

# NOVA TEHNOLOŠKA RJEŠENJA SIGURNOSTI U GRADSKOM PROMETU

Razvojno-inovacijski centar izvoznih  
visokotehnoloških proizvoda za željeznicu

Zvonimir Viduka  
Generalni direktor  
[office@altpro.hr](mailto:office@altpro.hr)

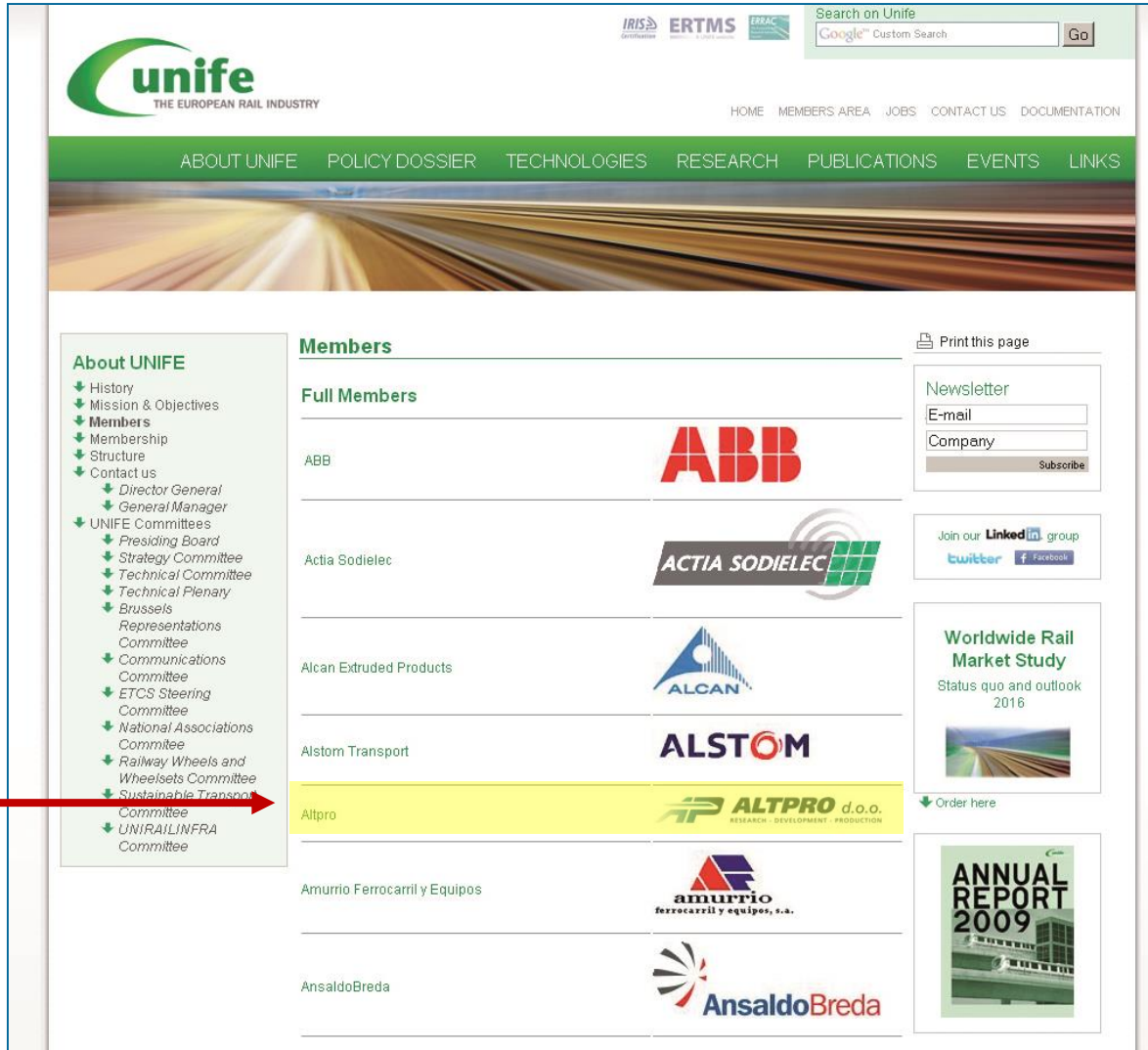


Razvojni centar



Ispitni poligon

# UNIFE ČLANSTVO...



**unife**  
THE EUROPEAN RAIL INDUSTRY

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  - Communications Committee
  - ETCS Steering Committee
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  - Railway Wheels and Wheelsets Committee
  - Sustainable Transport Committee**
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**ABOUT unife**  
Promote Rail Growth For Sustainable Mobility

## ČLANSTVO U CENELEC RADNIM GRUPAMA...

### UK

Roger Short UK NC

### BE

Gilles Duque Alstom

### FR

Timothee Loveluck RATP  
 Jean-Luc Schmitt RATP

### DE

Carsten Hilgers (sec) DB  
 Rainer Erbe DB  
 Jens Braband Siemens  
 Hendrik Schäbe TUV

### CZ

Martin Vlcek AZD

### AT

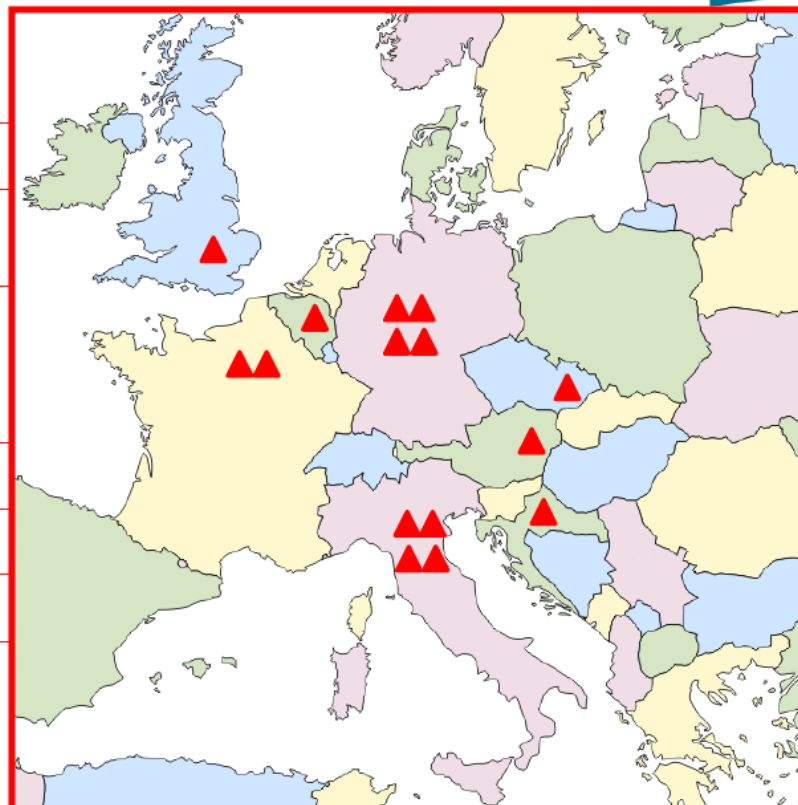
Gerhard Haipl ÖBB

### HR

Ivan Domladovac Altpro

### IT

Andrea Palermo Alstom  
 Daniele Diana Bombardier  
 Stefano Bacherini GE  
 Attilio Ciancabilla (con) RFI




A Ciancabilla  
 Brussels, May 15<sup>th</sup> 2014

# SEKTORSKA ANALIZA KOMISIJE EU

## Sector Overview and Competitiveness Survey of the Railway Supply Industry

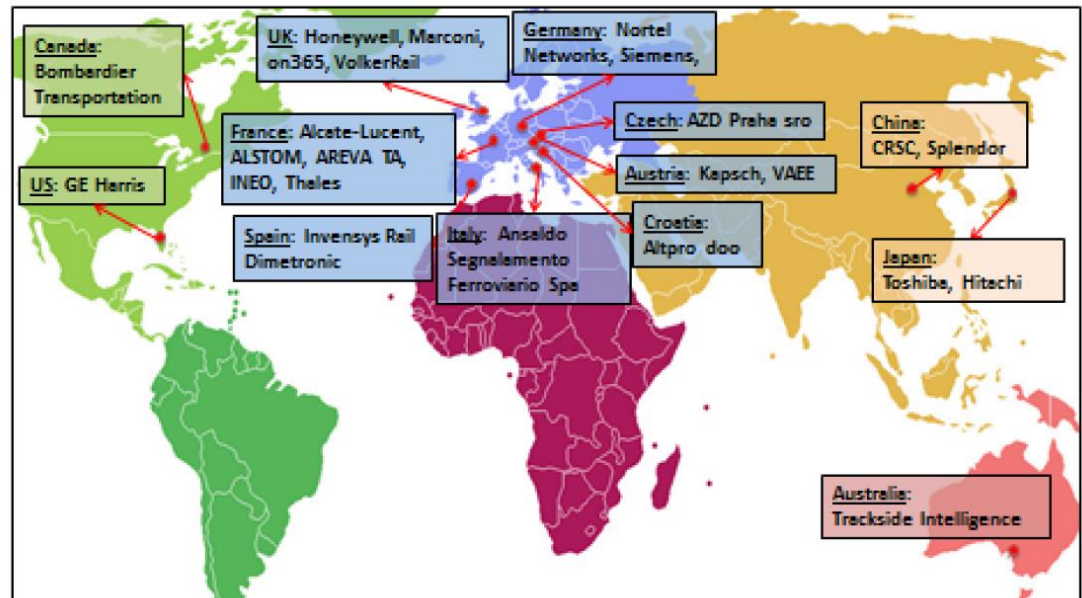
Within the Framework Contract of Sectoral Competitiveness Studies – ENTR 06/054

Funded by the  
 Rotterdam, May 2012



Global distribution of suppliers of Signalling systems

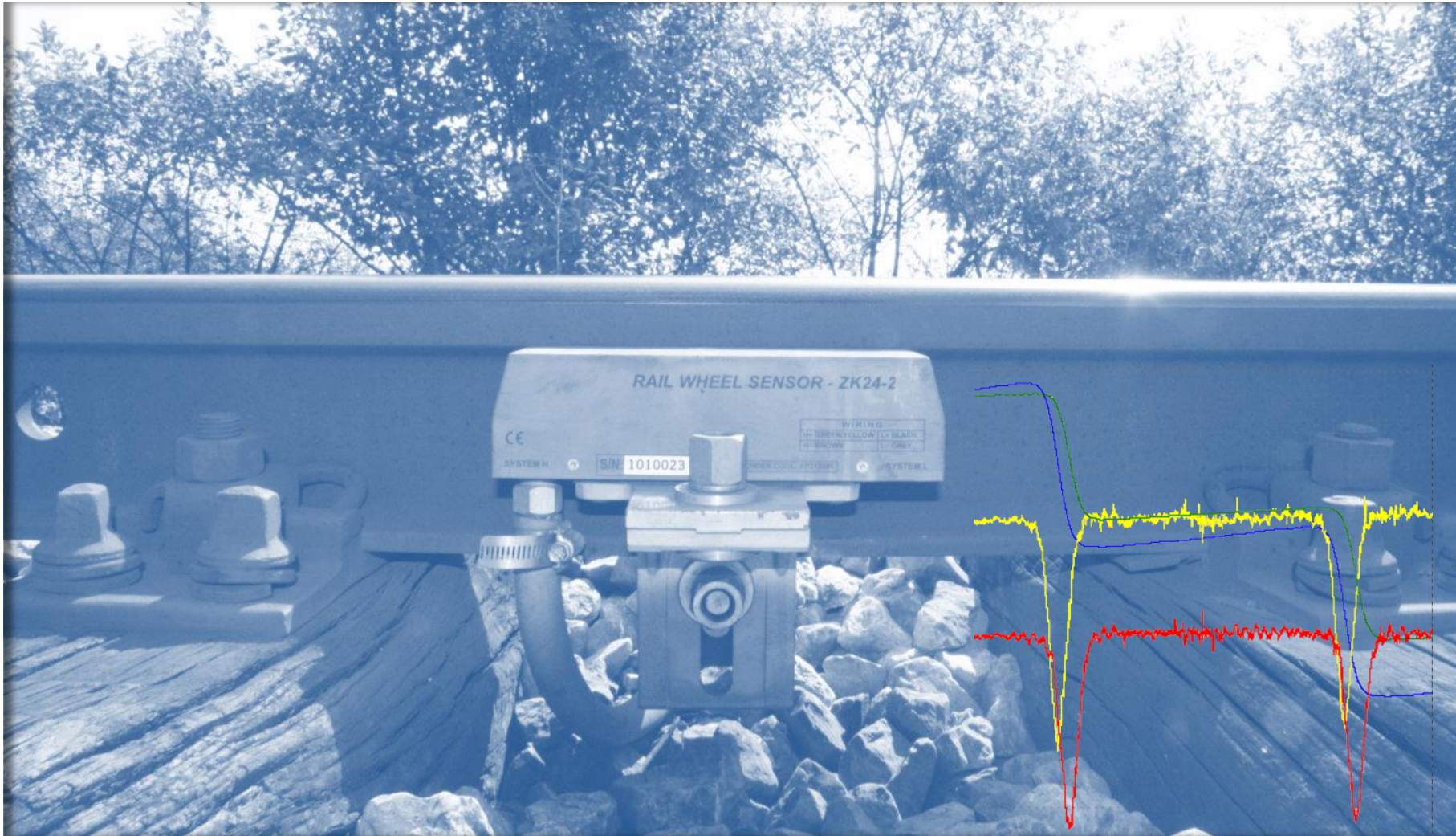
### Location of the Suppliers for the Signal System



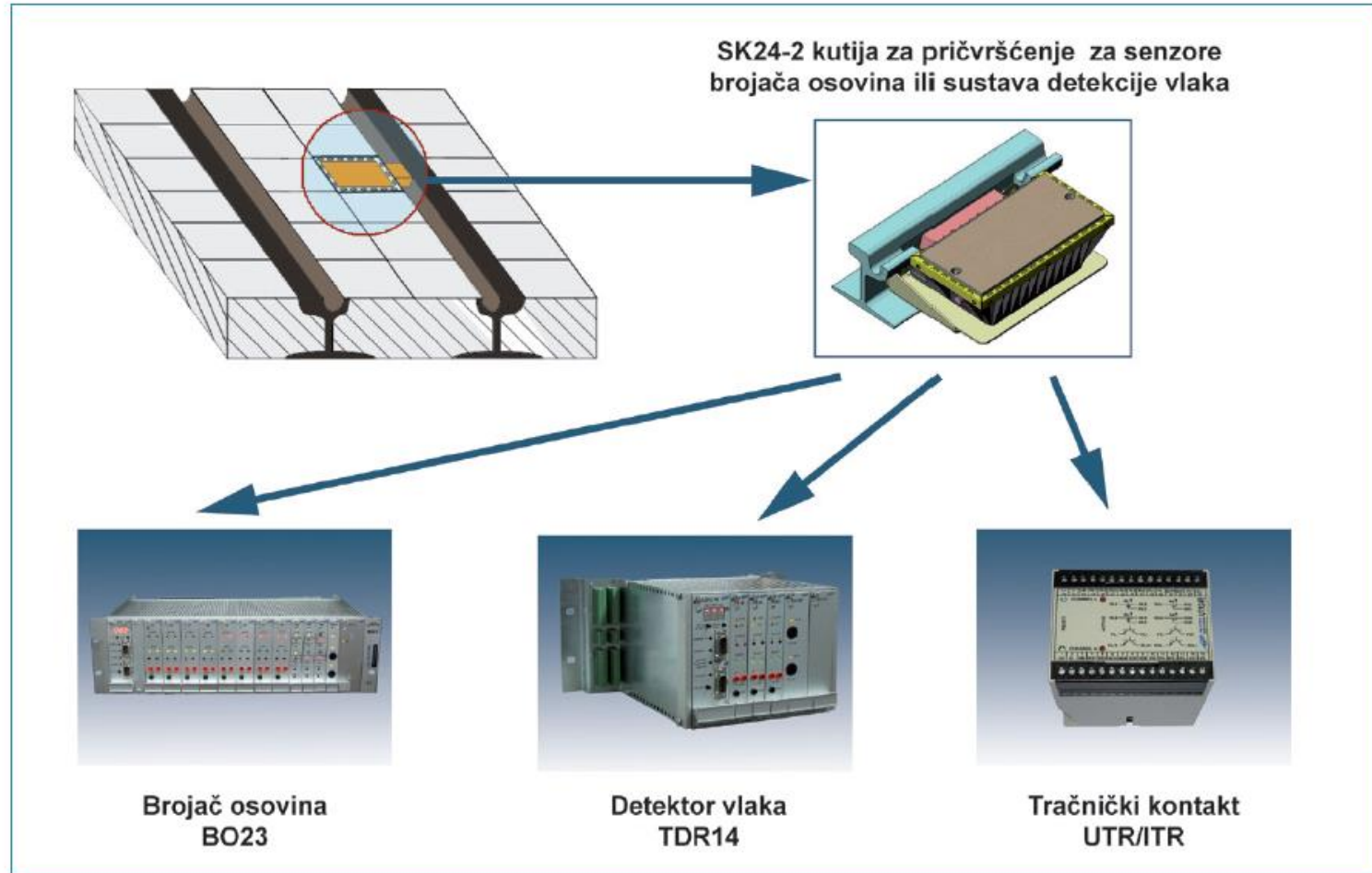
# INFRASTRUKTURA SIGNALNO-SIGURNOSNI UREĐAJI



## SENZOR ŽELJEZNIČKOG KOTAČA ZK24-2 – OSNOVA SUSTAVA ZA DETEKCIJU ŽELJEZNIČKIH KOTAČA



## TRAMVAJSKE LINIJE – OPREMA SUSTAVA ZA DETEKCIJU TRAMVAJA

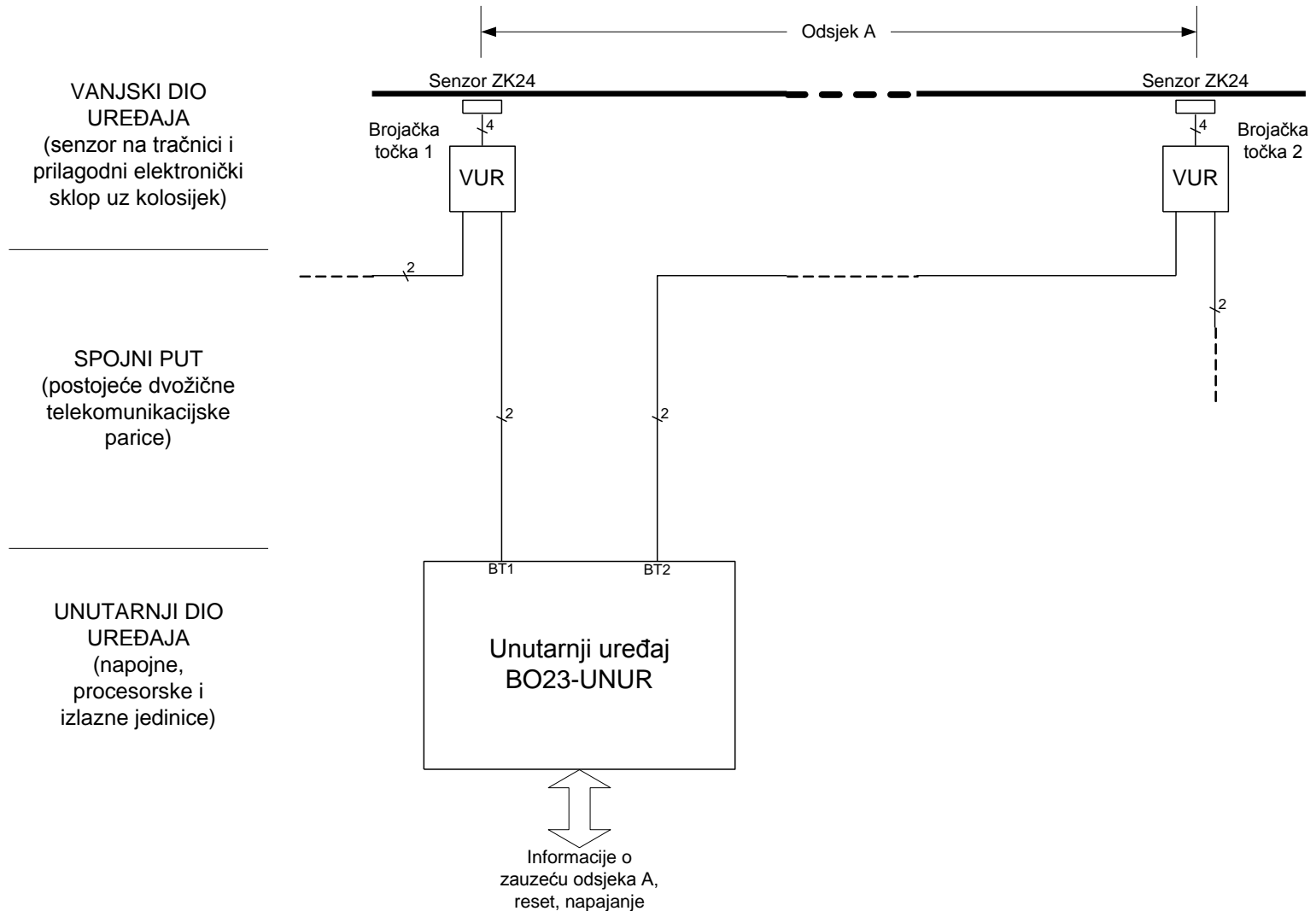


# NAJRAZLIČITIJA TESTIRANJA DILJEM SVIJETA SA TRAMVAJIMA I LOKOMOTIVAMA

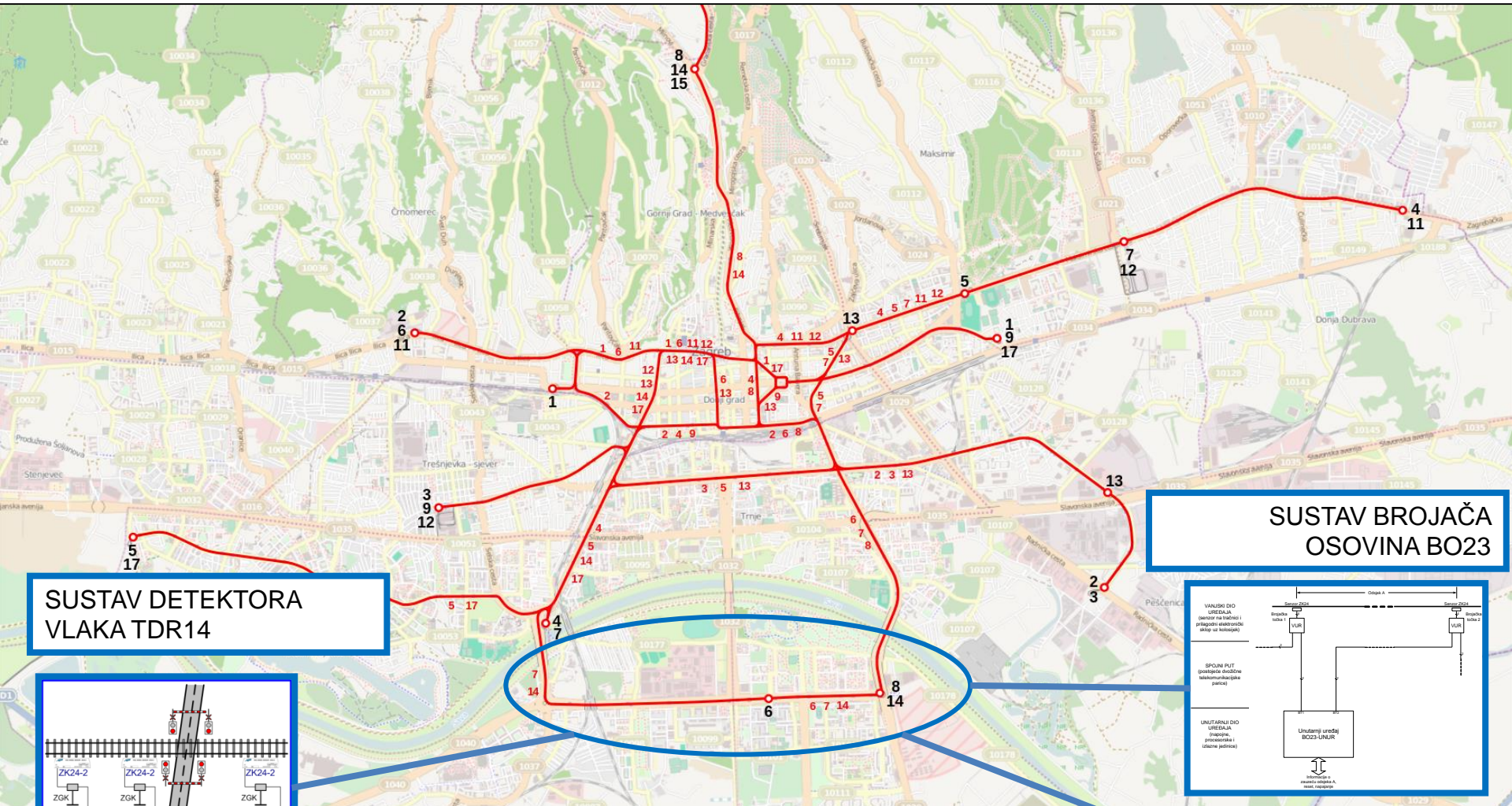




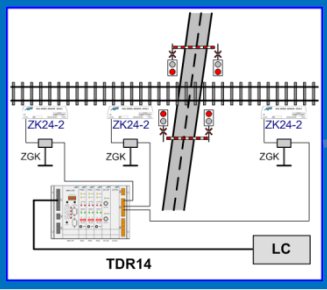
# BROJAČ OSOVINA BO23 – OSNOVNE SASTAVNE JEDINICE



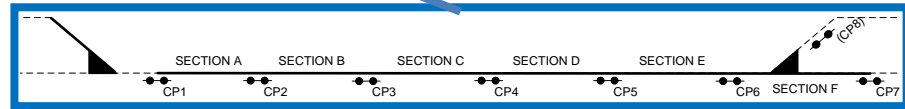
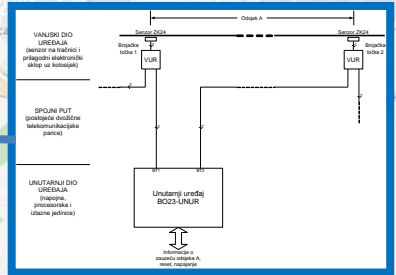
# TRAMVAJ GRAD ZAGREB – POVEĆANJE MOBILNOSTI I SIGURNOSTI PROMETA



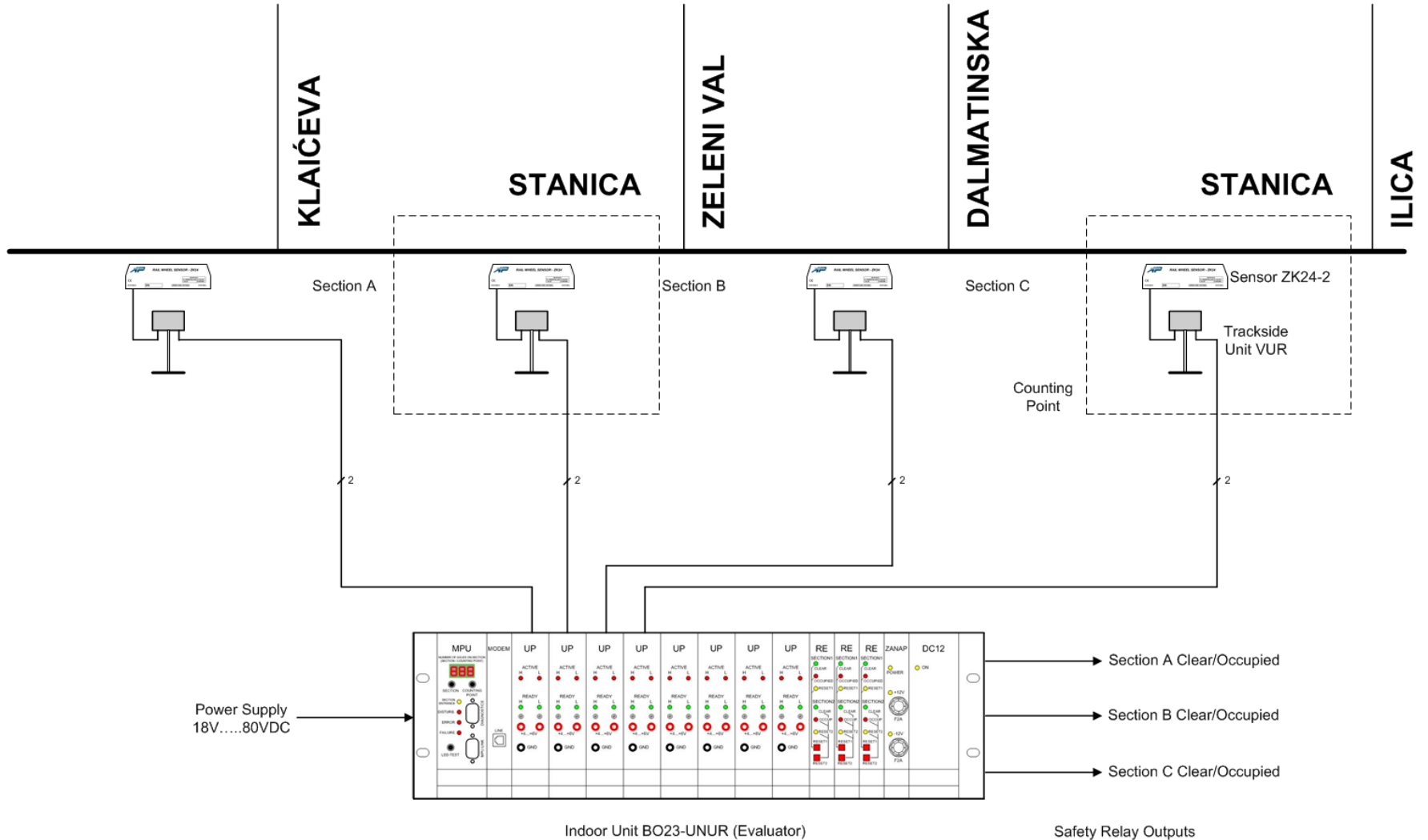
**SUSTAV DETEKTORA VLAKA TDR14**



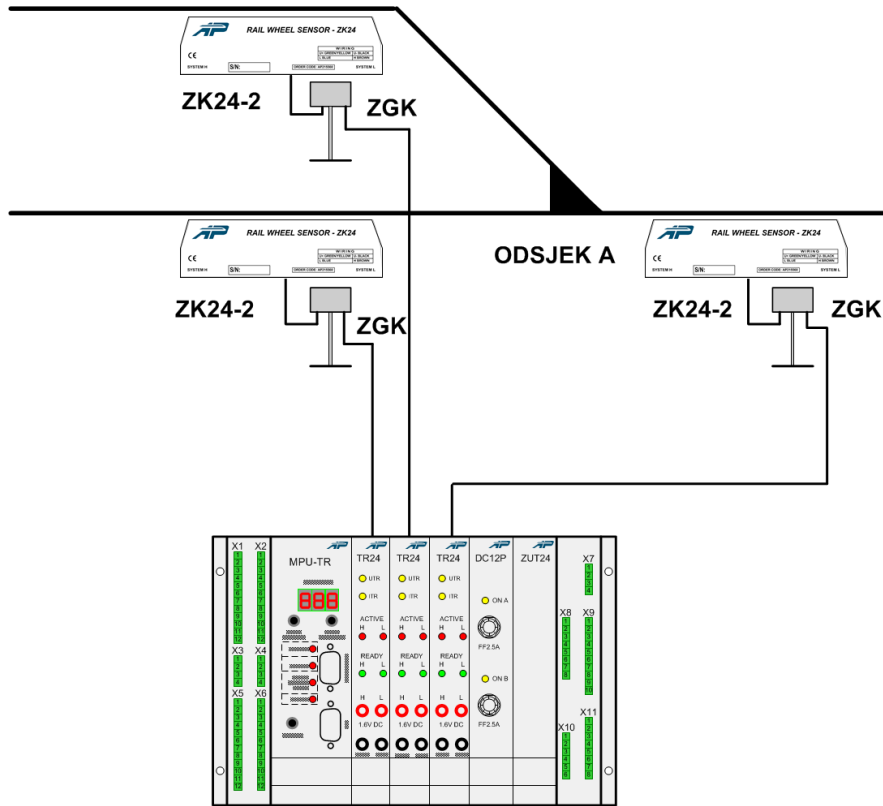
**SUSTAV BROJAČA OSOVINA BO23**



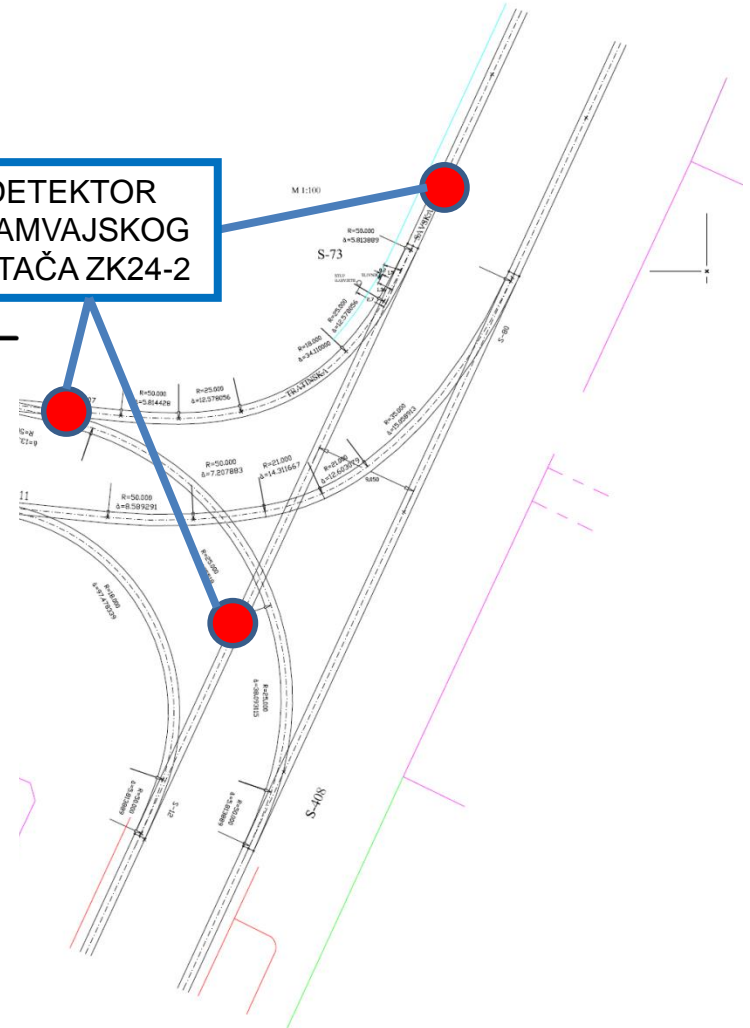
# BROJAČ OSOVINA ZA UPRAVLJANJE SEMAFORIMA



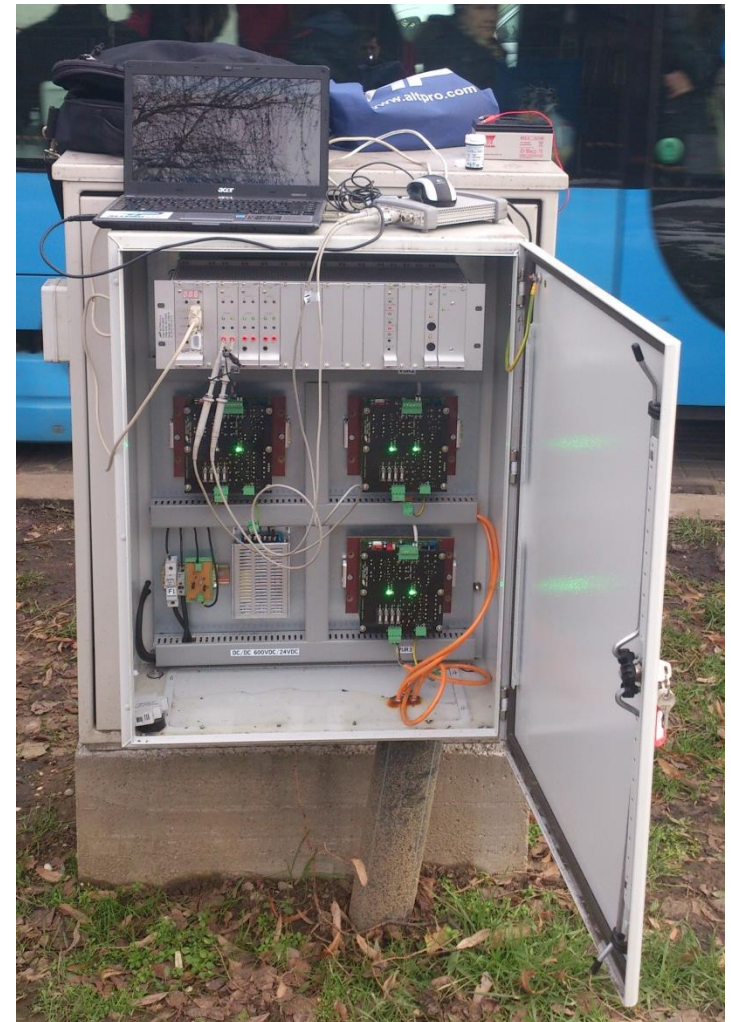
# OSIGURANJE SKRETNICE OD OKRETANJA POD TRAMVAJEM



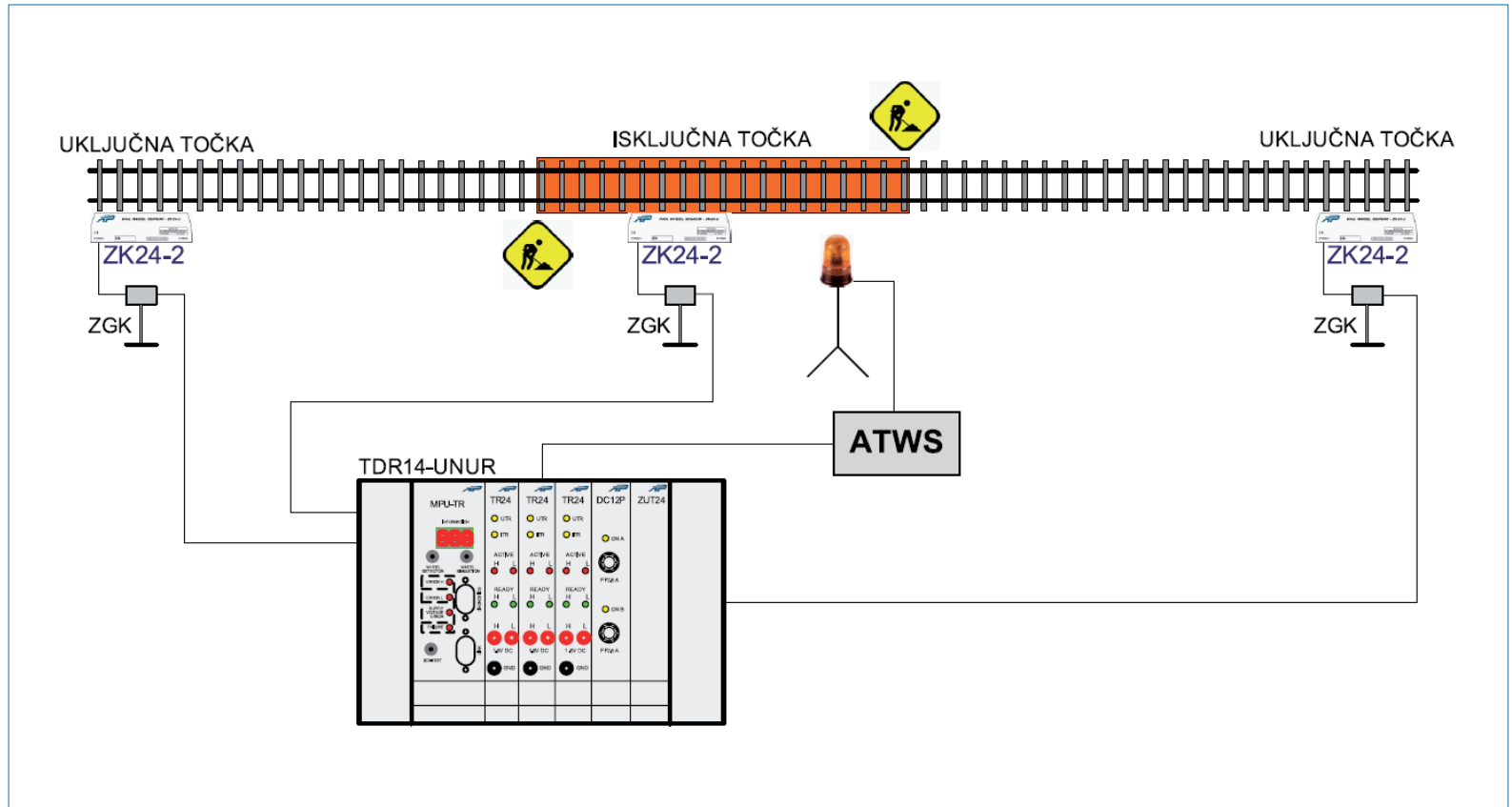
**DETEKTOR TRAMVAJSKOG KOTAČA ZK24-2**



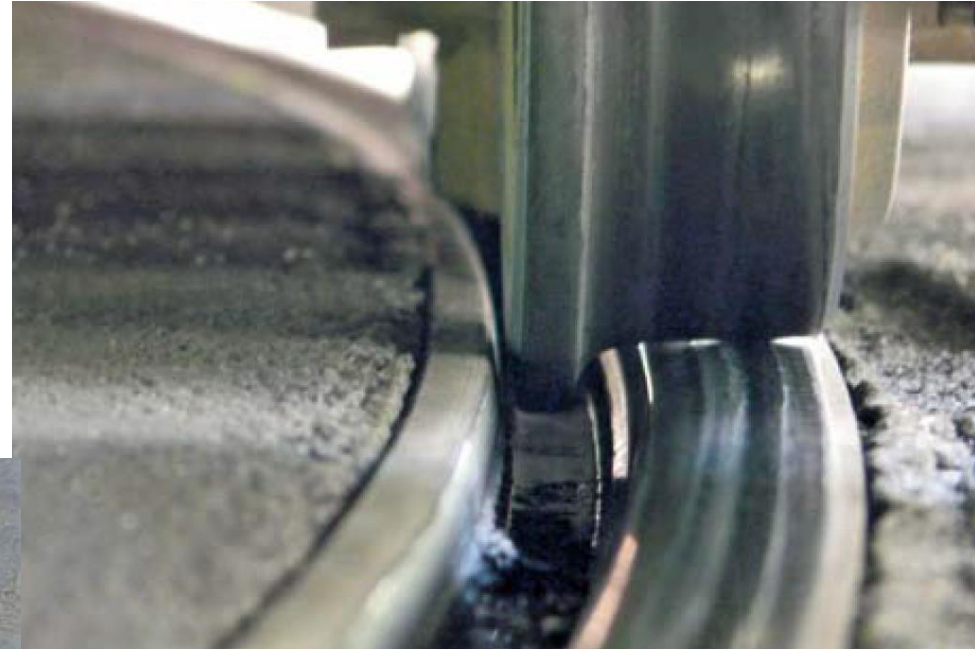
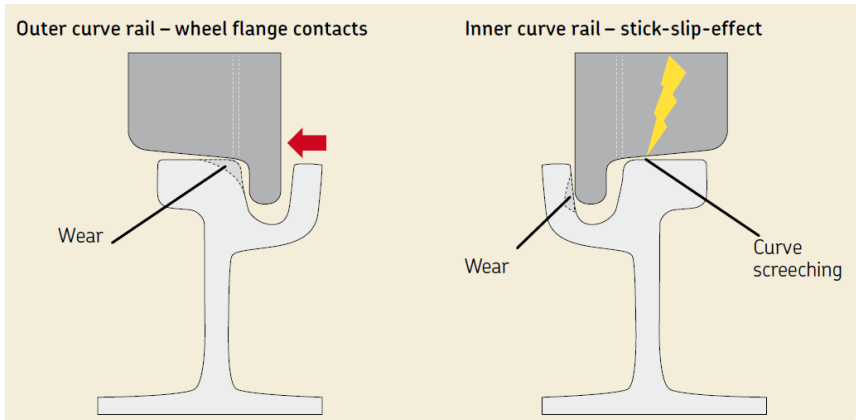
## OSIGURANJE SKRETNICE OD OKRETANJA POD TRAMVAJEM



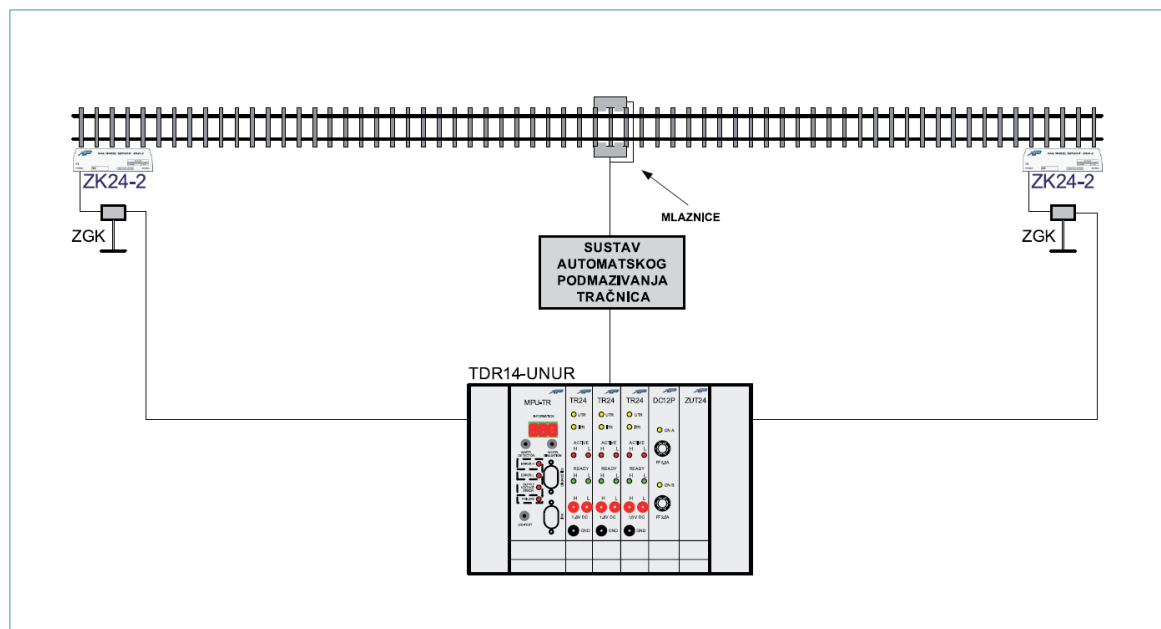
# SUSTAV ZA AUTOMATSKO UZBUNJIVANJE NA PRUZI KOD RADOVA



## SUSTAV ZA AUTOMATSKO PODMAZIVANJE TRAMVAJSKIH TRAJČNICA



## SUSTAV ZA AUTOMATSKO PODMAZIVANJE TRAMVAJSKIH TRAČNICA

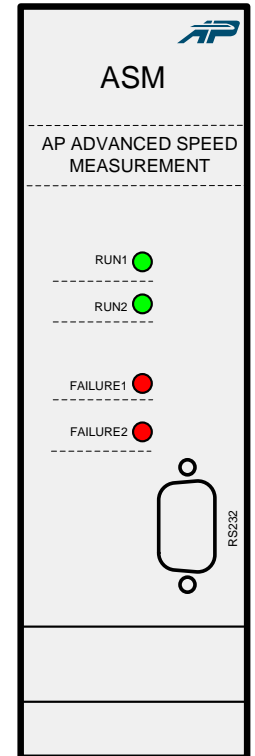
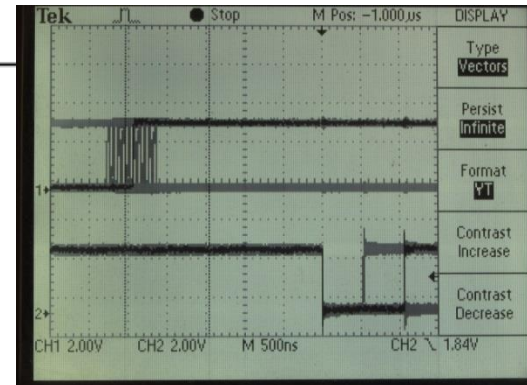
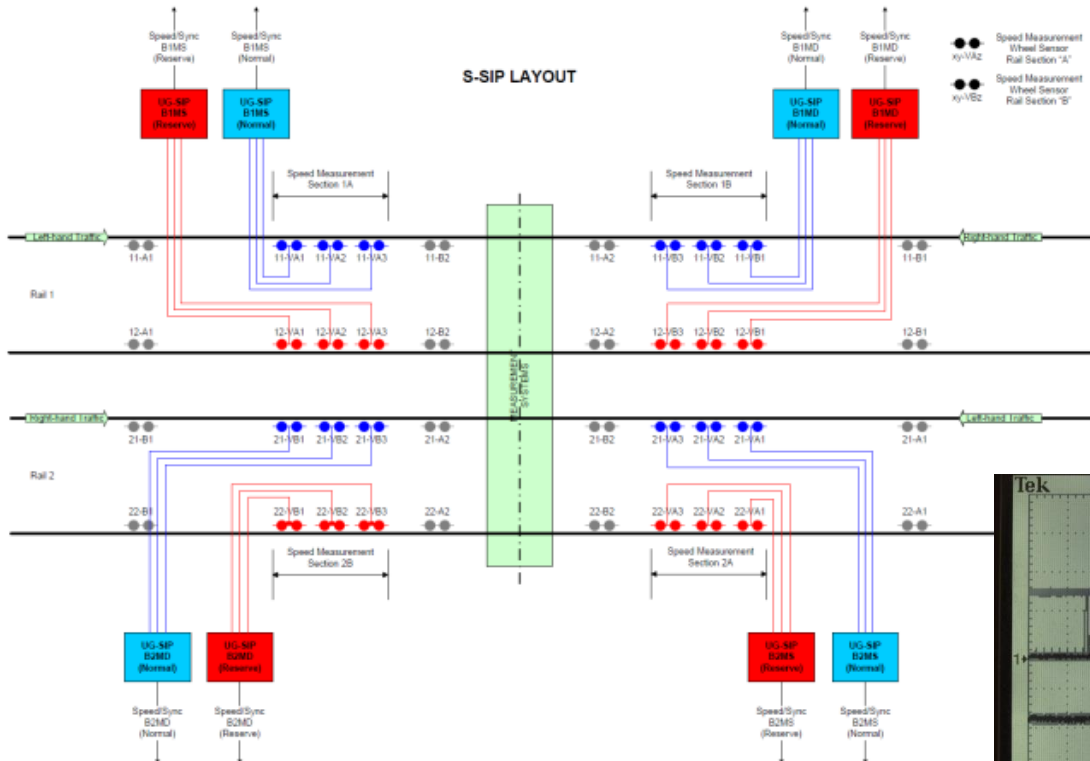


Pogodnosti korištenja takvog sustava su:

- smanjuje štetne lateralne sile koje uzrokuju iskliznuće, trošenje skretnica i trošenje zakrivljenih šina
- smanjuje trošenje skretnica
- povećava kapacitet prometa
- smanjuje održavanje skretnica i zakrivljenosti
- utrostručuje životni vijek skretnica i zakrivljenih šina
- koristi male precizne količine maziva
- pruža automatsko čisto podmazivanje skretnica, poluga, i vrha tračnice skretnice i (stock) šina više puta dnevno; nema potrebe za ručnim podmazivanjem; skretnica glatko radi cijelo vrijeme
- pruža podmazivanje srca skretnice
- djelotvorno podmazivanje zakrivljenih šina na vrhu i rubovima tračnice



# KONTROLA BRZINE TRAČNIH VOZILA



## GRADSKI TRAMVAJ – HOUSTON, TEKSAS, SAD





## GRADSKI TRAMVAJ – HOUSTON, TEKSAS, SAD

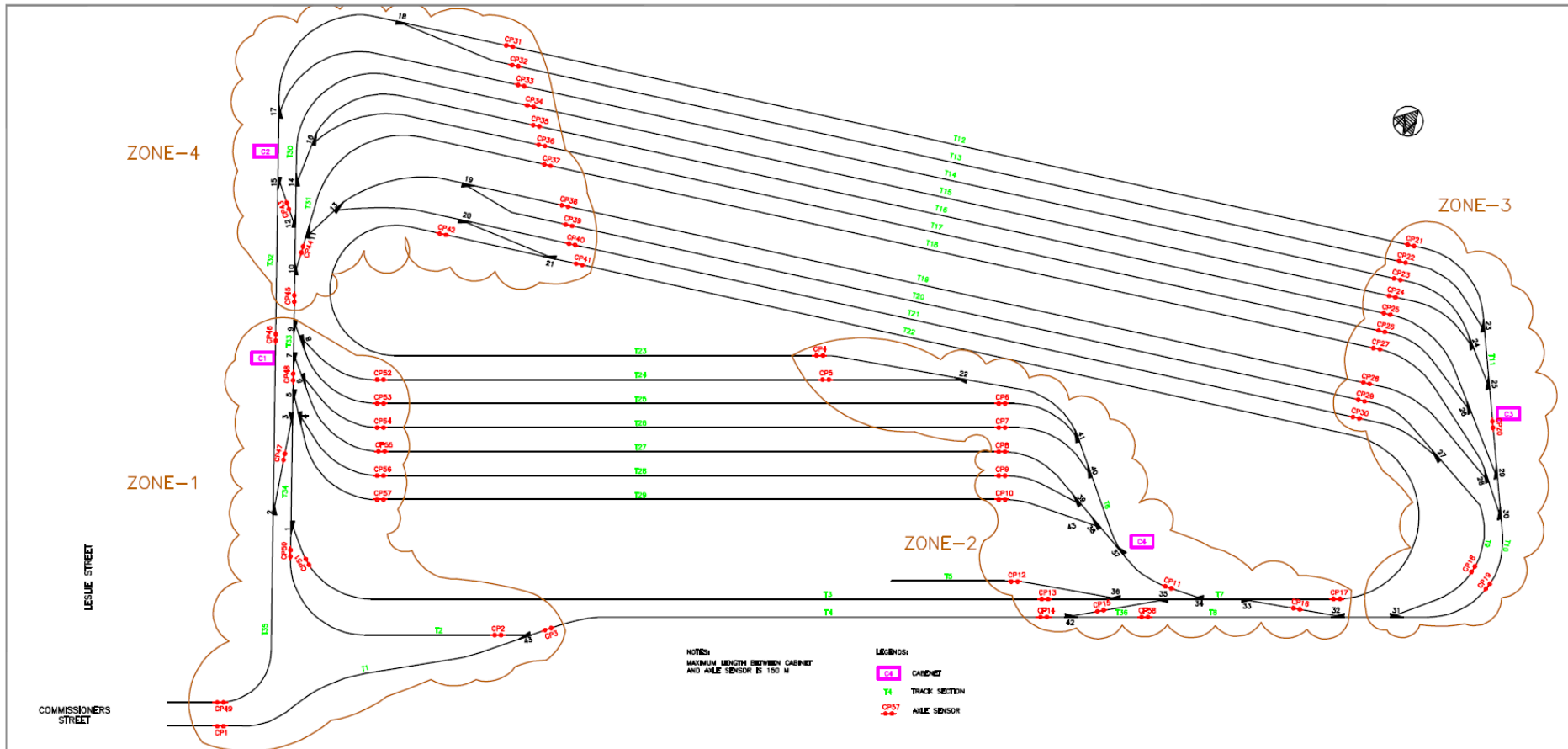


# GRADSKI TRAMVAJ – HOUSTON, TEKSAS, SAD





# TRAMVAJSKI DEPO – TORONTO, KANADA



REVISIONS		REVISIONS		DESIGNER	TTC ASHBRIDGES BAY LFLRV MAINTENANCE/STORAGE FACILITIES	ASHBRIDGES BAY SIGNAL SCHEME			
REV	DATE	ISSUED FOR	REV	DATE		ISSUED FOR	DWG. NO.	SHEET	REV.

DATE (MM/DD/YYYY)  
 ALK  
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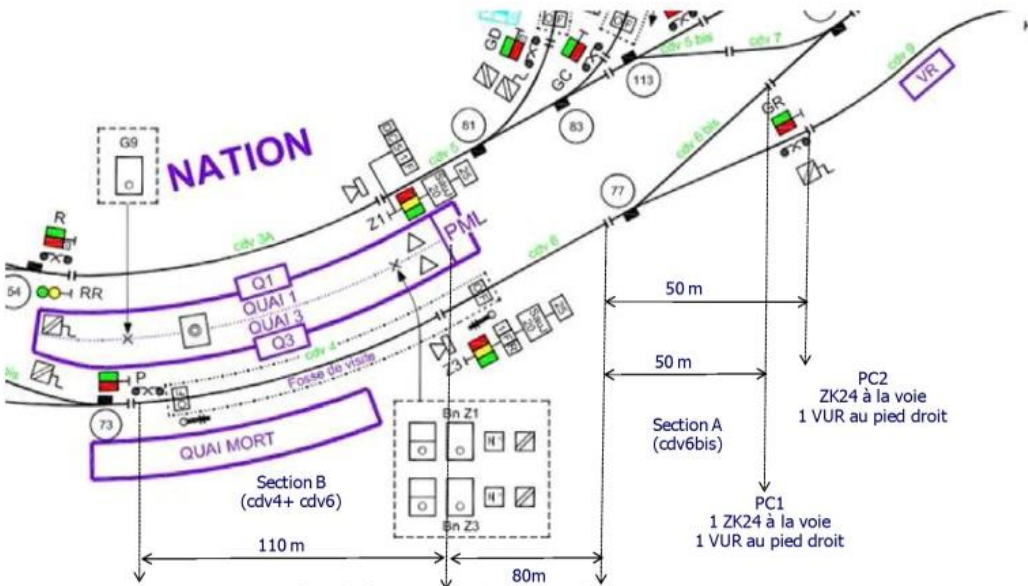
# DETEKCIJA PNEUMATSKIH METRO VLAKOVA – TESTIRANJA NA PARIŠKOM METRO-U, FRANCUSKA

## EXPLOATATION – METROS /SUBWAYS/ (World)

Paris Metro (RATP)



### Installation à Nation Ligne 2



1 armoire basse contenant:  
 1 BO23  
 1 alim

		TEST COMPTEUR D'ESSIEUX	
		SCHEMA D'IMPLANTATION	
CLEARSY	FORMAT	Version Projet 2	Schema de principe Complet 9/2009
mardi 15 septembre 2009	ECHELLE	1:1	FEUILLE









# DETEKCIJA BEZPILOTNOG VLAKA MITSUBISHI CRYSTAL MOVER – PROJEKT GRADSKOG PROMETA U MACAO



# DETEKCIJA BEZPILOTNOG VLAKA MITSUBISHI CRYSTAL MOVER MACAO – TESTIRANJE U JAPANU

N/Réf: CES Macau – D803    Version : 01.02    Date : 05/12/2013



**MITSUBISHI**  
HEAVY INDUSTRIES, LTD.

**AXLE COUNTER SIL4**

**MACAU**

**Test report during week in MHI Wadaoki site**  
**1<sup>ST</sup> AND 2<sup>ND</sup> DAY**

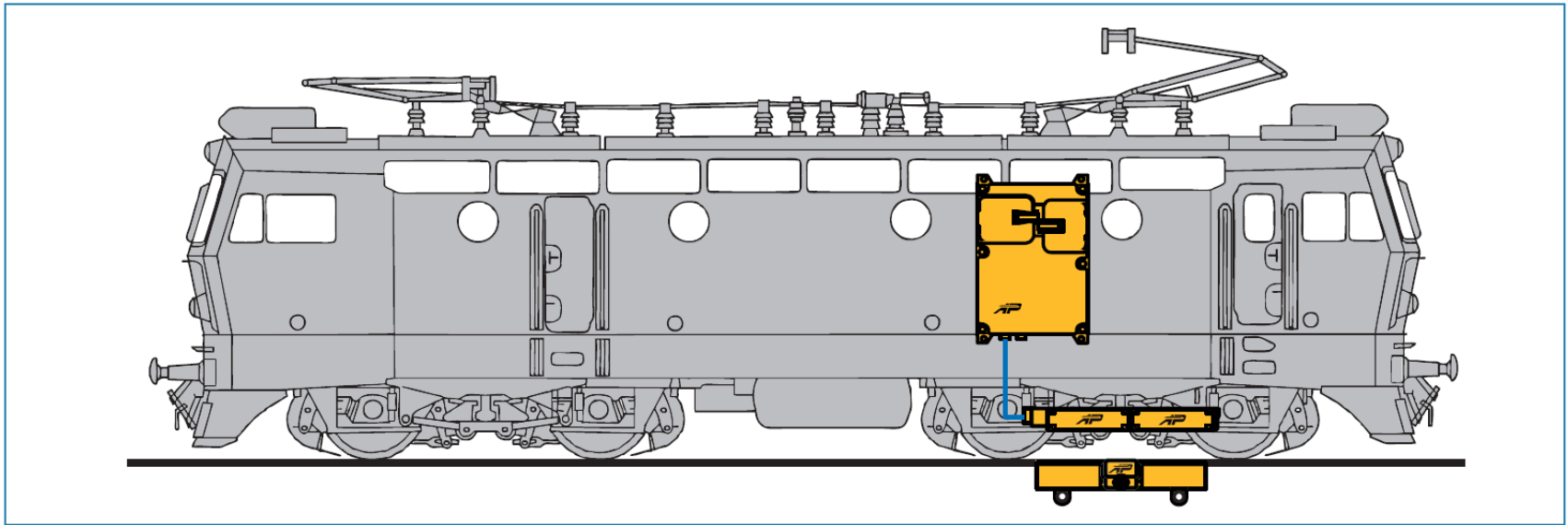
<b>Contacts :</b> Phone: +33(0) 4 42 37 1280 Cell Phone: Fax: +33(0) 4 42 37 1271 Email: <a href="mailto:michael.mamolle@clearsy.com">michael.mamolle@clearsy.com</a> Address: 320 avenue Archimède, les pléiades 3, Bat A 13857 Aix en Provence cedex 3 France	<b>PATRICK SAUVAGE</b> Fersil products manager +33(0) 4 42 37 1297 +33(0) 6 81 74 9665 +33(0) 4 42 37 1271 <a href="mailto:patrick.sauvage@clearsy.com">patrick.sauvage@clearsy.com</a> 320 avenue Archimède, les pléiades 3, Bat A 13857 Aix en Provence cedex 3 France	<b>Statut :</b> Établi par : Patrick SAUVAGE Vérifié par : Michael MARMOLLE
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## ATPS SUSTAV BAZIRAN NA INDUSI PZB PRINCIPIJU



INDUSI ATPS AUTOSTOP sustavi često se koriste na podzemnim (metro) i lakim željeznicama. Princip primjene jednak je kao i kod regularnih željeznica. S naglim urbanim razvojem, metro linije nastavljaju rasti, a INDUSI ATPS RAS 8385 pruža dokazano rješenje za sigurnost metra i lake željeznice.

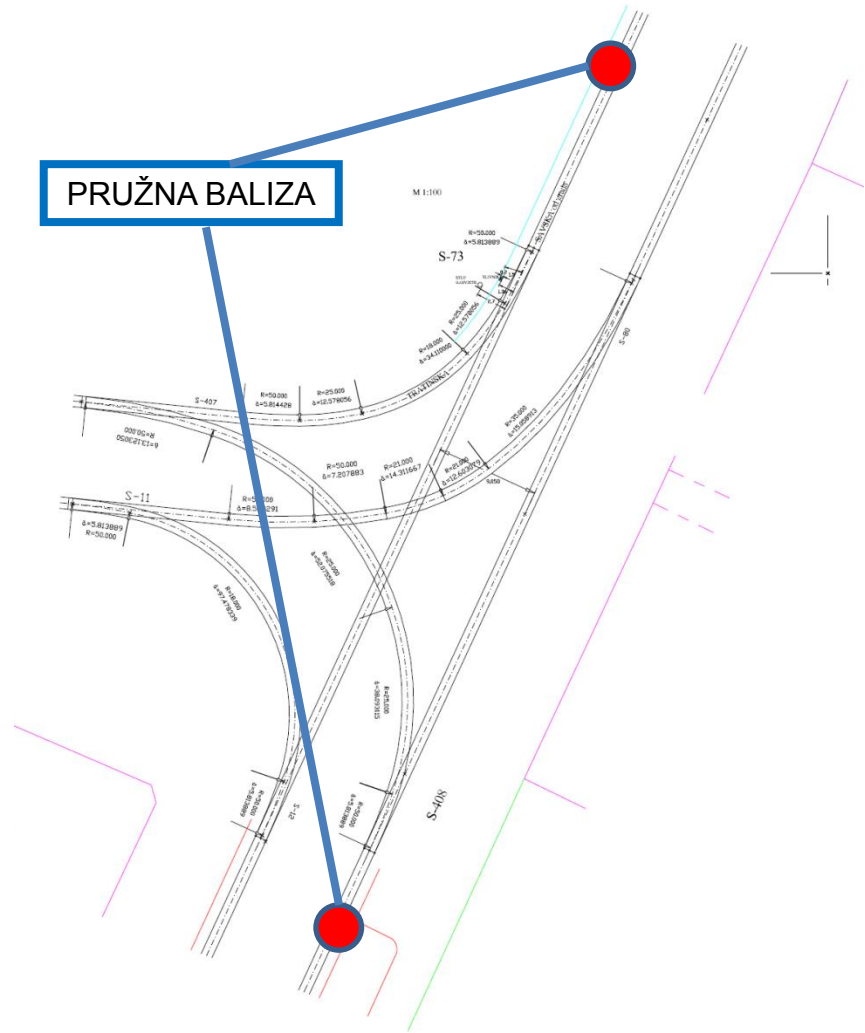
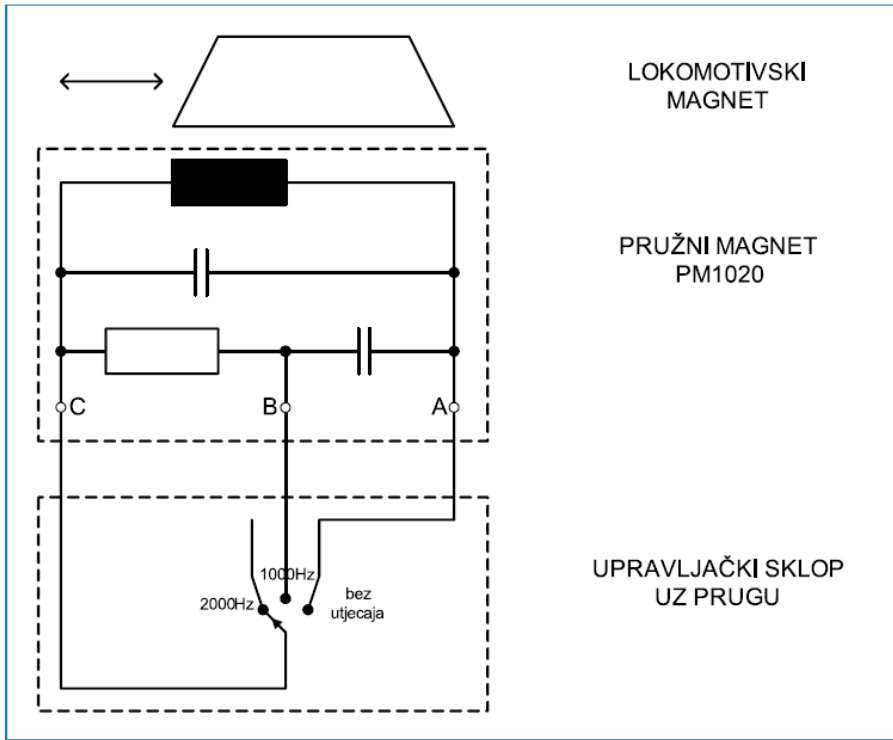


# SUSTAV ZA OKRETANJE SKRETNICE

1000 Hz LIJEVI SMJER

2000 Hz DESNI SMJER

PRUŽNA BALIZA



***Hvala Vam na pažnji!***

***P&O....***

***Sljedeći koraci....***