**Questions for market consultation participants**

Development and operation of the Budapest Cycling Community Transport System („MOL Bubi” Public Bike System) 2020 ’

Dear Public Bike System Operators!

In the context of the market consultation, public bike system operators (further referred to as: „PBS Operator”) shall answer the following questions in writing and/or via teleconf, conf call, Teams etc. (orally). The answers shall help us to ensure the success of the public procurement procedure planned by the contracting authority for the "Development and operation of the Budapest Cycling Community Transport System (further referred to as „Budapest Bike, or in short form: „Bubi)". It is important to note, that fair competition, public procurement principles on equal opportunities and equal treatment of economic operators shall be provided.

The questions asked by the Customer (our company, Budapesti Közlekedési Központ, further referred to as „BKK”) were numbered in the document (1 - 48). The PBS Operator is requested to use the serial numbers as a reference in the case of a response.

1. **References**
2. Please indicate, for how long you have been operating community cycling systems (public bicycle systems)?
3. Please describe the public bicycle systems you have operated in the last two years?
4. Please describe the nature of improvements you have made to community cycling systems during the existence of the product?
5. Please indicate if you already have a reference for operating a Hybrid docking system (meaning: a „fixed”, stationary docking solution, combined with a Free-floating solution),and if you also have a completely Free-float system?
6. Please indicate any and all references (including past and currently running PBS projects) you have for the delivery and operation for „off-the-rack” software systems? (By „off-the-rack”, we mean turnkey, ready to use systems, incl. customer management system, sales system, rental control system, billing initiation system, SAP data connection, reports)?
7. **Deadline for submission of tenders (public purchase competition)**
8. In order to save time, please provide information on any factors that may affect the length of the bidding period?
9. **Technical, operational parameters issues**

**„Recap”: short summary of the current operating model** of stations, and of the currently operated equipment (physical environment):

The current bicycles owned by BKK are equipped with fully filled rubber tyre with a sponge hose for puncture-free operation. These tyres are non-infaltable, resulting in higher drag and slower speed, and more exhausting usage. The frame design of currently operated bicycles is resistant to the weather releated wear. The tyres and generally speaking, the overall (hogh) weight of the bikes mean that it is more difficult and exhausting to use than an average city bike.

The aim of BKK with the new public procurement is to replace the entire bicycle fleet with brand new bikes, which are much easier to ride, roll better. At least 1,200 new bikes must be delivered, however, BKK reserves the right under the umbrella of the new Operating Contract to purchase further bikes, up to an additional 400 bicycles. These 400 pieces are only optional for BKK, BKK does not have any obligation to boost the bike fleet from 1200 units to 1600 units!

BKK Zrt. is subject to the provisions of the Stability Act, so it cannot undertake a guarantee in relation with the purchase of bicycles.

**BKK will examine the feasibility of the following two models:**

1. Model: The PBS Operator will supply new bicycles (1200 units) that are compatible with our currently operated „fixed” docking system (for technical description of the docking station, see Annex 3) so the physical design of the docking stations does not require any improvements, modifications, and the PBS Operator will supply a new Front-end, Back-end system and a new Mobile Application as part of the procurement.

**OR**

1. Model: The PBS Operator will supply new bicycles (1200 units), which are not compatible with our existing fixed docking system, therefure the PBS Operator will also adjust (rebuild/refurbish) the existing docking systems. PBS Operator also shall supply BKK with a new Front-end, Back-end system and mobile application as part of the procurement. In the case of this 2. model, the development or reconstruction of the docking system, including obtaining any paperwork, permissions etc., is the responsibility of the Bidder before commissioning.

The PBS Operator can present a solution proposal in connection with the feasibility for both models simoltaneously (separately), thus one PBS Operator can have two proposals at the same time!

1. **Model in details: if the** PBS Operator **develops a model in connection with the application of the current docking system, it must comply with the following Customer expectations:**
* Smart-lock: The supplied bicycles must have a smartlock. The smart-locks need to be able to communicate with the back-end software so that users can rent or end rent off bicycle at the stations without contact. In addition all smart locks must be equipped with GPS tracking system, on the basis of which the authorized employees of the Customer can query and view the route of the bicycle and its current position with a visual display. The smart-lock should also be able to handle a future geofence-based hybrid docking system in which virtual stations would be designated without physical docks (e.g. a marked area of the pavement, or a painted docking station sign on the pavement).. The smart-lock must be opened by at least the delivered mobile application, but the Customer also supports the possibility of opening with NFC in addition to the application
* Inflatable tyre: The supplied bicycles are required to be equipped with inflatable tyre for the entire fleet. The tyres must be puncture-resistant, puncture-proof e.g. equipped with tire clereance tape or with other flat-free technology .
1. Please describe, what is the possible solution to deliver new bicycles which are compatible with the existing docking system?
2. Please provide information on the accuracy of the planned GPS system and the intervals at which the bicycle signals.
3. Please describe what rental models, and locking functions would the new bicycles have. Please also cover the physical design and software solutions required to lock the bikes.
4. Please provide feedback on whether you would undertake to replace/replenish the stolen / damaged / destroyed bicycles during the operating period?
5. **Model in details: if the** PBS Operator **delivers new bicycles that are not compatible with our existing docking system, the developed model must meet the following Customer requirements:**
* BKK expects the new bicycles to be equipped with smart locks and inflatable tires (see Model 1 for a more detailed exposition)
* Existing docking stations can be upgraded (converted) or replaced so that the bicycles supplied by the PBS Operator can use the docking stations.
* Regarding the rebuilding, or refurbishment (or replacement) of the docking stations, the bicycles can be locked to the dock in such a way that they cannot be moved without permission (validation, e.g. valid rental). The upgraded (converted) or replaced docking system must be compliant with the image of Budapest public bike system and provide an aesthetically pleasing, professional appearence. The roll-over protection must be solved for all bicycles, ie. the bicycles must be secured in the area of the station in such way that the bicycles cannot be titlted or will not fall over.
* During the potential rebuilding the docking system, it is expected that the new docking system has the exact same size as the current system, and can only be designed as a superstructure, meaning that any damage, drilling or tapping of the pavement is prohibited. When rebuilding the docking system, the docking can be fixed with the currently used fixing solution (using the existing screw holes), as a superstructure.. (Attached the description of the concrete dowel used, see Annex 3.a.).

During the conversion of the docking system, it is probihited to demolish the asphalt, paving stone or paving.When installing a docking system, the existing holes must be used, meaining that new hole cannot be created!The operation of the docking system must be ensured in such a way that it does not require utility supply (electrical utility connection from third party, e.g. mucicipial electric company.)

1. Please present the technology by which the bicycles to be supplied can be locked in the area of the station in such a way that it is not physically possible to move them without renting, and that the bicycle can be fixed in such a way that it does not fall over. (A description of our docking system is attached to the invitation in Appendix 3).
2. Please provide feedback on whether you would undertake to refill the stolen / damaged bicycles assets during the operating period?

**Front-end; Back-end and mobile application (Software enviroment)**

In addition to replacing bicycles, the goal set by BKK is to replace the software environment in such a way that it acquires an off-the-rack, ready to use software system, consisting of Customer Management System, Sales System, Rental Control System, Billing Initiation System, SAP Data Connection, Reports etc.. This means a turnkey software system that has been operating in a market environment for several years (minimum 3 years). (Front-end; Back-end; Mobile application).

Currently, back-end and the monitoring/helpdesk software are two different systems with different backgrounds and developments. The back-end is a foreign-made software that is responsible for the registration, product purchase, rental, delivery functions and the management of the related settlements, as well as for the data to be sent to BKK. The monitoring / helpdesk software has been developed in a separate environment, for the current MOL Bubi system, and performs the functions of the SLA based on the data received from the back-end system.

**Back-end and Monitoring systems**

The monitoring system should monitor and supervise the operation of the Bubi system, record automatic trouble tickets when the system is unavailable, and calculate the SLA. In addition, it provides a reporting / Dashboard option for continuous and retrospective information on the current status of the system and the availability indicators.

A Helpdesk system shall be part of the monitoring system. This Helpdesk system is responsible for the trouble ticketing, it is embedded in the customer interface where they can also report faulty (malfunctioning) bicycles, stations and faulty docks. Trouble tickets are also tracked through this system. Categorizing, reclassifying, and assigning tickets to the problem tracker is also part of this system. The system should initiate a ticket, if a given station has a low amount of bikes, in order to get the station resupplied. When the station is refilled (resupllied), the ticket closes and the SLA calculation is completed. The closed fault ticket is included in the SLA statement.

Database level access to all applications/modules related to the operation of the systemRecord, prioritize, reclassify, log, track, and close helpdesk events. The integration of the hardware (terminals / docks) already owned by the Customer into the backend system.

1. Please provide feedback on whether they have a monitoring solution that includes the customer needs listed above?
2. If you do not have monitoring software that meets the above requirements of the Customer, please describe what alternative solution is proposed, covering at least, but not limited to, the following issues.
* What Ticketing solution can you provide for your operational tasks?
* What Ticketing solution can you provide to deal with IT system errors?
* Can the service and storage life of bicycles be traced in software?
* What monitoring solution can you provide in relation with docking stations, bikes, and user habits?
* What reporting and / or dashboard options can they provide?
1. Please describe the backend features of the software to be shipped.
2. Please describe how the software to be delivered can be used to manage day-to-day operational tasks. (For example, but not limited to: organization of bicycle logistics, rental tracking, customer registration process, customer registration reporting, purchase reporting, active user reporting, daily travel numbers, number of inoperable bikes, expected repair date, station status, software errors)
3. Please inform whether it is necessary for BKK Zrt. to provide a hardware environment for the software to be delivered (possible development needs of the IT infrastructure)?
4. Please inform us that, in accordance with the regulations in force by NAV (National Tax Office, NAV as abbreviation) in Hungary that you would provide at least 10 tax years of data storage on BKK's servers or in the PBS Operator’s own back-end system? If the Bidder provides data storage in its own background system, the Customer must be provided with continuous access during the entire period of operation.
5. Please describe what APIs you have, furthermore, explain what APIs can the Backend system provide for possible future developments by BKK (e.g. enhancing the service options)?

**Standard SAP connections, or API solution, financial function**

Customer is currently using an ERP system with SAP ECC version 6.0. Plans to migrate to S4HANA in the next 2 years, to which the software to be delivered must also be able to fit.

Customer's expectations regarding economic and financial functions:

* BKK issues invoices to all customers from the SAP system.
* The expectation of the system to have an online data connection to NAV. Currently used process:

In the case of a customer who is not registered as a private individual, the tax number or group tax number entered in the system must be transferred to the SAP system, which queries the NAV database using a web service. There, the tax number is checked, and the associated name and address data is returned to the SAP system, which in turn passes it to the Bubi software.. Thus, this data is automatically filled in on the interface of the non-private registered customer..

* In the case of a customer registered as a private individual, the system must provide the possibility to provide the minimum data required for the issue of an invoice in the case of a customer registered as a private individual at least in accordance with the provisions of Act CXXVII of 2007 on VAT and the Accounting Act 2000 and 23/2014. NGM Regulation (hereinafter referred to as the VAT Act). If the relevant regulations change, the system should be freely parameterizable in order to change the account data..
* The requirement for the system is compliance with the law, as part of which the online data provision to be introduced later by NAV in the case of invoices issued to private individuals will be handled..
* The system to be delivered must perform the same postcode monitoring (use country identification structure) as in the SAP system..
* The system must be able to aggregate sales, generate daily, weekly, monthly, annual reports..
* The system to be delivered must be suitable for initiating sales and payment transactions, managing the customer interface.. (for example. cancellation of a pass, management of credits for fairness). The payment and finance module must support the viewing and checking of payment transaction data.
* In the case of a customer with a monthly pass, it should be possible to sell a monthly or even several monthly passes of any duration. The pass price can be freely parameterized by BKK.
* The system is expected to provide a solution for entering and storing bank card data in the system in order to validate subsequent debits.. For credit card payments via the Internet, the system must comply with 3D secure regulations..
* The customer interface should allow the customer to pay their debt.. This data does not need to be passed to the SAP system, it only needs to be reportable data to perform accounting tasks.
* The system must be able to transmit and receive data to and from the SAP system (input, output data transfer), it is necessary to status the data communication.

Another condition is that automatic messages about the errors are sent by e-mail, at the end of the day, the mail contains the details of the erroneous transactions. This function must be deactivable. You must also be able to resubmit items that ran into „error” (based on a unique identifier and its status, this can be solved).

* The interface connection must be of the real-time online type. The customer expects to ensure the regular SAP SD invoicing process, from the transferred data an SD order must be formed in the first round, from which SAP SD automatically generates an invoice and records it in the general ledger. These need to be given a separate status.
* When paying for season tickets and services, regardless of its success, the Bubi system passes the data required to create an invoice order to the SAP system online.
* The Contracting Authority shall specify the fields required for the creation of the SD order and their technical content. It is necessary to compile a mapping table from the fields of the Bubi system and the required fields from SAP.
* The Bubi system must provide and list the necessary data with the criteria by which the data received from the bank or payment gateway service provider in connection with payments made via POS, VPOS terminal or other payment system can be fully, clearly reconciled, identified, so that discrepancies can be detected automatically.
* In the case of annual or longer passes, an accrual of revenue is required in SAP. Based on the validity data, a report is required from the Bubi system software. In the case of annual or longer passes, it is necessary to produce a table showing all the data stored in Bubi..

See Appendix 5 for a description of the SAP SD interface.

1. Please provide feedback on whether the software to be delivered is suitable for connecting to the Contracting Authority's SAP version 6.0 system via the web service.?
2. Please provide feedback on whether the software to be delivered is suitable for connection to the S4HANA SAP system management.?
3. Please provide feedback on whether the above Customer expectations are capable of operating in the off-the-rack software to be purchased or require some (any) customization or individual development? If individual development is required, how much additional time does that mean (how much delay does that cause)?

**Mobile application:**

The currently used client application was developed by the company operating the back-end system when the MOL Bubi system was launched, and no development has taken place since then.

The Customer's expectation with the newly delivered mobile application:

* operating under iOS and Android operating systems, (optional Huawei AppGallery), and it should be available free of charge.
* The application must have software tracking, run on at least the latest and 2 previous software versions.
* The application needs to be able to handle:
	+ rental
	+ completion of rental at a virtual station purchase product and display related information (expiration date)
	+ registration
	+ bug report
	+ rental account, balance history
	+ forgotten password function
	+ intuitive, advanced and user friendly UI/UX
	+ interactive map

Push notification and / or reception of messages within the application. Optionally, it must be able to organize campaigns, marketing campaigns, and provide Geofence games functionality

1. Please describe which boxed application you are proposing to meet the requirements outlined above.
2. Please provide feedback: which platforms the proposed application is compatible with (IOS, Android)?
3. Please demonstrate whether the development for Huawei AppGallery has a price-increasing effect?
4. Please give feedback on whether you can display an interactive map in the Bubi application and on the website, if so, please let us know what map solution your software has..
5. Please provide feedback on the possibility to modify the map elements / databases on the Customer side?

**Payment Systems:**

1. Please describe what solutions you consider feasible for the tariffs used in the Pay as You go (for occasional users: for example, tourists) and Flat rate (Constant/Loyal) customers: provide coupon access or provide long-term access for a low cost) payment models in order to be able to debit your credit card after each use. (Eg credit card payment, payment gateway systems)?
2. Please give an example of the options available to the Customer in the event that the debit card is not covered, how it is handled in other systems?
3. What payment and settlement solutions are used in other cities? If more than one solution is possible, which of the different models has a price-increasing role, or is there one whose implementation would significantly increase the commissioning time of the new system corresponding to the offer? From the contracting authority's point of view, a shorter implementation period is preferred.
4. In your experience, please indicate which of the models presented in answer to question 29 is cost-effective?
5. Please provide information on whether there is a solution for systems that can be purchased as boxed software on the market that allows instant, credit card refund transactions from the backend side?

**Operation of bicycles:**

Customer expects bicycles to operate 24 hours a day, every day of the year in accordance with the indicators specified later in the SLA.

At present, the Customer owns 3 vehicles (Fiat Doblo), 3 bicycle trailers that can be attached to a vehicle, 4 maintenance bicycles and bicycle trailer that can be attached to them. In order to reduce the operating costs, these vehicles and trailers are optionally made available to the Bidder for the operating activity.

1. Please indicate if you have a workshop(s) for servicing bicycles. If you do not have one, how much time will it take to set up the service, will it affect the commissioning time of the new system??
2. Please describe in which models to operate Bubi bikes, how would you solve the logistics. Related to this, present 2 operational references from 2 different cities (Method of logistics, frequency, number of bicycles operated, number of registered users, average daily travel time).
3. Optionally, please inform us whether you operate a bicycle suitable for transporting children, children's bicycles, cargo bicycles, bicycles for the disabled within the framework of other systems.
4. Please describe if you can utilize the bicycles currently operated in the Bubi system?

**Operation of stations and docks**

The customer currently has 3342 docks for attaching bicycles (for a technical description of the docks, see Annex 3) at 158 stations.

1. Please describe the model along which model would you operate the stations?
2. Please indicate how flexible the relocation of station equipment in the presented model is?

**Cost models (reckoning models) between BKK and the PBS Operator:**

Flat rate model:

In this model, BKK pays a fixed annual operating fee for the operation of the complete system, which includes all costs and expenses incurred during the operation. Futhermore, BKK Zrt shall be provided by PBS Operator with 25,000 tokens (coupons) of flat rate access per month, meaning that these tokens are included in the annual fixed costs. BKK will use it’s tokens as gifts forits customers with public transport passes or to customers specified by BKK, however, this provision of 25,000 tokens does not mean that the 25,000 accesses will be actually used by customers each months.

Bubi system 2020 statistics has been attached as Annex 4.

1. Please describe what alternative settlement models can be proposed in addition to the Flat-rate model above?

**SLA**

The Customer's minimum expectation regarding availability:

* For the entire system, the minimum SLA level is 98% operational each month (also applies to terminals, docks, bicycles, software and the availability of the mobile application).
* There shall be at least 3 bicycles available at each station at any given time; if fewer bicycles are available, the station must be topped up to at least 3 available, operational bicycles within 45 minutes.
* Bicycles that are not suitable for their intended use must be restored to service within a maximum of 2 days (repair, maintenance deadline)
* The number of available bicycles in the system should not fall below 85% of the total bicycle stock.
1. Please indicate which SLA requirements may have a price-increasing effect on operation.
2. Please indicate whether the availability of bicycles has a price-reducing effect from an operational point of view
3. **framework, public procurement process**
4. Please indicate in which model you see an opportunity to save time (implementation as soon as possible) for the implementation period.
5. Please indicate in which model you see the potential for investment and / or operating cost savings.
6. Please describe the possible upward or downward effects of certain Customer expectations.
7. Please describe the possible upward or downward effects of different operating periods. (primarily 3 + 2 years; 5 years; 7 years).
8. Please describe in what form you can provide the Customer with Licenses, Permissions, and any source codes.
9. Please present with a planned schedule the commissioning time required for the feasible new models.
10. Please indicate how you see possible expansion opportunities in the operating model (s) during the operational period? (Expansion, concentration, increase in the number of bicycles, exercise of options.)