



## **Cross-Rhine Driverless Shuttle Challenge**

*under the high patronage of the French State Secretary to the Minister of Environment, Energy and The Sea, responsible for Transportation,*

*and the Minister for Transportation of the Land of Baden-Wurtemberg,*

*encouraged by the German Federal Minister of Transport and Digital Infrastructure (BMVI)*

## **Call for Expressions of Interest**

**issued by The Strasbourg-Ortenau Eurodistrict**

*in collaboration with Strasbourg Eurometropolis  
and the City of Kehl*

### **Summary**

This Challenge is open to any designer or manufacturer of driverless shuttles with electric propulsion, with no nationality restriction.

The performance that constitutes the Challenge will take place during the coming European ITS Congress (to be held in Strasbourg, France from June 19 to 22, 2017).

Each preselected candidate will have to operate its own shuttles along one route, around 2 km long, linking the territories of Kehl and Strasbourg cities, crossing the Rhine by an existing bridge.

Candidates will operate their driverless shuttles according to one Specification, at separate times, with passengers. The whole package therefore will provide with an ephemeral service aimed at demonstration and evaluation.

Compelling innovations, whether technical or in terms of service, will be awarded in two

forms:

- The Challenge Trophies based on the achievement of Specification and the observed deficiencies toward the specified requirements. Any candidate that will ensure the required service during all the allocated time spot and according to specifications of the different Challenge documents will be awarded a Challenge Trophy and an Achievement Certificate.
- The People’s Choice Prize based on a multi-criteria assessment from the shuttle passengers, reserved to the candidates that obtain a Trophy.

The deadline for submission of application forms is February 28, 2017.

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## 1. Context

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### 1.1. *The driverless shuttle*

Here the driverless shuttle is a vehicle:

- That can run without driver;
- With electric propulsion;
- Aimed at carrying passengers;
- Typically with reduced gauge width;
- That can carry at least eight and no more than twenty passengers.

This Call for expressions of interest deals with this specific vehicle category in spite of the absence of standard.

Over and above its technical peculiarities, this driverless shuttle concept is based on the capacity of such vehicles to provide, without a driver, urban passenger transport services, easy to operate, flexible, cost-efficient, and environment-friendly. Due to their driverless ability, you typically expect:

- the possibility to extend the offer of public transport (first and last kilometers, staggered hours, etc.), where classic solutions with a driver are not affordable;
- A high level of service quality, including road safety, with or without hospitality staff on board.

As an integral part of the coming driverless vehicle disruption, the driverless shuttle is called upon to play a major role in the transport system of tomorrow's city. Developing driverless vehicles for passenger public transport (namely "driverless shuttles") constitutes a specific innovation segment. Involved technologies are almost mature. Throughout the world, a number of prototypes, or even pre-serial vehicles, are already tested or demonstrated on open roads in a situation close to effective transport service operation. In a number of countries, the deployment is coming soon. Such progresses must yet be strengthened through field tests.

Since 2013 when Strasbourg hosted the first open road tests of driverless vehicles, intensive R+D works have advanced technologies and systems, regarding achievements and reliability. Within a clear regulation framework, some open road tests of driverless shuttles have been jointly organized by manufacturers, transport operators and mobility authorities. During these tests, systems have been assessed in real conditions and the public fully involved.

But so far no event has gathered on one route the different driverless shuttle projects. Such a confrontation should boost exchanges between professionals and with the public, which could encourage, orientate and promote further R+D works, essential for achieving that new mobility.

### 1.2. *French-German Co-operation on electric and digital mobility*

The French Ministry for Environment, Energy and The Sea (*Ministère de l'environnement, de l'énergie et de la mer - MEEM*) and the German Federal Ministry for Transportation and Digital Infrastructure (*Bundesministerium für Verkehr und digitale Infrastruktur - BMVI*) have launched a French-German Initiative for electric and

digital mobility ("*Deutsch-Französische Initiative Elektromobilität und Digitalität*"). This Challenge is one of the two cross-border projects validated within this framework by Messrs Alexander Dobrindt, the Federal Minister for Transportation and Digital Infrastructure, and Alain Vidalies, the State Secretary for Transportation, Fisheries and the Sea, on September 29, 2016, in Munich, as announced on the same day to the media by a press release from the BMVI.

### **1.3. The European ITS Congress**

This project also takes place in a particular context of Strasbourg City hosting the European Congress of Intelligent Transport Systems (ITS) organized by ERTICO from June 19 to 22, 2017. Upon this major event in the field of smart mobility, the issue of ITS cross-border interoperability will be central and the automated vehicle issue as well.

## **2. The driverless shuttle Challenge**

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### **2.1. Goals**

Within this context, the Challenge will aim at:

- Introducing all transport users in Strasbourg-Ortenau Eurodistrict, the ITS Congress attendants and the general public (through local, national and international media) to electric driverless shuttles, as a component of future public transport;
- Proving the user value of a driverless shuttle service;
- Asserting its reliability and safety in open street traffic;
- Assessing the degree of maturity of the involved technologies.

The demonstration event that constitutes the Challenge will take place during the coming European ITS Congress (to be held in Strasbourg, France from June 19 to 22, 2017).

Each preselected candidate will have to operate its own shuttles along one route, around 2 km long, linking the territories of Kehl and Strasbourg cities, crossing the Rhine by an existing bridge.

Candidates will operate their driverless shuttles according to one Specification, at separate times, with passengers. The whole package therefore will provide with an ephemeral service aimed at demonstration and evaluation.

The Challenge trophy will be awarded to any candidate that meets without noticeable failure the Specification requirements and provide with the required service level. More, a People's Choice Prize will be awarded to the candidate that achieves the best multi-criterion evaluation mark from the shuttle passengers.

The trophies and the Prize are honors with no financial allowance.

The deadline for submission of application forms is February 28, 2017, at noon.

## **2.2. Roles: Steering Committee and Organizer and Supervisor**

The European Grouping of Territorial Co-operation (EGTC) “Strasbourg-Ortenau Eurodistrict” is the official Challenge carrier. In this capacity it is identified as the “Organizer” in the Challenge documents, notably the Regulation and the Specification.

The Challenge decision-making body is identified as the “Steering Committee”. It is established and chaired by the Organizer. So far, it gathers:

- The Strasbourg-Ortenau Eurodistrict;
- Strasbourg Eurometropolis (*Eurométropole de Strasbourg*);
- The City of Kehl (*Stadtverwaltung Kehl*);
- The French Ministry for Environment, Energy and The Sea.

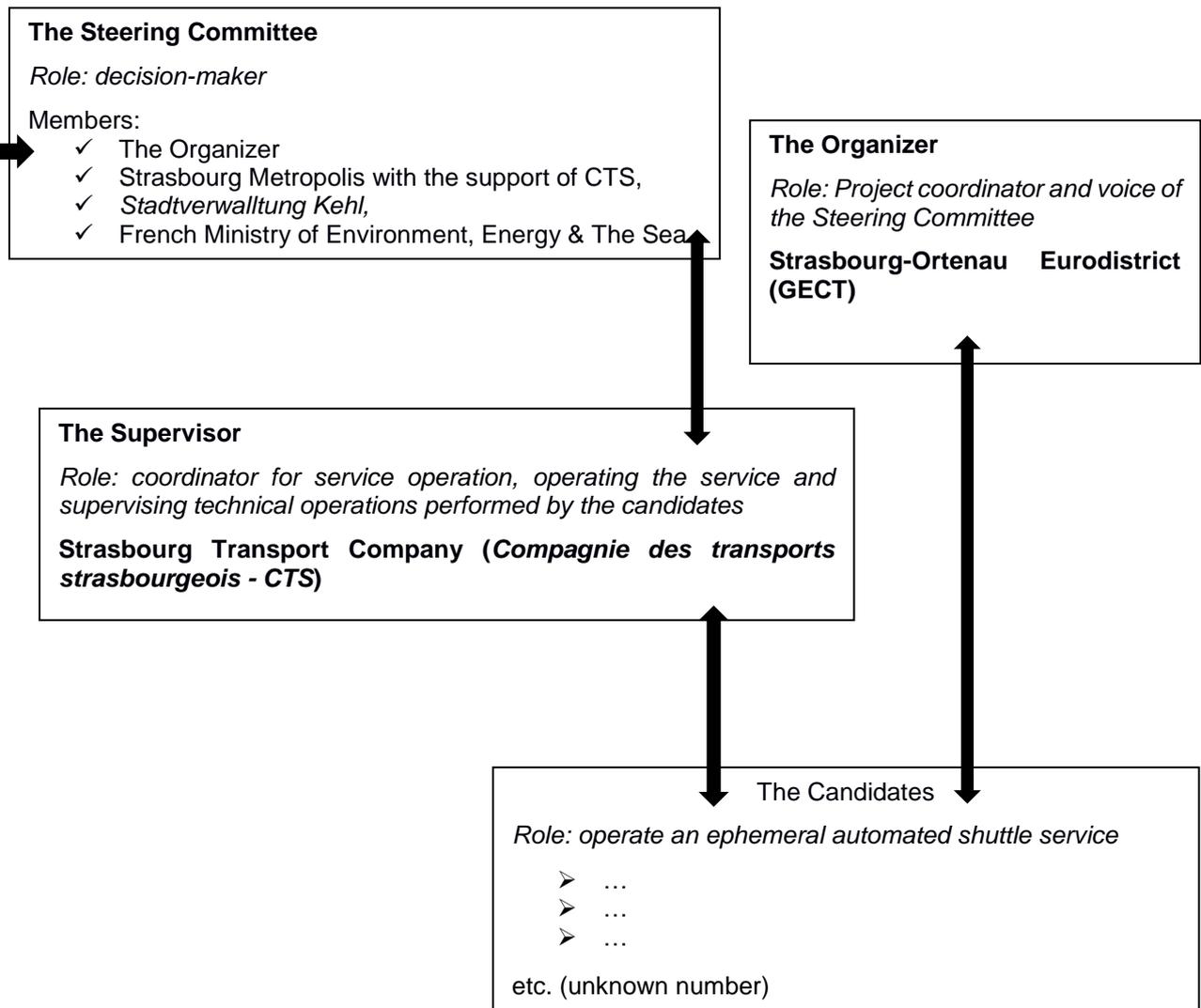
The Organizer equally acts as the voice of the Steering Committee towards the media and third parties. It will notify the candidates all Steering Committee decisions.

The Steering Committee relies on a number of advisors, notably for technical issues, including the Federal Institute for Highway Research (*Bundesanstalt für Straßenwesen – BAST*), the Center for Information Technology Research of Karlsruhe (*Forschungszentrum Informatik – FZI*), and the Fribourg government presidency (*Regierungspräsidium Freiburg*).

The Steering Committee will assign the dedicated function of Supervisor of the operation to the Strasbourg Transport Company (*Compagnie des transports strasbourgeois – CTS*). The Strasbourg Transport Company (CTS), as the public service contractor for public transport operation on the territory of Strasbourg Metropolis, will coordinate, as the Supervisor, the Challenge service operation. This role is detailed in the Specification.

In due time, the Organizer could provide the candidates some specific contacts for technical, functional and operational issues.

## Organization Scheme



### 2.3. **Schedule**

<b>February 6:</b>	Issuing the Call for expressions of interest;
<b>February 28, noon:</b>	Deadline for submission of application forms;
<b>March 17:</b>	Notifying pre-selection decisions;
<b>Up to April 30:</b>	Collaborative process for adjustment of the final Regulation and Specification;
<b>April 30:</b>	Notifying the final Regulation and Specification;
<b>Early June:</b>	Challenge Review with all parties;
<b>June 12 to 16:</b>	Blank test runs;
<b>June 19 to 22:</b>	Challenge demonstration runs;
<b>June 22:</b>	Trophy and People's Choice Prize Ceremony

### 2.4. **Required regulatory authorizations**

This refers to the individual authorizations required for open-street testing of driverless shuttle prototypes. Here the allocations of powers differ between the two countries:

- In France, issuing these authorizations is a centralized responsibility, through a derogatory process of vehicle registration, temporary and restricted, under the jurisdiction of the ministry in charge of transportation (MEEM).

**Contact person:** Mr Jean-Baptiste Autissier (MEEM, email address: [jb.autissier@developpement-durable.gouv.fr](mailto:jb.autissier@developpement-durable.gouv.fr)).

- In the Federal Republic of Germany, this is under the jurisdiction of Länder; namely in this case the Land of Baden-Württemberg and its subordinate bodies. Where relevant, derogations will be issued by the *Regierungspräsidium Freiburg* and the *Landratsamt Ortenaukreis*.

**Contact person:** Mr Alfons Bank (*Regierungspräsidium Freiburg*, email address: [alfons.bank@rpf.bwl.de](mailto:alfons.bank@rpf.bwl.de)).

The competent authorities, on both border sides, are not obliged to issue the corresponding authorizations to the selected candidates of the Challenge. Such authorizations remain subject to rules in force.

It is pointed out that French regulations require the presence on board during demonstrations of an operator that can stop the shuttle in case of an emergency, holding a valid driving license of category D for passenger transport. Each candidate will meet and bear this obligation burden.

No selected applicant can be admitted to the final phase of the Challenge until he gets the required authorizations from both border sides, as well as the required proofs of insurance for the experimentation.

## **2.5. Demonstration sequence**

Each member of the Steering Committee is responsible for its own part of:

- Ensuring the candidates access to the demonstration itinerary, including adaptation works and traffic measures. The Organizer will provide the preselected candidates with a “Challenge Itinerary” file to be included in their application forms (cf. 2;4):
- Allocating to each preselected candidate demonstration time;
- Keeping them available a 24/24 guarded storage place for their shuttles;
- Ensuring pre-registration and embarkment registration for the public;
- Collecting and synthesizing their opinion when getting off the shuttles, then providing the elements needed for awarding the People’s Choice Prize.

Candidates, each for its own part, are responsible of:

- Obtaining in due time the required authorizations for their demonstrations;
- Performing the demonstrations of their shuttles including the blank test demonstrations, by supplying driving, maintenance and safety personnel they deem necessary to the good achievement of the experimentation, with required clearances; they will have to submit these clearances before the start of the blank test runs, and the proofs of insurance as well;
- Ensuring care and maintenance of their vehicles.

## **2.6. Sharing of Challenge expenses**

Each candidate will bear the direct expenses linked to his own participation, including: the costs of providing the shuttle operators during the Challenge blank test runs and the demonstration runs; the costs of transferring and operating the shuttles; the costs of maintenance, security and insurance against damages to third parties or the public infrastructure.

## **3. Eligibility**

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Only firms of any nationality that design and/or build driverless shuttles are allowed to respond to this Call for expressions of interest, excluding any other firm or individual.

Besides, firms which do not have an establishment within the European Union must be represented, for their application, by an authorized representative residing in a EU member State.

## **4. Application procedure**

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### **4.1. Application forms**

Firms interested by this Challenge are invited to submit under seal, before the submission deadline their Application forms completed in English, French or German at their own convenience. These forms include:

- Annex A (letter of expression of interest constituting an application to the Challenge), completed and signed;
- Annex B (administrative information), completed and signed;
- Annex C (technical information), completed and signed, including:
  - C1: references of the candidate, showing his professional and financial capacities;
  - C2: presentation of the proposed shuttle and supporting documents proving its maturity, including evidences of past tests and demonstrations.

Abovementioned annexes A, B and C are appended to this Call for expressions of interest.

#### **4.2. Processing of application forms**

Application forms will be examined by the Steering Committee. The preselection decisions, to be notified by the Organizer, will be based on an assessment of the candidate abilities to operate their shuttles in accordance with the Specification, smoothly and safely for the passengers and the other public space users.

Applications will be eliminated if the applying firms do not provide adequate assurance regarding:

- Their reputation, professionalism, technicality, proficiency in the subject matter, to be demonstrated by the references of the Application forms;
- Or the maturity of the proposed shuttle prototype(s).

#### **4.3. Confidentiality**

Forms submitted by the candidates will be considered confidential. They will not be circulated outside the Steering Committee and its advisors.

### **5. Challenge Regulation**

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The Challenge Regulation (as the initial version) is available in French or German.

It is broken down in the following parts and sections:

#### Part I

- a.** Challenge basic requirements
- b.** Preselection process
- c.** Collaborative finalization of the Challenge Specification for performances
- d.** Collaborative finalization of the Challenge Regulation
- e.** Confirmation for participation to the Challenge

#### Part II

- f.** Blank test runs

#### **g. Evaluation of the demonstration runs**

This Regulation is considered as definite as for Part I. Sections in Part II could be elaborated and amended later, as a result of the collaborative process with the preselected candidates described in the Regulation, section e. Such amendments, to be decided by the Steering Committee, could neither compromise the Challenge general scheme nor substantially modify the competition framework between the Challenge participants.

## **6. Specification of Challenge performances**

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The Specification of Challenge performances (as the initial version) is available in French or German. It sets out technical and functional performances to be ensured by each participant as the specific competition purpose, as well as prior additional performances such as the blank test runs or later additional tasks such as the removal of its own equipment and installations

It is broken down in the following sections:

- a.** Role of the Supervisor (i.e; the CTS)
- b.** Route of the ephemeral line
- c.** Days, times and frequency of the ephemeral service
- d.** Admission of the passengers
- e.** Back-office
- f.** Storage facilities and electric recharging
- g.** Insurances and responsibilities
- h.** Removal of the candidates' own equipment and installations

This Specification could be elaborated and amended later, as a result of the collaborative process with the preselected candidates described in the Regulation, section c. Such amendments, to be decided by the Steering Committee, could neither compromise the Challenge general scheme nor substantially modify the competition framework between the Challenge participants, except in the case of full consensus between the Organizer and all the preselected candidates.

During this process, each candidate will be expected to specify the technical conditions that could ensure the highest success of its own performance.

Adjusting some parameters set by the Organizer in this Call for expressions of interest could be considered, based on alternative proposals if achievable and well-argued.

## **7. Document hierarchy**

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In case of discrepancy, the provisions of the Regulation and the Specification take

precedence over the indications of the text body of this Call for expressions of interest. Similarly, the provisions of the Regulation take precedence over those of the Specification.

All these three documents are provided in French, German and English. In case of discrepancy between the different language versions, the French version is binding. The two other versions are courtesy translations only.

## **8. Cases of waiver of compensation**

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Candidates waive by advance any right to demand compensation or to take legal action against the Organizer in the following cases:

- Non-preselection;
- Exclusion from the Challenge following the blank test runs;
- Challenge cancellation for any reason;
- And in general any decision of the Organizer that could be considered detrimental,

to the extent that the concerned decision is reasoned and pursuant to provisions of this Call for expressions of interest, or the Challenge Regulation or Specification.

## **9. Contact persons**

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### **Eurodistrict Strasbourg-Ortenau**

Mrs Lioba MARKL-HUMMEL, head of Mobility Projects

Addresses:

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Hadquarters: 1, Parc de l'Etoile, 67076 Strasbourg Cedex, FRANCE

Email address: [lioba.markl-hummel@eurodistrict.eu](mailto:lioba.markl-hummel@eurodistrict.eu)

### **Strasbourg Eurometropolis**

Mrs Celine OPPENHAUSER, Head of Innovative Projects, Travel Service, department for Mobility and Transport

Address: 1, Parc de l'Etoile, 67076 Strasbourg Cedex, FRANCE

Email address: [celine.oppenhauser@strasbourg.eu](mailto:celine.oppenhauser@strasbourg.eu)

*NB: See further the following annexes :*

- *ANNEX A: Letter of expression of interest;*

- *ANNEX B: Administrative information*
- *ANNEX C: Technical information*

*The Challenge Regulation and Specification are separate documents, non available in English. Please refer to the French or German versions.*

<b>Strasbourg-Ortenau Eurodistrict International Driverless Shuttle Challenge Call for Expressions of Interest</b>	<b>ANNEX A Letter of expression of interest</b>
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<b>Firm Name</b>	
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I, the undersigned, xxxxxxx, representative duly authorized for this purpose, express hereby the interest of the firm xxxxxxxx to compete in the International Driverless Shuttle Challenge governed by your Call for expressions of interest (CEI) issued on last February, 6.

The shuttle prototype [or: the shuttle model] that we intend to submit to the Challenge events is the following: xxxxx

To the best of our own tests and experimentations, we do consider this vehicle mature and proven enough to ensure safely the Challenge required performances.

Please find hereattached the items of our Application forms, completed as specified in the CEI, that we submit for our preselection as a Challenge candidate.

We do understand the candidate obligations, both as to the resources required and the technical and functional specifications and the charges and responsibilities to support, as they result from the terms of the Call for expressions of interest and the provisions of the Challenge Regulation and Specification annexed to it.

We hereby accept these obligations and submit ourselves unreservedly to these provisions, from the preselection round, and generally speaking for our participation to the Challenge if preselected.

<b>Title and name of the signatory</b>	
<b>Function</b>	
<b>Date</b>	
	<b>Signature</b>

**The Firm**

Firm name					
Headquarters address					
Postal code		City		Country	
SIRET number <sup>1</sup>				Assets	
Corporate name					
Firm manager					
Phone		Email			

If applicable, **contact information of the establishment** through which the firm answers the CEI:

Address of the establishment					
Postal code		City		Country	
Corporate name					
Manager of the establishment					
Phone		Email			

If applicable, **contact information of the firm's agent** answering on behalf of the firm to the CEI (please provide a copy of the warrant):

Name of the agent					
Headquarters address					
Postal code		City		Country	
SIRET number				Assets	
Corporate name					
Manager of the agent					
Phone		Email			

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<sup>1</sup> Or equivalent

**Signatory**

Title and name of the signatory	
Function	
Date	Signature

- C1: references of the candidate, showing his professional and financial capacities
- C2: presentation of the proposed shuttle and supporting documents proving its maturity, including evidences of past tests and demonstrations