPonline

Title: FR fellowship: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology

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Funder: European Commission

Template: Horizon 2020 DMP

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Project abstract:

Increasing traffic congestion around the world leads to a series of adverse effects on the public travel and the development of society, such as travel delay, vehicle fuel consumption and environmental pollution. In recent years, autonomous driving has become an increasingly practical technology leading to new challenges and opportunities for traffic management on highways. This proposal expects to generate new knowledge in highway traffic management by developing a novel multi-agent control system that adopts reinforcement learning and heuristic approaches. The system aims to achieve the global optimization of the highway region, alleviate traffic jams, reduce travel times, and then increase traffic management efficiency by control of traffic instructions and optimal travel time. The system can be applied in various scenarios, such as only autonomous vehicles on the highways, both autonomous vehicles and human-driven vehicles on the highways or only human-driven vehicles on the highways. Reinforcement learning has great potential as a tool in traffic instruments control, while the existing algorithms have some drawbacks due to the cooperative control between agents and heuristic approaches have been successfully applied to optimization problems as well as cooperative optimization. The outcomes of this proposal will produce an intelligent and partial controllability multi-agent system that provides significant social, economic, and environmental benefits through optimal control strategies and effective management schemes

ID: 178157

Start date: 15-06-2023

End date: 31-08-2025

Last modified: 15-05-2025

Grant number / URL: 101034337

Copyright information:

FR fellowship: Highway intelligent traffic control system based on vehicle-road coordination and multi-agent technology - Initial DMP

1. Data summary

Provide a summary of the data addressing the following issues:

- **State the purpose of the data collection/generation**
- **Explain the relation to the objectives of the project**
- **Specify the types and formats of data generated/collected**
- **Specify if existing data is being re-used (if any)**
- **Specify the origin of the data**
- **State the expected size of the data (if known)**
- **Outline the data utility: to whom will it be useful**

I am not using any real-data or other sources of data, all are synthesis data generated by myself.

2. FAIR data

2.1 Making data findable, including provisions for metadata:

- **Outline the discoverability of data (metadata provision)**
- **Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**
- **Outline naming conventions used**
- **Outline the approach towards search keyword**
- **Outline the approach for clear versioning**
- **Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

All are synthesis data generated by myself.

2.2 Making data openly accessible:

- **Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**
- **Specify how the data will be made available**
- **Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**
- **Specify where the data and associated metadata, documentation and code are deposited**
- **Specify how access will be provided in case there are any restrictions**

All describe in the published paper.

2.3 Making data interoperable:

- **Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**
- **Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Not applied.

2.4 Increase data re-use (through clarifying licenses):

- **Specify how the data will be licenced to permit the widest reuse possible**
- **Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**
- **Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**
- **Describe data quality assurance processes**
- **Specify the length of time for which the data will remain re-usable**

Not applied.

3. Allocation of resources

Explain the allocation of resources, addressing the following issues:

- **Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**
- **Clearly identify responsibilities for data management in your project**
- **Describe costs and potential value of long term preservation**

Not applied.

4. Data security

Address data recovery as well as secure storage and transfer of sensitive data

Not applied.

5. Ethical aspects

To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former

Not applied.

6. Other

Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

N/A.