



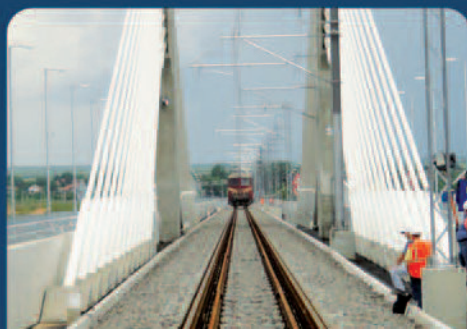
ep^tisa

Together for a better future



2013

ANNUAL REPORT



Eptisa

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Corporate Social Responsibility



Letter from Luis Villarroya

The Spanish engineering market had faced a particularly complex overall situation in 2013. While it is true that we can see signs of improvement, the fact is that, the figures of the sector were no more than the 15% of those achieved in 2009.

In this new environment, engineering firms are forced to choose between disappearing in the absence of projects in the domestic market or reinventing themselves to compete on international markets against foreign firms, financially stronger and with extensive experience at the global level.

Eptisa's year was no exception to the general tenor of the sector in Spain. We tackled the changes required to ensure survival in the future with decision. In short, our presence in Asia and Africa has grown considerably while the Spanish market has remained steady.

In 2013 Eptisa achieved an income of 120 million Euros, over 64% of which was in international projects. Our backlog at the end of the year stood at 164 million Euros, of which 75% were projects outside Spain. Around 2,000 professionals work with us, half of which are developing projects outside Spain.

A global company with local presence

Our international branch network now covers 16 countries and we are developing projects in 43 nations throughout America, Africa, Asia and Europe. The key factor of our progress is a geographic expansion plan that provides the guidelines for our approach to emerging markets. We have achieved good positions in the Balkans, Romania, Turkey and the Caucasus region, competing in local tenders against domestic companies. This enables us to create opportunities for other Spanish companies in the area. In 2013 our engineering market increasingly focused on Central Asia, India and Africa. Our presence in India has been rewarded by a number of transport infrastructure projects. We increased our presence in North African countries and in Central Asia we have obtained recurring contracts in Uzbekistan, Kyrgyzstan and Kazakhstan.

Collaborating with Spanish Concessionaries and Constructors in prospecting and developing international markets is another road to internationalisation. We continue working for OHL on the Marmaray project in Istanbul. In the UK we are part of the design team of a large road infrastructure in Liverpool, the Mersey Gateway Project, where FCC is a member of the construction consortium. In the industrial sector we took part in the construction of a building in Romania for the Spanish corporation Antolin.

Towards the end of 2013 we had been awarded the International Awards in the small and medium-size business category of Spanish Exporters and Investors Club. These awards



seek to recognise all the people, companies and institutions who have contributed to support, disseminate and introduce Spanish products and services throughout the world, helping to strengthen the Spanish economy and to internationalise our companies.

Ángel Corcóstegui, President of Eptisa, received the award from Jaime García-Legaz, Secretary of State for Trade, during a ceremony at the Casino de Madrid attended by numerous representatives from the financial and political life. Other winners in this edition were MAXAM in the large company category, the EFE news agency and Antonio Tajani, Vice-President of the European Commission.



The jury placed special emphasis on our export-oriented approach, the strong position we have achieved in international markets in a short period of time and the excellent work we are performing in multilateral organisations. In 2013 we once again led projects funded by the European Commission, the World Bank, Asian Development Bank and other multilateral financial Institutions.

Activity sectors

Water and the environment accounts for 28% of total activity and this specialisation has been rewarded on the international market. The experience acquired in Spain, Romania and the Balkans has enabled us to access projects in Central Asia, India and Peru. Technological solutions based on GIS and SCADA tools have been added to our traditional engineering know-how to provide integral solutions. In the environmental sector we are a reference in the design and construction of waste management plants and in specialised consultancy for decontamination of soil and material.

The transport sector represents 26% of our total income despite the decrease of projects in Spain. Our experience in the design and works supervision of road infrastructure, geotechnical know-how, expertise in pavements, tunnels and hydrogeology have provided the backing required to win new highway projects in India, the UK and Serbia. In the Spanish railway sector we provide supervision, management and quality control of works on the high speed lines in Galicia and the Basque Country.

Energy, industry and buildings sector now accounts for 18% of our business. In the energy sector we provide engineering services to the main domestic energy companies including project management of construction and refurbishment works, instrumentation and monitoring of infrastructures and facilities and the execution of turnkey projects. We are currently developing a turnkey project in Galicia for Endesa consisting of works on the Saa Coalfield Park to enhance its environmental efficiency and integrate operation of the same with the As Pontes thermal power station.

In 2013 the information technology sector continued to provide 17% of total income. In Spain, in view of the decline in new investment in the sector, we turned to maintenance and upgrading of existing information systems for major public and private organisations. The specialisation of our services and the development of vertically integrated solutions has enabled us to export our know-how and to participate in international projects in the water and land use planning sectors in Costa Rica, Georgia, India, Peru, Mozambique and Kyrgyzstan.

Eptisa is a leader in the field of development cooperation. In 2013 this field represented 11% of the total. The European Union and major international development agencies entrusted us to undertake development projects in Latin America and Africa. In 2013 we increased our presence in Morocco, Jordan and Mozambique and consolidated ongoing projects in Central America.

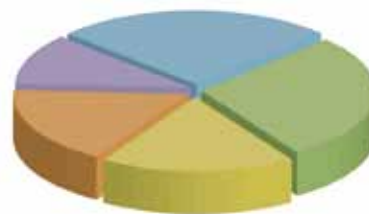
Innovation: the road to creating value for the client

In this new competitive environment innovation in services, products and business practise is the key to creating value for the client and thus growing our business and ensuring a bright future for our people. In 2013 we initiated several R&D projects and continued to work on those already under way.

We have been actively collaborating in research into photocatalytic pavements for several years, but this year we launched in collaboration with the Centre for Industrial Technological Development (CDTI) a research programme aimed at developing the first remotely controlled research and testing method on photocatalytic materials which will enable the efficacy of these decontamination materials to be realistically evaluated.

In the road sector we have combined our knowledge in pavement management and GIS tools to provide the market with a unique technological solution for management and maintenance of infrastructures and development of a pavement management system. The latter is an automatic tool based on an on-line platform that enables visual inspection of the pavement to create an inventory of the pathologies detected.

As part of the ISIP programme in the thermo-solar sector Eptisa signed a strategic alliance with TERI (The Energy and Resources Institute of India) for a R&D project to design an auscultation system to monitor solar energy collectors in thermo-solar plants. This project reinforces our prestige in the R&D field represented by our work in recent years on development of a system that enables the control of performance of the static elements (foundations, ferrules and towers) of wind turbines from the design to the operation and maintenance phase.







Transport

In 2013 we worked on the major transport infrastructure projects in Spain, providing engineering and information technology. Despite the decline in investment in new infrastructures we took part in nationwide, regional and urban projects to improve mobility by road, rail, sea and air, paying maximum attention to technical quality and economic optimisation.

In 2013, the Regional Government of Asturias awarded us the development of the mobility infrastructure plan. The project consists of drafting the 2013-2024 Master Plan to optimise resources and planning land transport infrastructures and services in Asturias until 2024.

In the **railways** sector Eptisa provides design, technical assistance, quality control and auscultation services. Throughout the year we provided technical assistance to supervise the construction works of the major Spanish high speed lines.

In the **Basque Country** we are providing technical assistance for the control and supervision of the platform construction on the Elorrio-Atxondo section of the Vitoria-Gasteiz-Bilbao high speed line and the Hernialde-Zizurkil section of the Basque "Y" in Guipuzcoa. In **Galicia** we are working on the technical assistance for the supervision of the platform

construction on Portocamba-Cerdedelo section and on the supervision and monitoring of the construction material quality assurance plan and environmental control on various sections of the North-Northwest corridor. We continue providing technical assistance for the control and supervision of the construction works on the Encina-Mogente section of the **Levante** line. In **Andalusia** we provide technical assistance to Construction Management for the control, monitoring and support of occupational health and safety coordination for the works on the Bobadilla interchange in Antequera of the Antequera-Granada high speed line.

In the **hydrogeology** field we work for ADIF, the Spanish Railway Infrastructures Authority, on hydro-geological studies and surveys of high speed railway infrastructures. In particular we are working on hydrological monitoring and study of the Udalaiz Massif on the Mondragon-Elorrio section of the Vitoria-Bilbao-Donostia high speed line. On the Madrid-Extremadura high speed line we are drafting the hydro-geological study and monitoring of the Santa Marina tunnel of the Grimaldo-Casas de Millán section. We are working on the hydro-geological monitoring and study of the Zizurkil-Urnieta section of the new Basque Country railway network.





▲ HYDROGEOLOGY IN TRANSPORT INFRASTRUCTURES

HYDROGEOLOGICAL STUDIES

The main aim is to provide basic information on the hydrogeological aspects of the works in order to take them into account when designing the transport infrastructure.

The scope of the studies includes:

- Analysis of the permeability and vulnerability of aquifers
- Identification of impact on the aquifers
- To analyse potential impacts in the current use of the aquifers and to determine the appropriate flow restoration measures.

HYDROGEOLOGICAL MONITORING AND CONTROL NETWORK DURING THE WORKS

During the detailed design phase of the infrastructure project it is necessary to implement a hydrogeological monitoring and control network in order to determine possible impact on the aquifers:

- determine the condition of the aquifer prior to start of works, define the natural variation of groundwater levels and output from springs
- to enhance knowledge of real use of the aquifer resources
- To provide a control infrastructure that enables real knowledge of the impact of the works on the aquifer and to monitor recovery of its natural condition once the works have finished.

HYDROGEOLOGICAL PROJECTS CARRIED OUT IN 2013:

- Hydrogeological monitoring and control of the Udalaiz Massif on the Vitoria-Bilbao-Donostia high speed line construction works. Section: Mondragon-Elorrio. The objective is to enhance hydrogeological knowledge of the sub-unit to determine the impact of the tunnel route on the operation and resources of the aquifer and of its present-day uses. The tunnel in question traverses the western part of the Udalaiz limestone massif for 3,260 meters.
- Study and hydrogeological monitoring of the Santa Marina tunnel. Madrid-Extremadura high speed line Talayuela-Cáceres. Section: Grimaldo-Casas de Millán
- Hydrogeological monitoring and control network. New railway network in the Basque Country Province of Gipuzkoa. Section: Zizurkil-Urnieta
- Hydrogeological fieldwork, tests and reports for the Ministry of Development related to railway infrastructures
- Study and hydrological monitoring of the North-Northwest high speed line. Section: Burgos-Vitoria
- Hydrogeological monitoring of construction of the Amorebieta-Muxica section, specifically the Urdinbide tunnel in Bizkaia.

In the field of **urban transport**, Eptisa participates in the **La Coruña Sustainable Urban Mobility Plan**. The project consisted of the design of the Sustainable Urban Mobility Plan of the city of A Coruña during the first 10 months, and the creation of a Mobility Technology and Operations Office (MTOO) during the following 20 months. The drafting of the Mobility Plan finished in December and the document was presented to public in an official ceremony attended by the main actors and associations of the city.

In the **Basque Country** we are drafting the detailed design of the Etxebarri-Ariz section of Line 5 of the Bilbao metro from Basauri to Galdakao Hospital.

The **Madrid** City Council awarded Eptisa a new contract to perform quality control of the works for which the Directorate General of Roads and Public Spaces is responsible in the city.

During the first half of 2013 Eptisa worked closely with the Madrid City Council to draw up the **Pavement** Management Manual that enables the infrastructure manager to ascertain the condition of pavement, prioritise improvement works and assess future investments.

Eptisa was selected to draft the preliminary design of the refurbishing project of the intermodal transport station of Pavones in the Moratalaz district of

Madrid after a thorough field campaign to inspect the terrain and pavement to determine the causes of subsidence.

We implement **road** projects for regional and national governmental authorities from the planning phase with feasibility studies through the drafting phase with layout and detailed design, the construction phase with technical assistance for works supervision and quality control and ending in the operational phase with technical consultancy on road safety issues.



▲ TECHNICAL ASSISTANCE FOR THE CONTROL AND SUPERVISION OF THE PLATFORM CONSTRUCTION OF THE ELORRIO-ATXONDO SECTION OF THE HIGH SPEED RAILWAY LINE VITORIA/GASTEIZ-BILBAO-SAN SEBASTIAN

The section runs entirely through the municipality of Elorrio in Bizkaia. The following structures will be built along the 2,565 metres of project platform: the 880 metre-long Kinatoi viaduct across the stream of the same name and the Iguria district; the 320 metre-long viaduct over the Zabaleta River and the 200 metre-long viaduct over the Larrazabal stream.



▲ TECHNICAL ASSISTANCE FOR THE CONTROL AND WORKS SUPERVISION OF THE HERNIALDE-ZIZURKIL SECTION OF THE NEW RAILWAY NETWORK OF THE BASQUE COUNTRY

The Hernalde-Zizurki section is 5,870 metres long of which 5,149 metres (88%) are in tunnel, 498 meters on a viaduct and 223 meters on an embankment. It begins at the northern mouth of the Montezkue tunnel, which belongs to the Tolosa-Hernalde section.

The most significant elements include the 25 metre-long Hernalde viaduct, the Anoeta tunnel with a length of 1,397 metres, the Alkiza viaduct of 69 metres, the 2,065 metre-long Asteasu tunnel, the 268 metres of the Ugarte cut-and-cover tunnel, the Asteasu viaduct of 404 metres and the 879 metre-long Zizurkil tunnel. The works budget is € 169,011,341.70 and the execution period is 42 months.



▲ CONTROL AND WORKS SUPERVISIONS OF THE BOBADILLA NODE SECTION OF THE GRANADA-ANTEQUERA HIGH SPEED RAILWAY LINE

The objective of the contract is the provision of technical assistance to the Construction Management to monitoring, control and coordination of occupational health and safety of the works of Bobadilla Interchange section of the Antequera-Granada high speed line.

The section consists of 5 lines that comprise the Bobadilla node section. The section is located in the municipality of Antequera in the province of Malaga. The total length of the section is 15,892.38 meters composed of 9,129.33 meters of single track and 6,763.05 m of double track to connect the Córdoba - Malaga HSL to the Antequera - Granada HSL. 8 structures are planned: 3 viaducts, two underpasses and 3 overpasses.



▲ QUALITY CONTROL IN THE CONSTRUCTION OF THE NORTH-NORTHWEST HIGH SPEED RAILWAY LINE

The work consists of supervising and monitoring the implementation and development of the Contractor's quality assurance plan in the aspects concerning quality control of materials and environmental protection. An on-site laboratory was installed for this purpose. The most frequent materials to be controlled are: concrete, steel, soils, gunite, bituminous mixtures, aggregates and water from discharges, among others. The in-situ tests include tensile strength testing of studs, in situ determination of density by radioactive isotopes, plate load and acoustic pollution metrics.

Eptisa was involved in works on the following sections: the left variant of the Espiño tunnel with a length of 8.5 km; the 9.8 km-long Prado-Porto section, the left variant of the 5.6 km-long O Cañizo tunnel, the right variant of the Como tunnel and the Prado Tunnel. We are also conducting comparative tests for the supervision of the works on the Portocamba-Cerdedelo section.



◀ TECHNICAL ASSISTANCE FOR THE CONTROL AND SUPERVISION OF THE CONSTRUCTION WORKS OF THE SECTION: ENCINA-MOGENTE NODE OF LEVANTE HIGH SPEED RAILWAY LINE

All tasks were performed on two levels: construction of the platform and superstructure to install the Iberian gauge double track over the old abandoned platform of the former railway; and the construction of the platform and superstructure to install the Iberian gauge double track on the new line named Mogente Bypass.

Numerous stone vaults have been extended with frame or arch-type structures. Existing overpasses were replaced by new ones to enable passage of double Iberian gauge tracks. The cross section of the existing 257 metre-long Santa Barbara tunnel will be increased from 27 m² to 75 m². All existing bridges and viaducts will be replaced by new structures to accommodate the double track. The most important viaducts and bridges will be replaced by new viaducts while the smaller ones will be replaced by frames.



▲ DETAILED DESIGN OF THE ETXEBARRI-ARIZ SECTION OF LINE 5 OF THE BILBAO METRO

The section has a total length of 6,500 metres. It begins as the prolongation of the shared section of lines 1 and 2 of the Bilbao Metropolitan Railway (between the San Ignacio and Etxebarri stations) and connects to the Etxebarri-Ariz section.

The route starts with an open-air section between the connection with the line already in service and the Sarratu station, after which it goes underground and alternates sections of cut-and-cover with buried tunnel for the rest of the route. Besides the initial above-ground section, the route is comprised of 1,200 metres of cut-and-cover tunnel including three of the planned stations (the Sarratu intermodal facility, Aperribai and Bengoetxe) and is completed by a 5,300 metre-long stretch of buried tunnel that includes the caverns for the Galdakao and Hospital Stations.



▲ CONSTRUCTION MANAGEMENT AND TECHNICAL ASSISTANCE TO WORKS IN THE URRETXU-ANTZUOLA SECTION OF THE GI-632 BYPASS IN GIPUZKOA

The Urretxu-Antzuola section of the GI-632 variant is 2,760 metres long and runs from Antzuola junction to the Urretxu/Legazpi junction in Urretxu.

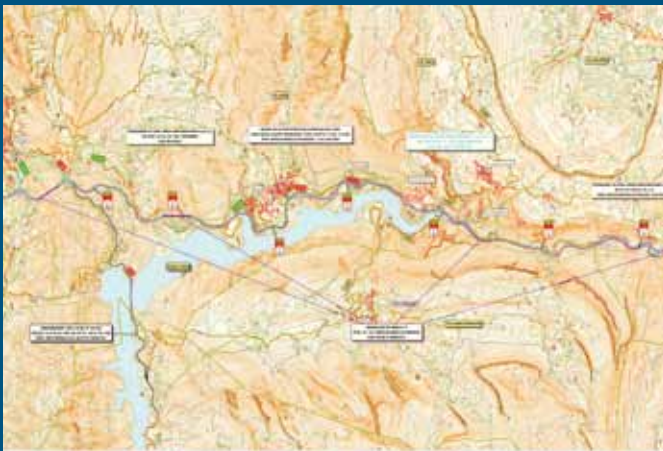
It starts next to the steam bed Ipurtika, in the junction to Antzuola, which includes the 5+9 overpass, a future roundabout, two branch lines and updating of the existing road. The Deskarga tunnel, about 620 metres long, follows the junction. The descent to Zumarraga begins after the tunnel and runs parallel to the Mendiaratz stream and the current road to the Urretxu-Legazpi interchange. The section ends at k.p. 8 +560, where it connects to the section between the aforesaid interchange and that of Zumarraga. Overpass 7+9 at k.p. 7+970 is located immediately before the Urretxu-Legazpi junction.



▲ DETAILED DESIGN OF REUS-PERAFORT SECTION OF THE NEW ROAD FROM REUS CITY TO THE CAMP DE TARRAGONA HIGH SPEED RAILWAY STATION

Three options were studied: the South 1 alternative, starting at the intersection of the T-11 road with the TV-7211 and which harnesses practically the entire current layout of the TV-7211; the South 2 alternative, also starting at the intersection of the T-11 with the TV-7211 and which alternates newly built sections with current TV-7211 sections, and northern alternative which begins at the TP-7225 just after the intersection with the T-11 and harnesses the current layout of the TP-7225 to finish with a newly built section.

The project includes dimensioning of the transversal and longitudinal drainage works, the design of removal and replacement of existing utilities, pavement design and analysis of structural types with special attention to the Francolí river viaduct.



▲ ROAD SAFETY AND UPGRADING PROJECT FOR THE BERGA - GUARDIOLA DE BERGUEDÀ SECTION OF THE C-16 ROAD

This project includes study and analysis of the options for improving road safety on this section of the C-16 to reduce road accidents and substantiation of the chosen solution including the detailed design for implementation.

The following tasks are included: description of the road (operation, coherence with the surroundings and consistency of the road itself); description of the traffic (volumes, speeds, composition and type of traffic); study of road capacity; detection and analysis of the black spots with regard to layout and cross-section (changes in gradient, curve radii, study of additional lanes, intersections and connections, accesses, tunnels, etc.); accident analysis; pavement refurbishing; re-adaptation of the cross section of the sections that are justified from a road safety point of view; fitting of safety barriers, inspection of the existing vertical and horizontal road signs and signals and the proposal for upgrading.



▲ RESTRUCTURING OF ROAD ACCESS TO C-63 ROAD IN THE LLORET DE MAR SECTION

The aim of the project is to reorganise the existing access to the C-63, between k.p. 0 +650 at the beginning of the urban area and k.p. 4 +100 at the southern mouth of the Monturiol tunnel. The section suffers intense vehicle traffic, excessive traffic speeds and numerous accesses to activities and residential areas. This means that the section is especially difficult to regulate. The project analyses the technical and economic viability of the proposed solutions for restructuring the accesses. The objective of the project, together with other preliminary actions, is to enhance road safety in the Vidreres - Lloret de Mar itinerary.

The services include to analyze the most viable technical and economical solutions for the restructuring of the section accesses, including the elimination of left turns, introduction of roundabouts, centre turning lanes and service roads, improvement of signalling and pavement, and other complementary works.



◀ INCLINOMETERS MANAGEMENT SYSTEM FOR THE ROAD NETWORK OF GIPUZKOA REGION

The Provincial Council of Gipuzkoa installed inclinometers at various points of the priority and secondary road networks. The Inclinometer Management System enables verification of the condition of the installed units, installation of new devices and recovery of inoperative units, as well as the establishment of a method to plan the frequency with which measurements should be made with each instrument.

Eptisa is responsible for the following tasks in execution of the contract: Implementation of the Inclinometer Management System (compilation of existing information, "in situ" data collection, creation of database and inclinometer inventory); geotechnical work (field survey tasks, execution of bores, borehole logging, water table monitoring, laboratory testing and geotechnical report) installation of new inclinometers; inclinometer reading campaigns (quarterly average frequency (3 per year) in a total of 50 inclinometer pipes).

The data collection campaigns will be managed using a programme specifically designed by Eptisa to manage inclinometric data. It enables direct dumping of data from the devices, identifies, stores and controls the campaigns, studies and displays the development curves and enables the update of database on the computers of the Provincial Council to be updated by telephone connection.



◀ AUSCULTATION DURING THE CONSTRUCTION, CONSERVATION AND OPERATION WORKS OF THE GEREDIAGA-ELORRIO SECTION OF THE N-636 ROAD IN BIZKAIA

Due to the construction of a road between the towns of Gerediaga and Elorrio and within the construction, maintenance and operation works of the Gerediaga-Elorrio section of the N-636 road, Eptisa has been awarded the contract for commissioning and maintenance of a comprehensive auscultation service involving instrumentation, monitoring and documentation of the control devices planned for the section.

The control area is located in the south-east of the province of Bizkaia, parallel to the current N-636. The variables to be monitored are, in general, the stresses exerted on structures and deformation of the terrain due to tunnelling and earthworks works. A total of more than 500 sensors will be installed both inside the tunnel (CPTR, CPTT and EV) and in the exterior (IN and CC).



▲ QUALITY CONTROL OF MATERIALS DURING THE WORKS OF THE LONZA-A ZAPATEIRA SECTION OF THE AC-14 LA CORUÑA ACCESS ROAD

Eptisa provided laboratory testing (aggregates, soils, bituminous mixtures, concrete, etc.) and in situ testing (densities, load testing, etc.) for quality control of materials during execution of the works.



▲ GEOTECHNICAL STUDY FOR ENHANCED STABILITY OF A SLOPE IN SADA, LA CORUÑA

Eptisa provided rotary borehole drilling, data harvesting using geo-radar, pressure gauge tests, execution of test pits to ascertain the thickness and type of material and laboratory tests on samples collected in the bores (sieve analysis, Atterberg limits, moisture detection, density, soluble sulphate content, Baumann Gully acidity test, uniaxial compressive strength of rocks etc.) during the geotechnical study.



▲ CONDITIONING OF THE CONNECTION OF THE AC-552, AC-551 AND DP-0509 ROADS IN ARTEIXO, LA CORUÑA

Eptisa provided geotechnical consultancy services in order to prevent problems deriving from the foundations works of structures and slope stability and the quality control of materials during the execution of works consisting of laboratory testing (aggregates, soils, bituminous mixtures, concrete, water, etc.) and in situ testing (densities, load testing, etc.).

In **Catalonia** the regional government corporation *Gestión de Infraestructuras S.A. (GISA)* awarded Eptisa several projects for designing to improve the road network. The Reus-Perafort section of the new highway from Reus to the Camp de Tarragona AVE station, the road improvement and road safety project for the Berga-Guardiola de Berguedà section of the C-16 and the roadway improvement and road safety project for the Lloret de Mar section of the C-63 are outstanding works in this field.

We continue to implement the technical consultancy on road safety for the Regional Government of Madrid. As part of the works, Eptisa took part in a ceremony held at the Presidential Palace, in which the Regional President received the first motorcyclist from Madrid who travelled around the world by motorcycle and committed on the need to install protection barriers for motorcyclists on all curves that so require. In collaboration with the General Directorate of Roads of Madrid, Eptisa carried out studies of the highest accident rate sections where installation of this type of protection is necessary.

In the **Basque Country** we are providing technical consultancy to works management of the Urretxu-Antzuola section of the GI-632 variant in Gipuzkoa. In Bizkaia we are working with Interbiak to monitor the **hydrogeological** aspects of construction of the Amorebieta-Muxica section, specifically the Urdinbide tunnel.

In the field of instrumentation and control the Gipuzkoa Provincial Council entrusted Eptisa with the inclinometer management system installed in the functional road network.

In Bizkaia we were awarded the contract for commissioning and maintenance of a comprehensive auscultation service during the construction, maintenance and operation of the Gerediafa-Elorrio section of the N-636 highway.

In **Galicia**, the Association of Civil Engineers confers the **San Telmo Award** on outstanding engineering works that demonstrate technical and construction excellence and improve the quality of life of the inhabitants of the region. This year the *Access highway to A Coruña and connection to the Alvedro Airport for the Zapateira - Highway A-6 section* project won a special mention for its technical and construction quality, in which Eptisa performed the technical assistance for drawing up the project.

Thanks our network of accredited laboratories we were able to meet our clients' requirements across the country and continue to work on quality control and safety in road construction projects.

In Galicia we carried out the quality control of the construction materials for the AC-14 access road to A Coruña on the following section: Lonza-A Zapateira, the geotechnical study to improve the stability of a slope located in Sada and the geotechnical consultancy for conditioning the interchange between the AC-552, AC-551 and DP-0509 in the municipality of Arteixo in the province of A Coruña.

In the **pavement** field Eptisa has a solid track record in design, study and evaluation. In 2013 we performed technical consultancy for assessment of the destructive effect of traffic



▲ TECHNICAL CONSULTANCY FOR ASSESSMENT OF THE DESTRUCTIVE EFFECT OF TRAFFIC ON THE PAVEMENT OF A SECTION OF THE BI-4336 ROAD IN BIZKAIA

In order to develop the technical assistance Eptisa performed a simulation model of the destructive effect generated by outbound traffic on the existing pavement. The performance of the model required a detailed prior pathological study of the pavement to analyse the density and severity of surface degradation detected in the field and the general condition of the pavement.

The load spectra of heavy vehicles demanded on the section were known, but the type of existing pavement was the unknown factor. For this reason two simulation models were developed from which it was possible to determine the optimum solutions based on different scenarios according to the expected traffic densities. This is an unconventional type of study that only leaders in the field of pavement design such as Eptisa are capable of performing today.

on pavement on a section of the BI-4336 road in Bizkaia, and in Navarre we carried out the technical assistance for the analysis of pathologies in the Los Arcos racing circuit.

Eptisa, which currently holds the Presidency of the Iberian Photocatalysis Association and as a specialist in pavement design, participated in the Conference on Decontaminating Buildings and Pavements that brought together public authorities, experts and producers of photocatalytic cladding to share experiences, debate questions of interest and create knowledge. The reason for using these innovative techniques is to work with the public authorities to improve air quality by reducing the adverse effects of pollution (especially by NOx) on human health.

In the **field of R&D+i** Eptisa is working on a comprehensive pavement management system, a prototype to measure the effectiveness of photocatalytic materials and development of ROMA technology for the inventory and maintenance of road infrastructures.



◀ QUALITY CONTROL OF WORKS UNDERTAKEN BY THE MADRID CITY COUNCIL

The Madrid City Council awarded Eptisa a new one-year contract (extendible by one further year) to manage quality control of works undertaken by the Council. During execution of the contract Eptisa performed materials test, performance testing of photo-catalytic materials, service testing, and consultancy and geotechnical studies for said works including those executed by utilities or private operators.

▼ TECHNICAL CONSULTANCY FOR ANALYSIS OF PATHOLOGIES OF THE PAVEMENT OF LOS ARCOS MOTOR RACING CIRCUIT IN NAVARRE

The Navarre motor racing circuit is one of the most modern race tracks in Spain. In 2013 Eptisa designed and implemented an innovative field campaign to compile data on the condition of pavements and the foundations of the same. Among other innovations, this system employed a revolutionary pathology auscultation device. This equipment enables detection of pavement layer thicknesses, the presence of moisture in depth, the presence of buried services, subsidence, gaps between pavement layers and qualitatively assesses the evenness of the current flush.

On the basis of this campaign Eptisa provided the Concessionaire, Navarra Sports and Leisure, with technical assistance in the geotechnical, pavements design and drainage aspects of enhanced operation of the circuit.



▲ DRAWING UP THE URBAN PAVEMENT MANAGEMENT MANUAL FOR THE MADRID CITY COUNCIL

During the first half of 2013 Eptisa and the Madrid City Council worked together to draw up the Urban Pavement Management Manual. Three IT applications and a User Manual were created for the purpose. They enable the Infrastructure Manager to use data collected by visual inspection to describe pavement conditions, prioritize improvement works and evaluate future investment. These applications were developed for three different scenarios: Urban roadway paving, pedestrian pavement and metropolitan roadway paving.

Thanks to the extensive experience of Eptisa in the field of pavement condition indicators and our extensive knowledge of pavement pathologies, it was possible to integrate these applications into the Comprehensive Agreement for Management of the Conservation, Renovation and Adaptation Service for Pavements and Structures on the Public Thoroughfare of Madrid in record time.



▲ PRELIMINARY DESIGN FOR THE PAVEMENT REHABILITATION OF THE PAVONES MODAL INTERCHANGE IN THE DISTRICT OF MORATALAZ IN MADRID

The Pavones (Moratalaz) modal interchange used daily by thousands of people suffered a high degree of subsidence during 2013 and has been temporarily closed as a result.

Eptisa was commissioned to conduct a comprehensive field campaign to survey the terrain and existing pavement to determine the causes of said subsidence. Once the fieldwork and tests had been analysed, various options to solve the problem were included in the final report with the associated budgets. The solutions, some of them ground-breaking, had to be effective, economical and enable rapid implementation to return the facility to service as soon as possible.



▲ SUSTAINABLE URBAN MOBILITY PLAN FOR LA CORUÑA

The La Coruña City Council awarded Eptisa the contract to implement the measures required to achieve a more sustainable transport system compatible with economic development, social cohesion and environmental protection.

The works are divided into drafting the Sustainable Urban Mobility Plan (SUMP) of A Coruña during the first 10 months, and creation of a Mobility Technology and Operations Office (MTOO) during the following 20 months.

A SUMP is a strategic planning tool based on the features of the terrain in question, and provides a series of measures aimed at achieving a more sustainable mobility system from a holistic viewpoint. Drafting of the SUMP finished in December and the document was made public in a ceremony attended by the main actors and associations of the city. The planned measures range from infrastructure development to awareness campaigns through the creation of focus groups and the adaptation of rules and regulations.

The purpose of the MTOO is to promote a mobility model of the city more sustainable in line with the objectives of the SUMP. This office coordinated the SUMP, developed solutions to improve mobility, created a database of available technologies and supported the process of public participation. An informative web platform (www.coruna.es/pmus) and a social profile (www.facebook.com/pmusacoruna) were created for the latter purpose.

The work of the MTOO will continue until late 2014 with the aim of contributing to the development of the SUMP and monitoring implementation of the same. A dashboard based on GIS tools is being developed for this purpose. It will enable monitoring of mobility-related indicators and assessment of the effectiveness of the implemented measures.



▲ MOBILITY INFRASTRUCTURE MASTER PLAN (MIMP) 2013-2014 OF ASTURIAS

Eptisa was entrusted to draw up the Mobility Infrastructure Master Plan of Asturias for the period 2013-2024 with the aim of optimising resources, planning investments related to transport infrastructure and services and thus prioritize the most need.

This plan marks a change in the concept of infrastructure planning in which the mobility of passengers and goods is approached in a holistic manner rather than focussing on particular modes, and is always consistent with the objectives of economic and environmental sustainability. In this way the Plan becomes a fundamental tool to achieve balanced implementation of the Strategy for Sustainable Development of Asturias Regional Government.

Eptisa is carrying out a technical analysis and diagnosis of the current condition of the transport infrastructure of roads, railways, ports and airport of Asturias in relation to the main environmental, demographic, economic and territorial aspects. The objective is to identify the main existing and foreseeable gaps and deficiencies in mobility on the basis of currently available information. The necessary measures to achieve the objectives in sustainability and efficiency are proposed and evaluated on the basis of a mobility prognosis. This includes measures based both on new investment and on management, conservation and maintenance of existing resources. The project also includes the mandatory Environmental Sustainability Report and the public information campaign.



▲ TECHNICAL CONSULTANCY TO WORKS MANAGEMENT OF THE URRETXU-ANTZUOLA SECTION OF THE GI-632 VARIANT IN GIPUZKOA

◀ TECHNICAL CONSULTANCY ON ROAD SAFETY FOR THE REGIONAL GOVERNMENT OF MADRID



◀ ▲ ACCESS HIGHWAY TO A CORUÑA AND CONNECTION TO THE ALVEDRO AIRPORT PROJECT, SAN TELMO AWARD 2013

▼ CONFERENCE ON DECONTAMINATING BUILDINGS AND PAVEMENTS



In the **ports sector** we drafted the construction design for the subterranean road from the Marina in the city of **A Coruña** to increase the traffic-free area and improve traffic flow in this high intensity zone.

Also in *A Coruña* we are carrying out the technical assistance to the works of the piping and drainage channel in the outer harbour and the geotechnical study for the east esplanade of the *Punta Langosteira* port facilities.

In the Port of Cadiz we are providing technical assistance to ensure the Quality Assurance Plan for the new container terminal construction.

In Barcelona Eptisa carries out quality control of materials during execution of the various works currently under way in the port by performing the required laboratory tests.

We continue to provide technical assistance for the control and works supervi-

sion of the enlargement of the runway at the A Coruña **airport**. The new runway is designed on an embankment with an average height of 35 metres requiring 4 million m³ of borrow material for execution of the embankment, 27,000 m³ of selected soil and 23,000 tons of HMA.



▲ CONTROL AND SUPERVISION OF THE RUNWAY ENLARGEMENT WORKS AT A CORUÑA AIRPORT

The works consist of lengthening the main runway of the A Coruña Airport by 400 metres to increase the capacity of the airfield. The runway will be 45 metres wide, with margins of 7.5 metres either side. The strip where the runway is located will have a width of 300 metres (150 metres each side of its centerline) extending 60 metres before each threshold. Also an area of 30,000 sq meters will be surfaced using a flexible pavement for the runway enlargement. In the area outside the airport, the CP-3104 road will be relocated, due to the destruction of part of it as a result of the runway enlargement.

The work planned also includes the restoration and rehabilitation of the elements that are listed as of cultural interest that appear in the

Environmental Impact Statement. In relation to the environmental aspects, a number of preventive and corrective measures are planned that, applied properly, should minimize and/or correct the environmental impact of the planned work.

The services provided by Eptisa include works management in matters concerning execution works, economic and quality control, occupational health and safety coordination, the aeronautical safety audit, as well as monitoring the compliance with deadlines and provision of consultancy services to project management.



▲ CONSTRUCTION DESIGN OF AN UNDERGROUND ROAD IN THE MARINA DOCK OF A CORUÑA

The Port Authority of La Coruña has awarded Eptisa a new contract for drawing up the detailed design of an underground road in the Marina dock to increase the traffic-free area and improve traffic flow in this high intensity zone. The area, a major leisure resource for the inhabitants and one of the most important tourist attractions of the city, will be completely free of surface traffic as a result.

The project consisted of burying approximately 530 metres of the road that currently runs along the Marina basin dock on the city's seafront. The tunnel will start at Avenida Alférez Provisional near the Los Cantones Village shopping centre and the NH Atlántico hotel and will connect to the O Parrote underground roadway and the María Pita tunnel.

The construction of the underground roadway will be carried out using concrete screens, constructing an upper slab of the tunnel and the subsequent extraction of the filling material. Finally, the roadway slab will be placed and once the main structure is finished the tunnel will be endowed with all the elements, installations, services and facilities required for commissioning.



▲ TECHNICAL ASSISTANCE FOR THE NEW PORT FACILITIES CONSTRUCTION AT PUNTA LANGOSTEIRA IN THE OUTER HARBOUR OF A CORUÑA

Eptisa provided technical assistance for construction of the piping gallery and drainage channel for the outer harbour of A Coruña. The purpose of the works is the construction of a gallery along the breakwater of the new Punta Langosteira port facilities to protect the connection pipeline to bulk liquid berths and a drainage channel and thus ensure full use of the adjoining esplanade in spite of waves breaking over the seawalls.

Eptisa also provided technical assistance for a geotechnical study of the east esplanade. Eptisa provided rotary bore drilling, pressure gauge tests, execution of test pits to ascertain the thickness and type of material and laboratory tests on samples collected in the bores (sieve analysis, Atterberg limits, moisture detection, density, uniaxial compressive strength of rocks etc.) for the geotechnical study.



▲ TECHNICAL ASSISTANCE TO CONTROL THE QUALITY ASSURANCE PLAN FOR CONSTRUCTION OF THE NEW CONTAINER TERMINAL OF THE CADIZ PORT

Eptisa is performing the control and report of the Quality Assurance Plan (QAP) drawn up by the Contractor regarding the compliance or otherwise of the QAP and the Technical Specification of the works.

The first phase of the new terminal will have a mooring zone 590.16 m long, generating a surface area of yard of approximately 22 hectares. The dock has a depth of 16.00 m. It will be closed on the north side by a stepped slope seawall (breakwater) and a wedge-shaped caisson that assembles with the first caisson of the dock, to the west by the Levante Seawall and to the south (during phase one) by a newly built provisional retaining wall until the beginning of phase two.

The new dock consists of 13 reinforced concrete caissons in the main alignment plus one wedge-shaped caisson forming the prolongation of the north breakwater. The project includes demolition of several structures (berthing docks, platforms and walkways). The turning basin for large container carriers in front of the New Terminal and the main access channel will be dredged to a depth of 13.00, 14.50 or 16.00 metres, depending on the area. A trench will also be dredged to dispose of material with low bearing capacity in the dock caisson foundation, breakwater and south retaining wall areas.



▲ TECHNICAL ASSISTANCE TO THE CONSTRUCTION MANAGEMENT AND QUALITY CONTROL OF WORKS IN THE PORT OF BARCELONA

Eptisa provided quality control of materials during execution of works in the Port of Barcelona, conducting laboratory tests (steel, cement, building materials, concrete, aggregates, paving, asphalt mixtures, etc.), in situ testing (surface regularity index (SRI) to determine terrain features, ultrasonic inspection of piles, non-destructive testing of welds, load testing, etc.) and testing of facilities (internal pipe inspection by video camera, hermetic sealing tests, etc.).



▲ ROMA (ROAD MANAGEMENT SYSTEM): TECHNOLOGICAL SOLUTION FOR BUSINESS TREATMENT AND MANAGEMENT OF INFORMATION ASSOCIATED WITH LINEAR INFRASTRUCTURES

ROMA (Road Management System) is the most comprehensive technological solution based on GIS technology from Esri, for the treatment and professional management of the information related to linear infrastructures due to its advanced visualization, edition, consulting, and management and information analysis capabilities.

ROMA has a set of tools that allows the assets inventory and management, the conservation planning scheduling and managing the preventive and

corrective actions, including the pavement management.

The Pavement Management is an independent software, or an integrated module, a working tool that allows to know, how, when, where and why the pavement should be intervened, as well as determining the associated costs to such investment.

▼ FIRST REMOTE-CONTROLLED PROTOTYPE FOR MEASURING THE EFFECTIVENESS OF DECONTAMINATING MATERIALS

Eptisa, in collaboration with the Centre for Industrial Technological Development (CDTI), launched a research programme aimed at developing the first remote-controlled research and testing method applied to photocatalytic materials.

This new technology will enable the measurement of the decontamination efficiency of pavements treated with photocatalytic products and the definition through laboratory testing of the variables that influence their behaviour.

The activities scheduled under this programme aim to achieve three objectives: 1) to investigate the behaviour of new decontamination materials, the chemical reactions of photocatalysis and the influence of temperature, relative humidity and UV radiation on the decontamination materials; 2) to design and develop the first device for testing the efficiency of pavements treated with decontamination materials both in situ and in the laboratory; 3) to design and develop automated tests.

▼ COMPREHENSIVE PAVEMENT MANAGEMENT SYSTEM

The objective is to develop an automatic tool accessible through an on-line platform that enables visual inspections of the pavement of all types of infrastructure (streets, sidewalks, roads, ports, airports, bike lanes, racing circuits, etc.) in order to create an objective inventory of their pathologies, minimizing the influence of the human factor to determine their condition or degree of deterioration and plan their rehabilitation needs. The application will be based on the Geographic Information System (GIS), with mapping, geo-referencing of pathologies and quantification of the same for then subsequent corrective measures and to determine future investments.





▲ DETAILED AUSCULTATION SYSTEM DESIGN FOR THE LA MINILLA DAM

Water and Environment

Our work in the water and environmental field in Spain focuses on engineering services for management of natural resources, water infrastructures and supply and sanitation networks for public and private organisations. Our water-related activity in domestic and international projects has positioned us as leaders in the sector.

In the **Water infrastructure** sector, within the framework agreement with the company Endesa Generación, we have developed several studies related to its hydraulic infrastructures. Among these we would highlight the proposals for classification on the basis of potential risk of the Lladres, Cardet, Morera and Montcasau dams, the Operating Standards and Procedures of the San Juan de Torán, Torán Pont de Rei, Montcasau, Tort Trullo and Tort Lago dams (all in the province of Lleida) and the preliminary study and design of the Iznájar hydroelectric power station and reversible pumping (pumps and turbines) using the Iznájar reservoir as the lower tank.

In the **dam auscultation** field we are working on the project to automate auscultation system in hydro-power dams of Gas Natural Fenosa, auscultation of 30 dams of the Ebro-Pyrenees Hydroelectric Production Unit for Endesa and on the project for implementation of a semi-automatic auscultation system in three infrastructures for Emasesa.

We are working on the repair, reconditioning and replacement of the auscultation devices and the monitoring systems for the dams in the Guadiana River Basin and on the control and supervision of the installation of the broadband for the management of the emergency plan of the dams of the Guadiana River Basin Authority.

In close cooperation with the Geotechnical Laboratory of the Research Institute *CEDEX* we have designed and implemented a system using the Flat-Jack test to control and determine the stress condition of the Yesa dam in Navarre.





◀ WATER SUPPLY NETWORK PROJECT FOR MARIN, PONTEVEDRA

The public corporation Acuaes awarded to Eptisa the contract to draw up the design of the water supply network to Marin in Pontevedra. This new contract is part of the project "New Water Supply for Pontevedra and its estuary (left bank)" that aims to renew the entire general water supply network to the estuary until the end of 2015. Eptisa analyses the available information and identifies gaps, performs field campaigns required to implement the geotechnical and topographical study, proposes different alternatives and draws up the construction design.



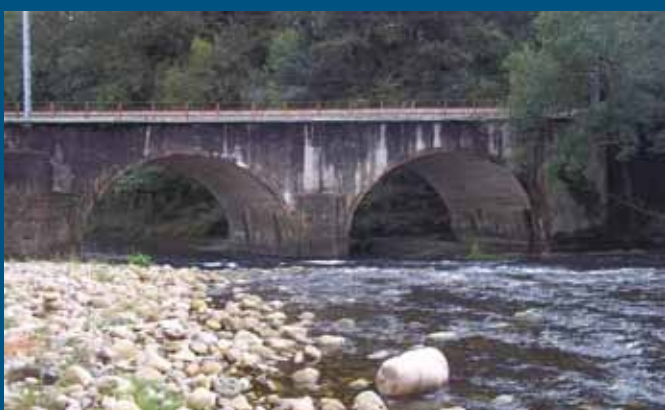
◀ DESIGN OF NEW SEWERAGE INFRASTRUCTURE IN BOADILLA DEL MONTE: WASTEWATER COLLECTORS FROM BOADILLA TO THE VALENOSO WWTP IN MADRID

Within the Framework Agreement with the Canal de Isabel II Gestión, Eptisa drew up three construction designs of the new sewerage system for the municipality of Boadilla (Madrid) which will provide service to new housing developments both finished and under construction. Through the water infrastructure defined in these projects (various WWPS, relief structures, collector networks, roadway conduits, etc.), the wastewater will be transported to the existing Valenoso WWTP, which will enable the creation of a treated wastewater flow of 2,000 m³/day suitable for irrigation of green zones, industrial use and street cleaning.



◀ WORKS MANAGEMENT FOR THE CONSTRUCTION OF THE GENERAL INTERCEPTOR COLLECTOR OF THE SAR RIVER OF THE SANTIAGO DE COMPOSTELA SEWERAGE NETWORK: SECTION PONTEPEDRIÑA-SILVOUTA WWTP

Eptisa undertakes the works management of this project, that aims to provide the city of Santiago de Compostela with a general combined sewerage system, so that the WWTP receives a regulated flow consistent with its capacity and avoid discharge of pollutants into the river Sar, as occurs at present due to the poor condition of the collectors and the absence of regulation and control structures which would also provide pretreatment. The work involves the construction of 11 km of new collectors mainly in reinforced concrete piping between 1600 and 1800 mm in diameter and 6 weirs for regulation and control of stormwaters. The population served in the horizon year will be 67,289 inhabitants. The total area served will reach 959.06 ha.



◀ TECHNICAL ASSISTANCE FOR THE WORKS MANAGEMENT FOR THE CONSTRUCTION OF WATER INFRASTRUCTURES IN THE PROVINCES OF LUGO AND PONTEVEDRA FINANCED BY FEDER FUNDS

This contract includes works management of six projects spread around both provinces financed with European funds aimed at improving drainage infrastructures of rivers in urban areas. Tasks include protecting the river banks against floods, separation of sewage from river water, specific measures to prevent infiltration of river water into the sewage network and opening channels in areas where the water is currently routed through pipelines. The river banks will also be landscaped to provide recreational and leisure areas.

In Galicia, under the contract of operating of the Meicende dam, Eptisa performs the management of the operating and emergency measures, the auscultation and inspection works, drafting of the daily and monthly operating reports and the annual management reports, management of technical records, implementation of operating standards and emergency plans and consultancy and studies related to dam management.

In the field of **water supply and sanitation infrastructures** and within the framework agreement signed with the Regional Water Company of Madrid Canal de Isabel II Gestión S.A., Eptisa developed three construction designs of sewerage systems in the municipality of Boadilla del Monte.

In Galicia, the company *Acuaes* commissioned Eptisa to draw up the water supply network construction design for Marín in Pontevedra, as part of a plan to renovate the entire water supply network for the *Estuary of Pontevedra* scheduled for completion by the end of 2015.

Also in Galicia Eptisa works in the construction management of the waste water pipe of the Pontepedriña-Silvouta WWTP section of the Sar River to provide the city of Santiago de Compostela with a new sewerage system. We provide technical assistance to the Miño and Sil River Basin Authority for works management of several projects funded by Feder Funds to be executed in the provinces of Lugo and Pontevedra aimed at improving the drainage conditions of the rivers in their urban sections.

In Huelva we carried out mechanical and remote control works on the water flow meters network of the Piedras channel and the Huelva Water Ring.

In Burgos, Eptisa implemented four construction designs with the main objective of improve the waste water collector system of the WWTP of Burgos city. It will collect the current and future waste water located within the scope of the study.

In the **water resource management** field Eptisa provides engineering services to the main public authorities to manage the **Hydrological Plans** of the catchment basins. In 2013 we carry out the monitoring of the Duero River Basin Hydrological Plan which was approved in June 2013 and the implementation of its action program.

In the field of **Flood Risk Prevention** we provided technical assistance for the adaption and development of the National Cartographic System of Flood Prone Areas in the Northern Spanish Hydrographical Region of Cantabria. Throughout the project we have developed hazard and flood risk maps in accordance with the Royal Decree 903/2010 dated 9 July for evaluation and management of flood risks. The initial results are currently in the public consultancy phase in the website of the River Basin Authority.

▼ MONITORING OF THE DUERO RIVER BASIN HYDROLOGICAL PLAN AND TECHNICAL SUPPORT FOR IMPLEMENTATION OF ITS ACTION PROGRAM

The Hydrological Plan of the Spanish part of the Duero River Basin was approved in June 2013 and measurement programs and plans for monitoring the implementation defined. The area of the basin is 78,889 km² and will benefit a population of almost 2,200,000 inhabitants. The work to be performed includes the following: monitoring implementation of the Plan, support for coordination of information with the committee of relevant authorities, coordination of information collection with the board of Water River Basin Authority, provision of information or reports to other agencies and stakeholders, public dissemination about the progress of implementation of the plan, preparation of the submission of monitoring data and special action plans in the event of drought and flood protection plans. Finally, it includes the proposal report for corrective actions, and additional measures to correct deviations in the implementation of the Plan and assessment of the existing gap between the current reality and the objectives.



▲ MECHANICAL AND REMOTE CONTROL WORKS ON THE FLOW METERS NETWORK OF THE PIEDRAS CHANNEL AND THE HUELVA WATER RING

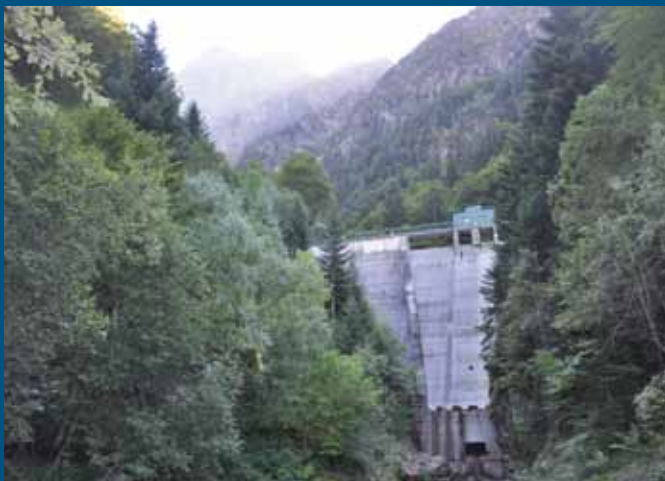
The purpose of these works is the refurbishment of the existing flow meters on the Piedras Channel and the Huelva Water Ring, installation of new flow meters and their integration into the SCADA control system of the infrastructure. Eptisa provides diagnostic, repair and procurement services, installation of the flow meters included in the Piedras water system, installation of the auxiliary system for data transmission and configuration of the new parameters into the remote control operating system.



▲ PROPOSAL FOR CLASSIFICATION OF THE LLADRES, CARDET, MORERA AND MONTCASAU DAMS FOR ENDESA GENERATION

Within the Framework Agreement with Endesa Generación, Eptisa developed the proposals for classification of the Lladres, Cardet, Morera and Montcasau dams, all in the Lleida Pyrenees, on the basis of potential risk.

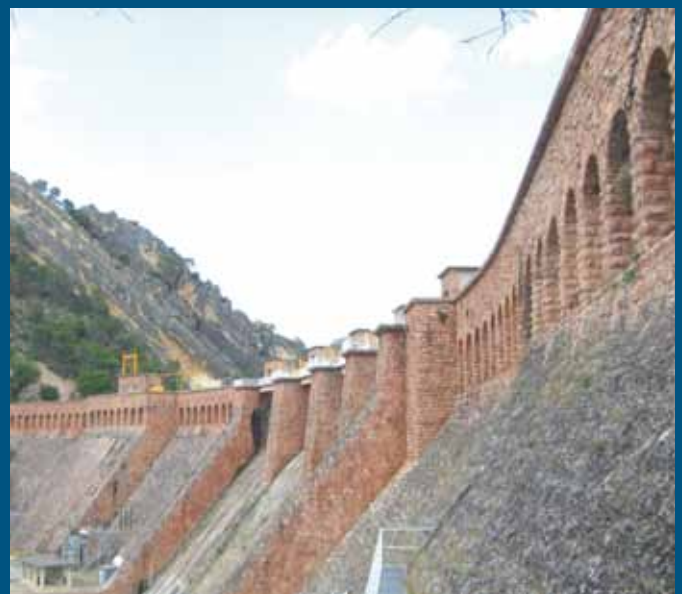
The main tasks were modelling hypothetical breaking of the dams and hydrodynamic study of rupture wave propagation along the associated riverbeds. After the identification of the flood areas, we evaluated the impact of the failure including potential risk to human life, the effect on essential services, property damage and the effects on the environment. HEC-RAS 4.1 and the two-dimensional mathematical model IBER 1.9 software were used for simulation of rupture and flood propagation along the riverbed.



▲ OPERATING STANDARDS AND PROCEDURES OF THE SAN JUAN DE TORÁN, TORÁN PONT DE REI, MONTCASAU, TORT TRULLO AND TORT LAGO DAMS FOR ENDESA GENERATION

Endesa commissioned Eptisa to draw up Operating Standards and Procedures for the San Juan de Torán, Torán Pont de Rei, Montcasau, Tort and Tort Teal dams, all in the province of Lleida. The objective of the Operating Guidelines is to provide comprehensive, accurate and up to date instructions for the correct technical operation, maintenance, conservation and monitoring of each dam. The instructions have been developed for normal operation, flood situation and extraordinary situation operation and the action, communication protocols, media and resources, etc. have been duly defined.

Finally, we defined the conservation work of the civil works, machinery and facilities and the repairs and refurbishment necessary in order to permanently maintain the security levels required in the dam and to ensure operability of the reservoir.



▲ AUTOMATIZATION OF THE AUSCULTATION SYSTEMS OF HYDROELECTRIC POWER STATIONS FOR GAS NATURAL FENOSA

This project includes all necessary works to equip the Edrada, Mao, Bolarque and Canal de Castrejón dams, located in Ourense, Guadalajara and Toledo, respectively, with an automated auscultation system. Edrada and Mao have been equipped by a PLC, which collects signals from the automated auscultation sensors and connects with the SCADA application (Supervisory Control And Data Acquisition) to integrate the data into the IT corporate system of GNF. This application is installed in a PC located at the Regueiro power station, about 8 km from the Mao dam.

In Bolarque two PLCs were installed, one in each river bank, to collect the auscultation sensor signals. They communicate with the Bolarque I station where a display screen was installed and connected to the SCADA software application for integration into GNF's corporate IT system of located in the Bolarque II station.

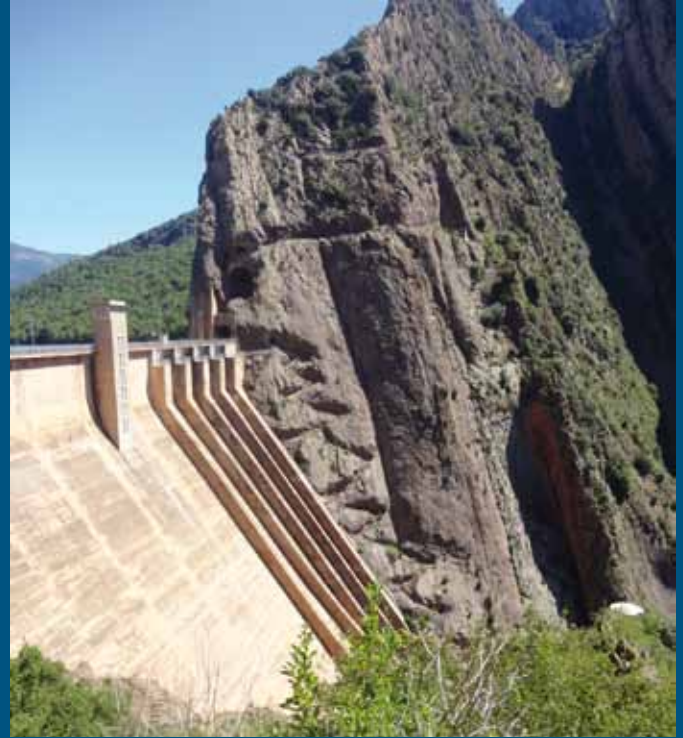
Thirteen water level gages to control the leakages were installed along the 16.6 km of the Castrejón channel that connects the dam with the station. This task included the civil works required to condition and protect the sensors. They are equipped with ultrasonic sensors, powered by solar panels and connected by radio modem at 9600 bit/sec.

They also have three points of concentration that will be used as booster and will be equipped with the wireless connection WiMax, completing the network with two new WiMax equipments installed in the dam and in the water level gauge located close to the loading chamber (automated by Eptisa in 2012). In this way, the wireless connection between the dam and the hydroelectric plant remains completed, which in turn provides an alternative communications network between the PLC's located in the dam and the SCADA application installed by Eptisa in 2012 in the hydroelectric plant and currently connected by VSAT.

▼ PRELIMINARY STUDY AND DESIGN OF THE IZNÁJAR REVERSIBLE HYDROELECTRIC POWER STATION

The project consisted of a study and design of the Iznájar Hydroelectric Power Station as a reversible turbine facility (pump/turbine) using the Iznájar reservoir as the lower reservoir. Eptisa analysed, various configurations of the Iznájar HEPS to determine the capacity, typology and location of the upper reservoir in each case, the location and power output of the Station and the layout of the hydraulic circuits.

The type and configuration most suitable for the hydroelectric station (underground, open air or shaft) and the hydraulic circuit (overhead water pipeline or pipe in pressure) were analysed taking the geotechnical conditions, construction processes, implementation costs, etc. into account.



▲ AUSCULTATION SYSTEMS IN DAMS OF THE EBRO-PYRENEES HYDROELECTRIC PRODUCTION UNIT FOR ENDESA

Eptisa will install auscultation systems for Endesa Generación in a total of 30 dams of the Ebro-Pyrenees hydroelectric production unit, finishing in 2016. The dams of the Alto Pallaresa, Bajo Pallaresa, Alto Ribagorzana, Ebro, Garona, Segre and Ter areas are located in the provinces of Lleida, Zaragoza and Girona and all are currently operative.

All these dams are equipped with auscultation and control systems adapted to the characteristics of each one that enables monitoring the behaviour of the all of them in accordance with the agreed annual schedule. 4,000 manual tracking points (instrumentation and topographic) and more than 800 automated sensors are monitored.

The main activities are: technical consultancy by specialised personnel (instrumentation engineering specialists and surveyors) and provision of all instruments required to perform the tasks with the required accuracy;

maintenance and replacement of all elements that are controlled; geodesies for the control of absolute movements, in magnitude and direction of all prism placed in the faces of the dams and slopes; levelling to control vertical displacements of the different blocks of the dams and slopes; monthly reporting to Endesa. And we carry out the installation and control of Pendulums for the control of normal and tangential deformations in the dam, relative movements between blocks, in the joints; telethermometers for the control of temperatures of concrete, water and environment in relation with stresses and deformations; piezometers for the control of pore pressure and gauges for the filtrations control; rod extensometers for monitoring the behaviour of the concrete-rock union vertically and the rock itself in different depths; triangulation: control of the pillars which forms the monitoring networks in the geodesies; as well as horizontal control of the expansions or contractions of the anchorage of the concrete block on the rocky massif.



▲ IMPLEMENTATION OF A COMMUNICATION SYSTEM FOR THE EMERGENCY PLAN MANAGEMENT OF DAMS ON THE GUADIANA RIVER CATCHMENT AREA

Eptisa provides network design, monitoring and quality control services for the implementation and commissioning of one of the most advanced and secure communications networks in the field of water resource management. The project defines a wide range of possibilities for the efficient operation of dams and complementary facilities and centralised monitoring of the same.



▲ MONITORING AND AUSCULTATION SYSTEMS IN DAMS IN THE GUADIANA RIVER BASIN

The project consists of the repair, rehabilitation and replacement of auscultation devices and monitoring systems in dams in the Guadiana River basin and implementation of various systems to ensure safe operation of the dams such as installation and calibration of equipment to indicate opening of drainage devices and improvement of critical communications systems in the environment of the dams.

Eptisa provides a team of experts in telecommunications, auscultation and monitoring of dams for the diagnosis, repair and installation of electronic equipment for monitoring, control and communication, and integration with the IT systems of the Guadiana River Basin Authority.



◀ DESIGN AND IMPLEMENTATION OF A SYSTEM TO EVALUATE THE EXISTING STRESS CONTIDIONS IN THE YESA DAM IN NAVARRE BY FLAT JACK TEST

In close cooperation with the CEDEX Geotechnical Laboratory we designed and implemented a metering system using the flat jack test to ascertain the current stress condition of the Yesa dam in Navarre. The measurement system based on the flat jack test involved installation of eighty extensometric sensors in four control sections. Each control section was automated using a continuous acquisition system centralised on a control computer that enables the engineer to monitor the entire testing process. The objective of testing each section is to ascertain the stress condition of the old Yesa dam before refurbishing the same.



▲ SEMI-AUTOMATIC AUSCULTATION SYSTEM OF THREE INFRASTRUCTURES OF EMASESA

The project includes drawing up the detailed auscultation system design for the La Minilla and El Gergal dams and the El Carambolo DWTP located in the province of Seville and the installation of 86 new complementary instrumentation sensors and subsequent "semi-automation" of the same using 34 dataloggers.

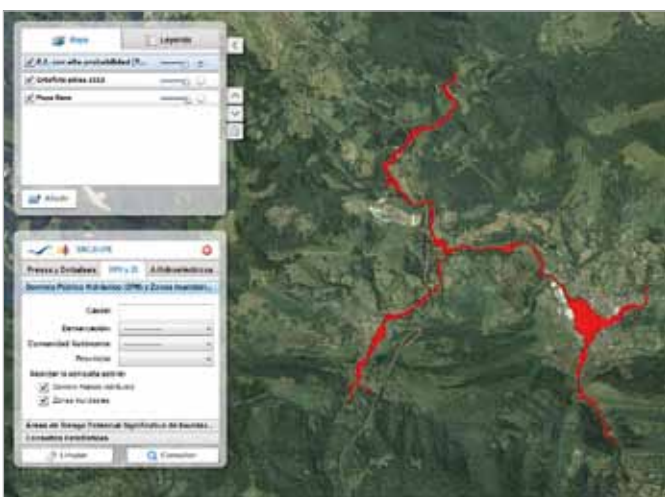
Within this semi-automation, a SCADA (Supervisory Control and Data Acquisition) software developed by Eptisa has been implemented for data acquisition, treatment and management, which allows data enquires via web (SAyTL 6.1). Communication between data loggers and the management program will be done manually by operators equipped with tablets that will download the logged data by wireless connection and subsequently update the database. The advantage of this type of device is that the operators can inspect the safety facilities during the visits to download the data. It also enables future integration of the auscultation system into EMASESA's monitoring and remote control system (as required by the client) since they are fully compatible.

The Minilla Dam (a gravity dam with a rectangular ground plan) currently has movement sensors in the block joints, monitoring of the dynamic response of the structure in the event of seismic movement and seepage monitoring. Three-dimensional potentiometric joint meters and ultrasonic gauges will also be installed as complementary measures.

The following controls were performed on the El Gergal dam (a gravity arch type executed in concrete): monitoring of block joint movement, of horizontal movement by pendulum and of seepage. Potentiometric three-dimensional joint meters, automated coordinometers, vibrating wire piezometers and ultrasonic gauges were installed to update existing instrumentation and automation of the same.

The El Carambolo DWTP is located in the Alcor cornice and is marked by heterogeneous, unstable terrain. This fact together with the existence of a significant aquifer helps create points of instability heavily influenced by rainfall. Critical points within the area of influence of the plant have been monitored since 1989 using inclinometer piping and rod extensometers. Various structures (drainage shaft screens and terracing of the El Carambolo hillside) have been installed to reduce the geotechnical risk. In addition to these measures automated instrumentation will be installed to provide information on the behaviour of the cornice and the structures installed on the same (tanks, buildings, etc.). To do so, automatic monitoring of groundwater levels will be installed on the three drainage screens and the two tanks, and fissures in the buildings of the drinking water treatment plant will be monitored. Seepage monitoring in the screens and the pipeline tunnel to Seville will also be automated.

▼ NATIONAL CARTOGRAPHIC SYSTEM OF FLOOD PRONE AREAS IN THE NORTHERN SPANISH HYDROGRAPHICAL REGION OF CANTABRIA



▼ BALLASTED SETTLING PROJECT FOR INTEGRATED WATER TREATMENT



In Galicia we continue to work on the **groundwater monitoring** network project in the coastal Galicia catchment basins. The work done by Eptisa includes compilation and analysis of the existing information, processing the compiled information and scheduling the works, conducting the campaign for recognition of the points that form the control network, sampling planning, sampling, scheduling analyses, analysis of contaminants, assessing the chemical condition of groundwater and drafting of reports and documentation associated with these tasks.

In 2013 Eptisa continued its activity as an engineering company specialized in installation and construction of **Waste Water Treatment Plants**. We provide service during the full cycle of a treatment facility from the design of the treatment process, detailed engineering construction, equipment and installation to commissioning.

The works for the construction of the Riolobos WWTP in Cáceres were concluded in 2013. The treatment plant of Riolobos in the province of Cáceres ensures treatment of wastewater to meet the parameters required for return to the environment. In this plant Eptisa carried out the detailed design of the entire plant and the turnkey provision of electromechanical equipment. The works to improve the water supply in Plasencia (Cáceres), for which Eptisa did the detailed engineering and the turnkey provision of electromechanical equipment, were also finished.

In 2013 the Bilbao-Bizkaia Water Consortium awarded Eptisa the framework contract for technical assistance services for projects design and works of its DWTPs and WWTPs. This framework agreement is of special importance because these facilities require cutting edge technology.

In Burgos, Eptisa provides specialised engineering services and consultancy to Acuaes in all phases of the tendering process and subsequent execution of the works for the enlargement of the Burgos WWTP.

In the field of **Industrial Environmental Protection** we are providing technical assistance to the works management of the Flix reservoir chemical pollution



▲ ENLARGEMENT OF THE WASTEWATER TREATMENT PLANT OF BURGOS

The Burgos WWTP became operational in February 1984 and since then has experienced several refurbishments and enlargements, providing notable operational improvements. During the last years numerous municipalities and industrial areas adjacent to the city have requested connection to the city's general sanitation network. At the same time the area of industrial land in the Villalonqu jar Industrial Park (already connected) has been increased and with it the demand for immediate occupation to install major industrial activities. This will have an impact on the sewerage infrastructure and specifically on purification of wastewater and the additional flows and loads will have to be absorbed while maintaining the discharge security features defined by the applicable legislation. These circumstances make an enlargement necessary to increase the capacity of the existing treatment plant to address these new needs.

Eptisa provides specialised engineering services and technical assistance to Acuaes in all phases of the tendering process and subsequent execution of the works for the enlargement of the Burgos WWTP: the RFQ for the detailed design and execution of the works, technical assessment of the technical tenders submitted by the bidders for the contract of the works, supervision and support the contract management during the drawing up the detailed design, and works control and supervision and the Occupational Health and Safety plan coordination.

The construction design was developed during the first half of 2013, the works started in early August of the same year and completion is scheduled for December 2015. The main tasks at present are civil works: earthworks have been finished and current work is proceeding with the major civil engineering structures of the plant. At the same time procurement of electromechanical equipment and monitoring of the technical specifications of the same is under way.

The final solution adopted includes an enlargement of the capacity of the WWTP, from current 100,000 m³/d, to 156,504 m³/d while complying with the discharge safeguards required by the currently applicable legislation. This flow rate, taking the expected contaminant concentrations into account, results in a design load of more than one million equivalent inhabitants.

The treatment process adopted includes the Villalonquejar water line which mostly treats industrial water from the Villalonquejar industrial Park; the main collector line that receives the extra flow; the storm water line and tertiary treatment line in which an additional new dual treatment line has been installed to treat rainwater or, in dry weather, provide additional treatment of the wastewater. Finally, the sludge treatment system that conditions the solid residues extracted from the two water lines have been modified and upgraded including an innovative thermal hydrolysis sludge pretreatment prior to anaerobic digestion.

The new facilities include a new combined biological treatment line for the general collector and dual stormwater-tertiary treatment, the required water and sludge pumping systems and a bridge and walkway.



► CONSTRUCTION DESIGN OF THE OUTLET PIPE CONNECTION WITH THE BURGOS WWTP

Eptisa developed four construction designs with the aim of improving the water quality in the collector systems of the Burgos WWTP (the Arroyo de las Fuentes collector, the Arlanzón and Pico river collectors and the Vena river collector), the main objective of which was to collect the output from all present and future wastewater outlets located within the scope of the study.

The Arroyo de las Fuentes collector is the main sewerage line. It starts at the Villagonzalo de Pedernales discharge on the right bank of the Arroyo de las Fuentes stream and ends at the Burgos WWTP enlargement located on the left bank of the Arlanzón River to the south-west of the city. It receives the waste water flow from the villages of Renuncio, Villacienzo and Villalbilla de Burgos, all within the Villalbilla de Burgos municipal district. The works include implementation of five spillways, two flowmeters and a pressure pumping station.

The Arlanzón River collector starts at the Ibeas de Juarros discharge located on the right bank of the Arlanzón River and ends at the Burgos

sewerage network on the left bank of the same river. The works include implementation of twelve spillways, seven flowmeters and a pumping station.

The Vena River collector begins at the Quintanapalla service station located on the right bank of the Vena River and ends on the left bank of the same after connecting to the existing network at Villafria (Burgos). It receives waters from Branches 1 and 2 which collect discharges from the SUR-DI industrial estate. It also receives direct discharge from the municipality of Rubena.

The Ubierna collector originates at Ubierna on the right bank of the Ubierna River and ends at the Burgos network in the Villalondejar industrial estate. The works include implementation of fifteen spillways, six flowmeters and three pumping stations.

clean-up project in Tarragona. This project is an extremely complex decontamination treatment process. The operational phase of dredging and sludge treatment began in March 2013.

In Galicia we are carrying out environmental monitoring and supervision of the Areosa landfill, the environmental complex, the urban waste transfer plants and technical assistance and quality control for execution of the project to refurbish the red mud dam for Alcoa. Eptisa provides supervision and monitoring services of the works and control of the execution procedure and finished product by conducting the relevant tests depending on the type of material and the work unit in accordance with the provisions of the technical specifications for the project.

In soil decontamination we work for Recemsa in the turnkey project for

decontamination of the soils of the industrial materials recycling facility.

In Andalusia we drew up the preliminary design for the deposit of sterile materials from Río Tinto Mine for Emed-Tartessus. Eptisa's work consisted of an exhaustive geological study of the entire

area, analysis of all the materials and terrain making up the sections or dams with static and dynamic stability studies, with the aim of reaching substantiated conclusions as to the practicability and structural stability of the storage methods.

▼ RIOLOBOS WWTP





▲ TECHNICAL ASSISTANCE FOR THE DECONTAMINATION WORKS OF THE FLIX RESERVOIR IN TARRAGONA

The Flix Reservoir, located on the lower reaches of the Ebro River in Tarragona, currently holds several hundred thousand cubic meters of sludge, presumably dumped there by a chemical plant established on the right bank. They consist of chemical compounds mixed with other inert materials. The contaminants fall into three main groups: organochlorines, heavy metals (mainly mercury) and radionuclides. Given the obvious risks of contamination of the waters of the Ebro, the Government has decided to initiate a process consisting of the design, analysis, project development, and selection of alternative measures to correct and prevent or mitigate the transmission of these harmful substances to the receiving environment.

This project is an extremely complex waste treatment process. The dredging and sludge treatment began in March 2013. The solution adopted, named ex-situ, consist in a multi-stage sludge treatment, that includes the dredging of all the sediments, the subsequent treatment of the same and storage of the now inert residues in a controlled, purpose-built landfill.

The works were divided into three phases: preliminary, auxiliary and protection, production and dismantling phase. Total investment amounted to € 165 million financed through the E.U. Cohesion Funds.

The preliminary works, completed in 2012, included as first task enclose the polluted area within a 1.3 km long twin-wall sheet piled cofferdam for the sludge extraction. Within the preliminary works, the joint-venture sealed more than 1 km of river next to the plant with a wall of 1,600 concrete secant piles in order to separate and protect the coast and the right bank of the river. An interceptor of drainage was built to collect the discharge of the chemical-industry. Within the chemical plant four buildings were erected to house the multi-stage treatment process. In the Raco de la Rubilla landfill a controlled class II deposit was built to store the inert residues. Additionally, seven wells were drilled to supply water to the towns downstream in the event of an emergency.

The process consists of dredging and extraction of the sludge using an ecological suction dredge without exposing pollutants to the atmosphere and transport of the materials by pipeline to the treatment plant.

The treatment plant is composed of a screen to remove fines, separation and storage of coarse materials, thickening and drying of fines, treatment of extracted water and specific treatment of radionuclides, selection of fine which require specific treatment, subsequent storage and loading onto the conveyor belt for transport by truck to the landfill. Treatment consists of granulometric classification in settling tanks and press filters. The volatile organochlorides are oxidized with hydrogen peroxide, semivolatile chlorides are treated in a desorption plant in which soil is briefly heated to 320°C. During the gas emissions treatment, any gaseous heavy materials (mercury) are filtered and stored in hoppers. The extracted water is treated with phenolic resin to remove radionuclides and transported to the WWTP for conventional treatment .

In the process, it is vital the pollution controls at the end of each process, as well as the safety measures in handling to avoid the condition to people and the environment. Eptisa and Getinsa are providing technical assistance to the Works Management in both control of execution of the works and enforcement of contractual obligations by the Contractor of the project to eliminate chemical pollution from the Flix reservoir.





▲ PRELIMINARY DESIGN OF THE DEPOSIT OF STERILE MATERIAL FROM RÍO TINTO MINE OF EMED-TARTESSUS

The mine tailings reservoir is divided into 3 sections named “Gossan”, “Cobre” and “Aguzadera” and is located in the Odiel River basin between the municipalities of Minas de Río Tinto to the south, El Campillo and Campofrío to the north and Nerva, in the province of Huelva. This type of open-pit mining produces large amounts of waste products which are obtained by a wet milling process and require large reservoirs for storage. Therefore Cobre and Gossan reservoirs were built on the Rejoncillo stream by damming the flow. As production increased a new facility was created to store the waste in the Barranco de la Aguzadera.

At present EMED Tartessus has announced reserves exceeding 123 Mt, sufficient for at least 10 years operation, which obliges upgrading of the Cobre and Aguzadera facilities. In response to these new needs, Eptisa has drawn up the preliminary design of the inert material storage consisting of upgrading the Cobre and Aguzadero reservoirs to the legal level: with a centrifugal treatment process of the residues in both and the application of high density sludge process to Cobre.

Eptisa’s work consisted of an exhaustive geological study of the entire area, analysis of all the materials and terrain making up the sections or dams with static and dynamic stability studies in order to reach substantiated conclusions as to the practicability and structural stability of the storage methods. Research fieldwork included 19 geotechnical surveys across more than 700 metres and 18 static CPTU-type tests with over 720 samples tested in the laboratory.



▲ TURNKEY PROJECT FOR SOIL DECONTAMINATION OF METALLIC MATERIAL FROM RECEMSA'S INDUSTRIAL FACILITIES

The works consist of the evaluation of the pollution levels, the quantification of contaminated sites, the proposal of treatment options for the affected areas, and the execution works for the decontamination of the facility including classification and management of waste generated in treatment and remediation of the soils.



▲ MONITORING AND ENVIRONMENTAL CONTROL OF THE AREOSA LANDFILL, THE ENVIRONMENTAL COMPLEX AND THE URBAN WASTE TRANSFER PLANTS

The works will include the required environmental controls in the Areosa landfill, in Sogama’s urban waste transfer plants (in Boiro, Cee, Narón, Santa Comba, Santiago de Compostela, Barreiros, Becerreá, Chantada, Lugo, Monforte, Sarria, Viveiro, A Rúa, San Cibrao das Viñas, Porriño, Ribadumia, Roseira, Silleda and Vigo) and partially in the Cerceda Environmental Complex.

Eptisa will undertake inspection of discharged wastewater, monitoring and control of surface water, monitoring and control of groundwater, analysis of leachates, noise control, monitoring and control of air emissions, topographical control and collection of meteorological data.





Energy, Industry and Building

In the **energy** sector we provide engineering services to the main domestic engineering companies including integrated management of construction and refurbishment projects and instrumentation and monitoring of infrastructures and facilities.

We are working on a turnkey project for Endesa in Galicia consisting of works on the Súa Coalfield Park to enhance its environmental efficiency and integrate operation of the same with the As Pontes Thermal Production Unit. This turnkey project includes the engineering and the civil, mechanical and structural, electrical and control works and installation of peripheral systems associated with the conveyor belt.

In Melilla we developed the project for the refurbishment of facilities in Endesa's Diesel Power Station that includes construction of four buildings to house the store, welding, cleaning, mechanical and injection workshops with a total built area of 1,600 m².

In the **nuclear** sector we worked on the dismantling and decommissioning project for the José Cabrera Nuclear Power Plant in Zorita for ENRESA (National Radioactive Waste Company). Throughout 2013 we provided civil

works supervision services for the decommissioning and dismantling project within ENRESA's Execution Service. We performed all the resulting tasks including planning, supervision and control of the works and technical monitoring of the contractors. In 2013 we were awarded the contract to provide support to the technical office, reporting directly to ENRESA, and monitoring and classification of materials for the dismantling and decommissioning project of the José Cabrera Nuclear Power Plant.

Eptisa has taken part from the beginning in the geological studies to determine the site characterization and the area of influence within the framework of the works in Cuenca for construction of the future Villar de Cañas Centralised Temporary Storage (CTS) facility for ENRESA.

In the field of **renewable energies** Eptisa developed solutions for optimisation of facilities and infrastructure in the wind power, photovoltaic and solar thermal sectors. We also expanded our energy consultancy services to provide advice to public authorities and private companies on the development of roadmaps, master plans and specific studies of the energy mix for the development of the renewable energy sector in various countries and markets.



▲ TURNKEY PROJECT OF ADAPTATION WORKS IN THE SÁA COALFIELD PARK FOR ENDESA

Eptisa is engaged on a turnkey project for ENDESA in Galicia consisting of works on the Súa Coalfield Park to enhance its environmental efficiency and integrate operation of the same with the As Pontes Thermal Production Unit after the end of lignite extraction from the mine. This project will enable transport and storage of coal that the company imports through its port terminal in Ferrol bound for the As Pontes power plant in the province of La Coruña.

This turnkey project includes the engineering and the civil, mechanical, structural, electrical and control works, as well as the installation of peripheral systems associated with the conveyor belt. Several local businesses have been subcontracted to execute the work units.

The Súa Park was part of the As Pontes mining district and lignite mine was active here until December 2007. Most of the area of the mining excavation was refurbished to form a lake and large tracts of forest and grassland, although some areas such as this coalfield were also reserved for industrial uses.

The improvements are intended to ensure that the thermal power plant is provided with a strategic fuel reserve and to implement an alternative system to the current rotary equipment for unloading the coal trucks. The facility will

also be upgraded to meet the most demanding safety and environmental protection standards. The coalfield also will be integrated with the thermal power station's systems. Its storage capacity is 350,000 tonnes.

With respect to environmental conditions, the installation of a water mist equipment in the galleries will ensure suppression of dust. Dust will also be controlled by means of a blower, extraction fan and a network of conduits and filters. It will also be fitted with an industrial, fire protection and emergency water supply system. Modernisation of the mineral handling and transport equipment is an outstanding feature of the mechanical aspects, and the civil works include earthworks, embankments, channelling and a new electrical building among other improvements.

As Pontes is the largest producer of electricity in Spain. Endesa has a 1,400-megawatt coal-fired power plant, an 870-megawatt combined cycle natural gas power plant and two hydroelectric plants totalling 62.82 megawatts in this location. The fuel for the first facility is sub-bituminous coal imported through the port terminal that the company owns in Ferrol. The natural gas for the combined cycle power plant is also imported through Ferrol and arrives at As Pontes by pipeline from the regasification plant owned by Reganosa.

► AUSCULTATION SYSTEM FOR ENERGY COLLECTORS IN SOLAR THERMAL PLANTS

As part of the ISIP programme in the solar thermal sector Eptisa signed a strategic alliance with TERI (The Energy and Resources Institute of India) for a R&D project to design an auscultation system for solar energy collectors in solar thermal plants.

The overall objective of the project is to design and develop an auscultation and diagnosis system for energy collectors in solar thermal power plants, as well as the associated evaluation. This system measures geometric parameters and the efficiency of energy collection in the solar field within solar thermal power plants. To do so, the relative positioning between the mirrors and the heat transfer tubes will be measured automatically on the structures in the solar field so that the percentage of radiation reflected onto the tubes from the mirrors can be evaluated. This will also enable identification of the devices that fail to comply with the design conditions.



In this project Eptisa is responsible for designing and developing all components of instrumentation, control equipment, operation and handling system (hardware, software and firmware) as well as the testing procedures and the methods including evaluation algorithms integrated with the data evaluation system.

► SUPERVISION OF CIVIL WORKS AND TECHNICAL OFFICE SUPPORT FOR DISMANTLING AND DECOMMISSIONING OF THE JOSÉ CABRERA NUCLEAR POWER PLANT

The José Cabrera Nuclear Power Plant is located in the town of Almonacid de Zorita (Guadalajara) and was commissioned in 1968 with an electrical output of 160 MWe. Enresa began dismantling this nuclear power plant in February 2010.

Supervision of civil works for dismantling and decommissioning of the José Cabrera Nuclear Power Plant.

Eptisa has been providing civil works supervision services for this project since 2010. We perform all the resulting tasks within Enresa's Execution Service including planning, supervision and control of the works, as well as technical monitoring of the contractors. The most noteworthy jobs were: dismantling the cooling towers and main and auxiliary transformers, dismantling the diesel building and turbine building, refurbishment of the old turbine building as the new auxiliary dismantling building and segmentation and packaging of the internal components of the reactor. Eptisa is currently engaged on supervising segmentation and packaging the reactor vessel.

Support to the technical office for the dismantling and decommissioning project of the José Cabrera Nuclear Power Plant.

Reporting directly to ENRESA under the Technical Office Service, Eptisa develops the fulfilment and/or consultancy for the technical/administrative tasks involved in its category, among which the following are worth special mention: Issuance of reports (monthly project activity reports, monthly monitoring reports and annual project activity report of the decommissioning and closure of the José Cabrera Nuclear Power Plant); cost control (control of accepted work unit certificates) and planning (updating the general construction schedule, issuance of specific schedules, monitoring of contractors' detailed schedules). With respect to the technical documentation



our tasks included control of technical documentation, procedures, reports, etc. issued by contractors, coordination of kick-off meetings and monthly monitoring of the contractors, processing minutes/notes of meetings, control of submission of prior documentation and support for contractors setting up on the worksite, monitoring of work permit applications (TAS), updating the DMS (Decommissioning Management System) and updating the PMS (Project Management System).

Material control and classification service.

Eptisa joined this department under the direct supervision of ENRESA in August 2013. The objectives of this service include implementation and/or consultancy of the technical and administrative tasks involved including the following: Issuance of reports (monthly project activity reports, monthly monitoring reports and annual project activity report of the decommissioning and closure of the José Cabrera Nuclear Power Plant); technical documentation (control of technical documentation, procedures, reports, etc.), coordination of kick-off meetings and monthly monitoring, processing minutes/notes of meetings, updating the DMS (Decommissioning Management System) and updating the PMS (Project Management System).

► SPECIFIC SMS STUDY FOR CENTRALISED TEMPORARY STORAGE IN VILLAR DE CAÑAS IN CUENCA

Eptisa took part from the beginning in the geological studies to determine the geological features of the site and the area of influence within the framework of the works in Cuenca for construction of the future Villar de Cañas Centralised Temporary Storage (CTS) facility for ENRESA (National Radioactive Waste Company).

The preliminary geological studies were performed by the Eptisa-Inypsa Consortium and consisted mainly of obtaining the geological, geomorphologic and neotectonic information required to ascertain the features of the materials of both the surface and subsoil of the site and its surroundings. This information was used to define the parameters related to the suitability and stability of the site and to support technical data obtained from other specific projects required for a safety assessment of the facility.

The works carried out included synthesis of regional geological-structural mapping (320 and 160 km radius) at scales of 1:200,000 and 1:50,000, geological and structural mapping (radius of 40 km) at 1:50,000 scale, geological and geomorphologic of the site (radius of 8 km) at 1:25,000, geological and geophysical mapping of outcrops (radius of 1 km) at a scale of 1:1.00 and detail cuttings and cores.



Eptisa is currently conducting the specific study of seismic models and sources in the surroundings of the Villar de Cañas CTS site. The main objective is to identify and characterise potential seismic sources in the vicinity of the site. To do so, it is necessary to identify the possible structures in the study area and define, date, and study the seismic implications of the same.

The study involves at least the following research: 1,000 m of specific geophysical tests of recent deposits, 2,500 m of trenches 3 m in depth, probes, petrographic tests and dating probes.

Thus the contracted works include all laboratory interpretation tasks and field studies required to identify structures that may influence the stability of the site itself, and proper identification and quantification of the effects of these results on the stability of the nuclear storage facility.



◀ PREVENTIVE MEASURE SYSTEMS OF PATHOLOGIES IN STATIC COMPONENTS OF WIND TURBINES

In recent years Eptisa has developed a system that enables control the behaviour of the static elements (foundations, ferrules and towers) of wind turbines from the design to the operation and maintenance phase.

These are preventive measurements that enable the wind farm operator to anticipate repairs before damage to the foundations causes technical shut-down of the machine with the consequent loss of earnings and, in many cases, an increase in repair costs.

The activities that Eptisa carries out are a mobile dynamic test unit for these preventive measurements and monitoring and automation through SAYTI_{Dynamic}. As a general rule, preventive tests can identify the current state of the static structures of the wind turbines so that maintenance measures can be planned ahead. In those cases in which measurements are obtained during a preventive campaign, a scheduled inspection or during routine maintenance reveal damage to structural elements, it may be advisable to implement a permanent monitoring system of the pathology detected by empirical damage control.

The main tool is the SAYTI_{Dynamic} software, a preventive system for intensive, continuous monitoring of conditions in wind turbines using continuous data acquisition equipment and a SCADA web for its display, management and alarms.



▲ ENVIRONMENTAL, ENERGY AND ECONOMIC ASSESSMENT OF ENERGY EFFICIENCY BY USING FOREST BIOMASS CARBONIZATION IN BATCH PROCESSES

The main objective of the project is to analyse the sector related to obtaining of charcoal from forest biomass from the point of view of the environmental impact on air quality, its economic viability and efficiency of the carbonization process.

The services provided by Eptisa included an air pollutant metering campaign in the three selected facilities, monitoring of key process parameters, laboratory analysis of the forest biomass used and the charcoal obtained, modelling of air pollutant dispersion in the facilities studied and determination of the energy efficiency of the carbonization processes under study.

Project results are published on the website of Altercexa, a European project in which mainly participate the public organizations under the Government of Extremadura and Portugal, whose main objective is to encourage the production of energy from alternative sources in the regions of Central, Alentejo and Extremadura as a strategy to combat climate change.



▲ REFURBISHMENT OF FACILITIES IN THE MELILLA DIESEL POWER PLANT (ENDESA)

The scope of the refurbishment includes the construction of four auxiliary buildings to house the warehouse, the welding workshop, mechanical workshop, warehouse for hazardous products and the associated urban development. Eptisa provides engineering services for the development of the detailed design and compilation of the as-built documentation.

In the field of wind energy, in recent years Eptisa has developed a system that enables control the behaviour of the static elements (foundations, ferrules and towers) of wind turbines from the design to the operation and maintenance phase. The main tool is the **SAyTI_{dynamic}** software, a preventive system for intensive and continuous monitoring of conditions in wind turbines using continuous data acquisition equipment and a SCADA web for its display, management and alarms.

As part of the ISIP programme in the solar thermal sector Eptisa signed a strategic alliance with TERI (The Energy and Resources Institute of India) for a R&D project to design an auscultation system of the energy collectors in solar thermal power plants. The overall objective of the project is to design and develop an auscultation and diagnosis system for energy receiving elements in solar thermal power plants and the associated evaluation procedures.

Altercexa is a European project involving mainly government agencies of Extremadura and Portugal the main aim of which is to foster the production of renewable energy in the Central, Alentejo and Extremadura regions as a strategy to combat climate change. Within the framework of this programme, Eptisa carried out an environmental, energy efficiency and economic assessment of the energy by using forest biomass carbonization in batch processes. The results have been published on the project website.

In the **industrial** sector we continue working on engineering and architectural projects, especially in the **aeronautical** and **automotive** industries. We drew up the detailed design, carry out the project management and supervision of the works



▲ EXTENSION OF THE WELDING BUILDING AT THE RENAULT PLANT IN PALENCIA

The works consist of project development and construction of the civil works and facilities of the 6,500 m² extension of the current welding building at the Renault assembly plant in Palencia. Eptisa provides engineering services for the development of the detailed design, project management and supervision of construction works and compilation of the as-built documentation.

and compiled the as-built documentation for the extension of the welding building at the Renault assembly plant in Palencia.

We provided engineering services for urban development for the extension of the Airbus plant in Illescas, Toledo. And for PSA-Citroën we drew up the detailed design for the south access to the Balaídos industrial park in Vigo, Galicia.

In the **agribusiness** sector, the Mahou-San Miguel Group entrusted us with the feasibility study for extension of the bottling plant and construction of a new warehouse for the mineral water Aguas de Solan de Cabras.

In 2013 Eptisa adapted the services it provides to the **construction** industry to the domestic market needs, adapting our engineering and architecture services to the integrated management of construction and refurbishment projects, including

drawing up the project, project management, and even the works execution.

In the city of San Sebastian we are providing integrated management of the construction project of the Cultural Centre in the old Tabacalera building for the International Contemporary Culture Centre. The centre is expected to open in 2015.

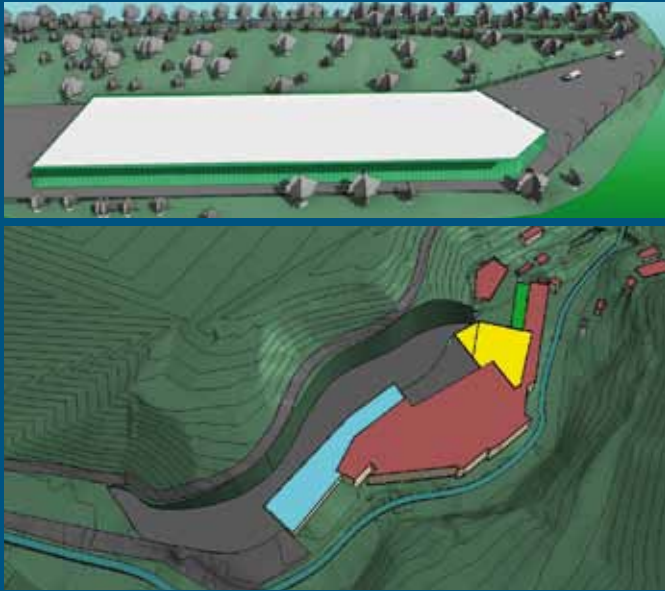
In Madrid we also work in the integrated project management for the reform and construction of a new classroom building for the British Council. Eptisa is responsible for the supervision of the basic and detailed design for the new building designed by the architectural studio RFA, for the management, coordination and control of the construction of works, for the management of design, deadlines and cost, as well as managing the tendering and contracting and quality control.



◀ REORGANIZATION OF LAND PARCELS FOR THE EXTENSION OF THE AIRBUS PLANT IN ILLESCAS, TOLEDO

The scope of the modification promoted by AIRBUS on behalf of Illescas City Council is located in area A1, of the 7B sector of the municipality of Illescas. This modification of the Municipal Management Plan (MMP) has three main purposes: to reorder the parks, urban furnishings and roads existing in the zone to be amended; to reclassify certain industrial processes that the current urban planning assigns to the wrong category and to create an industrial uses plot that can link the two AIRBUS plants currently separated by a roadway the uses of which the amendment aims to change.

The services provided by Eptisa include drafting the modifications to the MMP, the land subdivision design, the urban development design and project management of the works.



▲ FEASIBILITY STUDY FOR EXTENSION OF THE BOTTLING PLANT AND CONSTRUCTION OF A NEW WAREHOUSE FOR AGUAS DE SOLAN DE CABRAS, A MEMBER OF THE MAHOU-SAN MIGUEL GROUP

This project includes drawing up the Feasibility Study for extension of the existing plant including construction of a logistics warehouse and drafting of all the technical studies needed to request the required permits from the public authorities.

Eptisa has drawn up the Feasibility Study including the hydrological and flood-proneness studies, environmental impact assessments and feasibility study of supply connections and services.



▲ INTEGRATED WORKS SUPERVISION AND TECHNICAL ARCHITECTURE PROJECT MANAGEMENT FOR THE ILLA GUINARDÓ PROJECT IN BARCELONA

This project includes the construction of a primary healthcare centre, a day centre, a home for the elderly, a nursery, parking facilities, a municipal market, a retail area and 44 dwellings, among others, in addition to urban development, all in 25,922 m² area.

The activities that Eptisa carries out integrated into the Works Supervision and Technical Architecture Project Management, are technical assistance to the owner during the phases of drawing up the project, review of the detailed design, construction permits and the contractual documentation.

We also provide technical assistance to the owner during procurement phase, carrying out the supervision and control of the tender documentation, review of tenders, opening of bids and drafting of the evaluation report, as well as review of contracts and technical assistance to the owner during the works execution phase including coordination between all the actors involved in the project: technical management, construction company, watchdog agencies, utility companies and other interested parties.



▲ DETAILED DESIGN FOR THE SOUTH ACCESS TO THE BALAIOS INDUSTRIAL PARK FOR PSA-CITROËN

The main access for heavy traffic to the PSA-Citroën plant in Vigo is through the San Andrés gateway located to the north-west of the plant. This currently forces all heavy traffic bound for the factory pass through the city. Moving the gateway to the southern boundary of the factory would enable entry of heavy vehicles from the VG-20 bypass, thus freeing the city of most of the heavy goods traffic.

The design includes the access roads to the plant, the detailed design for the covered gateway as well as the foundations of the truck weighbridge. A single road starting at the VG-20 roundabouts with four lanes is designed, three incoming and one exit lane and each one 4 m to 4.5 m-wide. Later these lanes will be reduced to three, two incoming and one exit, with the same profile after passing access control.

The covered gateway will be built on land to the south of the site, specifically at the entrance to the grounds. It is designed to protect the access roads and carriers' reception zone. The dimensions of the covered gateway are 29.6 x 24.45 with a height of 7.9 m and 6.40 m structure gauge. The area covered by the covered gateway has all the required services in common with the other buildings in the plant. The foundation for the covered gateway is deep pile caps on a single 450-cm diameter pile.



▲ INTEGRATED PROJECT MANAGEMENT FOR REFORM AND CONSTRUCTION OF NEW CLASSROOM BUILDING IN GENERAL MARTÍNEZ CAMPOS STREET, MADRID

The British Council teaching center has awarded Eptisa the contract for integrated management of construction of the new classroom building for adult education located in the street General Martínez Campos 31 in Madrid. Eptisa, as Project Manager, also participated in the first phase of the project which involved the demolition of the old building from the '50s, conservation of the nineteenth century palace located in the interior of the same urban plot and accessible only through the arched entrance of the palace itself.

Eptisa is responsible for the basic and detailed design for the new building designed by the architectural studio RFA and for the management, coordination and control of the construction works, and for the management of design, deadlines and cost, as well as managing the tendering and contracting and quality control.

Throughout 2013 we worked on major projects to adapt and remodel certain **urban areas** in Barcelona.

We are providing integrated works supervision and technical architecture project management services for the Illa Guinardó Project. This project includes the construction of a primary healthcare centre, a day centre, a home for the elderly, a nursery, parking facilities, a municipal market, a retail area and 44 dwellings, among others, in addition to urban development, all in 25,922 m² area.

Eptisa is providing technical assistance services to the public company Barcelona de Infraestructuras Municipales S.A. (BIMSA) under two contracts, each for a term of two years. BIMSA has an infrastructure and facilities investment forecast of around € 130 M per annum in Barcelona over the next few years.

We also perform works management for the Pei de la Marina urban development project. The project consists of urbanization works located in the Customs Area/ Zona Franca of the Sants-Montjuic Dis-

trict in Barcelona bounded by the streets of Motores, Paseo de la Zona Franca and Ulldecona. The total area is approximately 18,248 m².

Finally, with respect to **shopping centres**, Sonae has once again entrusted to Eptisa the implementation of its new brand image for its flagship stores such as the facility in Alcorcón, where the multinational company has its headquarters in Spain, or the Marineda, the most important of the new openings in Galicia located in the Marineda Plaza shopping mall.



▲ TECHNICAL ASSISTANCE TO BARCELONA DE INFRAESTRUCTURAS MUNICIPALES S.A. (BIMSA)

Eptisa is providing technical assistance services to the public corporation Barcelona de Infraestructuras Municipales S.A. (BIMSA) under two contracts, each for a term of two years. BIMSA has an infrastructure and facilities investment forecast of around € 130 M per annum in Barcelona over the next few years.

Under the first contract Eptisa performs various works for BIMSA's Infrastructure Department such as monitoring deadlines, financial and quality control of the works carried out in the city or providing support for site visits. Eptisa also manages the relations between the construction company, works management, services companies and utility companies such as BCASA, Parcs i Jardins de Barcelona, lighting and other urban utilities. Eptisa was also responsible for updating and introducing all representative data about the works in the GESTBIMSA database.

In the second contract, Eptisa provides support to the Infrastructure and Technology Department for the review and correction of the technical tenders and projects under the execution phase, adaptation of the projects according to the regulations currently in force and management of the energy efficiency certificate of public facilities. We also monitored quality control tests of the facilities during construction and management and coordination of all documentation, among other activities.



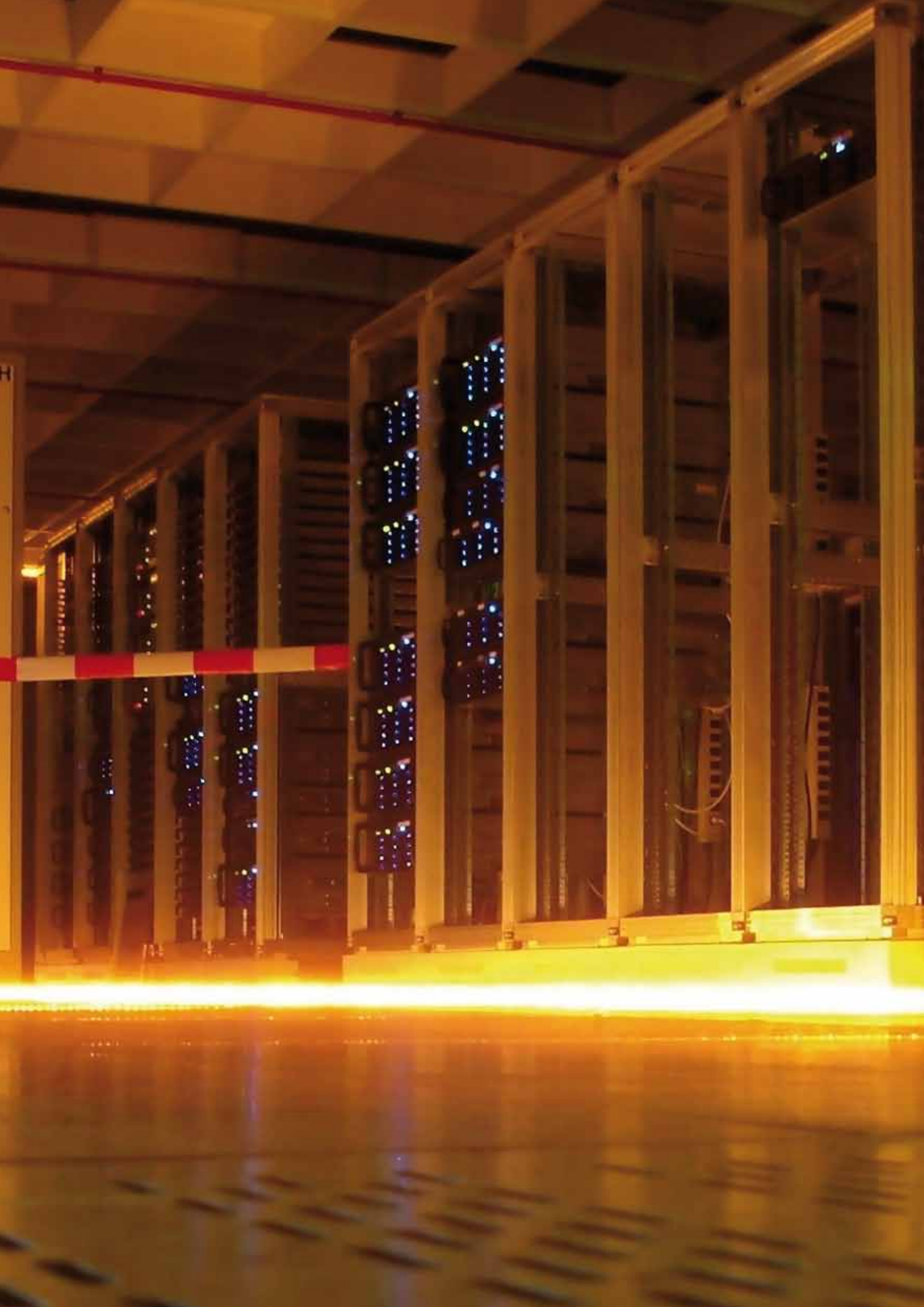
▲ WORKS MANAGEMENT FOR THE PEI DE LA MARINA URBAN DEVELOPMENT PROJECT IN BARCELONA

The project consists of infrastructure works located in the Customs Area/ Zona Franca of the Sants-Montjuic District in Barcelona bounded by the streets of Motores, Paseo de la Zona Franca and Ulldecona. The total area is approximately 18,248 m². The main elements of the works are the sewerage and telecommunications networks, the water, gas and power grid; as well as the DHC: district heating and cooling network, public lighting, traffic lights and signage.

The sustainable drainage system is a storm water management system that enables recharging of the deep aquifer instead of flowing to the general sewerage system. These waters collected from the roofs of buildings and pavement are conveyed through large natural filtering beds (through a gravel-based filtering system) to the lower drainage level. In those cases in which the flowing water fails to reach the lower drainage level through the filtering beds, it conveyed to the drainage system by a control system. Overflows connected to the general drainage system are provided in all the beds in case of malfunction or breakdown of the filtering system. 83% of all rainfall in the entire area is managed with this system.

Street furnishings, landscaping and irrigation are included in the site development project as is rehabilitation of an existing chimney, a 30 m-high structure made entirely of solid brick with circular section and inside diameter of approximately 1.1 metres.

The works entrusted to Eptisa consist of works management through the Works Manager, Assistant Works Manager and an affected services engineer.





Information Technology

In 2013 in Eptisa we focused on diversifying products and services to meet the needs of the new generation, as well as to develop specialised, vertically integrated solutions for the water, transport infrastructure and logistics sectors. The trend has led to the development of new technologies for mobile devices, cloud computing software and social networks. Digital content and software as a service (SaaS) are the client's opportunity to access to information and services in a simple, efficient and economical manner.

Internationalisation of our business activity was consolidated by participating in projects in India, Georgia, Kyrgyzstan, Peru and Costa Rica.

Geographic information systems

Esri Spain, working towards its main objective of fostering and disseminating the use of GIS technology in society as a whole, presented the WebGIS platform, a Cloud solution based on the ArcGIS platform. It opens up possibilities for information sharing and creation of collaborative environments both within inside and outside of the organization. Thus cloud computing has made it possible to develop and access maps using various types of devices and provides access to maps and GIS

applications for new market sectors such as SMEs, developers and start-ups.

With an attendance of 2,400 people, the **Esri Spain Conference** held on 3 and 4 October was the major GIS event held in Spain in 2013. This year the more than 50 speakers focused on two major innovations: first, the potential of the geospatial component for Location Analytics which enables the management of big data. And secondly, the use of ArcGIS platform through WebGIS.



▼ ESRI SPAIN CONFERENCE

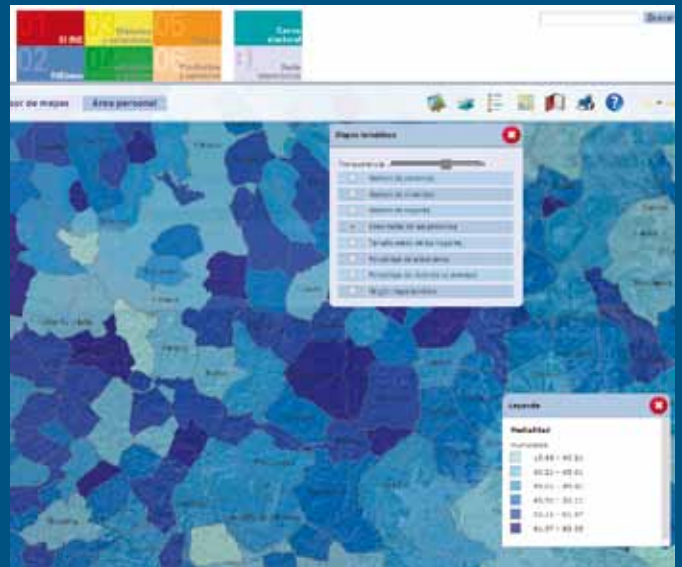




▲ THE REGIONAL GOVERNMENT OF GALICIA SIGNS AN AGREEMENT WITH ESRI FOR THE DEVELOPMENT OF A CORPORATE PORTAL

The Xunta de Galicia signed an agreement with Esri Spain to make unlimited use of its technology for three years. The aim is to create a system to centralise all the information in the databases of the various Ministries to make a single data library accessible to all professionals. This will not only involve cost savings but will also enhance the efficiency of decision-making process. The Director of the Xunta, Mari Mar Pereira, noted in the 2013 Esri Spain Conference the intention of position Galicia as a technologically advanced and innovative region to drive such a complex process of transformation. At the project launch participated the main actors, including representatives of the Regional Study Institute and the Agency for Technological Modernisation of Galicia (Amtega).

The data library of this corporate GIS compiles a wide variety of geographic and alphanumeric information of Galicia: forest fire control, closed fishing areas, socio-demographic population data and ship tracking, and combines this logged data with real-time data. This is a key step forward for the efficacy of the system and the decision-making process.



▲ THE SPANISH NATIONAL STATISTICS INSTITUTE COMBINES INTERACTIVE MAPS AND BIG DATA ANALYTICS TO CONSULT THE CENSUS BY GEOGRAPHICAL AREA

The National Statistics Institute (INE) of Spain has introduced interactive maps to consult the census by population centres for the first time. Until now this information was only available on alphanumeric tables, but now the data is loaded into a Geographic Information System which that enables display all census information on maps that incorporate and process these data layers.

This project represents the biggest statistical GIS operation by INE over the last ten years and enables custom data treatment by town, neighbourhood or even by housing development.



▲ BAJO BIDASOA SMARTLAND CITY PROJECT

The project developed for the Bajo Bidasoa region enables the local authorities to monitor incidents with the help of citizens who have a specific smartphone app to compile and transmit text and images relating to any incident occurring in the street. Thus the municipal services can plan and implement suitable measures of assistance or prevention.

Another interesting feature of the system is its ability to obtain real-time data on the performance and consumption of lampposts or the intelligent management of the water supply network through the installation of 32,000 sensors throughout the entire system. This technological infrastructure enables detection of faults in the network and monitors water consumption in relation to varying weather conditions, thus making consumption forecasts possible.

Likewise, the solution provides information on the disposal of municipal solid waste by placing RFID tags on garbage bags by volunteers, or controls vehicle parking in the busiest square in Irun. If a vehicle parks improperly, the driver is monitored by a camera connected by WiMAX technology and is alerted to the fact by loudspeaker.



▲ GIS PROJECT FOR THE MANAGEMENT OF THE MOLINA DE SEGURA WATER SUPPLY AND SANITATION NETWORK

The public corporation Servicios Comunitarios de Molina, S.A. (SERCOMOSA) entrusted Eptisa with implementation of the NILO GIS solution to improve management of the water network in the town of Molina de Segura. The main objective of the first phase was modelling the water supply and sewerage network data to managing the asset inventory, classify the items and load the new network data. On the basis of the data model, Eptisa has implemented the network editing tools to facilitate automatic updating of the data.

In subsequent phases, a Geographic Website viewer for query will be developed to enable the entire organisation to navigate the maps, display them, make queries and search network items, as well as analyse events such as outages, areas affected by works, etc., all without requiring special GIS expertise.

Esri Spain launched **MarketMap**, a solution which includes data and GIS tools to analyze, planning and growth estimation needs of companies on the Spanish market. This SaaS solution enables large retail and logistic companies to exploit the functionality of Location Analytics in the routine processes of marketing tasks, operations and planning.

Within the framework of the strategy to update and improve the content that Esri Spain provides for its clients, the image service of MAPABase project was updated in 2013 for 60% of the territory. It was also developed a new symbology, more in line with the cartographic publication tendencies on Internet and with the map symbology used by Esri Inc.

In 2013 the Esri Spain **training** services conducted a new edition of the GIS Master. Students acquire the knowledge required to become experts in GIS technology, and this facilitates their entry into both the domestic and international labour markets. In addition, Esri Spain and San Antonio Catholic University of Murcia (UCAM) signed a collaboration agreement to jointly develop two new graduate programmes: the GIS Online Master with ArcGIS and the Master in Geographic Information Systems with ArcGIS technology. These courses represent a further commitment by Esri Spain to continue training future professionals to meet a real demand of technical experts in Geographic Information Systems.

The implementation of Geographic Information Systems in Spain was the focal point of interest to a group of experts from the United Arab Emirates. The delegation saw the implementation of Geographic Information Systems of Esri Spain's clients and partners such as the Municipal Transport Company of Madrid, ADIF (the national railways authority), the Regional Government of Andalusia and the City Councils of Madrid and Seville. Besides, they could know the



▲ ESRI SPAIN CONFERENCE

innovative solutions that Esri and Nielsen are developing in the field of Location Analytics and the operating system that enables provision of optimum service to the emergency services of Madrid.

In the **public sector** we worked on maintenance of existing applications and projects during 2013. Corporate agreements that provide access to software and services at a fixed price help to foster client loyalty and maintain existing applications updated. In the past year we have signed several ELA (Enterprise License Agreement) that provide organisations with unlimited access to technology, most notably the agreements with the Regional Government of Galicia and the regional water company Canal de Isabel II in Madrid.

Thanks to the ELA agreement, Canal de Isabel II will have access to Esri technology and services which will enable it to continue developing and innovating its GIS system, which was created in 1992 and has been based on Esri technology

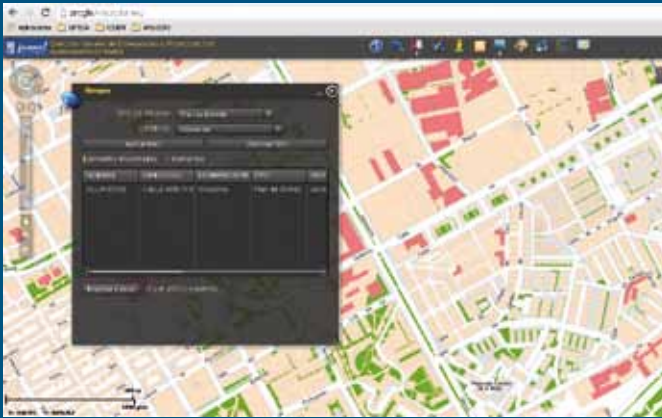
since 2000. The Canal is always seeking continuous improvement in its management systems in which the GIS is the essential tool to achieve the goal of providing high quality management and top class service to their clients. With over 20 years experience in GIS, the Canal is a benchmark in the use and application of this technology in the water sector at European level.

In the **emergency and public safety sector** Eptisa performs preventive, corrective maintenance of the geographic information systems for the Madrid Integrated Security and Emergency Centre (CISEM), the agency that coordinates the activities of the Fire Department, Municipal Police and SAMUR (the paramedical service) in cases of public alert.

In the **logistics** sector we worked on preventive and corrective maintenance of the corporate geographic information system for the Spanish Post Company "Correos".



◀ VISIT OF THE UNITED ARAB EMIRATES DELEGATION TO GIS PROJECTS IN SPAIN



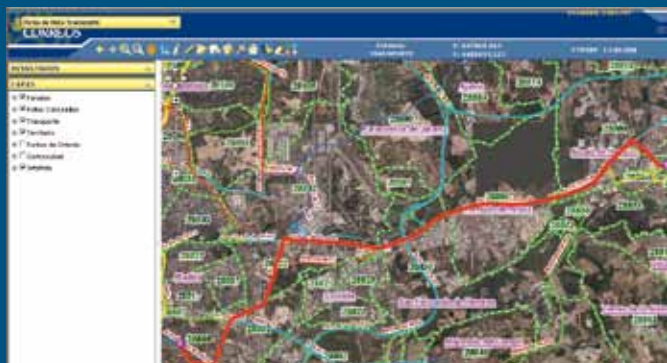
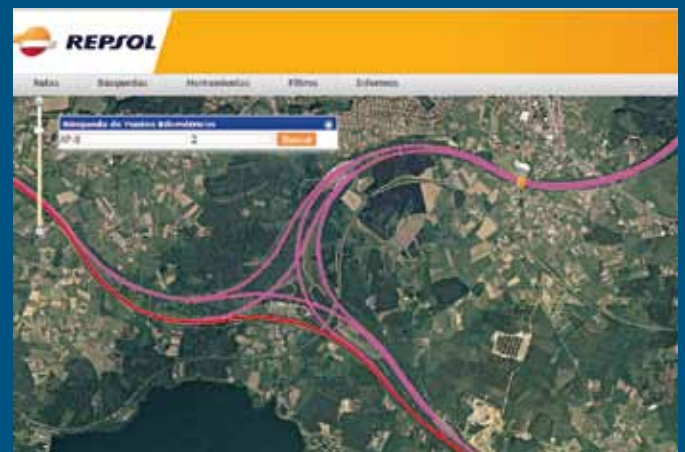
▲ MAINTENANCE OF GEOGRAPHIC INFORMATION SYSTEMS ASSOCIATED WITH SAFETY AND EMERGENCY MANAGEMENT OF THE CITY OF MADRID

Eptisa performs preventive, corrective maintenance of the geographic information systems for the Madrid Integrated Security and Emergency Centre (CISEM), the agency that coordinates the activities of the Fire Department, Municipal Police and SAMUR (the paramedical service) in cases of public alert.

The CISEM has several geographic information systems among which the application known as District Plans Viewer is especially noteworthy. It enables to display all information related to emergency management and the prevention plans associated with each districts of Madrid. This system provides the local officers with all the necessary information in an emergency

situation through a comprehensive resource inventory including, besides its own district plans, evacuation routes, ongoing interventions, police units, Samur bases, fire stations, hospitals, fire hydrants, etc.

Furthermore the system allows users to search and display the inventory of risks associated with buildings and road infrastructures, interventions in real time that are taking place in the city and to display the position of all ambulances and fire-fighting vehicle. The location of any other vehicles associated with the intervention can also be displayed on screen.



▲ MIGRATION AND MAINTENANCE OF REPSOL'S GIS APPLICATIONS

This project aims to migrate Repsol's GIS applications developed on a propriety platform to the new corporate platform based on Esri's ArcGIS technology and its subsequent maintenance. The business areas affected include Exploration and Production, Logistics, Service Stations and Heritage. Eptisa provides needs detection and analysis, design, construction and implementation of the GIS applications to migrate to the new platform, as well as installation of the applications themselves and subsequent maintenance.

▲ MAINTENANCE OF THE CORPORATE GEOGRAPHIC INFORMATION SYSTEM FOR THE SPANISH POST OFFICE COMPANY "CORREOS"

The GIS is the only repository of the Post Office's georeferenced data and serves as an analysis tool for the location of offices, distribution centres and the concentration of services in both rural and urban districts. It also helps decision-making with respect to the design and analysis of routes of all kinds (delivery on foot or by vehicle, collection from post boxes, transport, etc.). It also addresses and solves the displaying and management needs about telecommunications infrastructure information of Correos Telecom.

To facilitate and accelerate the migration to the new platform, Eptisa designed a base-level viewer with the following reusable functions in the applications to be migrated: Basic navigation and identification tools; route calculation with different optimisation criteria taking the restriction that apply to dangerous goods into account and that provide the option of adding stops or editing intermediate waypoints by selection of geographic features or by insertion of points on the map. It can be used to locate addresses, municipalities and provinces and to consult corporate geographic information on service stations, factories, warehouses, major clients, transfer clients, etc. Specific searches by geographic coordinates, by road and kilometric point and tagging of features by the various alphanumeric attributes are also available.

In the **private** sector we worked in the migration and maintenance project for Repsol's GIS applications. This project aims to migrate the GIS applications developed on a propriety platform to the new corporate platform based on Esri's ArcGIS technology and its subsequent maintenance.

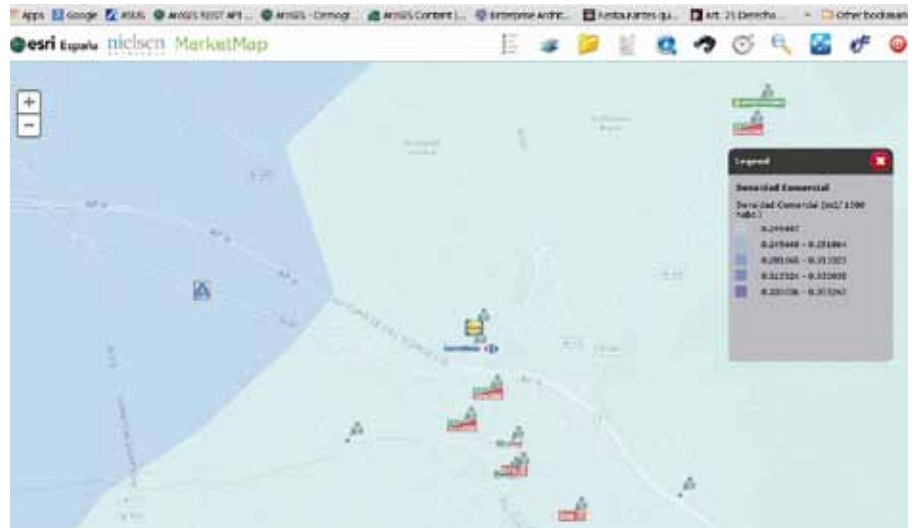
Eptisa is a benchmark company in the **water** sector. Our experience in the Canal de Isabel II and Txingudi projects, among others, supported the internationalisation of our network management applications through contracts in India, Kyrgyzstan, Georgia and Peru. In 2013 the public corporation Servicios Comunitarios de Molina, S.A. (SERCOMOSA) has entrusted Eptisa with the implementation of a GIS solution to improve management of the water network in the town of Molina de Segura.

In the **Smart City** sector we are committed to applying new technologies in line with our policy of developing innovative, sustainable solutions. In 2013, along with Bunt Planet, IKOR Metering, Btesa, Luix and Com&Media. we participated in the SmartLand Technologies consortium to develop custom projects for cities and counties seeking to optimize utilities and enabling citizen participation.

For this, the consortium uses the Smart City Center solution, an application that enables public authorities to display indicators in real-time to ensure that the best possible decisions are made in fields such as water, waste and public transport. The solution is based on implementation in Spain of the SmartLand Bajo Bidasoa project, which implemented a management model that ensures sustainability, public participation and transparency in a district with a population of 78,000 people.

Eptisa participated in the Smart City Expo World Congress held in Barcelona between 19 and 21 November within the consortium that presented the Bajo Bidasoa project.

On the **international market** we finalized the inventory of water supply and sewerage facilities for various cities in Georgia. In Peru we worked on the contract for development of an integrated Geographic Information System for the Lima Drinking Water and Sewerage Service (SEDAPAL). In India



▲ MARKETMAP SOLUTION



▲ MAPABASE'S SYSTEM OF SYMBOLS

we are working on the development and implementation of the e-SWIS (Surface Water Information System) for management of water resources. We collaborated in the development and implementation of the GIS application for the Land Registry Information System project in Costa Rica funded by the Inter-American Development Bank.

IT Solutions: Enterprise Search and Content Management Systems

We have the best experience in the development of projects in the business

solution of Google Search Appliance and in 2013 organisations such as La Caixa, RTVE and RENFE entrusted us with their projects. As result of the collaboration with Google, we developed an application to promote tools based on Google Apps technology in companies. This solution enables access to e-mail tools, search and business management at an affordable price to small and medium enterprises. Eptisa adapts these solutions to the company and its needs regardless of its size and provides new added value services.

R&D+i

The goal of investment in technological R&D is development of vertical solutions that provide our clients access to technology. This highly competitive and constantly changing environment demands that ICT services adapt to new trends in the digital economy and specialised vertical applications. This effort places us at the forefront of the latest technological advances and keeps our position in the domestic and international water sector.

In 2013 we launched the **NILO** GIS solution for water network management, aimed to improve the efficiency and optimise network management for small and medium-sized services companies.

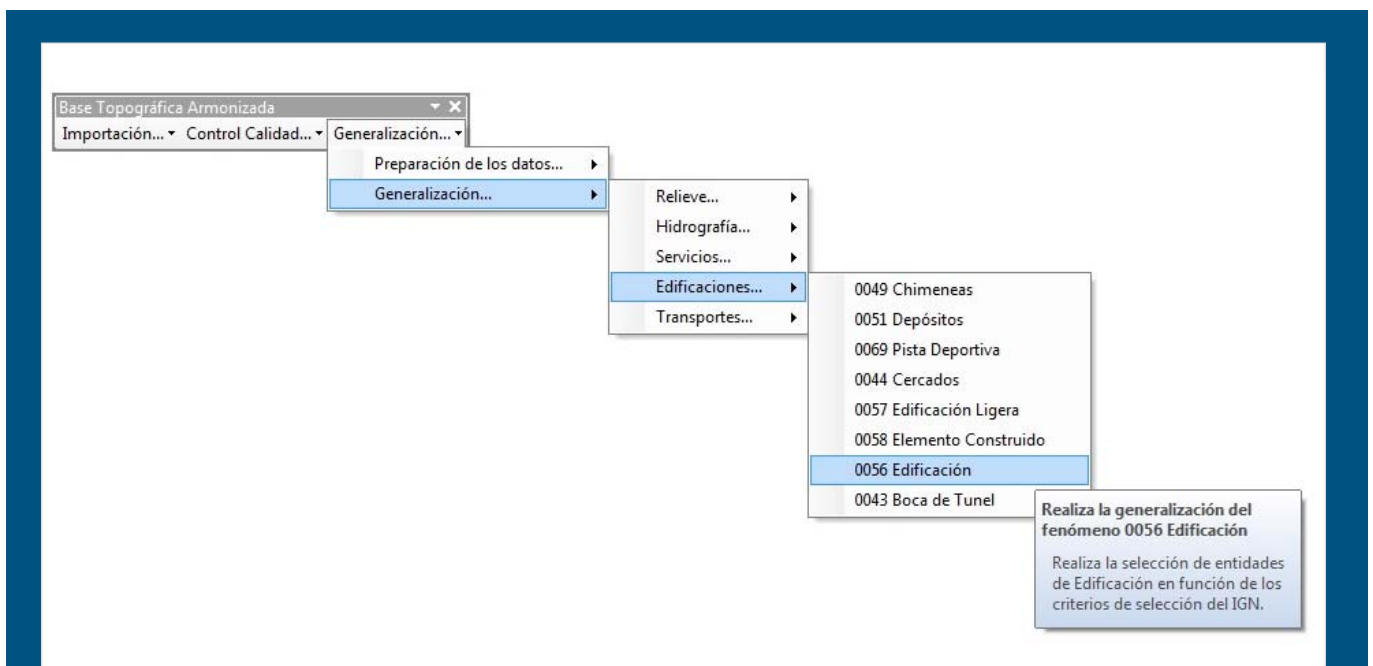
In 2013 in conjunction with the Engineering Department, we implemented the **ROMA** solution (Roads Management System), the most comprehensive tech-

nological solution for treatment and professional management of information associated with linear infrastructures due to its advanced display, editing, search, management and information analysis capacities.

Eptisa is part of the **Urban Milla Lab**, an area within eTopia (Art and Technology Centre in Zaragoza) intended as a smart city R&D+i laboratory. We develop the digital infrastructure inventory project and dashboard system for the participatory city.

After the standard data model defined by the geographical authorities (National Centre for Geographic Information (CNIG) and the National Geographic Committee), Esri Spain developed an extension of tools for validation and generalisation of the **Harmonized Topo-**

graphic Database (HTD), which enables to incorporate different geographic features and phenomena of a territory into an operative data scheme.



▲ VALIDATION AND GENERALISATION TOOLS OF THE HARMONIZED TOPOGRAPHIC BASE (BTA)

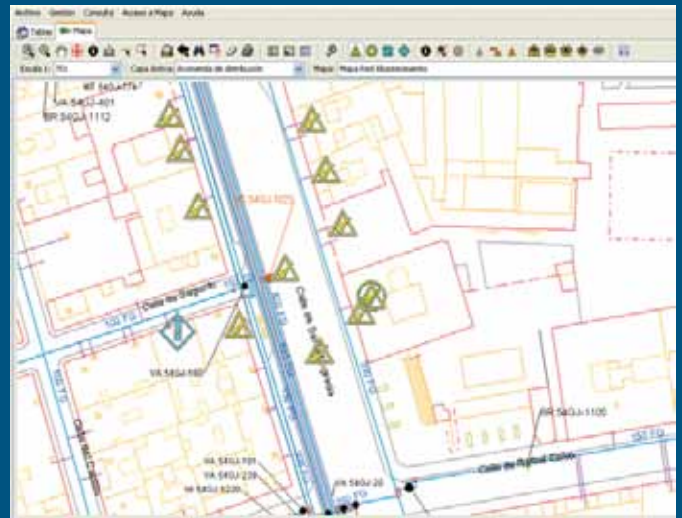
After the standard data model defined by the geographical authorities (National Centre for Geographic Information (CNIG) and the National Geographic Committee), Esri Spain developed an extension of tools, which enables to incorporate different geographic features and phenomena of a territory into an operative data scheme.

These tools also enable performance quality control processes and identify any elements that fail to comply with the standards. As a final step they adopt a new way of generating reference maps for larger scales by using the ArcGIS Desktop Generalization Tools which prepare the data for standardised delivery to the CNIG.

► NILO GIS SOLUTION FOR MANAGING THE WATER SUPPLY AND SEWAGE NETWORKS

With this project, Eptisa has launched into the market the NILO GIS application for water management, designed to improve the efficacy and optimise the management of networks for small and medium-sized utility companies. It is an affordable solution that benefits from the SUELA (Esri small utilities) agreement and provides unlimited supply of licenses by means of a three-year subscription. Thus investment in IT is tailored to the real needs of the project.

NILO provides a number of out-of-the-box tools that enable rapid implementation of the solution. Among others, the tool for loading and maintenance of the physical network inventory stands out, as do the tools for integration of geographic information with corporate applications and the information exploitation module. And all this is developed in a simple and intuitive environment that minimises the training required by users.



▲ R&D+I PROJECT IN AN URBAN MILLA LAB LABORATORY OF THE ZARAGOZA ART AND TECHNOLOGY CENTRE ETOPIA

The Centre for Art and Technology (eTopia) consists of three next-generation buildings with more than 16,000 m² of floor space designed to house and foster the most innovative creative projects and entrepreneurs within Milla Digital area. It aims to be an area open to all citizens, businesses and artists, while working as a contemporary culture centre showcasing the most innovative artistic expressions, as a workshop for artists and technologists, a dedicated training area specialising in the new fields deriving from the meeting of art and a technological think tank for the digital city and incubator of new companies in the content sector.

Eptisa is a part of the Urban Milla Lab, an area within eTopia intended as a smart city R&D+i laboratory. We developed the digital infrastructure inventory project and dashboard system for the participatory city.

This project, based on the experience obtained with the systems deployed in the Valdespartera Ecocity project, manages the environmental and economic impact of the proposal and carries out research into a sustainable model for implementation in other areas of the city. It brings major innovations for

both the public authorities (in efficient infrastructure management) and for the public in general.







Europe

UNITED KINGDOM

Eptisa has been appointed as part of the design team for Merseylink, the international consortium that has awarded the project for the design, construction, financing and operation of the new gateway bridge over the Mersey River, between Runcorn and Widnes, in the outskirts of Liverpool. The project, known as Mersey Gateway Project, includes the design of a new bridge upstream of the existing Silver Jubilee Bridge and the main road access infrastructures commissioned by the Halton municipality.

The consortium is formed by the three partners, Macquarie Capital (Australia), Bilfinger Project Investments (Germany) and FCC Construcción (Spain), who will be responsible for finance and operation the infrastructure during next 30 years. In the construction phase will participate the construction companies Samsung C&T Corporation (Korea), FCC Construcción (Spain), Kier Infrastructure and Overseas Limited (England). And besides Eptisa, the companies Flint & Neill, URS, Fhecor and Dissing + Weitling will collaborate on the consortium in the design.

GREECE

Under the contract of the Specialized Consultant for Quality Control E.S.P.EL. project we continue with the development

of audits and quality control of the works of the projects co-funded by European Funds and the institutional technical assistance to the Administration and the Ministry of Public Works.

Along this year, it has been carried out the quality control in the **transport** sector during the construction of the national road of Thiva-Livadia, the tunnel of Aigio in section of Kiato – Aigio of the high speed railway line from Athens to Patra, the bypass of Farkadonas and the subway of Thessaloniki.



▼ BYPASS OF FARKADONAS, GREECE





▲ MERSEY GATEWAY PROJECT IN LIVERPOOL, UNITED KINGDOM

Eptisa has been appointed as part of the design team for Merseylink consortium for the design, construction, financing and operation of the new gateway bridge over the Mersey River, between Runcorn and Widnes, in the outskirts of Liverpool. The project, known as Mersey Gateway Project, includes the design of a new bridge upstream of the existing Silver Jubilee Bridge and the main road access infrastructures commissioned by the Halton municipality.

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The infrastructure consists of a cable stayed bridge with three towers with 1,000 meters of suspended deck and extensive approach viaducts providing improved public transport in the area and relief to the current congested Silver Jubilee Bridge and in the area, from and to Liverpool.

▶ TECHNICAL ASSISTANCE FOR THE DESIGN AND MANAGEMENT OF THE PROJECT FOR THE EXTENSION AND RESTORATION OF WATER INFRASTRUCTURE IN BOTOSANI COUNTY IN ROMANIA

The project for the extension and modernisation of the water supply, sewage and wastewater treatment systems in Botosani County consists of investments for the drinking water treatment and distribution network, as well as for wastewater collection and treatment. The result will be the connection of the inhabitants to the network, in compliance with the relevant EU directives.

The services provided by Eptisa will include the elaboration of documentation; technical and legal support during public procurement procedures; technical assistance as designer during works execution; update the Master Plan for the water supply and sewage system, including the priority investment plans for 2014 - 2018; update the management strategy of the sludge resulted from the technological process from the treatment stations and provide adequate project publicity.

The project represents an important step for the improvement of the water supply and sewerage networks, by covering four agglomerations for the rehabilitation and constructions of the sewage infrastructure: Botosani,



Dorohoi, Flamanzi, Vorona and five areas for improvement of the water supply system: Botosani, Dorohoi, Flamanzi, Vorona, Stefanesti-Saveni and will consist of the following activities: construction of a culvert pipe from Prut water source, construction of a water treatment and of a sludge line for the existing treatment plants, rehabilitation and extension of the water supply networks, rehabilitation and extension of the wastewater collector and treatment systems.

▶ ENGINEERING SERVICES FOR THE CONSTRUCTION OF A NEW FACTORY FOR GRUPO ANTOLÍN IN SIBIU, ROMANIA

Eptisa will provide consultancy services to the subsidiary in Romania of Grupo Antolin (the Spanish manufacturer dedicated to the design, development, production and delivery of vehicle interior components for the automotive industry) as part of a project to build up a new factory in Sibiu, in the Western Industrial Park covering 12,500 m². The factory will be composed of production hall, warehouse, offices, platforms, interior roads and relevant utilities.

The Services provided by the Eptisa are the design of the factory: preliminary studies, preliminary design, and detailed design; licenses processing & management: collection of administrative data and requirements of the utilities; support in obtaining permits and licenses; build-up the technical documentation files necessary for agreements & permits, as requested by different institutions & agencies from the municipality. And finally, the creation



of "As-built" documentation: construction book, "as-built" layouts, materials homologation certificates, approvals, operation and maintenance manuals, equipments and systems guarantees, etc.



▲ TUNNEL OF AIGIO, E.S.P.EL PROJECT



▲ SEWERAGE NETWORK, E.S.P.EL PROJECT



▲ SUBWAY OF THESSALONIKI, E.S.P.EL PROJECT

In the **water** sector, we participated in the quality control of the works for the wastewater sewerage pipes which are parallel to the motorway Athens-Schimatari, and in the stream channel, in the construction of the connection section in Ephiridon. And in the **buildings** sector we collaborate in the construction of an elementary School at Lepenous and in the construction of closed gym at the region of Volakas at Dramas, as well as in the construction of a five storey building for the university of the Hospital of Ioannina. We also highlight our collaboration in the restoration of the disposals dam of the Mines of Asbestos at Northern Greece.

RUMANIA

Eptisa has consolidated the leading position in its key sectors on the Romanian engineering market, such as water supply and sanitation, waste management, environment, urban heating infrastructure, and civil constructions, proving adaptability to new challenges in the environment for technical assistance and engineering services.

In the **water** sector, we have participated in the most important projects in the sector at both national and regional level. Currently we work with 22 regional water operators and related ministries, implementing 35 projects in the field of supervision, design, support to funding, turnkey projects and projects management, with overall investment value of EUR 2 billion, financed by the EU and other multilateral funding organisms.

In 2013 we were awarded two new contracts in the water sector, both focusing on planning and design water supply, sanitation and water treatment infrastructures in the Botosani and Giurgiu Counties.

In Botosani County, Eptisa supports the water and waste water operator, S.C. NOVA APASERV S.A., in managing and implementing the project for the extension and modernisation of the water supply, sewerage and waste water treatment systems, with an investment over EUR 80 million. The project includes the detailed design and technical support to the documentation for the tendering of the works. This project adds to the

project that Eptisa implements in the region for the works supervision of the Integrated Waste Management System, which started in August 2011.

Also in the water sector, but in Giurgiu County, the client trusted in the technical quality of our services and awarded us a contract for the revision and update of the water, sewerage and wastewater treatment Master Plan for the entire county, in order to define the short, medium and long term investment programme in infrastructures. This contract is a continuation phase of the technical assistance for managing the rehabilitation and development project of the drinking water and sewerage systems in the Giurgiu County, implemented between September 2008 and February 2013.

We continue working in the projects for the design, project management and works supervision in Arges, Harghita, Caras-Severin and Valcea Counties. We also continue providing technical assistance services in two projects for the same regional operator in the Dolj County. Both projects include design,



▲ EXTENSION AND MODERNISATION OF WATER AND SEWERAGE INFRASTRUCTURES IN GIURGIU, OLT AND GORJ COUNTIES



▲ TURNKEY PROJECTS OF THE WASTE WATER TREATMENT PLANTS IN ZIMNICEA, AGNITA AND DUMBRAVENI

project management and supervision of water and wastewater works. And in the Iasi County, we continue with the technical assistance for the works for extension and rehabilitation of the water and wastewater infrastructures.

In 2013, the three turnkey projects of the water treatment plants in Zimnicea, Agnita and Dumbraveni were successfully implemented. The plants are equipped with a fully automated system connected to a SCADA system, in order to allow operation, control and monitoring of the treatment process.

In Southern Romania, the project management contracts for extension and rehabilitation of water and wastewater systems in Giurgiu, Olt and Gorj coun-

ties and co-financed by the EU were successfully delivered. The value of investments managed reached EUR 150 million, with over 250,000 people benefited. Our activities included development of hydraulic modelling and GIS systems, leak detection system, design of SCADA system, update and review of county's Master Plan, assisting in the development of industrial wastewater discharge and sludge management strategies and solid waste management. We also organize events and trainings about awareness raising aimed at stakeholders.

In the **waste management** sector, we have established ourselves by extending the scope of services and the technical assistance for Botosani County and for Salaj County in terms of supervising

the works for their Integrated Waste Management System. In 2013 within the Integrated Waste Management System project in the Botosani County, the Stauceni Integrated Waste Management Centre was inaugurated. Eptisa has worked in the design and construction of the sorting and leachate station and commissioning of Stauceni ecologic landfill, with a 0.95 million tones capacity. In 2013 we finalized the works supervision of the Integrated Waste Management System in the Bistrita-Nasaud County.

▼ INTEGRATED WASTE MANAGEMENT SYSTEM IN THE BISTRITA-NASAUD COUNTY





▲ MODERNISATION OF THE DISTRICT HEATING SYSTEM OF THE BACAU CITY IN ROMANIA

The project has as main objectives the modernisation of the heating system in Bacau city for compliance with the environmental standards on air emissions and increase the urban heating supply efficiency; to fulfil the commitments taken by Romania through the Accession Treaty and implement the *acquis communautaire* in the environmental sector; and support the final beneficiary.

The rehabilitation works of Bacau heating system will be done for both heating stations in the city (CET 1 and CET 2), for compliance with the environmental regulations on polluting emissions into the atmosphere. The works aim to reduce the SO₂, NO_x and dust (desulphurization installation, refurbishment of hot water and steam boilers) as well to increase the energy efficiency (overhaul of the heat transport pumps and of the heat transmission network). Eptisa will supervise seven works contracts, in accordance with the national law on works execution and design. Six of the contracts are both design and execution and the last contract it will be carried out works execution.



▲ SUPERVISION AND CONDUCTION OF DYNAMIC LOAD TESTS IN THE VIADUCT OVER THE RIVER DANUBE, BETWEEN VIDIN AND CALAFAT

Eptisa received the job from the Spanish company FCC (Fomento de Construcciones y Contratas) for the supervision and conduction of dynamic load tests of the structure of the new International Viaduct over the River Danube, between the municipalities of Vidin (Bulgaria) and Calafat (Romania). This viaduct is part of the Corridor IV linking Dresde (Germany) with Istanbul (Turkey) and consists of a bridge with two carriageways for vehicles (two independent lanes) and railway (one track). The structure is 1,951 m long with maximum lights of 180 m over the navigable channel of the River Danube.

The activities developed by Eptisa consisted of supervision, conduction and analysis of the data obtained through dynamic load tests with railways before the reception and opening to traffic. As well as the dynamic load tests, Eptisa carried out turns' control in the critical areas of the platform during the static load tests, by an automated acquisition system which allows measuring rotations with a precision close to 7x10⁻³ mrad. Once the tests were finalized, the Technical Office of Eptisa analyzed the obtained data and reported the results, validating the structural behaviour of the bridge.

In the **buildings** sector, the Spanish Group Antolín awarded Eptisa the design, supervision and project management services for its new factory in Sibiu County covering 12.500 m². The factory will be composed of production hall, warehouse, offices, platforms, roads and relevant utilities.

In the **energy** sector, Eptisa has become a reliable partner for energy savings and efficiency projects, thanks to the experience developing projects of district heating systems. In the city of Bacau we are working in the project for the modernization of the city heating systems, for compliance with the environmental standards on air emissions and increasing of the heating supply urban efficiency. The measures included in the project foresee implementation of combustion technologies less harmful to the environment, in order to reduce emissions from combustion plants and

improve efficiency of the distribution networks, in accordance with national strategy for the energy sector and for environmental protection.

In **transport** sector, Eptisa conducted dynamic load tests of the structure of the new International Viaduct over the River Danube, between the municipalities of Vidin (Bulgaria) and Calafat (Romania) for the Spanish company FCC (Fomento de Construcciones y Contratas).

Moldavia

Eptisa has contributed to completion of two water supply and sewerage projects in two localities within the most important investment program developed in the **water** sector in this country. The Moldova Water Utilities Development Program, financed from the European Bank for Reconstruction and Development, the European Investment Bank and Euro-

pean Union funds, is aimed at improving the water and sewage sector and to create models of independent operators who provide high standard services. The investments made within the project represent an opportunity for the development of the area, as well as an important step for improve the quality of life for people and for environmental conditions, in compliance with EU priorities and standards.

Eptisa provides consultancy services for institutional strengthening and works supervision in six regions of the Republic of Moldavia: Florești, Soroca, Orhei, Ceadir-Lunga, Hîncești and Leova, with over 210,000 inhabitants. Eptisa acts as consultancy engineer guaranteeing compliance with FIDIC Conditions during the supervision of the works of rehabilitation and extension of the water supply and sewerage systems in the municipalities included in the program.

The two projects finalized consist of the extension of the water supply system (50 km), by putting into operation an aqueduct 30.5 km long, the rehabilitation and drilling of wells and construction of three water towers. The improvements will benefit 9,500 inhabitants in the region.

We have also intensified our services in the institutional strengthening sector thanks to the development of two **local and regional development** projects financed by the GIZ. We provide technical assistance to the relevant institutions in the management, planning and implementation of projects in the sectors of water and sanitation, waste management, energy efficiency and road transportation.

BALKANS

With a current backlog of around EUR 40 million in inked contracts, and 38 assignments under implementation, 2013 has undoubtedly been a very positive year for the consolidation of Eptisa in the Western Balkans.

In addition to the thirteen newly-signed contracts, covering a wide variety of technical disciplines, ranging from transport engineering to environmental infrastructure and from energy to public administration reform services, the implementation of seven projects was successfully finalised.

Nowadays Eptisa has two subsidiary companies in the region: Eptisa Southeast Europe, our local subsidiary in the Republic of Serbia, and Eptisa Adria, supporting our activities in the Republic of Croatia. Furthermore, during 2013 Eptisa initiated the process of incorporation of three additional subsidiaries in the region, in Macedonia*, in Bosnia and Herzegovina, and in the Republic of Albania.

Our permanent and long-lasting presence covering the entire Western Balkans provides us with a very valuable knowledge of the local characteristics of the public authorities in each country, and also of the infrastructure design and construction standards in the whole region.

REPUBLIC OF ALBANIA

Eptisa is currently implementing three projects in Albania, in the fields of **transport** and water Infrastructure.

During 2013, we continued with the implementation of the project *supervision of secondary and local roads*, through which we are monitoring the upgrade of 1,500 km of local and secondary roads throughout the entire country. Here, a strategically composed team of local and international engineers are responsible for the supervision of all the contracted civil works, including monitoring, inspection, and reporting supervision activities with direct support to the Albanian Development Fund, the implementer of all the project components.

Also during 2013 we finalised an assignment aimed at the provision of technical support to the Albanian Roads Authority during the implementation of major road investments and construction contracts in the country. Eptisa offered substantial technical support for project implementation and contract management related to road investment and construction, delivered on-the-job training to project managers tasked with project implementation, and assisted in the preparation of future road investment projects.

In the field of **water**, Eptisa advanced with the supervision services for the construction of the sewerage systems in Shkodra, in the framework of an EU-IPA initiative. The contract envisages the finalisation of the construction of a new sewerage network and a waste water treatment plant in the industrial area of Shkodra, in the north-west of Albania.

During this year, we also resulted awarded with a new assignment for the *supervision of construction and supplies for the sewerage system and waste water treatment plant in Velipoja area – Phase III*. Within this new contract Eptisa will provide supervision services for the implementation of one works and three supply contracts related to the construction of over 30 km of gravity pipes, 1.15 km of main transmission pipe, manholes, house connections and

6 pumping stations. It will also supervise the extension of the Waste Water Treatment Plant, currently under construction, in order to treat a total flow of 465 m³/h.

FYR of MACEDONIA*

During 2013 Eptisa was awarded two important contracts in the Republic of Macedonia. First, in the **water** sector, a project funded by the EU Instrument for Pre-Accession Assistance (IPA) and aimed at the elaboration of a national water tariff study by developing economic instruments for a balanced water price system and the management of financially sustainable water investment projects. The project implements a stakeholders' consultation plan, develops economic instruments for an effective and affordable cost recovery in the water sector, and eventually formulates a water tariff methodology and a new structure of the water tariffs.

In the **railways** sector, Eptisa inked the contract for provide supervision and technical assistance services for the construction of the Railway Corridor VIII. The project consists of the reconstruction of 30 km-long railway line between the towns of Kumanovo and Beljakovce. Eptisa acts as the Engineer in accordance with FIDIC Conditions of Contract. The assignment has a value of almost EUR 2.7 million and is financed by the EBRD.

Eptisa finalised the implementation of the technical assistance for **strengthening** the capacity of the institutions to manage and implement the Operational Programmes. Within this EU-IPA project, we assisted in enhancing the administrative capacity of the institutions entrusted with the management of the EU pre-accession assistance in order to achieve a sound and efficient management of all the funds.

Eptisa has been working in Macedonia since 2005, implementing projects in the fields of environmental and transport infrastructure. Fully aware of the efforts being made by Macedonia in its path to become an EU Member State, and motivated by the need of being closer to the client, in May 2013 Eptisa inaugurated its new premises in Skopje. The new office

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▲ RAILWAY CORRIDOR VIII – CONSULTANCY SERVICES FOR THE SUPERVISION AND SUPPORT TO THE PROJECT IMPLEMENTATION UNIT IN FYR OF MACEDONIA

The Trans-European Corridor VIII is the main axis connecting the Adriatic Sea with the Black Sea, through Italy, Albania, Macedonia, and Bulgaria. In the Republic of Macedonia, the Trans-European Corridor VIII is 313 km-long, of which only 154 km are built. The construction of the missing parts, from Kumanovo to the Bulgarian border (eastern part) and from Kicevo to the Albanian border (western part), is supported by the Government's national transport strategy, where it is set as the biggest priority for the coming decade in the field of transport infrastructure.

The process for obtaining the necessary investment funds for the rehabilitation works and for the construction of the missing parts was initiated by the Ministry of Transport and Communications five years ago by approaching the EBRD, the European Investment Bank (EIB) and the EU. At that stage a consortium led by Eptisa successfully developed the Feasibility Study and the Environmental and Social Impact Assessment for certain sections. This study opened the doors to a loan from EBRD and facilitated the outset of the reconstruction of this crucial railway infrastructure.

Eptisa acts in accordance with FIDIC Conditions of Contract during the reconstruction of the 30 km-long railway line between the towns of Kumanovo and Beljakovce, and performs monitoring and reporting activities in accordance with the Loan Agreement.

The civil works comprise earth works of 130,000 m³, rail replacement, new tracks including ballasting for 9.9 km, 9 platforms, 3 passenger buildings, 4 ancillary buildings, 3 water treatment plants, 31.2 km of signalling and telecommunications, and approximately 45 structures (bridges, over/underpasses, galleries, culverts, retaining walls, and others).

counts on a team of project managers and other professionals that provide project management and backstopping support for several projects under implementation.

BOSNIA AND HERZEGOVINA

2013 was an outstanding year for Eptisa in Bosnia and Herzegovina, resulting in several new signed contracts. First, Eptisa inked a new contract for the provision of supervision services during the implementation of a European Investment Bank-funded programme aimed at the construction and rehabilitation of **water** supply and sanitation infrastructure in several municipalities in the Republika Srpska, one of the two entities of Bosnia and Herzegovina.

The second awarded contract, *Capacity Building in the Water Sector*, is funded by the European Union and managed by the EU Delegation to Bosnia and Herzegovina. The intervention will focus on supporting the transposition and implementation of water-related EU Directives and on the enhancement of the water resources management in the Sava River basin, to prepare a full River Basin Management Plan in line with the local legislation, with the EU *acquis* on environment, and with several relevant international conventions and treaties.

Another awarded contract in the water sector is the works supervision of the water supply project in the municipality of Capljina. Eptisa supervises the design, construction, testing and commissioning of a new water supply system.

Throughout 2013, we continued working in a technical assistance contract for the project financed by the Global Environment Facility (GEF) and aiming to strengthen the integrated management of water resources in the country, in accordance with the EU Water Framework Directive. More specifically, Eptisa provides technical assistance for the management of the Neretva and Trebisnjica river basins, developing decision support instruments and guidelines to achieve the maximum economic effects in respect to the operational rules and constrains of hydropower plants in various hydrological conditions.

In the field of **Transport**, we advanced with the supervision of the design and construction works of 36.6 new kilometres of the motorway Banja Luka – Dobož, a section of the Trans-European Corridor V. In this assignment we supervise the works on the section Prnjavor – Dobož and on several local and access roads. This road will play a key role in providing a financial boost to the development of Bosnia and Herzegovina's economy and will also have a significant impact on the entire region.

In the field of **environmental** Infrastructure and related services, Eptisa finalised a contract in Capljina, aimed at the provision of support for the development and implementation of a Financial and Operational Performance Improvement Programme, as well as for the preparation of a Public Service Agreement between the water utility company and the Municipality.

Also in the environmental sector, Eptisa is participating in the project for the implementation of the Birds and Habitats Directives, delivering assistance to the national institutions in the transposition and implementation of the EU Directives on Birds and Habitats. Furthermore, we assist the environmental authorities during the initial steps for the development of a NATURA 2000 network and its corresponding implementing strategy and management plans.



◀ CAPACITY BUILDING SERVICES IN THE WATER SECTOR IN BOSNIA AND HERZEGOVINA

The project Capacity Building in the Water Sector is funded by the European Union and managed by the EU Delegation to Bosnia and Herzegovina. The intervention is focused on supporting the transposition and implementation of EU water-related Directives and on the enhancement of the water resources management in the Sava River basin, for the preparation of a River Basin Management Plan (RBMP) in line with the local legislation, with the EU acquis on environment, and with several relevant international conventions and treaties.

The technical assistance also comprises the preparation of a Water Tariff Policy Framework that will ensure a consistent tariff setting process, the development of a long-term capacity building plan for the various institutions responsible for river basin management, the review and updating of other RBMPs in the country, and the upgrading of the water information system in place.

Additionally, we extended our contract for the EU-funded project for strengthening Bosnia and Herzegovina's Environmental Institutions and Preparation for Pre-Accession Funds, aimed at strengthening the technical, administrative and programming capacities of all the institutions involved in the management of the country's natural resources.

Within the **social** sector, Eptisa is currently involved in strengthening the role of the Civil Society Organisations, as part the EU-funded project about capacity building of Government Institutions to engage in policy dialogue with the civil society. In more detail, Eptisa supports the Governments of Bosnia and Herzegovina to increase the engagement of the civil society in the different reform processes related to the eventual accession the country to the EU.

Besides, Eptisa finalised the implementation of the institutional strengthening and capacity building in the employment sector project. The aim of this contract was to improve institutional capacities of the labour market management and employment service delivery at national and regional levels, in order to make the labour market work effectively in the country, currently hit by very high unemployment rates.

REPUBLIC OF CROATIA

Eptisa consolidated its presence in the Republic of Croatia by opening Eptisa

Adria d.o.o. in Zagreb in early 2012. Nowadays this daughter company counts on a local team of project managers and other professionals that provide project management and backstopping support for several projects under implementation.

During 2013 two important contracts were awarded in Croatia. The first project, within the **environmental** infrastructure sector, is entitled *Sisak Wastewater Programme — Supervision of Design and Construction* and aims at the supervision during the construction works for the sewerage systems and for the new waste water treatment plant (60,000 P.E.) in Sisak, the main inland navigation port and featuring the largest metallurgic factory and the biggest oil refinery in Croatia.

The second contract signed in 2013 is the technical assistance for the management of the IPA/Structural Funds Operational Programme. Here, Eptisa provides support in managing and implementing the existing IPA Environment Operational Programme (EOP) and in the preparation and start of implementation of a new EOP to be financed with Structural Funds, as well as for the new programming period 2014-2020. Furthermore, this new project will also respond to the practical challenges related to capacity building and training of government officials, the officials of relevant regional and municipal authorities, and the staff of the

Managing Authority and intermediate bodies.

Eptisa also advanced with the implementation of the works supervision for the construction of the **Waste Management** Centre Marišćina in Primorsko-Goranska County project, through which we closely monitor the construction of a new state-of-the-art regional solid waste management centre. The centre is being erected under strict EU standards and will include the use of the latest technologies in order to solve the urging demands of one of the largest regions in Croatia.

We are also providing support to the Croatian Ministry of Environment and Nature Protection with the transposition and implementation of the EU Acquis on **Strategic Environmental Assessment** (SEA). Eptisa is training the officers involved in SEA procedures and will, furthermore, develop a set of guidelines and manuals for the correct implementation of SEA procedures.

Lastly, Eptisa is acting in the capacity of the Engineer following FIDIC Conditions of Contract within the project of works supervision for the construction of the **water** supply and sewerage system and waste water treatment plant in Slavonski Brod. The new facility will have a capacity of 80,000 P.E., contributing to the overall protection of the water resources in this municipality, the seventh largest in the country.

KOSOVO*

During 2013, Eptisa has participated in several important projects in Kosovo. First of all, we finalised the preparation of an **energy efficiency** study in the building sector. We provided assistance to the Ministry of Energy and Mining in undertaking a quantification of the potential energy efficiency improvements in the building sector and with the development of a detailed Building Energy Efficiency Program.

The company also continued with the implementation of an EU-funded contract in the field of integrated **water** resources management supporting the Ministry of Environment and Spatial Planning (MESp) in water management and monitoring of water resources. Through this program, Eptisa assists with prioritisation and planning activities aimed at improving the protection of water resources and the water management practises in Kosovo in accordance with the EU environmental acquis. The intervention will eventually lead to a unified Water Strategy at a national level.

We also provide a wide range of engineering services for the development of **socio-economic** infrastructure in several municipalities, as part of the project *Municipal Social and Economic Infrastructure*. Eptisa is involved in all the stages of project implementation, developing detailed designs and technical specifications, and supervising the construction works until handover and final acceptance.

MONTENEGRO

During 2013 EPTISA finalised the implementation of the EU-funded *Raising Environmental Awareness*. In the contract we provided support in establishing an efficient and viable system for the implementation of activities on **environmental** awareness. Furthermore, we prepared and delivered environmental consciousness campaigns and education activities on environmental issues aiming at the student population throughout Montenegro.

We also continued with the implementation of the project for the preparation and implementation of the *National and Local Waste Management Plans*, ensuring Montenegro's roadmap for the implementation of the EU legislation in the field of **waste management**. This project will provide the beneficiaries with a new National Waste Strategy on which to base the subsequent National Waste Management Plan 2013 – 2018, supporting an enhanced effectiveness in controlling pollution from solid waste.

REPUBLIC OF SERBIA

During 2013 Eptisa signed three new contracts in the Republic of Serbia, all of them within the **socio-economic** and **Public Administration reform** sectors. The first awarded contract was the EU-funded *Strengthening Media Freedom*. In the next two years, Eptisa will support the efforts of the Serbian Government in the harmonisation of the legal framework governing the media sector and in the enhancement of the competences of



▲ SISAK WASTE WATER PROGRAMME – SUPERVISION OF THE DESIGN AND CONSTRUCTION WORKS IN THE REPUBLIC OF CROATIA

It is estimated that only 12% of wastewater generated by the population in Croatia is treated and that only 40% of the population is connected to a public sewerage network. However, the Government of the Republic of Croatia is committed to preserve the water resources and is taking up several measures to ensure that the EU Water Framework Directive is transposed into the Croatian legislative system. At present, in the city of Sisak the sewerage network is incomplete and partially fragmented and there is no treatment of the discharged wastewater. The combination of these two elements is contributing to the degradation of the water quality and is jeopardising the overall public health in the whole region. In order to solve these problems, the European Union and the Government of Croatia have allocated funds for the construction of a new wastewater treatment plant and for the development of the sewerage network.

The contract for the supervision of all these works has recently been awarded to a consortium led by Eptisa. The project is financed by the Instrument for Pre-Accession Program (IPA) from the European Union. This new IPA project will contribute to securing a sound management and a successful implementation of the investment measures, leading to a more efficient protection of the water resources in the area of Sisak and the entire Sisacko-Moslavacka County. The Consortium will supervise the construction works for the sewerage systems and for the new wastewater treatment plant (60,000 P.E.), all executed under FIDIC Red Book and Yellow Book Conditions of Contract, as well as under the national regulations.

journalists and media professionals. Our team of experts will provide technical assistance to the Ministry of Culture and Information, to the relevant regulatory bodies, to journalists' associations and media professionals, and to judges and prosecutors in further developing media-related legislation and in the implementation of the Media Strategy and Action Plan. In addition, the Consortium will support the implementation of a Media Fund Grant Scheme aimed at favouring the independence of media professionals and their associations, and at promoting media production and investigative reporting in the area of good governance, human rights and minority protection, freedom of expression and regional reconciliation.

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At the same time, Eptisa resulted awarded with the technical assistance contract to the Serbian Authorities for the Management of Pre-accession Assistance, an intervention aimed at the provision of technical support to the Serbian administration to effectively manage pre-accession assistance in order to speed up preparations for EU membership. It is worth noting that Eptisa also gave support to the preparation and implementation of the decentralised implementation system roadmaps for IPA components III and IV, as well as during the related stages of accreditation, within the assignment *Further Support for the Implementation of Decentralised Implementation System*, finished some months ago.

The third contract signed during 2013 was the technical assistance for the implementation of a grant scheme to support the closure of the remaining collective centres. The overall objective of this intervention is to provide assistance to the EU Delegation to the Republic of Serbia and to the Commissariat for Refugees and Migration in the implementation and monitoring of a EUR 14.2 million grant scheme that aims to find adequate living conditions and to integrate forced migrants who choose to stay in Serbia, while also supporting the sustainable return of those wishing to go back to Kosovo. This assignment represents an important step forward in strengthening Eptisa's position as one of the leading service providers of technical assistance in the fields of housing solutions for vulnerable groups and in the management of EU-funded grant schemes.

Also within the social sector, we finalised the implementation of the contract to provide supporting access to rights, employment and livelihood enhancement of refugees and internally displaced persons, aiming to improve the capacities of refugees and displaced persons to obtain long-lasting employment opportunities.

In the **transport** sector, Eptisa continued the supervision during the construction of two major tunnels in the Republic of Serbia. Following FIDIC Condition of Contract, a joint venture led by Eptisa supervises the construction of the tunnels Predejane and Manajle, both located on the highway E-75. This highway is



▲ SUPERVISION OF THE CONSTRUCTION WORKS ON THE HIGHWAY E-80 IN SERBIA

the most important traffic corridor in the Serbian transport network, connecting the most significant social and economic centres of the Northern and Southern parts of the country.

Furthermore, we moved ahead with the implementation of the project to supervise the construction works on the Highway E-80, Prosek – Dimitrovgrad. Eptisa is supervising the works performed by several international contractors in nine different subsections in the section Dimitrovgrad – Prosek, all the way to the border with Bulgaria. Being part of the Trans-European Corridor X, this road will become a crucial element in the main route from Central Europe to Turkey. Its construction will boost the economic development in the region while decreasing the number of casualties due to traffic accidents. It consists of 60 kilometres and includes 43 bridges and viaducts, 4 tunnels, and 3 interchanges.

In the **Social and Public Administration Reform** sectors, we advanced with the implementation of the contract *Implementation of Anti-discrimination Policies*. Here, Eptisa leads an initiative to support the efforts of the Serbian Government in combating discrimination and in promoting tolerance, equality, and diversity. Our team is working on the protection of human and minority rights and on the promotion of equality and non-discrimination standards in the Republic of Serbia.

In addition to this, we finalised the implementation of the contract *Supporting*

Access to Rights, Employment and Livelihood Enhancement of Refugees and Internally Displaced Persons, aiming to improve the capacities of refugees and displaced persons to obtain long-lasting employment opportunities.

In the field of **building** and within the contract of support to the Ministry of Science for the implementation of the Research and Development (R&D) facility, Eptisa is the main technical advisor in the implementation of the *R&D Infrastructure Investment Initiative* and in the tendering and construction of all the related buildings and facilities. Within this project, a multidisciplinary team from Eptisa provides architectural, engineering and management support services for the design and construction of several buildings and a wide range of research-related infrastructure.

In the **water and environment** area, Eptisa is the leading company in the implementation of the *Municipal Infrastructure Support Programme*, covering its Phases 1, 2, and 3. All together, the three phases of this Programme represent a technical assistance of EUR 20.8 million, aiming to assist the Republic of Serbia in the improvement of its municipal infrastructure services, in the enhancement of the human capacities of its local governments, and in the development of its people's living standards. While the successful implementation of the first phase is already behind us, our activities continue now with the realisation of the second and third phases, where we are providing technical support in the

preparation and prioritisation of municipal and socio-economic infrastructure projects. We are also undertaking a number of feasibility studies, providing supervision services for several construction projects, and offering advice and support for the improvement of the technical and financial management of several public utility companies.

Finally, in the field of **waste management**, Eptisa advanced with the preparation of the feasibility study, the detailed design, and the tender documents for the construction of the first hazardous waste management facility in the country.

In the **energy** sector, Eptisa is supervising the construction and commissioning of a new wastewater treatment plant within the Thermal Power Plant Nikola Tesla, which is considered the largest of its kind in Serbia, covering almost half of the national demand of electricity.

Last but not least, we continued providing engineering services within the supervision of works for the Vranje and Leskovac substations and related transmission lines.

Regional projects

During 2013 Eptisa inked two new regional contracts. The first one, funded by EBRD and KfW is the *Municipal Infrastructure Development Fund*, an initiative aimed to provide finance to municipalities and utility companies in the Western Balkan countries for the realisation of infrastructure-related investments.

The second contract is the European Investment Bank-funded *Framework Contracts for Consultancy Services in the Transport Sector Lots 1, 2 and 4*. The aforementioned lots are related to infrastructure projects in the road, railways and airport sectors. The primary objective of this assignment is to provide technical support to EIB's Projects Directorate and, more in particular, to its Mobility Department, within its diversified portfolio of activities and over the next four years. The sub-assignments will mainly consist of rapid interventions referring to a wide array of tasks ranging from technical, economic, financial, environmental and social appraisal and monitoring of projects in one or more of the EIB's countries of operation.

Additionally, Eptisa continued providing Technical Assistance to Bosnia and Herzegovina, Croatia, Montenegro and Serbia during the implementation of the overall *Regional Housing Programme*, funded by the European Commission and managed by the Council of Europe Development Bank. Within this initiative, Eptisa gives technical support in the provision of durable housing solutions for refugees and internally displaced persons (IDPs) after the armed conflicts in the Western Balkans during the nineties. More specifically, our team of experts provided substantial assistance to the four beneficiary countries in finalising the preparation of the specific Country Housing Projects within the joint Regional Housing Programme, and in their subsequent implementation in order to assure sustainable housing solutions in line with the best international practice.

Another regional project under implementation aims to promote the execution of EU programmes on energy efficiency in a group of EU Member States and in the Candidate Countries. Namely, we are part of an international consortium that is implementing the project of consultancy services in support of EU Programmes on Energy Efficiency. The assignment targets energy efficiency projects implemented by SMEs and Energy Service Companies (ESCOs) in Croatia, Hungary, Poland, Romania, and the Slovak Republic. During the next years, we will assist a number of financial intermediaries in the beneficiary countries with the selection, preparation, processing, and verification of a wide range of energy efficiency projects eligible for EU grant financing.

CAUCASUS

In 2013, we developed several multi country projects in the region and we consolidated our local presence in Georgia and Ukraine.

We successfully completed the third phase of the project *Trans-Boundary River Management for the Kura River Basin*, aimed to improve the water quality management in the Kura River basin and trans-boundary cooperation of Georgia, Azerbaijan and Armenia. Given the excellent outcomes of the previous phases of the project, the third phase established a trans-national common approach to water quality assessment. It has been analyzed the systems and process for water quality assessment in each country to bring them to the EU requirements, independent laboratories were created using EU standards, and the capacities of the authorities responsible for the trans-boundary water resources management has been strengthened.

In December 2013 Eptisa completed the *Waste Governance within the countries of the European Neighbourhood and Partnership Region (ENPI East)*, within the Environmental Programme for the Eastern Region of Europe. Its main purpose was to reduce the risks of contamination arising from the inappropriate management of solid waste in Republic of Armenia, Republic of Azerbaijan, Republic of Belarus, Georgia, Republic of Moldova, Russia and Ukraine.

▼ TRANS-BOUNDARY RIVER MANAGEMENT FOR THE KURA RIVER



It was focused on the development of the waste management strategies and on updating the registers of illegal waste disposal sites. It has been developed a digital GIS database with information format for four of the Partner Countries and into a graphical format for Azerbaijan and Belarus

Regarding to the waste management, progress has been made in an adopted common waste classification approach that accords with international standards, in a 15-year waste management strategy

for each partner country, and a feasibility study on the establishment of a DABLAS type platform to encourage a strategic focus to investments in the waste sector. Likewise, awareness activities and capacity building for all groups involved in the project were made.

In the region, we continue providing technical assistance to contribute to the development of civil protection capacities of the partner countries of Republic of Armenia, Republic of Azerbaijan, Republic of Belarus, Georgia, Republic

of Moldova and Ukraine within the Programme for the Prevention, Preparedness and Response to man-made and natural disasters in the ENPI East Region (PPRD East). The main objective is to bring these countries to EU Civil Protection Mechanism, improving the cooperation between them.

ARMENIA

In 2013 and in the **transport** sector, we continue working in the project management of two tranches for the *North-South Road Corridor Investment Program of Armenia*. The global objective is to improve the North-South corridor to improve mobility within the country and with the surrounding neighbors, aimed to contribute to the socio-economic development of Armenia and expanding the regional trade.

Eptisa undertakes the project management and support to acquisitions, as well as financial management, construction supervision and assure the compliance with the requirements agreed in the Investments Program. As well to supervise, evaluate and reporting the progress of the reconstruction works of an 18.4 km four-lane section on the Yerevan-Ashtarak road. For this same section we carried out a study to improve road safety.

AZERBAIJAN

During 2013 we successfully developed the first two phases of the technical assistance for the *Strategic Plan for a Sustainable Urban Development Plan of the Region of Baku*. The overall objective is to support authorities in the development of the Strategic Environmental Assessment (SEA) of the Greater Baku Regional Development Plan, which includes environmental considerations and evaluates the significant effects (risks, cumulative long term impacts and opportunities) related to the implementation of the Greater Baku Regional Development Plan (GBRDP). The Study area in this assignment covers roughly 280,000 hectares including a triangular strip separating Baku and Sumgayit cities (including Xirdalan city).

The specific objectives of this SEA are to: (a) recommend policies, institutional and governance arrangements conditioned on the premise of sustainable urban

▼ WASTE GOVERNANCE FOR THE EASTERN REGION OF EUROPE





▲ DESIGN AND WORKS SUPERVISION FOR THE CONSTRUCTION OF MECHANICAL WASTE SEPARATION FACILITY IN THE CITY OF GRODNO IN BELARUS

development of the Baku's region; (b) provide overall direction and inputs to the GBRDP formulation (including LED strategy and action plan) and other sectoral projects and plans; and (c) ensure stakeholders and wider public participation in the dialogue on the urban development planning through a series of consultations. In the third phase of implementation are developed tools to integrate environmental aspects of sustainability in regional planning according to international standards, best practices and processes of impact assessment and urban development monitoring.

In the field of **environment**, and for the Ministry of Economic Development, we have worked in the *Integrated Solid Waste Management Project*, with the overall objective of improve and support the modernization of the solid waste collection and management system in the city of Baku. Throughout the year we have worked in the development of an effective and sustainable system in the fields of improving environmental conditions at the existing waste disposal sites, building-up operational, management and communication capabilities, as well

as improve collection and planning system services.

BELARUS

In 2013 we worked in the first phase of the project for the design and supervision of works concerned with construction of mechanical waste separation facility in the city of Grodno, financed by the World Bank. The project is part of a National Plan for the integrated solid waste management and reuse of recyclable materials, financed by international multilateral funds.

The specific objective of this new plant is to increase environmental benefits through recovery and reuse of recyclable materials. The project includes the strengthening of national capacity to manage hazardous wastes associated with Persistent Organic Pollutants (POPs). The services provided by Eptisa during this first phase include the design, business plan and documentation for the tendering of the works. The following phases will include client's support in the selection of contractors for the design and construction, and finally, the supervision of construction works of the waste separation

facility with a capacity of 120,000 tons per year.

GEORGIA

In 2013 the International Fund of **Agricultural Development** (IFAD) through the Ministry of Agriculture of Georgia awarded Eptisa a new project for the preparation of *feasibility studies for the selection of viable irrigation schemes for rehabilitation* in Georgia. The reliable supply of irrigation water through the rehabilitation of the most deteriorated promising irrigation schemes is considered as top priority by the Georgian Government, because it is a constraint to the development of rural infrastructure and therefore, the development of the economy.

The objective of the project was to provide an assessment of the technical, economic, social and environmental viability of the rehabilitation of the shortlisted irrigation schemes, including an assessment of current situation of the infrastructure and proposed options for rehabilitation and improvement. It also include a cost benefits analysis, elaboration of report on the results of the irrigation schemes ranking process,



▲ DETAILED DESIGN OF THE RUISI-RIKOTI SECTION OF THE E-60 HIGHWAY IN GEORGIA

conduction of a Stakeholders Meeting to disclose project's objectives and assessment of farmers attitude and willingness to act as partners to the Project.

Related to **water** sector, and within the *Urban Services Improvement Investment Program*, Eptisa assists the regional operator United Water Supply Company of Georgia (UWSCG) to supervise the construction of water supply and sewerage networks in five cities of Georgia.

In the **socio-economic development** sector, we continue working in the project financed by the World Bank for the works supervision for the rehabilitation and refurbishment of touristic infrastructures (buildings, monuments, etc.) in the region of Imereti.

In the **transport** sector we finalized the detailed design of the Ruisi-Rikoti section of the E-60 Highway, an approximately 49 km section, which passes through mountains and towns. The project, co-financed by the Georgian government and the World Bank, is aimed to upgrade the section from 2-lane to 4-lane highway in the mountainous area of Rikoti. This work includes the design for all elements of the project: new road, all junctions, structures, drainage, safety facilities, etc.; topographical, geotechnical and hydrological

UKRAINE

In the **environment** sector, we are working for the Ministry of Ecology and Natural Resources (MENR) in the implementation of the *Sector Budget Support Program*, providing support during the process of harmonization of Ukrainian legislation with the EU norms and standards and promote the civil society participation in environmental issues.

The services provided by Eptisa include capacity building to planning, execute and supervise the Sector Budget Support Implementation and the National Action

Plan in accordance with the National Environmental Strategy priorities. The technical assistance also involves the improvement of the coordination and dialogue amongst other civil society stakeholders (NGO) and donors in the environment sector, to achieve a successful implementation of the Program.

▼ SECTOR BUDGET SUPPORT PROGRAM TO UKRAINE





▲ FEASIBILITY STUDIES FOR THE REHABILITATION OF IRRIGATION SCHEMES IN GEORGIA



▲ URBAN SERVICES IMPROVEMENT INVESTMENT PROGRAM IN GEORGIA

Financed by the Asian Development Bank, the objective of the Program is to improve water supply and sewerage networks in the provincial capitals, secondary and economically important cities of Georgia. The main goal is to provide 24 hour water supply in Georgia's tourism centers and to maximally decrease environment pollution as well as improving sanitary conditions.

A Consortium led by Eptisa assists the regional company United Water Supply Company of Georgia (UWSCG) to supervise and control the construction of all civil works in the towns of Anaklia, Mestia, Kutaisi, Poti and Ureki: Mestia surface water intake and transmission, Mestia Water treatment Plant and Reservoir, Mestia Water Supply and Sewerage Network, Anaklia Sewage Treatment Plant, Anaklia Water Supply and Sewerage Network, Anaklia Ground Water Intake, Transmission,

Treatment, Reservoirs and Pumping Station, Poti Head works, Transmission Main, Nabada Reservoirs and Pumping Station, Kutaisi Water Supply; and Ureki Water Supply, Sewerage and Sewage Treatment Plant.

The services provided by the Consortium led by Eptisa are as follows: Technical supervision of construction, quality control, contracts management, cost control, project planning, environmental protection, and public awareness; Design review of water treatment plant, reservoirs and wastewater treatment plant being implemented under Design and Build contracts; Technical assessment of risks and advise on risk minimization and mitigation; Providing on-the-job training to counterpart UWSCG engineers seconded to the consultants team; and Providing assistance for commissioning and handing over of works to client.

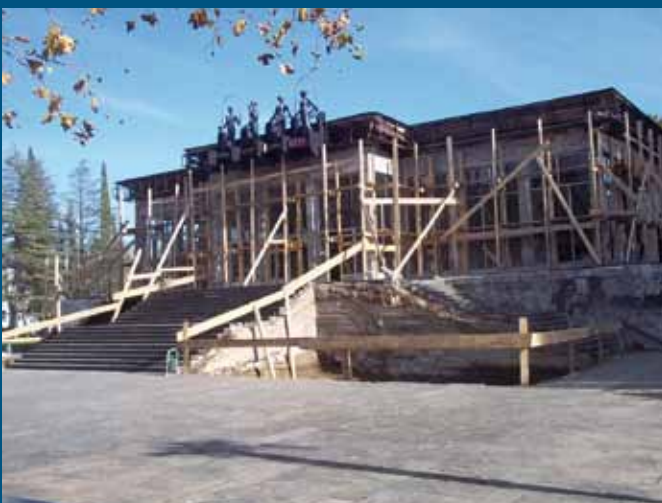


▲ PROGRAMME FOR THE PREVENTION, PREPAREDNESS AND RESPONSE TO MAN-MADE AND NATURAL DISASTERS IN THE ENPI EAST REGION (PPRD EAST)

The programme focuses on natural and man-made disasters with special emphasis on the identified as priority in the ENPI East region, formed by Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine, such as seismic risks, hydro-geological events, forest and ground fires, urban/industrial disasters, road accidents and disasters caused by extreme meteorological conditions. The overall objective of this project is to contribute to the peace, stability, security and prosperity of the Eastern Partner Countries and to protect the environment, the population, the cultural heritage, the resources and the infrastructures of the region by strengthening the countries' resilience, preparedness and response to man-made and natural disasters.

The programme tackle all levels of preparation, preparedness and mitigation, and response management, to achieve: i) an improved knowledge base concerning the current state of play, ii) a strengthened prevention, preparedness capacities and response (from the administrative, operational and legislative perspectives), and iii) increased information and awareness.

Eptisa has provided the following services: development of the Electronic Regional Risk Atlas; development of a common policy with regard to disaster risk assessment in the region; creation of an electronic Civil Protection Operational Guidebook, including an outline of the Community Civil Protection Mechanism; implementation of the capacity development activities focused on disaster risk assessment including Flood Directive, usage of GIS in disaster risk management, disaster risk reduction and industrial hazards including SEVESO Directives; civil protection capacity building programme at regional level consisting of basic and operational management training courses as per EU Civil Protection Mechanism Training Programme curricula; sub-regional and regional table top exercises improving coordination with the EU Mechanism; assistance addressing the environment emergencies; and improved information, awareness and participation of civil protection and disaster management stakeholders.



◀ IMERETI REGIONAL DEVELOPMENT PROJECT IN GEORGIA

Eptisa continued working on the Regional Development Project in the Imereti region, providing supervision services for the construction and rehabilitation of touristic and recreational infrastructure in the region. Specifically, the services during 2013 included the rehabilitation of water supply and sewerage systems, rehabilitation of roads, foot paths and storm water drain systems, arrangement of water channels, irrigation system and landscaping of central park and lake "Tsivi" territory in Imereti region.

Eptisa provides the services of supervision and inspection of the works, Eptisa provided the following services: inspection of the works; review, adapt and refine of the communication and supervision management procedures; monitoring of all the financial disbursements; control of the materials, equipment and workmanship, according to Conditions of Contract for Works and international standards; proper recording of the progress of the works and orderly planning of the civil works; preparation of progress, technical and contractual reports.

TURKEY

From the offices in Ankara and Istanbul and with a team of 90 professionals, Eptisa is executing seven projects in the country and other four projects in the nearby region of Central Asia. Nowadays, we are the benchmark engineering for any company that wants to develop business or invest in the country.

In the **transport** sector, we are working in the *Marmaray* project, aimed to connect the railway lines between the European and the Asian side in Istanbul through an undersea tunnel in the Bosphorus Strait, which will allow the transit of high-speed, commuter and freight trains between the two continents. The new railway system will be approximately 76 km long. Eptisa, in consortium with the Turkish company Prota, has carried out the detailed design, as well as the design of the stations and associated structures in both European and Asian side of the *Gebze-Haydarpaşa* and *Sirkeci-Halkalı* line. In 2013, we also executed the auscultation of the section between Pendik – Gebze, within the railway contract.

In the **building** sector, we continue working in the supervision for the construction of buildings that will house forensic laboratories in the cities of *Istanbul*, *Izmir*, *Diyarbakir* and *Adana*. Within the *Istanbul Seismic Risk Mitigation* and

Emergency Preparedness (ISMEP), Eptisa continues providing consultancy services for the design and reconstruction supervision of Etiler Police Vocational Academy Dormitory and 40 schools. The Kağıthane School, which was awarded in the architectural contest “ARKIV Selections”, is one of the first completed works.

In 2013, also in the building sector, we were awarded a new project to carry out the works supervision of the *Common Use Facility for the Tokat Small Industry Construction Cooperative*, under the operation of *Big Partnership of Small Industries*. Eptisa is responsible for supervising the works contractor in the construction of three blocks with a total area of 3250 m², ensuring terms and budget, start-up and produce reports and documentation in support of the payment management.

In the **water** sector we work in construction project for the Ceyhan waste water and storm water treatment plant. Eptisa carries out the project management and construction supervision services under FIDIC Conditions of Contract, and provides technical assistance and capacity building services.

The Ministry of Environment and Urbanization has awarded to Eptisa a new two years contract to support Turkey to

become fully ready to implement **Strategic Environmental Assessment** (SEA), including all relevant public institutions and other stakeholders and ensure the effective implementation of By-law on SEA in Turkey. This project mainly covers intense training programmes, seminars, and study tours workshops for different target groups such as Ministry of Environment and Urbanization staff, component authorities, NGOs, universities and chambers, and the implementation of four pilot SEA projects on different sectors. The overall objective is to provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the State plans and programs.

All the projects mentioned above, currently in execution phase, add to the list of projects successfully executed, such as the Çanakkale solid waste landfill, the project to mitigate flood risk in the GAP region, the implementation of the SCADA system in the water supply and sewerage network of the Bursa city and the technical assistance for the Subasi wind farm in Edirne Province.

▼ CAPACITY BUILDING FOR THE CONSTRUCTION OF THE DWTP IN CEYHAN, TURKEY





▲ SUPERVISION SERVICES FOR CONSTRUCTION OF FORENSIC LABORATORIES IN ISTANBUL, ADANA, DIYARBAKIR AND ZMIR IN TURKEY

The consortium provides supervision services for the construction of model forensics laboratories that will be established in Adana, Diyarbakir, Izmir and Istanbul. Its total area is about 28,000 m². Eptisa will also supervise the execution of all works in compliance with contract conditions, as well as to ensure the provision of the services necessary during the defects notification period. Related works contracts are going to be organised in 4 lots, one for each laboratory. All will be based on the FIDIC conditions of contract for construction (Red Book).



▲ SUPERVISION OF CONSTRUCTION WORKS FOR THE GEYHAN WASTE WATER AND STORMWATER PROJECT IN TURKEY

The project is under the scope of the Environment Operational Programme - Instrument of Pre-Accession Assistance (IPA) for the Regional Development Component in Turkey and is co-financed by the EU and the Turkish Republic Government. Its objective is to support the improvements in storm water and waste water systems, in order to improve the conditions of health, environmental protection and municipal services.

The services provided by Eptisa consist of the supervision of the 1st phase construction works for waste water treatment plant and replacement of the existing collector, and the construction of storm water drainage network for the existing area. As well as provision of technical assistance for administrative, financial and technical capacity building of Ceyhan Municipality and the modernisation of the water utility department to enable sound implementation of planned projects and improve financial and operational performance for water / wastewater services.



▲ MARMARAY PROJECT: GEBZE-HAYDARPA A, SIRKECI-HALKALI COMMUTER RAILS UPGRADING CONSTRUCTION IN ISTANBUL, TURKEY

The objective of the Marmaray project is to connect the railway lines between the European and the Asian side in Istanbul through an undersea tunnel in the Bosphorus Strait, which will allow the transit of high-speed, commuter and freight trains between the two continents. The new railway system will be approximately 76 km long. The railway corridor runs along the length of the coast of the Sea of Marmara, between the towns of Kazlıçeşme and Halkali in the European side of Istanbul, and between the towns of Ibrahimaga and Gebze in the Asian side. The project will upgrade the existing railway corridor and adapt it to accommodate two tracks for internal Istanbul traffic (Commuter Rail) plus a third line on which interurban traffic will run (Intercity). Furthermore, the railway corridor has to be suitable for the movement of goods both on the dual track (CR) and on the two-way single track (IC). The maximum capacity at peak-hours should be about 75.000 passengers per hour per travel, the loading capacity for freight trains will be around 25 tonnes and the maximum operational speed will be 100 km/h with 104 min. of travel time between Gebze and Halkali (currently is about 185 minutes).

Eptisa, among other activities, has carried out the conceptual, preliminary and detailed design and the preparation of technical specifications for the fabrication, installation and construction of all systems and structures. This includes the layout, earthworks and drainage works, retaining wall, stations (architectural, structural, MEP, acoustic, fire safety and protection and landscape), overpasses, bridges and other structures, depots and stabling yards, track superstructure, and substation and power supply. There is also a team of fieldwork and research of existing structures in order to decide whether to retain, upgrade or are demolished to be replaced according to useful life criteria and, last, the consortium has the responsibility of reporting.

The main structures and systems are: three new underground stations, 37 surface stations (renovation and upgrading), 197 structures, operations control centre, yards, workshops, maintenance facilities, upgrading of existing tracks including a new third track and completely new electrical and mechanical systems.

Furthermore, Eptisa has executed the auscultation of the section between Pendik – Gebze. The control has been carried out during the execution of the work to control possible effects on adjacent buildings due to the excavations between embankments and walls.

To do this we implemented a topography network along the entire section and in different buildings, complemented by the installation of inclinometer pipes at different points to control the horizontal and in depth movements, and the installation of vibrating wire piezometers to know the interstitial pressures and the fluctuation of the groundwater level in the surrounding area. Additionally, was undertaken the control of existing fissures in buildings by using digital comparators and inclinometers were installed to control possible variations in the inclination of the buildings annexed to the work.







Asia



UZBEKISTAN

In 2013 we consolidated our presence in Uzbekistan within the **water** sector. We continue working in the technical assistance project to the Uzbek Communal Services Agency for the supervision and management of the subprojects included in the *Water Supply and Sanitation Services Investment Program - Tranche 1. Management of Investment Program within Multitranchise Financing Facility*, financed by the Asian Development Bank and it will be implemented until August 2017. The project includes the reconstruction of water pipelines, wastewater facilities, sewerage networks and water supply systems in the cities of Andijan, Gijduvan, Kokand, Vabkent, Termez, Fergana, Margilan, Rishtan and Yangibazar and in the regions of Djizzak (Kuytash water intake), Khorazm and the Republic of Karakalpakstan.

Also within the **water** sector, we are working in the project Surkhandarya Water and Sanitation Project Implementation Assistance, financed by the Asian Development Bank. We provide technical assistance services with the aim of improve the quality of life and health conditions in

the city of Termez, together with seven areas of the province. These last areas need to restore and modernize their drinking water supply facilities.

KAZAKHSTAN

Within the strategy of the Government of Republic of Kazakhstan for the renewable **energy** development, the state holding Samur-Kazyna, has launched a Master Plan in this sector with the aim of planning the investment during next 15 years to increase the share of renewable energies up to 10% until 2020.

Throughout 2013 we implemented the technical assistance project to develop the roadmap of the *National Renewable Energy Plan*, the analysis of different financial options for its implementation and the improvement of the regulatory framework.

As part of the main objectives of the project, Eptisa led the following activities: analyze the situation and provide reports for the preparation of a long term Road-Map (2013-2030) to increase the share of renewable energies up to 10% until 2020; develop and assess (operationally,



▲ WATER SUPPLY AND SANITATION SERVICES INVESTMENT PROGRAM IN UZBEKISTAN

The purpose of this project is to assist the Uzbek Communal Services Agency in supervising and administering the design and construction of the individual projects, including the reconstruction of water pipelines, wastewater facilities, sewerage networks and water supply systems in the cities of Andijan, Gijduvan, Kokand, Vabkent, Termez, Fergana, Margilan, Rishtan and Yangibazar and in the regions of Djizzak (Kuytash water intake), Khorazm and the Republic of Karakalpakstan.

Among other activities, Eptisa supervises feasibility studies and the final design; approves the key staff, construction programmes and method statements, temporary land occupation by the Contractors, materials and sources of materials and will inspect the works periodically. It also trains the future operatives of the Water Supply and Sanitation system in the correct operation of the plant in accordance with the chosen processes and installed equipment so as to ensure a low operating cost for treating the wastewater.



▲ FEASIBILITY STUDIES AND DESIGN CONSULTANCY SERVICES FOR THE ISSYK-KUL SUSTAINABLE DEVELOPMENT PROJECT IN THE KYRGYZ REPUBLIC

The Issyk-Kul basin is internationally important for biodiversity. The region was declared as a Biosphere Reserve by the Kyrgyz Government in 1998, and UNESCO in 2001 and the Asian Development Bank has classified the project as Environmental Assessment Category A. Eptisa, in consortium with the Kyrgyz companies RAM Engineering Associates LLC and OJCS Promproekt, has been awarded a new contract to prepare feasibility studies, detailed designs and tender documentation within the Issyk-Kul Sustainable Development Project in the Kyrgyz Republic.

The project covers the cities of Balykchy, Cholpon-Ata and Karakol and it consists of preparing feasibility studies for the first regional sanitary landfill solution to serve the communities along the Northern shore of Issyk-Kul with possible transfer station locations in Balykchy and Karakol, and for sewerage, sewerage treatment and involving facilities with a planning horizon to 2035.

Eptisa also prepares engineering designs, calculations and drawings for the transfer stations and for the complete development of the sanitary landfill establishment with an initial operating capacity for 10 years (total volume about 1,000,000 m³), to have provisions for fencing, internal roads, drainage, landfill cells, administration and maintenance facilities, parking areas, guard house, weighbridge and truck-wash, leachate treatment, etc.

Furthermore the consortium will prepare the detailed design and complete tender documentation with bills of quantities and cost estimates for the works identified for implementation in Phase II.





▲ UPGRADING PROJECT OF WATER SUPPLY AND SANITATION INFRASTRUCTURES IN THE CITIES OF OSH, JALAL-ABAD AND BAZAR-KORGON IN KYRGYZSTAN

economically and environmentally) three generation capacity alternative scenarios of energy-mix (conventional vs. renewable), from 2015 to 2030; select a list of 5 priority projects and investments in renewable energy power (solar, wind, hydro, etc.) to be launched before 2015; identify those parts of the renewable value chain where it should foster the local participation and define the investment strategy; define key regulatory guidelines, and possible organization of administrative bodies responsible for renewable energy development, and develop specific recommendations regarding the development of local skills and capabilities and the capitalization of this plan to maximize Kazakhstan's economic development.

KYRGYZSTAN

Eptisa, in consortium with two Kyrgyz companies, was awarded a new contract

to prepare feasibility studies, detailed designs and tender documentation within the Issyk-Kul Sustainable Development Project in the Kyrgyz Republic. This is the second phase in a longer-term initiative by the Asian Development Bank (ADB) to support **environmental** management and to improve urban service delivery in the Issyk-Kul Oblast.

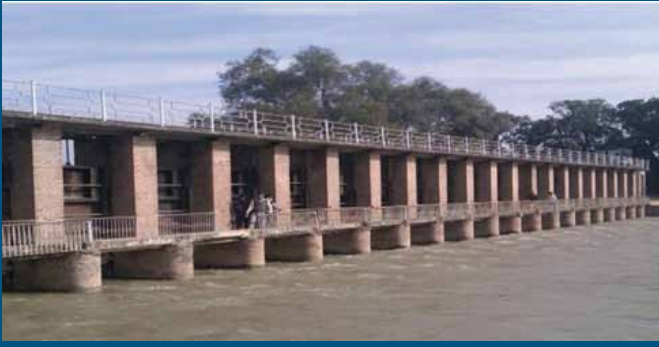
This project adds to the technical assistance to improve **water** supply and sanitation in the cities of Osh (capital city of the Osh region and second largest city of Kyrgyzstan) and Jalal-Abad (capital city of the Jalal-Abad region) and Bazar-Korgon located in the Southwest of the Kyrgyz Republic on the border with Uzbekistan.

Since 2012 Eptisa is preparing the design and cost options for the rehabilitation or new build for the needed infrastructures, as well as Resettlement Action Plan

(RAP) and Environmental Management Plan (EMP) in accordance with ADB procedures. In addition we assist the client with the tender preparation, selection, contracts, as well as, the management and supervision of the Contractors during the works implementation.

In the **information technology** sector, Eptisa has been awarded with a new contract to carry out the supply and installation of a Network Information System based on Geographic Information System (GIS) for the water supply system of Bishkek city.

The aim of this project is to improve the accessibility, quality and efficiency of local infrastructure services provided to the population of Bishkek novostroikas in order to improve the living conditions and facilitate the socio-economic integration into the urban community.



▲ DESIGN FOR THE MODERNIZATION OF IRRIGATION INFRASTRUCTURE IN THE UTTAR PRADESH STATE IN INDIA

The Government of Uttar Pradesh State, through the Irrigation Infrastructure Department, awarded to Eptisa a consultancy services contract to carry out a survey and redesign for the rehabilitation and modernization of irrigation infrastructure of main delivery canal in Lower Ganges Canal System, which provides irrigation facility to the entire lower area of the Yamuna River Basin, tributary of Ganges. The project is financed by the World Bank.

The Lower Ganges Canal System includes the Lower Ganges Canal (length 99.36 km) and Parallel Lower Ganges Canal (length 89.14km), both taking from the right bank of Narora Barrage. There are also five branch systems taking off from the left bank of the Lower Ganges Canal including Farrukhabad Branch (at km 41.45), Bewar Branch (at km 63.517), Kanpur Branch (at km 89.36), Etawah and Bhognipur Branch (at km 99.80).

Eptisa reviews the existing data, designs, studies, design manuals, institutions and initial field visits to optimize and prepare water allocation plan for various sub systems both for Kharif and Rabi Crops. It also carries out a survey for Lower Ganges Main Canal, Parallel Lower Ganges Main Canal, Farrukhabad Branch and Bewar Branch and the design, including construction planning and economic and financial analysis. Preparation of bid documents will be also undertaken.



▲ ENGINEERING SERVICES FOR NH-10 HIGHWAY PROJECT IN THE STATE OF HARYANA IN INDIA

The National Highways Authority of India (NHAI) awarded Eptisa a new contract to provide independent engineering services for the Rohtak to Hissar section of the four lanes NH-10 highway. This project includes the section from km 87,000 to km 170,000 including connecting link from km 87,000 (NH-10) to km 348,000 (NH-71) to be executed on DBFOT pattern (Design, Build, Finance, Operate and Transfer) under the Phase III of the National Highways Development Project in the State of Haryana.

The project involves the construction of 4-lane highway including bridges, widening and rehabilitation of bridges and culverts; construction of high embankment /elevated structures/ROBs wayside amenities, etc. along the existing highways including provision of realignment and bypasses.

Eptisa reviews the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the Concessionaire and furnish its comments. It also reviews, inspects and supervises the construction works, O&M and the divestment requirements, conducting tests on completion of construction and issuing Completion/Provisional Certificate.



◀ IMPLEMENTATION OF SWIS (SURFACE WATER INFORMATION SYSTEM) IN INDIA

The overall aim of the project is the migration of the present applications and data bases used by the Central Water Commission for central storage of hydro-meteorological data, to new e-SWIS system (Surface Water Information System), as well as the existing system for validation and data processing.

Eptisa reviews the existing databases, water information system design and processes; designs a system for data-flow, storage, dissemination, web platforms and GIS components; develops and implements the software (using open source software) in a phased manner; migrates the existing data from HIS databases (i.e. SWDES/WISDOM/HYMOS); trains different section of staff (i.e. end users, administrators, etc.), and generates documentation, online help, real-time help, etc.



▲ DETAILED DESIGN AND CONSULTANCY SERVICES FOR COASTAL TOWNS INFRASTRUCTURE IMPROVEMENT IN BANGLADESH

The project takes an integrated approach to urban environmental improvement in vulnerable coastal towns of Bangladesh which suffer deficits in basic urban services and are severely at risk to the impacts of climate change. The project aims to provide climate resilient municipal infrastructure with key investments in water supply, sanitation, drainage, urban roads and bridges, solid waste management, slum improvements, and transport facilities.

The Local Government Engineering Department has awarded Eptisa, in consortium, a contract to draw up of the detailed design and consultancy

services in the Coastal Towns Infrastructure Improvement Project financed by the Asian Development Bank.

Eptisa, in consortium, will undertake detailed engineering designs, including specifications, drawings, and detailed cost estimates, and feasibility studies such as preliminary engineering design and cost estimates of subprojects, as well as will conduct physical surveys. Eptisa will also prepare the bidding documents and undertake the Development Project Proposal preparation for investment project and will assist during the approval process, among other activities.

INDIA

Definitely, 2013 has been the year of consolidation for Eptisa in India. In only two years we have started different projects in the water, agriculture, transport and information technology sectors. With a consolidated team for the project management and business development, we work in projects financed by multilateral organisms as well as for the Government of India, competing with local companies. From our office in India, we have developed the market for Bangladesh, receiving our first contract in late 2013.

In the **transport infrastructure** sector, the Ministry of Road Transport and Highways of India, through the National Highways Authority of India (NHAI), has awarded Eptisa a new contract to provide independent engineer services for the Rohtak to Hissar section of four lanes NH-10 Highway, in the Haryana state. Eptisa will review the detailed design, construction methodology, quality and safety procedures, subcontractors' conditions and all documentation sent by the Concessionaire.

The Government of Uttar Pradesh State, through the **Irrigation** Infrastructure Department, has entrusted to Eptisa the

consultancy services to carry out a survey and redesign for the rehabilitation and modernization of irrigation infrastructure, specifically the main delivery canal in Lower Ganges Canal System, which provides irrigation facility to the entire lower area of the Yamuna River Basin, tributary of Ganges. The project is financed by the World Bank.

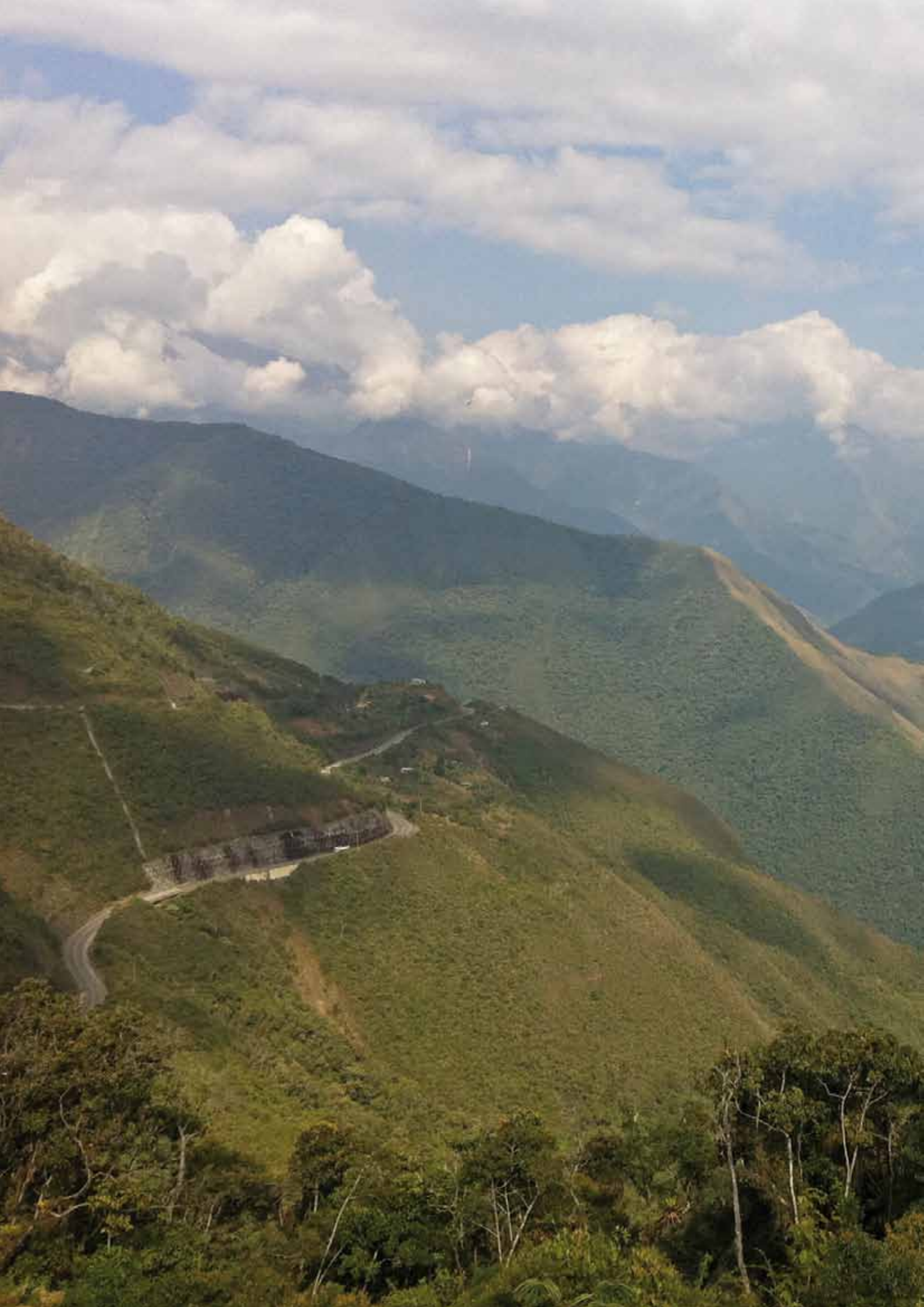
In the **water** and **information technology** sectors, we continue working in the *Supply, Installation and Commissioning of Surface Water Information System* project for the Central Water Commission (CWC), a technical organization in the field of Water Resources and is presently functioning as an attached office of the Ministry of Water Resources. The new web environment system will be implemented in participating agencies in the phase II of the National Hydrology Project, and potentially in all States and UTs of India. Furthermore, will be provided the web services required for data dissemination that, among other tasks, will allow the support of the Flood Warning functions.

BANGLADESH

Climate change and variability are critical development issues for Bangladesh,

particularly in its low lying coastal areas naturally exposed to sea level rise, storm surges, and more frequent and intense storm events. The government, in its Sixth Five-Year Plan, has targeted assistance to vulnerable coastal populations with improvements in climate resilient water supply, sanitation, drainage, and flood protection infrastructure.

To achieve this purpose, the Government of Bangladesh, through the Local Government Engineering Department, has awarded Eptisa, in consortium, a five-years contract to draw up the detailed design and provide consultancy services under the coastal towns infrastructure improvement project, financed by the Asian Development Bank.





America

In the **quality of aid** assessment, Eptisa has carried out the missions concerning the monitoring contract based on **ROM methodology (Result-Oriented Monitoring)** of the cooperation programmes and projects financed by European Union, both in Latin America and ACP (African, Caribbean and Pacific) regions. As consultants, we are responsible for organising the monitoring of each project and preparing the reports concerned. The objective is to guarantee an objective, impartial and rigorous quality control over the results of the European Union Aid and Cooperation Programmes in Africa. Within the programme, we visited projects in practically all countries of Sub-Saharan Africa, Caribbean and Pacific region and, in 2013, 706 monitoring reports within the ROM ACP contract were performed.

HAITI

In 2013 our presence was strengthened in Haiti with the award of three new projects in the water, buildings and development cooperation sectors.

On October 23, 2012, Hurricane Sandy hit the coast of Haiti, bringing heavy rains that caused 55 deceased, severe flooding and substantial damage in housing, crops, animals and public infrastructure of the island, such as the destruction of

roads, bridges and viaducts. The Ministry of Public Works, Transport and Communications (MTPTC) received a grant from the Inter-American Development Bank to finance the emergency response program of road rehabilitation in the South, Grande-Anse, Nippes, West and Nord departments. In order to carry out this program, the MTPTC awarded Eptisa the contract to supervise the program.

In the **water** sector, Eptisa was awarded a new contract financed by Inter-American Development Bank funds to carry out a hydro-geological study in the metropolitan region of Port of Prince, performed for the aquifers Massif de la Selle and Nappe de la Plaine du Cul-de-Sac. This project is aimed to draw up preliminary studies for the implementation of drinking water extraction wells.

In 2013 we continued developing the project to carry out the *Regional Master Plans for Drinking Water and Sanitation*. The contract includes the preparation of feasibility studies for nine cities located in the region. The objective of the Master Plan is to provide each one of the four regional offices (OREPAs) with data and short, medium and long term investment proposals. In 2014 it will start the construction phase of the water and sewerage networks.





▲ SUPERVISION OF EMERGENCY WORKS IN RESPONSE TO HURRICANE SANDY

The Ministry of Public Works, Transport and Communications (MTPTC), received a grant from the Inter-American Development Bank (IDB) to finance the emergency response program of road rehabilitation in the Hurricane Sandy in the departments: South, Grande-Anse, Nippes, West and Nord. The MTPTC entrusted Eptisa the contract to supervise of the programme.

The works to undertake can be summarized in the construction of new culverts, new ditches for road drainage and retaining structures for road embankments by means of masonry walls, gabions or reinforced concrete. It will be also carry out paving works for repairing and strengthening of unpaved

roads surface, repairing structural elements and other equipment of damaged bridges and hydraulic protection works for foundations and abutments of bridges, among others.

The overall objective of the services to be provided by Eptisa is mainly to consider all aspects to ensure that the works complies with the specifications of works contracts and quality requirements stated in the norms and standards, while ensuring compliance with deadlines and budgets allocated to the project.

► HYDRO-GEOLOGICAL STUDY IN THE METROPOLITAN REGION OF THE HAITIAN CAPITAL PORT OF PRINCE PERFORMED FOR THE AQUIFERS MASSIF DE LA SELLE AND NAPPE DE LA PLAINE DU CUL-DE-SAC IN HAITI

The objective of the study is to carry out preliminary reports for better implementation of the extraction wells. The project will consist of recovering and gathering the existing information and executes the study with taking into consideration all existing studies, all information from the boreholes and wells located in the studied area.

In the aquifer Massif de la Selle it will be carried out the verification of the stability of the springs and detection of any rehabilitation needs that have not been detected previously. Following, it will be performed geological cartography and analysis of possible fracturation in the selected region, analysis of geophysical state to define exploration drilling and the placement of piezometers, as well as trial execution to determine stable pumping flows in opened boreholes. The study for the Massif de la Selle closes with the synthesis of the potential of newly identified water resources and with the cost assessment of the construction and exploitation of the particular hydrological resource, its connection to the existing network and its storage.

In the aquifer Plaine du Cul de Sac, the hydro-geological research will include: interpretation of hydro-geological data and data on water level recovered from existing piezometers and those drilled during the project; long-term data follow-up and interpretation; inventory; identification and interpretation of the data from the existing wells (wells from the industrial areas and old irrigation wells); examination of the current situation and the potential for drilling in the contracting Administration, update of the database, with its adaptation to the newly gathered data; evaluation of the reserve of renewable aquifer; analysis



of the quality of water evolution; evaluation of the optimal pumping flow from the currently exploited boreholes; localization of the future drilling zones and identification of affected properties; evaluation of the vulnerability of the Plaine du Cul de Sac aquifer; summary of the potential of newly detected resources in Plaine du Cul de Sac and its overall capacity. Cost assessment for the construction of new water supply infrastructure and its communication with the existing network, as well as proposed storage in the Master Plan of Tractebel y Estudio de BEJV.

Eptisa will carry out two preliminary studies for better implementation of the extraction wells. With the support of these studies, the piezometers will be placed and the data extracted from them will be mathematically modeled, so that optimal production capacity and water extraction flow can be determined. They will also coordinate technical tasks as well as the establishment of the database with the existing data and update with the data acquired from the research campaigns.



▲ STUDY AND CONSTRUCTION SUPERVISION OF THE MULTIFUNCTIONAL CENTRE FOR THE CIVIL PROTECTION DEPARTMENT IN PORT-AU-PRINCE IN HAITI



▲ DEVELOPMENT OF THE REGIONAL MASTER PLANS FOR DRINKING WATER SUPPLY AND SANITATION IN THE SOUTHERN AREA OF HAITI

Within the **development cooperation** sector, we were awarded the technical assistance to *Support the Ministry of Trade and Industry (MTI) Programme*, financed by the European Union under the 10th FED. Eptisa provides technical assistance to the MTI in order to strengthen its institutional capacities when it comes to analyzing, formulating and implementing trade, industrial and competitiveness policies. It will also consolidate the coordination between public and private stakeholders and will ensure the coordination and implementation of the different trade agreements and commitments.

Particularly, the project offers assistance services for the strategic definition of industry and trade policies, suggestions to help Haiti to respond to the commercial agreements that have been signed, facilitate the public-private dialogue and the improvement of the MTI staff capacities, among others.

In the sector of **buildings**, the Ministry of Interior and Territorial Communities (MICT) of Haiti has awarded Eptisa a new project to carry out a study and construction supervision of the multifunctional centre for the Civil Protection Department in Port-au-Prince. During the first phase, it has carried out the study of execution and drawing up the detailed design. In the second phase we will prepare the dossier with the conditions of the call for tenders for construction companies, as well as an analysis of the offers of the companies that participate and their evaluation. And to finalize, it will be carried out the works supervision of the building, including the monitoring of scheduled execution, reporting and a dossier of executed works.

DOMINICAN REPUBLIC

Within the technical assistance project for the *Program Supporting Public Administration Reform (PARAP)*, Eptisa supports the Ministry of Public Administration in the implementation of key elements of the 2009-2012 Strategic Plan in at least six institutions of the Government. These have been selected under the permanent scrutiny of the Dominican society organizations. The aim of the project is to contribute to strengthening the Dominican Republic's governability, social cohesion, and modernisation by means of the professionalization of civil service, the quality of public services, and the strengthening of public bodies.

MEXICO

Eptisa provides technical assistance and support to executive management and

program team within the Integrated Program of social cohesion Mexico - European Union, Lot 2: Mexico- European Union Social Cohesion Laboratory, as well as to the related public institutions and communities and beneficiary groups of the program. The objective pursued is to establish, implement and strengthen an integrated participatory model for sustainable local development in the regions of the Selva and Sierra at Chiapas State.

GUATEMALA

In Guatemala, we work in three projects related to the **development cooperation** sector. The first one, offering technical assistance services for the Programme to Security and Justice Sector in Guatemala (SEJUST) with the aim of improving the justice and security sectors to allow it to operate more effectively in prosecution and investigation of crime and guarantee

▼ LAND ADMINISTRATION PROGRAM FOR GUATEMALA





▲ TECHNICAL ASSISTANCE FOR THE IMPLEMENTATION OF THE PROJÓVENES II PROJECT IN EL SALVADOR

due process by protecting the rights of victims and vulnerable groups seeking rehabilitation, reintegration and education of the lawbreakers.

This year, a special effort has been made to strengthen the coordination between institutions of the sector through the Coordinating Body for the Justice Sector Modernization, beneficiary of the SEJUST Project. Important activities have been driven in penitentiary field, strengthening the Ministry of Government, as well as different activities to train the staff of the Public Ministry and Criminal Public Defence Institute. Other important activity promoted during this year is the next construction of three 24-hour courts in the country.

The second is aimed to reduce poverty, food insecurity and chronic malnutrition. Eptisa provides technical assistance to the Government of Guatemala in the implementation of the *Programme of Support to the Food Security National Policy (PESAN)*. The program is being coordinated by the National Food Security Department and the Ministry of Public Finance.

Last but not least, we also support the *Financial Management Support* project, which is to strengthen the capacities of the Ministry of Public Finance to improve the transparency and credibility of the Public Administration, through better coherence and efficiency in public expen-

diture management under the Managing for Results. The project enhances the relationship between planning and budgeting, making it easier to elaborate and implement integrated programmes and strategies compatible with the development and social cohesion targets, with special approach on health, education and security sectors.

In the **land management** sector, we continue working in the *Land Administration Program for Guatemala* for the Cadastral Information Registry (CIR). The overall objective is to promote the security process during the registration of land tenure in the project area, through the provision of an efficient and accessible cadastral and land administration service. Eptisa is carrying out the cadastral and limited land regularization processes with the aim of determine both physical and geometric characteristics of each land located in the municipalities of San Juan Ermita, Olopa, Quezaltepeque and Camotán, within the Chiquimula department, as well as to obtain information about these municipalities and the cadastral owners.

EL SALVADOR

In El Salvador we continue providing technical assistance services to the Government, specifically to the National Institute of Youth (INJUVE), in the implementation of the *Projóvenes II* Project. Its objective is to promote social cohesion and to mitigate the risks factors of

violence and youth delinquency. The Program is characterized by carrying out its work through granting prominence to the young people, and through the municipalities where are located the focused communities on which prevention and support interventions are carried out.

The Projóvenes Project has paid more attention to some key factors that allow preventing youth delinquency, such as community development, promotion of sport, arts and culture as an essential point for the youth development, education for coexistence, restoration of public spaces and environmental conservation, labour insertion, and improvement of labour opportunities and relations, among others.

NICARAGUA

Following successful completion of the second phase of the *Institutional Strengthening Programme in Support of the Government of Nicaragua for the Establishment of a Mid-Term Expenditure Framework (MTEF)*, the Swiss Secretariat for Economic Affairs awarded a contract to implement the third phase of the Program to a consortium lead by Eptisa, adding a regional approach.

The project, which will be implemented until April 2016, continues the support in Nicaragua while at the same time expands the use of this multi-year budgeting tool to the other member countries



▲ TECHNICAL ASSISTANCE SUPPORT FOR THE PROGRAMME TO SECURITY AND JUSTICE SECTOR IN GUATEMALA (SEJUST)

Eptisa provides technical assistance support for the Programme to Security and Justice Sector (SEJUST) in Guatemala. The project will last 42 months and is financed by the European Union and coordinated by the Executive Secretary of the Coordinating Body for the Justice Sector Modernization of the Government of Guatemala.

The SEJUST Programme, with a budget of EUR 22 million, has the aim of improve the justice and security sectors to allow it to operate more effectively in prosecution and investigation of crime and guarantee due process by protecting the rights of victims and vulnerable groups seeking rehabilitation, reintegration and education of the lawbreakers.

Eptisa, as the leader of the consortium formed by ICON and the “Instituto de Estudios Comparados en Ciencias Penales de Guatemala”, will support beneficiary institutions of the SEJUST programme (Judiciary and Supreme Court of Justice, Public Ministry, Ministry of the Interior and Criminal Public Defence Institute (IDPP), among others) in coordination, planning, implementation, monitoring and follow-up of program activities, and provide technical support and advice in the design, development and implementation of Procurement Processes, in accordance with procedures of the European Commission; and support other needs that might arise during the implementation of the technical assistance.

This year, a special effort has been made to strengthen the coordination between institutions of the sector through the Coordinating Body for the Justice Sector Modernization, beneficiary of the SEJUST Project. Important activities have been driven in penitentiary field, strengthening the Ministry of Government, as well as different activities to train the staff of the Public Ministry and Criminal Public Defence Institute. Other important activity promoted during this year is the next construction of three 24-hour courts in the country.



▲ LAND REGULARIZATION SERVICES IN RURAL AREAS OF THE AZUERO IN PANAMA

The Government of Panama has developed an action plan in different provinces and districts of the country with the aim to find a solution for the situation of the cadastre and the real property registration. A cadastral survey and land titling will be carried out in order to allow the regularization of the situation of the urban and rural lands, fulfilling one of the historical requirements that the ANATI (National Land Administration Authority) has assumed as priority action since its recent creation.

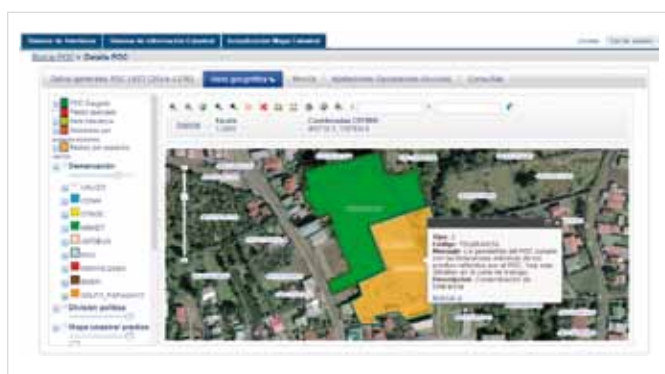
Eptisa will provide its services including all the necessary activities to carry out the cadastral survey of 40.000 rural hectares in the Azuero Peninsula which includes the Herrera, Los Santos and Veraguas provinces, as well as processing the necessary property records for the registration in the Public Registry. The result of these works will mean the generation of 4,000 title deeds. With this measure the objectives of the national land policy related to the modernization of the land administration and services will be achieved, ensuring legal security and the improvement of the quality of life of the rural and urban land's owners.



◀ SUPPORT TO IMPROVEMENT OF WORK CONDITIONS AND EMPLOYMENT CREATION IN THE MINING REGIONS OF BOLIVIA (EMPLEOMIN)

Eptisa advises and provides operational support to the Ministry of Mining and Metallurgy within the project of Improvement of Work Conditions and Employment Creation in the Mining Regions of Bolivia (EMPLEOMIN). The aim is to contribute to economic, social and environmental development of these areas, besides generating job opportunities by developing the artisanal mining sector and by diversifying economic activity.

The EMLEOMIN Project has three main components: the first one is to implement initiatives to improve working, competitiveness and environmental conditions in the cooperative and artisanal mining sector, as well as generating employment in alternative sectors. The second component emphasizes institutional strengthening of related public institutions (both national and local level). And the third one is aimed to contribute to the improvement of the quality of the mining sector work force through training activities. During the year 2013, the three components have received a big boost, resulting in significant progress in the implementation of the project.



▲ REAL STATE REGISTRY INFORMATION SYSTEM (SIRI) IN COSTA RICA

of COSEFIN (Costa Rica, Guatemala, El Salvador, Honduras, Panama and the Dominican Republic). Regional MTEF project works in the diagnosis, design and institutionalization of budgeting processes focused on results, monitoring and evaluation of programs.

We also continue with the technical assistance project titled *Institutional Support Program for the Development Policies in Nicaragua (POFI)*. It is aimed to contribute to the strengthening of the planning, execution and monitoring capacities for the implementation of the public policies in the rural and security sectors, key areas established in the Human Development National Plan, and amelioration of the beneficiary institutions planning capacities and the public sector budget management.

HONDURAS

In Honduras Eptisa continues with the technical assistance for the *Support Program to the Public Administration and the Regional Integration (SPARI)* that will last four years. It supports the State of Honduras in promoting a better grade of social cohesion through the reinforcement of the State institutions and other organizations of the civil society involved, directly or indirectly, in the implementation of development strategies linked to the poverty reduction, social protection and improvement of public budget management.

COSTA RICA

In the **information technologies** sector, we continue with the project for the development, setting up and maintenance of the *Real State Registry Information System (SIRI)*, aimed to guarantee the maintenance of real state information, to guarantee that the data of the National Registry are the base for the real state information and operate inside the national spatial data infrastructure, and to resolve the different type of inconsistencies between the real state registry and cadastre in the future.

The Real State Registry Information System will have three main subsystems: the Cadastral Information System (CIS) based on a Geographic Information System (GIS), with the geographic and topographic information of the Cadastre; a interface with the Building Assets System (SBI) which includes information of property (alphanumeric and legal); and the Interfaces System (IS) which integrates both and offers to CIS users a unified and consistent viewer of the physical and legal descriptions of all lands.

Included in the **Cadastre and Registry** Regularization Program and through the project for the *Cadastre preparation and regularization for cadastre and registry information for Zapotal Area*, Eptisa supports the Government to improve legal security and real property rights.

In the **auscultation** field, and upon request of the Costa Rican geotechnical company CACISA, Eptisa is carrying out the installation of an inclinometer and piezometer network in the slope located next to Tarcoles dam. The installation has been carried out by drilling in a heterogeneous and highly brittle field, so it has been necessary to use high complexity installation procedures in order to guarantee the correct installation and joining of the device with the surrounding environment.

PANAMA

After the completion of the activities corresponding to the *Urban Cadastre in the Metropolitan Area*, the Government of Panama awarded Eptisa the execution of land regularization services in rural areas of the Azuero Peninsula. The services provided, that will last 10 months, are part of the activities scheduled under the Property Planning Program carried out by ANATI (National Land Administration Authority).

Thanks to this first contract with ANATI institution, Eptisa consolidates its position as one of the leading companies in Panama, where began its activities ten years ago.

COLOMBIA

In consortium with three local companies, Eptisa continued providing technical assistance services to the *New Territories of Peace of Colombia*, aimed to contribute to the consolidation of their safety and development by promoting socioeconomic initiatives, which it turns towards a culture of peace, democracy and a State of Law. This is fostering to a decent living conditions and equal opportunities for all citizens.



▲ AUSCULTATION AND GEOTECHNICAL CONTROL OF THE SLOPE LOCATED NEXT TO TARCOLES DAM IN COSTA RICA

PERU

In 2013 Eptisa was awarded with a new contract in Peru for the development of an *Integrated Geographic Information System for the Drinking Water and Sewerage Service of Lima (SEDAPAL)*. The objective of the Information System, based on ArcGIS technology, is to homogenize and integrate all the geographic information into an only database which currently SEDAPAL manages in different formats. Furthermore the necessary functionalities will be developed for the use of the said information.

BOLIVIA

In the **environmental sector**, we have been worked in the project within the *Biodiversity Sustainable Conservation Support Program (PACSBio)*, with the global objective of provide technical assistance for an adequate implantation of the program and institutional strengthening to the Environment and Water Vice Ministry and the National Service of Protected Areas (SERNAP). The purpose of the PACSBio is the biodiversity conservation and the sustainable development in Bolivia, thus supporting the Bolivian policies under the Protected Areas National System.

And in the **development cooperation** sector, we continued providing technical assistance services to other two EU-funded projects. In the first one we provide advice and operational support

to the Ministry of Mining and Metallurgy, in the *Improvement of Work Conditions and Employment Creation in the Mining Regions of Bolivia (EMPLEOMIN* in Spanish). The target is to contribute to economic, social and environmental development in these areas, as well as to create employment opportunities by developing the artisanal mining sector and by diversifying the economy activity.

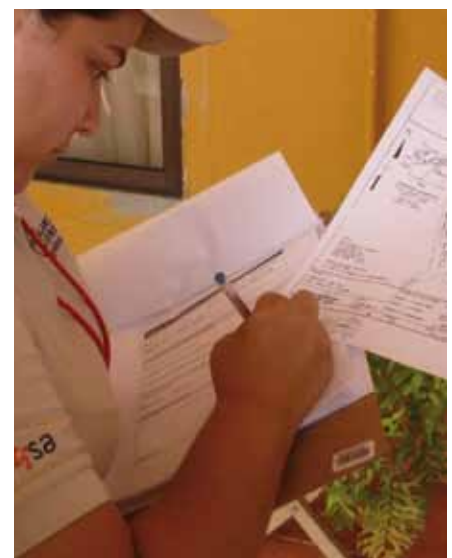
In the second project, and within the consortium lead by Eurecna, we offer technical assistance to the project supporting the PRO BOLIVIA agency and other beneficiaries on the *Program for supporting the Productive Development with Decent Employment Sector Plan*. The focus is to improve productivity and employment quality in the Small and Medium Enterprises (SMEs) in prioritised sectors, through the improvement of management capacity, promotion of productive development and institutional strengthening.

ARGENTINA

Eptisa continue providing technical assistance services for the project to *Improve Regional Economies and Local Development*, aimed to contribute to improving the life quality of the community and the local development of ten less-favoured areas of the country, located at Northwest and Northeast Regions. Through this program, it is provided specific technical assistances on different topics of interest for the National Industrial Technology

Institute (INTI) so they can improve the services to enterprises, particularly in the northern areas of the country, as well as advice to get the project having the greatest possible impact.

▼ CADASTRE AND REGISTRY REGULARIZATION PROGRAM IN COSTA RICA





Africa

During 2013, the presence of Eptisa in Africa has increased thanks to the new projects awarded in the energy and social development sector, as well as environment, water and health sectors.

The first one is related with the **energy** sector. The European Union awarded Eptisa, in consortium, a project to provide technical assistance to the countries and regional organizations located in Western and Central Africa within the framework of the *Sustainable Energy for All* initiative (SE4All). This initiative is aimed to achieve by 2030 the insured universal access to modern energy services, doubling the global rate of improvement in energy efficiency and doubling the share of renewable energy in the global energy mix.

In the **development cooperation** sector, we continue providing technical assistance services to the European Union within the multi-country contract: *Strengthening Non-State Actors Capacities to promote National Reform and increase Public Accountability in the Neighbourhood South Countries*. The purpose of this contract is to strengthen the overall capacities of the non-state actors to promote

the national reform and increase public accountability in the countries located in the Southern Mediterranean region: Morocco, Algeria, Tunisia, Libya, Egypt, Israel, Occupied Palestine Territory, Jordan, Lebanon and Syrian Arab Republic.

In the **quality of aid** assessment, Eptisa has carried out the missions concerning the monitoring contract based on ROM methodology (Result-Oriented Monitoring) of the cooperation programmes and projects financed by European Union, both in Latin America and ACP (African, Caribbean and Pacific) regions. As consultants, we are responsible for organising the monitoring of each project and preparing the reports concerned. The objective is to guarantee an objective, impartial and rigorous quality control over the results of the European Union Aid and Cooperation Programmes in Africa. Within the programme, we visited projects in practically all countries of Sub-Saharan Africa, Caribbean and Pacific region and, in 2013, 706 monitoring reports within the ROM ACP contract were performed.

Since 2012 Eptisa is part of the consortium that provides its services evaluating



the UK Department for International Development (DFID) and facilitating the compliance of its purpose of maximize both impact and effectiveness of the development aid as the value of money from UK taxpayers. 28 mainly African and Asiatic countries are included, and specially emphasises the impact assessments in fragile or conflict-affected countries and in sectors such as governance, climate change and development of private sector.

MOROCCO

In 2013, the European Investment Bank awarded us a new contract, in consortium, to provide technical assistance to the Central Project Management Unit (CPMU) of the Ministry of Agriculture and Maritime Fisheries for the modernization

of **irrigated agriculture** in the area of Gharb, Haouz and Souss Massa in Morocco. The project is part of the “Programme National d’Economie d’Eau en Irrigation” (PNEEI), aimed to transform a surface of 21,405 Ha into an irrigation area in three regions of the country.

We concluded the monitoring of the *Support Programme to Literacy and Adult Education Strategy*, offering technical assistance services to improve the economic, social and political participation of the most disadvantaged segments of the population, as well as the preparation for the future sector evolution, placing emphasis on the relationship between vocational education and employment development sector.

ALGERIA

In the **transport** sector, we continue drawing up the construction design of a 32.5 km section of the new single-track railway line Ralizane - Tiaret – Tissemsilt, which will be 185 km long.

In the **water** sector, we are involved in the contract to carry out the control of the detailed design and works supervision of the Wastewater Treatment Plant in Akbou city (Wilaya de BEJAIA), and its operation for a two years period. The new WWTP will include a capacity of 100,000 Eq.h and biological treatment (low-loaded activated sludge), with a complete line of wastewater treatment and another sludge treatment line.

JORDAN

Eptisa, in consortium with the German company GFA and the Jordanian NGO Partners Jordan-Centre for Civic Collaboration, will support civil society and community-based organizations to effectively engage in policy dialogue with local authorities. The Programme’s objective is to support democratic governance in Jordan focusing on three main components: strengthening of the institutional and administrative capacity of the Chamber of Deputies; building the institutional capacity of decentralized structures in each province, and supporting Non-State Actors to act as an effective drive for good governance and accountability. During three years of project implementation, it will be undertake legislative development, promotion of public policy dialogue and gender equality, and development of civil society.

MOZAMBIQUE

Within the **health** sector, we continue working in the European Union-funded project for the *Institutional Strengthening to the Ministry of Health: Support to the Development of Human Resources for Health Sector Management and Administration*. The overall objective of this project is to strengthen and develop the planning, management, and evaluation process in the health care sector, placing particular emphasis on infrastructures, as well as human, material, and financial resources. This will help improve the

▼ MONITORING SERVICES
OF DEVELOPMENT
COOPERATION PROJECTS IN
AFRICA





▲ SUSTAINABLE ENERGY FOR ALL (SE4ALL) FOR WESTERN AND CENTRAL AFRICA COUNTRIES

The European Union has awarded to Eptisa, in consortium, a project to provide technical assistance to the countries and regional organizations located in Western and Central Africa within the framework of the "Sustainable Energy for All" initiative (SE4All). This initiative is aimed to achieve by 2030 ensured universal access to modern energy services, double the global rate of improvement in energy efficiency and double the share of renewable energy in the global energy mix.

The objective of this contract is to provide technical assistance to countries located in Western and Central Africa (including the regional structures) to produce an improvement in their administrative and technical capabilities in the areas of analysis, development and implementation of sector policy, as well as to accelerate and efficiently implement their sector reform policies in the areas of access to energy, energy supply, renewable energy and energy efficiency. With this, the implementation of investment projects will be facilitated to develop necessary infrastructure to achieve the SE4All objectives.

▶ TECHNICAL ASSISTANCE TO THE CARTOGRAPHIC AND TELECOMMUNICATIONS NATIONAL CENTRE OF MOZAMBIQUE (CENACARTA)

Eptisa supports the Cartographic and Telecommunications National Centre of Mozambique during a territorial cartography project to carry out the implementation of the pilot phase of the project Territorial cartography at a scale 1:25,000.

The project consists of strengthening the institutional capacities of the Cartographic and Telecommunications National Centre of Mozambique (CENACARTA), which is in charge of the collection, storage and processing of cartographic and satellite images within the country.

The institutional strengthening is being carry out through the procurement of modern equipment and training on technology transfer at national level, as well as the creation of a database of georeferenced data to produce topographical cartography at 1:25,000 scale and update the existing cartography at 1:50,000. The project seeks to cover the needs of different sectors within the country: cadastre, agriculture, transport infrastructure, geographic information systems, energy and telecommunications, among others.

The project is divided into three phases. The pilot phase will involve the procurement of equipment, software and satellite images, the starting of cartographic production, technology transfer, training and testing of proposed methodology. The production phase comprises the extension of cartographic production to other locations different to the pilot zones within Mozambique, and the assumption of responsibilities in the production process by the client's staff. Finally, the project will conclude with a consolidation phase.



▲ DETAILED DESIGN OF THREE SECTIONS OF THE NEW RAILWAY LINE FOR PASSENGERS AND GOODS BETWEEN THE CITIES OF RELIZANE, TIARET AND TISSEMSILT IN ALGERIA

The project located in Algeria includes the detailed design of the new railway line for passengers and goods between the cities of Realizane, Tiaret and Tissemsilt. They are part of the track and platform layout design, earthworks, design of esplanade, ballast and sub-ballast, cross and longitudinal drainage, track superstructure, railway and non-railway facilities, replacement of affected services and structural protection of gas pipelines near the layout.

It also includes the highway and road design cut off by the new railway line and their replacement guaranteeing cross permeability. The layout, earthworks, pavements, drainage and road replacement signalling will be analyzed during the process. The geotechnical study related to earthworks and slope stability in the railway layout and road layout, as well as the analysis of parameters of design and recommendations of structures foundation are part of the detailed design.

The project involves the design of two railway stations (Mendes and Rahouia stations) at both building design level (architectural and structural design) and related facilities design level. It is also included in the project the design of the adjoining areas to the building for vehicles, buses and taxis parking.



population's health conditions by equitably expanding high-quality basic health care services.

In 2013, we were awarded a new contract to carry out the implementation of the pilot phase of the project **Territorial cartography** at a scale 1:25,000. The project consists of strengthening the institutional capacities of the Cartographic and Telecommunications National Centre of Mozambique (CENACARTA), which is in charge of the collection, storage and processing of cartographic and satellite images within the country.

DJIBOUTI

In 2013 we were contracted to provide technical assistance for the development of an **Integrated Risk Assessment Platform** in Djibouti (IRAP), which is part of the Natural Disaster Risk Assessment and Monitoring System Project. The project is financed by the GFDRR (*Global Facility for Disaster Reduction and Recovery*) and managed by the World Bank.

The main objective of this consultancy is the analysis, evaluation, communication

and monitoring of the country's risk factors, as well as the assessment of the associated potential losses in order to provide decision-makers with the necessary tools for the development of their functions.



▲ TECHNICAL ASSISTANCE TO THE CENTRAL PROJECT MANAGEMENT UNIT (CPMU) FOR THE MODERNIZATION OF IRRIGATED AGRICULTURE IN MOROCCO

The European Investment Bank has awarded us, in consortium, a new project to provide technical assistance to the Central Project Management Unit (CPMU) of the Ministry of Agriculture and Maritime Fisheries for the modernization of irrigated agriculture in the area of Gharb, Haouz and Souss Massa, which are part of the "Programme National d'Economie d'Eau en Irrigation" (PNEEI), with the aim of transform a surface of 21,405 Ha into an irrigation area in three regions of the country.

The technical assistance team will support the CPMU of the Ministry of Agriculture and Maritime Fisheries and will provide the necessary technical support for the modernization of over 20,000Ha of irrigation area through upgrading of public irrigation networks and their adaptation for localised irrigation, on-farm drip irrigation equipment. It is expected to directly benefit about 7,772 farmers, which will receive support and training services to a better access to new technologies, irrigation, finance and markets.



▼ REGIONAL CAPACITY BUILDING PROGRAMME FOR CIVIL SOCIETY FACILITY OF SOUTHERN MEDITERRANEAN COUNTRIES

The European Union awarded Eptisa, in a consortium lead by Transtec, the multi-country contract Regional capacity building programme for civil society facility Southern countries with the aim of strengthening non-state actors' capacities to promote national reform and increase public accountability in the Neighbourhood South Countries: Morocco, Algeria, Tunisia, Libya, Egypt, Israel, Occupied Palestine Territory, Jordan, Lebanon and Syrian Arab Republic.

The overall objective of the Civil Society Facility of which this contract is part is to increase the influence of Civil Society in the democratic configuration, both at national level and within the Southern Mediterranean region, and to stimulate a civil society-friendly 'environment' and culture. The technical assistance will be focused on strengthen the overall capacities and the accountability of Civil Society Organisations, and to facilitate their involvement so as to boost their contribution to a political and institutional level.



Corporate Social Responsibility

Eptisa provides services with high technical and quality standards, and develops its projects aiming to provide the highest benefits for its clients', always acting professionally and looking for continuous progress and orientating its results, to the extent possible, towards environmental sustainability and public interest.

Corporate Social Responsibility (CSR) is a strategic focus which potentiates Eptisa and its brand. Furthermore, it builds the trust and commitment of our employees. These factors being key in today's globalised market.

Aware of the significance that company's CSR has acquired in this new context, in the following sections we set forth the main aspects of Eptisa's CSR policy.

IMPLEMENTATION OF CORPORATE GOVERNANCE

Corporate Governance is the development of a framework that effectively manages the relationships between the shareholders, the Board of Directors, management and key stakeholders in Eptisa

The incorporation Corporate Governance best practices directly enhances trust, safety and value creation within the Company. Therefore, Eptisa's management commits to ensuring that its executives act in a responsible and ethical manner in the course of their professional activity, applying Corporate Governance best practices via the implementation and monitoring of CSR related standards and recommendations, and to integrating these guidelines within Eptisa's internal organisation without overlooking strategic management and operational efficiency.

► GOVERNING BODIES

In order to incorporate these Corporate Governance best practices and consequently fulfil its commitment to transparency and business ethics, Eptisa has the following Governing Bodies: (i) Shareholders' General Meeting, (ii) the Board of Directors and (iii) the Executive Committee.

Among others, the main objectives of these Governing Bodies include the following:

- Ensure the organisation's sustainability from the economic-financial, social and environmental point of view;
- Foster an environment of ethical business practice in order to aid the Directors, managers and employees to prevent any unethical irregularities from occurring within Eptisa;



- Ensure an effective framework of Corporate Governance, establishing the necessary internal policies and regulations;
- Involve stakeholders in the Corporate Governance model in order to foster collaboration and cooperation so as to maximize value creation;
- Contribute to creating long-term value through careful management of corporate reputation;
- Potentiate the transparency and ensure the accuracy of the published financial information;
- Monitor operational management efficiency, improvement of processes and compliance with the applicable legislation.

Shareholders' General Meeting

The Shareholders' General Meeting is the supreme organ of expression of the shareholders' will. The decisions concerning the matters within their competence are adopted through majority.

Amongst others, matters within its competence include the following:

- Modifications to Eptisa's corporate structure;
- Modifications to the composition of the Board of Directors;
- Amendment of the Articles of Association; and
- Election of the External Auditor of the Company.

All shareholders are represented at the Shareholders' General Meeting and meet at least twice during each financial year.

Board of Directors

The composition, meetings schedule and internal regulations of Eptisa's Board of Directors are defined in specific clauses in the Articles of Association and by the Capital Companies Act. Furthermore, Eptisa's Board of Directors also abides to the applicable recommendations of the Good Governance Code.

Eptisa's Board of Directors is made up of the following seven Board Members, of which three are Executive Directors:



D. ÁNGEL CORCÓSTEGUI

President of Eptisa and Founding Partner of Magnum Capital Industrial Partners.

Prior to founding Magnum Capital Industrial Partners in 2006, Angel Corcóstegui served, from 1994 to 2002, as the Global CEO and First Vice-Chairman of Banco Santander Central Hispano (BSCH / BCH, currently Banco Santander). From 1988 to 1994 Ángel served as General Manager and Board Member of Banco Bilbao Vizcaya (BBV). From 2002 to 2006 Ángel worked as an Industrial Advisor to Carlyle Private Equity.

Angel is currently President of Eptisa and Iberchem and Board member of Generis, Geriatros, the Lau-der Institute and the Wharton Business School.

Ángel holds a Ph.D. in Finance and an MBA from the Wharton Business School (Fulbright Scholar), and a Master of Science degree in Civil Engineering from Santander University.



D. LUIS VILLARROYA

Vice-President and CEO of Eptisa.

Luis Villarroya has been Vice-President of the Board and CEO of Eptisa since 2007, where he has held positions of the highest managerial responsibility since his incorporation in 1990. Luis is currently a member of the Strategic Guidance Committee of ICEX specialising in exports and investment; Vice-president of the Steering Board of the Spanish Exporters and Investors Club; Vice-president of the Association of Engineering, Consultancy, Environment, Architecture and Technology Services Companies of Madrid (ASICMA); Member of the Steering Board of the Spanish Association of Engineering, Consultancy and Technology Services Companies (TECNIBERIA); Member of the Executive Committee of the Pan-American Federation of Consultants (FEPAC) and Member of the Forum for Engineering Excellence (FIDEX).

Luis has a Master of Science degree in Civil Engineering from the Polytechnic University of Madrid.



D. ENRIQUE DE LEYVA

Proprietary Director of Eptisa since 2007 and Founding Partner of Magnum Capital Industrial Partners.

Prior to founding Magnum Capital Industrial Partners in 2006, Enrique de Leyva worked for McKinsey & Company for over 20 years in Spain, Lisbon, New York and London. Enrique was the Managing Partner of the McKinsey Spanish office, Co-chairman of McKinsey's Worldwide Partner Election Committee (1998 - 2002), and a key member of McKinsey's Worldwide Director-Election Committee (2003-2006). Prior to McKinsey, Enrique worked at Union Fenosa (1982-1984) in financial planning and regulatory affairs.

Enrique is currently Chairman of Geriatros and Board Member of Iberwind, Eptisa, Vendap and Iberchem.

Enrique has an MBA from the Columbia Business School (Fulbright Scholar), and holds a Master of Science degree in Civil Engineering from the Polytechnic University of Madrid.



D. ÁNGEL CATENA

Executive Director and Corporate General Manager of Eptisa.

Angel has been working for Eptisa for more than 25 years and has held office as Controller, Chief Financial Officer and General Manager. Prior to this he spent five years as project manager and chief consultant at Arthur Anderson in the Construction and Manufacturing sectors. He is currently President of the Ressa Foundation.

Angel has a Master Science of degree of Civil Engineer from the Polytechnic University of Madrid.



D. JOÃO TALONE

Proprietary Director of Eptisa and founding partner of Magnum Capital Industrial Partners.

Prior to founding Magnum Capital Industrial Partners in 2006, João Talone served as CEO of Energias de Portugal (EDP) from 2003 to 2006. From 2002 to 2003, João was Special Commissioner for the Portuguese Government Special Commissioner and before that he spent 13 years (1988 - 2001) with the Commercial Bank of Portugal (BCP) where he served as Executive Board Member and Chairman of the Board of Directors (1999 to 2001).

João is currently President of Iberwind and Board Member of Generis, Eptisa and Vendap.

João has an Advanced Management Program degree from Harvard Business School, an MBA from Universidade Nova of Lisbon and a Master Science of degree in Civil Engineer from the Technical University of Lisbon. In 2006, João was awarded the honour of "Grand Officer of the Order of Merit" by the President of the Portuguese Republic.



D. GERARDO ROIZ DE LA PARRA

Executive Director since 2013 and General Manager of the International Division of Eptisa.

Gerardo has been General Manager of the International Division since 1997 and therefore manager of Eptisa Romania, Eptisa Mühendislik Ltd. in Turkey and co-manager of Eptisa India. Gerardo was a member of the Sticing Priority Foundation of the Dutch multinational engineering firm Arcadis for 8 years (1997-2005).

Gerardo holds a Master Science of degree in Civil Engineer from the Polytechnic University of Madrid.



D. ALBERTO BERMEJO

Proprietary Director of Eptisa since 2013 and partner of Magnum Capital Industrial Partners.

Alberto Bermejo joined Magnum Capital Industrial Partners in 2007. Previously, Alberto worked for nearly 6 years as Associate Director in Mercapital. Previously, Alberto worked for Deloitte in the Corporate Finance Department.

Alberto is currently a Board Member of Geriatros and Eptisa.

Alberto holds an MBA from IMD (Caja Madrid Scholar), a Masters in Finance from the Complutense University of Madrid and a degree in Business Administration also from the Complutense University of Madrid.

In 2013 Iñaki Echave left Eptisa's Board of Directors and was replaced by Alberto Bermejo. Additionally, the Managing Director of Eptisa, Felipe García Berrio, retired and Gerardo Roiz, General Manager of the International Division of Eptisa, was appointed to fill his vacancy in Eptisa's Board of Directors.

Eptisa's Board of Directors is assisted by its Secretary, Gonzalo Garcia de Prado (Garrigues Law Firm), being an independent, impartial and professional person who, as a non-Board member, attends Board meetings but lacks voting rights. The Secretary diligently records in the Minutes the agreements, comments and proposals covered within the Board Meetings.

Eptisa's Board of Directors performs its tasks with unity of purpose and independence of judgement, treats all shareholders equally and takes the company's interests - understood as maximising the sustainable economic value of the Company - as its guiding principle. Additionally, Eptisa's Board of Directors is committed to respecting the rules and regulations, fulfilling its obligations and contracts in good faith, respecting the customs and good practices of the sectors and territories in which it carries out its activity and observing the additional principles of social responsibility that it has voluntarily accepted in its relationships with all the Company's stakeholders.

Eptisa's Board of Directors assumes, as a critical part of its mission, the approval of the Company's strategy, as well as, the accurate organisation required to put it into practice. Furthermore, Eptisa's Board of Directors commits to supervising and ensuring that Management fulfils the Company's targeted strategic objectives and respects its social purpose and interests. Consequently, Eptisa's Board of Directors reserves the power to approve the Company's general policies and strategies, and in particular the following:

- The strategic or business plan, as well as, management objectives and annual budgets;
- The investment and financing policy without prejudice to the prerogatives of the General Shareholders' Meeting;
- Definition of the corporate structure, without prejudice to the prerogatives of the General Shareholders' Meeting
- The Corporate Governance policy;
- The Corporate Social Responsibility policy;
- The remuneration policy and evaluation of the performance of top-executives;
- The risk management policy and periodic monitoring of the internal information and control systems; and
- The dividends policy and the treasury shares policy, in particular their limits.

The Board of Directors also has the prerogative of informing the General Shareholders' Meeting of the annual financial statements and the auditors' report.

The members of Eptisa's Board of Directors are required to actively participate and limit to a minimum any possible faults of attendance. With sufficient time in advance, Eptisa's Management provides the members of the Board of Directors with the required information in order for these to be able to take an active participation its meetings. Furthermore, all members of Eptisa's Board of Directors may request any additional information on any subject covered by the Board of Directors.

At the beginning of every financial year the Board of Directors sets the schedule of meetings for the coming year with a frequency of at least one ordinary meeting per month and/or any other meetings it may deem necessary. Once a year a meeting is scheduled to assess the operation of the Board of Directors in order to analyse its performance and detect aspects that could be improved.

Eptisa's Board of Directors is not remunerated and there are currently no other Board Committees.

Management Committee

Eptisa's Management Committee main function consists of defining, implementing and evaluating the strategic and operational plans of the Company approved by the Board of Directors.

The CEO of Eptisa appoints the Management Committee from among the members of the management team that takes care of the day-to-day operations of the Company. The following managers comprise Eptisa's Management Committee:

- Luis Villarroya Alonso
- Javier Andreu
- Ángel Catena Asúnsolo
- Ignasi Cantarell Taxonera
- Gonzalo García Alonso
- Gerardo Roiz de Parra
- Alfonso Rubio Barroso
- José Manuel Sampedro Quijano
- Javier Sanz Urbina

COMMITMENT TO OUR PROFESSIONAL

Eptisa is committed to the welfare and professional development of its Professionals

► TECHNICAL RESOURCES DEPARTMENT

Eptisa promotes training, creativity and synergy among its professional to enhance efficiency, productivity and knowledge management. With this aim in 2013 the **Technical Resources Department** was created to provide Eptisa's professionals anywhere in the world with the support of a technical team of engineers, architects, economists, geologists, programmers etc. that work to apply innovations, to modernise and optimise our services and make them available to the entire Company.

► PERSONALIZED PROFESSIONAL CAREER DEVELOPMENT PLAN

All of Eptisa's employees have a personalized professional development plan based, responsibilities and capabilities required for each position. Internal training plans and a talent management program help to develop the professional career of every employee in the Company.

► OCCUPATIONAL HEALTH, SAFETY AND HAZARD PREVENTION POLICY

Eptisa is firmly committed to its strict **health, safety and hazard prevention policy** with the aim of preventing accidents and improving the welfare of its employees everywhere in the world. Occupational health and safety recommendations are published through the communication and training plan disseminated on the Intranet.

Eptisa adopted the Joint Prevention Service in the technical specialities for all of Eptisa's companies. For this reason Eptisa implemented the Occupational Hazard Prevention Management System, which has as its main objective the prevention of accidents and enhancement of occupational health in order to eliminate and/or mitigate harm to people and damage to facilities, machinery, materials, products etc., reduce downtime and foster safe, efficient working procedures.

This management system is certified by CERNE under the OHSAS 18001 standard which specifies the requirements of an Occupational Health and Safety (OHS) management system to enable the Company to monitor its OHS hazards and improve its OSH performance. It is an effective tool to establish an appropriate occupational health and safety policy (OHSP) in companies with the will to undergo continuous improvements.



► EQUALITY POLICY AND WORK-LIFE BALANCE PLAN

The Equality Policy and Work-Life Balance Plan have contributed to the professional development of women in Eptisa and are an example of the Company's commitment to the family. Within the framework of the Equality Policy and the gender equality plan objectives, in 2013 we carried out training courses to foster awareness and integration of good gender equality practices in the career development of women in Eptisa. Additionally, the Company maintains its commitment to the family life by implementing **work-life balance plans**.

Again this year Eptisa renewed the **collaboration agreement with the Adecco Foundation** for the development of the initiative called Family Plan to support employees who have handicapped family members. This programme, which is specialized in helping handicapped individuals integration into the labour market, is a fundamental element of Eptisa's Corporate Responsibility Policy. In this sense Eptisa's employees with handicapped children, siblings or spouses under 65 years of age can take part in the counselling plans implemented by the Adecco Foundation's recruitment consultants. This personalized attention of the family member consists of guidance, advice and the design of actions adapted to the needs of each participant. These needs are valued under a counselling plan in the following areas: Medical-clinical, family, social, educational and labour-related.



COMMITMENT TO ENVIRONMENTAL SUSTAINABILITY

Eptisa applies the principles of sustainability to projects for the development of society

Over-exploitation of the planet compromises its sustainability and the resources available for future generations. Engineering is an essential component of environmental conservation, the recovery of natural areas, water and waste management and the search for alternative energy sources to ensure a sustainable future. We understand that progress entails protection of the environment, and therefore Eptisa integrates policies associated with sustainable development into its strategic planning.

Eptisa works to mitigate the environmental impact caused by its activities through a programme of environmental sustainability best practices aimed at reducing the consumption of resources and proper waste management. The environmental management system implemented by Eptisa defines the Company's commitment to reducing its environmental impact.



► ENVIRONMENTAL AND QUALITY POLICY

Eptisa's Management carries out an Integrated Quality and Environmental Management System in accordance to UNE-EN ISO 9001 and 14001 standards. This system includes a Quality and Environmental Policy based on the following principles:

- Quality and environmental management are key strategic objectives for the Company;
- The personal, technical and managerial development of all employees through continuous improvement of their knowledge and skills is a priority of the corporate mission;
- A comprehensive client service is the core value that makes Eptisa a global company, which approaches all tasks from an innovative multidisciplinary perspective;
- Continuous improvement in the efficiency of the system and prevention of pollution are considered essential;
- The integration of Environmental criteria into activities and business processes are promoted, and
- Eptisa and its clients are committed to providing products and services that meet the requirements specified by the current applicable legislation.

The system is aimed at achieving the following objectives:

- Customer satisfaction and the pursuit of excellence in the performance of the assignment, and
- Conducting activities with minimal environmental impact.

Eptisa's Management reviews the System in order to evaluate the suitability of the policy and set the specific, measurable and quantifiable objectives for the current year.

The policy is accessible to the general public and is communicated to all employees and those who work for or on behalf of Eptisa to ensure that it is known, understood and put into practice.

► INTEGRATION OF THE VALUES OF ENVIRONMENTAL SUSTAINABILITY WITHIN SERVICES AND PRODUCTS

With respect to integrating sustainability within our services and products, each of Eptisa's business units develop and implement detailed operational plans to protect environmental sustainability. Among others, these include:

**Transport**

In the transport sector Eptisa is committed to optimising mobility in order to minimise the environmental and economic impact in order to enhance well-being without over-exploiting the resources of the earth.

Energy

In the energy sector Eptisa focuses on saving energy, the search for new sources of energy and the design of energy-efficient facilities and infrastructures, collaborating in several developing countries in the renewable energy development programs.

Water

In the water sector Eptisa is committed to improving people's access to water all over the world by providing its know-how and engineering and managerial services. Eptisa works with multilateral agencies on projects to improve water supply and sanitation infrastructure in developing countries.



► INTERNAL MANAGEMENT OF BUILDINGS AND ENVIRONMENTAL PERFORMANCE

Within the framework of Eptisa's internal environmental management programme, Eptisa develops initiatives and objectives for reducing the consumption of paper, water and electricity.

Initiatives Implemented in 2013

Among others, in 2013 the following initiatives, were carried out:

- To encourage the rational use of paper Eptisa implemented a monthly stationery budget for paper, via double-sided printing, the use of recycled paper for drafts, conducting communications via e-mail rather than printed internal memos, etc.
- Reduction of the number of light fittings switched on in corridors, halls and other transit areas or areas not occupied by personnel;
- Reduction of the number of printers deployed in order to contain energy consumption;
- Fitting temperature limiters to HVAC equipment;
- Setting up energy saving measures in PCs, and
- Limiting the use of portable heaters.

Eptisa's Intranet has become the communication channel for sharing best practices, improvement points and recommendations on the most efficient use of power, water, paper, etc.

Objectives Achieved in 2013

The following results have been achieved thanks to the involvement of the personnel and monitoring of the aforesaid initiatives:

- 5% reduction in energy consumption in all work centres. In three work centres savings of up to 10% were achieved.
- The goal of reducing paper consumption by 3% was achieved in 63% of work centres. The related objective of recycling 85% of all paper consumed was achieved in 57% of work centres.
- Water consumption has been reduced by 2% in 66% of work centres.
- In 2013 an objective for the reduction of fuel consumption compared to the previous year was set for the first time. The success of this initiative is demonstrated by the 23% reduction achieved.

Waste of Electrical and Electronic Equipment

To reduce electrical and electronic equipment waste (WEEE), the use of electronic materials has been optimised and units were only replaced when absolutely necessary.

Noise Level

The interior and exterior noise levels of the building in Emilio Muñoz Street (Madrid) were measured and deemed to be within the permissible levels.

► OBJECTIVES 2014



► ISO 14001 ENVIRONMENTAL MANAGEMENT CERTIFICATION.

Eptisa's Environmental Management System is certified by AENOR, accredited by IQNet, the international certification network and in Spain by ENAC in accordance with the ISO 14001 standard.

The implementation of an Environmental Management System under the UNE-EN ISO 14001 standard is a tool which systematises environmental aspects related to the Company's activities and fosters environmental protection and pollution control and at the same time considering socio-economic aspects.



COMMITMENT TO QUALITY

Quality management for achieving excellence is Eptisa's commitment to its clients

Eptisa's commitment to quality management gives rise to continuous improvement plans as part of the strategic planning. Eptisa's Management understands quality as the suitable administration of all resources to achieve optimum results, and thus ensures the achievement of excellence in service provided to clients.

► INTEGRATED QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEM

In Eptisa quality management and client satisfaction have always been a key objective. So much so that the Company had a certified quality management system implemented more than ten years ago, applicable to all its processes and activities regardless the brand that operates in the market.

For the sake of simplicity and operational efficiency the quality and environmental management systems are merged into a single Integrated Quality and Environmental Management System (IQEMS), which means that all those who work at Eptisa share a commitment to quality and a deep respect for the environment, which has as ultimate objective client satisfaction.

► ISO 9001 QUALITY MANAGEMENT CERTIFICATES

The Quality Management System is certified by Bureau Veritas, accredited by ENAC in Spain and internationally by UKAS Quality Management in accordance with the UNE-EN ISO 9001 standard. This international standard fosters the adoption of processes to develop, implement and improve the effectiveness of a quality management system based in turn on the continuous improvement PDCA (Plan, Do, Check, Act) cycle approach.



COMMITMENT TO SOCIAL DEVELOPMENT

Technical know-how and management skills at the service of social development

Companies are major players in the development of society, both by the provision of services, civil works and supply of equipment and through the transfer of knowledge, technology and management skills to less-favoured environments areas of the planet. To generate greater value for society Eptisa adapts its business strategies to the features of each local context.

► DEVELOPMENT COOPERATION

Eptisa, aware of this reality, began its specialised development cooperation activity in 1996, with the main objective of combining business opportunities that benefit the Company with activities which also benefit society as a whole. The Company is now a reference for the management of multilateral funds and works with leading international development agencies.

Cooperation development has many objectives with a common focus on reducing poverty. This scope requires players with very different skills, for example: Engineering companies, which have extensive knowledge in diversified technical fields.

Eptisa's strengths are its technical and management skills, the knowledge to identify and define technical solutions, the capacity to contribute to improvement of the physical capital of the environment of the people and the capacity to quickly respond to demanding commitments.

► RESPONSIBILITY AND RESPECT OF THE LOCAL COMMUNITY

In developing countries projects are not purely technical: technical issues are always associated with social issues. Therefore it is necessary to understand how local socio-cultural variables function (which are different in every location) in order to ensure that the technical solutions proposed are an adequate response to all aspects of the project.

When implementing projects, Eptisa's corporate responsibility focuses on respecting a series of principles such as (i) the value of local human and material resources, (ii) the population's sense of ownership, (iii) awareness and consensus of the local stakeholders, (iv) the compatibility with local development processes and (v) the conservation of local natural resources.

Eptisa's technical and managerial teams understand perfectly that the contribution of other actors such as consultants, research centres, universities and public institutes that provide local knowledge is vital. This also applies to the role of NGOs that have experience and knowledge of the dynamics of society.

The management of Eptisa, aware of the importance and scope that social responsibility and labour conditions acquire when performing the its activity, actively promotes the responsibility of each employee to comply with national and international laws on working conditions and the respect for the local community with which they interact.



COMMITMENT TO INNOVATION

Innovation as a founding pillar of the development of civilization

The evolution of civilization has been driven by a series of technological innovations which have brought about economic benefits to the innovators who commercialized them, but above all to society as a whole.

Innovation is the key factor in creating sustainable competitive advantages. For that reason the ability to learn and innovate are a reliable method of increasing competitiveness and developing new products, processes and services to better meet client needs.

Eptisa has adopted a management model based on continuous improvement in the activities of our core business; in other words: adapting and improving processes, products and services, always regarded within the specifications of our clients' needs.

Eptisa's professionals use their know-how to introduce technological innovations that improve the products and services we provide to clients and have a beneficial impact on society.

► EPTISA'S R&D PROJECTS

R&D projects developed by Eptisa seek (i) to create innovative products in order to meet the needs of clients and society, and (ii) to optimize internal management processes in order to foster managerial modifications focussed on improving the economic and social potential of the Company.

1. Emergency management technology R&D project

Eptisa Information Technology carried out a research and development project to provide technology to coordinate the agents involved in emergency situations.

This project, called 'TECAMIS +' (the Spanish acronym for Multi-agent Internet Technology and Architecture through Services', aims to improve the management of civil disasters such as fires, terrorist attacks, weather disasters, etc. There are many agents involved in handling such situations, from fire-fighting through medical and sanitary services to police, etc., in some cases from different regions or even countries. These scenarios demand a new integrated management model based on the latest technology to coordinate the various agents.

The identification code of this project is TSI-020100-2009-167. It is part of the Strategic Action Plan for Telecommunications and the Information Society within the framework of the 2008-2011 National Plan for Scientific Research, Development and Technological Innovation co-funded by the Ministry of Industry, Tourism and Trade's aid sub-programme Plan Avanza I+D and the ERDF (European Regional Development Fund) and is carried out in consortium with AMPER Programas de Electrónica y Comunicaciones S.A., EPICOM S.A., KNOSOS S.L., Consultora de Telecomunicaciones Optiva Media S.L. and Tiempo Real Sistemas S.L.

2. Enterprise search R&D Project

Eptisa Information Technology implements the enterprise search R&D project based on GeoSearch and Natural Language Recognition.

The project, entitled "Development of an enterprise search system based on GeoSearch and natural language recognition", aims to design and develop a comprehensive enterprise search tool to facilitate the user's search for information by integrating new features such as: GeoSearch, Recognition of Natural Language, search for images and audio and video files and harmonisation with mobile devices.

This project aims to develop a Comprehensive Search Solution that meets the gaps identified in existing enterprise search tools on the market, providing a high added value to the solution by integrating the aforesaid new functionality. The project was funded by the Ministry of Industry, Tourism and Trade's aid sub-programme Plan Avanza 2 within the framework of the 2008-2011 National Plan for Scientific Research, Development and Technological Innovation. Its identification code is TSI-020100-2009-430.



3. Accessible tourism R&D project

Eptisa Information Technologies has completed an R&D project called “GATACA, Accessible Tourism Guide Adapted to Castilla-La Mancha Region”.

This project, which Eptisa carried out in consortium with In-Nova, International Innovation Program, the National Paraplegics Hospital Foundation and the National Paraplegics Hospital was co-funded within the framework of the 2008-2011 National Plan for Scientific Research, Development and Technological Innovation by the Ministry of Industry, Tourism and Trade’s aid sub-programme Plan Avanza I+D and the ERDF (European Regional Development Fund). Its identification code is TSI-020312-2009-0025.

The aim of this project is to break down the remaining barriers for handicapped people by placing technology at the service of the public to improve the quality of life and extend the options for tourism and leisure in Castilla-La Mancha region to all groups regardless of their accessibility needs.

4. Integrated pavement management system

The objective is to develop an automatic tool accessible through an on-line platform that enables visual inspections of the pavement of all types of infrastructure (streets, sidewalks, roads, ports, airports, bike lanes, racing circuits, etc.) to create an objective inventory of their pathologies, minimising the influence of the human factor to determine their condition or degree of deterioration and plan their rehabilitation needs. The application will be based on the Geographic Information System (GIS), with mapping, geo-referencing of pathologies and quantification of the same for subsequent corrective measures and to determine future investments.

The project was funded by the Ministry of Industry, Tourism and Trade under the 2008-2011 National Plan for Scientific Research, Development and Technological Innovation. Its project identification number TSI-100502-2013-10.

5. First remote-controlled prototype for measuring the effectiveness of decontaminating materials

Eptisa, in collaboration with the Centre for Industrial Technological Development (CDTI), launched a research programme aimed at developing the first remote-controlled research and testing method applied to photo-catalytic materials. Among other applications, this new technology will enable on-the-ground measurement of the decontamination effects of pavements treated with photo-catalytic products and definition (through laboratory testing) of the variables that influence their conduct.

6. ROMA (Road Management System)

Due to its advanced capabilities for display, editing, search, management and analysis of information, the ROMA Road Management System is the most comprehensive Esri GIS-based technological solution for professional treatment and management of information related to linear infrastructures. ROMA users have access to a series of tools that enables them to perform asset management and management of preventive and corrective maintenance of infrastructure and their elements, including paving management.

7. Auscultation system for collectors in thermo-solar plants

As part of the ISIP programme Eptisa signed a strategic alliance with TERI (The Energy and Resources Institute of India) for an R&D project to design a system to monitor solar energy collectors in thermo-solar plants. The overall objective of the project is to design and develop a monitoring and diagnosis system for solar collectors in thermo-solar power plants and the associated evaluation. This system measures geometric parameters and the efficiency of energy collection in the solar field.

8. Pathology Prevention Warning System and Maintenance Management in wind turbines

In recent years Eptisa has developed a system that enables control the behaviour of the static elements (foundations, ferrules and towers) of wind turbines from the design to the operation and maintenance phase. These are preventive measurements that enable the wind farm operator to anticipate repairs before damage to the foundations causes technical shut-down of the machine with the consequent loss of earnings and in many cases an increase in repair costs.

9. COEM HIGIA: Smart platform for management and monitoring of health workers, patients and assets in hospital environments

The main objective of this project was to design and create Hygía, a platform to centralise and manage the information of patients and health care resources intelligently and efficiently on the basis of real-time identification and location of the resource to optimise the entire attention process. To do so, agent technology, artificial intelligence, innovative identification and localization technologies and e-health techniques are used to endow the platform with a certain degree of intelligence and to generate knowledge and the ability to adapt to the demands of each individual interaction. The great challenges facing the platform are to provide the best patient care, enable access to information, improve data management, aid decision-making, promote the use of new technologies, optimise access to the resources and reduce costs.

The extreme complexity, scope and diversity of the objectives of the project meant that it was necessary to set up a consortium to access the necessary expertise in the various areas of investigation. The project consortium is composed of Eptisa and HORUS. The Directorate General for Health Development of the Regional Government of Castilla y León and the University of Salamanca Biomedicine Intelligent Information Systems and Educational Technology Group (BISITE) also participated in the project. The R&D project was funded by the European Regional Development Fund (ERDF) and the Regional Government of Castilla y León.



CODE OF ETHICS

In 2013 the Eptisa Code of Ethics was drawn up and adopted with the aim of establishing the principles, standards, values and rules of conduct to guide the behaviour of all those who work in the Company in the course of their professional activity.

It seeks to ensure that labour and human rights will be thoroughly followed, and that people, in all their diversity, will be fully integrated within the corporate structure and culture.

Eptisa's Management is committed to promoting - among both employees and partners - the knowledge, acknowledgement and assessment of the ethical business behaviour which is in compliance with the content of Eptisa' Code of Ethics.

► SCOPE

The Code of Ethics is applicable to all levels of Eptisa's corporate structure:

- Board members
- Management
- And all other employees

When establishing business relationships with other companies and professionals, Eptisa will consider as key selection criteria their compliance to the management and behaviour principles set forth in Eptisa's Code of Ethics.

► BASIC PRINCIPLES OF BEHAVIOUR

Eptisa provides services with high technical and quality standards, and develops its projects aiming to provide the highest benefits for its clients', always acting professionally and looking for continuous progress and orientating its results, to the extent possible, towards environmental sustainability and public interest.

The following are the principles on which Eptisa's Code of Ethics is based:

- **Legality:** In the course of their professional activities all of Eptisa's management and employees shall strictly comply with the currently applicable legislation in the territory where the Company carries out its activity. No order which contravenes the provisions of the rule of law shall be obeyed.
- **Ethical integrity:** All those who work for Eptisa shall perform their tasks with objectivity and professionalism.
- **Human rights:** All activity carried out by Eptisa and the people who compose it shall scrupulously respect the Human Rights and public freedoms enshrined in the Universal Declaration of Human Rights.





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