



AEON ER Data Management Plan

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ADVANCED ENGINE OFF NAVIGATION

This Data Management Plan is part of a project that has received funding from the SESAR Joint Undertaking under grant agreement No 892869 under European Union's Horizon 2020 research and innovation programme.



Abstract

The document is the Data Management Plan (DMP) of the AEON project. The Data Management Plan describes how the data collected or generated will be handled during and after the AEON project, describes which standards and methodology for data collection and generation will be followed, and whether and how data will be shared.

The deliverable is based on the Guidelines on FAIR Data Management in Horizon 2020.

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1 Introduction

AEON aims at fostering the usage of environmentally friendly ground operations techniques:

- Non autonomous taxiing such as TaxiBots
- Autonomous taxiing like Electric Green Taxi System
- Single Engine Taxiing as last option.

The project will be defining a concept of operations focusing on engine-off taxiing techniques based on a set of dedicated tools such as fleet management for TaxiBots and supervision interfaces to support the operators and their collaborations.

This document describes how the data will be collected, processed and shared in the AEON project.

The approach is based on the FAIR (findable, accessible, interoperable and reusable) guidelines of Horizon 2020 [2].

1.1 Applicable Reference material

- [1] AEON Grant Agreement Description of Action - GA-892869-AEON
- [2] FAIR (findable, accessible, interoperable and reusable) guidelines of Horizon 2020

1.2 DMP maintenance

This Data Management Plan (DMP) has been produced at the beginning of the project as a contractual deliverable. Its main purpose is however to be a living document in which information can be made available on a finer level of granularity through updates as the implementation of the project progresses and when significant changes occur.

The Project manager oversees the DMP update. The DMP should be updated at least before the end of the last reporting period.

2 Data Summary

AEON will produce a concept of operations document dealing with the management of engine-off taxiing techniques. The preparation of this document will be supported by the prototyping of different tools, algorithms and HMIs, that will be evaluated in an airport simulator. In order to be representative, this simulator will use two types of data:

- Topographical description of the platform using AIXM or equivalent formatting
- Traffic description, i.e. arrival and departure schedules, parking used, etc.

The geographical data will be either gathered from aeronautical information service if available or generated from a dedicated tool.

The traffic description will preferably be real life recorded data from the simulated airports (presumably Amsterdam Schiphol and Paris Roissy CDG) for better realism. If the data is not available, it could be generated. Validation scenarios should be prepared upon 2 or 3 days of traffic for each airports, representative of the overall traffic.

The data collected in AEON will mostly be of qualitative nature and originate from transcripts of interviews conducted with research participants, survey results and questionnaire results, as well as audio and video recordings. During AEON's validation sessions, feedback on the prototypes will be collected anonymously. The procedure and the formatting to collect this data is still to be determined.

The collection of personal data will be restricted to the following data:

- Personal and professional views and experiences.
- Photographs, audio, and/or video recordings of their participation in AEON research activities (e.g. documentation of discussions in workshops or activities in demonstrations).

For simulation purposes, AEON project may use performance data for TaxiBots, electric taxiing and single engine taxiing aircraft. These data coming from manufacturers will be confidential and stay internal to the project.

3 FAIR DATA

3.1 Making data findable

The geographical data describing the topology of the airport will be stored using the date of their definition as a key for referencing the data files. The date will help reflect the status of the airport platform in case of road work or taxiways modifications for instance. Generated files will also be stored using a configuration system to clearly identify their versioning.

The recorded traffic data potentially used to generate the validation scenario will be stored using the date of the recording sessions as a key for referencing the data files.

Topological data:

- File format: an SVG¹ file stores both the map information including, but no limited to, runways pavements, taxiways, apron, terminal buildings, service roads, together with data needed for routing processing. The routing data is stored as explained in the figure below:

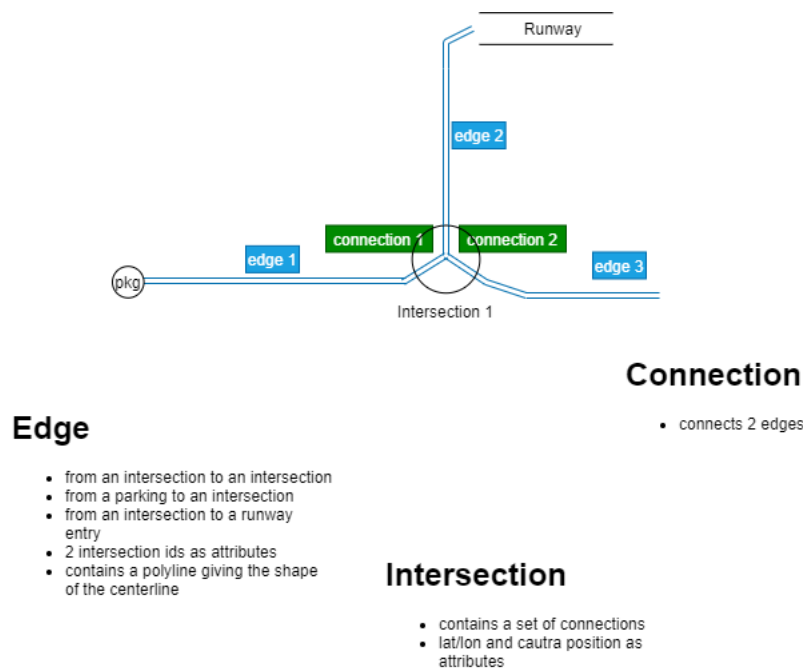


Figure 1: routing information

- Naming conventions: The files will simply be named according to the airport it represents using the ICAO code: either LFPG.svg or EHAM.svg

¹ https://fr.wikipedia.org/wiki/Scalable_Vector_Graphics

- Storage: The code used to generate the SVG files and the SVG files themselves will be stored in ENAC's source version control system (git).

Traffic description:

- File format: The input files format still needs to be defined and may be specific to the airport. Data for the simulator will be generated from operational recordings. The simulator files format is proprietary to ENAC and consists in a text file containing for each aircraft its flight plan and its trajectory.
- Naming conventions: The filename will be composed of the concerned airport's ICAO code and the date of the recording.
- Storage: the files will be stored in ENAC's source version control system (git).

AEON's validation sessions feedback:

- File format: word and excel files will be used to record the feedback collected during the validation sessions, together with videos and photos (when needed).
- Naming conventions: the filename will contain the name of the project, the date of the validation session, the associated validation technique.
- Storage: the files will be stored in ENAC's source version control system (git)

Publications of the project will have a Digital Object Identifier (DOI) and will have keywords.

3.2 Making data openly accessible

Deliverables marked as "Public" will be uploaded to the AEON website. There are no restrictions to the access of public deliverables.

Scientific papers and journal articles based on the project work will be publicly available from the publishing company. For all research publications web links will be provided on the project website.

In addition, for project-internal sharing and collaboration of data, a secure repository within the consortium has been established, called the AEON Redmine. The platform is only accessible with a personalized account provided by ENAC to consortium members upon request and protected by username and password.

Non sensitive data will be made accessible on request. To access the data, a request has to be made, by email (aeon-partners@lists.recherche.enac.fr) or through the AEON website contact page, to the AEON project consortium. If the access is granted. The data will then be accessible, in an email, on secured web URL, depending on its size.

Additional information can be requested by AEON partners, in order to ascertain his identity of the requesting person.

3.3 Making data interoperable

Technical data (airport topology and traffic data) will be produced using the best suitable standard format so that they can be reused.

Data collected during validation session will be stored in an easily reusable format.

3.4 Increase data re-use

The collected data will remain available up to five year after project closure. As stated in 3.7, only anonymous data will be collected.

Produced technical data may be shared to open data sources like Eurocontrol R&D data archive (<https://www.eurocontrol.int/dashboard/rnd-data-archive>).

3.5 Allocation of resources

The production of topological data is included in WP4 workload.

3.6 Data security

The security measures taken for collected data will be detailed in a dedicated deliverable, D8.2.

3.7 Ethical aspects

Only anonymous data will be collected during the validation sessions. The ethical aspects of recruitment and consent will be detailed in a dedicated deliverable, D8.1.