ENERGOINVEST

Communications Engineering

REFERENCES

LLOYD'S REGISTER QUALITY ASSURANCE
ISO9001 • ISO14001
OHSAS 18001

EWSD Public Digital Exchanges

LOCATION	CUSTOMER	CAPACITY (PORTS / TRUNKS)	EXCHANGE TYPE	YEAR OF REALIZATION	NOTE
Mostar, Travnik, Bihać, B&H	JP PTT BiH	34238/6870	Transit/Local	1997.	1&2
Zenica, Kakanj, Training Exchange, Mostar, Zenica, Bugojno, B&H	JP PTT BiH	17950/5110	Transit/Local	1998.	1&2
Sarajevo, Bihać, Mostar, Konjic, B&H	JP PTT BiH	22052/8220	International and Transit/Local	1999.	1&2
Eight exchanges, B&H	JP BH Telecom	70828/21310	International, Transit and Local	1999.	3
Sarajevo, B&H	JP BH Telecom	11672/11640	MnC	2000.	5
Tuzla, Zenica, Kakanj Travnik, Bugojno, Mostra, Konjic, Bihać, B&H	JP BH Telecom	43170/2250	Transit/Local	2000.	1&2
Contract Upgrade EWSD V11 to V14 Ten exchanges, B&H	JP BH Telecom	148492/33040	International, Transit and Local	2001.	4
Priština, Kosovo	PTK	38872/10560	Local	2001.	5
Sarajevo, Tuzla, Zenica, Kakanj Travnik, Bugojno, Mostra, Konjic, Bihać, B&H	JP BH Telecom	47562/8040	International, Transit and Local	2001.	1&2
Sarajevo, Tuzla, Zenica, Kakanj Travnik, Bugojno, Mostra, Konjic, Bihać, B&H	JP BH Telecom	45128/6840	International, Transit and Local	2003.	1&2
Sarajevo, Tuzla, Zenica, Kakanj Travnik, Bugojno, Mostra, Konjic, Bihać, B&H	BH Telecom d.d. Sarajevo	83850/0	Transit and Local	2004.	1&2
Sarajevo, Tuzla, Zenica, Kakanj Travnik, Bugojno, Mostra, Konjic, Bihać, B&H	BH Telecom d.d. Sarajevo	37824/0	Transit and Local	2005.	1&2
Sarajevo, Tuzla, Zenica, Kakanj Travnik, Bugojno, Mostra, Konjic, Bihać, B&H	BH Telecom d.d. Sarajevo	30336/960	Transit and Local	2006	1&2
Kakanj, Konjic, B&H	BH Telecom d.d. Sarajevo	Relocation of remote locations	Remote locations	2007	2

Note: 1 - Design
2 - Installation and Commisioning
3 - Hardware and Software Upgrade V.7 and V.9 - V.11
4- Hardware and Software Upgrade V.11 - V.1
5- Installation

Software Development Projects

PROJECT	CUSTOMER	TECHNOLOGIES	YEAR OF REALIZATION	NOTE
TalkGem client development of web application	IskraTel, Slovenia	javascript	2004.	2
EWSD Switch Based IN Services	IskraTel, Slovenia	C#	2004.	2
Media Streaming and Download system Download and Live Streaming of Video on Demand Clips	IskraTel, Slovenia Siemens	C, Oracle, Solaris, Apache, Red Hat	2004.	2
OmniBox (Video Surveillance Center) Connect smart home appliances to a Service Gateway (SG), which is through the IP network connected to a Management Center (MC), as well as to a Surveillance Center which administers the application installed on the SG.Energoinvest developed Video Surveillance Centre Application for monitoring video signal from cameras (working with video, streaming and codec)	IskraTel, Slovenia	Linux, C#, java, ASP .NET, PostgreSQL, SuSE 9.1, OSGi FW	2004. – 2006.	1,2
Hotel Billing Driver for Modem Communication	IskraTel, Slovenia	C#, java, MSSQL	2005. – 2007.	2
Tele Voting Application for collecting of customer calls, connected to EWSD exchange	IskraTel, Slovenia	C#, Visual Basic	2005.	2
System for controlling, configuring, setting up Network elements	IskraTel, Slovenia Siemens NSN	Solaris, C++, java, Flexigen, ClearCase, Mobile NE	2006. – 2007.	2
Advanced Speech Call Item Testing form MSC on PC-simulator	IskraTel, Slovenia Siemens	Assembler, Chill	2006. – 2007.	2
Number Portability Application responsible for writing/removing ported telephone numbers	IskraTel, Slovenia	C#, CORBA	2006. – 2007.	2
Web Phone Services Application to access common Phone/PBX functionalities from PC	IskraTel, Slovenia	C#	2006. – 2007.	2
Test Adapter NGN interoperability testing (TTCN-3 based) system	IskraTel, Slovenia	java	2007.	2
School SMS Application This project is introduction of School SMS application into elementary and secondary schools for improvement of communication between parents/students and school. Using this modern Internet application and SMS technology, notification messages about homework, grades and absences are being created and sent to the parents and/or students.	Self-financed project	C#. NET, MS SQL 2005	2007.	2
IP-TV Set of applications, services, ... designed for TelCo operators. Participation in development of Middleware segment and User portal. It contains Conditional Access, web interface to subscribers.	IskraTel, Slovenia	Linux, C#, java, ASP .NET, JavaScript, MSSQL	2007. – 2008.	2
web-portal Information System with web portal for European organization for development NCP FP7 subsidiary B&H. System is designed for customers' employees for online distant access to information	SUS – Foundation for high education (World University Service) B&H	ASP.NET 2005, JavaScript, HTML, XML, MS Access Database	2008.	1,2,3

PROJECT	CUSTOMER	TECHNOLOGIES	YEAR OF REALIZATION	NOTE
IMS Applications Based on IMS platform, over ISC interface. Technologies: Java, JainSlee, C, XML, VoXML. Testing applications in Fraunhofer environment (Fraunhofer Institute, Berlin, Germany), especially equipped for testing IMS applications. We developed test applications, the aim was to investigate the possibility of IMS platform and make some test service.	Telekom Slovenije	Java, JainSlee, C, XML, VoXML.	2008.-2009.	2
HP Open Call Test Application based on HP OCMP platform for fixed network.	Telekom Slovenije	Java, JainSlee, C, XML, VoXML.	2008.-2009.	2
In-House HR Survey application Web based user application and WPF desktop administrator application. Communication using WCF services. Data access layer implemented using Entity Framework.	Energoinvest, d.d. Sarajevo	ASP.NET, WPF, SQL Server 05/08, WCF services, Entity Framework, Custom reporting	2009.	1,2,3
WEPIS Business Information System System is modular and includes the following modules: • Human Resource Management • Accounting (Main accounting and financial operations) • Fixed assets • Payroll calculations • Commodity-finance business • Books of incoming and outgoing invoices	Energoinvest, d.d. Sarajevo	.NET Framework 2.0, WinForms, SQL Server 05, Business Objects Crystal Reports	Aug 2007 –April 2009	1,2,3
"TAPSOL - implementation support for BH Telecom roaming solution" Solution development for handling roaming data for BH Telecom together with Allround partner company. Processing of roaming data is done for both ways, incoming and out coming roaming data. Our responsibilities were integration of solution into BH Telecom business environment and supporting work for whole life cycle.	BH Telecom d.d.	Java,Oracle 10g	2008.-2009, 2012	2,3
"NRTRDE- implementation support for BH Telecom roaming solution" Near Real Time Roaming Data Exchange (NRTRDE) provides a new method for monitoring the customers' activities in the VPMN (Visited Public Mobile Network) networks, and enables the HPMN (Home Public Mobile Network) to detect unauthorized network usage and other fraud issues near real time.	BH Telecom d.d.	Java, Oracle 10g	2010.-2012.	2,3

PROJECT	CUSTOMER	TECHNOLOGIES	YEAR OF REALIZATION	NOTE
"Call me" SMS mobile service which allow to user to send free charge messages to ask other user to call him, in case that he has no credit even for a message. Service is developed in Java, developing environment is Eclipse, it is used Ericsson Parlay X API. The service has two parts, one for core functionalities (checking the credit of user, sending SMS, checking the kind of users) the other is for administration of service, and web part for generating dynamic report.	BH Telecom d.d.	Java, JSF, PalayX API, mySQL, HTML, XML	2009.-2010.	1,2,3
Treasury business Information system that supports the work of administrative bodies in compliance with the treasury operations. The system is modular and includes modules: ▪ Budget Planning ▪ Order management ▪ Human Resource Management ▪ Accounting (Main accounting and financial operations) ▪ Fixed assets ▪ Payroll calculations ▪ Commodity-finance business ▪ Books of incoming and outgoing invoices ▪ Reporting	Energoinvest, d.d. Sarajevo	.NET Framework 2.0, WinForms, SQL Server 05, Business Objects Crystal Reports	2009. –2010.	1,2,3
"Weather Info" Represents web module for IPTV solution end users. It gives them a graphical presentation of weather details such as temperature (low and high), wind, pressure etc. for every city.	BEESMART, Ljubljana	JEE, EJB, Oracle database	2010	1,2,3
„Anevia VoD" Represents implementation and integration of Anevia Video On Demand functionalities in IPTV framework middleware. Due to unified VoD interface, implementation for Anevia VoD server obeyed and instantiated this particular interface.	BEESMART, Ljubljana	JEE, EJB, Oracle database	2010	1,2,3
" TV Commerce " Represents new platform that is added in IPTV framework that will be used for different TV Shop services. This implementation of TV Commerce also included integration of currently most important payment service in the world PayPal. PayPal implementation is developed as Enterprise Java Bean and also as web service for use by 3rd party applications.	BEESMART, Ljubljana	JEE, EJB, Oracle database	2010	1,2,3

PROJECT	CUSTOMER	TECHNOLOGIES	YEAR OF REALIZATION	NOTE
"ERViP"-Access Control and Time & Attendance information system ERViP is web and windows application set for complete access control and business timekeeping solution for any modern organization. Its flexible and scalable personal identification infrastructure provides robust physical security platform. Once implemented, it can be combined with comprehensive scheduling, tracking of working hours and detailed attendance calculations required by Payroll and other Human Resources applications.	Energoinvest d.d., Sarajevo	C#. NET, MS SQL 2005	2009/2010	1,2,3
Telemedicine SMS service developed for BH Mobile operator. It serves for monitoring and recording of vital parameters.	BH Telecom d.d.	Java	2011	1,2,3
WEB-based application for monitoring transport of weapons on territory of B&H. App records every piece of weapon, with its history, status, place, and other detailed infomations.	UNDP	ASP .NET, SQL 2008	2011	1,2,3
112 Participation in instalation and integration in Project State Communication Center 112	Ministry of Security BiH		2011	2
EPG Content Delivery for Electronic Programming Guide for IPTV	BH Telecom d.d.	XML	2012	3

Note: 1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

NGN Studies/Projects

NAME OD THE PROJECT	CUSTOMER	DESCRIPTION OF THE PROJECT:	YEAR OF REALIZATION	NOTE
WiFi Feasibility Study	BH Telecom d.d. Sarajevo	The aim of this project was to estimate the possibility to introduce WiFi network on the territory of Bosnia and Herzegovina. This study also analyses costs of the introduction, as well as current operation costs. The study specify characteristics and functionalities of the network equipment and advises BH Telecom on the choosing the adequat system, equipment and software. The project was realized together with Yankee Group.	2005.	1
HW and SW platform for supervision and maintenance Feasibility Study	BH Telecom d.d. Sarajevo	The aim of this project was to define the structure of HW and SW platform for supervision and maintenance of BH Telecom network, as well as procedures and steps of implementation. Based on the current situation and gap analysis, target arhitecture and future mode of operation were recommended using advanced OSS Introduction Methodology The project was realized together with partner companies Lucent Technologies and Kate-Kom d.o.o Zagreb.	2006.	1
WiMAX Feasibility Study	BH Telecom d.d. Sarajevo/ETF Sarajevo	Together with our local Technical Faculty in Sarajevo we are developing the feasibility Study that estimates the technical and financial possibility of introducing WiMAX network into BH Telecom's Network for the entire territory of Bosnia and Herzegovina. In specific the Study analyses techno-economic aspects of evaluated technology including detailed cost of the introduction, as well as current operation costs analysis. The study specifies characteristics and functionalities of the network equipment and advises BH Telecom on the choosing the apropriate system, equipment and software. The project is currently under realization together with our partner ETF Sarajevo.	2008.	1

Note: 1 - Study
2 - Implementation and Support

Access DSLAM/MSAN Systems

LOCATION	CUSTOMER	CAPACITY	SYSTEM TYPE	EQUIPMENT TYPE	YEAR OF REALIZAT.	NOTE
15 locations	BH Telecom	Cca.10000	DSLAM	hiX 5635/5630	2008.	1&2
7 locations	BH Telecom	Cca.5260 POTS; 648 ADSL	MSAN	hiX 5635/5630	2008.	1&2
17 locations	BH Telecom	Cca.14600 POTS; 3600 ADSL	MSAN	hiX 5635/5630	2009.	1&2
113 locations	BH Telecom	Cca 11000 POTS	DSLAM	EDA 1200	2011	1&2

Note: 1 - Design
2 - Implementation and Support

ET Public Local Digital Exchanges

LOCATION	CUSTOMER	CAPACITY (PORTS/TRUNKS)	EXCHANGE TYPE	YEAR OF REALIZ ATION	NOTE
Hutovo, B&H	PTT	172/12	ET 10	1986.	1&2&3
Rakovica, B&H	PTT	1114/72	ET 200	1987.	1&2&3
Ljuti Dolac, B&H	PTT	482/32	ET 10	1987.	1&2&3
Opličići, B&H	PTT	1230/80	ET 10	1988.	1&2&3
Zavidovići, B&H	PTT	1490/90	ET 200	1988.	1&2&3
Rogatica, B&H	PTT	3192/192	ET 200	1988.	1&2&3
Haljinići, B&H	PTT	1862/62	ET 200	1988.	1&2&3
Mostar, B&H	PTT	8100/700	ET 200	1988.	1&2&3
Kušiljevo, Serbia	PTT	270/20	ET 10	1988.	1&2&3
Stog, B&H	PTT	106/10	ET 10	1988.	1&2&3
Svinjašnica, B&H	PTT	215/15	ET 10	1988.	1&2&3
Vozuća, B&H	PTT	430/30	ET 10	1988.	1&2&3
Military of Defence, Serba	-	250	ET 20/RSM	1989.	1&2&3
Svilajnac, Serbia	PTT	3960/360	ET 200	1989.	1&2&3
Svilajnac, Serbia	PTT	1800	ET 200/RSM	1989.	1&2&3
Čačak, Serbia	PTT	2200	ET 200	1989.	1&2&3
Mostar Grude, B&H	PTT	1072/72	ET 200	1989.	1&2&3
Ljubuški, B&H	PTT	1072/72	ET 200	1989.	1&2&3
Gabela, B&H	PTT	860/60	ET 200	1989.	1&2&3
Stolac, B&H	PTT	860/60	ET 200	1989.	1&2&3
Paraćin, Serbia	PTT	2300	ET 200	1989.	1&2&3
Sarajevo Medenica, B&H	PTT	1090/90	ET 200	1990.	1&2&3
Novi Travnik, B&H	PTT	3280/280	ET 200	1990.	1&2&3
Zavidovići, B&H	PTT	2120/120	ET 200/RSM	1990.	1&2&3
Ljubuški, B&H	PTT	250	ET 200/RSM	1990.	1&2&3
Dublje, Serbia	PTT	328/28	ET 10	1990.	1&2&3
Goražde, B&H	PTT	136/16	ET 10	1990.	1&2&3
Jablanica, B&H	PTT	300	ET 200/RSM	1990.	1&2&3
Novi Travnik, B&H	PTT	420	ET 200	1991.	1&2&3

Note: 1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

Private Digital Exchanges PABX

LOCATION	CUSTOMER	CAPACITY (PORTS/TRUNKS)	EXCHANGE TYPE	YEAR OF REALIZATION	NOTE
Sarajevo, B&H	Energoinvest Company	1401/120	TLC 10	1982.	1&2&3
Sarajevo, B&H	Skenderija Culture & Sports Center	330/30	TLC 10	1983.	1&2&3
Sarajevo, B&H	Holiday Inn Hotel	670/70	TLC 10	1983.	1&2&3
Bačka Palanka, Serbia	Sintelon Company Headquarters	408/48	TLC 10	1986.	1&2&3
Zenica, B&H	Steelworks	4400/400	ET 200	1986.	1&2&3
Sarajevo, B&H	Unis Company Headquarters	2200/200	ET 200	1986.	1&2&3
Mostar, B&H	Aluminium Company	2200/200	ET 200	1986.	1&2&3
Sarajevo, B&H	Municipal Water Distribution Company Headquarters	330/30	ET 10	1986.	1&2&3
Neum, B&H	Hotel Neum	330/30	ET 10	1986.	1&2&3
Sarajevo, B&H	Faculty of Mechanical Engineering	275/25	ET 10	1986.	1&2&3
Čačak, Serbia	Factory 1st May	112/12	ET 10	1987.	1&2&3
Sarajevo, B&H	Health Center Mojmilo	246/16	ET 10	1987.	1&2&3
Sarajevo, B&H	Energopetrol Company	110/10	ET 10	1987.	1&2&3
Moscow, URSS	Ministry of Energy	860/160	ET 200	1987.	1&2&3
Tešanj, B&H	Unis Pobjeda Company	325/25	ET 10	1988.	1&2&3
Odessa, Ukraina	Reni Port	660/160	ET 200	1988.	1&2&3
Moscow, Rusia	Hotel Savoy	230/30	ET 200	1988	1&2&3
Prague, Czech Republic	Krajski Projektovy Ustav (KPU)	440/40	ET 200	1990.	1&2&3
Kablo Decin, Czech Republic	Ministry of Defence	4523/223	ET 200	1990.	1&2&3
Szcecin, Poland	Donja Odva	272/22	ET 200	1990.	1&2&3
Zdziesowice, Poland	Electrical Power Plant	2200/200	ET 200 Centrex	1990.	1&2&3
Wroclaw, Poland	Institute of Automation	172/12	ET 10	1990.	1&2&3
Bidgosc, Poland	Electrical Power Plant	1120/120	ET 200 Centrex	1990.	1&2&3
Gdinia, Poland	Shipyard	2180/180	ET 200 Centrex	1990.	1&2&3
Warshow, Poland	International Airport	4360/360	ET 200	1990.	1&2&3
Moscow, Rusia	Business Club	72/16	ET 10C	1990.	1&2&3
Moscow, Rusia	Fiodorov Clinic	324/ 4	ET 200	1990.	1&2&3
Sarajevo, B&H	Electrical Energy Distribution Company	204/24	ET 10	1990.	1&2&3
Jajce, B&H	Pljeva/Šipovo	360/60	ET 100	1990.	1&2&3
Čačak, Serbia	Jugopetrol Company	132/12	ET 10	1990.	1&2&3
Szcecin, Poland	Steelworks	220/20	ET 10C	1991.	1&2&3
Szcecin, Poland	Thermal Heating Plant	266/10	ET 200	1991.	1&2&3
Vlasenica, B&H	Aluminium Mines	2370/120	ET 200	1991.	1&2&3
Prilep, Macedonia	11th October Factory	68/8	ET 10	1991.	1&2&3
Sarajevo, B&H	Energopetrol Company	104/8	ET 10	1991.	1&2&3
Priština, Kosovo	KOSTT	500/2	Omni PCX Enterprise	2010	2
Sarajevo, B&H	Ministry of Security	640/32	MX-ONE™ TSW	2011.	2

Note:

1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

Radio Communications Systems

LOCATION	CUSTOMER	NUMBER OF RADIO STATION	EQUIPMENT TYPE	YEAR OF REALIZATION	NOTE
Iraq	Electrical Power Company	12	BBC	1982.	1
Sarajevo, B&H	Gas line Zvornik - Sarajevo	110	Motorola	1984.	1&2&3
Đurđevik, B&H	Coal Mine	60	Motorola	1984.	1&2&3
Tuzla, B&H	"Titovi rudnici uglja" Coal Mines	130	-	1984.	1
Šikulje, B&H	Coal Mine	35	Motorola	1985.	1&2&3
Sarajevo, B&H	Water Supply and Sewage	58	Motorola	1985.	1&2&3
Ugljevik, B&H	Strip Mining, Bogutovo selo	84	Motorola	1985.	1&2&3
Tuzla, B&H	Salt Mine Tetima	72	Motorola	1987.	1&2&3
Sarajevo, B&H	"Energoinvest" Company	1900	-	1987.	1
Neum, B&H	Regional Water Suplly and Sewage	38	Motorola	1987.	1&2&3
Sarajevo, B&H	Elektroprivreda BiH Company	-	-	1988.	1
Bosanski Brod, B&H	Oil Rafinery	58	Motorola	1989.	1&2&3
Livno, B&H	Elektrodistribucija Company	18	-	1989.	1
Tuzla, B&H	Salt Mine Tetima	36	Motorola	1990.	1&2&3
Kakanj, B&H	JP Grijanje	6	Motorola	1990.	1&2&3
Sarajevo, B&H	Youth Center Skenderija	23	Motorola	1990.	1
Sarajevo, B&H	Sport Center Skenderija	34	Motorola	1991.	1&2&3
Sarajevo, B&H	Ministry of Internal Affairs BiH	146	Motorola	1991.	3
Sarajevo, B&H	"Zora" Company	5	Motorola	1991.	1&2&3
Kakanj, B&H	JP Grijanje Company	6	Motorola	1996.	3
Sarajevo, B&H	Elektroprivreda BiH Company	340	Motorola	1997.	1
Alger	Watter Sistem Saida	32	Motorola	1997.	1
Sanski Most, B&H	Watter Sistem Sanski Most	16	Motorola	1999.	1&2&3
Sarajevo, B&H	Energopetrol BiH Company	239	Motorola	1999.	1&2&3
OULED Mimun conn., Algeria	Sonelgas	2	Douons (SR Telecom)	2009	1&2&3
Sidi Rashid conn., Algeria	Sonelgas	3	Douons (SR Telecom)	2010-2011	1&2&3

Note:
1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

Access and Industrial Telecommunications Networks

LOCATION	CUSTOMER	CAPACITY (PORTS)	NETWORK TYPE	YEAR OF REALIZATION	NOTE
Višegrad, B&H	Hydro-Electric Power Plant	240	Industrial Telecommunication Network	1984.	1&2&3
Čapljina, B&H	Power Plant	290	Industrial Telecommunication Network	1984.	1&2&3
Gacko, B&H	Steam Power Plant	320	Industrial Telecommunication Network	1984.	1&2&3
Zenica, B&H	RMK Steel Works	410	Industrial Telecommunication Network	1985.	1&2&3
Sarajevo, B&H	Water Distribution Company	250	Industrial Telecommunication Network	1986.	1&2&3
Bulgaria	Gas Line	160	Industrial Telecommunication Network	1986.	1&2&3
Mostar, B&H	Aluminium Company	370	Industrial Telecommunication Network	1987.	1&2&3
Stolac, B&H	PTT	440	Access Telecommunication Network	1989.	1&2&3
Bačka Palanka, Serbia	PTT	1.015	Access Telecommunication Network	1989.	1&2&3
Ostra, Croatia	PTT	330	Access Telecommunication Network	1989.	1&2&3
Trepča, Serbia	PTT	1.100	Access Telecommunication Network	1989.	1&2&3
Bečanj, Serbia	PTT	520	Access Telecommunication Network	1989.	1&2&3
Bresnica, Croatia	PTT	470	Access Telecommunication Network	1990.	1&2&3
Donja Garevnica,	PTT	710	Access Telecommunication Network	1990.	1&2&3
Vujetinci, Serbia	PTT	490	Access Telecommunication Network	1990.	1&2&3
Orašje, B&H	PTT	750	Access Telecommunication Network	1990.	1&2&3
Mrčajevci, Serbia	PTT	730	Access Telecommunication Network	1991.	1&2&3
Pelagićevo, Serbia	PTT	815	Access Telecommunication Network	1991.	1&2&3
Brčko, B&H	PTT	635	Access Telecommunication Network	1991.	1&2&3
Tasovčići, B&H	PTT	530	Access Telecommunication Network	1991.	1&2&3
Dolina - Alići, B&H	JP PTT BiH	600	Access Telecommunication Network	1999.	1
Budoželje, B&H	JP PTT BiH	500	Access Telecommunication Network	1999.	1
Kakanj, B&H	JP PTT BiH	1.800	Access Telecommunication Network	1999.	1
Kakanj Bilješevo, B&H	JP PTT BiH	2.600	Access Telecommunication Network	1999.	1
Hadžići Pazarić, B&H	JP PTT BiH	3.300	Access Telecommunication Network	2000.	1
Butmir Donji Kotorac, B&H	JP PTT BiH	6.870	Access Telecommunication Network	2001.	1
Sokolović Kolonija, B&H	JP PTT BiH	6.390	Access Telecommunication Network	2001.	1
Gračanica - Džakule, B&H	JP PTT BiH	2.030	Access Telecommunication Network	2001.	1
Gračanica - Doborovci, B&H	JP PTT BiH	1.690	Access Telecommunication Network	2001.	1
Gračanica Soko, B&H	JP PTT BiH	3.460	Access Telecommunication Network	2001.	1
Sarajevo - Hrasnica, B&H	JP BH Telecom	10.400	Access Telecommunication Network	2002.	1
Sarajevo - Aneks, B&H	JP BH Telecom	4.670	Access Telecommunication Network	2002.	1
Sarajevo - Hrasno, B&H	JP BH Telecom	5.680	Access Telecommunication Network	2003.	1
Sarajevo- Pofalići, B&H	JP BH Telecom	5.650	Access Telecommunication Network	2003.	1
Sarajevo- Grbavica, B&H	JP BH Telecom	8.100	Access Telecommunication Network	2003.	1
Sarajevo - Obad, B&H	JP BH Telecom	4.440	Access Telecommunication Network	2003.	1
Bihać - Mali Lug, B&H	JP BH Telecom	1.360	Access Telecommunication Network	2003.	1
Bihać - Ozimice II, B&H	JP BH Telecom	6.520	Access Telecommunication Network	2003.	1
Bihać - Kamenica, B&H	JP BH Telecom	1.920	Access Telecommunication Network	2003.	1
Bihać - Klokot, B&H	JP BH Telecom	800	Access Telecommunication Network	2003.	1
Bihać - Izačić, B&H	JP BH Telecom	1.480	Access Telecommunication Network	2003.	1
Bihać - Vikići, B&H	JP BH Telecom	1.260	Access Telecommunication Network	2003.	1
Bihać - Vinica, B&H	JP BH Telecom	1.230	Access Telecommunication Network	2003.	1

LOCATION	CUSTOMER	CAPACITY (PORTS)	NETWORK TYPE	YEAR OF REALIZATION	NOTE
Bihać - Vrtoče, B&H	JP BH Telecom	260	Access Telecommunication Network	2003.	1
Bihać – Radoč, B&H	JP BH Telecom	600	Access Telecommunication Network	2003.	1
Travnik - Mudrike, B&H	JP BH Telecom	450	Access Telecommunication Network	2003.	1
Travnik - Vitovlje, B&H	JP BH Telecom	680	Access Telecommunication Network	2003.	1
Travnik - Babanovac, B&H	JP BH Telecom	1.320	Access Telecommunication Network	2003.	1
Travnik - PC 96 Vitez, B&H	JP BH Telecom	1.050	Access Telecommunication Network	2003.	1
Konjic - Studenčica, B&H	BH Telecom d.d.	220	Access Telecommunication Network	2004.	1
Konjic - Čelina, B&H	BH Telecom d.d.	200	Access Telecommunication Network	2004.	1
Konjic - Klek, B&H	BH Telecom d.d.	270	Access Telecommunication Network	2004.	1
Mostar, B&H	BH Telecom d.d.	500	Access Telecommunication Network	2004.	1
Jablanica, B&H	BH Telecom d.d.	200	Access Telecommunication Network	2004.	1
Bihać - Žegar, B&H	BH Telecom d.d.	1.100	Access Telecommunication Network	2004.	1
Bihać - Lohovo, B&H	BH Telecom d.d.	300	Access Telecommunication Network	2004.	1
Bos. Krupa - Krčane, B&H	BH Telecom d.d.	1.200	Access Telecommunication Network	2004.	1
Cazin - Gnjilavac, B&H	BH Telecom d.d.	1.200	Access Telecommunication Network	2004.	1
Cazin - Polje, B&H	BH Telecom d.d.	1.300	Access Telecommunication Network	2004.	1
Velika Kladuša - Ponikve, B&H	BH Telecom d.d.	600	Access Telecommunication Network	2004.	1
Sarajevo - Švrakino selo i Mojmilo Brdo, B&H	BH Telecom d.d.	6.400	Access Telecommunication Network	2004.	1
Šehovina, Mostar, B&H	BH Telecom d.d.	860	Access Telecommunication Network	2005.	1
Cerići, Konjic, B&H	BH Telecom d.d.	1.170	Access Telecommunication Network	2005.	1
Sarajevo – Koševsko brdo, B&H	BH Telecom d.d.	10.400	Access Telecommunication Network	2007.	1
Sarajevo – Breka, B&H	BH Telecom d.d.	2.100	Access Telecommunication Network	2007.	1
Sarajevo – Dobroševići i Ahatovići, B&H	BH Telecom d.d.	3.000	Access Telecommunication Network	2007.	1
Tuzla – Slatina, BiH	DD BH Telecom	3.700	Access Telecommunication Network	2009.	1
Tuzla – Tušanj, BiH	DD BH Telecom	2.000	Access Telecommunication Network	2009.	1
Tuzla – Irac, BiH	DD BH Telecom	2.200	Access Telecommunication Network	2009.	1

Note: 1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

Transmission and Access SDH/PDH/DWDM Systems

LOCATION	CUSTOMER	CAPACITY	SYSTEM TYPE	EQUIPMENT TYPE	YEAR OF REALIZATION	NOTE
Sarajevo, Tuzla, Zenica, Mostar, Brka, B&H Kladanj, Zavidovići, Konjic, Kakanj	BH Telecom d.d.	252 x 2 Mbps 96 x 155 Mbps 4 regenerator STM-16	SDH (TransXpress) STM-16	SLD-16 E (6) SMA-16 (2) SLR-16 (4)	2003.	1
Tuzla, Živinice, G. Dubrave B&H Kalesija	BH Telecom d.d.	903 x 2 Mbps 3 x 34 Mbps 85 x 155 Mbps 24 x 622 Mbps	SDH, Surpass STM-4	hiT7070SC2.0 (4) hiT7050FP1 (1) SMA 1K V3.3 (1)	2004.	1&2
Tuzla Paša bunar Ilincica Mandići B&H Kula Big User 1 Big User 2	BH Telecom d.d.	651 x 2 Mbps 3 x 34 Mbps 64 x 155 Mbps 8 x 622 Mbps 24 x STM - 16	SDH, Surpass STM-16	hiT7070SC2.1 (3) hiT7050FP1 (4)	2005.	1&2
Mostar B&H	BH Telecom d.d.	441 x 2 Mbps 6 x 34 Mbps 32 x 155 Mbps 4 x 622 Mbps 8 x STM-16	SDH, Surpass STM-16	hiT7070DC 3.0 (1)	2005.	1&2
Sarajevo Bjelimići B&H	BH Telecom d.d.	16 x 155 Mbps 8 x STM-16	SDH, Surpass STM-16	hiT7070 SC 3.0 (2)	2006.	1&2
Gračanica Gradačac Srebrenik Lukavac Tuzla VF Tuzla BihPak BiH Husino Dragunja Kalesija Jajici Memići Hrasno G.Rainci	BH Telecom d.d.	16 x 155 Mbps 8 x STM-16	SDH, Surpass STM-16/ STM-4/ STM-1	Nokia Siemens Networks hiT7060 (4) 7025 R4.1 (6)	2008.	1&2
Babanovac, Grbavica, Trepča, Ahmići, BiH Grbavička, Kasindolska, Zagrebačka	BH Telecom d.d.	502/576 parica 1.080 parica 1.368 parica	Surpass	Nokia Siemens Networks hiX 5635 (NGN MSAN) OCANEQ	2008.	2

LOCATION	CUSTOMER	CAPACITY	SYSTEM TYPE	EQUIPMENT TYPE	YEAR OF REALIZATION	NOTE
2xD.Malta A.Polje Vogosca Bascarsija Glavaticevo Mostar 2xKonjic Visoko Kakanj Zenica Travnik Bugojno Zavidovici Banovici 2xTuzla Zivinice Olovo Kladanj Lukavac Srebrenik Brka B&H	BH Telecom d.d.	24x10/40G DWDM/STM-64/STM-256	DWDM 10/40G	Nokia Siemens Networks hiT 7300 (24)	2008.	1&2
PJD Travnik Radakovo	Elektroprivreda BiH	10xSTM-1, 8x10/100 Ethernet, 2xSTM-4	SDH, STM-1 /STM-4	Nokia Siemens Networks hiT 7020 hiT 7060	2009	3&4
42 x SDH, 42xPDH, 42x Power Supply 2xGPS Synchro. 1xIP PBX	KOSTT, Kosovo	Can be submitted upon request	SDH STM4, PDH, Power Supply	Areva, Huawei MSE 5100, DXC 5000, Jupiter	2009-2011	1&2
Abu Argoub Rawies Ghadames Tripoli West Tripoli South BAM Benghazi S. Benghazi N. TRCC NCC BRCC Libya	GECOL LIBYA	882 x 2 Mbps 4 x 155 Mbps 30 x STM-4 14 x PDH devic	SDH, STM-4 PDH	Family Areva/Alcatel	2007-2011	1&2&3
25xSDH 25xPDH 10xUHF,VHF,HF 3xPLC 6xTeleprot. 2x NMS 2xGPS Synchro 1xIP PBX Kongo	SNEL, Kongo	Can be submitted upon request	SDH, STM-4 PDH	Family Areva/Huawei, Motorola, Philips	2010-2012	1&2
Abu Argoub, Melitah Homs Misuratah Sirte Bani Walid Zawia S.Sorman Libya	GECOL LIBYA	Can be submitted upon request	SDH, STM-4 PDH	Family Areva/Alcatel	2010-2012	1&2&3

Note: 1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

Optical Cable Lines/Networks

LOCATION	CUSTOMER	CAPACITY (km/N°fibres)	LINE / NETWORK TYPE	YEAR OF REALIZATION	NOTE
Region Bugojno, B&H	JP PTT BiH	2,6 / 8	Optical Cable (underground)	1999	1
Region Gračanica, B&H	JP PTT BiH	32,2 / 24	Optical Cable (underground)	2002	1
Region Tuzla, B&H	BH Telecom d.d.	17 / 24	Optical Cable (underground)	2004	1
Region Kalesija, B&H	BH Telecom d.d.	1,7 / 24	Optical Cable (underground)	2004	1
Region Srebrenik, B&H	BH Telecom d.d.	4 / 24	Optical Cable (underground)	2004	1
Region Brčko, B&H	BH Telecom d.d.	3,1 / 24	Optical Cable (underground)	2004	1
Region Lukavac, B&H	BH Telecom d.d.	7,6 / 24	Optical Cable (underground)	2004	1
Region Gimbi- Mendi - Assosa, Ethiopia	EPCO Ethiopia	208 / 48	Optical Cable (OPGW)	2006	1&2
Region Gonder-Metema, Ethiopia	EPCO Ethiopia	122 / 48	Optical Cable (OPGW)	2007	1&2
Region Gimbi-Mendi - Assosa, Ethiopia	EPCO Ethiopia	208 / 48	Optical Cable (OPGW)	2006	1&2
Region Sanski Most, BiH	Elektroprivreda BiH	3,2 / 24	Optical Cable (underground)	2008	1
Region Jezero - Velečevo, BiH	BH Telecom d.d.	44,3 / 48	Optical Cable (underground)	2008	1
Region Tuzla, BiH	BH Telecom d.d.	0,3 / 12 5,6 / 24 1,9 / 48 0,9/ 96	Optical Cable (underground)	2009	1
Region Konjic, BiH	Elektroprivreda BiH	0,7 / 24 (underground) 16,9 / 24 (OPGW) 0,5 / 24 (ADSS)	Optical Cable (ADSS + underground + OPGW)	2010	1
Region Sidi Al Bousidi and Batna, Ghazuat, Tipaza	SONATRACH Algeria	43/48 200/24	Optical Cable (OPGW)	2008-2009	1&2
Region Abu Argoub-Rawies-Ghadames, Libya	GECOL Libya	759 / 24	Optical Cable (OPGW)	2007-2011*	1&2
Region Avash, Ethiopia	EPCO Ethiopia	130 / 24	Optical Cable (OPGW)	2008	1&2
Region Bosanski Petrovac, BiH	Elektroprivreda BiH	4,2 / 24	Optical Cable (ADSS)	2010	1
Region Shedi, Metema, Ethiopia	EPCO Ethiopia	130 / 48	Optical Cable (OPGW)	2010-2011*	1&2
Region Sebha GMMRa, Libya	GECOL Libya	251 / 24	Optical Cable (OPGW)	2011*	1&2
Region Prishtina,Peja... Kosovo	KOSTT Kosovo	600 / 48	Optical Cable (OPGW)	2009-2011	1&2

* Contract has been signed and has been started. Contracted relations and works are currently under installation&commissioning

Note:
1 - Design
2 - Installation and Commisioning
3 - Supply of Equipment

Software Development Process

ENERGOINVEST

Hamdije Ćemerlića 2, 71000 Sarajevo, Bosnia and Herzegovina
Phone: (++) 387 33 703 601; 703 604
Fax: (++) 387 33 657 458
E-mail: e-comm@energoinvest.com
www.energoinvest.com

Publisher: ***Energoinvest d.d. – Marketing****, Sarajevo, July 2008.*