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Preliminary market consultation and contextual request for offer

Project and CUP: *D39G18000040002- MENTOR – INTERREG ITALY-SWITZERLAND*

Dear supplier,

NOI SpA intends to initiate a preliminary market consultation pursuant to art. 20 of LP no. 16/2015 and art. 40 of Directive 2014/24/EC for the implementation of a software component ("**Bike Sharing Merano Data Collector**"), to be integrated in the Open Data Hub. The component has the function to retrieve on a real-time basis the data about the occupancy of the bicycles of the pilot bike sharing service in Merano and integrate it in the Open Data Hub with the other available datasets, so that end-users' applications can be able to properly visualize it. More information and specifications about the afore-mentioned project and this market request are described in more detail in the Annex.

NOI SpA invites all interested economic operators to participate by filling in an expression of interest, **also in the form of a quote/offer**, in relation to the products and requirements described in the Annex.

DEADLINE FOR THE DELIVERY OF THE OFFER (27.09.2019):
The offer is to be sent exclusively by e-mail to r.cavaliere@noi.bz.it

Best regards
Roberto Cavaliere

ANNEX: Details of the preliminary market consultation

1. The MENTOR project

The MENTOR project is a project financed by the **Interreg-V-A Italy-Switzerland** programme, coordinated by the Municipality of Merano and implemented in collaboration with **NOI Techpark**, **SASA**, the **Municipality of Brig-Glis** in the Canton of Valais and **Postauto**.

The aim of the project is to demonstrate a concept of "**Mobility-as-a-Service**" (MaaS) in the two pilot municipalities, which are representative of the Alpine environment. MaaS is currently one of the main drivers of technological innovation in mobility and is based on the idea of being able to combat the use of the private car with integrated packages of sustainable mobility services, which the user can easily use, book and pay.

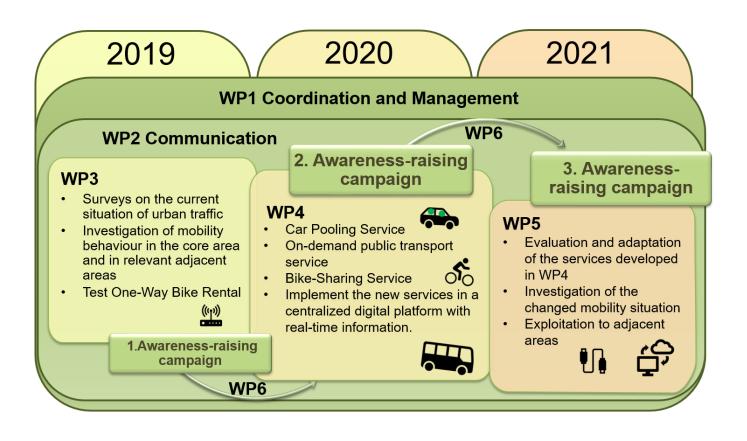The demonstration will be carried out on three axes of intervention:

- **Experimentation of new mobility services**, designed to be integrated with the public transport offer, which in the vision of the project partners must be the backbone of a MaaS ecosystem. Specifically, following services will be tested:
  - o **Merano**: car pooling service, bike sharing service, on-demand service
  - o **Brig-Glis**: on-demand transport service
  Experimentation of MaaS tools, aimed at making access to these services as simple as possible:
  - o **Merano:** evolution of the experimental portal mobility.meran.eu. In particular, a real-time inter-modal routing function will be developed, so that people can have a valid travel option for each possible travel from A to B.
  - o **Brig-Glis**: an evolution of the MaaS app that Postauto is already implementing will be tested.
- **Demonstration of automated mobility services**, aimed at creating a high acceptance by local travellers to use this new generation of vehicles. In particular, a first demonstration of small self-driving shuttles on predefined, traffic-free routes in Merano and Brig-Glis is planned for September 2019.

The project started in December 2019 with an expected duration of 3 years. An overview of the project activities is summarized in the following picture.
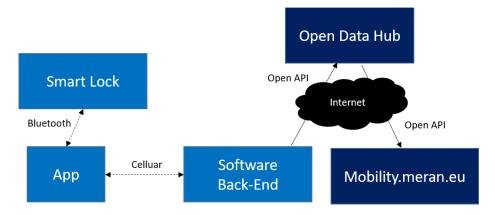
2. The pilot bike sharing service

The purpose of the market consultation is to find a suitable supplier that is able to implement a new software component ("**Bike Sharing Merano Data Collector**"). This collector will be an "adapter" to the back-end of a new pilot bike sharing service that will be launched between September / October 2019 in Merano.

The IT architecture of the bike sharing service is illustrated in the figure below.

The new bike sharing service is powered by the technologies of the supplier MOQO, a German start-up specialized in IT solutions in the sharing mobility sector, and is characterized by three main components:

- An **APP**, that users will have at disposal for accessing the service.
- A **smart lock**, installed on each bike, that allows the unlocking of the bicycle on to the user that has booked it.
- A **back-end system** in the cloud, that remotely manages all bike sharing operations.

The bike sharing service will be **one-way** (i.e. the bikes can be left in a different point from the one in which the user has taken it) and **station-based**. The concept of "station" is however a new one with respect to the traditional schemes: even if physically marked and recognizable by the users they will actually be **virtual** areas defined by the system in which the restitution of the vehicle are only admitted. In case a user tries to leave the bicycle outside one of these areas, it won't be possible to lock the bicycle. This functionality is implemented by means of a **geofencing** logic, i.e. by comparing the position of the user through the APP. The service will be for **free** for all users but in case of unproper usage of the service, users will be charged from their credit card account. **Penalties** are defined by a specific set of rules that are under consolidation. Users have to provide their **credit card account** during the registration phase.

The goal of the Bike Sharing Merano Data Collector is to connect to the back-end system, retrieve the real-time information of the bike sharing service and provide it to the Open Data Hub. The Open Data Hub will provide in its turn this information as open data (CC0 license) to third-party applications; in particular such information will be integrated in the web-application https://mobility.meran.eu .

3. The API with the bike sharing back-end

Given these premises, the back-end system is in the condition to know in each moment the real-time availability of the bikes and, if available for use, the station in which they are currently parked. All this data is made available through an API, which is fully documented here: https://cloud.opendatahub.bz.it/index.php/s/tpw2xQkL3GWaAj3 .

The API is based on a single method called "**cars**", which can be used to get all relevant static and real-time information about the status of the vehicles (in our case, bikes). The main purpose of the collector is to retrieve to the Open Data Hub all relevant information associated to each bike of the service, so that a third-party application can use this data to show the real-time positions / availability of the bikes' fleet in Merano.

4. The integration with the Open Data Hub

The Bike Sharing Merano Data Collector has to be implemented according to the technical constraints and using the information technology defined at http://opendatahub.readthedocs.io/en/latest/corehacker.html and its subsections.

The development of the Bike Sharing Merano Data Collector will take place in three phases / environments:

- **Development environment**, on supplier's infrastructure. The supplier is required to replicate locally an instance of the Open Data Hub platform, using the source code of the "core", freely available: https://github.com/idm-sued-tirol/bdp-core
- **Testing environment**, on an infrastructure controlled by NOI (running on Amazon Web Services). The first working versions of the Data Collector will be integrated into the existing Continuous Integration (Jenkins) pipeline. New versions of the code will have to be "commissioned" on a private repository, according to instructions that will be provided, so as to allow the automation of this process.

- **Production environment**, on an infrastructure controlled by NOI (running on Amazon Web Services). At the end of the testing, when the version of the Data Collector is considered sufficiently stable, the Data Collector will be integrated into the production environment, which is also managed with a Continuous Integration pipeline similar to that used in the testing environment.

The Data Collector must be implemented on the basis of the example (HelloWorld) freely available (https://github.com/idm-suedtirol/bdp-helloworld).

5. Timing of implementation

The implementation of a Data Collector must be carried out using the "agile" methodology (scrum). Twice-weekly sprint sessions are planned with the core development team of the Open Data Hub. In the kick-off meeting it will be specifically defined how the sprints will be managed and the team of people who will be involved, with their roles. The exact specification of how the data from the back-end API should be integrated in the Open Data Hub will also be defined during the kick-off meeting. The development of the software can take place as an extension of an existing Data Collector. This possibility will be evaluated and decided at the beginning of the work.

The reference timeline for all requested work is the following, assuming that all deepening work of the Open Data Hub infrastructure is carried out by the supplier while preparing the requested proposal / offer:

- **Sprint 1**: implementation of the Data Collector (reading part from the bike sharing back-end, writing part in to the Open Data Hub)
- **Sprint 2**: testing of the Data Collector (bug fixes, development of unit testing, etc.)
- **Sprint 3**: production release of the Data Collector (final verification tests, implementation work final documentation, etc.)

We therefore expect that in 6 weeks' time since the kick-off meeting the implementation work is completed.

6. Evaluation of proposals / offers

The supplier will be chosen according to the best overall quality/price compromise illustrated in the delivered proposals / offers, which must not exceed 15 pages of documentation. Any collaboration with other companies and the presence of any subcontracts must be indicated.

7. Invoicing procedures

All billing details will be indicated in the order. NOI Techpark is subject to the system of electronic invoicing of split payments.

8. Transfer of rights

NOI is granted all rights to reuse and elaborate the produced software works, including the possibility to distribute them to third parties and to release them under an open license. The works must therefore be provided in the source files, according to the modalities indicated in point 4.