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Cleaner and better transport in cities

ELAN

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Implementation status report on pilot project – 10 vending machines

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			WP7 Energy-efficient freight logistics
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1. Summary (abstract)

The measure "Ticket vending machine diagnostic" is realized by DPMB, a.s. (Brno Public Transport Company). After few months of operation the first phase of this measure was finished in August 2009. The first 10 ticket vending machines (from the total number 152) were equipped with the system of diagnostic in June 2009 and for 2 months (from 15 June to 15 August 2009) the system was tested and evaluated in regular operation. The control centre was equipped with necessary system as well.

After the successful finishing the pilot project was evaluated and all observations from the pilot project were sent to the supplier. They will be used for improving of the system which will be installed to the rest of the ticket vending machines in the first half of 2010.

2. Introduction to the project

2.1. City of Brno

Brno lies in the central part of Europe, in the Czech Republic. At the same time, it represents the centre of the South Moravia region. It is situated at the crossroads of ancient trade routes which had connected the North and South European civilizations for centuries.

The city of Brno, with 370,000 inhabitants, is the second-largest city in the Czech Republic and the largest in Moravia. It is the major urban centre of the Southern Moravian region, which has 1,132,563 inhabitants.

Brno is situated in a picturesque countryside, surrounded by wooded hills on three sides and opening to the Southern Moravian lowlands on the south of the city. In the north, the city is guarded by the foothills of the Drahany and Bohemian-Moravian ranges. The city itself lies in the basin of Svratka and Svitava rivers, somewhat to the north of their conflux at elevations ranging from 190 to 425 meters (620 to 1395 ft) above sea level and covers an area of 230 km² (143 sq.miles). From east to west it spans about 22 km (13 miles). The river Svratka cuts a 29 km (17 mile) path through the city and is the main supply for the Kninický Dam Lake, a popular recreation area in the city's northwest corner. The Svitava River flows through the city for about 13 km (8 miles).

2.2. Brno public transport company (DPMB)

Brno public transport company (DPMB) is the dominant public transport operator in the city of Brno and also in the Integrated Public Transport System of the South Moravian Region. It operates 750 vehicles in the city of Brno and surrounding area. From the total number of 750 vehicles 300 are trams, 300 buses and 150 trolley-buses.

DPMB also operates 6 boats at Brno reservoir during the summer season. These boats are very environment-friendly because they are all powered by the electric engines with accumulators.

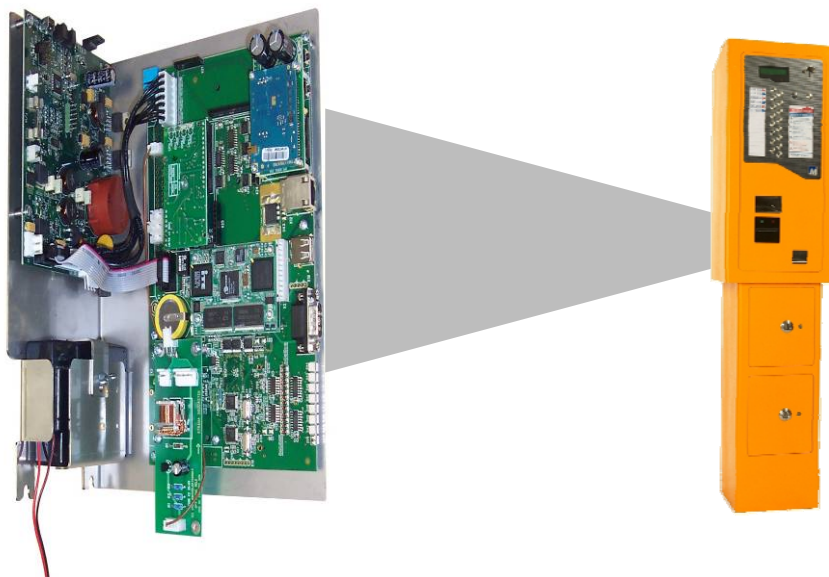
DPMB together with the Brno City Municipality forms the local consortium in the city of Brno which is a part of CIVITAS ELAN demonstration project.

2.3. Ticket vending machines in Brno

There are 152 ticket vending machines in the City of Brno and surrounding areas (Modřice, Šlapanice, Ostopovice) operated by the DPMB. Ticket vending machines sell various types of tickets, which can be used within the Integrated Public Transport System of the South Moravian Region as well.



Picture 01: Ticket vending machine



Picture 02: The systems inside the ticket vending machine

3. Project of the system of the ticket vending machines diagnostic

3.1. The system of administration and maintenance before CIVITAS ELAN

Before the project CIVITAS ELAN, the system of administration and maintenance of vending machines was based on periodical checks by maintenance workers or passengers' announcements that the ticket vending machines are out-of-order. These checks were carried out depending on the location of the vending machines - e.g. daily in the centre but only once a week in some peripheral areas.

Thus DPMB, as a dominant public transport operator in the city of Brno, has no information about the possible failures until the maintenance workers come for the regular checks. As a result of this system of control, the machine can break down immediately after the maintenance workers leave and the machine will be out of order until the next maintenance check.

3.2. The system after realization of the measure within CIVITAS ELAN

The measure is part of the CIVITAS ELAN project which is being implemented in the city of Brno.

As part of this measure, DPMB intends to introduce a new system for the diagnostics of vending machine operating conditions. A system of wireless modems will be installed into all vending machines, then automatically and regularly sending the information about their status to the control centre and thus inform on problems. This will enable maintenance workers to act more quickly and efficiently, thus increasing the quality of the service provided to customers and improving customer satisfaction.

3.3. The pilot project

The pilot project started on 15th June and lasted until 15th August. During this two-month period the system of diagnostic of the ticket vending machines condition was tested, which was installed into 10 ticket vending machines. The control centre was equipped with the system as well, thus becoming able to receive the information sent from ticket vending machines.

During the pilot project DPMB had collected data from the operation of the ticket vending machines. The results of the testing operation will be used for the analysis and then become the base for installation of the system to all ticket vending machines in the next period of the project.

4. Planning

We started to plan the project in 2008. During the preparation of the project, we decided to divide the project into the two phases:

1. Pilot project, when 10 vending machines will be equipped with the system; during this first phase it would be possible to test the system and discover possible deficiencies, which can be redressed before second phase will be started;
2. The rest of the machines (142³) will be equipped with the system. Only the system of the diagnostic will be co-financed from the project CIVITAS ELAN.

5. Description of the system

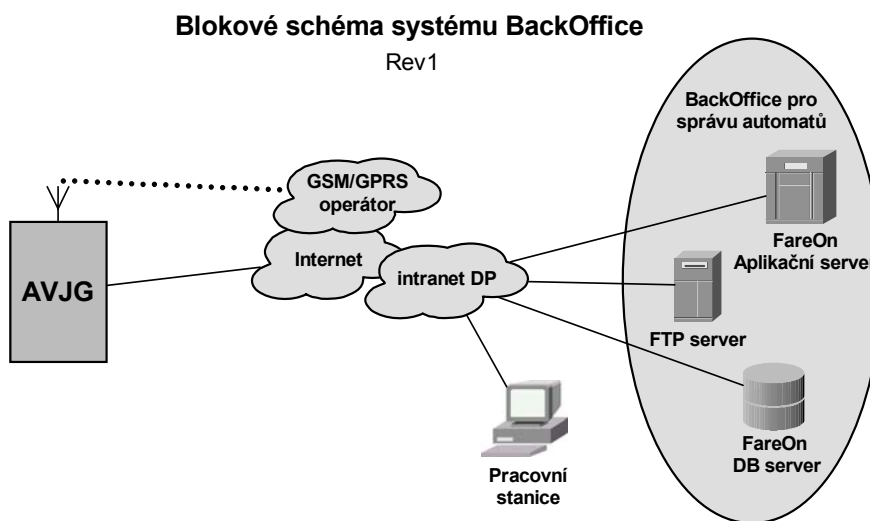
The system of the ticket vending machines diagnostic is based on transfer of the data between ticket vending machine and control centre using GPRS technology. In the control centre, the data are displayed on the computers with special software.

³ Originally there were 140 ticket vending machines, nowadays there are 142 vending machines operating by the DPMB. The increase of the number of ticket vending machines is a part of the improving of quality of the service for customers. The installation of the new ticket vending machines is paid by DPMB.

Ticket vending machines are equipped with modules with modems. The modules include communication modems, equipped with SIM cards from the private mobile operator enabling communication with the workstation (computer) in the control centre. Modules communicate with all parts of the vending machine and collect data which are sent on-line to the control for further analysis (See the picture 03.)

The collected data displayed on the computer include information about:

- tariffs
- all transactions made,
- service data,
- data on amount of cash in the vending machine,
- condition of the cashbox, and
- error reports.



Picture 03: The block schema of the system of the transfer information from the ticket vending machine to the control centre

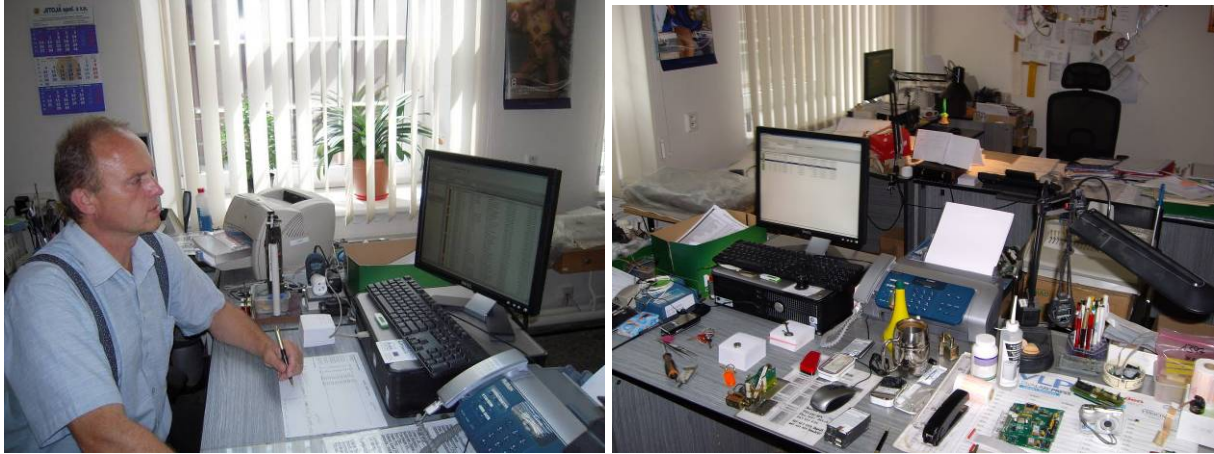
AVJG = ticket vending machine

Pracovní stanice = workstation - computer

The control centre (see the picture 04) where the data about condition of the ticket vending machines are collected is situated in administrative building of DPMB.

Servers and 3 workstations are installed in the control centre. One server is used for the communication with ticket vending machines and on the other one the applications of the system are running.

These servers are part of the measure; they were purchased in order to implement the system of the diagnostic of the ticket vending machines.



Picture 04: The Control centre

On the three workstations it is possible to check the current condition of the ticket vending machines.

In picture 05, you can see the output of the whole system. There, the status of the 10 ticket vending machines from the pilot project is displayed. Green colour indicates that everything is in order, yellow colour indicates that ticket vending machine is still running but some problem occurs. There can also be red colour indicating that the ticket vending machine is not running.

Detailed information about problem is included in the message which is the part of data transferred from the ticket vending machines.

The operator in the control centre interprets the received data and in case of the major problem which caused the failure of the ticket vending machine, the operator will immediately send a serviceman to resolve the problem.

Dahledové centrum

Formuláře Nápověda

Aktuální stav zařízení

Datum odeslání od: 30.07.2009 Datum odeslání do: 30.07.2009 Poslední aktualizace: 30.7.2009 11:19:30

Typ zařízení: AVJGZJ - AVJGZJ

Aktivní zařízení Neaktivní zařízení

Pro seskupování přetáhněte na toto místo hlavičku sloupku.

Barva	Reg. číslo	Typ zaříze	Skupina	Č. zprávy	Kód	Umístění	Čas odeslání	Čas přijetí
■	1	AVJGZJ		000001350	902 A...	Hlavní nádra...	30.7.2009 10:33:00	30.7.2009 10:34:58
■	4	AVJGZJ		000001012	20 K...	Hlavní nádra...	30.7.2009 8:06:40	30.7.2009 8:08:29
■	5	AVJGZJ		000001214	20 K...	Hlavní nádra...	30.7.2009 8:09:35	30.7.2009 8:11:04
■	17	AVJGZJ		000000664	900 s...	Řečkovice k...	30.7.2009 9:49:15	30.7.2009 9:51:38
■	19	AVJGZJ		000000779	900 s...	Komárov kon...	30.7.2009 8:06:20	30.7.2009 8:11:05
■	24	AVJGZJ		000000805	900 s...	Štefánkova ...	30.7.2009 10:03:13	30.7.2009 10:04:37
■	105	AVJGZJ		000001030	900 s...	Konklecová	30.7.2009 7:22:54	30.7.2009 7:24:16
■	124	AVJGZJ		000001873	900 s...	Klusáčkova	30.7.2009 7:43:46	30.7.2009 7:45:04
■	134	AVJGZJ		000000670	902 A...	Hrnčířská	30.7.2009 10:50:30	30.7.2009 10:53:10
■	146	AVJGZJ		000001108	120 M...	Koříškova ...	30.7.2009 11:06:22	30.7.2009 11:08:46

30.7.2009 11:19

Picture 05: Example of the output of the software for the diagnostic of the ticket vending machine status.

6. Realization

6.1. Plan – Tender requirements for the system of the diagnostic

Just after CIVITAS ELAN contract was successfully signed, tender requirements for delivery of the system of the diagnostic were prepared. These requirements were prepared based on the common operation of the ticket vending machines and expected outputs of the future system.

Provider had to fulfil several basic technical requirements. These were:

- On-line data transfer into and from ticket vending machine a the control centre (GPRS technology),
- Data, which are transferred, have to include information about all transactions, service data, data on amount of cash in the machine, error reports and information about the status of the cashbox,
- On-line monitoring of condition of machines has to be possible,
- Control centre will be installed and equipped.
- The system will be delivered in the two phases. First one include pilot project of the 10 ticket vending machines. After the pilot project, the rest of the ticket vending machines will be equipped in the second phase.

The tender was prepared according to the Czech law, commenced on 27th January 2009 and was successfully finished on 6th March 2009. The final price of the system was slightly below our expectations.

6.2. Contract for the system of the diagnostic

The contract was signed with the company Mikroelektronika, s.r.o on 25th March 2009. According to the signed contract, Mikroelektronika s.r.o. should deliver the system in two phases: in the first 10 ticket vending machines (pilot project) should be equipped with the system till 15th August. The rest of ticket vending machines should be equipped in the second phase over the first half of year 2010.

The signed contract included condition that all ticket vending machines and control centre will be equipped with the system, but the telecommunication services were excluded from the contract. Telecommunication services were demanded only for the pilot project. This separation of the tenders was made because of the prices of the telecommunication services. It is expected that separate tender enable to get the lower prices for the telecommunication services.

6.3. Tender for telecommunication services

Telecommunication services are needed for the transfer of the data from ticket vending machines to the control centre.

Tender for the telecommunication services for data transfer was running in June 2009. We addressed all three major mobile operators in the Czech Republic: T-Mobile, O2 and Vodafone, to submit an offer.

The contract will last for 2 years and include an equipment of all of the 152 ticket vending machines by the on-line transfer data by GPRS technology.

The results of the tender were surprising. The final price of the service was 80 per cent lower than it was expected! Expected monthly fee for the telecommunication services of one ticket vending machine was approx. € 7, but according to the final price it will be no more than € 2. These relatively cheap operating costs are good news for other operators of the ticket vending machines.

The winner of the tender is T-Mobile. Because the future operation expenses will be lower than expected, we were able to equip more ticket vending machines (152 instead 150 - 2 more ticket vending machines were installed at the beginning of year 2009).

6.4. Contract for telecommunication services

The contract for telecommunication services for data transfer was signed with the T-mobile company for the next two years on 11th August 2009 with effect as of 1st September 2009.

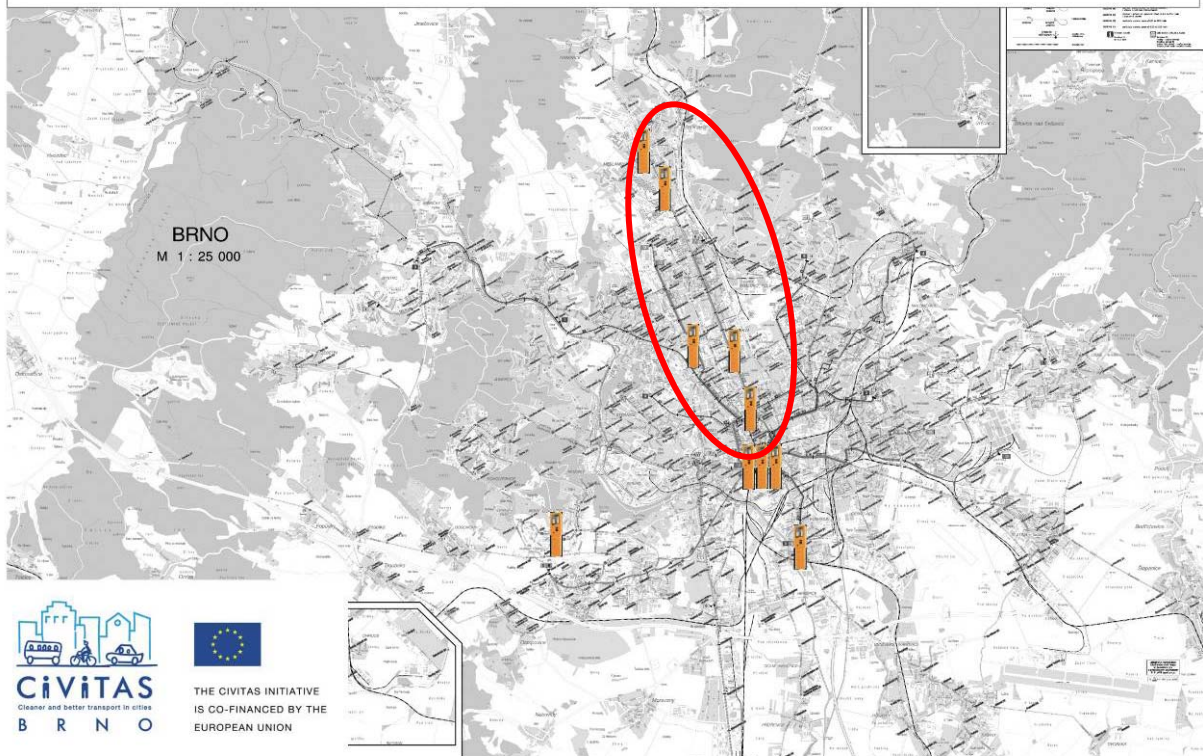
6.5. Pilot project

According to planned activities and signed contract, the first 10 ticket vending machines and the control centre were equipped with diagnostic system. The pilot project was running from 15th of June to 15th of August 2009. All observations from the pilot project were sent to the supplier; it will be used for the development of the system for the rest of the ticket vending machines.

Table 01: The list of ticket vending machines within the pilot project:

No. of ticket vending machine	Internal number	Place
1	1	Hlavní nádraží
2	4	Hlavní nádraží
3	5	Hlavní nádraží
4	17	Řečkovice smyčka
5	19	Komárov smyčka
6	24	Štefánikova – Kotlářská
7	105	Koniklecová
8	124	Klusáčkova
9	134	Hrnčířská
10	146	Kořískova

Ticket vending machines diagnostic - pilot project



Picture 06: The map with the locations of the ticket vending machines in the pilot project

Not all of the ticket vending machines from the pilot project are located within the CIVITAS corridor (red oval on the map – picture 06). The reason why were the ticket vending machines outside the corridor chosen is that the CIVITAS corridor is situated in the city centre. As was mentioned above, in this area the ticket vending machines are checked daily but at peripheral areas the ticket vending machines are sometimes checked no more than once a week. To obtain various data for the next development of the whole system it was necessary to include also the ticket vending machine outside the CIVITAS corridor in the pilot project (ticket vending machines no. 19 and 105).



Picture 07: The installation of the system to the ticket vending machine

Training of DPMB staff took place during the pilot project on 9th June 2009. This training was focused on maintenance of the ticket vending machines equipped with the system of the diagnostic and on usage of the system.



Picture 08: Training of the staff

7. Results

Generally speaking, the pilot project was successful. After it was finished (15th August 2009), began the evaluation of the testing operation - Assessment of the Pilot Operation – Completion Certificate Annex 01. The Completion Certificate was signed by DPMB and sent to the supplier.

Strictly speaking, the functionality of the system is satisfactory, but some changes will be carried out nevertheless.

Results of the pilot project (translation of the Completion Certificate Annex 01)

- the system was delivered according to the signed contract and technical conditions– with certain reservations – annex
- Pilot project was running for 60 days according to the signed contract
- Pilot project was running without breakdowns for at least 20 days according to the signed contract

8. Observations

During the pilot project there was observed that the system fulfilled previous expectations. No substantial problems or defaults occurred during the pilot project.

Though the system was working without problems, in order to improve the system DPMB decided to negotiate certain changes with the supplier.

List of changes follows (translation of Annex 02):

Reservations and requirements for modification of Firmware and Software JA-GPRS, FareOn and USV24 based on pilot project.

- 1) Ticket vending machine
 - a. to add item “Checking ticket Nr.2” to the menu of the software with the list of all printed tickets (date, time, type) including the possibility of printing selected number of records (10,50,100,200) or printing summary of printed tickets in defined interval.
 - b. to solve (remove) the issue of frequent (short-term) restarts of application in ticket machines. Due to these restarts there is a lot of needless communication between ticket machine and server, leading to unnecessary stress of the system. This may become important when the number of on-line monitored ticket machines will be increased to 152 in 2010.
 - c. to solve the issue of not generating “TCP resp. – no connection” message.
- 2) Service manual – ticket machine with GPRS module
 - a. Request for upgrade of the list of operation messages – to explain the context and causes of these messages and include in the manual the procedures of removal of such conditions.
- 3) FareOn application
 - a. Request for automatic check and listing of all the ticket machines which didn't send a message in a set time.
 - b. Request for displaying of personal identification of anyone who enters the service menu or choice.
 - c. Request for adding of simple sorting methods of breakdown messages from ticket machines (e.g. according to the checking routes).
 - d. Request for implementing of possibility to display the condition of ticket machine in application FareOn at any moment.
 - e. Request for implementation of an option to send data to ticket machine.
 - f. There are too many messages concerning a ticket machine restart (printer doesn't communicate, terminal doesn't communicate, ticket machine is operational). These messages are redundant because the whole reboot process does not take more than 30-40 seconds.
 - g. Request for possibility of using the map with locations of the vending machines in FareOn application.

- h. Request for modification of the summary of breakdowns according to the proposals of DPMB. Certain data are not displayed correctly.
- 4) Application USV24: Brno
 - a. User-unfriendly interface of ticket machines.
 - b. To remove items for buses.

9. Evaluation

After the finishing of the project first evaluation of the measure was prepared. In addition to subjective observation (where result is that the system is useful) there were also done certain exact comparisons of usefulness of the system.

9.1. Before the pilot Project

Period "before data collection" was defined as two months from 15th April till 15th June 2009. During these two months 82 messages (errors) were recorded. The average time necessary for elimination of fault was **20 hours and 18 minutes**.

9.2. Pilot project

The pilot project lasted two months as well, from 15th June till 15th August 2009. During the pilot project 66 messages (errors) were recorded. The average time necessary for elimination of fault was **14 hours and 20 minutes**. This time includes time needed for repairs in cases where there were no spare parts available immediately. Moreover, the system is not attended for 24 hours a day; the operator can read messages only during working time that means from 6 am to 2 pm.

9.3. Conclusion

Despite the limiting factor of the working hours in the control centre, the average time necessary for the elimination of the failure of the ticket vending machine was during the pilot project approx. 6 hours shorter than before the implementation of the new system.

According to the subjective observation the system is very useful in providing service of selling of the tickets in ticket vending machines. It will be even better after some changes are carried out.

The measuring also confirmed that the situation after the implementation of the pilot project is better than it was before it. In the second phase of the project even more significant results are expected due to the expanding of the software tool to yet another working place and to the prolongation of the working hours in the control centre.

10. Dissemination

An article about this measure was published in the "Šalina" magazine. "Šalina" is distributed for free in all tram vehicles. In this magazine the important information about operation of the public transport are provided to the customers.

Article was focused on presentation of the pilot project to the public. There was short description of the project and of reasons why it is realized. Information that this project is part of the CIVITAS ELAN project was included as well.

The project was also presented in September during the European Mobility Week at CIVITAS Information Point.

During the European Mobility Week, when the CIVITAS ELAN was presented to public, DPMB was contacted by the PhD student of the Jan Perner Transport Faculty of University of Pardubice. Together with Transport Faculty in Pardubice, DPMB and Brno City Municipality are preparing a lecture about CIVITAS and its measures, especially this one, for students from Transport Faculty. This lecture will take place in spring 2010.

CIVITAS ELAN logo was installed on all the ticket vending machines connected during the pilot project.



Picture 09: Ticket vending machine with Brno CIVITAS logo operation

Nové tramvaje čeká dlouhá cesta, než se vydají do ulic s cestujícími



Foto: T. Ropka

Až po uzávěrci tohoto čísla se konal slavnostní „křest“ dvanácti nových tramvají Škoda 13T, které DPMB uvedl do provozu v letošním létě. K akci se tedy vrátíme fotoreportáží v příštím čísle Šaliny. Dnes si aspoň povíme, co předchází oně chvíli, než nová tramvaj vyjede poprvé na linku s cestujícími. Vyrobený nový vůz je dopraven na trajleru z Plzně do brněnské vozovny Medláňky. To už má za sebou pečlivé prověření své funkčnosti, které garantuje výrobce. V Brně jej čeká nejprve oživení součástí tramvaje, které je možné provádět až na místě. Týká se to

například informačního systému pro cestující nebo ovládání výhybek na trati z místa řidiče. Dále musí vůz vykonat praktické brzdové zkoušky, o nichž se sepíší příslušné protokoly. Poté musí prázdný vůz bez cestujících ujet 100 kilometrů. Teprve pak následuje zaslání podkladů pro vydání průkazu způsobilosti na Dražní úřad. Po jeho vystavení a doručení se teprve vůz převádí do majetku DPMB. Mezitím se rozhodne, na kterou linku a kurz je zařazení tohoto typu vozidla vhodné a když je vše „papírově“ vyřízeno, může začít jezdit na linkách s cestujícími. Celý tento proces trvá minimálně jeden měsíc, a to jsme ještě

zapomněli, že na nové typy vozidel je nutný také pečlivý zácvik řidičů. A jak se vlastně nové tramvaje jmenují? Po Adélce, Barborce, Cecilce, Dášence, Evelince a Fanynce pokračují nové dámy na brněnských kolejích dle abecedy: Gábinka, Helenka, Irenka, Julinka, Klárka, Lucinka, Maruška, Natálka, Olinka, Pavlínka, Renatka a Simonka. (red)

Větší komfort pro nevidomé

V rámci zkvalitnění služeb pro nevidomé cestující a také další občany, kteří potřebují doprovod asistenčního psa, vyznačuje DPMB ve všech svých vozidlech tzv. přednostní místa. Jedná se o sedadla, označená piktogramem sedící osoby s holí a psem (viz obr.). Piktogram je nalepen na okně nebo vnitřní stěně vozu. V tramvajích se lze setkat s tímto označením míst už třetím rokem, a to u prvního sedadla vlevo za řidičem. V současné době se takto označují také sedadla v autobusech a trolejbusech. Zde se jedná o druhou nebo třetí řadu sedadel po obou stranách vozu. Označování bude probíhat postupně od srpna až do konce října tohoto roku. Pro osvětlení vidoucím krátký citát ze Smluvních přepravních podmínek: „Cestující s omezenou schopností pohybu a orientace mají ve vozidle právo na vyhrazené místo k sezení. Jiný cestující je povinen uvolnit vyhrazené místo cestujícím s omezenou schopností pohybu a orientace.“ Udělejme tedy všechno pro to, abychom usnadnili cestování těm, kdo to potřebují. Nevíme, kdy se podobné potřebnými staneme sami. (fb)

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Diagnostika jízdenkových automatů na dálku

V DPMB v současné době probíhá pilotní projekt diagnostiky stavu jízdenkových automatů v rámci projektu EU Civitas. Prvních deset jízdenkových automatů a dispečerské centrum již byly osazeny systémem diagnostiky v polovině června

a v současnosti probíhá zkušební provoz, který by měl být ukončen v polovině srpna. Po vyhodnocení zkušebního provozu a případných úpravách systému pak budou osazeny i zbývající jízdenkové automaty (142 ks). Celkové náklady na projekt činí 3,9 mil. Kč, z čehož příspěvek EU je ve výši 50 %.

A co to vlastně znamená? DPMB jako dominantní provozovatel veřejné dopravy na území města Brna spravuje 152 jízdenkových prodejních automatů. Systém správy a údržby jízdenkových automatů je založen na pravidelné kontrole údržbářů nebo na základě oznámení o problémech s jízdenkovým automatem, např. od cestujících nebo řidičů. Doba mezi jednotlivými kontrolami je závislá na umístění jízdenkového automatu, v centru města denně, ale v jiných oblastech až jednou týdně. Do doby pravidelné kontroly nebo oznámení není žádná informace o funkčnosti jízdenkového automatu. V současné době tak chybí především informace o stavu jízdenkového automatu (např. porucha, nedostatek papíru pro tisk jízdenek apod.). Je také možné, že v zápatí po pravidelné kontrole se objeví další problém, který zůstane nevyřešen až do další kontroly nebo ohlášení poruchy zákazníkem. Do každého jízdenkového automatu je v rámci projektu instalován systém jeho diagnostiky, který pomocí technologie GPRS předává automaticky a v reálném čase zprávy do řídicího centra. Systém tak umožní zefektivnit systém údržby jízdenkových automatů a současně umožní zkrátit dobu potřebnou pro odstranění poruchy jízdenkového automatu. (zj)



Šalina

3

Picture 10: Scanned page from the „Šalina“ magazine containing the article about the measure

11. Next steps

According to the signed contract and because the pilot project is considered a success, the rest of ticket vending machines will be equipped with the system of ticket vending machines diagnostic over the first half of the next year (2010).

After the installation of the system on all the ticket vending machines, another data collection phase will take place. Collected data will be used for the analysis and evaluation report. Pilot project results

show that the time necessary for repair of ticket vending machines (the time between the announcement of the failure and ending of the repair) is much shorter than before CIVITAS ELAN project.

We also plan to improve the system by expanding the software tool to another working place with extended working hours.

Apart from previously mentioned points the pilot project showed that operational costs are lower than it was expected.

Relatively low operational costs of this system, improving the quality of the services for the public transport users, might make it suitable for other cities as well.



Annex 01: Assessment of the Pilot Operation – Completion Certificate



Předávací protokol

Zpracoval: Lenka
Tluchořová

SML410_09_004

Datum: 17.8.2009

Zápis o vyhodnocení
zkušebního provozu

č. protokolu:

Oprávněný zástupce odběratele a dodavatele potvrzují, že v souladu se smlouvou SML410_09_004


- byla provedena dodávka plnění v rozsahu dle této smlouvy a technických podmínek.
[] v plném rozsahu
[X] s výhradami – viz příloha č.1
- proběhl zkušební provoz v rozsahu 60 dní
[X] v plném rozsahu
[] s výhradami – viz příloha č.1
- proběhl zkušební provoz bezporuchově po dobu minimálně 20 dní
[X] v plném rozsahu
[] s výhradami – viz příloha č.1

Přílohy:

PŘÍLOHA 1 – Výhrady k předání plnění po vyhodnocení zkušebního provozu

V Brně dne: 17.8.2009

.....
PŘEDAL - za dodavatele
Lenka Tluchořová


.....
PŘEVZAL - za odběratele
ing. Miroslav Buchta

DOPRAVNÍ PODNIK MĚSTA BRNA, a.s.
Tarifní zařízení 2
HLINKY 151
656 46 BRNO

1/1

Annex 02: Annex to Assessment of the Pilot Operation (Annex 01) sent to supplier (Mikroelektronika spol. s r.o.)



Dopravní podnik města Brna, a. s.
Hlinky 151, 656 46 Brno, telefon: 543 171 111
Společnost je zapsaná v OR vedeném KS v Brně, oddíl B, vložka 2463
Společnost je držitelem certifikátu ČSN EN ISO 9001:2001

BANKOVNÍ SPOJENÍ: Komerční banka, a.s., pobočka Brno - město
číslo účtu: 8905621/0100, IBAN: CZ62 0100 0000 0000 0890 5621
IČ: 2550 8881, DIČ: CZ 2550 8881

www.dpmb.cz, dpmb@dpmb.cz

Mikroelektronika spol. s r.o.
Lenka Tluchořová, projektový manažer
Dráby 849
566 01 Vysoké Mýto

VÁŠ DOPIS ZNAČKY / ZE DNE

NAŠE ZNAČKA

VYŘIZUJE LINKA

MÍSTO ODESLÁNÍ / DATUM

ing. Buchta Miroslav

Brno, 17.08.2009

Věc : **Příloha č.1 k Zápisu o vyhodnocení zkušebního provozu on-line diagnostiky provozu jízdenkových automatů dle smlouvy SML 410 09 004 .**

Výhrady a požadavky na úpravu FW a SW JA – GPRS, FareOn a USV24C, které vyplynuly ze zkušebního provozu :

1) **Jízdenkový automat**

- do servisního menu dopracovat „Revizní lístek č.2“ s uvedením výpisu jednotlivých vydaných jízdenek (datum, čas, druh jízdenky) s možností tisku vybraného počtu záznamů (10, 50, 100, 200) nebo tisk přehledu jízdenek vydaných v určitém intervalu data.
- vyřešit (odstranit) mnohočetné (krátkodobé) restarty aplikace v JA. Důsledkem toho dochází ke zbytečné komunikaci mezi JA a serverem a tím ke zcela zbytečnému zatěžování. Důležitost řešení tohoto jevu je podložena navýšením počtu on-line sledovaných automatů v roce 2010 na 152 ks.
- vyřešit negenerování hlášení „TCP resp. – není spojení“

2) **Servisní návod – JA s modulem GPRS**

- požadavek na doplnění Seznamu provozních hlášení o vysvětlení souvislosti a příčin těchto hlášení a také doplnění návodu na odstranění chybového stavu

3) **Aplikace FareOn**

- požadavek na hlídání a zobrazení u jednotlivých automatů, kdy automat nepošle data ani po určeném čase
- požadavek na zobrazení identifikace osoby vstupující do servisu, či výběru
- požadavek na možnost jednoduchého třídění poruch automatů (zpráv) např. i podle trasy (trasa objížďení automatů 1 – 4)
- požadavek na možnost dotazu z FareOn na stav JA – kdykoliv
- požadavek na možnost zaslání dat do automatu



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- dochází velmi často zprávy z různých JA o restartu (Tiskárna nekomunikuje, Terminál nekomunikuje, MS nekomunikuje, Automat je OK) . To jsou zbytečné zprávy, když během 30 – 40 s je automat OK
- požadavek na dopracování možnosti využívat ve FareOn mapu s umístěním JA
- požadavek na úpravu přehledu poruch automatů dle požadavku DPMB, některé údaje nejsou zobrazovány správně

4) Aplikace USV 24C : Brno

- velice nepřívětivé uživatelské prostředí pro JA
- požadavek na odstranění nabídek pro autobusy

ing. Buchta Miroslav
vedoucí stř. 5032 Údržba tarifních zařízení a distribuce jízdenek
Dopravní podnik města Brna, a.s.

DOPRAVNÍ PODNIK MĚSTA BRNA, a.s.
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