



## UKRAINE PROJECTS

Profile No.	PROJECT NAME	LOCATION
UK1	Geographic Information Systems and Remote Sensing	Kiev
UK2	Odessa – Sale of Shares of TWT Ukraine	Odessa
UK3	Privatization of Ukrtelecom	Nationwide

## UKRAINE

### Geographic Information Systems and Remote Sensing

#### Project Summary

<b>Subsector</b>	Information Technology
<b>Location</b>	Kyiv, Ukraine
<b>Project Cost</b>	US\$6.5 Million (to date)
<b>Export Potential</b>	US\$500,000 (over 3 yrs)
<b>Project Type</b>	Natural Resources Management and Ecology
<b>Project Executing Agency</b>	ERIM for USAID/Kyiv



### Project Outline

The project sponsor, the Ukrainian Land and Resource Management Center (ULRMC), is working to implement remote sensing, geographic information systems (GIS), and Internet-based technologies and applications in the Ukraine and other countries in the region.

Over the next three years, the ULRMC is expected to procure remote sensing and GIS hardware, software, and services amounting to about US\$500,000. The replication of ULRMC-like activities in other parts of Central Europe and the New Independent States would lead to substantial requirements for American goods and services with each replication resulting in the need for up to US\$3 million for hardware, software, and consulting services.

ULRMC was initiated in 1998 with funding from the U.S. Agency for International Development (USAID)/Kyiv and established as a scientific/technological international association under Ukrainian law in 1999. The founding partners of ULRMC include the Environmental Research Institute of Michigan (ERIM) and the Environmental and Resources Research Institute of Ukraine (ERRIU). The mission of ULRMC, which operates as a non-governmental organization, is to operate as a "Center of Excellence" in Information Technologies, producing and providing commercially available geospatial information to strengthen the process of decision-making and to improve the quality of life in Ukraine and throughout the region. In so doing, ULRMC promotes sustainable economic and natural resource development, environmental management and stewardship, disaster mitigation and response, commercial project support and development, collaboration with government and industry, technical innovation, and world class management and western accounting standards. For additional information concerning ULRMC, please refer to the organization's website at [www.ulrmc.org.ua](http://www.ulrmc.org.ua).

## Technical Description

Primary project elements include: remote sensing, geographic information systems (GIS), and internet-based technologies and applications.

The objectives of ULRMC are to encourage the development and use of civil remote sensing and GIS technologies, to assist in the establishment of national Ukrainian and Central European standards for the open exchange of data, to increase the interactions between the technical and information technology community and public policy makers in Ukraine, and to form public-private partnerships to produce information products for Ukrainian and regional consumers. To illustrate the relevant application of information technologies in achieving these objectives, ULRMC has undertaken several demonstration projects relating to ecological, natural resource, emergency situation, and health projects.

ULRMC has extensive new facilities and a state-of-the-art environment for remote sensing data exploitation and spatial information analysis. Real-time acquisition of over flights from the AVHRR and SeaWiFS polar-orbiting satellites are conducted daily at ULRMC. These data can be routinely processed and analyzed for a wide range of environmental and monitoring applications. ULRMC also provides a venue for the processing of other types of satellite and airborne image data. ULRMC specialists have access to extensive computer hardware and software capabilities for integrating acquired image data with other spatial environmental data and models to learn procedures for creating information products and decision-support tools. ULRMC staff has substantial expertise in all phases of data acquisition, image exploitation, data and information integration and analysis, and information product development.

## Project Site

ULRMC is located in Kyiv, Ukraine.

## Project Status/Timeline

USAID/Kyiv awarded the initial funding for the development of ULRMC to ERIM in May 1998. In the past three years, the legal entity has been created and registered with the appropriate Ukrainian authorities, a highly-skilled Ukrainian staff has been hired, the technical facilities have been constructed and equipped, substantial managerial and technical assistance has been provided by ERIM, demonstration projects illustrating the role of information technologies have been completed, and several revenue-generating projects have been executed. Presently, ULRMC is positioned financially to provide much-needed assistance to the people of Ukraine and throughout the region in addressing important ecological and natural resource challenges.

Over the next few years, the founding partners, sponsors and beneficiaries will solidify the design of ULRMC's activities. During the same period, there will be an opportunity for U.S. companies to supply hardware, software, services, and consulting expertise.

## **Equipment and Services**

There are no immediate equipment or service requirements for the ULRMC project. However, given the nature of the technical services provided by ULRMC, the organization is routinely faced with the need to consider computer hardware and software upgrades and acquisitions. Over the next three years, there are likely to be opportunities for U.S. companies to participate in specific projects to be implemented by ULRMC that will require hardware, software, services, and American consulting expertise in the amount of approximately US\$500,000. Notice of such opportunities will be posted on the ULRMC website. Furthermore, the replication of ULRMC-like activities in other parts of Central Europe and the New Independent States would lead to substantial requirements for American goods and services. Each replication could result in the need for up to US\$3 million for hardware, software, and consulting services.

## **U.S. Competitiveness**

The U.S. is generally regarded as the global leader in applying information technologies, especially remote sensing and GIS, to ecological and natural resource challenges. Accordingly, the opportunity to replicate the ULRMC concept is substantial. Along with such replication of the concept comes the possibility for significant U.S. exports of goods and products, as well as managerial and technical services.

## **Project Financing**

The ULRMC project has been financed to date by the USAID/Kyiv grant, financial investments and in-kind contributions of ERIM and its Ukrainian partners, and revenues generated through the provision of products and services, albeit nominal to date. Financing for the immediate future will include a similar combination of sources with a gradual decrease in USAID/Kyiv funding and increase in commercial revenues, other multilateral donor project revenues, and Ukrainian budget-financed project proceeds.

## **Conclusion**

In summary, U.S. companies are well positioned to explore opportunities concerning the application of information technologies in the markets of Central Europe and the New Independent States. These markets offer interesting high-tech investment opportunities with rapidly increasing information and communications infrastructure development.

With respect to the ULRCM project, opportunities for western subcontracts will be posted on the organization's website as they develop.

## Key Decision Makers

<b>Organization or Company Name</b>	Environmental Research Institute of Michigan (ERIM)
<b>Contact Person</b>	Eric P. Luhmann
<b>Title</b>	Director, International Programs and Program Manager for the ULRCM Project
<b>Address</b>	13 Chokolivsky Boulevard, Kyiv 03680, Ukraine
<b>Telephone</b>	(380-44) 230-2266
<b>Fax</b>	(380-44) 230-2267
<b>E-mail</b>	eluhmann@erim.org

<b>Organization or Company Name</b>	Environmental Research Institute of Michigan (ERIM)
<b>Contact Person</b>	Jeffrey G. Moore
<b>Title</b>	Vice President
<b>Address</b>	1530 Wilson Boulevard, Suite 690, Arlington, Virginia 22209
<b>Telephone</b>	(703) 312-0832, x1005
<b>Fax</b>	(703) 312-0836
<b>E-mail</b>	jmoore@erim.org

## UKRAINE

### Odessa – Sale of Shares in TWT Ukraine

#### Project Summary

<b>Subsector</b>	Telecommunications
<b>Location</b>	Odessa, Ukraine
<b>Project Cost</b>	US\$1.2 Million (investment)
<b>Export Potential</b>	US\$ 200,000/year
<b>Project Type</b>	Sale of Shares
<b>Project Executing Agency</b>	Comstar Telecommunications



### Project Outline

Comstar was created in 1989 as a joint venture company involving GPT of the U.K. (later Marconi Telecommunications) and AO The Moscow City Telephone Network (MGTS). Marconi sold its shareholding in Comstar during November 2000 to Metromedia International Telecommunication Inc. of the U.S. At its inception, Comstar provided card payphone services, but later became the first alternative operator in Moscow. Now the Comstar network utilizes sophisticated digital and optical equipment and provides national and international service. The Comstar network covers almost all of Moscow, and provides alternative telecommunications routes to St. Petersburg, the Primorsky region, the island of Sakhalin, as well as Sochi.

In early 1998 Comstar acquired two Ukrainian companies in the port city of Odessa - "TWT Ukraine" and "Svyaz". The former company had been established in 1995 in Odessa, the second largest city in the Ukraine with a population of 1.1 million. The two companies were subsequently restructured under the identity of TWT Ukraine, as a wholly owned Comstar subsidiary company, and continued to provide telecommunications services to the commercial port and adjacent city areas of Odessa. The Odessa region has a high density of small to medium size businesses, as well as a number of very large manufacturing facilities. The city's most successful businesses tend to be medium size commercial structures, banks, business centers, and hotels that are focused on the commercial seaport.

### Technical Description

TWT Ukraine is a small company that primarily serves one large customer: the commercial seaport. In all, the company serves 2,000 lines and has an employee base of 63 workers. Annual turnover is US\$1 million, while net fixed assets are US\$600,000. Despite a high prevailing level of inflation, TWT Ukraine has sustained a stable level of gross margin.

In mid-April 2001 the company started to provide service to a second large group of business clients located in a 24-floor business center that includes a 300-room four star hotel. This new service is expected to generate US\$200,000 of revenue in the first year of operation. TWT Ukraine has installed a Meridian Option 81 PABX at the port and is carrying all of the port's telecommunications traffic including that is generated by shipping companies and foreign ships docking in the port. Also, TWT has its own 50 kilometer fiber optic network.

TWT has a license to operate a telephony network in Odessa, Ukraine. In addition to telephony services, the license gives TWT Ukraine the right to perform construction and technical maintenance to its local network. The 10-year license expires August 1, 2005 and, according to Comstar, there is a right to extend the effective period.

### **Project Site**

Comstar's subsidiary, TWT Ukraine is based in Odessa, Ukraine.

### **Project Status/Timeline**

Comstar would like to divest its shareholding in TWT Ukraine during 2001, as the subsidiary company is no longer regarded as a core asset.

### **Equipment and Services**

In the longer term, this pending sale of shares in TWT Ukraine represents an opportunity to sell U.S. equipment and services to a small, yet stable telecommunications network.

### **Project Financing**

Comstar is seeking a buyer to acquire 100% of the shares of TWT Ukraine.

### **Conclusion**

The new owners of Comstar no longer regard TWT Ukraine as a core activity as that company is remote from their Russian telecommunication holdings. The acquisition of this small network could offer a potential purchaser the opportunity to establish a beachhead in the liberalizing Ukraine telecommunications market. Properly nurtured,

this network could grow over time and become a market for U.S. telecommunications equipment and services.

## Key Decision Makers

<b>Organization or Company Name</b>	Comstar Telecommunications
<b>Contact Person</b>	Vladimir Umanskiy
<b>Title</b>	Chief of Analytical Department
<b>Address</b>	3 Dmitrovsky per. Bldg1 Moscow Russia 103031
<b>Telephone</b>	(7 095) 956 02 10
<b>Fax</b>	(7 095) 956 02 76
<b>E-mail</b>	umanskiy@post.comstar.ru

<b>Organization or Company Name</b>	COMSTAR Telecommunications
<b>Contact Person</b>	Pavel Bogulev
<b>Title</b>	Finance Director
<b>Address</b>	3 Dmitrovsky per. Bldg1 Moscow Russia 103031
<b>Telephone</b>	(7 095) 956 00 00
<b>Fax</b>	(7 095) 956 02 76
<b>E-mail</b>	bogulev@post.comstar.ru

## UKRAINE

### Privatization of Ukrtelecom

#### Project Summary

<b>Subsector</b>	Telecommunications
<b>Location</b>	Ukraine
<b>Project Cost</b>	Up to US\$400 Million (expected share price)
<b>Export Potential</b>	US\$1 Billion/year
<b>Project Type</b>	Privatization
<b>Project Executing Agency</b>	State Property Fund of Ukraine



### Project Outline

Ukrtelecom was created in 1993, when the Ukrainian Ministry of Communications reorganized the national telecommunications structure by merging several telecom departments and regional companies into the Ukrainian State Telecommunications Corporation (Ukrtelecom). Owning all transmission facilities, Ukrtelecom administers the national wire line infrastructure. The company employs more than 130,000 people.

Ukraine's telecommunications infrastructure has developed significantly since 1992, but still lags behind Eastern and Central European countries. The Government of Ukraine (GOU) hopes to raise average wire-line connections from 19% to 40% of the population over the next 10 years, approaching western standards. This will require the installation of 10 million new phones, which would cost from US\$5 to US\$10 billion. These calculations require a US\$1 billion annual investment into the industry, which only seems feasible if Ukrtelecom is privatized and the Ukrainian economy improves. In the meantime, wireless communication is emerging as the most viable alternative for corporate and business clients.

Plans to privatize Ukrtelecom have been repeatedly announced since 1997 through 1999, but fierce opposition delayed privatization. The law on the privatization of Ukrtelecom was adopted on July 13th, 2000.

The sales offer is for a block of shares in Ukrtelecom PJSC (the national telecommunication operator of Ukraine) totaling at least 25% of the authorized capital of Ukrtelecom plus one share. The sale of the block of shares in Ukrtelecom PJSC will be carried out in open tender, exclusively to industrial investors and according to the rules and procedures developed by the State Property Fund of Ukraine. These rules and procedures are based on those approved by the Privatization Commission of Ukrtelecom.

## Technical Description

Ukrtelecom has an installed capacity of 8.9 million numbers with 8.5 million numbers operational. The company's existing wire-line network is far from optimal, however, with fees for line installation reaching \$1,000 after a substantial waiting period. Although there is increased use of digital equipment in the network, many regional switches continue to connect customers with outdated equipment. Digital exchanges serve only about 10% of customers, while electronic and quasi-electronic exchanges server another 10%. The remaining switching gear consists of obsolete relay and mechanical equipment that severely limits the introduction of a new electronic billing system. As a result, many users outside urban areas now pay a symbolic fee of up to \$3 per month. Automated billing systems have only been introduced on a limited basis in urban centers. In some small towns and villages there are instances where only one line exists for several thousand people and the wait for a line can exceed 10 years. In cases where rural wireless local loops are utilized, they are unprofitable. Ukrtelecom subsidizes those local loops with revenues from inflated fees for international calls, line installation, and registration.

Teledensity varies dramatically by region with Kyiv exhibiting the highest telephone penetration at 43.6%, followed by the industrial regions in the east of the country at 19%. Telephone lines in the agricultural regions of Transcarpathia and Carpathia in the agricultural west of the country are relatively rare. The average teledensity for the country is 19.8 telephones per 100 inhabitants. The annual per capita spending for telecom services in Ukraine is \$20.6. According to the Commercial Section of the U.S. Embassy in Kyiv, 3.3 million people are on the waiting list for private phone service. There is an excess capacity, however, of several hundred thousand circuits available in part because potential subscribers cannot afford to become connected.

Recent advances in wire-line communications include the completion of a national telecom network with 45 long-distance exchanges (27 are digital and located in regional centers, while the other 18 regional exchanges are analog) and three digital international gateways. Ukraine has also installed a national fiber optics network connected to the international fiber optic system such as ITUR, TEL, TAE, and BSFOCS. The fiber optic network consists of 4,200 km of fiber and digital microwave communication lines. Currently, this network is expanding towards the neighboring regions of Russia. Ukrainian users now have available international telephone connections to more than 200 countries.

### Ukrtelecom Performance 1998 - 2000

Parameter	1998	1999	2000
Number of subscribers (000)	7,964	8,165	8,354
Subscriber base growth (000)	246	201	190
Net income (million UAH)	2,045	2,362	2,919
Operating costs (million UAH)	1,520	1,795	2,527
Accounts receivable (million UAH)	818	1,170	1,247
Accounts payable (million UAH)	641	565	653
After tax profit (million UAH)	478	546	298

Ukrtelecom's revenues in 1999 reached \$627 million, a 30% increase when compared to 1997, if calculated in local currency, but 50% lower if calculated in US dollars. The reason for this decrease in foreign exchange terms is because the GOU, which regulates Ukrtelecom's rates, did not modify those rates for almost two years as the local currency declined in value against the dollar. New rates were approved early in 2000.

Ukrtelecom is a participant in the following joint ventures:

1. Infocom is a Ukrainian-German limited liability company established in 1991 involving Ukrtelecom (Kyivelektrozvyazok Infotel) and Controlware-GmbH. Ukrtelecom holds 51% of the shares in the company which is active in construction, maintenance service of documentary telecommunication networks, rendering of documentary telecommunication and data transmission services.
2. UTEL - Ukrainian-American-Dutch-German venture established in 1992 whose shareholders include Ukrtelecom, Deutsche Telekom, AT&T, JSB Brokbiznesbank. Ukrtelecom holds 51% of the shares. The company provides public, international and long distance telephone communication and data transmission services. Utel owns two of the three international gateways available in Ukraine and controls more than 90% of international traffic. The company employs 1,700 employees.
3. Ukrainian Mobile Communication (UMC) - Ukrainian-American-Dutch-German limited liability company that was created in 1992 by Ukrtelecom, Deutsche Telekom, Denmark Telecom and PTT Telecom. Ukrtelecom controls the shareholding of the company with 51% of the shares. UMC operates a wireless cellular communication network.
4. Elsacom-Ukraineis - a Ukrainian-Italian company that was founded in 1996 involving the SPFU (in the interests of Ukrtelecom, KB Yuzhnoe, VO Yuzhny Machine-Building Plant), Elsacom (Italy), and Simest (Italy). The Government of the Ukraine holds 51% of the authorized share capital in this company (Ukrtelecom holds 34% of the total company shareholding) that provides Globalstar mobile satellite communication services.
5. Ukrtelecom holds 9.9% of Telesystems Ukraine, a company created in 1996 to maintain fixed wireless facilities. Other shareholders include LLC Ruta-Farm and Paktolus.
6. Telecominvest is a wireline service provider created in 1996 and involving the SPFU (in the interests of Ukrtelecom), APPB "Aval", LLC "Pollicorp", Derzhinvest Ukraina, Attis-Telecom JV. Ukrtelecom's share in the company is 26%.

Two companies dominate the national and long-distance wire-line networks: Ukrtelecom and Utel. There are a number of other providers of wire-line services (e.g. Golden Telecom Business Solutions, Kancom/Andrew, Optima, Farlep, Lyuza, Intersvyaz, Crymtel, and Telecominvest), but their total number of customers does not exceed 120,000, thereby making their share of the local market insignificant.

## **Project Site**

Ukrtelecom is the government-owned wire-line provider of telecommunications throughout Ukraine.

## **Project Status/Timeline**

The tender to select a financial adviser for the privatization process was on going as the conference briefing book was being prepared. At that time, it was expected that the tender process to sell shares in Ukrtelecom would commence in late 2001.

## **Equipment and Services**

Once the privatization process is complete, Ukrtelecom will require a substantial investment of about US\$1 billion per year to modernize its network infrastructure. Procurement from U.S. suppliers will likely be enhanced if a U.S. strategic partner is selected in the telecommunications network privatization.

## **U.S. Competitiveness**

The Ukrainian telecommunications industry still lags behind Western and Central European countries. Wireless communications and Internet services have proven to be the most active subsectors of the telecom industry in Ukraine, despite a relatively low market penetration for this subsection, (equal to 1% of the population.) Voice communication continues to dominate the Ukrainian telecom industry, accounting for 70% of the market.

Because of costs associated with the telecommunications industry, foreign firms have been and are expected to continue to be significant players in the market. They are the sole source of financing and technology available at the moment. Ukrainian authorities are aware of this need and are urging new investments into the Ukrainian telecom industry. To this end, substantial changes/improvements were made in the Ukrainian telecommunications legislation in July - August 2000. The new laws allow foreign companies to operate in the Ukrainian telecom market on the same basis as Ukrainian companies. Ukrainian telecom operators need to diversify and upgrade the services they offer. Expensive credit and the lack of confidence by foreign manufacturers limit their plans.

## Project Financing

A variety of funding sources exists, on the books, for investment projects in Ukraine. They include government agencies, government-funded programs, publicly and privately financed investment funds directed towards defense conversion, venture capital funds, and grant programs. It should be noted however, that Ukraine's budget reduction measures make government financing unlikely. U.S. companies are urged to concentrate on private sources of financing, as well as U.S. and international programs for trade and project development financing when considering large infrastructure projects.

## Conclusion

Potential strategic U.S. technical investors are actively encouraged by the Ukrainian authorities to participate in the expected privatization tender. Export opportunities are likely to be significant since Ukrtelecom will require a substantial investment of about \$1 billion per year to modernize its network infrastructure. Should one of the U.S. fixed network operators successfully bid for control of Ukrtelecom, long-term sales opportunities for American telecommunications equipment and software providers will be substantially enhanced.

## Key Decision Makers

<b>Organization or Company Name</b>	Ukrtelecom
<b>Contact Person</b>	Mr. Olexander Lebedenko
<b>Title</b>	Head of International Relations Department
<b>Address</b>	18 Shevchenko Bld Kiev, Ukraine
<b>Telephone</b>	380 44 220-1001
<b>Fax</b>	380 44 229-2506
<b>E-mail</b>	Olebedenko@ukrtelecom.net