

Solutions for Public Transport

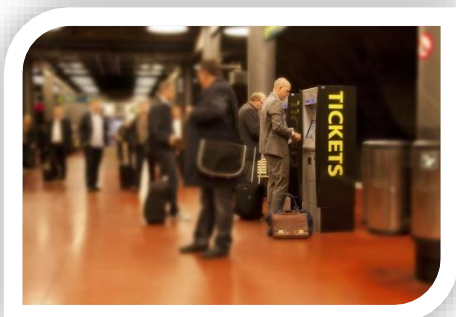
Supplier conference
regarding Ticket Vending
machines, Oslo 23.5.2016



Mikroelektronika is the leading European company in the branch of fare collection and connected systems in public transport.



Modul-System is a well experienced company in the Nordics in the area of payment and ticketing systems mainly for public transport and parking. Partner with ME for EMV payment solutions.



How can Ruter maintain a cost efficient TVM channel with a small and declining share of the sales?

Compact and user friendly TVM in passengers reach in sufficient quantity. Avoid coin/bills, card stacker to minimise size

What are the key design issues to address this challenge?

Compact dimensions, easy installation on any construction, maintenance free, vandal proof, sufficient stock of paper roll, backup battery.

What are the key operational/life-cycle issues to address this challenge?

Remote monitoring and updating, support of new standards e.g. EMV contactless.



How can such a cost efficient TVM channel still be flexible and adaptable, without driving cost upwards?

- Centralised system for ticketing**
- Remote monitoring and updating.**
- Support of new standards e.g. EMV, NFC etc.**
- Possible HW modification and configuration changes.**
- Communication with portable electronics (installation of 2D code reader).**



What possible ownership and operating models should Ruter consider if Ruter decides to move forward with a procurement process (buy, lease, rent, TVM-as-a-Service, shared vending services, etc.)?

There are benefits and disadvantages in each of the possibilities stated above.

Decision about the way how devices will be put into operation is up to Ruter.

We are used to lease/rental agreements for payment solutions. Same can be applied on this as a package with development, maintenance and operation with a fixed cost



What functionality should Ruter consider in a TVM that could help us improve our services?

Support of new standards e.g. EMV. Except solution with contact EMV with PIN PAD take into consideration also solution with contactless EMV. In this case also validator can be used instead of TVM eventually. Advantage is compact dimension of validator and also fact that it's cost efficient solution.





What do you consider important that Ruter do, and how, in order to make it possible/interesting for you to participate in a tender?

Definitively the market itself and possibility to realise a project in Oslo is interesting for us. Except some general conditions like some minimal requested quantities, realistic delivery time, important is also openness of the future project and equal conditions for all participants. If for example Rejsekort shall be used than all the necessary technical documentation should be obtained.

Some of our references



Goteborg - Sweden



Swedish Railways



Klaipeda



Portland



Sofia - Bulgaria



La Paz



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