

**12.** BIH KONGRES  
O TRANSPORTNOJ  
INFRASTRUKTURI  
I TRANSPORTU  
→ željeznice

**12<sup>th</sup>** B&H CONGRESS  
ON TRANSPORT  
INFRASTRUCTURE  
AND TRANSPORT  
→ railways

ACE BH  
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→ **Program**  
→ **Programme**

11. i 12. maj 2023  
11-12<sup>th</sup> May 2023

Hotel Holiday, Sarajevo  
Bosna i Hercegovina

## Organizator / Organizer:



Udruženje Konsultanata Inženjera Bosne i Hercegovine  
Udruga Konzultanata Inženjera Bosne i Hercegovine  
Удружење Консултаната Инжењера Босне и Херцеговине  
Association of Consulting Engineers Bosnia and Herzegovina

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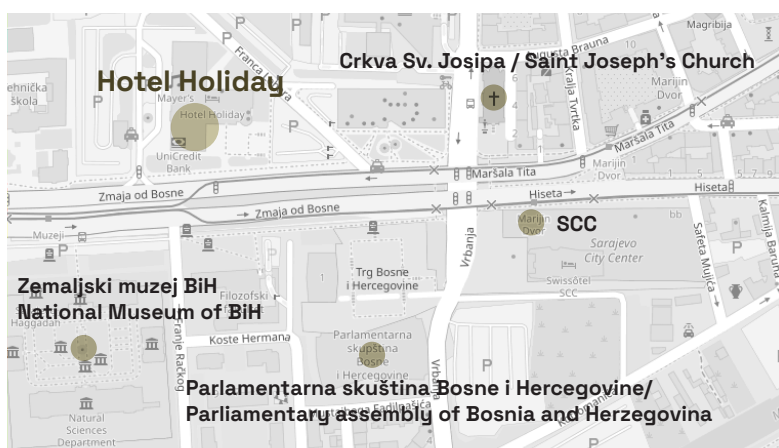
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## → Mjesto održavanja

## → Venue



Zmaja od Bosne 4  
71 000 Sarajevo  
Bosna i Hercegovina

<https://www.hoteleurope-group.ba/ba/holiday>



12. BIH KONGRES O TRANSPORTNOJ INFRASTRUKTURI I TRANSPORTU	Sarajevo, BiH / 11. i 12. maj 2023
12. BIH KONGRES O TRANSPORTNOJ INFRASTRUKTURI I TRANSPORTU	Sarajevo, B&H / 11-12 <sup>th</sup> May 2023

## → Kongresni program

## → Congress schedule

**DAN 1 / DAY 1**

**Četvrtak / Thursday / 11.05.2023.**

**08:00 - 09:00**

**Registracija učesnika / Registration of participants**

**09:00 - 09:30**

**Ceremonija otvaranja / Opening ceremony**

**Ešref Gačanin**

Predsjednik Udruženja konsultanata inženjera BiH /  
*President of the Association of Consulting Engineers of BiH*

**Matej Zakonjšek**

Transportna zajednica /  
*Transport Community*

**Igor Pejić**

Ministarstvo komunikacija i prometa Bosne i Hercegovine /  
*Ministry of Communications and Transport of Bosnia and Herzegovina*

**Tihomir Narić**

Regulatorni odbor za željeznice BiH /  
*Regulatory board of railways of Bosnia and Herzegovina*

**09:30 - 11:00**

**Prva sesija / First session**

**Nina Avramović Trninić**

Zašto je nerazvijeni željeznički sistem trenutna prednost Zapadnog Balkana? /  
*Why is an underdeveloped railway system a real superpower of Western Balkans?*

**Kristijan Solina, Dragica Flam, Nenad Zonjić**

Učinci liberalizacije željezničkog robnog prijevoza u Republici Hrvatskoj /  
*The effects of railway market liberalization in Croatia*

**Vladimir Malčić, Branimir Bošković, Mirjana Bugarinović, Ratko Đuričić**

Strategije zelene mobilnosti za Balkan /  
*Green mobility strategies for the Balkans*

**Tomaž Motoh**

Značenje interoperabilnosti i uloge notificiranog tijela u procesu puštanja podsistema u upotrebu /  
*The significance of interoperability and the role of the notified body in the process of putting the subsystem into use*

**Dejan Lasica, Kire Dimanoski**

Infrastrukturni uslovi i usklađenost sa TEN-T standardima željezničke mreže na Zapadnom Balkanu /  
*Infrastructure conditions and compliance with TEN-T standards of the rail network at the Western Balkans*

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### Ç. Kivilcim Koru Çiftcioğlu

Rad na ETCS nivou i međusobni odnosi između ETCS infrastrukture i ETCS komponenti na vozilu /  
*ETCS level operation and interrelations between ETCS infrastructure and ETCS on-board components*

### KONČAR

Video prezentacija /  
*Video presentation*

11:00 - 11:30	Kafe pauza / Coffee break
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11:30 - 12:45	Druga sesija / Second session
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### Luka Šošo

Mikroskopsko modeliranje i simulacije željezničkog saobraćaja /  
*Microscopic railway traffic model and simulations*

### Rade Cvijanović, Branislav Bošković, Ratko Đuričić

Analiza i odabir pokazatelja efikasnosti rada željezničkih operatera u tržišnim uslovima poslovanja /  
*Analysis and selection of performance indicators of railway operators in market business conditions*

### Edvin Hadžiahmetović, Gregor Rakar

Povećanje brzine na postojećim željezničkim pravicima /  
*Raising speed on existing railway alignments*

### Emir Jašarević, Enes Čovrk

Očekivani trend razvoja željezničke infrastrukture u BiH do 2035. godine /  
*Expected trend of railway infrastructure development in B&H until 2035*

### Dragan Nešić

Okvir za pravnu i tehničku interoperabilnost željeznica /  
*Framework for legal and technical rail interoperability*

12:45 - 14:00	Ručak / Lunch
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14:00 - 15:30	Treća sesija / Third session
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### Zorica Milanović, Miloš Dimitrijević, Jelena Mišković

Analiza reda vožnje i iskorišćenosti kapaciteta na deonici pruge Resnik-Valjevo primenom opentack-a /  
*Scheduling and capacity utilisation analysis on the railway section Resnik - Valjevo using opentack*

### Saša Džumhur

Primjena GIS tehnologije na evropskim željeznicama i na odabranim projektima implementiranim u Bosni i Hercegovini /  
*GIS technology applications on railways in Europe and on representative projects implemented in Bosnia and Herzegovina*

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**Andreas Schoebel, Jelena Kuzmanović**

Primjena opentrack na železnicama Republike Srpske /  
*Application of opentrack on railways of the Republic of Srpska*

**Nenad Kecman, Pantelija Petrović, Luka Kecman**

Informacioni sistem za upravljanje kontejnerskim terminalima /  
*Information system for management of container terminals*

**Ana Ilić, Jelena Radović**

Projektovanje GSM-R sistema na pruzi (Beograd centar) – Stara Pazova – Novi Sad /  
*Design of GSM-R system on the railway line (Belgrade center) – Stara Pazova – Novi Sad*

**Nermin Čabrić, Nedžad Branković, Aida Kalem**

Analiza ključnih indikatora performansi upravitelja željezničke infrastrukture /  
*Analysis of the key performance indicators of the railway infrastructure managers*

**Petak / Friday / 12.05.2023.**

09:00 - 10:15

**Četvrta sesija / Fourth session**

**Stjepan Kralj, Mario Kralj, Frane Burazer Iličić**

O projektu rekonstrukcije postojećeg i izgradnji drugog kolosijeka na dionici  
Hrvatski Leskovac – Karlovac /  
*About the reconstruction project of existing and construction of the second track on  
the Hrvatski Leskovac – Karlovac railway section*

**Igor Pejić**

Uloga i značaj obnove Unske pruge u funkciji regionalnog i lokalnog gospodarskog razvoja /  
*The role and significance of the Una railway renovation in the function of regional  
and local economic development*

**Ivo Haladin, Stjepan Lakušić, Krešimir Burnać**

Monitoring stanja tračničke infrastrukture na temelju podataka prikupljenih  
konvencionalnim tračničkim vozilima / Tramway track condition monitoring based on  
acceleration data collected using in-service vehicles

**Dragana Stefanović, Tatjana Mikić, Aleksandar Radosavljević**

Primena simulacije saobraćaja u planiranju i analizi efekata projekta izgradnje,  
rekonstrukcije i modernizacije pruge Beograd – Novi Sad – Subotica /  
*The application of traffic simulation in the planning and analysis of the effects  
of the project of construction, reconstruction and modernization of the railway  
Belgrade – Novi Sad – Subotica*

**Danijel Savković, Nemanja Lošić**

Primena tehničkih specifikacija interoperabilnosti za osobe smanjene  
pokretljivosti (TSI PRM) u projektovanju objekata namenjenih putnicima na pruzi  
Beograd – Novi Sad – Subotica /  
*Application of technical specifications of interoperability for persons with  
reduced mobility (TSI PRM) in the design of facilities intended for passengers on the  
Belgrade – Novi Sad – Subotica railway line*

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**Sanja Dejanović – Raičević**

Izazovi organizacije i tehnologije izvođenja radova na gornjem stroju u funkciji rehabilitacije mostova na pruzi Vrbnica – Bar u Crnoj Gori u režimu bez totalne obustave saobraćaja na pruzi /

*Challenges of the organization and technology of performing work on the superstructure in the function of rehabilitating bridges on the Vrbnica - Bar railway in Montenegro in a regime without a total suspension of traffic on the railway*

10:15 - 10:45	<b>Kafe pauza / Coffee break</b>
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10:45 - 12:00	<b>Peta sesija / Fifth session</b>
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**Fadila Kiso, Samira Karičić, Osman Lindov, Samir Džaferović, Amra Zvizdić, Enes Memić**

Modernizacija cestovno – željezničkih prelaza u BiH /  
*Modernization of road-rail crossings in B&H*

**Đozo Vahid, Dragutin Lončar**

Održivost željezničke infrastrukture /  
*Sustainability of railway infrastructure*

**Kubat Faruk**

Iskustva i primjena signalno-sigurnosnih tehničkih rješenja za efikasniji željeznički saobraćaj na prugama Zapadnog Balkana /  
*Experiences and application of signaling and safety technical solutions for more efficient railway traffic on the railways of the Western Balkans*

**Dragan Đorđević, Nikola Ristić, Bojan Vozar**

Analiza novo planiranih kolosječnih kapaciteta u stanici Paraćin /  
*Analysis of the newly planned track capacities at the Paraćin station*

**Velimir Fržović, Aleksandar Zlatanović, Vladimir Vojinović, Liu Gang**

Projektovanje signalno-sigurnosnih uređaja na prvoj pruzi sa ETCS I2 u Republici Srbiji /  
*Designing railway signalling systems on the first ETCS I2 line in Republic of Serbia*

**Mihajlo Pajević, Dragan Đorđević, Ana Vulević**

Pregled elemenata pristupačnosti na objektima željezničkog saobraćaja nakon izvedenih radova sa aspekta lica u invalidskim kolicima – dionica Beograd center – Stara Pazova /  
*Overview of elements of accessibility on railway transport facilities after the performed works from aspects of persons in wheelchairs – section Belgrade center – Stara Pazova*

**Zatvaranje Kongresa / Closing the Congress**

# KONČAR

INŽENJERING



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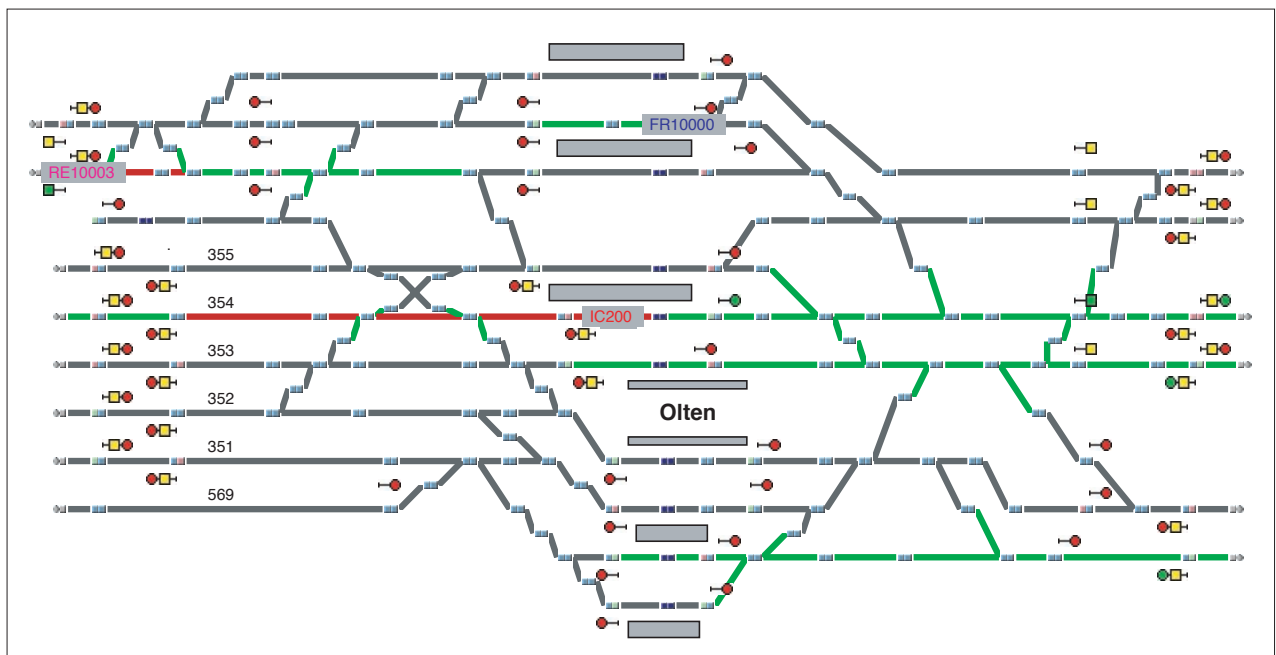
ALTPRO od 1994. godine inovira, razvija i proizvodi signalno sigurnosnu opremu i sustave za željeznička vozila i infrastrukturu. Predanost povećanju sigurnosti na željeznicama učinila je ALTPRO globalnom kompanijom sa sustavima koji su instalirani na 6 kontinenta u preko 50 država svijeta.

Posjetite nas na 12. Kongresu o transportnoj infrastrukturi i transportu kako biste vidjeli zašto možemo biti izvor vaše sigurnosti.



Izvor vaše sigurnosti.

## OpenTrack - Simulation of Railway Networks



## Functions of OpenTrack

OpenTrack is a planning and simulation tool for railway operations. It was developed at the Swiss Federal Institute of Technology Zurich and is currently supplied by OpenTrack Railway Technology Ltd. to over 230 organisations in 46 countries.

OpenTrack offers support for the following tasks:

### Operations

- Determining capacity of stations
- Determining capacity of lines
- Localizing capacity bottlenecks
- Calculating headways
- Determining occupation times for station tracks
- Optimizing rolling stock scheduling
- Evaluating how disturbances affect the network as a whole
- Planning of maintenance and construction projects
- Visualization of operations (including rolling stock, routes and signals)

### Infrastructure

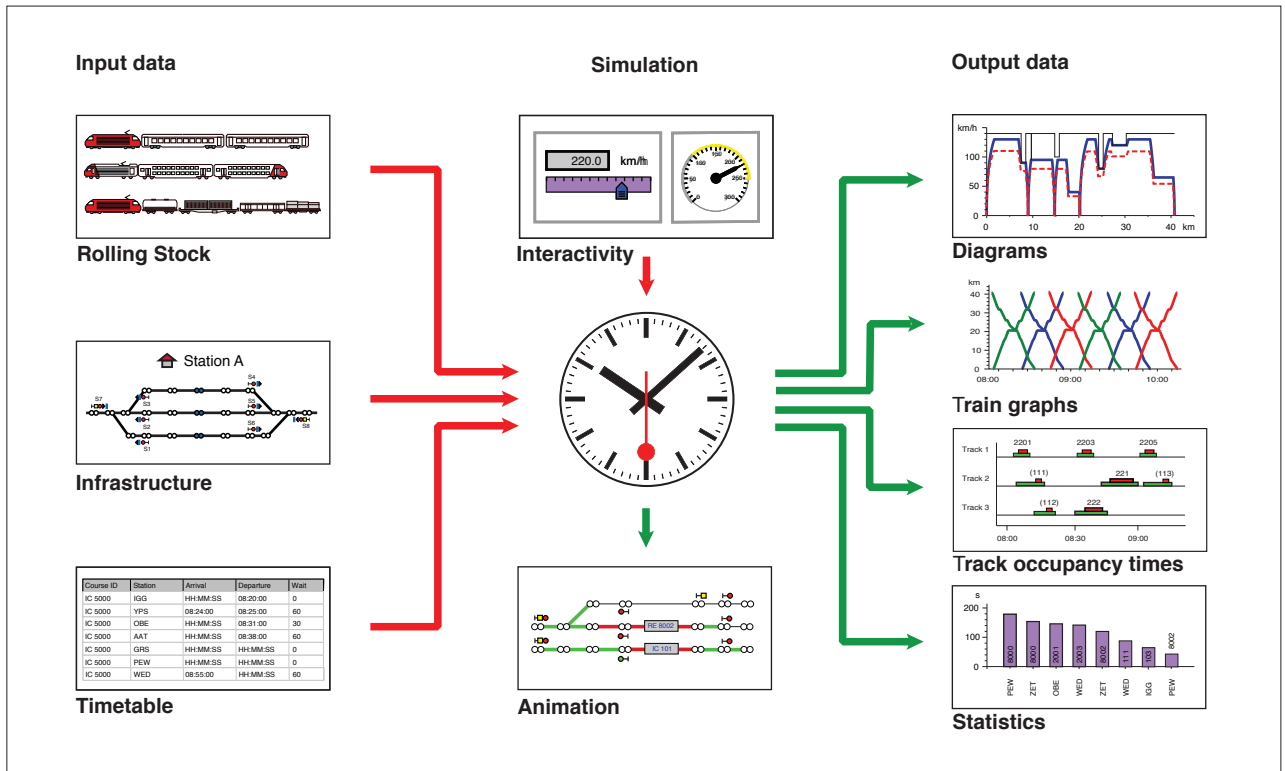
- In-depth evaluation of different infrastructure variants
- Determining requirements for expansion
- Evaluating and designing signaling systems
- Managing infrastructure data by means of a graphical user interface
- Testing the impact of component and system reliability

### Timetable

- Calculating running times
- Checking feasibility and stability of timetables and identifying conflicts

### Rolling Stock

- Rolling stock scheduling
- Determining requirements for future rolling stock



## Working with OpenTrack

The diagram above shows the process sequence for a simulation. Predefined trains run according to the constraints of the timetable data on a defined track topography. The simulation has both continuous and discrete parts. The continuous part calculates differential equations for train speeds and distances. The discrete part simulates processes such as states of the signaling system and the propagation of delays.

During a simulation, the user can watch the track topography in an animation mode that shows running trains, prepared routes and current signal aspects. The user can interrupt the simulation at any time, and if required go into OpenTrack and modify certain constraints.

After a simulation run, various forms of evaluation are available:

- Distance/time and speed/time diagrams
- Station track occupation times
- Acceleration behavior
- Report on obstructions and disturbances
- Train graphs
- Occupancy time stairway
- Tractive effort
- Comparison of real and planned running times

OpenTrack runs on all popular computer systems (Windows 2000 / XP / Vista / 7 / 8 / 10, Mac OS X).

For further information on OpenTrack, please contact OpenTrack Railway Technology Ltd. ([info@opentrack.ch](mailto:info@opentrack.ch)).



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Let | Years | Jahre | Ans | Godina

**Tradicija kot ključ za kakovost**  
Tradition as the key to quality

### Preskušanja | Testing

Neporušitvene preiskave | Non-destructive testing (NDT)

### Nadzori | Inspections

Jeklene konstrukcije | Steel structures

Tlačna oprema | Pressure equipment

Varilska dela | Welding

Periodični pregledi opreme pod tlakom |

Periodic inspection of pressure equipment

ADR | ADR

Premična tlačna oprema | Transportable pressure equipment (TPED)

### Kakovost | Quality

Zagotavljanje kakovosti | Quality assurance

Uvajanje sistemov vodenja | Implementation of Management Systems

Ekspertize in svetovanje | Expertise and Counseling

### Certificiranje | Certification

Certificiranje varilnih postopkov | Certification of welding procedures

Certificiranje podjetij po | Certification according to:

SIST EN 1090-1, SIST EN 15085-2

Varilni stroji in naprave | Welding machines and devices

Interoperabilnost železniškega prometa |

Interoperability of the rail system

### Certificiranje osebja | Personnel Certification

Certificiranje varilcev | Welder certification

Certificiranje NDT osebja | Certification of NDT personnel

### Izobraževanje | Training

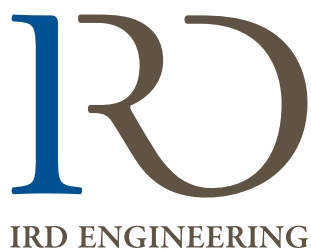
NDT osebje | NDT personnel

Seminarji | Seminars

Notranji presojevalci | Internal auditors



IZOBRAŽEVALNI



→ Nadolazeće Konferencije / Upcoming Conferences

## FIDIC MODULE 2

International Contracts Training Course  
"Management of Claims and Disputes  
resolution under the FIDIC contracts"

19.-20.10.2023.

## FIDIC MODULE 3

International Contracts Training Course  
"FIDIC Dispute Adjudication"

23.-24.11.2023.

# 2023

**Organizator / Organizer:**



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Udruga Konzultanata Inženjera Bosne i Hercegovine  
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12. BIH KONGRES O TRANSPORTNOJ INFRASTRUKTURI I TRANSPORTU → željeznice  
12<sup>th</sup> B&H CONGRESS ON TRANSPORT INFRASTRUCTURE AND TRANSPORT → railways