



# Sofia Contactless travelling with card in PT



**mikroelektronika**<sup>®</sup>  
fare collection and parking systems



■ CZECH TELEMATIC  
AUTUMN IN BULGARIA  
SEPTEMBER 2008 ■

**Vladimír Vojáček**  
Sales Director

- About us
- Basic figures
- System advantages
- System description
- Devices
- Future development
- Shared experience



- We are a leading european company in the branch of fare collection systems in public transport
- 16 years of experience in ticketing
- 28 countries, 25 milion passengers every day



**Europe:**

Austria  
Belgium  
Bosnia and Herzegovina  
Bulgaria  
Croatia  
Czech Republic  
Germany  
Greece  
Hungary  
Italy  
Latvia  
Lithuania  
Norway  
Poland  
Romania  
Rusia  
Slovakia  
Spain  
Sweden  
Switzerland

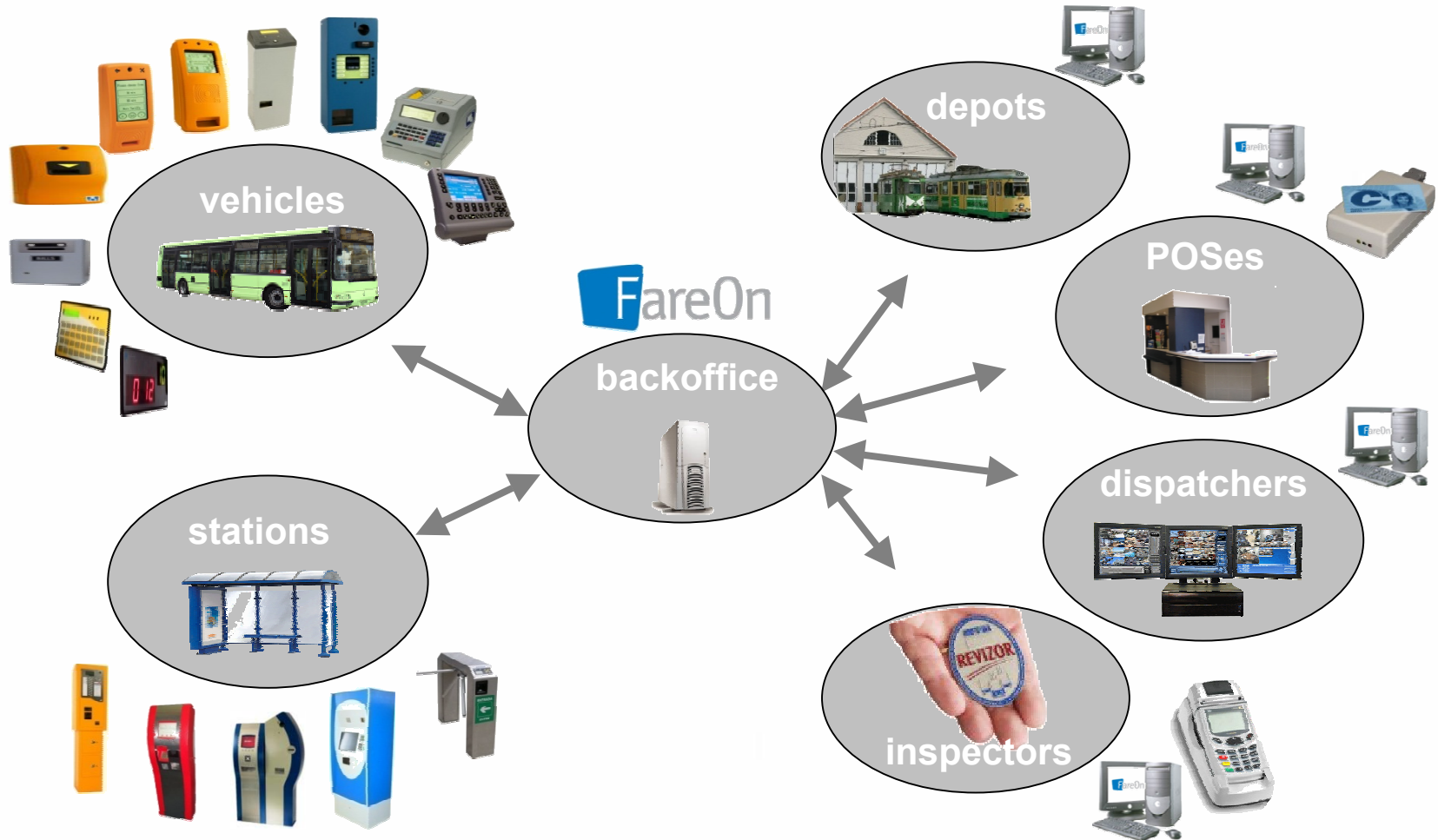
**America:**

Argentina  
Ecuador  
Chile  
Guatemala  
USA  
Uruguay  
Venezuela



## ■ Company profile

### ■ Complex fare collection system



## ■ Company profile

## ■ Product portfolio



**onboard computers  
ticket processors**



**contactless card  
and ticket validators**



**ticket vending machines  
(stationary/mobile)**



**accessories**



■ Yesterday



■ Punched paper tickets

■ Today



■ Payment by contactless card or coins

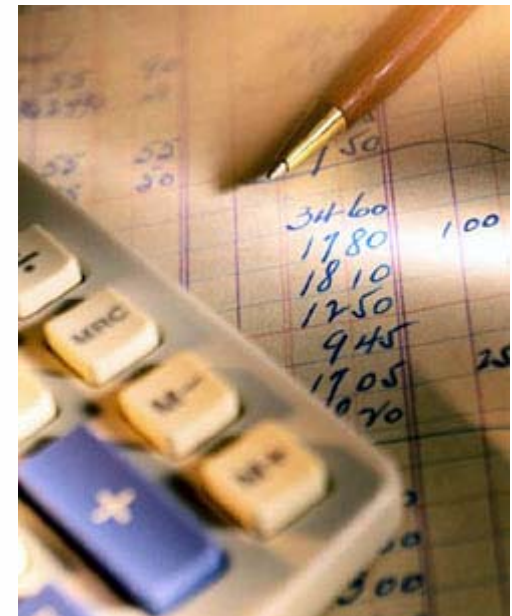




## ■ New FCS in Sofia

### ■ Background and financing

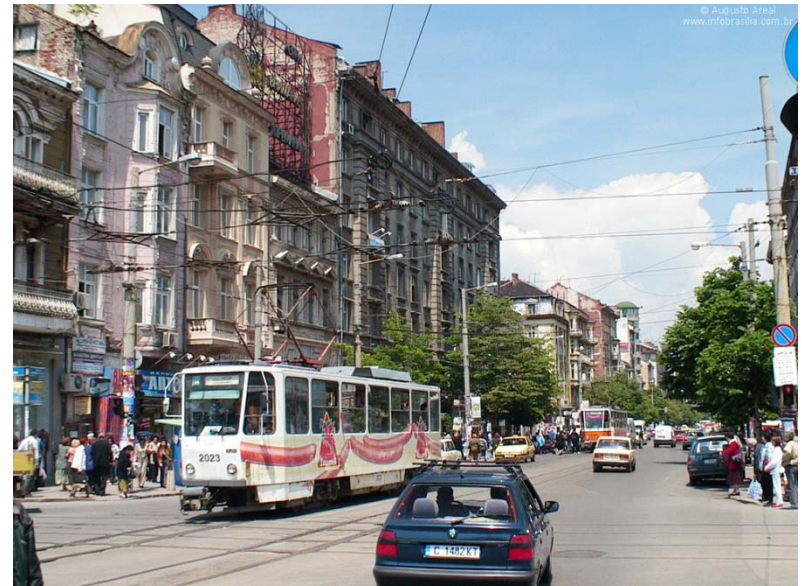
- tender promoter – municipality
- user- transport authority SKGT
- vehicles are property of EAD
- grant of Netherland government 78%
- coordinated by EBRD
- 2 round selection procedure, 46 competitors in first round, 13 in the second
- 8 proposals
- main evaluation criteria: price



## ■ New FCS in Sofia

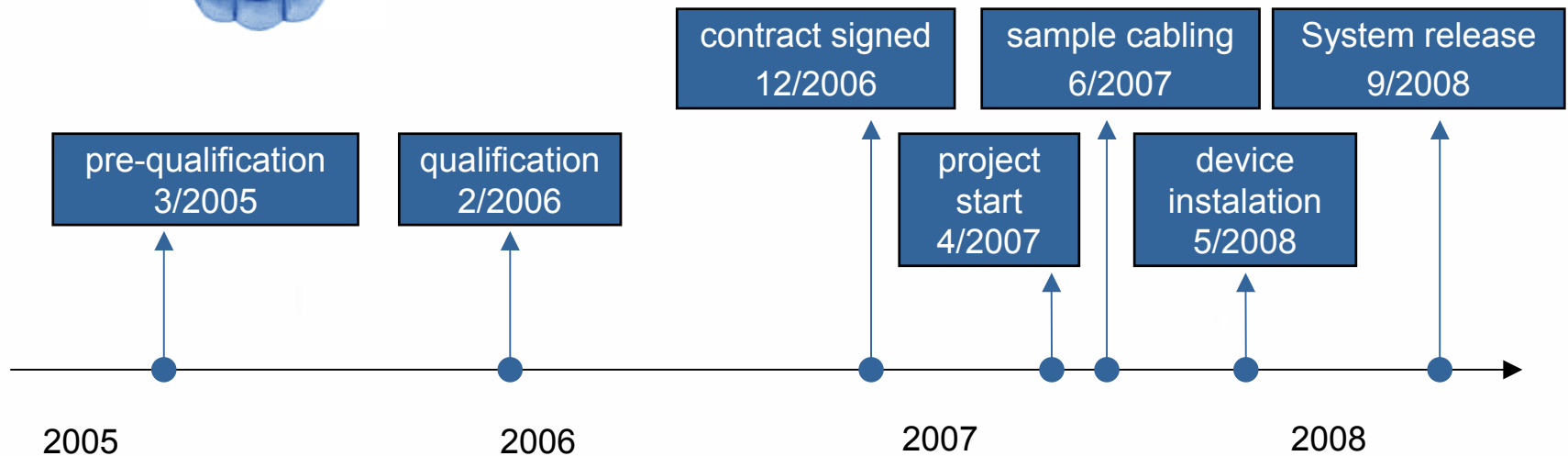
### ■ Basic figures

- 466 trams and trolleybuses
- 1830 card validators
- 466 communication units
- 100 000 cards
- 20 vehicle inspection readers
- 56 POSes
- 2 years of warranty service



## ■ New FCS in Sofia

### ■ Milestones



## ■ New FCS in Sofia

### ■ Advantages for passengers

- the card is always at hand, no need to carry cash
- the card can work placed in a wallet
- a single card can be used for more transport companies
- passenger's money save: blocking in case of card loss and saving of remaining balance



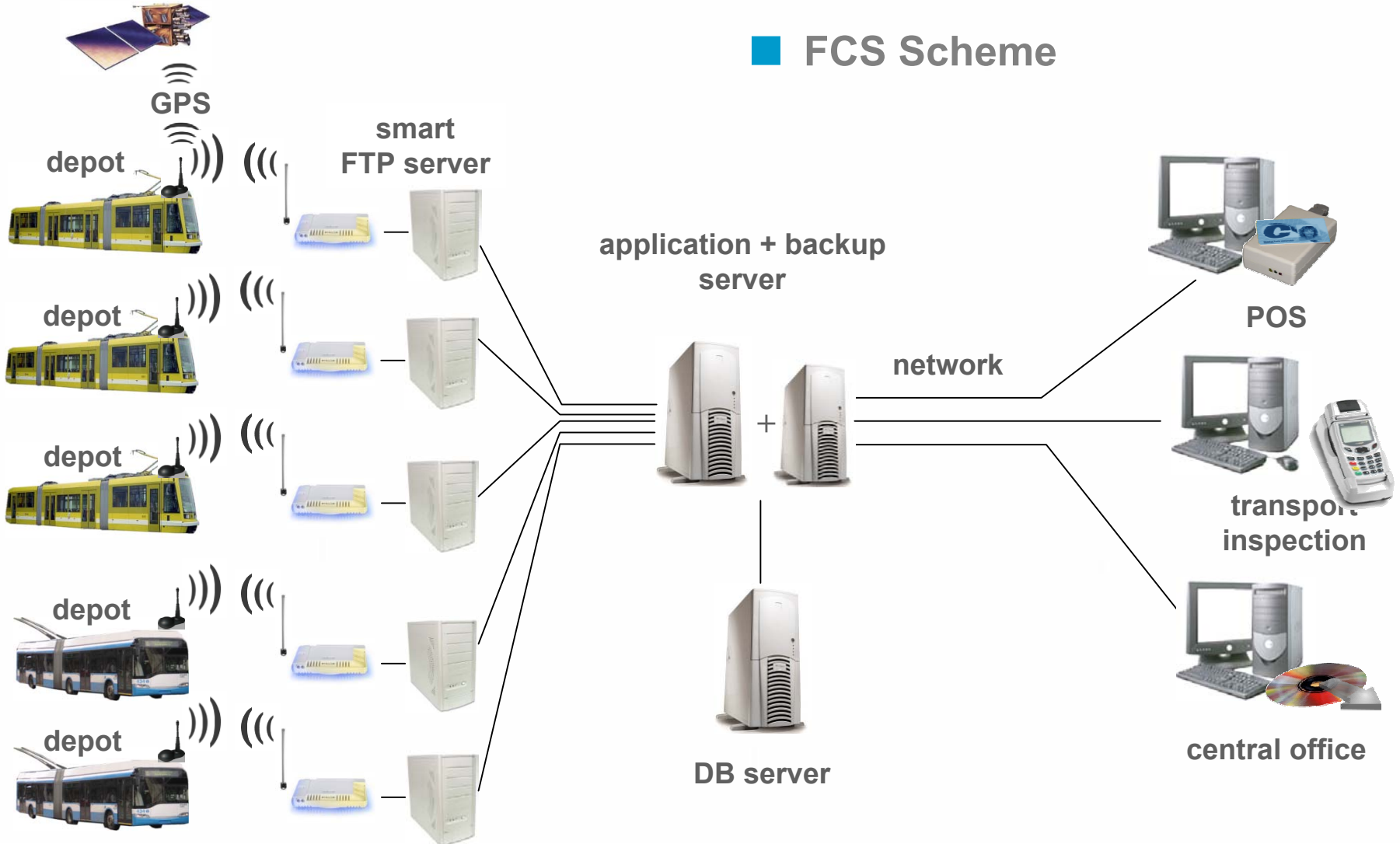
## ■ New FCS in Sofia

### ■ Advantages for operator

- data for transport optimization
- fast and easy updating
- smooth integration of other companies
- easy for drivers, inspectors,
- no „fake tickets“
- on-line monitoring
- strong controlling tool (passengers, drivers, inspectors)

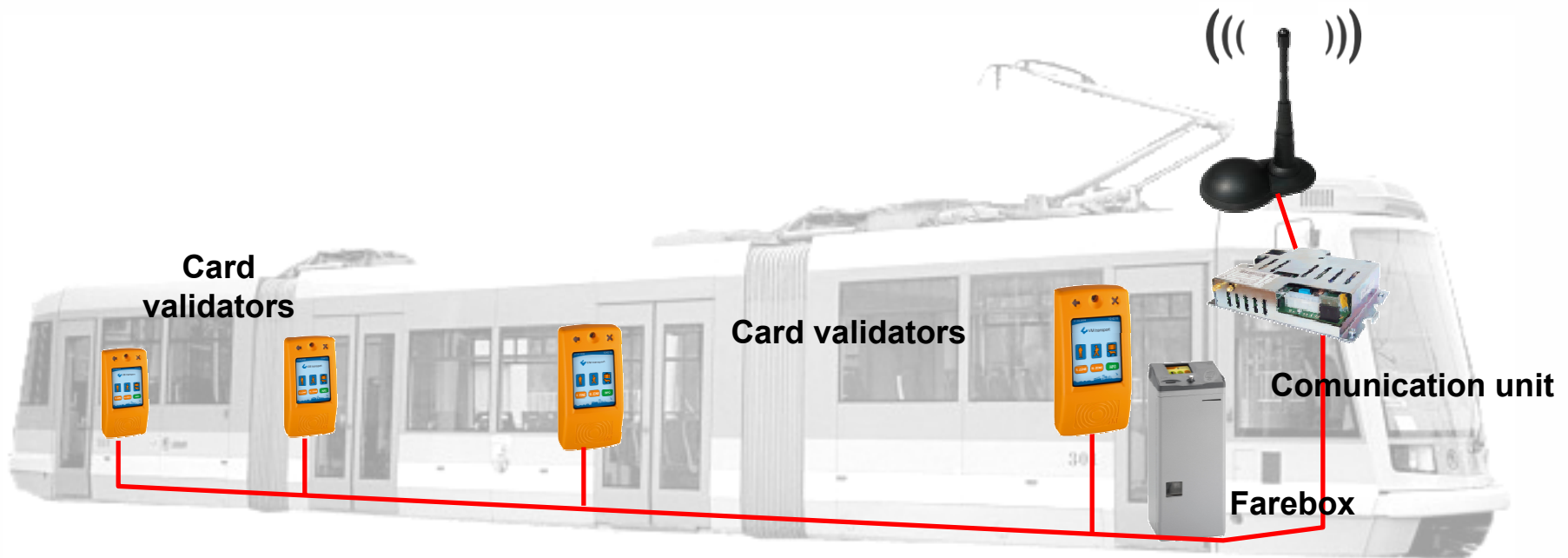


■ FCS Scheme



■ New FCS in Sofia

■ Vehicle equipment



## ■ New FCS in Sofia

### ■ Devices



■ Card validator



■ Farebox



■ Communication unit



■ Handheld reader



■ New FCS in Sofia

■ Card validator Camel



valid card

start

irregular card

start

- New FCS in Sofia

- Ticket vending machine MS



Insert coins

**start**

## ■ New FCS in Sofia

## ■ Further development

- city card project – parking, library, cultural institutions, sport institutions, schools, government, ...
- enhancement to whole transport system
- self service zones
- internet applications
- commercial applications



■ .. if we could start again...

- Find experienced local advisor
- Study legal aspects in advance (VAT, fiscal law, Intrastat)
- Expect frequent changes (plan x reality)
- Beware of different culture (don't change – accept it)





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Thank you for your attention

