



OPEN CALL FOR REPLICATION SITES



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Abbreviations & Acronyms

EC	European Commission
ECGA	European Commission Grant Agreement
EU	European Union
GA	Grant Agreement
INEA	Innovation and Networks Executive Agency (European Commission)
LL	Living Lab
PIC	Participant Identification Code
RIA	Research and Innovation Action
SE	Software Enabler
WP	Work Package



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Introduction

This document provides all the necessary information and guidance for any interested organisation to prepare and submit an application to the **AVENUE Open Call for Replicator Sites**.

AVENUE is an Innovation Action (RIA) part-funded by the European Commission under the H2020 *Smart, green and integrated transport* program, implemented by a Consortium of 16 organisations from 6 EU countries and Switzerland.

The overall target of AVENUE is to demonstrate that autonomous vehicles will be a key element of the solution for public transport in the future. The project will not only assess the road behaviour safety of the autonomous vehicles in public transports, it will also demonstrate the economic, environmental and social advantages of autonomous vehicles for both the exploiting companies and the users, opening the way for a full scale adoption of autonomous vehicles in public transport after the end of the project. The project started on May 1st 2018 and will run until 30 of April 2022.

AVENUE will integrate, adapt, develop and validate innovative in- and out-of-vehicle services for passengers, maximising the personalisation and optimisation of itineraries, and making travelling a real experience for its passengers. AVENUE will revisit the offered public transport services, starting from the original problem, which is to allow passengers to move from one place to another and propose innovative transportation services and new transportation models (like mobility as a service).

The goals AVENUE are:

1. to demonstrate the advantages of the use of autonomous vehicles in urban and sub-urban shared transport
2. evaluate the cost-benefits, socio-economic and environmental impacts of the use of autonomous shared public transport vehicles under different public transport models,
3. to assess the safety and reliability of the autonomous shared public transport vehicles for users, and last, but not least,
4. propose a roadmap and business plans for the large scale adoption and deployment of autonomous vehicles for public transport.

These goals will be achieved with the design, development and evaluation, via large scale pilots and demonstrators, of new innovative public transport services based on autonomous vehicles in urban and sub-urban environments. The transport services will be fully integrated into existing public transport services, with security and safety being the cornerstone of the demonstrators.

AVENUE demonstrators are organised currently in four cities and namely Geneva, Lyon, Luxembourg and Copenhagen To extend the validation of defined solutions and investigate their transferability in Europe, AVENUE has launched an Open Call aimed to select and integrate **three additional sites** committed to implement and test some of the AVENUE innovations in collaboration with the AVENUE partners.

Any organisation or city operating autonomous shuttles for public transportation and interested in integrating the AVENUE platform and services, is invited to submit an application to the AVENUE Open Call.

In order to prove and test AVENUE's final solution as a vehicle-agnostic solution supporting various brands and types of vehicles, priority and strong encouragement will be given to those applicants that are proposing an autonomous shuttle fleet integrating shuttles from a new/different manufacturer than the one present in the project (that is Navya).

Potential applicants are advised to thoroughly read the whole document before beginning their applications, and make sure they:

- (i) Meet all the necessary eligibility criteria.
- (ii) Fill in each section of the application form, as per the requested information.

Structure of the document

This document is divided into four main sections:

Chapter 1 General Call Information provides a summary of the main aspects of the AVENUE Open Call, specifically:

1. the scope and terms of the call, including the aim and main objectives of the call, the type of activities eligible for funding, the type of contract and available budget, the financial provisions;
2. the eligibility criteria, including eligible subjects, countries and costs.

Chapter 2 “Background: project concepts and tools” provides an overview of the main innovation areas investigated by AVENUE and the type of solutions we expect the new selected replication sites that will implement and validate in collaboration with AVENUE partners.

Chapter 3 “How to Apply and Procedures to Follow” describes the main steps for submitting an application to the Open Call, including the Application Form, the procedure for submission of the application and the general timing of the evaluation, up to contract awarding to the selected applicant.

Chapter 4 “Selection” provides an account of the adopted evaluation process, of the assessment criteria and the applicant selection procedure.

All information and resources regarding this call, such as the Application Form and any supporting document, is provided on the AVENUE website at the following link: <https://h2020-avenue.eu/open-call>

1 General Call Information

1.1 Scope And Terms Of The Call

1.1.1 Aim And General Objectives

The target of the AVENUE project is to demonstrate the suitability and efficiency of the use of small and medium autonomous vehicles (AV) for different transport models that are under development in Europe.

Towards this target the project work is addressing the following issues:

- Define new public transport models based on autonomous mini-busses and identify enablers and barriers, (WP2)
- Develop new and innovative passenger services (WP 4)
- Organise and operate large scale demonstrators in different cities (WP7)
- Conduct a socio-economic analysis, identifying the impact of the adoption of autonomous vehicles (WP8)

The key concepts, characteristics and tools of the AVENUE approach in the above areas are outlined in section 2.

Validation and assessment of developed solutions, and input for the socio-economic evaluation is being implemented in the context of the four AVENUE demonstrator sites, all engaged in the implementation, test, validation and evaluation of innovative elements related to the above areas.

The aim and general objectives of the AVENUE Open Call are twofold:

- a. To improve the potentials and impacts of the AVENUE solutions, through the integration of the additional demonstrator sites allowing extended validation and evaluation by a test case that has not taken part in the initial investigation and design phases of AVENUE solutions.
- b. To achieve early assessment of the transferability of AVENUE solutions to other European sites.

Given these general aim and objectives, AVENUE is willing to recruit, through the Open Call, a new site that is already operating a public transportation service using autonomous vehicles, and interested to provide on-demand, door-to-door shared public transportation services, integrated to existing public transportation.

The aim of the AVENUE Open Call is to contribute to the new sites, financially and technically, in the extension of the existing services, and support them in the integration of the AVENUE Platform, the transport service optimization, in-and out-of vehicle services as well as vehicle-to-platform interfaces, according to their needs and the state of their existing implemented services.

1.1.2 Type Of Contract

The selected applicant will become a **new beneficiary** of the AVENUE project and will receive funds from the AVENUE project budget.

The contractual involvement of the selected applicants as new beneficiaries of AVENUE will be achieved through an amendment of the AVENUE EC Grant Agreement (ECGA).

The amendment will be managed by the AVENUE Coordinating Beneficiary (on behalf of the AVENUE Consortium and the applicant) and by the EC Funding Authority (INEA). On completion of the amendment process, the selected applicant will sign the ECGA and will become a full member of the AVENUE Consortium and a participant in the project.

The selected applicant will be also required to enter the Consortium Agreement signed by all AVENUE beneficiaries.

1.1.3 Type Of Activities Funded And Available Budget

By entering the AVENUE project as the organisation responsible for the new site, the selected applicant will ensure to implement and coordinate the activities of the new site, cooperate with the other AVENUE partners and contribute to the general objective of the project related, particularly, to validation and evaluation of innovative solutions and the socio-economic studies.

The new AVENUE site will be involved in the overall project experimental implementation, testing and evaluation cycle. Accordingly, the selected applicant is expected to take part in the following type of project activities:

- Define, in collaboration with the AVENUE partners and, particularly, with the partner in charge of sites' coordination (WP7 leader) a detailed plan for the implementation and operation of the new site demonstrator, and set up and operate, for the duration of the project, the demonstrator transport services, with involvement of the required stakeholders and users.
- Define, in collaboration with the AVENUE partner in charge of the socio-economic evaluations (WP8 Leader) the information that will need to be collected and provided for contributing to the overall socio-economic evaluations.
- Integrate the AVENUE platform and use a selected set of services, as required by the user needs of the site passengers, in coordination with the AVENUE partner in charge of the services (WP4 Leader).
- Contribute to the overall assessment, evaluation and dissemination effort of the AVENUE project.

Given the research character of the AVENUE project, project activities of the new AVENUE site will follow a work plan defined and agreed in the initial phases with the selected applicant, and they will be subject to possible changes and adjustments during the course of project implementation in the site.

The costs incurred by the selected applicant for the implementation of the above activities will be reimbursed in accordance to the general EC rules for the reimbursement of Research and Innovation Actions, i.e. 100% of eligible costs for public non-profit organisations, and 70% for for-profit organisations, up to a maximum of 100.000 EUR.

1.1.4 Duration Of The Contract

Project activities and collaboration within AVENUE by the selected applicant will last over a period starting on the entry date of the ECGA (target date: **01 May 2020**) and ending on the planned completion of AVENUE (**30 April 2022**).

1.1.5 Location Of Activities

The new AVENUE Living Lab must take place in one of the EU member states or an H2020 Associated Country (see sect. 1.2.2 ahead).

1.1.6 Financial Provisions

As a beneficiary of H2020 funds, the selected applicant shall receive payments for the costs related to project activities only against the presentation of Financial Statements, which will be prepared and submitted following the general rules of the EC H2020 program as defined in the relevant Financial Guidelines (see the H2020 online manual at the following link: http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm).

The submission of the financial statements will follow the general reporting period of the AVENUE project; i.e.: Interim financial reporting at month 36 (30 April 2021). Final financial reporting at month 48 (30 April 2022).

Payments to the selected applicant will be released by the Coordinating Beneficiary following the payments from the EC Funding Authority (INEA) according to the following scheme:

1. Pre-financing: at project entry (May 2020) 45% of total budgeted grant amount (EUR 100.000) of the new beneficiary.
2. 2nd instalment after the financial report of month 36
3. Balance: at project end (30 April 2022) the remaining part of eligible costs.

The amount of the final balance is calculated based on total beneficiary's costs accepted by the EC against the submitted Financial Statements, by deducting the amount of pre-financing.

In any case, the selected replication site applicant shall not receive, at the end of the Project, more than its allocated maximum grant amount (EUR 100.000).

1.2 Eligibility Criteria

1.2.1 Eligible Subjects

The call is open to public bodies/authorities or private companies responsible for offering or operating an integrated public transportation services in a specific European municipality or region and complying with the general eligibility criteria for participation in H2020 actions:

http://ec.europa.eu/research/participants/data/ref/h2020/legal_basis/rules_participation/h2020-rules-participation_en.pdf.

The public transportation services' offer must include the use of autonomous vehicles which operate in an open and mixed traffic environment.

The autonomous vehicle services must be already in operation at the time the application is submitted, or planned in the short term, i.e. entering the operational the latest on the integration of the new partner in the project, that is May 1st 2020.

The applicant must declare the willingness to contribute to the project concept evolution by testing some of the services and platform developed in AVENUE, depending on the type of public transport services offered and the underlying technology available in the site.

At the very basic level, the applicant must be able to integrate and operate the AVENUE platform for on-demand transport services integrated to existing public transportation services. However, the availability and operation of advanced transport services (e.g. multimodal trip planning, integrated ticketing, booking of resources, management of multiple payment schemes – pay-per-use, subscription – etc.) would be an advantage.

The applicant shall ensure demonstration and validation activities of the AVENUE services in real-life conditions, including the involvement of transport end-users and the collection of data and information about mobility choices and experience. The willingness to share with the AVENUE partners the data collected during the operation of the trials in the site will be an important contribution to the project and a relevant element for evaluation of applicant's proposal.

In order to allow timely access to the EC Grant Agreement as a new AVENUE beneficiary, the applicant must ensure that at the start of ECGA amendment procedure (anticipated for November 15, 2019, **all the following conditions are met:**

- The selected applicant complies with the aforementioned general eligibility criteria for participation in H2020 actions and is registered in a country described in the following section (1.2.2)..
- The selected applicant has a **validated PIC** (Participant Identification Code), according to the guidelines published on http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/applying-for-funding/register-an-organisation_en.htm
- The selected applicant is in the position to sign an EC Grant Agreement (ECGA) according to the guidelines published on http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/from-evaluation-to-grant-signature/grant-preparation_en.htm

AVENUE retains the right to discard the selected application in case one (or more) of the conditions above are not satisfied. In this case, **the first applicant that follows in the ranking** resulting from the technical evaluation process and **meets all of the above conditions** will be selected to join AVENUE as the new replication site. In order to avoid such a circumstance, **it is highly recommended that all applicants check out their validation status on EC Participants Portal before submitting the application** and, when needed, complete any process with the EC ensuring the above eligibility criteria are met well in advance of the conclusion of technical evaluation process (see sect. 4.2).

Institutions, organizations or other kind of legal entities funded by or otherwise affiliated with an AVENUE partner are not eligible.

1.2.2 Eligible Countries

Legal entities that fulfil the above described conditions and are established in the following countries are eligible to receive funding through the Open Call:

The **Member States (MS)** of the European Union (EU), including their overseas departments (based on the general H2020 rules as define in http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm .

The **EU Associated Countries** participate in Horizon 2020 under the same conditions as EU Member States.

1.2.3 Eligible Costs

Eligible costs for the implementation of the activities outlined in section 1.1.3 follow the general rules of the EU H2020 program.

To be considered eligible for reimbursement by the European Commission, the costs incurred by the selected applicant need to be:

- Actual and incurred during the project.
- Contributing to the objectives of site project activities in an economic, efficient and effective manner. Determined according to the usual accounting principles of the applicant.
- Included in Annex I of the EC Grant Agreement, following the ECGA amendment process.

Overall, the costs incurred by the selected applicant for the proposed action may include the following cost categories:

1. Direct personnel costs, i.e. costs for employees (or equivalent), costs for natural persons working under a direct contract, costs of personnel seconded by a third party against payment, costs for SME owners without salary, costs for beneficiaries that are natural persons without salary.
2. Subcontracts.
3. Other direct costs, i.e. travel costs and related subsistence allowances, equipment costs, costs of other goods and services.
4. Indirect costs.

Further information on the eligibility of costs and H2020 rules may be found in **H2020 online manual**¹. The **Annotated Model Grant Agreement**² provides, among others, explanations on the eligibility of direct and indirect costs in H2020 actions.

2 Background: Project Concepts And Tools

The vision behind AVENUE is to develop and demonstrate economically and environmentally viable, highly personalised, safe and secure transport services, where the autonomous vehicle services (like itinerary, time table etc.) are dynamically adapted to the individual user needs and are integrated into the public transport eco-system of the cities. We anticipate that future public transport services where there will be no time tables and no predefined destinations, with fleets of mini, medium and large shared autonomous vehicles roaming the city in a seemingly random way, picking up and dropping off passengers anywhere and at any time, but which in reality will be highly coordinated by sophisticated itinerary optimisation algorithms. With the use of mobile technologies and cloud IT services, passengers will define their needs for a ride, and based on nearby vehicle availability, current vehicle itinerary, vehicle load, and other announced (or anticipated!) passenger needs, (and possibly on the acceptable price!), the vehicle itinerary will be modified to pick up the passenger from the requested point and drop them off at their destination or at an acceptable nearby point. All this in full coordination and use of other existing transport means, so that we can offer the passenger the optimal way for his travel needs.

The AVENUE concepts, tools and services are being tested at four sites (Geneva, Lyon, Luxembourg and Copenhagen), all strongly engaged in the development of new public transportation services based on autonomous vehicles.

¹ http://ec.europa.eu/research/participants/docs/h2020-funding-guide/index_en.htm

² http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf

The sites have been selected according to their complementarity in business model, operator type (Public or private) and operating environment (from residential to industrial). The resulting knowledge and lessons learned will be made available and shared with any interested operator, city, and policy maker (while respecting privacy and business constraints).

As previously introduced, AVENUE work is organised around four work areas (1) definition of new public transport models; (2) Development of new and innovative passenger services; (3) Organising and operating large scale demonstrators in different cities ; and (4) Conducting socio-economic analysis, identifying the impact of the adoption of autonomous vehicles.

2.1 Avenue Main Work Areas

The use of Autonomous Vehicles in public transport has the potential to revolutionise the complete landscape of public transport, affecting at the same time all aspects of urban and sub-urban living, from daily living to urban development and to social planning. The goals AVENUE are: 1) to demonstrate the advantages of the use of autonomous vehicles in urban and sub-urban shared transport, 2) evaluate the cost-benefits, socio-economic and environmental impacts of the use of autonomous shared public transport vehicles under different public transport models, 3) to assess the safety and reliability of the autonomous shared public transport vehicles for users, and last, but not least, 4) propose a roadmap and business plans for the large scale adoption and deployment of autonomous vehicles for public transport.

goals will be achieved with the design, development and evaluation, via large scale pilots and demonstrators, of new innovative public transport services based on autonomous vehicles in urban and sub-urban environments, integrated into existing public transport services, with the support of new passenger services, and the main work areas towards these target are described in the following sections.

2.1.1 New Public Transport Services

Autonomous vehicles will be deployed in the demonstrator and replicator cities, in collaboration with public transport organisations and authorities, are expected to be fully integrated into the existing public transport services.

By integrating the latest technologies allowing for personalisation of services based on user profiling, passenger and vehicle localisation and dynamic itinerary optimisation, AVENUE will provide autonomous vehicle public transport services based on new models like, a-la-carte, any-time, any-where and for anybody, with optimal service costs integrated and coordinated with existing public transport and multimodal services.

During the project, autonomous vehicles of different capacities will be deployed, supported by new and innovative services and validate different models for public transport, adapted to the site needs and requirements. The number of vehicles used and the number of passengers using the services will allow measuring the efficiency and success of the new autonomous vehicles services.

The integration of autonomous vehicles will complement and improve the existing public transport systems and offer an optimised approach to integrate traditional transport services with autonomous transport services with the goal of improving the services offerings for urban and sub-urban low to medium demand areas. Operational integration will enable coordination with conventional transport modes, while access to traffic and other useful data available will further enhance the reliability, safety and robustness of the overall service.

The transport services will be based on a fleet of autonomous vehicles, which will be possibly offering different levels of service (like for example exclusive or shared). All autonomous vehicles will be centrally controlled and coordinated by optimisation algorithms, where security and safety is a cornerstone of the services.

The integration with the existing services will be achieved by linking the autonomous vehicle operations to the official operations and planning systems of the existing transport services and modals, proving coordinated transfers, integrated pricing etc.

In addition to the passenger transport services, the autonomous vehicles will also include auto-maintenance services and auto-charging from selected places.

2.1.2 New And Innovative Passenger Services

AVENUE's approach will include various innovative in- and out-of-vehicle services for passengers that will be designed with the user in mind to ensure the acceptance and promote a smooth integration of these novel technologies into a daily life-style. The developed services target to improve not only the access to the public transport service, but also the in-vehicle comfort. The new service will be personalised, taking into account special personal needs of the passengers with aim in adapting the in-vehicle services to the actual state of mind of the passenger, by monitoring for example the in-vehicle behaviour of the passenger. Extra focus will

be paid to the development of accessibility services and solutions for different passenger groups like, persons with reduced mobility and young children and elderly who require supervision.

Several value-added services adapted to the needs of the passengers during the trip are under development in the project, improving the user experience of autonomous vehicle services.

For each demonstration site the choice of the services to be deployed is made following an evaluation of the needs of the passengers. The services provided include in-vehicle and out-of-vehicle services. The in-vehicle services include infotainment services, passenger guidance, etc.

The Out-of Vehicle Services allow the passenger to organise their trip based on their needs, follow up information regarding whereabouts of a specific vehicle, where a close person is present, like an unaccompanied child or an elderly parent, and even follow the ordered vehicle and be informed of its arrival. All services will be offered by simple, ergonomic interfaces on mobile phones or home PCs.

2.1.3 Organising and operating large scale demonstrators

The project is organised around four (4) basic use cases of autonomous vehicles for public transport, which constitute the “large scale demonstrators” of the project (Geneva (Switzerland, Coordinator), Lyon (France), Copenhagen (Denmark) and Luxembourg (Luxembourg), representing the most important models in public transport in Europe. They also act as examples for replication for the “replication sites” of the present call.

The target of the replication cities is to run demonstration activities after the 3rd year of the project.

The project is currently developing and will be testing in the second year door-to-door services and dynamic routing public transport services with fleet itinerary optimisation (that is with the operation of at least 3 vehicles in the served area). Towards the introduction of a free itinerary and dynamic routing and with the acceptance of the authorities, we have defined flexible itineraries, where the routing includes a set of possible, but well defined streets (and possibly itineraries) where the vehicle will be able to pass, based on a dynamic routing. This allow us to validate the routing algorithms, identify road behaviour issues, introduce to the public the notion of on-demand public transport and, of course, collect data regarding the vehicle behaviour and passenger reactions and acceptance.

The next step in from the third year will be to introduce a fully dynamic door-to-door service, within an area. We will define the area to service, the type of services that will be offered and operate it for until the end of the project (and hopefully beyond the project duration as a standard service), taking into account restrictions in itineraries coming from inadequacy of the roads (too narrow, in bad shape, etc), parts of the roads where the vehicle will not be allowed to stop for passenger boarding and disembarking etc. This situation, while it can be seen as a restriction of the service, it will be in reality a positive issue, since it will allows us from one side to define, in the recommendations that will be produced, the limits and need for urban adaptations for the support of the autonomous vehicles, and from the other side specify requirements for the next generation of autonomous vehicles for public transport.

2.1.4 Conducting socio-economic analysis

The success of the adoption of autonomous vehicles for public transportation relies, from one side, in the acceptance by the (future) passengers, and from the other side in demonstrating the economic, social and environmental benefits. A major target of the project, that will lead in the edition of recommendations for public transportation actors, is a thorough socio-economic analysis.

The project will conduct an in depth study of the socio-economic and environmental impacts of the introduction of the new disruptive services or public transport, analysing benefits and costs not only from the point of view of service operation, but also quantify the indirect benefits like vehicle ownership, parking cost savings, or efficient land development benefits, change of modal transfer, working hour gains, gains in waiting time, energy savings, carbon footprint, noise, air pollution etc

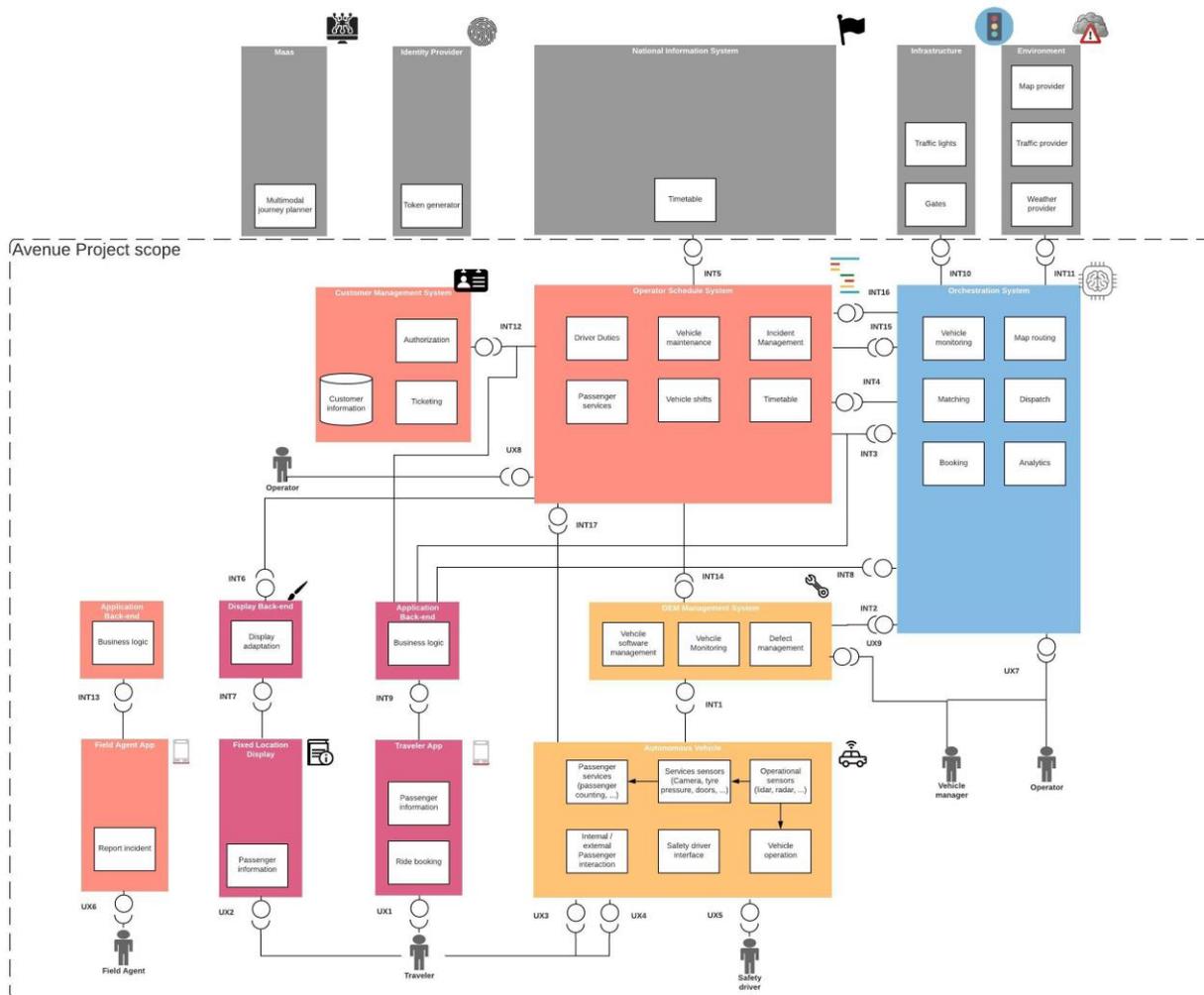
During the operation of the services, we will evaluate the needs of the different user groups, identify the barriers in the adoption and acceptance of autonomous vehicle transport services (like user expectations and illusions, administrative issues, costs, network density etc.), identify the advantages for users and non-users, and evaluate the costs related to the deployment and operation of autonomous vehicles based public transportation.

The service acceptance will be measured both subjectively (questionnaires for active and potential users, semi-structured interviews) and objectively (number of new users in the service, number of users changing behaviour etc.). The evaluation of the costs and benefits will be done in a holistic way, taking into account not only service operation costs, but also quantify the indirect societal and environmental benefits like vehicle ownership, parking cost savings, or efficient land development benefits, change of modal transfer, working hour gains and waiting time reductions, energy savings, carbon footprint and air pollution reduction and even changes in passenger habits resulting from the public service personalisation.

The results of the socio-economic evaluation will be used to produce sets of recommendations for public authorities regarding required measures, legislation, road map creation etc. for the adoption and deployment of autonomous vehicles, analysing directly or indirectly related socio-economic and environmental issues and the impact of the services. In addition, a recommendation and guidelines for the de-velopment of a business model for public transport operators will be set up.

2.2 The AVENUE platform and services

The diagram below represents the overall architecture of AVENUE platform (the architecture presented might be revised based on technical, legal and implementations restrictions).



The new project partners will be asked to install the Operator backend (in in the diagram) at their premises and integrate/interface/link/connect to their existing transport services' system. Passenger services developed in the project (in in the diagram) will be offered to the site passengers. The fleet will be controlled for operation and optimisation by the project developed system (in in the diagram). The vehicles (in in the diagram) will be integrated and controlled by the AVENUE platform.

A set of services are under consideration and development, based on the needs of the operators. Each operator will be able to choose the set of services that needs to reply to its passengers. The first set of services that are under consideration for implementation are the following:

	Automatic trip planning suggestions	Category	Out-of-Vehicle services
User story	As a user, I want to be able to receive automatic trip planning suggestions		

	Trip planned via call centres	Category	Out-of-Vehicle services
User story	As a user, I want to be able to plan a trip even without using IT devices		
	Digital or human information points	Category	Out-of-Vehicle services
User story	As a user, I want to be able to get information about the service in other places than on the web/via an app		
	On demand zone	Category	Out-of-Vehicle services
User story	As a user, I want to know when I enter an on-demand zone, where I can order autonomous vehicles		
	Single button vehicle calls and help request	Category	Out-of-Vehicle services
User story	As a user, I want to call a bus in front of my house or signal a request for help with a button tap.		
	Online ticketing services/ Convoy service	Category	Out-of-Vehicle services
User story	As a user, I would like to book trip for me / As a user, I would like to book a group trip involving several autonomous vehicles		
	Intelligent ticket control	Category	In-Vehicle services
User story	As a user, I want a seamless ticketing system		
	Visualisation in real time of the path/ destination	Category	In-Vehicle services
User story	As a user, I want to know my real-time itinerary		
	In vehicle entertainment	Category	In-Vehicle services
User story	As a user, I want to be entertained while being transported in the autonomous vehicles		
	Emergency automatic call system	Category	In-Vehicle services
User story	As a user, I want to be able to get help in case of an emergency		
	Enhance the sense of security and trust	Category	In-Vehicle services
User story	As a passenger, I wish to feel secure at any time I use the autonomous mini-bus (especially in the absence of the driver)		
	Prevention of night aggressions	Category	In-Vehicle services
User story	As a user, I would like to be able to ask for help in case of an aggression or possible one		
	Virtual personality interaction	Category	In-Vehicle services
User story	As a user I want to be able to receive information and interact with the different services offered in the vehicle using natural language and with a well-known personality I can trust, which represents the autonomous vehicle services.		
	Follow my kid/ grandmother/ father	Category	Out-of-Vehicle services / In-Vehicle services
User story	As a user, I would like to see that my relative/friend is safe / As a user I would like to feel safe when travelling with the autonomous vehicles		
	Mutual help facilitation	Category	Out-of-Vehicle services / In-Vehicle services
User story	As a user, I would like to know how to help fellow passengers / As a user I would like to tell other passengers or the autonomous service that I need help		

With the deployment and operation of the transport services, other passenger and operator services will be defined and mapped, as use cases, to the project architecture.

2.2.1 Data Sharing

An important aspect of AVENUE is the collection and analysis of data, in order to gain a deep and supported understanding of the actual effectiveness of the services and business models on specific and different profiles and environment, as well as the identification of technical and non-technical issues concerning data collection processing and sharing (such as data privacy, security, visibility of internal business, “fears”, trust, regulatory frameworks, etc.). The applicant should accept to collect the required data, that fall in the scope of the project, and share them with the project consortium partners, as they will share their data with the new partner.

3 How To Apply And Procedures To Follow

This section outlines the procedures for the submission of the application to the AVENUE Open Call and the relevant Application Form and submission rules.

3.1 Application Form

The applicant shall complete and submit to AVENUE (following the procedure outlined bellow) the **Application Form** available for download at the following link: <https://h2020-avenue.eu/open-call>

The Application Form must be:

1. Compiled following the indications and using the formatting conventions of the provided template.
2. Signed and emailed by an authorized representative (the email is valid as electronic signature).

The Application Form consists of five main sections:

1. **Description of the candidate replication site:** the applicant shall provide here some high-level information about the served area and the transport services currently in place (population/area covered by the service, description of integrated ticketing and multi-operator schemes, etc.), as well as the technology used (which types of autonomous vehicles, infrastructure used etc).
2. **Ambitions and development plans:** the applicant shall describe the overall city/region multi-annual ambitions, highlighting the mobility strategic plans, the integration with planning policies, the technological roadmap, and services planned..
3. **Integrating with AVENUE:** the applicant shall describe how the candidate replication site will incorporate, validate and demonstrate the AVENUE, both at organizational and technological level, indicated which types of services can be of interest to adopt and integrate in the new site.
4. **General information about the applicant:** Applicant expertise, past experience, key persons.
5. **Cost and effort information** : overview of the allocated resources and use of the budget.

Finally, an (optional) **Annex Section** can include possible expressions of interest and/or letters of support produced by involved operators/public authorities or any other information that can be useful in the evaluation of the proposal.

3.2 Where And How To Send The Application

The compiled Application Form shall be sent as an attachment to an email sent to project coordinator, dimitri.konstantas@unige.ch.

3.3 Deadline For Submission Of Applications

Compiled Application Forms can be submitted up to 1st of October 2019 17:00 CET.

All the mails received after such deadline (mail sending time rules) will be silently discarded.

3.4 Further Information For The Applicants

More information can be found and/requested at the project site, and by contacting the project coordinator by email. A video-conference can be also organized for a more detailed discussion.

3.5 General Timing: From Application To Contracting

After closing the application phase (**1st of October 2019**), all applications will undergo a technical evaluation process, aiming to determine their ranking and select the new sites to be launched in AVENUE.

The technical evaluation will consolidate the final ranking as described in section 4, and will be concluded on **30th of October 2019**. The resulting ranked list will be presented to the General Assembly of the project, that will take place in the first 2 weeks of November 2019, and which will decide on the sites that will be integrated in AVENUE.

The inclusion of the selected applicants and new sites in the AVENUE project will be achieved via an amendment procedure of the EC Grant Agreement (ECGA) currently in force. The amendment process will be requested by the AVENUE Coordinating Beneficiary (Softco Sismat) and will be carried out in interaction with the EC Funding Authority (INEA). During the process, additional administrative information and documents could be required from the selected applicant.

The timing of the amendment process depends on the timing the required information is provided to EC Funding Authority and on the timing of the concerned internal processes of the EC. The target date for completion of the amendment is **April 1st 2020**; however, such date may be subject to changes depending on the actual processing time taken by INEA.

Once officially included in the project, the selected applicant is entitled to start activities and report costs in relation to the allocated AVENUE budget.

4 Selection

4.1 Evaluation Process

The evaluation of eligible applications will be carried out by the AVENUE evaluation committee, in respect of principles of fairness and transparency, with the overall goal to enrich the consortium with valuable competences and an additional site willing to explore and demonstrate the AVENUE target potentials.

The applications will be evaluated against the criteria and according to the principles described in the following section. All applications above the defined threshold will be sorted according to their overall score. The application with the highest score will be initially selected for the official integration in AVENUE consortium, provided all eligibility criteria are met (see sect. 1.2.1). All other applications above the threshold (as per the scoring scheme described in the following) will be considered in a reserve list and could be recalled, starting with the one with the highest score, in case the selected applicant does not fulfil the eligibility criteria or withdraws from the process.

In case two or more candidate proposals will reach the same score, the evaluation committee will invite competitors to join (separately) additional evaluation sessions performed remotely (via e.g. video calls) and aimed to provide further clarifications related to proposed activities, and a new ranking will be issued.

4.2 Assessment Criteria, Scoring Thresholds And Weights

Proposal will be evaluated according to the following criteria that will be assessed upon the received applications:



- Assessment Criterion 1.** Experience in operating, testing, or demonstrating a public transportation service using autonomous vehicles
- Assessment Criterion 2.** A running AV project OR the legal authorization to start the operations of autonomous shuttles by May 2020
- Assessment Criterion 3.** Strategic plan and commitment of the candidate sites for the deployment under commercial exploitation of autonomous vehicles integrated to existing public transportation services (supported by a roadmap)
- Assessment Criterion 4.** Maturity of the existing services offered for shared public transportation with autonomous vehicles (technical excellence, maturity and novelty compared to the state-of- the-art or market, ambition)
- Assessment Criterion 5.** Technological capability of the proposer to successfully deliver the promised results
- Assessment Criterion 6.** Integration with existing public transportation services
- Assessment Criterion 7.** Feasibility of installing and using the services
- Assessment Criterion 8.** Benefit and impact: Expected benefit for user or customer, impact on society and environment in relation to cost, and impact on AVENUE project
- Assessment Criterion 9.** Commitment of collaboration with other partners in the socio-economic studies targeted by the project
- Assessment Criterion 10.** Novelty of the site site-up, including new mobility models, different vehicles than the ones used actually in the project (NAVYA Autonom shuttle)

Each evaluation criterion will accord scores reflecting feasibility, innovation, integration and conformity to the project ideas. Designed evaluators will provide scores on each criterion as per the table below.

Evaluation	Score
Bad. The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information	0
Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.	1
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.	2
Good. The proposal addresses the criterion well, but a number of shortcomings are present.	3
Very Good. The proposal addresses the criterion very well, but a small number of shortcomings are present.	4
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor	5

Applications will be declared **above threshold** if:

- Each criterion reaches the **default threshold of 3**

AND

- The proposal reaches the **overall threshold score of 40.**