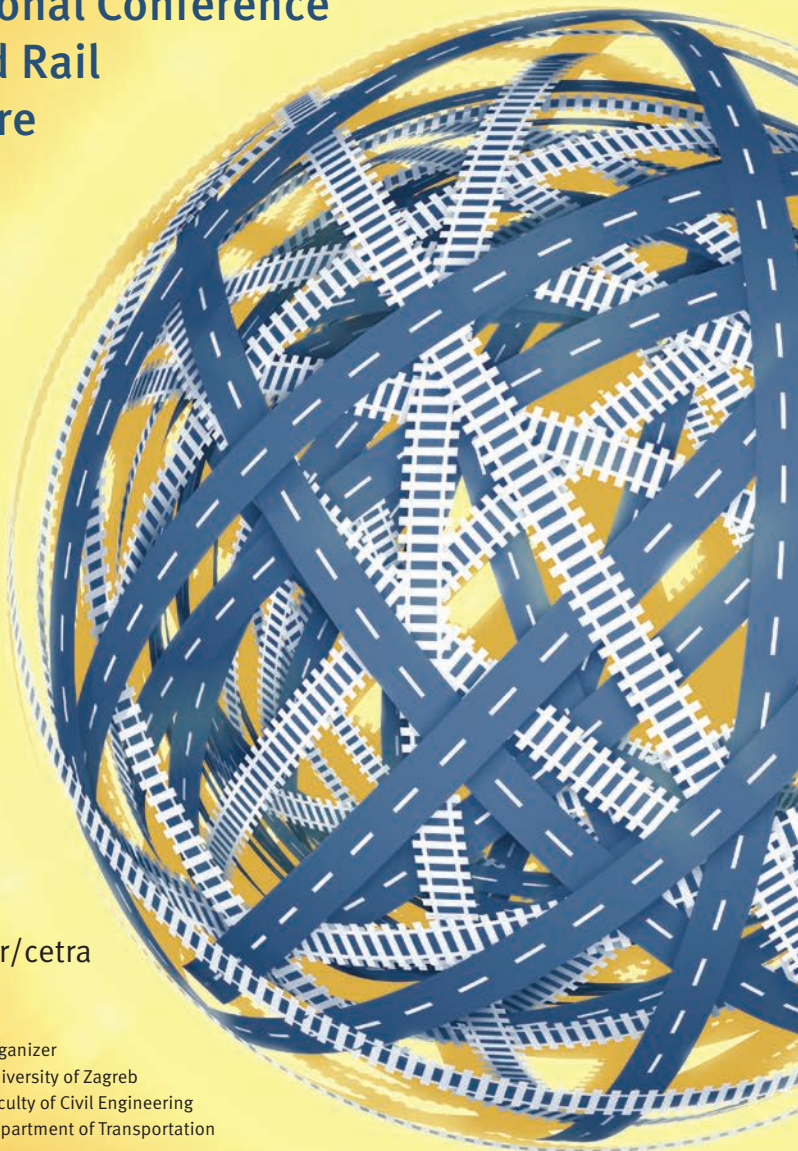


CETRA²⁰¹⁶

Final Programme

4th International Conference on Road and Rail Infrastructure

23–25 May 2016
Šibenik, Croatia



www.grad.unizg.hr/cetra



Organizer
University of Zagreb
Faculty of Civil Engineering
Department of Transportation

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All members of CETRA 2016 Conference Organizing Committee are professors and assistants of the Department of Transportation, Faculty of Civil Engineering at University of Zagreb.

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WELCOME TO CETRA 2016 AND WELCOME TO ŠIBENIK

The intention of CETRA 2016 conference is to bring together scientists and experts in the fields of road and railway engineering and give them one more opportunity to present the results of their researches, findings and innovations. Road and railway infrastructures are closely related, but scientific and professional gatherings that include both fields simultaneously have rarely been organized until now. The development of a society, particularly its economic development, at present is unthinkable without a developed road and railway infrastructure.

Great interest of participants in topics from the field of road and rail infrastructure during previous CETRA conferences (CETRA 2010, CETRA 2012, CETRA 2014), confirmed the soundness of the Department for Transportation Engineering's decision to once again organize such an international event. Positive comments received from participants in the previous CETRA conferences motivated the Department for Transportation Engineering, Faculty of Civil Engineering - University of Zagreb, to continue with the organization of such event in 2016 also. The Organizing Committee has been working hard to make CETRA 2016 a very interesting conference, which will provide not only fruitful, scientific and professional experience but a chance to meet old friends and make new ones in Šibenik.

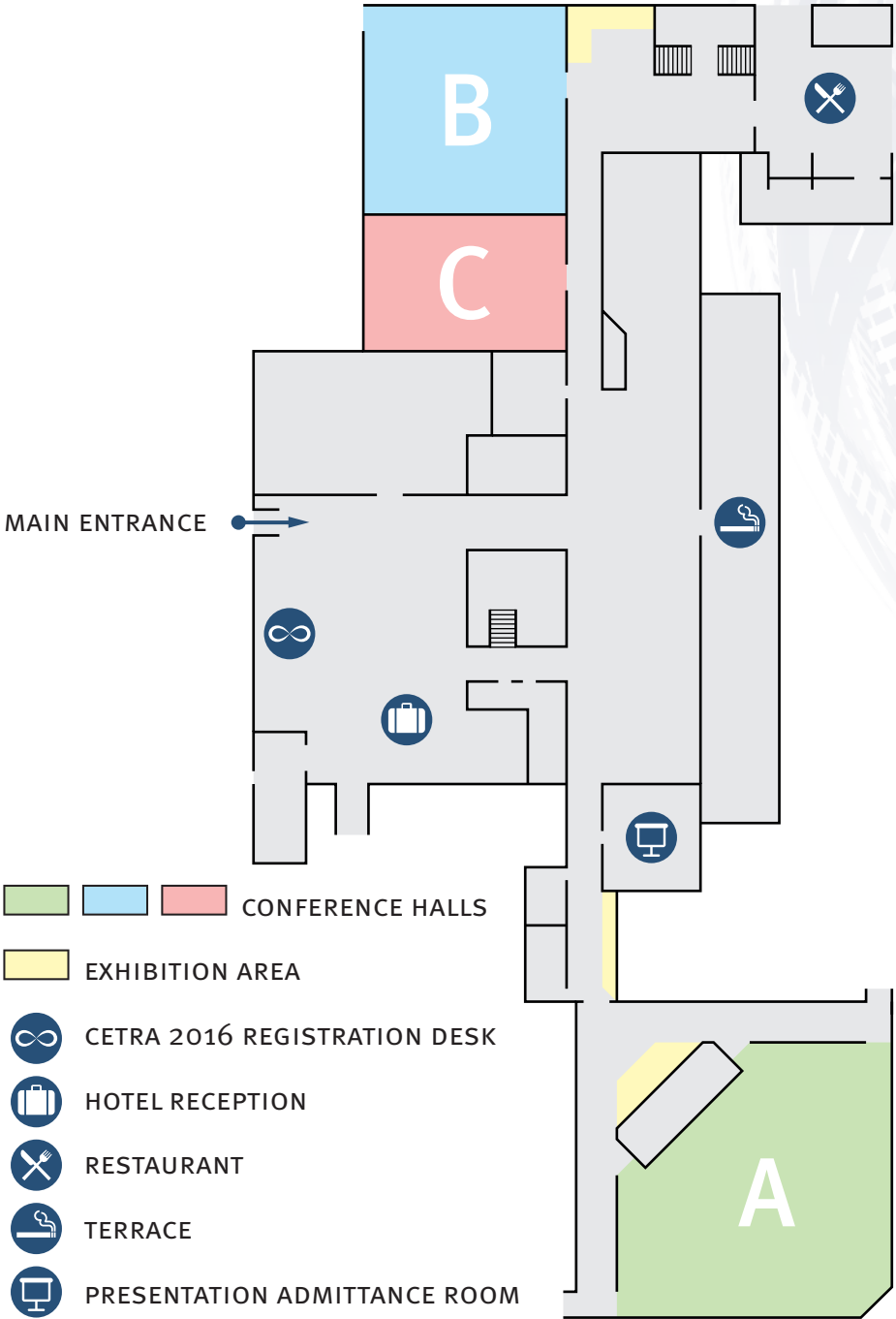
We would like to thank the various institutions, scientific committee members, sponsoring and donor companies and of course, the indefatigable staff of the Department of Transportation at Faculty of Civil Engineering in Zagreb, who have helped in the preparation and organization of CETRA 2016 Conference.

A great novelty is that the CETRA 2016 conference will be indexed in the TRID base, which is an intedatabase that combines the records from TRB's Transportation Research Information Ser(TRIS) Database, and the OECD's Joint TransResearch Centre's International Transport Research Documentation (ITRD) Database. TRID provides access to more than one million records of transportation research worldwide. In addition, the TRID base has accepted all papers that were published at previous CETRA conferences. 143 excellent papers were published in the proceedings Road and Rail Infrastructure IV. The full papers are being published by the Department of Transportation, Faculty of Civil Engineering at University of Zagreb in hardcopy and CD-ROM version of the conference proceedings.

We wish you all a pleasant and productive time in Šibenik at CETRA 2016 Conference.



Stjepan Lakušić and Željko Korlaet
Chairmen of CETRA 2016 Conference



CONFERENCE PROGRAMME – SHORT VERSION

DAY 0 – Sunday, May 22nd		
17:00 – 19:00	Registration of the Participants	HOTEL LOBBY
19:30 – 21:30	A welcome cocktail for participants and guests	HOTEL TERRACE
DAY 1 – Monday, May 23rd		
08:00 – 09:30	Registration of the Participants	HOTEL LOBBY
09:30 – 09:45	Opening Ceremony	CONFERENCE HALL “A”
09:45 – 10:15	KEYNOTE LECTURE 1: CROATIAN RAILWAY INFRASTRUCTURE IN THE CHANGING ENVIRONMENT Renata Suša, HŽ Infrastruktura d. o. o.	CONFERENCE HALL “A”
10:15 – 10:45	KEYNOTE LECTURE 2: VIRTUAL MANAGEMENT OF COMPLEX INFRASTRUCTURE: INFORMATION SYSTEMS IN THE AGE OF BIG DATA Prof. Timo Hartmann, Technical University of Berlin	CONFERENCE HALL “A”
10:45 – 11:30	Coffe Break	
11:30 – 12:45	1A Railway Infrastructure	CONFERENCE HALL “A”
	1B Road Pavement	CONFERENCE HALL “B”
12:45 – 14:00	Lunch Break	HOTEL RESTAURANT
14:00 – 15:30	2A Rail Traffic Modelling and Timetables	CONFERENCE HALL “A”
	2B Road Projects Management	CONFERENCE HALL “B”
	2C Traction Vehicles and Power Supply	CONFERENCE HALL “C”
15:30 – 15:45	Coffee Break	
15:45 – 17:00	3A Rail Track Structure	CONFERENCE HALL “A”
	3B Traffic Planning and Modelling	CONFERENCE HALL “B”
17:15 – 23:00	ORGANISED TRIP BY BOAT (Hotel Solaris – Island Prvič – Šibenik – Lake Prokljan)	
DAY 2 – Tuesday, May 24th		
09:00 – 10:30	4A Rail Infrastructure Projects	CONFERENCE HALL “A”
	4B Road Pavement	CONFERENCE HALL “B”
	4C Noise and Vibration	CONFERENCE HALL “C”
10:30 – 11:00	Coffee Break	
11:00 – 12:30	5A Road Traffic Safety	CONFERENCE HALL “A”
	5B Rail Infrastructure Projects	CONFERENCE HALL “B”
	5C Bridges Structural Monitoring	CONFERENCE HALL “C”
12:30 – 14:00	Lunch Break	HOTEL RESTAURANT
14:00 – 15:30	6A Transport Geotechnics	CONFERENCE HALL “A”
	6B Railways – Miscellaneous	CONFERENCE HALL “B”
15:30 – 16:00	Coffee Break	
16:00 – 18:00	7A Traffic Planning and Modelling	CONFERENCE HALL “A”
	7B Rails Construction and Rehabilitation	CONFERENCE HALL “B”
	7C Road Pavement	CONFERENCE HALL “C”
20:30 – 23:00	Gala Dinner	

DAY 3 – Wednesday, May 25th

09:30 – 11:00	8A Road Traffic and Infrastructure Projects	CONFERENCE HALL “A”
	8B Urban Transport and Traffic Planning	CONFERENCE HALL “B”
11:00 – 11:30	Coffee Break	
11:30 – 12:30	9A Innovation in Transportation System	CONFERENCE HALL “A”
	9B Use of New Technology	CONFERENCE HALL “B”
12:30 – 13:00	Conference Closure	CONFERENCE HALL “A”

Remark · Napomena

Official languages of the conference are Croatian and English. We kindly ask the participants to acquire devices for simultaneous translation that will be available in front of congress hall A and B.

Službeni jezici konferencije su hrvatski i engleski. Ljubazno molimo sudionike konferencije da koriste uređaje za simultano prevodjenje koji će biti dostupni u konferencijskoj dvorani A i B.

CONFERENCE PROGRAMME – DETAILED VERSION**DAY 1 – Monday, May 23rd**

08:00 – 09:30	Registration of the Participants	HOTEL LOBBY
09:30 – 09:45	OPENING CEREMONY	CONFERENCE HALL “A”
09:45 – 10:15	KEYNOTE LECTURE 1: “CROATIAN RAILWAY INFRASTRUCTURE IN THE CHANGING ENVIRONMENT” Renata Suša, HŽ Infrastruktura d.o.o.	CONFERENCE HALL “A”
10:15 – 10:45	KEYNOTE LECTURE 2: “VIRTUAL MANAGEMENT OF COMPLEX INFRASTRUCTURE: INFORMATION SYSTEMS IN THE AGE OF BIG DATA” Prof. Timo Hartmann, Technical University of Berlin	CONFERENCE HALL “A”
10:45 – 11:30	Coffe Break	

Monday, May 23 rd 11:30 – 12:45		Session 1.A RAILWAY INFRASTRUCTURE	Session room: CONFERENCE HALL “A”
Chairmen:	Prof. Tomislav J. Mlinarić & Prof. Kenneth Gavin		
Time	Ref. No.	Paper Title / Author(s)	
11:30 – 12:45	∞	KEYNOTE LECTURE 3: INTEROPERABILITY OF THE EUROPEAN RAIL SYSTEM: 4TH RAILWAY PACKAGES ISSUES, TSI, DIRECTIVES, ROLE OF NOBOS AND DEBOS Andrzej Harassek, European Railway Agency	
	624	DEVELOPING DECISION SUPPORT TOOLS FOR RAIL INFRASTRUCTURE MANAGERS Irina Stipanović Oslaković, Kenneth Gavin, Meho Sasa Kovacevic	
	497	ENHANCING RAILWAY INFRASTRUCTURE ASSETS AGAINST NATURAL HAZARDS Andreas Schöbel, Christine Schönberger, Jelena Aksentijević	
	521	HOW TO EFFECTIVELY IMPLEMENT MOBILITY MANAGEMENT FOR COMPANIES – EXPERIENCES AND EXAMPLES FROM 5 YEARS OF “SÜDHESSSEN EFFIZIENT MOBIL” André Bruns	
	619	TRANSPORT NETWORK DEVELOPMENT IN SOUTH-EAST EUROPE Goran Puž, Oliver Kumrić, Domagoj Šimunović	
12:45 – 14:00	Lunch Break		HOTEL RESTAURANT



Monday, May 23 rd 11:30 – 12:45		Session 1.B ROAD PAVEMENT	Session room: CONFERENCE HALL “B”
Chairmen:	Chairmen: Prof. László Gáspár & Assoc. Prof. Sanja Dimter		
Time	Ref. No.	Paper Title / Author(s)	
11:30 – 12:45	598	IMPACT OF WASTE ENGINE OIL AS REJUVENATOR ON UTILIZATION OF RECLAIMED ASPHALT PAVEMENT IN BITUMINOUS MIXTURES Peyman Aghazadeh Dokandari, Derya Kaya, Ali Topal, Burak Şengöz	
	586	ACTUAL EFFICIENCY OF ROAD PAVEMENT REHABILITATION László Gáspár	
	492	POSSIBILITIES OF ENERGY SAVINGS IN HOT-MIX ASPHALT PRODUCTION Zdravko Cimbola, Zlata Dolaček-Alduk, Sanja Dimter	
	467	BITUMEN SELECTION APPROACH ASSESSING ITS RESISTANCE TO LOW TEMPERATURE CRACKING Judita Gražulytė, Audrius Vaitkus, Igoris Kravcovas	
	520	EVALUATION OF CHEMICAL FRACTIONS IN PAVING GRADE BITUMEN 50/70 AND EFFECTS ON RHEOLOGICAL PROPERTIES Diana Simnofske, Konrad Mollenhauer	
12:45 – 14:00	Lunch Break		HOTEL RESTAURANT



Monday, May 23rd		Session 2.A	Session room:
14:00 – 15:30		RAIL TRAFFIC MODELLING AND TIMETABLES	CONFERENCE HALL “A”
Chairmen:	Assist. Prof. Andreas Schöbel & Assist. Prof. Danijela Barić		
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 15:30	453	OPENTRACK - A TOOL FOR SIMULATION OF RAILWAY NETWORKS Andreas Schöbel, Jelena Aksentijevic, Hrvoje Haramina	
	606	SOLVING A BOTTLENECK ON A STRATEGIC POINT OF THE HUNGARIAN RAILWAY NETWORK János Földiák, Viktor Borza	
	500	MODELLING TRAVEL BEHAVIOR OF RAILWAY PASSENGERS UNDER TRAVEL TIME UNCERTAINTY Kazuyuki Takada, Kota Miyauchi	
	580	FUNCTIONAL CONNECTING OF THE RAILWAY BYPASS AROUND NIŠ AND THE RAILWAY JUNCTION NIŠ Tatjana Mikic, Dragan Dordevic	
	458	CHALLENGES FOR AN INTEGRATED TIMETABLE IN AUSTRIA Andreas Schöbel, Hans Wehr	
	478	EFFICIENT RAILWAY INTERIORS – EXPERIENCES Bernhard Rüger	
15:30 – 15:45	Coffee Break		



Monday, May 23rd		Session 2.B	Session room:
14:00 – 15:30		ROAD PROJECTS MANAGEMENT	CONFERENCE HALL “B”
Chairmen:	Prof. emer. Željko Korlaet & Prof. Dražen Cvitanić		
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 15:30	596	ANALYSIS OF SOLUTIONS FOR SUPERELEVATION DESIGN FROM THE STANDPOINT OF EFFICIENT DRAINAGE Martina Zagvozda, Željko Korlaet	
	468	OPERATING SPEED MODELS ON TANGENT SECTIONS OF TWO-LANE RURAL ROADS Dražen Cvitanić, Biljana Maljković	
	529	A LOCAL AUTHORITY’S RISK-BASED APPROACH TO PRINCIPAL INSPECTION FREQUENCY OF STRUCTURES Slobodan B. Mickovski, Gary McGregor	
	542	ECODRIVING POTENTIALITY ASSESSMENT OF ROAD INFRASTRUCTURES ACCORDING TO THE ADEQUACY BETWEEN INFRASTRUCTURE SLOPES AND SPEEDS LIMITS Alex Coiret, Pierre-Olivier Vandanjon, Ana Cuervo-Tuero	
	503	APPLICATION OF SENSITIVITY ANALYSIS FOR INVESTMENT DECISION IN BUILDING OF UNDERGROUND GARAGE Suada Dzebo	
	633	EXAMPLES OF FLEXIBLE FOUNDATIONS OF SOIL-STEEL STRUCTURES MADE OF CORRUGATED SHEETS Mario Bogdan, Czesław Machelski, Adam Czerepak	
15:30 – 15:45	Coffee Break		



Monday, May 23 rd 14:00 – 15:30		Session 2.C TRACTION VEHICLES AND POWER SUPPLY	Session room: CONFERENCE HALL "C"
Chairmen:	Prof. Adam Szelag & Prof. Zoran Krakutovski		
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 15:30	∞	KEYNOTE LECTURE 4: TSI RELATING TO THE 'ENERGY' SUBSYSTEM OF THE EUROPEAN RAIL SYSTEM Gianvittorio Tavola, European Railway Agency	
	564	PROBLEMS OF IDENTIFYING CONDUCTED DISTURBANCES IN A CURRENT DRAWN FROM A 3 KV DC CATENARY BY VEHICLES EQUIPPED WITH POWER CONVERTERS Adam Szelag, Marcin Steczek	
	568	POWER CONTROL ALGORITHM OF HYBRID ENERGY STORAGE SYSTEM FOR VEHICULAR APPLICATIONS Maciej Wieczorek, Mirosław Lewandowski	
	574	TIMETABLE OPTIMIZATION ON THE RAILWAY LINE ELECTRIFIED IN A DC POWER SYSTEM IN TERMS OF ENERGY CONSUMPTION USING THE PARTICLE SWARM OPTIMIZATION Jefimowski Włodzimirz, Adam Szelag	
	540	PRACTICAL EXPERIENCE AND IN-SERVICE VEHICLE DYNAMICS MEASUREMENTS BASED MAINTENANCE STRATEGY FOR TRAMWAYS INFRASTRUCTURE Ákos Vinkó, Péter Bocz	
	563	PROBLEMS OF ELECTRICAL SAFETY IN DEPOTS AND WORKSHOPS FOR SERVICING ELECTRIC TRACTION VEHICLES Adam Szelag, Tadeusz Maciolek	
15:30 – 15:45	Coffee Break		



Monday, May 23 rd 15:45 – 17:00		Session 3.A RAIL TRACK STRUCTURE	Session room: CONFERENCE HALL "A"
Chairmen:	Prof. Otto Plasek & dr. Ivo Haladin		
Time	Ref. No.	Paper Title / Author(s)	
15:45 – 17:00	594	FLOW ON THE BALLASTED TRACKBED WITH PERMEABLE SURFACES AND ITS INFLUENCE ON THE BALLAST FLIGHT Jianyue Zhu, Zhiwei Hu	
	595	BALLASTLESS TRACK SYSTEMS - ROAD TO RAIL SYNERGIES FOR BETTER TRANSPORT INFRASTRUCTURE Bernhard Lechner	
	565	CONCRETE MIX DESIGN FOR THE REMEDY OF CORRODED CONCRETE SLEEPERS Fitim Shala, Muhammad Umair Shaukat	
	516	STABILITY CHART FOR CAVITY EXISTENCE BELOW RAILWAY TRACK Yujin Lim, Sungjin Lee, Jin Wook Lee	
	522	PROPOSAL FOR THE WHEEL PROFILE OF THE NEW TRAM-TRAIN VEHICLE IN HUNGARY Péter Bocz, Ákos Vinkó	
17:30 – 23:00	ORGANISED TRIP BY BOAT Hotel Solaris – Island Prvič – Šibenik – Lake Prokljan		



Monday, May 23 rd		Session 3.B	Session room:
15:45 – 17:00		TRAFFIC PLANNING AND MODELLING	CONFERENCE HALL “B”
Chairmen:	Prof. Lajos Kisgyörgy & Prof. Vesna Dragčević		
Time	Ref. No.	Paper Title / Author(s)	
15:45 – 17:00	613	THE NATIONAL TRANSPORT MODEL FOR THE REPUBLIC OF CROATIA – DEVELOPMENT OF THE FREIGHT DEMAND MODEL Jens Landmann, Andree Thomas, Igor Majstorović, Gregor Pretnar	
	610	TRAFFIC SAFETY ASSESSMENT MODEL METHOD – SSAM Gregor Kralj	
	517	ANALYSIS OF HEADWAY CHARACTERISTICS IN DISSIPATING QUEUES Lajos Kisgyörgy, András Szele, Árpád Barsi	
	504	EVALUATION OF THE CALIBRATED MICROSIMULATION TRAFFIC MODEL BY USING QUEUE PARAMETERS Irena Ištoka Otković	
	511	COMPARISON OF SOME CAPACITY AND CONTROL DELAY MODELS ON ROUNDABOUTS Ivan Lovrić, Sanjin Albinović, Ammar Šarić	
17:30 – 23:00	ORGANISED TRIP BY BOAT Hotel Solaris – Island Prvić – Šibenik – Lake Prokljan		



DAY 2 – Tuesday, May 24 th			
Tuesday, May 24 th		Session 4.A	Session room:
09:00 – 10:30		RAIL INFRASTRUCTURE PROJECTS	CONFERENCE HALL “A”
Chairmen:	Prof. Tomislav Josip Mlinarić & Assist. Prof. Maja Ahac		
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 10:30	638	DETERMINATION OF THE CAPACITY IN URBAN–SUBURBAN RAILWAY PASSENGER TRANSPORT Branimir Duvnjak, Tomislav Josip Mlinarić, Renato Humić	
	634	ANALYSIS OF POSSIBILITIES TO INCREASE THE CAPACITY OF M202 ZAGREB GK – RIJEKA RAILWAY LINE ON SECTION OGULIN-ŠKRLJEVO Maja Ahac, Stjepan Lakušić, Ivan Obad, Katarina Vranešić	
	573	THE EFFECTS OF GENERAL OVERHAUL RAILROAD IN FB&H Sanjin Albinović, Mirna Hebib –Albinović, Ammar Šarić	
	475	RECONSTRUCTION AND MODERNIZATION OF RAILWAY SUBOTICA (FREIGHT) – HORGOS – SERBIAN-HUNGARIAN BORDER Goran Cirovic, Ljubo Petar Markovic, Ljiljana Ljubisa Milic Markovic	
	534	PRELIMINARY DESIGN OF TRAM TRACK ILIDŽA – HRANICA Amra Zvizdić, Alen Mehić	
10:30 – 11:00	545	TRACK MAINTENANCE AT THE END OF LIFE CYCLE Waldemar Alduk, Saša Marenjak	
	Coffee Break		



Tuesday, May 24 th 09:00 – 10:30		Session 4.B ROAD PAVEMENT	Session room: CONFERENCE HALL “B”
Chairmen:	Prof. Vesna Dragčević & Assoc. Prof. Sanja Dimter		
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 10:30	501	IMPACT ASSESSMENT IN THE PAVEMENT LIFE CYCLE DUE TO THE OVERWEIGHT IN THE AXLE LOAD OF COMMERCIAL VEHICLES Lúcia Maria Pessoa Oliveira, Cássio Eduardo Lima Paiva, Adelino Jorge Lopes Ferreira	
	535	EFFECTIVENESS OF THE STEEL MESH TRACK IN STRENGTHENING CRACKED ASPHALT PAVEMENTS Piotr Zieliński	
	605	EFFECT OF TYPE OF MODIFIED BITUMEN ON SELECTED PROPERTIES OF STONE MASTIC ASPHALT MIXTURES Marta Wasilewska, Krzysztof Blazejowski, Przemyslaw Pecak	
	616	HIGH PERFORMANCE ROADS – HUGE INNOVATION IN A LITTLE COMPOUND Sergio Carrara, Loretta Venturini	
	626	EXPERIMENTAL STUDY ON GEOCELL REINFORCED RECLAIMED ASPHALT PAVEMENT (RAP) BASE OVER WEAK SUBGRADE UNDER STATIC LOADING Manish Shah, Rahul Parmar, A.R. Gandhi	
	476	EFFECT OF MOISTURE CONTENT AND FREEZE-THAW CYCLES ON BEARING CAPACITY OF RAP/NATURAL AGGREGATE MIXTURES Josipa Domitrović, Tatjana Rukavina, Sanja Dimter	
10:30 – 11:00	Coffee Break		

Tuesday, May 24 th 09:00 – 10:30		Session 4.C NOISE AND VIBRATION	Session room: CONFERENCE HALL “C”
Chairmen:	Prof. Zoran Krakutovski & dr. Ivo Haladin		
Time	Ref. No.	Paper Title / Author(s)	
09:00 – 10:30	518	IN-SITU ASSESSMENT OF LOW NOISE ASPHALT PAVEMENTS ACOUSTICAL PERFORMANCE Tadas Andriejauskas, Audrius Vaitkus, Viktoras Vorobjovas	
	635	VIBRATION-NOISE-CANCELLING ASPHALT PAVEMENT: INNOVATION FOR SILENT CITIES Sergio Carrara, Loretta Venturini	
	570	ANALYSIS OF THE INFLUENCE OF THE NATURAL ENVIRONMENT ON BRIDGE SOUNDNESS Takahiro Minami, Makoto Fujju, Shoichiro Nakayama, Jyunichi Takayama	
	593	MONITORING OF DYNAMIC PROPERTIES OF NEW TYPE OF TRAM TRACK FASTENING SYSTEMS UNDER TRAFFIC LOAD Ivo Haladin, Stjepan Lakušić, Marko Bartolac, Janko Koščak	
	532	ENVIRONMENTAL IMPACT OF TRAFFIC NOISE Riste Ristov, Slobodan Ognjenovic, Ivana Nedevska	
10:30 – 11:00	Coffee Break		

Tuesday, May 24 th 11:00 – 12:30		Session 5.A ROAD TRAFFIC SAFETY	Session room: CONFERENCE HALL "A"
Chairmen:	Assoc. Prof. Aleksandra Deluka Tibljaš & Prof. Dražen Cvitanić		
Time	Ref. No.	Paper Title / Author(s)	
11:00 – 12:30	471	SAFETY AT LEVEL CROSSINGS: COMPARATIVE ANALYSIS Martin Starčević, Danijela Barić, Hrvoje Pilko	
	495	PROBLEMS OF CROSSFALL CHANGEOVER FOR REVERSED CROSSFALLS Boris Čutura, Ivan Lovrić, Danijela Maslač	
	508	REVIEW OF FASTEST PATH PROCEDURES FOR SINGLE-LANE ROUNDABOUTS Saša Ahac, Tamara Džambas, Vesna Dragčević	
	510	GEOMETRIC DESIGN OF TURBO ROUNDABOUTS ACCORDING TO CROATIAN AND DUTCH GUIDELINES Tamara Džambas, Saša Ahac, Vesna Dragčević	
	506	NEW INDICATORS FOR NEW INFRASTRUCTURE Harald Frey, Anna Mayerthaler, Ulrich Leth	
	460	INVESTMENTS IN INFRASTRUCTURE THROUGH PPP IN SPAIN: PAST ACHIEVEMENTS AND CURRENT TRENDS Alejandro Lopez Martinez, Cesar Queiroz	
12:30 – 14:00	Lunch Break		HOTEL RESTAURANT



Tuesday, May 24 th 11:00 – 12:30		Session 5.B RAIL INFRASTRUCTURE PROJECTS	Session room: CONFERENCE HALL "B"
Chairmen:	Prof. Otto Plasek & Prof. Stjepan Lakušić		
Time	Ref. No.	Paper Title / Author(s)	
11:00 – 12:30	527	GREEN FUTURE FOR NARROW GAUGE RAILWAYS – VISION AND REALITY IN HUNGARY Dora Bachmann, Csaba Orosz	
	611	NEW RAILWAYS IN THE TRIESTE-KOPER AREA Marko Jelenc	
	600	RECONSTRUCTION OF THE RAILWAY TUNNELS TIČEVO, KLOŠTAR AND RESNJAK Snježana Špehar	
	557	ENTRANCE TERMINAL OF THE PORT OF PLOČE - ENDPOINT OF THE VC CORRIDOR Boris Vidak	
	546	INTERACTION BETWEEN CONTINUOUS WELDED RAIL AND BRIDGES WITH RELATIVELY LARGE EXPANSION LENGTH Otto Plasek, Jiri Vendel, Vladislav Klusacek, Hana Krejcirikova	
	581	ANALYSIS OF THE CRANE RAIL TRACKS OF BULK CARGO TERMINAL AT THE PORT OF PLOČE Stjepan Lakušić, Viktorija Grgić, Darko Badovinac	
12:30 – 14:00	Lunch Break		HOTEL RESTAURANT



Tuesday, May 24 th 11:00 – 12:30		Session 5.C BRIDGES STRUCTURAL MONITORING	Session room: CONFERENCE HALL “C”
Chairmen:	Prof. Rudolf Eger & Prof. Nenad Gucunski		
Time	Ref. No.	Paper Title / Author(s)	
11:00 – 12:30	576	USE OF AIR-COUPLED SENSING IN THE ASSESSMENT OF BRIDGE DECK DELAMINATION AND CRACKING Nenad Gucunski, Seong-Hoon Kee, Basily Basily, Jinyoung Kim, Ali Maher	
	603	STATIC AND DYNAMIC TESTING OF STEEL RAILWAY BRIDGE “SAVA” Domagoj Damjanović, Marko Bartolac, Ivan Duvnjak, Janko Koščak	
	544	METHODS FOR CALCULATING THE INTERACTION OF STEEL RAILWAY BRIDGES WITH WOODEN SLEEPERS AND CWR TRACKS IN RESPECT OF LONGITUDINAL FORCES Helga Papp, Nándor Liegner,	
	575	THE LONG-TERM BRIDGE PERFORMANCE (LTBP) PROGRAM BRIDGE PORTAL Hooman Parvardeh, Nenad Gucunski, Hamid Ghasemi, Ali Maher, Nenad Gucunski, Robert Zobel	
	457	THE EVALUATION AND IMPLEMENT OF BICYCLE PATHS ON BRIDGES Hwachyi Wang, Hans De Backer, Dirk Lauwers, S.K. Jason Chang	
	496	DEVELOPMENT OF SPECIALIZED FORCE SENSOR FOR RAILWAY WAYSIDE MONITORING SYSTEMS Nencho Georgiev Nenov, Emil Dimitrov, Petio Piskulev, Nikolay Dodev	
12:30 – 14:00	Lunch Break	HOTEL RESTAURANT	



Tuesday, May 24 th 14:00 – 15:30		Session 6.A TRANSPORT GEOTECHNICS	Session room: CONFERENCE HALL “A”
Chairmen:	Prof. Meho Saša Kovačević & Prof. Vesna Dragčević		
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 15:30	505	REMEDICATION OF KARST PHENOMENA ALONG THE CROATIAN HIGHWAYS Mario Bačić, Bojan Vivoda, Meho Saša Kovačević	
	536	VOLUME MEASUREMENTS OF ROCKFALLS USING UNMANNED AERIAL VEHICLES Marijan Car, Danijela Jurić Kačunić, Lovorka Librić	
	548	QUANTITATIVE LANDSLIDE SUSCEPTIBILITY AND HAZARD ANALYSIS FOR EARTHWORKS ON TRANSPORT NETWORKS Karlo Martinović, Kenneth Gavin, Cormac Reale	
	560	MODEL TEST TO DETERMINE LOAD-SETTLEMENT CHARACTERISTICS ON SOFT CLAY USING PILE-RAFT SYSTEM Manish Shah	
	597	MULTI-MODAL RISK ASSESSMENT OF SLOPES Cormac Reale, Karlo Martinović, Kenneth Gavin	
	515	LEVEES CONDITION ASSESSMENT IN CROATIA Katarina Ravnjak, Goran Grget, Meho Saša Kovačević	
15:30 – 16:00	Coffee Break		



Tuesday, May 24 th 14:00 – 15:30		Session 6.B RAILWAYS – MISCELLANEOUS	Session room: CONFERENCE HALL “B”
Chairmen:	Prof. Zoran Krakutovski & Prof. Libor Ižvolt		
Time	Ref. No.	Paper Title / Author(s)	
14:00 – 15:30	524	ANALYSIS OF NEW SUPERSTRUCTURE COMPONENTS OF RAILWAY TRACK IN TUNNEL SOZINA IN MONTENEGRO Zlatko Zafirovski, Zoran Krakutovski, Darko Moslavac	
	490	UNDERSTANDING AND PREDICTING GLOBAL BUCKLING DURING CONSTRUCTION OF STEEL BRIDGES Stephen Rhodes, Philip Icke, Paul Lyons	
	452	VERIFICATION AND OPTIMIZATION OF TRANSITION AREAS OF BALLASTLESS TRACK TUNNEL TURECKÝ VRCH Michal Šmalo, Libor Ižvolt	
	555	MONITORING OF INFLOW GROUNDWATER INTO SUBWAY STATION IN SOUTH KOREA Bo-Kyong Kim, Young-Kon Park, Sung-Jin Lee, Jin-Wook Lee, Sun-Il Kim, Seong-Chun Jun	
	489	SELECTED ASPECTS OF NUMERICAL AND EXPERIMENTAL STUDIES OF PROTOTYPE RAILWAY WAGON FOR INTERMODAL TRANSPORT Wieslaw Krason	
15:30 – 16:00	Coffee Break		



Tuesday, May 24 th 16:00 – 18:00		Session 7.A TRAFFIC PLANNING AND MODELLING	Session room: CONFERENCE HALL “A”
Chairmen:	Assoc. Prof. Aleksandra Deluka-Tibljaš & Prof. Davor Brčić		
Time	Ref. No.	Paper Title / Author(s)	
16:00 – 18:00	612	THE NATIONAL TRANSPORT MODEL FOR THE REPUBLIC OF CROATIA – APPLICATION AND USE Uwe Reiter, Igor Majstorovic, Ana Olmeda Clemares, Gregor Pretnar	
	614	THE NATIONAL TRANSPORT MODEL FOR THE REPUBLIC OF CROATIA – DEVELOPMENT OF THE PASSENGER DEMAND MODEL Gregor Pretnar, David Trošt, Igor Majstorovic, Jens Landmann, Andree Thomas	
	477	CRITERIA FOR URBAN TRAFFIC INFRASTRUCTURE ANALYSES – CASE STUDY OF IMPLEMENTATION OF CROATIAN GUIDELINES FOR ROUNDABOUTS ON STATE ROADS Sanja Šurdonja, Aleksandra Deluka-Tibljaš, Mateo Kozić, Barbara Karleuša	
	637	SOME ISSUES REGARDING THE LEGAL STATUS OF ROADS IN THE REPUBLIC OF CROATIA Davor Rajčić, Damir Kontrec	
	502	INITIATIVE FOR DEVELOPMENT OF SUSTAINABLE MULTIMODAL TRANSPORT AND MOBILITY NETWORK IN THE ADRIATIC-IONIAN REGION Saša Džumhur, Enes Čovrk	
	513	CROATIAN AIRFIELDS - POTENTIAL FOR AVIATION TOURISM DEVELOPMENT Ivana Barišić, Gordana Prutki-Pečnik, Goran Ratkajec, Roman Cvek	
20:30 – 23:00	Gala Dinner		



Tuesday, May 24 th 16:00 – 18:00		Session 7.B RAILS CONSTRUCTION AND REHABILITATION	Session room: CONFERENCE HALL "B"
Chairmen:	Prof. Janusz Madejski & Assist. Prof. Andreas Schöbel		
Time	Ref. No.	Paper Title / Author(s)	
16:00 – 18:00	577	OPERATIONAL PLAN FOR CONSTRUCTION OF RAILWAY LINE BELGRADE – NIŠ ON SECTION STALAČ – ĐUNIS Tatjana Simić, Tatjana Mikić, Tomislav Miličević	
	550	HOLISTIC APPROACH TO TRACK CONDITION DATA COLLECTION AND ANALYSIS Janusz Madejski	
	578	MAIN WORKS FOR CONSTRUCTION OF RAILWAY BYPASS AROUND NIŠ Tatjana Simić	
	585	EVALUATION OF INFRASTRUCTURE CONDITIONS BY 3D MODEL USING DRONE Hiroyuki Miyake, Makoto Fujii, Shoichiro Nakayama, Jyunichi Takayama	
	599	RECONSTRUCTION OF THE RAILWAY STATIONS SLAVONSKI BROD AND VINKOVCI Snježana Špehar	
464	RELATIONSHIP BETWEEN LIFESPAN AND MECHANICAL PERFORMANCE OF RAILWAY BALLAST AGGREGATE Vaidas Ramunas, Audrius Vaitkus, Alfredas Laurinavičius, Donatas Čygas		
20:30 – 23:00		Gala Dinner	

Tuesday, May 24 th 16:00 – 18:00		Session 7.C ROAD PAVEMENT	Session room: CONFERENCE HALL "C"
Chairmen:	Prof. László Gáspár & Assist. Prof. Ivica Stančerić		
Time	Ref. No.	Paper Title / Author(s)	
16:00 – 18:00	592	QUALITY ASSURANCE OF ASPHALT PAVEMENT Denisa Čihlarova, Petr Mondschein	
	494	ROLLED COMPACTED CONCRETE PAVEMENTS László Gáspár, László Énekes, Zsolt Bencze	
	465	STUDY OF COMPACTABILITY MODELS DESCRIBING ASPHALT SPECIMEN COMPACTION WITH GYRATORY AND WITH IMPACT COMPACTOR Marjan Tušar, Miha Šlibar, Mojca Ravnikar Turk, Aleksander Ipavec	
	474	THE BEST PRACTISE OF THE RECYCLED TYRE RUBBER MODIFIED ASPHALT BINDERS AND MIXES Ovidijus Sernas, Donatas Cygas, Audrius Vaitkus	
	567	POROSITY EFFECT ON PHYSICAL AND MECHANICAL PROPERTIES OF PERVIOUS CONCRETE PAVEMENT Miloš Šešlija, Vlastimir Radonjanin, Nebojša Radović, Đorđe Lađinović	
	481	MECHANISTIC ASPHALT OVERLAY DESIGN METHOD FOR HEAVY DUTY PAVEMENTS Zsuzsanna Igazvölgyi, Zoltán Soós, Csaba Tóth	
20:30 – 23:00		Gala Dinner	

DAY 3 – Wednesday, May 25th

Wednesday, May 25th	Session 8.A	Session room:
09:30 – 11:00	ROAD TRAFFIC AND INFRASTRUCTURE PROJECTS	CONFERENCE HALL "A"



Chairmen: Assoc. Prof. Aleksandra Deluka Tibljaš & Assist. Prof. Ivica Stančerić

Time **Ref. No. Paper Title / Author(s)**

09:30 – 11:00	512	SWEPT PATH ANALYSIS ON ROUNDABOUTS FOR THREE-AXLE BUSES – REVIEW OF THE CROATIAN DESIGN GUIDELINES Šime Bezina, Ivica Stančerić, Saša Ahac
	498	EFFECTIVE AND COORDINATED ROAD INFRASTRUCTURE SAFETY OPERATIONS: COMMON PROCEDURES FOR JOINT OPERATIONS AT ROADS AND TUNNELS Marios Doros Miltiadou, Ljiljana Cela
	632	THE APPLICATION OF STEEL HELICAL PIPES ON THE CONSTRUCTION OF THE SOUTHERN BYPASS ROAD OF THE CITY DONJI MIHOLJAC Mario Bogdan, Hrvoje Pandžić, Adam Czerepak
	552	INCREASING ROAD SAFETY BY IMPROVING ILLUMINATION OF ROAD INFRASTRUCTURE Paval Flavius
	484	ANALYSIS OF SIGHT DISTANCE AT AN AT-GRADE INTERSECTION Aleksandra Deluka Tibljaš, Ivana Pranjić, Sanja Šurdonja, Dražen Cvitanić
	455	INTELLIGENT INFRASTRUCTURE AND ITS USE IN MONITORING AND REGULATION OF ROAD TRAFFIC Abidin Deljanin, Fadila Kiso, Emir Deljanin
11:00 – 11:30		Coffee Break

Wednesday, May 25th	Session 8.B	Session room:
09:30 – 11:00	URBAN TRANSPORT AND TRAFFIC PLANNING	CONFERENCE HALL "B"



Chairmen: Assoc. Prof. Sanja Dimter & Prof. Davor Brčić

Time **Ref. No. Paper Title / Author(s)**

09:30 – 11:00	507	THE EFFECTS OF FORECASTS ON THE LEVEL OF MOTORIZATION – A SELF-FULFILLING PROPHECY? Harald Frey, Anna Mayerthaler, Ulrich Leth
	528	ROUTE GUIDANCE OF TRAM TRAFFIC IN CITIES: PARTICULARITIES OF TRAM TRAFFIC IN THE CITY OF OSIJEK Martina Zagvozda, Sanja Dimter, Filip Ruška
	533	SUSTAINABLE URBAN MOBILITY PLANS Davor Brčić, Marko Šoštarić, Dino Šojat
	554	THE EVOLUTION OF URBAN TRANSPORT – UBER Marko Slavulj, Krešimir Kanižaj, Siniša Đurđević
	584	STUDY ON USAGE BEHAVIOUR OF THE ARTERIAL TRAFFIC IN JAPAN Kosuke Koike, Makoto Fujii, Jun-ichi Takayama
	509	DID CYCLING POLICY AND PROGRAMS ADVANCE CYCLING IN THE CITY OF ZAGREB? Hrvoje Pilko, Tadej Brezina, Krunoslav Tepeš
11:00 – 11:30		Coffee Break

Wednesday, May 25th		Session 9.A	Session room:
11:30 – 12:30		INNOVATION IN TRANSPORTATION SYSTEM	CONFERENCE HALL “A”
Chairmen:	Prof. Vesna Dragčević & Assist. Prof. Ivica Stančerić		
Time	Ref. No.	Paper Title / Author(s)	
11:30 – 12:30	491	IMPACT OF THE ENVIRONMENT OF AN ORGANISATION ON ITS CAPACITY FOR THE DIFFUSION OF INNOVATIONS: ITT APPLICATION AND BIM ADOPTION Sanjana Buc, Miroslav Šimun	
	571	COMPARISON OF DIFFERENT SURVEY METHODS DATA PRECISION FOR ROAD DESIGN AND CONSTRUCTION Ivana Barišić, Vladimir Moser, Sanja Dimter, Damir Rajle	
	463	EXPLOITATION OF NEW TECHNOLOGIES FOR COLLECTION AND PROCESSING OF MOTORWAY TRAFFIC DATA Christos Nektarios Andtoniadis	
	487	PROTOTYPE RAILWAY WAGON WITH ROTATABLE LOADING PLATFORM AND CONCEPT OF INNOVATIVE INTERMODAL SYSTEM USAGE Tadeusz Niezgodna, Wieslaw Krason	
12:30 – 13:00	Conference Closure		CONFERENCE HALL “A”



Wednesday, May 25th		Session 9.B	Session room:
11:30 – 12:30		USE OF NEW TECHNOLOGY	CONFERENCE HALL “B”
Chairmen:	Prof. Dražen Cvitanić & Prof. emer. Željko Korlaet		
Time	Ref. No.	Paper Title / Author(s)	
11:30 – 12:30	462	ENERGY HARVESTING ON TRANSPORT INFRASTRUCTURES: THE PARTICULAR CASE OF RAILWAYS Adelino Jorge Lopes Ferreira, Francisco Duarte, Cassio Paiva	
	461	A MULTI-OBJECTIVE OPTIMIZATION-BASED PAVEMENT MANAGEMENT DECISION-SUPPORT SYSTEM FOR ENHANCING PAVEMENT SUSTAINABILITY Adelino Jorge Lopes Ferreira, Joao Santos, Gerardo Flintsch	
	454	APPLICATION OF SIMULATION SOFTWARE TO OPTIMIZE TRAFFIC PLANNING AND MODELLING Emir Deljanin, Abidin Deljanin, Fadila Kiso	
	479	BAGGAGELESS - BAGGAGE LOGISTIC SYSTEM Bernhard Rüger, Volker Benz, Petra Matzenberger	
12:30 – 13:00	Conference Closure		CONFERENCE HALL “A”



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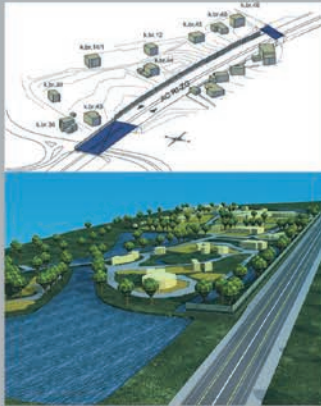
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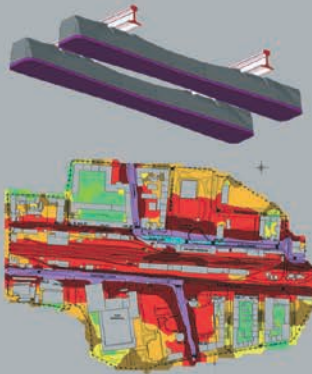


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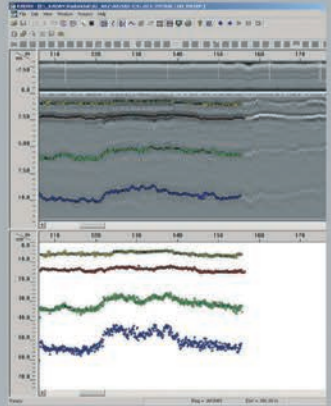
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