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Annual Report  
2015







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2015

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# LETTER FROM LUIS VILLARROYA

In a market still suffering from the negative economic times, in 2015 Eptisa has continued to build a path for the future. Our outlook toward the new economical horizon is clear; hence we are developing a plan for geographic expansion into emerging countries.

The international market has been affected by a strong process in prices in all regions, a fact that far from intimidating us has not stopped us becoming one of the top five firms for consulting contract awards with the Asian Development Bank. At present, Eptisa is successfully implementing 18 projects financed by the ADB in countries like Kyrgyzstan, Uzbekistan, Tajikistan, Bangladesh, Laos and Vietnam. Our presence in Asia has expanded and for the first time Eptisa has been working on projects in Nepal and Cambodia. But we have not stopped there; we have also entered in the Middle East participating in tenders for desalination plants in Oman and Saudi Arabia.

Furthermore, this year we have obtained our first engineering contract in sub-Saharan Africa with the A104 road project in Kenya. Besides we continue to build our consolidation process in regions like the Balkans and the Caucasus, and in countries like Romania and India, competing in local tenders with local companies. In 2015, our regional office for South-East Europe, established in Belgrade, has celebrated its 10<sup>th</sup> Anniversary, and has implemented in this period 125 contracts in the seven countries of the Balkan region.

Our activity in the field of water has considerably increased, representing at present 44% of the global activity of Eptisa. The projects developed in this sector have placed us as one of the leading engineering companies, both in Spain and at the international level. As an example of this, the hydroelectric plants that we executed in Bolivia, Guatemala or Nicaragua or the new 11 projects awarded in Romania.

The research, development and innovation are intrinsic features of the DNA of Eptisa. They are features that allow us to envision the horizon with optimism. Not in vain, as we continue with RDI projects in road surface and pavement, like P@vement Check, or in Information Technology with solutions like ROMA or GIS NILO.

In this annual report we have endeavoured to reflect the work that we have carried over the last twelve months. I invite you to read and discover a little more the good work of Eptisa.

# EPTISA'S KEY FIGURES



Income  
110  
million Euros



Presence in  
+45  
countries



Professionals  
2,000



Backlog  
182  
million Euros

## ACTIVITY BY SECTORS



44%  
Water and  
Environment



27%  
Transport  
Infrastructure



12%  
Institutional,  
Economic and Social  
Development

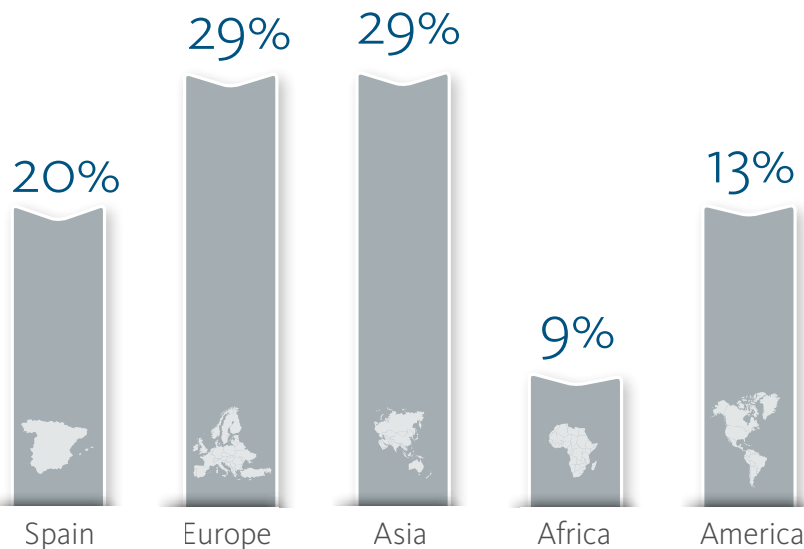


12%  
Information  
Technology



5%  
Industry, Energy  
and Buildings

## GEOGRAPHIC DISTRIBUTION







# SPAIN

In Spain, we offer our engineering, consultancy and information technology services in the main transport, water, environmental and building construction projects, on a domestic, regional and urban level.

We apply our expertise and the very latest technologies to design solutions that improve mobility, water management, environmental conservation and the sustainability of our cities, all with a view to improving the quality of life of people





Quality control of the materials during the construction of the temporary station for the High-Speed Railway Line in Vigo

## TRANSPORT



Design, technical assistance, quality control and auscultation are some of the most important services that we offer in the **railway** sector. In 2015, we undertook many technical assistance activities to control the construction works on Spain's main high-speed lines.

We prepared a study for the European Economic Interest Grouping, involving potential layouts for the new high-capacity track in the **Pyrenees**, collecting data from the Spanish side of the frontier and drawing up technical reports, among other tasks.

In **Castile and Leon**, Eptisa carried out the quality control of the materials during the construction phase for the sidings and stabling points to enable the trains at Medina del Campo take the line linking this town with Salamanca.

ADIF also awarded us the contract for testing the structures on the Venta de Baños-Burgos high-speed railway line.

In **Galicia**, Eptisa has taken on the responsibility of controlling the quality of the track superstructure for the Atlantic high-speed railway line, on the section between Urzaiz Station in Vigo and Soutomaior Station in Pontevedra. We conducted laboratory tests on the aggregates, steels, soil, rocks and concrete used, as well as carrying out the in situ tests.

Ineco also commissioned us to undertake the quality control of the materials during the construction of the temporary station for the high-speed railway line in Vigo and during the covering of the cut-and-cover tunnel at Urzáiz Station.

We were awarded the quality control contract of the materials used to construct a 7,600 metre long tunnel on the Prado-Porto section of the North to North-West Corridor on the Madrid – Galicia high-speed

railway line. The contract also included quality control for the left-hand track in the Prado Tunnel, which is over 7,400 metres long.

In the **Basque Country**, we provided the technical assistance for controlling the platform construction works on the Hernialde-Zizurkil section of the Basque “Y” layout in Gipuzkoa.

We were made responsible for the quality control of the materials used to construct the new Casco Viejo station on Line 3 of the **Bilbao** Metropolitan Railway, as well as the track superstructure along the San Antonio-Casco Viejo and Casco Viejo-La Ola sections. We conducted not only the laboratory tests on the concrete, aggregates, graded materials, steel, electro-welded wire mesh or ballast, but also the in situ tests, establishing the density and moisture using nuclear methods or plate load tests.



Bilbao Metropolitan Railway. Casco Viejo Station

Further progress was made on the work for Gipuzkoa Provincial Council to control landslides on the slopes of its highway network. In the same Province and for ADIF, we are developing a slope and embankment auscultation plan for the railway network.

In the Province of **Cadiz** we provide the technical assistance and works supervision services for a variety

of tram-train projects between Chiclana de la Frontera and San Fernando:

- Cycle lane between Chiclana de la Frontera and Cadiz
- Cadiz intermodal station access urbanization from Avenida de Astilleros
- Track superstructure
- Ardila node infrastructure
- Canopies for the train-tram stops
- Intermodal station in the Plaza de Sevilla in Cadiz

In **Huelva**, we drew up the construction design for a railway access and for constructing a freight unloading pit in Sector 2 of Huelva Outer Port.



Construction design for the freight unloading pit in Sector 2 of Huelva Outer Port

## Corridors study for potential layouts for the new high-capacity Pyrenees crossing

Over the past year we have been preparing the study of potential layouts for the new Pyrenees High-Capacity Rail Line, forming part of the Joint Venture Eptisa-Railconcept-Antea; this work was commissioned by the European Economic Interest Grouping. The aforementioned Grouping is fruit of collaboration between the Spanish and French Governments, through ADIF and RFF, the latter being the French public infrastructure manager.

The study identifies the corridors that would make the best routes, taking into account economic criteria, multimodality, running the services, socioeconomic and environmental impact and the fact that it would be forming part of a European corridor.

This work will form the basis of the information that the interested parties will require both in Spain and France, and highlights the impact that the project will have on the local, national and European economic plan, as well as both the positive and negative environmental impact.

Eptisa's roles within the Joint Venture will be as follows:

- Collecting the data needed on the Spanish side of the frontier regarding the existing access lines and the railway freight routes as a whole



## Technical assistance for controlling the works on the Hernialde-Zizurkil section of the new Basque Country railway network

Eptisa has accepted responsibility for providing technical assistance to construction management, for quality control of the works and for the Quality Assurance Plan for the Hernialde-Zizurkil section, which forms part of the Basque railway network. The stretch is 5,870 metres long, 5,149 m of which run through a tunnel, 498 m over a viaduct and 223 m are open-air. This infrastructure was designed for mixed traffic, with a running speed of 250 km/h for passenger trains.

The most important elements along this section are the 25 m Hernialde Viaduct; the 1,397 m. Anoeta Tunnel. The 69 m. Alkiza Viaduct; the 2,065 m. Asteasu Tunnel; the 268 m. Ugarte cut and cover tunnel; the 404 m. Asteasu Viaduct; and the 879 m. Zizurkil Tunnel.



ADIF awarded us the contract for testing the structures on the high-speed railway line between Venta de Baños and Burgos



## Construction design for tram-train canopies between Chiclana de la Frontera and San Fernando and technical assistance at the bus intermodal station in Cadiz

We have carried out the construction design of canopies at the tram-train stops in the interurban zone along the line linking Chiclana de la Frontera and San Fernando. We are also responsible for the technical assistance given to construction management and for supervising the construction of the bus intermodal station at Plaza de Sevilla in Cadiz, which will be connected to the railway station.

The infrastructure will have a foyer covering an area of about 500 square metres, a platform zone, with eight bays 3 metres wide that will serve as parking facilities for vehicles up to 15 metres long; a zone that connects with the railway station exchanger, an outdoor garden 7.5 metres wide and 30 metres long; plus a level area slightly prepared for potential use as a car park.

The whole complex has been designed following the sustainability principle, which is to be understood as meaning a methodology that aims to meet the requirements included in the theory of global energy cost or the ecological footprint requirements.



## Quality control during the works for covering the cut-and-cover tunnel at Urzaiz Railway Station in Pontevedra

Eptisa has carried out the quality control of the materials used in the works to cover the cut-and-cover tunnel at Urzaiz Railway Station, by conducting laboratory tests on the steel, soil and concrete, as well as in situ non-destructive tests on the welded joints connecting the metal structure.

Where **highways** were concerned, we developed projects comprehensively, from the planning stage through the layout and construction stages and, finally, the operating stage, including road safety advice and support tasks.

In the **Basque Country** we provided the technical assistance for the construction management contained in Subsection nº1 of the construction design for the GI-632 Road bypass, along the section linking Urretxu/Legazpi and Bergara.

For Gipuzkoa Provincial Council, we have been supervising the crossing permeabilization construction for the GI-2632 road as it runs through Ezkio-Itsaso, and the actions that have to be taken to ensure that vehicles and all road users are adapted safely to the new highway situation designed.

We performed the technical assistance for drafting an informative study for an 89.639 km section in

A-40 Highway between **Avila** and Maqueda. The work also involved drafting the Summary Report for Environmental Queries and the Environmental Impact Assessment.

In **Alicante**, Eptisa has prepared the layout and construction design for the A-7 Highway between Crevillent and the Orihuela-Benferri junction, the purpose of which is to widen the road to three lanes at this point.

In **Catalonia**, we prepared several highway network improvement projects. The most noteworthy ones include the section from Reus to Perafort of the new highway connecting Reus with the high-speed railway station Camp de Tarragona, not to mention the project for improvement accesses and road safety on the C-63 Highway in Lloret de Mar, as well as the road safety along a two kilometre stretch of the C-352 road in La Roca del Valles.



Project to renovate the Cyclists' Green Ring in Madrid

Thanks to the services provided by our official accredited laboratories, Eptisa has been able to offer **quality control** and industrial safety services for road works throughout Spain.

In **Castile and Leon**, along the section of the dual carriageway "Autovia de la Plata" linking Benavente and Zamora, we have been awarded the contract to carry out the quality control of the materials throughout the works, by conducting laboratory and in situ tests.

In **Galicia**, Eptisa carried out different controls and inspections on the piers and the infrastructure concrete during the widening of the Rande Road Bridge to three lanes on the AP-9 Atlantic Highway, along the stretch between Cangas and Teis.

In the **Basque Country**, we were responsible for the quality control of the works on the Uretamendi section of the Ermua South bypass. Eptisa also controlled the quality of the materials while the work was being done on the Gerediaga-Elorrio Dual Carriageway and on the GI-631 bypass in the Antzuola-Bergara junction.

We were awarded the control and supervision of the works in the section between Solares and La Encina on the A-8 Cantabric Dual Carriageway. This section will be an extension to the A-8, connecting it with the section that goes to Santander, as well as with the current N-634 from San Sebastian to Santiago de Compostela.

As far as **pavements** were concerned, and as part of the "Plan Barrios 2014" Framework Contract, we worked on restoring the Cyclists' Green Ring in **Madrid** for the City Council's Public Highways General Directorate, providing technical assistance, assessment of infrastructure assets, designing new asphalt mixes and drawing up the construction design.

Eptisa gave technical assistance to the Regional Government of **Galicia** and optimised standard sections of pavement.

In 2015, we participated in the workshop organised by the Iberian Photocatalysis Association concerning decontaminant and self-cleaning construction in A Coruña, during which different techniques were described for improving air quality, inhabitability and for reducing the infrastructure maintenance costs through photocatalytic technology.

In **R&D&i**, more progress was made on developing the solution for the management of pavement condition, P@vement Check, which is a prototype for measuring the efficiency of photocatalytic materials, and developing the technological solution ROMA for the inventorying and maintenance of road infrastructures.

In the Villaverde District of Madrid, we carried out the air control on photocatalytic pavements for the City Council. This project involved applying photocatalytic linings to more than 40,000 m<sup>2</sup> of pavement and 3,000 m<sup>2</sup> of tunnels.



■ We continue developing the P@vement Check solution, which is a prototype for measuring the efficiency of photocatalytic materials



## Technical assistance to the construction management during the works on the GI-632 Bypass. Section linking Urretxu/Legazpi and Bergara in Gipuzkoa

We have provided technical assistance to construction management during the works along the Urretxu/Legazpi-Bergara section of the GI-632 Highway Bypass, which has involved supervising and controlling the works, as well as finding solutions, monthly assessments, reports and settlement. The section lies between kilometre point 5+800 and 8+560 on this road. The most outstanding feature in this zone is the two-tube discharge tunnel that is over an average of 703 metres long.



## Road safety project for the C-352 road on the La Roca del Valles – Las Franqueses del Valles section in Catalonia

We were awarded the project for studying the new layout for the single carriageway section of the C-352 road with traffic flowing in both directions, along the stretch between the towns of La Roca del Valles and Las Franqueses del Valles that, making the most of the current pavement, would enable a central reservation crash barrier to be erected that physically separates the traffic flowing in the two directions, thereby preventing head-on collisions and front-lateral collisions. The aim is to ensure that there are no more fatal accidents and serious injuries like the ones that happen every year on this stretch of the road.

This project also includes improving the asphalt pavement on the sections of the road that are in a poor state of repair and enlarging the two existing underpasses. Plans have also been made to provide

concrete-lined kerbs that can be used by pedestrians that will replace the existing deep ones, and improvement of the road signs, road markings, the lighting and the metal crash barriers at the sides.

A study will also be undertaken to find a way of ensuring that the new section retains or improves upon the current traffic service levels, which means that specific studies will have to be conducted regarding traffic-flow and operation & maintenance, both for the existing layout and the new one that is planned.

The works will be organised into construction phases that will enable the road to cope with the major traffic flow, around 17,000 vehicles/day; this is another major challenge to be faced, because it will be impossible to interrupt the traffic flow.



## Layout and construction design for the extension of the A-7 Highway between Crevillent and the Orihuela/Benferri Junction

The Highways General Directorate has awarded us the contract to prepare the layout and construction design for the "A-7 Mediterranean Dual Carriageway. Widening it to create a third lane per carriageway between Kilometre Points 724 and 741", which includes the section between Crevillent and the Orihuela/Benferri junction. The activities consist of developing the selected solution so that the road can be widened to provide a third lane in the study section, and to redesign the junctions so that they form a dumbbell interchange.

The Dual Carriageway section of the A-7 between Alicante and Murcia, is used by long-distance traffic, but there is also a considerable amount of traffic looking for parking spaces and medium-distance traffic travelling between the capitals and the rest of the local towns, which causes considerable congestion at certain times of the year.

Furthermore, it forms part of European Route E-15, as established by the European Union Economic and Social Committee in the European Agreement on Main International Traffic Arteries, which establishes that the number of lanes shall guarantee suitable service levels.



## Widening of the Rande Road Bridge on the AP-9 Atlantic Highway. Cangas and Teis Interchange Section in Pontevedra

The Rande Bridge on the AP-9 Toll Highway is going to be widened to add third lanes adjacent to the outer part of the existing roadbed. Eptisa is responsible for the initial surveying of the surfaces of the existing piers, including the visual inspection to find cracks, flaking, chipping, hollows and loosening; to establish the thickness and lining of the steel with pachometers; establishing the recoil index of the concrete with sclerometers; finding out the depth of carbonation affecting the concrete; determining the run time of the ultrasonic

impulses in the concrete and analysing the corrosion affecting the steel using corrosion meters.

We are also responsible for controlling the quality of the materials by conducting laboratory tests on aggregates, steel, soil, rocks and concrete, as well as the in situ density tests using radioactive isotopes, plate load tests, and tests on the soundness of the piers by means of the crosshole sonic logging method and mechanical impedance.



## Control and supervision of the works on the section between Solares and La Encina on the A-8 Cantabrian Dual Carriageway

The Roads General Directorate, under the Ministry of Public Works, awarded us the contract for the control and supervision of the A-8 highway works, on the section between Solares and La Encina. This infrastructure will be a continuation of the Cantabrian Dual Carriageway, connecting it not only with the lane that leads to Santander, but also with the existing N-634 from San Sebastian to Santiago de Compostela.

At the beginning of the 1990s, Eptisa prepared an informative study for the Cantabrian Dual Carriageway, the N-634 highway from San Sebastian to Santiago de Compostela, Solares-Unquera section. After approval was given, different sections were constructed leaving Solares-Torrelavega until the end. The project has now been resumed between Solares and La Encina.

The work being done by Eptisa is split into three stages:

During the initial stage, we prepared a report about the current state of the work, which included a list of the activities that had already been performed, the reviews due, the quality plan and the works still to be carried out, amongst others.

At the construction stage, Eptisa set the criteria for establishing and monitoring the inspection and stopping points, as well as controlling the contractor's quality assurance plans, the geometric control, controlling the quality and quantity of materials and the environmental monitoring.

Finally, we will supervise the monitoring, checking the load tests, the end of the works and the data collection for measuring and defining the eventual state, preparing the reports concerned.







Extension of the north alignment of the platform attached to the western dock in the Port of Palma de Mallorca

In the area of **ports**, Eptisa was awarded three new contracts in Spain. The first of these was the project for adapting the commercial wharfs so a mobile container handling gantry crane can be used in the Port of **Melilla**. Secondly, we also conducted the laboratory and in situ tests during the construction of a new Ro-Ro mobile ramp for the intermodal terminal at Bouzas, in the Port of **Vigo**. Thirdly, we provided the technical assistance to control the execution of the construction works for the gallery to protect piping in the breakwater for the new port facilities at Punta Langosteira in Arteixo, **A Coruña**.

We also completed the supervision, control and monitoring activities required for the extension to the north alignment of the platform backing onto

the western breakwater in the Port of **Palma de Mallorca**. These works have been carried out to enable the largest cruise ship in the world "Oasis of the Seas" of 362 metres long and its twin to moor alongside on the Balearic infrastructure.

We likewise finished work in **A Coruña**. In this cases, the activities involved controlling the quality of materials, geological and geotechnical description of the subsoil, piezometric work and analysis of hydrogeological data, auscultation using tilt meters and surveying, characterising the water column and controlling the sound level during the works to construct the underground road for the dock for the Coruña fleet, for which we had already prepared the construction project.

### Adaptation of the yard on the commercial wharfs to place a mobile container handling gantry crane in Melilla

The Melilla Port Authority awarded us this contract for which the electrical installations have been designed for supplying the new crane to be implemented at the container terminal. Before this could be done, it was necessary to adapt the existing facilities and equip them with new transformers. New electrical ducting has been laid and special connecting devices have been provided for the crane.



### Technical assistance for the A Coruña Port Authority for improving the new facilities at the port of Punta Langosteira in Arteixo

The A Coruña Port Authority awarded Eptisa a new technical assistance contract to control the implementation of the construction works to excavate a 2,300 metre long tunnel to protect the piping in the breakwater for the new port facilities at Punta Langosteira in Arteixo.

For 20 months, Eptisa will not only be providing the project management with the technical assistance services, but will also be controlling the quality of the works being performed and the quantitative aspects, as well as supervising and controlling the construction procedures and the Environmental Control Plan. Eptisa will be reviewing and updating the designs, and will also be supervising and monitoring the Quality Control Plan and the structural modelling.

The main objective of the works is to construct a tunnel to protect the piping that conveys bulk liquids in the Outer Port of A Coruña, from the overtopping action of the waves. The tunnel will be an arcaded structure consisting of a crown slab supported on 537 pillars about 10 metres high, laid on a foundation slab. It will be made up of 47 modules of different lengths, with expansion joints inserted between them.



Apart from the tunnel, an edge piece will be constructed to protect the inner slope from overtopping, as well as a joint between

the parapet and the tunnel. The works are expected to require about 12,919 tonnes of steel and 90,000 m<sup>3</sup> of concrete.

### New Ro-Ro mobile ramp for the intermodal terminal at Bouzas in Vigo

Vigo Port Authority commissioned Eptisa to create a new Ro-Ro ramp as part of its plan to improve the quality of its services, because the new "Sea Motorway" is soon to be opened between Bouzas, in the Port of Vigo, and the French city of Nantes.

The activities involved the quality control of the materials while the work was being done, by conducting the required laboratory tests on the steel and concrete, as well as the in situ tests, such as pressure tests on the supply and fire-fighting network, establishing the density in situ using radioactive isotopes or plate loads, amongst others.





As far as our **airport** work was concerned, we provided technical assistance for the Adolfo Suárez **Madrid-Barajas** Airport facilities, as well as controlling and monitoring the ground-lighting for Taxiway C7 and the renovation of the pavement and the facilities in Car Park P1, including the preparation of the design. We also prepared the urban development project for the former Plan Barajas zone, and the project for the tasks involved in adapting the lane regulations.

Furthermore, we issued an expert's report for Dragados on the state of Runway 18R – 36L and Taxiway ZW, after which we provided technical assistance for performing and monitoring the runway repair and improvement works. The works made it necessary to close the runway for one month, even though it is one of the busiest

in Spain, and the regeneration of almost 150,000 tonnes of flexible pavement and 10,000 tonnes of concrete.

Technical assistance was provided at El Prat Airport in **Barcelona** in preparing the remodelling design for the southern parking stand at Terminal T1 so that it can accommodate larger aircraft.

Work continued at **A Coruña** Airport, where we are providing the technical assistance for controlling and monitoring the runway extension works.

At **Fuerteventura** Airport, we drew up a project for raising the take-off runway. Meanwhile, farther north, at **Bilbao** Airport, we were working on the raising of the pavement for Runway 12-30, for which we were also responsible.



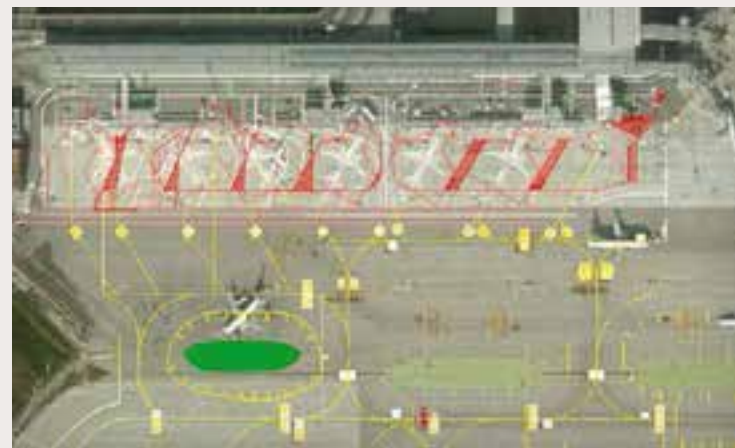
Technical assistance and control and supervision of the runway enlargement works at A Coruña Airport

In 2015, at the Adolfo Suarez Madrid-Barajas Airport, we participated in numerous technical assistance activities to renovate and improve several facilities and runways

## Remodelling the platform for the southern parking stand for Terminal 1 at El Prat Airport in Barcelona

We were awarded this project aimed to give a new layout to the T1 parking stand platform, so that it can accommodate larger aircraft. The following are among the most outstanding activities carried out by Eptisa:

- New layout for ramp 15 and taxiways Q and J
- Installing new lighting and signs for vertical signalling
- Providing new road markings and signalling
- Demolishing the three existing entrance ramps
- Constructing new slabs on the north side of the platform
- Constructing six platforms for installing special equipment (CBTH, CF-400Hz and PCA)
- New ducts for the special facilities and communications equipment
- Reforming Transformation Centre nº 15 and the service connections to the CBTH



## Technical assistance at the Adolfo Suárez Madrid-Barajas Airport

We carried out a variety of technical assistance activities at Madrid Airport:

- *Control and supervision of the ground-lighting for taxiway C7:* We supervised and controlled the works performed on the facilities to give AENA a guarantee that the work was being carried out correctly by the construction company. We supervised the implementation both before and during the works, as well as when they were completed.
- *Drawing up the project for the actions to adapt the galleries to regulations:* our function consisted of analysing AENA's documentation, making an inventory of the galleries, updating the documentation, as well as preparing the non-compliances study and the designs required.
- *Control and supervision of the pavement resurfacing and renovation of P1 parking facilities:* Supervising before the works began, analysing and reviewing the design, calculations, detecting potential problems, etc. We also supervised the works while they were being implemented, carrying out geometrical and qualitative controls, as well as coordinating the health & safety aspects, among other activities. When this was completed, we prepared a final report on the work and the dossier containing all the works documentation.
- *Preparing the design to adapt the urban development contained in the old zone of the Barajas Plan:* the aim of this activity was to convert

an old and semi-abandoned plot so that it can serve as the site for the subcontractor's new huts, providing the area with services so the AENA can use it for commercial purposes, as well as recovering it from an environmental perspective.

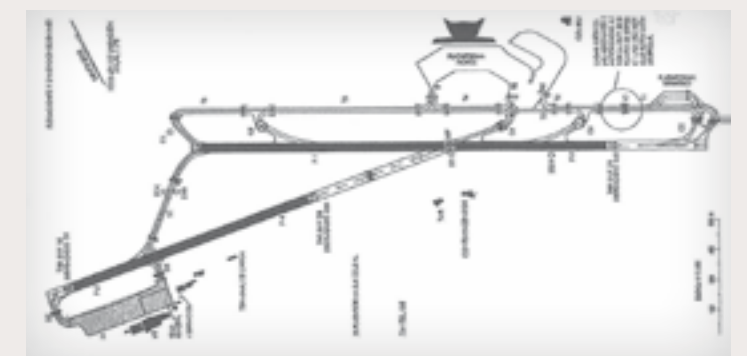
- *Preparing the rent-a-car parking facilities (P1) regeneration design:* the idea is to enable the airport to use the surface area, by adapting it to new technologies and requirements.



## Technical assistance for preparing the design to enlarge the runway 12-30 at Bilbao Airport

The services offered by Eptisa included the preliminary work and studying different options, as well as preparing the basic and construction designs and plotting and staking out the ground where the works would be performed. Finally, an executive summary of the project was drawn up, together with all the documentation concerned.

The runway enlargement project was carried out to overcome the problems affecting Runway 12-30.







Design and construction for enlarging and adapting the Arroyo del Soto Wastewater Treatment Plant

## WATER AND ENVIRONMENT



The tasks that we have performed in numerous projects in the **water** sector, not only in Spain but also all over the world, have positioned us as one of the leading engineering companies in the sector.

Where **water infrastructure** is concerned, we were awarded numerous contracts, such as technical assistance services for control & supervision of works, health & safety coordination, and environmental control over the works for the project to supply the central zone of the mining areas with resources from Las Parras Reservoir, in **Teruel**.

In **Huelva**, Eptisa has provided technical assistance in modernising and integrating the signals in the remote control and command system for the Canal del Piedras and, as a Joint Venture with Inersa, has carried out the heightening works for the Corumbel Bajo Dam, to ensure that it complies with the Technical Regulations for Dams & Reservoirs.

Furthermore, we offered technical assistance services to the construction management, with a view to controlling, monitoring and supervising the works while the feed pumps for the Chanza and Andevalo Dam system were being repaired, and to renovate and optimise the remote control and command system for the two dams.

Eptisa provided support, control and supervision to strengthen the left abutment of the Negratin Dam in **Granada**, as well as modernising the gallery on the left bank. Staunching and waterproofing work was also applied to a joint on the right bank.

We were responsible for the **auscultation** of 30 dams for Endesa, in the Ebro and Pyrenees production units. We were also in charge of the maintenance and repair work for the automatic auscultation systems for 30 dams owned by Iberdrola Generación and a further 19 units for Gas Natural Fenosa, all located in the Galicia and Centre areas.

In **water supply and sanitation infrastructures**, Eptisa has taken part in the second phase of the **irrigation** networks consolidation and improvement project for the El Fresno Irrigation Association in Moguer and the Lucena del Puerto in **Huelva**, providing works management with technical assistance, as well as controlling and supervising it.

In the same region, close to the Doñana National Park, we have constructed an 18 km long drive pipeline with an irrigation pool and two pumping stations to make it possible to transfer 5 Hm<sup>3</sup> per year from the Guadiana River Basin to the Guadalquivir River Basin. Eptisa was

responsible for the construction management, control, monitoring and supervision of the works and for coordinating health & safety.

Between August 2015 and April 2016, we adapted the national **mapping system of flood prone areas** to review and integrate the areas of potential significant coastal flood risk (ARPSIS) in the Western Cantabria Hydrographic Zone.

In **Galicia**, we also carried out the groundwater control analyses in the coastal river basins for the company Aguas de Galicia.

During the course of 2015, Eptisa carried on with its specialist engineering activities in **water treatment plants** facilities, covering the complete cycle for the facilities: conceptual design, process, detailed engineering, construction, equipping and commissioning.

In the Province of **Segovia**, Eptisa developed a turnkey design & construction project for 6 wastewater treatment plants, selecting the “sustainable plants”

option on this occasion, because it is more efficient from an energy perspective and requires a smaller work force.

Construction designs were developed at the **Burgos** Water Treatment Plant to bring together all the wastewater disposal points, in order to improve the water quality in the river into which it flows. We also carried out a turnkey project for the Canal de Isabel II that involved enlarging and adapting the Arroyo del Soto Wastewater Treatment Plant, in **Madrid**.

Progress was made on the framework contract providing technical assistance services for projects and works in the Drinking Water and Wastewater Treatment Plants that the Consorcio de Aguas de **Bilbao** Bizkaia is responsible for managing. Special importance is attached to this contract because the facilities are equipped with advanced technology.

Technical assistance was completed for the construction of a 30.000 m<sup>3</sup> reinforced concrete underground tank for regulating the raw water at the intake to the Villa Azul Drinking Water Treatment Plant, in **Cordoba**.

### Technical assistance to construction management, quality control, and health & safety for the Negratin Dam works in Granada

The Negratin Reservoir, located in the Province of Granada, is aimed to regulate the Guadiana Menor River, and to provide irrigation for 25,000 hectares in the Provinces of Jaen, Cordoba and Seville, plus a further 3,600 in the Province of Granada by raising the resources to the Jabalcon Channel, and another 5,000 hectares in the Province of Almeria, via a water transfer system that raises resources to the Cuevas de Almanzora Reservoir. Water is also used to produce electricity.

Eptisa provides technical assistance to the construction management carrying out this infrastructure, as part of a Joint Venture with the firm Ingeniería Centro y Cálculo. The activities involve giving support, control and supervision of the strengthening of the left abutment by grouting, modernising the gallery provided on the left bank, where rock falls and sinking have occurred, and staunching and waterproofing a joint on the right bank.



### Project to supply the central zone of the mining areas with resources from Las Parras Reservoir in Teruel

In 2015, Eptisa worked for ACUAES (Waters from Spanish Basins), offering technical assistance services to the construction management where supervision and controlling the works was concerned, as well as liaising health & safety and environmental control over the works included in the project for supplying the central zone of the mining areas from the Las Parras Reservoir.

The works consists of laying a network with branches leading from the Las Parras Reservoir, currently under construction. A gravity pipe leads down from the collection box as far as the drinking-water treatment plant, and its regulating tank. As from this point it branches into two separate networks, one that leads off to Martín del Río and Montalbán and the other one that supplies the Boroughs of Utrillas and Escucha, which requires auxiliary pumping.

The technical assistance services into which the activities are divided are for preparing the works management plan, the project management for works control and supervision, including the draft stage of the integrated management plan, the part assigned to management for coordinating health & safety and the environmental supervision and control activities.



Technical assistance to modernise and optimise the feed pumps for the Chanza and Andevalo complex



Works management for supplying water to the vicinity of Huelva and the Doñana National Park



## Heightening the Corumbel Bajo Dam to comply with the Technical Regulations for Dams and Reservoirs in Huelva

Eptisa, as part of a Joint Venture with Inersa, has carried out the heightening works on the Corumbel Bajo Dam, located in the Borough of La Palma del Condado (Huelva), to ensure that it complies with the Technical Regulations for Dams & Reservoirs. This work has been done for the Tinto, Odiel and Piedras River Basin Operations Management (DHTOP) which is part of the Regional Government of Andalusia. Apart from heightening, the aim of the works is to improve the dam auscultation and to renovate it.

Eptisa has supplied and installed the equipment for the instrumentation system, including sensors, 3D gauges for joints with LVDT and bases for topographical control, and the automated data collection system, with fieldbus equipped with distributed peripheral and signals integration from reservoir level and weather station.



The system sends the signals to both the system facilities and to the DHTOP control centre in Huelva, where SAYTL software has been installed for managing dams, which was developed by Eptisa. It is a unified SCADA solution for auscultation systems and emergency plans in dams.

## Turnkey project: design & construction for 6 WWTP in the Province of Segovia



We took part in designing and constructing 6 waste water treatment plants in the Province of Segovia commissioned by ACUAES. These plants will serve small towns and villages with populations ranging from 1,000 to 1,500 inhabitants. The "sustainable plant" option has been chosen for this pilot scheme, i.e., projects that require only a small labour force, little maintenance work, efficient operation when coping with seasonal discharge and load variations in different seasons, are energy efficient and that easily blend into the environment.

The plants in the municipalities of Cabezuela, Santa Maria la Real de Nieva and Villaverde de Iscar have pre-treatment facilities, an Imhoff tank with floating macrophytes, from which the contents flow into vertical filters or facultative stabilisation ponds. The outlets from these elements are unified to feed horizontal filters. Both the vertical and horizontal filters are provided with macrophytes.

The other three, in Ortigosa del Monte, Pradena and Zarzuela del Monte, are equipped with biodiscs. They have pre-treatment facilities, an Imhoff tank with floating macrophytes and decantation.

Once they have been constructed we will subject these facilities to an efficiency and operating study for a period of two years of operation to find out if they are suitable for use in other rural settlements with less than 2,000 inhabitants.

## Modernisation project for irrigation facilities belonging to the El Fresno Irrigation Association in Moguer and Lucena del Puerto in Huelva

We are carrying out the second stage of the technical assistance project and giving support to the project management to construct 35 kilometres of pipelines and a pumping station that will serve the plots being used by the El Fresno Irrigation Association in Moguer and Lucena del Puerto in Huelva.

Apart from technical assistance to the construction management, we are also responsible for supervising, controlling and monitoring the works.

The two stages of this project have been jointly financed by ERDF and SEIASA Funding and will affect a total of 851 hectares.



The **industrial environment** was another field where we have been highly active. Since 2010 we have been carrying out the environmental monitoring and supervision at the Areosa landfill in the environmental complex of Cerceda and the urban waste transfer plants, in **Galicia**.

We have been continuing to work for Fertiberia in **Andalucía**, one of the leading companies in the fertiliser sector in the European Union. The project involves decommissioning the phosphogypsum ponds in the Borough of Huelva.

In 2015, we carried out the monitoring and supervision of the inclinometer instrumentation of the tailings dams which contains the copper and sandstone from the Riotinto mining zone in **Huelva**. The contract is part of the project to heighten these dams owing to the resumption of mine workings.

In the summer of 2015, a geotechnical analysis and study was conducted of the way the red mud



Monitoring and supervision of the inclinometer instrumentation of the tailings dams which contains the copper and sandstone in Riotinto

reacted in the San Ciprian Tailings Dam in **Lugo**. It was concluded that the geotechnical behaviour and the way the parameters evolved was normal.

We completed the construction management assistance for the chemical decontamination project for the Flix Reservoir in **Tarragona**. This was one of the most highly complex waste treatment activities. The operation commenced in March 2013 with the dredging and treatment of sludge.



Chemical decontamination project for the Flix Reservoir

▲ The chemical decontamination project for the Flix Reservoir in Tarragona was one of the most complex waste treatment activities

## Adapting the National Mapping System of Flood Prone Areas in the Western Cantabria Hydrographic Area

Between August 2015 and April 2016, we prepared the flood risk and hazard maps in zones exposed to extreme combined events, tidal and river, in the Western Cantabria Hydrographic Area.

The work zone included about 150 kilometres of river beds, of which about 80 are in Asturias and approximately 70 in Cantabria.







## Technical assistance in modernising and integrating the signals in the remote control and remote command system for the Canal del Piedras in Huelva

We have been awarded the contract for repairing and replacing the radio equipment for the remote control system for Canal del Piedras, in the Province of Huelva, and also for fitting surveillance cameras for the elements in the remotely-controlled system and updating and enlarging the SCADA system.

The services taken on by Eptisa are technical assistance to the construction management, works control and supervision, and coordination of health & safety.

## Construction design to seal the phosphogypsum ponds at the Fertiberia production centre in Huelva

Further progress was made with the task of sealing the phosphogypsum ponds in the Rio Tinto marshes in the Province of Huelva. These ponds belong to Fertiberia, the leading fertiliser company in the European Union. The phosphogypsum ponds cover a surface area of approximately 720 hectares, and the contents come from the manufacture of phosphoric acid that took place in this zone.

The project includes the construction design for removing acidic water stored in the ponds, the movement of the gypsum required to make paths and to make the slopes gentler, basically affecting the dykes that enclose the ponds. The project also includes creating the infrastructures for draining away inner water by excavating ditches for this purpose on the slopes, and berms midway down the slopes and at the base; sealing the pile surfaces by means of a variety of natural and synthetic materials; providing the structures for draining away the rainwater; planting vegetation and landscaping the site to restore it to its original state. The project also involves installing a system for monitoring the ponds not only during the works but also after they have been sealed and monitoring them from a geotechnical perspective.

During the course of the project, a series of hydrogeological and dynamic stability field studies were undertaken, and an analysis was conducted to establish the environmental risks to human health and the ecosystems.



## Geotechnical auscultation in the red mud tailings dam in San Ciprian in Lugo

The project to heighten the red mud tailings dam in the Borough of San Ciprian to elevation 100 made it necessary to complete the geotechnical auscultation campaigns that took place in the Summers of 2005 and 2008, by conducting static penetration tests with CPTU pore pressure measurements and rotary drilling with core extraction and sampling.

In the summer of 2015, we carried out a series of campaigns in the tailings dam zone to establish the state and extent of consolidation, and to characterise the red mud from a geotechnical viewpoint. The behaviour of the materials was also studied and analysed from a geotechnical viewpoint. The conclusion was reached that the geotechnical behaviour and the way the non-hazardous waste parameters evolved in the red mud was normal and as expected, even slightly better than expected if the state of the pore pressure is taken into account.



## INDUSTRY, ENERGY AND BUILDINGS



The main Spanish **energy** companies have been able to rely on our services for the integrated management of the following types of projects: construction, refurbishment, instrumentation or monitoring of infrastructures and facilities.

In **Galicia** we have carried on working for Endesa on the turnkey project to adapt the Saa Coalfield Park in order to increase the environmental efficiency of the facilities and incorporate its working into the As Pontes thermal production unit. The tasks include the engineering, the civil works, the mechanical, structural and control works, as well as installing the peripheral systems associated with the conveyor belt. We have also been conducting stress tests on the roof arches of the As Pontes Thermal Plant.

Eptisa has taken on the responsibility for the turnkey project for installing the ash dampening and extraction structure for the intermediate silo, so the ash can be transported to the non-hazardous waste disposal site, and for installing wheel-washing equipment for the lorries in the disposal site, at the Puentes de García Rodríguez Thermal Power Plant, in the Province of **A Coruña**; this work was done for Endesa.

In the **nuclear** sector, we developed the service providing support for the technical office dependent on ENRESA and the service for monitoring and classifying materials for the project involving the dismantling and closure of the José Cabrera Nuclear Power Plant. Furthermore, in 2015 we performed surveying work using independent GPS equipment.

▲ We increase our offer of energy consultancy services to include advice to authorities and companies about how to develop plans of action and specific energy-mix studies in different countries and markets



In the borough of Villar de Cañas in **Cuenca**, and for the same client, we carried on with the task of providing a geological characterization of the site for the future centralised temporary storage facility.

Further progress was made on the detailed engineering project, also for ENRESA, involving the closure of Section I and the construction of Section II of Cell 29 at the El Cabil Storage Centre in order to store very-low-activity waste in **Cordoba**.

As far as **renewable energies** were concerned, we developed solutions for optimising the facilities and infrastructures in the wind energy, photovoltaic and solar thermal sectors. We also increased our offer of energy consultancy services, offering authorities and companies advice about how to develop plans of action, master plans and specific energy-mix studies in different countries and markets.

In the **wind energy** field, we continued to conduct tests on the foundations for wind turbines. Furthermore, in recent years Eptisa has developed **SAYTL<sub>Dynamic</sub>**, a preventive system for the intensive and continuous monitoring of wind turbine pathologies, from the project phase until the operation & maintenance phase, through the use of ongoing-data acquisition equipment and a SCADA web to display and manage it and for alarms.

In **Seville**, we were awarded the contract for construction management services, as well as the monitoring and supervision of the works for the ground improvement treatment project on the south-east corner of the embankment for the Cantillana Solar Plant.

ENEL Green Power has awarded Eptisa the technical assistance services for the civil works and electromechanical assembly work to install the selective catalytic reduction (SCR) systems for the biomass energy plants at La Loma, in Villanueva del Arzobispo (Jaen), and Energías de La Mancha Eneman, in Villarta de San Juan (Ciudad Real).

In the **buildings** sector, we have adapted our engineering and architectural services to the integrated management of construction and urban development projects, including its design, management and even implementing the works.

We continued to comprehensively supervise and manage projects for SAREB, the Management Company for Assets Arising from the Banking Sector Reorganisation. We have been performing these activities since 2013. Eptisa collects from each one of the company's assets, all the technical and administrative information available, analysing the current projects and the work done, and completes these activities with an economic feasibility and promotion sensitivity analysis. In the case of execution, Eptisa initiates the renewal of licences, the administrative procedures, selecting and contracting all those who are involved in the project, including architecture teams, safety liaison officers, quality laboratories or construction companies. Finally, we have been monitoring and coordinating the promotion of properties before they are delivered by the agreed deadlines.

In the **Basque Country**, we have been taking part in the Giro Project, seeking new architectural solutions for a new gerontological care model focused on the person, which caters for the requirements, tastes and expectations of the elderly and is conducive to the development of their abilities, comfort and welfare.

In Sestao, we have been working on the construction of 58 social housing units and 105 council houses in Vega de Galindo. While this was being done, Eptisa was responsible for controlling the quality of the materials. And in Portugalete, we completed the work on constructing a block of flats. There were a total of 100 council houses and 259 other social housing units, the total investment amounting to € 58 million.



The municipal company **Bilbao** Kirolak commissioned Eptisa to carry out several activities in its facilities, such as the construction management and execution of the football pitch 7 at the sports complex in Mallona or the improvements to the sports facilities in Artxanda.

Meanwhile, in 2015 in **San Sebastian**, we completed the cultural centre in the Tabakalera Building, a project whose integrated management and construction were entrusted to Eptisa. The plot of land, home to the former tobacco factory since 1913, has been converted into an international contemporary culture centre.

In **Pontevedra** we provided the technical assistance and controlled the performance of the works and the quality of the materials during the construction of the building for the 112 Emergency Centre in A Estrada.

During the refurbishing of the "El Plantío" arena in **Burgos**, we carried out the quality control of the materials while the works were being undertaken.

In **Soria**, we conducted a geotechnical study and a geothermal response test for the research building on the Campus Duques de Soria.

In **Barcelona**, we participated in the remodelling and comprehensive refurbishment of the Vil·la Joana Residence, located within the bounds of the Collserola Natural Park.

Eptisa is providing technical assistance services to the public company Barcelona de Infraestructures Municipales S.A. for a variety of activities involving infrastructures and equipping in the city.

In 2015, the Illa Guinardó Project was finally commissioned. It is an outpatients' centre, a day



112 Emergency Centre in A Estrada

centre, a residence for senior citizens, a playschool, a car park, a municipal market, a shopping centre and also has homes. Eptisa provided the integrated works supervision and senior technical architectural management services.

In the field of **industry**, we were responsible for the quality control of the materials while the works were



Refurbishing the "El Plantío" arena in Burgos

being carried out on the plant for preparing different types of cooked meats and sausage, cured and sliced at the Gamonal-Villimar Industrial Park in **Burgos**.

We also took part in the works for preparing five bioclimatic warehouses for the business incubator in the Porto do Molle Business Park, in the borough of **Nigrán** (Pontevedra).

## Turnkey Project to install an ash dampening and extraction system for the Puentes de García Rodríguez Thermal Power Plant in A Coruña

Eptisa carried out a turnkey project for installing the ash dampening and extraction structure for the intermediate silo, so the ash can be transported to the non-hazardous waste disposal site, and for installing wheel-washing equipment for the lorries in the disposal site, at the Puentes de García Rodríguez Thermal Power Plant, in the Province of A Coruña run by Endesa.

The civil works involved executing the structure connected to the existing one in the silo, with a view to supporting two new dampening systems. Roads and paved areas were modified to enable heavy vehicles to be driven and manoeuvred in the zone. New service connections were also opened up and connections were made to the plant sewerage system.

A dampening system was designed and installed as part of the mechanical facilities, as well as the service connections needed, in the discharge system for the current silo, so that hopper trucks can unload under the silo, ensuring that the existing dry exit remains operational. A new wheel-washing system has been implemented in the non-hazardous waste disposal site.

Furthermore, a new electricity supply has been installed for the dampening system and for the wheel-washing equipment. A control system has also been applied for the dampening process, which forms part of the general thermal power plant programme.



## Constructing and assembling the selective catalytic reduction system for two biomass plants in Jaen and Ciudad Real

ENEL Green Power awarded Eptisa the technical assistance services for the civil works and electromechanical assembly work to install the selective catalytic reduction (SCR) systems for the biomass energy plants at La Loma, in Villanueva del Arzobispo (Jaen), and Energías de La Mancha Eneman, in Villarta de San Juan (Ciudad Real). Both of them are equipped with two olive husk burners and an over fire air (OFA) system above the highest burner, which theoretically produces a certain scaling of the air. However, and with a view to reducing nitrous oxide emissions, a new selective catalytic reduction system has been installed at the two plants to comply with the emission limits established in compliance with Royal Decree RD 815/2013 and any further and more stringent modifications that might be made following the proposals contained in Best Available Techniques (BAT) documents, which are compulsory and apply as from 2016.

The tasks that Eptisa has performed at the facilities were:

- Checking compliance with the works activities schedule
- Proposing solutions to ENEL Green Power to overcome technical problems
- Making sure that the environmental conditions are fulfilled
- Guaranteeing compliance with the provisions currently in force in matters concerning temporary works signs and notices, occupational safety & health signals, and checking the Safety & Health Plan prepared by the contractor.

We were also responsible for controlling the performance, the geometrical control and the qualitative and quantitative control for the works and for interpreting, controlling and informing about the results of the tests conducted by the contractor to control the materials. Furthermore, on a weekly and monthly basis we prepared an exhaustive works progress report, containing all the problems involved and their solutions.



## Surveying work for the Jose Cabrera Nuclear Power Plant dismantling and closure project



The company ENRESA awarded Eptisa the contract for the surveying work inside the Jose Cabrera Nuclear Power Plant while the facilities are being dismantled. The work involved collecting data, analysing the information and preparing a technical report in a period of less than five working days as from arrival in situ.

Eptisa also continued to participate in the material classification and control service department for the dismantling and closure of the Jose Cabrera Nuclear Power Plant, being directly under the authority of ENRESA. Eptisa's tasks included issuing reports, preparing the technical documentation, coordinating the kick-off meetings and the monthly monitoring, updating the dismantling management system and the project management system.

## Integrated management of the project and construction of the Tabakalera Culture Centre in San Sebastian

In September 2015 the Tabakalera Building in San Sebastian was opened to the public for the first time. Eptisa was in charge of integrated management of the project and the construction works. The plot of land, home to the former tobacco factory since 1913, has been converted into an international contemporary culture centre.



Approximately 10,000 m<sup>2</sup> of the 37,000 m<sup>2</sup> covered by the four storeys plus the prism of the building are given over to cultural projects, while the remaining 27,000 m<sup>2</sup> are used by institutions, private initiative and services, such as the San Sebastian Festival, the Instituto Vasco Etxepare, the Basque Film Library, the Kutxa Trust and Zineuskadi.



## Technical management to promote housing in Portugalete

In Portugalete (Bizkaia), we completed the work on constructing block of flats 9. There were a total of 100 council houses and 259 other social housing units. All that remains to be done is the construction of two blocks each with 55 apartments, to complete the urban plan envisaged in the General Plan for the Borough. The total investment amounted to € 58 million.

Eptisa was in charge of the technical management of the promotion, which included preparing the execution design and the project management of the works.



## Sports facilities for Bilbao Kirolak

In recent years we have performed a variety of activities at the Bilbao Kirolak municipal society sports facilities. Some of the most outstanding ones include the San Ignacio Sports Complex, where Eptisa prepared the design and was responsible for the professional site management for several activities. We were responsible for the work done on the football pitch 7 in Mallona, which covers a site that was once a bowling alley.

We were also recently awarded the works management and site professional management of the improvements to the Artxanda Sports Complex. We also prepared the design.



## Technical assistance for the works commissioned by BIMSA's Infrastructure Department in Barcelona

Eptisa provides its services to the works in the monitoring, economic and qualitative activities for the works in the city, district and the Comprehensive Maintenance Plan and the Sports Institute of Barcelona. The tasks include the relations between the construction company, the works management, the service companies and Public Zones Authorities at Barcelona City Council. Eptisa is also in charge of coordinating the works with the Council's Mobility Department and the City Police Force.

The following works have been monitored: urban development of the Av. Diagonal, Av. Paral·lel, the roofing for Sants, Ronda del Mig Road, the Turó de la Rovira anti-aircraft batteries, improving access to the Turó de la Rovira batteries and the streets Panorama, Ermengarda, Forn, Mühlberg, Pedraforca and the Montjuïc Municipal Tennis Sports Centre. The technical assistance also involved updating and monitoring data in the GestBimsa database and in liaising with the rest of BIMSA's Departments.



## Works to convert five bioclimatic warehouses into buildings for use as business incubator in Nigran

The Consortium of the Foreign-trade Zone that manages the business incubator from the Porto do Molle Business Park in the Municipality of Nigran, Pontevedra, commissioned Eptisa to provide the technical assistance and works supervision of the structure, architecture and facilities during the works of five bioclimatic warehouses. The tasks not only included the quality control of the materials by conducting laboratory tests on the steel, concrete and construction materials, but also conducting service tests on all the facilities and soundproofing tests.







## INFORMATION TECHNOLOGY

The new TIIC Division has gained a great deal of experience in applied technologies thanks to a combination of expertise in two of our specialist areas: **Information Technologies**, given over to providing consultancy services and developing and implementing solutions, and **monitoring, telemetry and infrastructure control**, which specialises in controlling structural behaviour and the way it evolves, damage detection, pathologies, strategies for maintaining and operating civil infrastructure and networks throughout their useful working life.

In the **emergencies & citizen protection** field, Eptisa carries out the preventive, corrective and ongoing maintenance for the Geographical Information Systems belonging to the Integrated Safety and Emergency Centre of Madrid (CISEM).

Where **logistics** are concerned, we work on the preventive and corrective maintenance for the Spanish Post Office Geographical Information System.

In the **private** sector, we are developing for Repsol the project for transferring its GIS applications to a new company platform based on ArcGIS technology by Esri and subsequently maintaining the applications. We are likewise providing technical assistance to the insurance company "Consortio de Compensacion de Seguros" to maintain and develop the Geographical Information System, also based upon the ArcGIS Platform Version 10.2.

Eptisa is a benchmark in the **water** sector. The experience acquired in projects such as the Canal de Isabel II or Txingudi Projects have ensured that the networks management applications have become internationalised and are now a feature of the contracts signed in India, Kyrgyzstan, the Dominican Republic and Peru.

We have signed company agreements with the Canal de Isabel II Gestión, the company that manages the water in the Autonomous Region of **Madrid**, to enable it to have unlimited access to the GIS platform. We also provide them with a backup service for maintenance and development of applications and systems for

the computerized maintenance management system (CMMS) and mobility.

Where water infrastructure is concerned, we were awarded the contract for the auscultation of the works to improve the Alcolea Dam, the Chanza Dam and the Corumbel Bajo Dam.

Endesa has awarded us the contract for the repair & maintenance services for the pendulums in a total of 20 dams located in their production units in the Ebro-Pyrenees and North-West. The purpose is to adapt and modernise these instruments, which are essential for the operation of the auscultation system in concrete dams.

For the same company, we have extended until 2016, the dam auscultation service that we have already been providing since 2010 for the Ebro-Pyrenees production unit, and the service now includes the integrated management of the automated auscultation systems.

We have been carrying out the corrective maintenance for the automatic dam auscultation system for Iberdrola Generación. We have been providing the services contained in the framework contract for repairing failures affecting the automated auscultation system for the period 2014-2016, and applying them to a total of 30 infrastructures. The work has covered 110 automatic stations (EMA type with 64 channels and PLC), which process the data from 6,500 sensors.

We have likewise been doing the maintenance work on the automated auscultation systems for the dams belonging to Gas Natural Fenosa, which involves performing the preventive and corrective maintenance on the auscultation systems for 19 dams, all either in Galicia or the central zone, which process the data from 600 sensors.

We have collaborated with the company ACSA (Sorigué) on implementing the Emergency Plan for the Jarama Dam, between Huelva and Seville.

As far as **buildings** is concerned, reference must be made to the automated auscultation that we perform for the works on the Canalejas Building in Madrid. In

this project, we control the outer walls of the building by automated surveying and 3D jointmeters when these walls are being knocked down, emptied and constructed.

In the **railway** sector, we also implemented the auscultation plan on unstable slopes and embankments on the ADIF railway network.

The Provincial Council of Gipuzkoa awarded us the contract for controlling landslides on the slopes of the **highway** network, which involves implementing a system of inclinometers and installing 35 new units.

One of the many projects undertaken for Esri España in the first six months of 2015 was the agreement signed with Airbus Defense and Space to provide high-quality satellite images on demand via the geographical information platform ArcGIS. Furthermore, both the European Union Satellite Centre and the Andalusian Regional Ministry of Environment and Land Planning have signed new contracts to make unlimited use of this technology.

The company has added to its platform of ArcGIS smart maps with 600 new AIS Group sociodemographic variables, the latter company specialising in providing support for decision making.

### R&D Technology

The aim of the **R&D** investment is to develop **vertical solutions** that enable our clients to access the

technology. This highly-competitive and constantly-changing environment makes it essential to adapt the services to the latest trends in digital economy, by creating specialist vertical applications. This effort puts us at the forefront where the latest technological breakthroughs are concerned and allows us to retain our position in the IT market, not only in Spain but also on an international level.

A good example of such solutions is the **NILO** GIS solution for the management of water networks, whose purpose is to increase efficiency and optimise the management of networks run by small & medium-sized service enterprises.

And **ROMA**, the most comprehensive solution for the processing and professional management of the information associated with linear infrastructures, thanks to its advanced capacity to display, edit, query, manage and analyse information.



### GIS application migration and maintenance for Repsol

This oil company has commissioned Eptisa with the migration of its GIS applications, currently developed on a proprietary platform, which are to be transferred to the new Repsol platform, based on ArcGIS by Esri. We have also committed ourselves to the maintenance involved.

This project means that the company will be unifying its business applications onto one single GIS platform with the consequent economic saving and enabling the company users to use this technology. Repsol has relied on Eptisa to carry out such a strategic project because

of our company's proven experience with Esri technology.

The functionalities that they will have from now on are:

- Route calculation using different criteria based on TeleAtlas mapping
- Locating addresses and kilometre points
- Display of corporate geographic information, showing service stations, storage facilities or prospectations
- Dynamic labelling of entities
- Locating entities



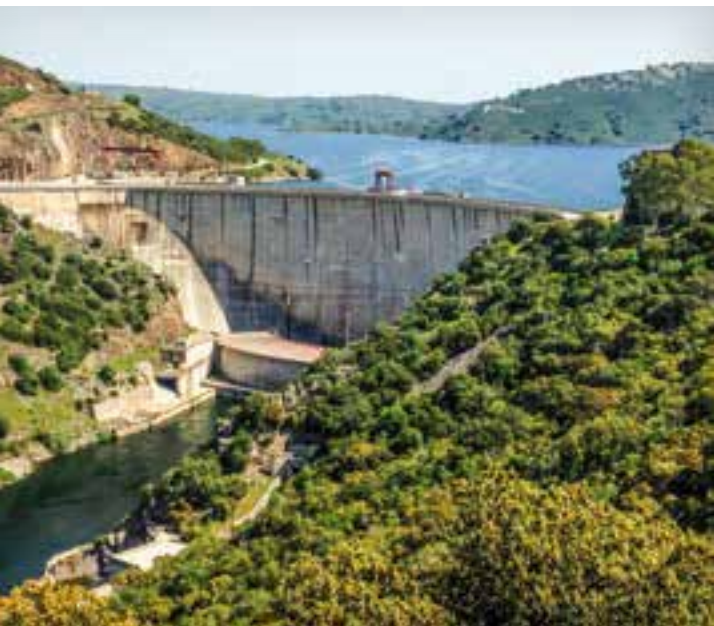
### Auscultation of dams in the Ebro-Pyrenees hydraulic production unit

We have carried on our work for Endesa Generación that involves the auscultation of 30 dams in the Ebro-Pyrenees hydraulic production unit. We have been providing this service since January 2010 and the period has been extended until 2016, the innovation being the integrated management of the automated auscultation systems. All the dams are currently operational and belong to the group: Alto and Bajo Pallaresa, Alto Ribagorzana, Ebro, Garona, Segre and Ter, located in the Provinces of Lleida, Zaragoza and Girona.

The infrastructure have different control systems, each one being adapted to its own particular characteristics, which makes it possible to monitor on the basis of the established annual calendar. The auscultation is done manually at 4,000 control points, both instrumentation and topographical, and with the aid of more than 800 automated sensors.







## Corrective maintenance for the automated auscultation system for the dams belonging to Iberdrola Generación

In 2015, we were commissioned to repair the failures affecting the automated auscultation system for 30 dams belonging to Iberdrola Generación. This is an extension to the service provided since January 2000 and extended until 2016.

The dams are in the Sil, Douro, Tagus, North and East operating zones, and all of them are equipped with automatic auscultation data-acquisition systems, connected to automatic data acquisition stations manufactured by Eptisa. The stations are linked as a network to an in situ PC at the facilities themselves, which is equipped with a specific auscultation SCADA (AGIL), also developed by Eptisa, which is currently being modernised. The repair work affects 110 automatic stations (EMA type with 64 channels and PLC), which process the data from 6,500 sensors.

## Maintenance work of the GIS applications, management of mobility and CMMS for the Canal de Isabel II

We have been contracted by the Canal de Isabel II to provide the maintenance service for their Geographical Information System applications, to manage the computerized maintenance management system (CMMS) and mobility. We thus give them the support that, controlled by service levels, will enable them to guarantee that these systems are operated, maintained and evolve efficiently.

One of the objectives they have asked us to achieve is to define a management model that enables the user to ask for and control the service level included through service level agreements (SLA), detect and correct deviations quickly, and also to identify areas where there is room for improvement and adaptations that could make it possible to provide more stable environments that are easier to maintain and are more functional.

The technologies used for this work include ArcGis Server 10.1, JasperReports or Vaadin UI framework.

The scope of the project includes a telephone backup service for the queries asked by the users, in which doubts are dispelled about

operating functionality and providing support in the notification of incidents or dealing with requests. On-the-spot support is also offered for such activities as tests, training in tool functionalities, critical processes or meeting for liaising with other work groups; including a 24x7 emergency service for critical situations.



## Implementing the Jarrama Dam Emergency Plan

Eptisa has collaborated with the company ACSA (Sorigue) in implementing the Emergency Plan for the Jarrama Dam, between Huelva and Seville, in a contract that the aforementioned company has with the Operating Management of the Tinto, Odiel and Piedras River Basin Authority (DHTOP), under the Regional Government of Andalusia.

In this case we have supplied the equipment for the dam control centres, which makes it possible to manage the alarm system for the inhabitants, which consists of three siren posts, one in the infrastructure itself, and the other two in the villages of San Juan del Puerto and Niebla.

We have also integrated the automated auscultation system, updating the automated data acquisition system with a fieldbus system with distributed peripheral for 50 sensor, total pressure cells, vibrating wire piezometers and gauge, and signals integration that indicate the reservoir level, flowmeters and weather station.



The system is managed not only locally at the facilities, but also from the DHTOP control centre in Huelva, which is equipped with SAYTL dam management software, a unified SCADA solution for auscultation systems and emergency plans for dams developed by Eptisa. In this particular case, the Decision Support System (DSS) module has been installed, which completes the supervision system and enables the user to manage the emergency scenarios and warn the inhabitants.

## Auscultation plan for the unstable slopes and embankments on the ADIF railway network

The Earthworks Department at Infrastructure Maintenance Management of ADIF has awarded us the Annual Auscultation Plan, with a view to controlling the slopes and embankments on the railway network, given that slope and embankment movement can directly affect track quality, safety and railway traffic quality.

The aim is to control the geotechnical instability phenomena observed at certain points on the network. It is thus possible to have exhaustive information about the way the pathologies in those zones are evolving and, as a consequence, how the associated structures are reacting.

The slopes and embankments auscultation plan essentially involves fitting the devices, maintaining and programming them, and carrying out monitoring campaigns, processing the data using a standardised format for all the zones and, finally, establishing the states of control or safety thresholds.



## Maintenance for the automated auscultation systems for the dams belonging to Gas Natural Fenosa

In 2015, the energy company awarded Eptisa a 5-year contract to carry out preventive and corrective maintenance on the automated auscultation systems for 19 dams located in Galicia and Centre, which process the signals from approximately 600 sensors. The maintenance work includes the various sub-systems: instrumentation, wiring, power supply, communications, automatic data acquisition and management software.

Since 2009, all Gas Natural Fenosa's dams have been equipped with automated auscultation systems based on fieldbus with periphery and communications via optical fibre, which were implemented with the assistance of Eptisa. This technological decision is a milestone in the dam auscultation sector in Spain, in view of the fact that the traditional proprietary electronics have been replaced by a new industrial automation philosophy based on the use of PLC.



## Automated auscultation of the works affecting the Canalejas Building in Madrid

Canalejas Madrid Centro has contracted us to control the movements affecting structures and buildings while the works are being performed on the Canalejas Building in Madrid, to guarantee safety.

Canalejas Madrid Centro is a series of seven buildings dating back to the beginning of the 20th Century and the 1950s, of great architectural and historical value. They are going to be joined together and refurbished to become mixed-use premises with a horizontal layout on the different floors. Once the refurbishment is completed, the project will have a shopping centre covering around 15,000 m², a luxurious 5-star hotel, housing associated with the hotel establishment service and parking facilities.

To be able to undertake the work contracted, we have installed auscultation devices and systems that will enable us to obtain at all times, information about the way the structures and facilities are reacting to the various construction phases. This will allow us to control the outer walls of the buildings by means of automated surveying and gauges that measures the 3D joints during the demolition, emptying and construction processes. We will also be analysing the situation affecting the metro tunnel that runs close to the works, using inclinometers in piles wall and automated surveying inside the tunnel; this will be done at the building emptying and construction phases.







# EUROPE

We continue to consolidate our position in the markets of Romania, Balkans and Caucasus through the award of new projects in the fields of water, environment, energy, transport and socioeconomic development.

Our network of branch competes in local tendering processes with the companies of the region, opening up opportunities for other Spanish companies in the area







Mersey Gateway Project in Liverpool

## UNITED KINGDOM

The Mersey Gateway Project consists of the construction of a new viaduct on the outskirts of Liverpool which includes the main road access infrastructure to the outskirts of Halton. The project is executed by the Merseylink international consortium formed of three partners, Macquarie Capital, Bilfinger Project Investments and FCC Construcción, responsible for the design, construction, financing and operation of the structure during next 30 years. Eptisa participates in the project as part of the design team, together with other companies, Flint & Neill, URS, Fhecor and Dissing + Weitling.

The main infrastructure is a suspension **toll bridge** over the River Mersey with a span of 1,000 metres supported

by a cable-stayed structure with three towers. The bridge will be accessed by extensive approach viaducts that will improve mobility in the area and decongest traffic on the Silver Jubilee Bridge and the entry to and exits from Liverpool. The project involves a series of changes and improvements to the existing road network between Widnes and Runcorn.

Eptisa's participation in conjunction with other companies includes structural design, geotechnics and drainage in addition to construction supervision. The actual works which started in October 2014 are expected to be completed during the summer of 2017.

## PORTUGAL

We continue to work with the electricity company EDP Gestão da Produção de Energia on the project to install a **data collection and automation system** in the Alto Ceira Dam that forms part of the Santa Luzia hydroelectric installation in Coimbra.

The dam is a double-curvature concrete arch type with a maximum height over the foundations of 41 m and a crest length of 100 m supported by gravity-type abutments.

The works include the preliminary design, construction of three new flumes including its automation, and installation of four new control units equipped with Siemens serie 1200 PLC with Ethernet port and connected via fibre optic cable to a computer in a technical building located around 200 meters downstream from the dam at a higher altitude than the dam crest.

The PLC has the necessary inputs and outputs to automate the sensors installed during construction of the dam: limnimeter, ambient temperature, rainfall, temperature of the concrete within the dam body, horizontal displacements of the structure by pendulum, vertical displacements by rod extensometers, relative displacement between blocks by three-dimensional joint gages, stress within the dam body by Carlson-



type extensometers, pressures in foundation by piezometers, accelerations by two seismographs with recorder, and fibre optic sensors installed in parallel with the Carlson-type conventional instrumentation.

The monitoring computer of the dam is programmed with SayTL Auscultation SCADA software developed by Eptisa and is configured to collect and store data from the aforesaid sensors and send them through the EDP's corporate network to the auscultation server located in Oporto.

## IRELAND

Dragados, through its established branch in Ireland, has contracted Eptisa to provide engineering services for performance a Design-Check of the N25 New Ross Bypass PPP contract for which it had submitted a tender. We were entrusted with design verification to ensure that the project measurements agreed with the drawings and review of the Category III structures to ensure compliance with the provisions of the tendering documents.

The overall objective of the project consisted in the construction of a new **highway** section of over 13 km long, including an interchange, three roundabouts, two on the main line and the other

on the interchange. With regard to structures, it included the construction of a 913-metre long bridge at a height of 36 m above the Barrow River, composed of four cable-stayed central spans of 95, 230, 23 and 95 metres long, and of two approach viaducts of 105 and 168 m long with spans of 60 m. Besides the construction works included a bridge over the railway line, seven underpasses, four overpasses, and 15 minor structures to house the underpasses.

The project, which began in 2014 with preparation of the tender, was successfully completed in 2015 with the award of the contract to our client.

## ROMANIA

Eptisa has consolidated its leading position in engineering in Romania in key sectors such as water supply, wastewater treatment, solid waste management and implementation of infrastructure for urban heating and civil constructions. This proves our flexibility in the execution of technical assistance and engineering projects.

According to the "TOP 100 Design Construction Companies" ranking by the Romanian trade journal IBC Focus, we are currently the leading engineering company in terms of turnover volume generated in the environmental sector.

In 2015 Eptisa implemented 35 projects and obtained 13 new contracts, excellent figures that reflect

the good work of the four offices, more than 130 employees and 200 collaborators we have in the country.

In the **water** sector our most significant contract was in Bucharest where we undertook technical assistance for works supervision of the completion of the Glina WWTP project, rehabilitating the main sewerage collectors and the Dambovită sewer boxes. The works supervised under this contract poses a real challenge from the technical point of view and include six works contracts.

The Bucharest City Council once again entrusted Eptisa with a second contract for the management and supervision of works to develop water supply

■ In 2015 Eptisa implemented 35 projects and achieved 13 new contracts in Romania, 11 of them in the water sector



Technical assistance for works supervision of water and sewerage infrastructure

■ The dam's monitoring computer is programmed with SayTL Auscultation SCADA software developed by Eptisa and configured to collect data from the sensors



and sewerage networks, public lighting and roads associated with a new urban development area in Bucharest's District 1.

We signed three new design services contracts to develop water and sewerage infrastructure in the counties of Olt, Teleorman and Valcea. The objective of these works is to draw up the documentation required to obtain European Union co-funding under the new Operational Programme for Large Infrastructure 2014-2020 for these areas. The main tasks in these projects involve preparation of the financing application and supporting documentation: feasibility study, cost-benefit analysis, institutional analysis, environmental impact assessment, study on industrial wastewater discharge, sludge management study, procurement strategy and field studies among others, providing support for approval of the funding application, preparation of bidding documents for services, works and supplies contracts, the tendering process itself and provision of design assistance during execution of the works.

We were also awarded a significantly large and complex contract by the regional water operator of Iasi which includes the design, preparation of financing application for 2014-2020 programming period and project management and supervision of works. The duration of this project is six years and the estimated investment amounts to € 175 million.

The Dolj County water operator has once again entrusted us with technical assistance for works supervision, contract management and submission of reports for extension of its water and sewerage networks. We have executed seven contracts with this operator since our first job for them in 2002.

We obtained four more new contracts for works supervision in the counties of Buzau, Cluj, Bistrita-Nasaud and Harghita. Technical assistance for the design, project management and advertising are included in the latter two and we have also

obtained a contract for works supervision services in Olt County.

Moreover, we continued with successful execution of projects funded by the European Union in 11 Romanian counties for regional water operators, providing project management, design and supervision services of works.

In the **building** field Eptisa performed supervision services for a variety of civil works projects in Bucharest's District 3. In 2015 we rehabilitated, upgraded or consolidated more than 200 residential, administrative, kindergarten and school buildings. The contract for technical assistance services to the Ministry of Health for the rehabilitation of neonatal units and maternity hospitals has been extended by one year.

In the **transport** sector Eptisa implemented and successfully completed the contract for development of a Sustainable Urban Mobility Plan in the city of Galati, financed by the European Bank for Reconstruction and Development. The study area for the Plan included the whole transport system that serves the entire urban area and the outskirts. The upgraded system enables the city to manage mobility in a manner compatible with European and national requirements on the basis of an urban transport model supported by a GIS-based software platform.

In the **energy** area we worked on projects funded by the EU to supervise the works for modernizing the centralized heating supply in the cities of Iasi and Bacau to ensure compliance with environmental standards on air emissions and to enhance supply efficiency. The Iasi project was successfully completed in 2015.

In 2015 Eptisa continued to work on projects in the field of **waste management**, providing construction supervision services for implementation of Integrated Waste Management Systems in the counties of Salaj and Botosani. We also began the implementation of a new works supervision contract in Bihor.

## Supervision of the thermal insulation works in buildings of District 3, Bucharest

We were awarded a framework contract for consultancy services and supervision of thermal insulation works in residential buildings in District 3 of the capital, Bucharest. This contract includes repairs to schools and other buildings and construction of new public buildings administered by the City Council.

The following are the key services provided by Eptisa:

- Verification that all approvals and agreements have been obtained and that the technical documentation for execution of the works contract complies with the currently applicable legislation
- Analysis of project implementation, tender dossiers and the technologies and procedures required to achieve the main objective
- Monitoring construction progress to ensure final acceptance of the works
- Quality control of works in accordance with the applicable standards as per the technical documentation and withholding payment for substandard execution
- Verification of compliance with the legislation applicable to the construction materials, quality certification documents and signature of all documentation arising from said verifications.



## Technical assistance to the regional project for development of water and sanitation infrastructure in Iasi County

The Iasi regional water operator has awarded us the design, drafting of technical-economic documentation required for European Union financing of the 2014-2020 programming period and the project management and works supervision of water and sanitation infrastructures in the county of Iasi. The project has of six years of duration and an estimated investment € 175 million.

In the first phase we will prepare the financing application and supporting documents: the feasibility study, financial analysis, institutional analysis, environmental impact assessment, study of discharges of industrial wastewater, sludge management studies, procurement strategy, geotechnical study, surveying, flood study, hydro-geological study and studies of water and sewage quality, among others. We will also draw up the bidding documents for services, works and supplies contracts and provide support to APAVITAL S.A. company during the bidding process.

In the second phase we will support project management in activities such as advertising and industrial water discharge management and



supervise the works contractors in accordance with FIDIC standards. We will also provide design assistance during execution of the works.

## Technical assistance for works supervision to complete the Glina wastewater treatment plant and rehabilitation of the main sewerage collectors

In Bucharest we have been awarded the contract for technical assistance to supervise the works to finish the Glina WWTP and rehabilitation of its main sewerage collectors and of the sewer collectors in Dambovit. The aim is to improve the wastewater infrastructure system in the capital of Romania in order to implement the transitional agreements and intermediate objectives agreed between the European Commission and the Government of Romania for implementation of Directive 91/271 EC regarding the collection and treatment of urban wastewater.

According to the FIDIC contractual conditions Eptisa acts as an engineer and also as a works engineer, providing support to local institutions in compliance with the national legislation on the building quality. Eptisa supervises six works contracts to ensure due diligence and successful implementation of the project.

The execution of contracts subject to supervision by Eptisa will be conducted in two stages. The first phase involves extension of the wastewater treatment plant and construction of the sludge incinerator, construction of the drainage system on the right side of the sewerage box and other works on the drainage network, drainage of lakes Titan, Tineretului and Carol and rehabilitation of the main sewerage collectors Ao and Bo. During the second phase the sewage collectors and drainage system on the left side of the sewerage box in the Ciurel-Unirii-Vitan sectors and the sewerage box in the Vitan-Glina sector will be upgraded in addition to rehabilitation or replacement of the sewerage network in Cotroceni, Regina Maria and Tineretului.

The commissioning of these infrastructures will lead to a reduction of infiltrations from the current 46% to 26%, enable proper treatment of the entire wastewater flow and provide a sustainable solution for processing all sludge produced.

This contract epitomises recognition of the work done so far by Eptisa on a project that poses a real challenge from the technical point of view and an increase in the value of investments by € 300 million.





## MOLDOVA

Our activity in Moldova remained steady in 2015. We are executing the extension of the contract, funded by the European Bank for Reconstruction and Development, for modernisation and rehabilitation of the **water supply and sewerage network** in six regions. The project consists of provision of consultancy services for institutional strengthening and works supervision in Floresti, Soroca, Orhei, Ceadir-Lunga, Hincesti and Leova for a total of more than 210,000 inhabitants. Eptisa acts as a consulting engineer to ensure compliance with

FIDIC standards for rehabilitation and extension of over 600 kilometres of water supply and sewerage systems facilities.

In the **institutional strengthening** area we continue implementing two regional and local development projects funded by the German Technical Cooperation Agency (GIZ) involving technical assistance to bodies responsible for projects in water and sewerage, waste management, energy efficiency and transport areas.

## BALKANS

We have a very significant presence in this region. We have projects in all the main sectors: water, the environment, energy, transport and socio-economic development. 2015 was the 10th anniversary of our regional office for Southeast Europe and during this time we have signed more than 125 contracts in seven countries. We are proud of this track record which together with all the successfully completed projects allows us to look to the future with ambition and security.

We have participated in major projects in the region covering all possible sub-sectors of consultancy and engineering: transport infrastructure, environmental management, building and architecture, public administrations reform, development of information

systems, integrated water resources management, support implementation of grant schemes in the social sectors, energy efficiency and renewable energy.

Since we believe it is vital to be close to our customers and partners, in 2012 and 2013 we set up subsidiaries in Croatia, Macedonia and Bosnia and Herzegovina. In 2014 Eptisa continued its expansion in the region with the opening of a new office in Montenegro. We completed the branch office network in the Balkans in 2015 with Eptisa Illyria which covers the territories of Albania and Kosovo. The new companies and branches coordinate all sales and marketing activities and are directly responsible for project management and quality control of all contracts implemented in the region.



## Albania

Eptisa continues to consolidate its position in this country. We are currently working on four projects in the transport and water fields.

In the **water** sector, in 2015 we were awarded a contract for construction supervision of a wastewater treatment plant for the Gramsh municipality and the Pishaj Commune with the goal of improving the health and environmental conditions of these areas with an adequate and sustainable sewerage system. The project, to be executed over a period of 18 months, is based on efficient implementation of the works, with focus on quality and time within the constraints of the budget.

We continue to supervise the construction of a sewerage system and wastewater treatment plant in the Velipoja area. Eptisa provides supervision services for the implementation of one works and three supply contracts related to construction of over 30 kilometres of gravity piping, 1,150 metres of the main transmission pipeline,

culverts, connections to homes and six pumping stations using a team of local and international engineers. The team also supervises extension of the wastewater treatment plant currently under construction to treat a total flow of 465 m<sup>3</sup>/h.

Supervision of the construction of a new sewerage system and a wastewater treatment plant in Shkodra was successfully completed this year. This contract formed part of an EU-IPA initiative.

In the **transport** infrastructure sector Eptisa continues to develop the secondary and local roads project through which we monitor upgrading of 150 kilometres of roads nationwide.

We also continue to provide technical support to the Albanian Roads Authority in the procurement and construction of the Fier and Vlore bypass roads, providing consultancy on project implementation and contract management, training to managers and assistance in the preparation of future roadway investment. This project is funded by the EBRD.



## Montenegro

Eptisa has come a long way since that first project implemented in Montenegro in 2003. Today it is among the leading companies in the environmental protection and energy sectors.

In the **transport** sector we were awarded a contract for technical assistance to the Ministries of the Economy, Transport and Maritime Affairs, Sustainable Development and Tourism and the National Statistics Office to develop and implement a regulatory framework to increase the use of

sustainable energy in the transport sector. An expert team from the company will analyse the country's options to enhance sustainability in transport by establishing a series of mandatory regulations. It will also study the possibilities of employing high efficiency cogeneration.

The contract, with 24 months of duration, will be implemented with funds from the Instrument for Pre-Accession Assistance (IPA) of the European Union.





Capacity building in the water sector in Bosnia and Herzegovina

## Bosnia and Herzegovina

The number of works we are implementing in this country continues to grow. In 2015 the number rose to six as we obtained two new contracts.

One is to support social services providers and improve **human rights and social protection** monitoring capacity in Bosnia and Herzegovina. On the one hand the programme seeks to develop a generic model to assist elderly and disabled people by fostering the creation of two mobile teams that will provide assistance to these two kinds of beneficiaries. On the other hand it aims to strengthen the functions of the Ministry of Human Rights and Refugees and other institutions responsible for data collection on the protection of human rights.



The other new award is a contract financed by the European Union to improve the business performance of the country and its **institutional and administrative capacity** to implement activities related to the commitments of the Stabilisation and Association Agreement, the Central European Free Trade Agreement and the agreements and obligations of the World Trade Organization.

We also continue to work on the four other projects in the country.

The first is for supervision of an infrastructure construction and rehabilitation programme of the **water** supply and sewerage in several municipalities in the Srpska Republic, one of the two political entities that make up Bosnia and Herzegovina. Funded by the European Investment Bank, the project includes 21 construction works in 19 municipalities. Eptisa is in charge of supervision of the design, construction, implementation and commissioning of a large number of environmental infrastructures.

Capacity building in the water sector, managed by the EU delegation in Bosnia and Herzegovina, is another important contract currently in the implementation phase. Our team is supporting the transposition and implementation of European directives related to water and improving management of water resources in the Sava River Basin to enable the designated authorities to prepare a river basin management plan in line with local legislation, the EU acquis on the environment and several important international conventions and treaties.

We are providing monitoring services for the design, construction, implementation and commissioning of a new water supply system in the municipality of Capljina. The project is funded by the European Bank for Reconstruction and Development.

In the **transport** sector we continue with the supervision of design and construction of 36.6 kilometres of the Banja Luka - Doboj highway, a section of the Trans-European Corridor V. Our role in this project is supervision of the works on the Prnjavor - Doboj section and on several local and access roads. This highway will play a key role in boost the economic and social development of Bosnia and Herzegovina and will have a significant impact on the entire region by providing proper service levels and better connection of the central region of Zenica and Sarajevo with the Banja Luka, Prijedor and Lijevece (Laktasi and Gradiska) regions and with neighbouring countries.

## Kosovo<sup>1</sup>

Our presence in Kosovo is increasingly noteworthy: every year we obtain more and bigger contracts as the 2015 figures demonstrate.

In the **water** sector we were awarded the feasibility study and preliminary design for construction of a dam in Leposaviq designed to improve the social and economic infrastructure and the supply and quality of drinking water to residents of Socanica, Lesak and other settlements in the municipality of Leposaviq. In addition to the dam the project includes construction of the supply pipeline with a length of around 20 km, a fence, guard house, an access road and all work required for functional water supply. The project is funded by the 2013 IPA and is managed by the European Union office in Kosovo.

In the **environmental** sector we were entrusted with the supervision of construction and supplies for a rendering plant and an administrative building. A team from Eptisa is providing technical support to the contracting authority on to facilitate completion of the works and supply contract through effective supervision over a period of 24 months. This work ensures that the works and supplies are completed on time, within the foreseen budget and fully respecting the required quality.

We have been awarded a new contract in the **energy** sector: the feasibility study for the environmental measures of the Kosovo B thermal power plant. The project includes all the required activities to conduct a study of the technical, economic, financial and environmental feasibility of upgrading the plant to comply primarily with the requirements of the Energy Community Treaty.

In 2015, we completed the activities for capacity building in the energy field for employees of the Ministry of the Environment and Spatial Planning, the Environmental Protection Agency and the Kosovo environmental inspectorates. We also provided technical assistance in this project for review of the environmental impact assessment process, approval of permits and monitoring the requirements for power stations and mines. The project was funded by the International Bank for Reconstruction and Development and the International Development Association (IBRD/IDA).

Furthermore, the EU awarded Eptisa the construction supervision of infrastructure schemes in northern Kosovo within the framework of the 2013 Instrument for the Pre-Accession Assistance (IPA). We are performing supervision tasks for reconstruction of the regional road from Zubin Potok to Dren, the Zvečan/Zvečan sports centre and construction of a municipal building in Mitrovica.

We continue to provide a wide range of engineering services during all stages of project implementation for development of the civil, socio-economic and environmental infrastructure in various municipalities.

Finally, we obtained a new design contract within the framework of Phase VIII of the Design of Municipal Social and Economic Infrastructure. Our part in this project is to prepare the detailed designs and technical specifications to extend and refurbishment of various municipal buildings in Gjakova and build a high school in Gracanica.



Supervision of construction works for the infrastructure schemes in northern Kosovo

<sup>1</sup> It should be remembered that Eptisa takes a neutral position on the political issues of the Western Balkans region and fully supports EU policy. The name Kosovo is without prejudice to positions on their status.



## Feasibility study of environmental measures in the Kosovo B Power Plant



Funded by the European Union's Instrument for Pre-Accession Assistance (IPA), the project consist of a technical, economic, financial and environmental feasibility study of upgrading the facilities for compliance with the requirements of the Energy Community Treaty

including compliance with the Directive on Large Combustion Plants and the Industrial Emissions Directive and to verify extension of the lifetime and capacity of the plants.

We will carry out the following tasks:

- A detailed study on the actual operational and technical status of the plant
- Proposals of the best technologies of flue gas treatment plants to be applied in the two Kosovo B units, allowing the plants to reach the EU Emissions Limit Values in accordance with the Large Combustion Plant Directive and the Industrial Emissions Directive
- Definition of works to be performed on the Kosovo B units and on the balance of plant (BOP) to increase their efficiency and lifetime
- Proposals for treating all waste produced by the Kosovo B plant in accordance with the Industrial Emissions Directive

In addition to assessing the social and environmental impact of the Kosovo B power plant, the project involves capacity building for Kosovo Energy Corporation and Kosovo B plant staff including transfer of know-how, specific workshops and study tours.

## Supervision of construction works for infrastructure schemes in North Kosovo

Within the framework of the 2013 Instrument for Pre-accession Assistance (IPA), the European Union awarded Eptisa the supervision of construction works for infrastructure schemes in North Kosovo. The project is managed by the European Union Office and aims to achieve a more balanced regional development in the country through improving the social and economic infrastructure in the northern municipalities, providing improved conditions, better facilities for residents and implementation of dialogue on governance. To achieve these goals, a project for the creation of small and medium size infrastructure and capacity buildings and training of staff in the municipalities was launched.

Supervisory tasks are conducted on reconstruction of the regional road from Zubin Potok to Dren village, the construction of Zvečan/ Zvečan sports pavilion and of a municipal building in Mitrovica with the following objectives:

- To facilitate the implementation of the works contracts in order to ensure that the works are completed to contracted budget, time and quality parameters
- To ensure successful handing over of the projects after issuing the Certificate of Provisional Acceptance;
- To ensure that all defects are properly dealt with and rectified within the 12-month Defects Liability Period

- Issuance of final acceptance certificates after expiry of the 12-month Defects Liability Period
- To provide periodic information on monitoring and evaluation to the contracting authority
- To maintain and archive all documentation and records



## Macedonia<sup>2</sup>

2015 marks the tenth anniversary of our entry into this market and a year since we set up our local office, which now has its own team to manage ongoing projects.

In the **water** sector we were awarded a contract for supervision of Phase II of the works to rehabilitate and extend the sewerage network in Prilep. The civil works include construction of 43 kilometres of new sewerage lines for extension of the network, 1,260

wastewater manhole covers, 2,680 connections to buildings and restoration of the affected roadways. The overall objective of the project is to improve environmental protection by preventing contamination of surface and groundwater. The programme, funded by the European Union will last 30 months.

Within a consortium we also obtained a contract to assist the competent authorities to reform

<sup>2</sup> It should be remembered that Eptisa takes a neutral position on the political issues of the Western Balkans region and fully supports EU policy. The names Republic of Macedonia and Kosovo are without prejudice to positions on their status.



Trans-European railway corridor X. Supervision for upgrading the Bitola-Kremenica section

the existing water system in the organisational, administrative, financial and operational aspects at local level in the city of Skopje and ten other municipal districts. The aim of these works is to achieve effective and efficient management of the water supply and of collection and treatment of wastewater.

In the **environmental** area we were awarded a contract to set up an integrated self-sustainable waste management system in the eastern and north-eastern regions of Macedonia. The tasks are primarily aimed at drafting the required project studies and technical and tendering documentation for construction of facilities for the selected waste treatment and disposal facilities including the feasibility studies, cost-benefit analysis, environmental impact assessments, detailed designs and assistance in the preparation of volumes 3, 4 and 5 of the tendering dossiers for works contracts.

In the **transport** sector Eptisa was awarded a major contract for supervision of upgrading of the Bitola-Kremenica railway section, part of trans-European corridor X. This new project is located in the southern part of the country near the border with Greece. The full renewal of the railway connections throughout corridor X will lead to a substantial increase in the national railway capacity which in turn will bring better cohesion with EU member states and other neighbouring countries. During reconstruction of

these 17 kilometres of track Eptisa will act as the supervising engineer of works in accordance with the FIDIC Red Book on Conditions of Contract for Civil Engineering.

We also continued with the implementation of the consultancy for supervision and technical assistance for construction of railway corridor VIII, the key infrastructure connecting the Adriatic Sea with the Black Sea through Italy, Albania, Macedonia and Bulgaria. It spans south-east Europe where the rail infrastructure is rather weak. Eptisa acts as the consulting engineer for reconstruction of 30 kilometres of track between the towns of Kumanovo and Beljakovce. The project budget is nearly € 2.7 million funded by the EBRD.

In the **social development** sector we continue working on the programme for local integration of refugees, internal displaced persons (IDPs) and minority groups such as the Roma. The mission is to increase the administration and implementation capacity of the State for subsequent strengthening and support during the process of local integration and inclusion of displaced resident or non-resident persons and to provide sustainable solutions to their dependence. To do so, Eptisa is carrying out activities in favour of local integration of refugees with special emphasis on supporting local institutions in the creation and implementation of policies and labour market access for refugees and IDPs.

## Reform in the System for Water Supply, Collection and Treatment at Local level in Macedonia



In consortium with Setec Engineering and Geing Krebs und Kieferd, Eptisa was awarded a contract to support local authorities in achieving efficient water supply management and collection and treatment of wastewater in eleven areas. The project will assist the public municipal corporations in Tetovo, Gostivar, Bitola, Kavadarci, Strumitsa, Debar,

Radovish, Kichevo, Berovo, Kumanovo and the city of Skopje to reform the existing system and improve the water-related services. The EU acquis will be applied, especially Directive 2000/60/EC, the Water Framework Directive, that implements the economic principle that polluters and users should pay for the natural resources they use and the damage they cause.

Eptisa will perform the following activities:

- Evaluation of the current condition of the municipal corporations from the technical, operational and financial viewpoints and drafting of the improvement plans.
- Study of options and drafting of proposals for reorganisation of the municipal services.
- Measures at the organisational level: business plans, improvement of internal organisation, data and information management and improvement of financial management and tax collection rates.
- Development of a performance monitoring system.





Supervision of construction works of the Predejane and Manajle tunnels on E-75 highway in Serbia

## Serbia

This country is of great importance to Eptisa due to the number of contracts we execute within its borders. One example is the new contract we have obtained for provision of technical assistance to the delegation of the European Union in Serbia for implementation of the “**EU in Serbia Communication Network** (EUIFONET)” service contract. The main goal is to assist, support and advise the delegation to implement its information and communication strategy to achieve public awareness of the EU, its values and policies, and to increase knowledge and understanding of Serbia's accession process to membership of the European Union.

We are providing a service in the **socio-economic** and **public administration reform** sectors to support social inclusion of the most vulnerable groups, including the Roma, through greater diversification of community social services. The project, awarded to a consortium led by Eptisa, has a budget of more than € 1 million. The programme aims to provide assistance to the EU delegation in Serbia and the Ministry of Labour, Employment and Social Policy for implementation of social inclusion policies and development of a large number of community social services for vulnerable and disadvantaged groups.

We also continue to implement the strengthen media freedom project. Our team provides support to the Serbian Government in harmonising the legal framework governing the sector and strengthening the competences of journalists and media professionals. Eptisa also provides



Strengthening media freedom in Serbia

technical assistance to the Ministry of Culture and Information and other stakeholders such as the competent regulatory bodies, associations of journalists and media professionals and judges and prosecutors in the development of new legislation and implementation of the Media Strategy and Action Plan.

We are also implementing a technical assistance to the Serbian Authorities for effective management of pre-accession in order to support and speed up preparations for membership of the EU.

We are executing the technical assistance project for the implementation of a grant scheme to support the closure of the remaining refugee collective centres. Our goal is to provide assistance to the EU delegation and the Commissariat for Refugees and Migration in implementation and monitoring a grant programme of € 14.2 million to provide adequate living conditions and integrate immigrants who choose to remain in Serbia in addition to supporting those who prefer to return to Kosovo.

In the **transport** sector a consortium led by Eptisa is conducting supervision during the construction of the Predejane and Manajle tunnels, both on the E-75 highway. This route is the most important corridor in Serbia transport network, connecting the most important economic and social centres of north and south. The aim of the project is to improve traffic flow on Euro Corridor X, enhancing the environmental and safety conditions of the Serbian highway network in line with EU standards.

The E-80 highway construction project between Prosek and Dimitrovgrad in which we are in charge of works supervision by several international contractors working on nine sections to the border with Bulgaria continues to make good progress. As part of trans-European corridor X this highway will be a crucial element on the main route from Central Europe to Turkey. The section is 59.6 kilometres long and the project includes construction of bridges, tunnels and intersections in the two works sectors. Two tunnels - Progon and Przojna Padina - were completed in 2015 and the Crvena Reka - Ciflik

section was completed and opened to traffic. The highway is a dual carriageway and each lane is 11 meters wide and the central reserve has a width of 4 metres.

In the **water and environmental** sector Eptisa is the leading company in implementation of the Municipal Infrastructure Support Programme. The three phases of this technical assistance programme have a budget of € 23 million and entail a commitment to assist Serbia in improving its municipal infrastructure services, the human capacities of its local governments and improvement of the inhabitants' living standards. Today the works are in the second and third phases, in which we provide technical support in the preparation and prioritisation of municipal infrastructure and socio-economic projects. The tasks already fully executed in 2015 include drafting of thirteen feasibility studies, implementation of the Regional Water Supply Project in the Rasina district and supervision of the works of several wastewater treatment plants.

In the **energy** sector we are supervising the construction and commissioning of a new wastewater treatment plant in the Nikola Tesla thermal power station, considered the largest infrastructure of its kind in Serbia and which covers approximately half of the electricity needs of the country.

We completed several projects in 2015 such as provision of supervision services for the Vranje and Leskovac substations works and the adjacent high voltage lines - a programme funded by the EU - and the preparation of the feasibility study, detailed design and tendering documents for construction



Municipal Infrastructure Support Programme in Serbia

of the first hazardous **waste management** facility in the country.

In the **building** sector Eptisa was the main technical consultant for implementation of the contract to support the Ministry of Science for the implementation of R&D facilities. Our contribution was primarily technical assistance for the implementation, tendering process and construction of all the buildings and facilities related to the project and procurement of the scientific equipment and consumables. In this project we provided architectural, engineering and management services for design and construction of several buildings, a large number of infrastructures related to research and capacity building for the staff of the project implementation unit. We executed a total of approximately 27 sub-projects.

## Technical assistance to the European Union delegation for its communication strategy in Serbia

The European Union awarded Eptisa a new project to assist its delegation during implementation of the service contract “EU in Serbia Communication Network (EUIFONET)” which will conclude in 2017.

The programme aims to increase public awareness of the EU in the country, disseminate its values and policies and assist the delegation in its awareness-raising activities. EUIFONET also has the mission to explain and promote the process of Serbia's accession to the European Union.

Eptisa is entrusted with the tasks of supporting and advising the EU delegation in its efforts to increase the knowledge and understanding of the process among the population and of efficiently managing the EU Information Centre in Belgrade and EU Information Points in Nis and Novi Sad which provide easy access for Serbian citizens to information about the EU. To do so, we will set up working networks such as Team Europe or the EU Library Shelves to raise the profile of the EU and foster public debate; organise activities and events aimed at identified target groups to foster understanding of the accession negotiations, EU policies and the operation of its institutions, thereby increasing awareness of the Instrument for Pre-Accession Assistance and other ways in which Europe is supporting Serbia.

The target audience for this project are young people, students, public figures, senior citizens, municipal and governmental institutions, civil society organisations, academia circles and think tanks, always focusing on getting the message to society in general to ensure that ordinary people understand the benefits that integration with Europe will bring to their daily lives.



Eptisa is the leading company in the implementation of the Municipal Infrastructure Support Programme, the three phases of which represent a technical assistance of € 23 million



## Croatia

In the **water** sector we continue to provide the construction supervision services for the sewerage system and wastewater treatment plant in the city of Čakovec. The sewerage and treatment facilities, with a capacity of 75,000 P.E. and tertiary treatment, will serve the population of both Čakovec and Međimurje, meeting the objective of providing more efficient water resource management for the area.

We also continue to supervise the project to improve water infrastructure in the municipality of Zupanja.

Within the framework of the Sisak Wastewater Programme we are supervising the construction of the sewerage systems including two crossings under the Kupa River and the new wastewater treatment plant in Sisak with a capacity for 60,000 P.E. The objective of the project is to reduce regional disparities in Croatia by contributing to social stability through the construction of infrastructure and creating the wastewater treatment plant to improve water

supply and sewerage. These works are necessary to comply with the obligations established in the country's Stabilisation and Association Agreement by applying the European Union environmental Acquis to water management.

We continue working in Slavonski Brod where we supervise implementation of the water supply system, sewerage system and wastewater treatment plant with a capacity of 80,000 P.E.

The commissioning works for the cutting-edge **waste management** plant in Marišćina in Primorsko-Goranska County continue to advance at a satisfactory rate. Eptisa is responsible for supervision of the works in this project.

In the area of **environmental management** we continue with technical assistance funded by the Structural Funds for implementation for the management of the European Union environmental operational programme of the Instrument for Pre-Accession Assistance (IPA), providing support of the same.

## Regional projects

In 2015 Eptisa continued working on three multicountry regional projects.

The first, the **Municipal Infrastructure Development Fund**, is an initiative aimed to provide funding to municipalities and utilities in Western Balkans countries to enable investment in infrastructure. It is financed by the European Bank for Reconstruction and Development and the German bank KfW.

The second is the **Framework Contract for Consultancy Services in the Transport Sector**, lots 1, 2 and 4. These lots are related to road, railway and air transport infrastructure projects. The subprojects mostly consist of rapid technical, economic, financial, environmental and social assessment interventions to monitor projects in one or more of the countries in which the European Investment Bank, the financing agency, operates.

Eptisa continues to work on technical assistance to Bosnia and Herzegovina, Croatia, Montenegro and Serbia for implementation of the **Regional Housing Programme** funded by the European Commission and managed by the Council of Europe Development Bank. Our team provides technical assistance to these countries for provision and subsequent implementation of durable housing solutions for refugees and displaced persons after the armed conflict that occurred in the Balkans in the nineties.

Major milestones achieved by the Programme in 2015 include delivery of dwellings to more than 200 families, signature of six new grants totalling € 69 million and opening of five new sites for construction of more housing.



Regional Housing Programme

## UKRAINE

In 2015 the European Commission awarded Eptisa a new project in the **environment** sector to support the Ministry of Ecology and Natural Resources of Ukraine in its approach to the requirements of the EU environmental acquis. The project focuses on institutional strengthening and legal capacity building for the Ministry and the other institutions responsible for implementation of environmental standards within the framework of the Chapter 6 about Environment of the EU-Ukraine Association Agreement. Over the next three years the project team will work on adoption of Ukrainian legislation that complies with the obligations under the provisions of the Agreement and on fostering environment-related education and information in civil society in general.

In 2015 Eptisa successfully completed implementation of technical assistance for the **Sector Budget Support Programme** (SBS) funded by the European Union, also in collaboration with the Ministry of Ecology and Natural Resources of Ukraine.

The primary objective of this project was to contribute to achievement of the priorities of the National Environmental Strategy in line with the EU-Ukraine Association Agreement and assisting implementation of the SBS programme. In 2015 the project assisted the Ministry to draw up proposals to update the National Environmental Strategy and develop a new National Environmental Protection Plan for the next 5 years by means of an inclusive and transparent national consultation process.

The project achieved the following objectives:

- Ukraine met all nine indicators of the SBS environmental protection programme.



Sector Budget Support Programme

- Environmental monitoring and reporting mechanisms and their transparency improved and thus enabled Ukraine to receive 70% of the € 35 million allocated by the EU to fund the programme.
- It helped to lay the groundwork for drafting of Chapter 6 about Environment of the EU-Ukraine Association Agreement, assisted drafting of the National Environmental Harmonisation Strategy and proposals for 29 EU directive and regulation implementation plans in addition to helping with the drafting of new laws.
- Increased awareness of stakeholders of the environmental component of the Association Agreement through training in EU environmental policy and legislation. Seminars were held in all Ukrainian provinces and publications reached more than 1,000 professionals in the public sector, businesses, educational institutions and NGOs. Around 90% of the stakeholders participated in 60 seminars and roundtables organised by the project.

## Support to Ukraine in approximation of EU Environmental Acquis



Eptisa assists the Ukrainian government with a project aimed to facilitate the adoption of a series of practices and criteria based on the EU-Ukraine Association Agreement and applied in the European Union Environmental Agreements. The project also includes the promotion of relevant framework documents concerning harmonisation of Ukraine's environmental legislation with the EU acquis.

As a result of this project the Ministry of Ecology and Natural Resources in particular and other stakeholders and civil society in general will be

able to meet the environmental requirements of the EU, thanks to the institutional assistance for environmental legislation, water quality, water resource management and the protection of natural resources.

Our contribution consists of support for implementation of 12 EU directives. On the one hand, legal harmonisation with European standards in environmental legislation. On the other, assisting with implementation of the European directives on water quality, water resource management and protection of natural resources.

The first target group will be the ministries and institutions with responsibilities in the process of adopting the community environmental acquis and managing EU-funded projects. Other stakeholders involved are the Water Resources Agency, the Agency for Environmental Inspection, the National Geology and Mining Service, the Ministry of Agricultural Policy and Food, the Ministry of Regional Development, Construction, Housing and the Economy, the Meteorological Centre and the National Emergency Service.

The participation of civil society organisations and citizens will be a determining factor in successful implementation of this project.



## BELARUS

In the **environment** sector Eptisa continues to work in Belarus on the design and supervision of works for the construction of a mechanical waste



separation facility in the city of Grodno, funded by the World Bank. This contract is part of the National Plan for integrated waste management and reuse of recyclable materials.

The main objective of the project is to provide technical support to the city of Grodno for the development and implementation of the mechanical facility for recovery of solid urban waste and integrate it with the general urban waste management system and the municipal recycling programme.

In 2015 Eptisa conducted a review and thorough examination of the detailed design and provided customer support services during the inspection of the process of equipping the plant, quality control and supervision during assembly of the same.

## CAUCASUS

In 2015 Eptisa continued working on the project to conduct high-quality studies on specific topics defined by the platforms and panels of the countries of the Eastern Partnership comprised of Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. Its goals are greater integration between the member states and with the EU based on the following fundamental values:

- Democracy, good governance and stability

- Economic integration and convergence with EU sector-related policies
- Energy security
- Contacts between people

Within the framework of this programme Eptisa is performing mapping, pre-feasibility and feasibility studies, needs assessments and policy recommendations reports among other tasks.

Imereti regional development project in Georgia



Urban Services Improvement Investment Program

## Georgia

We have consolidated our position in Georgia with new contracts in addition to our ongoing projects.

In the **water** sector the public corporation Georgian Amelioration Ltd. awarded us a contract to rehabilitate the largest irrigation and drainage system in the country, Zemo Samgori, comprised of a gravity irrigation network of more than 30,000 hectares. We will perform the detailed design, environmental and social impact assessment, the financial plan and the economic study.

The Ministry of Finance and Economy of the Adjara region requested us to prepare the feasibility study for the improvement of water supply and sewerage systems in semi-urban and rural communities. Within the framework of German-Georgian Financial Cooperation and financed by the KfW Development Bank, the project contributes to environmental conservation and protection of water resources, seeks to produce a positive impact on the socio-economic situation and health of the rural population and to reduce poverty in the area.

Eptisa continues to work on implementation of the Investment Programme for Improvement of Urban Services. This project, funded by the Asian Development Bank, contributes to the provision and sustainable operation of water supply services and urban sewerage in six Georgian cities by upgrading and reinforcing the supply and sanitation systems. Eptisa's role in the project is to provide consultancy services for supervision and control of construction works to the United Water Supply Company of Georgia.

The same regional operator is the beneficiary of an ongoing technical assistance for the non-revenue water investigation in supply networks in six cities of Georgia. The aim of this project, funded by the European Investment Bank, is to support the United Water Supply Company of Georgia to

draft and implement investment plans in the water sector and improve the performance of the water supply and wastewater treatment infrastructures in the country. Our tasks also include provision of technical assistance to improve the aforementioned Company's capacities, train its staff in water loss reduction methods and the transfer of know-how.

In the **transport** sector we were awarded a contract for supervision of the output and performance based road contracts (OPRC) for rehabilitation and maintenance of around 117 kilometres of the Kakheti regional roads under the Second Secondary and Local Roads Project of Georgia.

We also obtained the consulting contract, in this case in the **building** area for the rehabilitation design and construction supervision of 17 public schools in Georgia funded by the US foreign aid agency Millennium Challenge Corporation.

We continue managing projects in the field of **socio-economic development** such as the consultancy contract awarded by the Municipal Development Fund of Georgia for supervision of civil works to be implemented under the Second Regional and Municipal Infrastructure Development Project of Georgia financed by the World Bank.

We have successfully completed several subprojects related to construction and rehabilitation of **tourism and recreational infrastructure** in the region of Imereti under a project funded by the World Bank. The works implemented by the Municipal Development Fund of Georgia in 2015 under the direct supervision of Eptisa include arrangement of water channels, irrigation systems and landscaping in the central park and Tsivi Lake area, rehabilitating roads, footpaths and storm water drainage systems, the historical train station in Tskaltubo and various municipal buildings. Some of these subprojects are still in progress.

■ In the water sector the public corporation Georgian Amelioration Ltd. awarded us the rehabilitation of the largest irrigation and drainage system in the country, Zemo Samgori



## Rehabilitation design and construction supervision of public schools in Georgia

In 2015 we were awarded the consultancy contract to rehabilitate 17 public schools commissioned by the US foreign aid agency Millennium Challenge Corporation (MCC) through the Improving General Education Quality Project. The project aims to increase educational performance by, among other components, improving the conditions of the facilities and the physical environment of schools, which directly results in the comfort of students.

Our role includes project assessment and planning, field studies, pre-design and feasibility studies, reassignment studies and plans, social and environmental assessment, detailed design and drafting of bidding documents. Eptisa is also involved in supervision of construction, operation and maintenance, training and the ancillary works services required to complete the schools such as water and sanitation facilities.

Eptisa works closely with MCC and the Education and Science Infrastructure Development Agency, beneficiary communities and the Ministry of Education and Science.



## Rehabilitation of Zemo Samgori Irrigation System in Georgia

This year we were awarded a contract to upgrade the largest irrigation and drainage system in the country, Zemo Samgori, comprised of a gravity irrigation network of more than 30,000 hectares. The contract was awarded by the public corporation Georgian Amelioration Ltd. and is funded by the ORIO programme.

Eptisa is responsible for the environmental and social impact assessment, the financial plan, the economic study and detailed design engineering of the Zemo Samgori irrigation system including the lower main canal, secondary and tertiary canals, drainage infrastructure, headworks in Paldo, the upper main canal with the Lilo Martkopi canal and the Tbilisi reservoir.



## Supervision of the Output and Performance Based Road Contract for rehabilitation and maintenance of Kakheti regional roads



A consortium led by Eptisa is responsible for supervision of the rehabilitation and maintenance of approximately 117 kilometres of secondary roads in the Georgian region of Kakheti through the introduction and operation of Output and Performance based Road Contracting (OPRC) methodology for Road Asset Management. This is a relatively new concept in the country and its aim is to increase the efficiency and effectiveness of road maintenance operations within a life span cycle.

Eptisa will be responsible for assisting the Roads Department in monitoring the management of the OPRC contract including continuous assessment of compliance with the contract by the company responsible for maintenance.

## Consulting services for supervision of civil works under the Second Regional and Municipal Infrastructure Development Project in Georgia

In February 2015 the Municipal Development Fund of Georgia awarded Eptisa a contract to support implementation of the Second Regional and Municipal Infrastructure Development Project of Georgia, financed by the World Bank.

Our mission is to supervise construction and rehabilitation subcontracts in addition to project management on behalf of the Municipal Development Fund, performing works supervision to ensure high quality, compliance with the execution conditions

provided for in the contracts in accordance with the detailed design and its specifications. The consultancy is expected to last until mid-2017.

The complexity of the project is determined by the variety of sub-projects including roads, bridges, water supply and sewerage networks, kindergartens and sports centres, among others, and different geographic locations as it is carried out simultaneously in several regions of Georgia.



## Azerbaijan

Eptisa is present in this country thanks to a contract awarded by the United Nations Development Programme (UNDP). The project for "Integrating **Climate Change** Risks into Water and Flood Management by Vulnerable Mountainous Communities in the Greater Caucasus Region" aims to install a control centre, a meteorological station at a high point and a hydro-meteorological station at a low location in order to prevent flooding and its effects on mountain communities in the Caucasus.

Eptisa provided the detailed specifications of the same in addition to the plans and drafts, identifying the required specific devices and essential performance features and the identification of

the works to be outsourced. We also supervised installation of the equipment, providing all manuals, software and training materials necessary for its operation and maintenance. The company will provide technical assistance to stations installed by UNDP for one year following the beginning of the operational phase.

The control centre processes the data using SAYTL, an application developed by Eptisa for SCADA system configuration and data analysis. This application uses an open SQL database compatible with third-party applications. Thanks to the SAYTL web server module it is also possible to access the system remotely from any device.





## TURKEY

Our offices in Ankara and Istanbul have around 100 professionals to manage various projects in Turkey and Central Asia. In 2015 Eptisa maintained its position as a leading consulting and engineering company of reference in the country.

In the water sector we continue to work on the construction project for the wastewater and storm **water** treatment plant in Ceyhan. Eptisa performed supervision of phase I of construction of the wastewater treatment plant, replacement of the current collector and construction of the storm water drainage network for the existing zone. This project forms part of the Environment Operational Programme -Instrument for Pre-Accession Assistance (IPA) for the Regional Development Component in Turkey financed by the European Union and the Turkish Government.

Eptisa is working on the contract to support Turkey in its preparations to implement a **Strategic Environmental Assessment** (SEA) including all the relevant public institutions and other stakeholders. This project mainly covers intensive training programmes, seminars and study workshops for various target groups such as the staff of the Ministry of the Environment and Urban



Technical assistance for implementation of the Strategic Environmental Assessment in Turkey

Development, the authorities of the components, NGOs, universities and chambers of commerce and implementation four SEA pilot projects in different sectors. The aim is to provide a high level of environmental protection and contribute to the integration of aspects related to the matter in the government plans and programs.

In the **transport** sector we are working on the Marmaray project. These works will connect the Istanbul railway lines between the European and the Asian zones through a tunnel under the Bosphorus Strait. Eptisa, in consortium with the Turkish company Prota, carried out the detailed design and design of the stations and associated structures on the Gebze-Haydarpaşa and Sirkeci-Halkali lines. In 2015 we also began work on monitoring and supervision of the new sections of the Ibrahimaga-Bostanci and Bostanci-Pendik lines.

With respect to the **social development** sector, the Ministry of National Education of Turkey awarded Eptisa a new contract for technical assistance to provide the government with various tools to enable students to learn about the European Union: its common values, fundamental rights and its policies. This project is funded by the Instrument for Pre-Accession Assistance (IPA) of the European Union and Turkish institutions.

Eptisa also participated as a consultant in the round table organised by the Association of Architects of Turkey on "Design and Supervision of Reconstruction Projects of 44 School Buildings in Istanbul". The seminar brought together the project designer, the engineering firm and the client to discuss the design and implementation processes. The schools are designed and reconstructed under the Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP) the main mission of which is to improve educational buildings resistance to seismic risks.



Works Supervision of the wastewater and storm water treatment plant in Ceyhan

### Marmaray Project: the Gebze-Haydarpaşa and Sirkeci-Halkali railway line in Istanbul

The purpose of this contract, under which Eptisa draws up the detailed design as part of a consortium, is to connect the railways between the European and Asian sectors of Istanbul through a tunnel under the Bosphorus Strait, currently in service, to enable transit of high-speed, commuter and freight trains between the two continents.

Our work will include the layout, earthworks and drainage, geotechnics, retaining wall, fencing, bridges, viaducts, tunnels and other structures, track superstructure, noise and vibration study, electrical substations, stations, workshops, depots and railway equipment, and preparation of technical specifications for the manufacture, installation and construction of all systems and structures.

The following are main structures and systems to be constructed: 37 stations (20 underground, 12 surface and 5 special), 197 structures, an operations control centre, five workshops and depot areas and seven electrical substations.

The new railway system, which will have be approximately 76 kilometres long, runs along the coast of the Marmara Sea between the towns of Kazlıçeşme and Halkali on the European side of Istanbul and between the cities of Ibrahimaga and Gebze on the Asian side. The project will use the existing railway corridor and adapt it to accommodate two tracks for internal Istanbul traffic and a third line for long-distance routes. The maximum capacity at peak hours



will be approximately 75,000 passengers per hour each way. The maximum axle load of freight trains is 25 tonne and the maximum speed is 100 km/h.

In 2015 work was also begun on control and supervision of the possible effects on the surrounding buildings on sections of the Ibrahimaga-Bostanci and Bostanci-Pendik sections. To do so, geotechnical instrumentation and equipment monitoring units have been used on the foundations, facades and structural components of the buildings to detect, after analysis of data, any movements or fissures due to the works.

### Technical assistance to the Government of Turkey to support students' learning in the values of the European Union

The underlying premise of this project is that Turkish society reach a high level of awareness and knowledge of the values, fundamental rights and policies of the European Union through effective educational measures, especially for students aged between 10 and 18 years old. It is funded not only with funds from the Instrument for Pre-Accession Assistance (IPA) of the EU but also with the support of the country's institutions.

On the one hand, the programme seeks to raise awareness among students, teachers, non-teaching staff and personnel of the Ministry of Education concerning the EU: its values, policies, rights, institutions and their purpose, the process of Turkey's accession and the reforms relating to this decision including its benefits and consequences. To achieve this, informative materials such as manuals, brochures, posters, games and a website containing a monthly newsletter prepared by schools have been used.

The project's first activities involved an analysis of EU knowledge through surveys of students conducted in the provinces where there is a community information centre.

Moreover, the project seeks to increase capacity and raise awareness among pupils and ministerial staff about the EU. Painting, short-story and slogan competitions have been conducted among students on a local, regional and national basis to achieve these objectives. Teachers, administrators and ministerial staff are trained on various EU issues in almost all Turkish provinces. Furthermore, international conferences and two special films to be broadcast on national television have been organised to increase general awareness.







# ASIA

2015 has been a year of growth in Southeast Asia and for the first time we are working in countries like Nepal and Cambodia. We continue to implement major projects in the transport, water, climate change and institutional strengthening fields, consolidating our presence in Central and Southern Asia.







## UZBEKISTAN

During 2015 Eptisa continued to work in the **water** sector on technical assistance to the Uzbekistan Communal Services Agency for supervision and management of sub-projects included under the Water Supply and Sanitation Services Investment Programme - Tranche 1. Our activities include reconstruction of water pipelines, wastewater treatment and facilities, sewerage networks and water supply systems in nine cities and in the Djizzak and Khorazm regions and the Republic of Karakalpakstan.

In the **transport** sector we successfully completed the contract awarded by the Ministry of Finance through the Republican Road Fund. This contract was financed by the Asian Development Bank to provide consultancy services for road safety under the Second Central Asia Regional Economic Cooperation (CARAEC) Road Investment Programme.

## Water Supply and Sanitation Services Investment Program in Uzbekistan

Eptisa will execute the contract for the “Water Supply and Sanitation Services Investment Programme - Tranche 1. Management of the Investment Programme in the Multitranche Financial Facility” in a consortium with UBI Consulting until August 2017. Funded by the Asian Development Bank, this project seeks to assist the Uzbekistan Communal Services Agency in reconstruction of water pipelines, wastewater treatment and facilities, sewerage networks and water supply systems in the cities of Andijan, Gijduvan, Kokand, Vabkent, Termez, Fergana, Margilan, Rishtan and Yangibazar in addition to the Djizzak and Khorazm regions and the Republic of Karakalpakstan.

Eptisa supervises the feasibility studies and the final design and approve key personnel, construction programmes, the methods declaration, temporary occupation of land by contractors, materials and material sourcing and conduct periodic works inspections. We will also train future operators for the proper operation of the plant.







Design and Supervision to improve the Water Supply and Sewerage System under Component 3 in Osh and Jalal-Abad

## KYRGYZSTAN

We continue working for the Ministry of Transport and Communications of Kyrgyzstan on consultancy services for engineering and supervision of the reconstruction and refurbishment of 120 km section of the **road** between Bishkek and Osh. The project is aimed to enhance that safety and connectivity of a roadway, the poor condition of which are a traffic hazard and an obstacle to commerce and regional development. The contract is funded by the Asian Development Bank.

In the Issyk-Kul **Sustainable Development** Project we continue with drafting of the feasibility studies, construction designs and tendering documentation in consortium with the local businesses RAM Engineering Associates LLC and OJCS Promproekt. The Issyk-Kul basin is vital for biodiversity worldwide.

The region was declared a Biosphere Reserve by the Government of Kyrgyzstan in 1998 and by UNESCO in 2001. The project is also classified as Environmental Assessment Category A by the Asian Development Bank.

This project is in addition to the technical assistance to improve the **water** supply and sewerage network in Osh (the second largest city in Kyrgyzstan), Jalal-Abad and Bazar-Korgon.

In the field of **information technology** we successfully completed the contract for supply and installation of a geographic information system for the water supply network in Bishkek to improve the accessibility, quality and efficiency of the local infrastructure services provided to the outlying districts of the city.

### Engineering services and works supervision of the CAREC project to improve Corridor 3 in the Kyrgyz Republic

The Ministry of Transport and Communications of Kyrgyzstan has awarded Eptisa an engineering services and supervision contract for reconstructing and refurbishing a section of 120 km from Bishkek to Kara-Balta in Corridor 3, the Bishkek-Osh road.

The objective of the works is to improve the safety and connectivity of the section, the currently poor condition of which poses a serious traffic hazard and an obstacle to trade and regional development. Eptisa is performing consulting engineering and construction supervision of the project, which includes increasing the number and quality of the traffic signals, lane markings, street lighting, parking areas, bus stops, safety barriers and sidewalks, as well as awareness campaigns to enhance road safety for users of the road.

In addition to considerably enhancing the safety of people, this programme will foster cross-border connectivity and promote trade, in line with the priority of the government of Kyrgyzstan to update key regional economic corridors as part of the 2013-2017 National Strategy for Sustainable Development.

The contract is funded by the Asian Development Bank and represents the fourth phase of the CAREC Corridor 3 improvement programme.



## TAJIKISTAN

We continue working on the project preparatory technical assistance for the management of water resources in the Pyanj River basin, financed by the Asian Development Bank. The objective is to design an stand-alone grant investment programme to increase farming incomes in the Chubek area irrigation system to enhance the productivity of **water** for agricultural purposes. The contract was finalised in February 2016 after submission of the final report with the main project results and conclusions.

Also in the Pyanj River Basin, we were awarded a project to enhance the resilience of communities in the area, in view of its vulnerability to the impact of **climate change**. Funded by the Asian Development Bank, the project is aimed to develop flood protection systems and enhance the strength of irrigation infrastructures. Eptisa will support the Agency for Land Reclamation and Irrigation under the Government of the Republic of Tajikistan and the Project Management Unit by means of various activities during the more than three years required for implementation.



Final workshop of the Project Preparatory Technical Assistance for Water Resources Management in the Pyanj River Basin in Tajikistan

### Assistance in incorporating climate resilience to the Pyanj River Basin project

In view of the vulnerability of the area to the impact of climate change, Tajikistan has launched a project aimed at increasing the resilience of communities in the Pyanj River Basin. Eptisa has been awarded the contract to manage the programme which has two main goals. On the one hand, to develop flood protection systems including upgrading of infrastructures for small-scale management of the same and capacity-building for the disaster management committees, and on the other to create more resilient irrigation systems, which includes upgrading the irrigation infrastructures and small-scale capacity building for the communities that use the water.

During the 39-month implementation period Eptisa will support the Agency for Land Reclamation and Irrigation of the Government of the Republic of Tajikistan and the Project Management Unit by performing a series of activities such as reviewing the construction designs, consultancy and support for preparation of tendering documents and the associated technical assessments, designing training programmes for personnel, the acquisition, management and delivery of projects, drafting of the operating manual and maintenance of the infrastructures.

We will also conduct key activities to achieve objectives such as efficient procurement management, detailed design of the civil engineering, drafting the terms of reference for the works at the drip and pump-driven irrigation station, environmental management, construction supervision, financial management and subcontracting NGOs.







## SOUTH ASIA

This has been a year of significant growth for Eptisa in terms of market expansion and production volume. We were able to penetrate the Nepalese market with our first project awarded and received several contracts by Multinational Funding Agencies in India and Bangladesh. We have strengthened the project management and operations team in India to ensure effective and efficient execution of projects, establishing management procedures with special focus on areas like quality control and risk management.

### INDIA

In the **transport infrastructure** sector we were awarded the consultancy services contract for the detailed feasibility study and drafting of the detailed engineering project report for construction of the 4.15 kilometre-long Shinkunla tunnel in Himachal Pradesh. This work includes the access roads under the Deepak project.

We continue to work on the prestigious project for the Ministry of Road Transport and Highways for the construction, operation and maintenance of the Z-Morh tunnel in the state of Jammu and Kashmir. Eptisa is responsible for the review of all designs and drawings and subsequent supervision of construction works. This project is extremely important for the country's comprehensive communications infrastructure, since the 6.5 km-long tunnel ensures year-round road connection between Kashmir and Leh.

Throughout 2015 we continued to develop the engineering design for the Rohtak to Hissar section of the four-lane NH-10 highway in the state of Haryana. This work was commissioned by the National Highways Authority of India (NHAI), an agency of the aforementioned Ministry. Eptisa reviews the design, construction method, quality and safety procedures, conditions of the works subcontractors and all documentation provided by the concessionaire.

In the same area we obtained a new contract in Jaipur: iRAP survey, including the design and supervision of multi-sector corrective measures to improve road safety in various pilot trials to be performed in the State highway corridors.

Moreover, we continue to perform consultancy work for construction supervision of the approximately 80 kilometres highway section between Nuapada and Bangomunda in the state of Orissa. This contract is included in the National Highway Infrastructure Improvement Programme.



Consultancy services for supervision of the NH-217 highway in the state of Orissa

We continue to provide consultancy services for **institutional strengthening** and capacity building to the Public Health Engineering Department (PHED) of the Government of Jammu and Kashmir. We are working with the Department on planning and design of reforms and improvement plans including implementation of invoicing and water collection software, accounting software and a GPS-based water tanker tracking system. Eptisa also provides support in the development and monitoring of the implementation of reforms and improvement plans.

In the State of Uttar Pradesh we have finished the consultancy for the study and redesign for rehabilitation of **irrigation** infrastructure for the Irrigation Infrastructure Department. Specifically, we are working on the Lower Ganges Canal System main supply canal which provides irrigation water to the entire lower basin of the Yamuna River, a tributary of the Ganges. The project is funded by the World Bank.

In the **water** and **information technology** sector we are in the maintenance phase of the project



Study and design for modernisation of the irrigation infrastructure in the State of Uttar Pradesh

for development of an information system for hydro-meteorological data (e-SWIS: *Surface Water Information System*) for the Central Water Commission (CWC). This new web environment-based system provides geographical and hydrological data to the participating agencies as support for flood alerts.

### IRAP survey, design and supervision of multi-sector corrective measures to improve road safety in corridors of the State of Rajasthan

With around 68 million inhabitants, Rajasthan is India's largest state. It has a road network of around 200,000 kilometres. However, it also has a serious road safety problem. In 2013 there were more than 23,000 traffic accidents which left 9,700 deceased persons and over 27,000 injured. In the case of the highways directly administered by the state of Rajasthan, approximately 11,000 kilometres, there were 3,029 accidents in which 414 people were killed. This means a severity index of 47; in other words, 47 people die for every 100 accidents. In view of this, the Department of Public Works of the Government of Rajasthan has commissioned Eptisa to develop sector-based measures to enhance road safety in the State.

We are carrying out the following activities:

- Support data collection such as inventory and traffic data in the field before the iRAP (International Road Assessment Programme) survey.
- Analysis of accidents over the past three years.
- IRAP surveys of around 700 km of identified high-risk corridors.
- Training of staff designated by the aforesaid departments.
- Selection of nearly 100 km of corridor for the road safety pilot test.
- Drafting of the detailed design of multi-sector counter measures and interventions, of bidding documents for the civil works, the implementation plan for the non-civil works intervention and assistance to the Department of Public Works in procurement of consultancy services, goods and civil works.

The measures will be taken on a demonstration corridor over a period of 18 months. Once the adaptation works are finished, Eptisa will manage implementation of the measures designed and packaged within phase 1 to improve road safety over the following 24 months.



Once the adaptation works are finished, Eptisa will manage implementation of the measures designed to improve road safety

We continue to expand our portfolio of projects in India with new and major contracts in the transport and water sectors



## Feasibility study and drafting of the detailed design engineering report for the construction of Shinkunla Tunnel in India

The Border Roads Organisation (BRO), which develops and maintains road networks in the border areas of India and its neighbouring countries, has awarded Eptisa a consultancy services contract for the Shinkunla tunnel construction project including access roads for the Deepak project in Himachal Pradesh. The tunnel will be more than 4 kilometres long.

The purpose of the works is to obtain the best possible alignment of the tunnel between the two specified locations with minimal cost while minimizing the impact on the environment and the population. We will undertake a feasibility report of the tunnel to enable potential bidders to assess the requirements of the BRO in order to ensure increased safety and service for users, enhanced operational efficiency of the project and minimal impact of the works on the inhabitants and users of the local roads.

The following consultancy tasks will be performed by the company, among others:

- Site investigation programme
- Report on the geological features and surface
- Interpretative geological and geotechnical report
- Identification of geotechnical risks and their characterisation
- Acquisition of three-dimensional high-definition stereoscopic satellite images for assessment and identification of faults and other significant features
- Feasibility study
- Detailed project report
- Drafting of land plan schedules and utility relocation plans



## Engineering services in the construction, operation and maintenance of the Z-Morh Tunnel in India



The Ministry of Road Transport and Highways of India has awarded Eptisa a consulting project during the construction, operation and maintenance of the Z-Morh tunnel in the State of Jammu and Kashmir.

The Z-Morh tunnel, located 2,637 metres above sea level, is a twin lane facility with a parallel 6.5 km auxiliary tunnel on the new alignment between Gagangir and Sonamarg under the Srinagar-Leh section of highway NH-1 that will provide year-round connection between Srinagar and Leh.

At present the Ladakh region of Jammu and Kashmir State are cut off for six to seven months of the year during winter due to heavy snowfalls on the Jammu-Srinagar-Zozila-Kargil-Leh and Manali-Sarchu-Leh routes that connect Leh to the rest of the country, which means that the region can only be accessed by air. The weather is extremely cold during the winter months and snowstorms and avalanches are frequent. The section between Srinagar and Leh is not only important for the strategic reasons but also for the socio-economic well-being of the people of Ladakh and the overall development of the state.

Eptisa is in charge of reviewing the drawings and detailed design, construction methodology, quality control and procurement procedures, meeting engineering and construction deadlines and inspecting and monitoring the construction works. It will perform the pertinent studies and issue completion certificates once construction has finalized. During the operating phase Eptisa will also monitor both operation and maintenance.



## BANGLADESH

Located in the delta at the mouth of the Ganges, Brahmaputra and Meghna rivers, Bangladesh is located in a region prone to earthquakes, tidal waves, tidal action, droughts, floods, heavy rains, erratic monsoons and cyclones, all phenomena that can have a serious impact on the population. Climate change is a serious additional problem for the country. A temperature increase of 1.5 degrees and a similar increment in rainfall would cause the sea level in the Bay of Bengal to rise by 27 centimetres by 2050. This temperature increase will generate cyclones and stronger and more frequent tides that will affect roads and bridges and annul water supply and sewerage systems.

In this context Eptisa has opened a new office in the capital, Dhaka, which is already working with the Engineering Department of the local government of Bangladesh on three projects under the framework contract to improve the coastal infrastructure desolated by the rising sea level.

On the one hand we continue developing the design and consultancy project to improve the **environmental infrastructure** in coastal cities with the aim of creating a sustainable infrastructure to combat climate change through investment in sewerage, drainage, water supply, roads and bridges, solid waste management, slum upgrading and transport. We are also working to strengthen institutional capacity to manage sustainable services, foster urban planning and improve response to natural disasters.

We are providing the following services, among others:

- Drafting of feasibility studies including preliminary engineering design and cost estimates of subprojects
- Performing field assessments and identifying, prioritising and providing technical assistance for subprojects
- Preparing designs of engineering works including specifications, drawings and detailed cost estimates. Drafting of contract documents
- Development of a study on social and environmental safeguards based on the designs and drawing up the documentation associated with said safeguards

- Drafting of the project development proposal and support to achieve its approval

In 2015 we were awarded two new contracts within the framework of this programme. The first is the technical assistance for **supervision and management of the project** in which we have performed numerous tasks such as works supervision and quality control, drawing up monthly reports and the final project report, operation and maintenance planning and drafting of bidding specifications, financial and economic due diligence and staff training courses, among others.

The second is **institutional and community capacity** building for the coastal environmental infrastructure improvement project. In this case we have carried out non-structural measures to reduce climate and disaster risks and preparedness for the same, improvement of municipal governance and service delivery systems and increased capacity and awareness of best practices in sewerage and hygiene management. We have also offered support to municipalities for preparedness, review and implementation of master plans, as well as development and dissemination of comprehensive information on the web platform of the local engineering department.

From our office in Dhaka we are working with the local Engineering Department on implementation of three projects under the framework contract to improve coastal environmental infrastructure







## NEPAL

Eptisa's significant international expansion is best demonstrated by cases like Nepal, where we have just obtained our first contract. Within the Melamchi water supply programme funded by the Asian Development Bank, the government of Nepal has awarded us the design and supervision of the headworks and diversion tunnel. The assignment, carried out through the Melamchi Water Supply Development Board, the procurement authority, and the Ministry of Urban Development, aims to address the chronic shortage of water in the Kathmandu valley to improve the health and welfare of people in the region.

The diversion tunnel subproject is aimed to change the path of around 510 ML/d of raw water from the Melamchi Valley to the Kathmandu valley through a 26-kilometre long tunnel, as well as headworks and

the construction of approximately 43 km of access roads and upgrading approximately 29 km of roads to enable construction and maintenance of the facilities. It also includes the construction of a water treatment plant with an initial capacity of 170 million litres per day, expandable to around 510 million, to treat raw water from the Melamchi River.

Eptisa, within a consortium, provides assistance to the project management unit, conducts design review, manages the bidding process and contract management, supervises the compliance with environmental and legal regulations and performs construction quality control and financial management of the project. We will also train the staff of the Melamchi Water Supply Development Board on questions related to supervision of construction of the tunnel.



■ Nepal is an example of the growing number of projects our local offices are implementing throughout Asia, a continent in which we consolidate our position year after year.



## SOUTHEAST ASIA

2015 has been a year of consolidation and growth in Southeast Asia. During this time Eptisa has strengthened its expansion in the region with new contracts in countries where it was already working such as Laos, the Philippines and Vietnam. The company also signed a new contract in Cambodia, our first foray into this country. We have also strengthened our track record with projects financed by the World Bank and the Asian Development Bank, the two main funders in this geographical area. These achievements demonstrate the confidence placed in Eptisa by these institutions and form the basis to expand their activity in the region.

## CAMBODIA

In 2015 the award of a consultancy by the Ministry of Water Resources and Meteorology of Cambodia allowed Eptisa to sign its first contract in this Southeast Asia country. Under this contract we will assist the **National Flood Forecasting Centre** to improve hydraulic design standards. Like its counterpart in Laos, the project forms part of the regional programme funded by the Asian Development Bank for mitigation and risk management of flood and drought. The programme supports governments in the region to carry out structural and non-structural measures for prevention and management of disaster risks associated with floods and droughts. The main objective of the project is to strengthen the National Flood Forecasting Centre and to improve national and regional coordination in the management of serious problems caused by water.

Eptisa assesses the hydro-meteorological network and proposes measures to improve the data acquisition system necessary for flood forecasting and early warning. We also develop and manage an operational strategy for the dissemination of flood forecasting across the country and early warning at the community level. We also provide the necessary training for sustainable operation of the newly created National Flood Forecasting Centre and recommendations on its institutional configuration.





## PHILIPPINES

Eptisa consolidated its presence in the Philippines through the extension of the scope of the wastewater treatment project, execution of which began in 2014. We were also awarded a new consultancy contract in the water resource management field.

As an outcome of the quality of our services and the results obtained during implementation of the project awarded to Eptisa a year earlier, the World Bank extended the scope of the consultancy to perform a study of alternatives for improving the **sewerage system** in the cities of South Caloocan, Malabon and Navotas. Its objective was to identify and evaluate different wastewater treatment and collection options to help in reducing pollution of Manila Bay and its tributaries in the basin, thus improving the health conditions of these areas.

This consultancy was extremely important since the cities of South Caloocan, Malabon and Navotas, located to the north of Manila, cover a total area of 4,400 hectares with an estimated population of 1,100,000 inhabitants. Extending the scope of the consultancy enables the adjacent area of Talayan, in Quezon City, to be included in the project. The study considered alternative designs for the wastewater collection system, the main interceptors, structures for the combined sewage overflows (CSO) and the number, location, and the technological processes of the wastewater treatment plants. This consultancy concluded in 2015.

The National Irrigation Administration has also entrusted Eptisa with a consultancy to prepare the **irrigation plan** for the next ten years and to provide advice on design of the Administration's institutional and corporate plan.

### Preparation of Irrigation Development Master Plan and NIA Corporate Plan in the Philippines

The National Irrigation Administration of the Philippines awarded a consulting contract to Eptisa to define the Irrigation plan for the next ten years and to provide consultancy on the design of the institutional and corporate plan of the National Irrigation Agency.

Financed by the World Bank, the purpose of the consultancy is to formulate the irrigation system development strategy on which the Government's development and food security plan will be supported. The main tasks are development of an irrigation infrastructure database and information system, definition of development strategies for the systems and management of the same for the next decade.

Moreover, the project includes assistance in drafting the National Irrigation Agency's 2016-2025 Corporate Plan that will analyse the current position of the Agency, drafting of the short and long-term strategic operations road map to enable implementation, operation

and maintenance of the projects in the irrigation plan and definition of the financial and corporate transactions required for execution of the plan over the next ten years.



## VIETNAM

The Bac Giang **water** supply company has awarded Eptisa a new project in Vietnam funded by the Asian Development Bank to increase the coverage of water supply in the city.

The project will support the construction of the **drinking water treatment plant** which will extend the water supply system, bridging the gap between the existing coverage and government targets to ensure supply in the coming years. It includes the headworks in the Song Mai community, the raw water pumping station and pre-sedimentation tank, a drinking water treatment plant in Quang Phuc

with a capacity of 25,000 m<sup>3</sup>/day, and transmission systems and distribution pipelines in the city of Bac Giang. Eptisa is responsible for the detailed design of these facilities, drafting of the bidding documents and support for the Bac Giang water supply company in procurement during the bidding process.

This is the second project Eptisa has obtained in Vietnam after completion in 2014 of the technical assistance for supervision of the sewerage infrastructure construction in the city of Dong Hoi. Eptisa was awarded a certificate of merit for "achieving excellence in execution" of this project.

Our second project in Vietnam will increase coverage of the water supply in the city of Bac Giang

## LAOS

The company continues to expand its presence in this country with the implementation of two projects in the fields of **water and tourism infrastructure**.

The Ministry of Agriculture and Forestry continues to entrust Eptisa with participation in the capacity building programme for the National Early Warning Centre on drought and flooding risks, funded by the Asian Development Bank.

Floods and droughts have a significant impact on the social, environmental and economic conditions of urban and rural areas in Laos and therefore the availability of reliable hydro-meteorological data and development of an effective early warning system to mitigate losses caused by these events is vital. To achieve this it is necessary to upgrade the hydro-meteorological network, enable data transmission and create an effective management system, develop forecasting and early warning models, enhance public awareness and achieve an effective communication system.

The contract is part of the **Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project** funded by the Asian Development Bank. It is aimed to strengthen the capacities of the National Early Warning Centre as part of the Department of Meteorology and Hydrology. Eptisa provides technical assistance for the design of the water resource planning system and management of the Centre itself and of other stakeholders, providing consultancy to enable them to obtain the required reliable and relevant data to become more efficient. To do so, Eptisa is reviewing the hydro-meteorological monitoring system, mainly



in two of the Mekong River's basins, Sebangfai and Sebanghien, which have suffered most from flooding. We also provide technical training for Department of Meteorology and Hydrology staff on flood forecasting and flooding in the two basins, prediction of drought and extreme weather events and seasonal weather prediction at the national and basin level.

We were also awarded a new contract from the Asian Development Bank to carry out the design, project management and works supervision of **civil engineering of tourism infrastructure** in the provinces of Khammouane, Luangprabang and Oudonxay.

### Design, project management and civil engineering supervision of the tourism infrastructure in the provinces of Khammouane, Luangprabang and Oudonxay

Tourism has become a key pillar for the economy of Laos. The government is currently making a concerted effort to improve the quality of the most popular tourist destinations in the country. Within this context the Ministry of Information, Culture and Tourism has awarded Eptisa a contract to perform the design, project management and supervision of civil engineering aspect of tourism infrastructures in the provinces of Khammouane, Luangprabang and Oudonxay.

Funded by the Asian Development Bank, the project goals are the construction, improvement and refurbishment of roads, bridges, docks, parking areas, sewerage facilities, tourist information centres, trails and accesses to areas of interest such as caves. Eptisa will assist the Project Coordination Unit and Provincial Project Implementation Units with detailed design, construction supervision and compliance with the guarantees and social development. We will also provide project management and administrative support, conduct the project assessment and submit the required reports.







# AMERICA

In 2015 we obtained important contracts in the water sector that enabled us to work on the design of various hydropower plants in Bolivia, Nicaragua and Guatemala. We also continued to strengthen our leadership in the field of institutional, economic and social development, transport and information technology





Hydro-geological study of the metropolitan area of Port-au-Prince for the Massif de la Selle and Nappe de la Plaine du Cul-de-Sac aquifers

## HAITI

In the **transport** sector the Ministry of Public Works, Transport and Communications awarded us the supervision of rehabilitation works on the runway at Toussaint Louverture International Airport in Port-au-Prince. The area covered by this project is over 130,000 m<sup>2</sup>. The works will last 13 months and will be financed by the Inter-American Development Bank.

We continue working on the hydro-geological study of the metropolitan area of Port-au-Prince for the Massif de la Selle and Nappe de la Plaine du Cul-de-Sac aquifers. This project is included in the **water sector** and is financed with funds from the Inter-American Development Bank. Its objective is to draw up the preliminary reports for implementation of extraction wells for drinking water.

In the **buildings** sector, we continue working on construction supervision of the Port-au-Prince multifunctional centre for the Civil Protection Directorate of the Ministry of the Interior and Territorial Communities. We took part in the first and second phase of the contract by developing the construction design, the dossier with the conditions of the call of tenders, and analysis and assessment of the tenders. In the last phase our tasks include monitoring the execution schedule, various reports and an executed works dossier.

With respect to **institutional, economic and social development**, implementation of the Institutional

Support for Strengthening the Haitian State project funded by the European Union under the State Building Contract is now under way. The programme will strengthen the capacities of the Haitian Government in the fields of financial, civil service and education management. Eptisa's technical assistance seeks to enhance the capacity of the State to implement and supervise reform of public finances, thus improving the public spending and accountability aspects of financial management. It also aims to strengthen its capacity to implement reform of the State administration and the capacity of the Ministry of Education and to achieve the educational reform goals. This project is implemented in coordination with the other programme participants in order to promote synergies between the activities of the technical and financial partners.

Moreover, we are still working on the technical assistance to support the Ministry of Trade and Industry and funded by the European Union under the 10<sup>th</sup> EDF programme. The aim of this project is to improve the institutional capacity of the Ministry in the analysis, drafting and implementation of the commercial, industrial and competitiveness policies. It also seeks to strengthen coordination between the public and private stakeholders and ensure the organisation and implementation of various trade agreements and commitments entered into by the Government. To do so, Ministry staff is trained in human resources and IT systems.

## Institutional support for strengthening the Haitian State within the framework of the State Building Contract (SBC)

Within the framework of the tenth European Development Fund, the European Commission has adopted a budget support programme for consolidation of the State of Haiti known as the State Building Contract (SBC). The programme, under which Eptisa has been awarded a support technical assistance, is especially adapted to the context of country's institutional fragility.



The project has three main objectives. Firstly, to strengthen governance of the State by modernising the public administration. Secondly, to improve management of public finances, especially in aspects such as budget transparency, and to strengthen the control mechanisms to combat corruption. Thirdly, the programme aims to define priority expenditure to implement a national policy for primary education.

The purpose of Eptisa's technical assistance is to assist the project in achieving its objective, supporting the Government of Haiti at the institutional level in three key areas of the project:

- Public financial management for transparency and control of State expenditure
- Reform of the administration and public services
- Education and vocational training

## Supervision of rehabilitation works on the runway at the Toussaint Louverture Airport in Port-au-Prince

The Ministry of Public Works, Transport and Communications of Haiti has awarded Eptisa a new contract to supervise the rehabilitation works on the runway at Toussaint Louverture International Airport in the capital, Port-au-Prince. The duration of the project, which covers an area of more than 130,000 m<sup>2</sup>, will be 13 months and it is financed by the Inter-American Development Bank. The works have been promoted by the Ministry of Public Works, Transport and Communications, the National Airport Authority and the Central Implementation Unit.

The following are Eptisa's main tasks in this project:

- To review and update documents and drawings and the implementation schedule.
- To verify the location of the runway axis and its environment, drainage and references to enable execution and control of the works
- To provide information on the measurements and stake-out required, ensuring that the work will be carried out in accordance with the planned layout, elevations and cross sections. This

includes beacons on the runway axis and those that mark its edges, in addition to the paving and margins.

- To demand and ensure that the constructor performs all the works taking into account the specifications on the environmental impact, including pollution of rivers, to minimise the undesirable effects of the construction activities required in the specifications.
- To ensure compliance with the environmental management plan and to draw up and implement a waste management plan and occupational health and safety plan and ensure compliance with the same.
- To propose design guidelines, methodology plan and a traffic plan for the transport of materials.
- To conduct full and continuous inspection of all work done by the construction contractor and to supervise the execution plans submitted by said contractor, suggesting any changes that may be required.
- To inspect, test and draw up the associated reports on the materials used or to be used in the works in accordance with the technical specifications.



Eptisa continues to expand its works portfolio in the country and has become one of the few international engineering companies with a permanent presence in Haiti



## DOMINICAN REPUBLIC

In 2015 we continued to work as part of the DRWMS consortium for the National Institute of Drinking Water and Sewage (INAPA) of the Dominican Republic in the development and implementation of a user-based cadastral system, a commercial system and a geographic information system for country's drinking water supply and sewerage networks.

In the **institutional, economic and social development** sector, Eptisa has been providing technical assistance to the Civil Society and Local Government Support Programme (PASCAL) since July 2014. This work involves three main lines of action. Firstly, the effective development of municipal services, compliance with regulations

affecting processes, organisation, supervision and management. Secondly, incorporation of civil servants to career system, performance assessment and training. And thirdly, improving public services by increasing the participation of civil society in the municipalities and local authorities.

Our support for the launch and implementation of the Public Administration Monitoring System II (SISMAP II, municipal) is a noteworthy aspect of the technical assistance performed in this area. This system currently oversees the management of 50 municipalities covering more than 60% of the country's population, by monitoring progress in the management of various fundamental action areas for municipalities.

## MEXICO



We have completed the technical assistance project under the **EU-Mexico Integrated Social Cohesion Programme** developed to strengthen a participative model of sustainable local development in the Selva and Sierra regions of the State of Chiapas, consolidating the use of new tools and strategies that establish the territorial approach as an essential guide in the programme's activity. Thanks to this intervention, a model oriented to reducing inequality and strengthening local progress in an integrated and participative manner to enhance social cohesion has been obtained. In short, the programme aims to break the dynamics of sector-based work and the fragmentation of public policies.

## GUATEMALA

In Guatemala we have been awarded a new contract in the **water** sector: The Renace IV Hydroelectric Project. Our role consists of development of the construction design and technical assistance for the **hydroelectric installation** works which consist of the intake gate, canal, tunnel, regulation pond, draft tube, machine hall and a substation. The design power of the hydroelectric installation is 55 MW with a flow rate of 13 m<sup>3</sup>/s and a net head of 489 m.

In the area of **institutional, economic and social development** we are working on three projects. In the first, we provide technical assistance services for the **Support Programme for Security and Justice (SEJUST)** with the aim of improving the justice and security sector to enable it to act more effectively in the investigation and prosecution of crime, ensuring due process and by protecting the rights of victims and vulnerable groups and seeking the re-education, rehabilitation and reintegration of lawbreakers. In 2015 we began supervision of the construction of two courts and five workshops in several juvenile detention centres for the Social Welfare Department.

The second addresses the problem of reducing poverty, food insecurity and chronic malnutrition. Eptisa provides technical assistance to the Government of Guatemala in implementing the **Support Programme for the National Food and Nutrition Security Policy (PESAN)**.

The third, completed successfully in 2015, is the **Support to Budget Management in Guatemala (AGEP)** programme which has strengthened the capacity to improve the transparency and credibility of the public administration through enhanced coherence and efficiency in public expenditure management. Performed by a consortium led by Eptisa, the project was designed under the auspices of the Ministry of Finance and the General Secretariat of Planning of the Secretariat of the Presidency. Some of the key objectives achieved are the development of strategies for health, education and governance compatible with financial stability in the medium term and approval and implementation of the medium-term budgetary framework.

## HONDURAS

In 2015 we were awarded the contract for the **Institutional Strengthening for Decent Work Programme** (EURO+LABOR) in Honduras which provides technical assistance to the Ministry of Labour and Social Security and other important stakeholders through follow-up activities, supervision and advice in the coordination processes. Linked to one of the priorities of the Honduran government, the programme aims to increase its capacity to foster decent employment in the country and reduce underemployment and unemployment.

Furthermore, Eptisa continues to perform technical assistance for the **Project to Support the Public Administration of Honduras and its Participation in the Regional Integration Process (PAAPIR)**,

supporting the government in promoting greater social cohesion by strengthening state institutions and other civil society organisations. The duration of the project is four years.

This year the technical assistance has focused on supporting the institutional area of quality, promoting dialogue and development of the strategic agenda; and the water and sewerage sector, developing a platform for dialogue on policies and agreements between the public authorities involved while fostering analysis of the strategic agenda in the water sector. Within the framework of the project we continue to support this sector in reviewing its compliance indicators for the purposes of budget support disbursement reports.

### Institutional Strengthening for Decent Work Project in Honduras (EURO+LABOUR)

In 2015, the European Commission awarded Eptisa, in consortium with the companies Archidata and Project Group, a new technical assistance contract whose purpose is the strengthening of institutional capacities to promote decent work in Honduras (EURO+LABOUR). The project, whose beneficiary is the Secretariat of Labour and Social Security (SLSS), has an initial duration of 60 months.



The main purpose of the Programme is linked to the Government's National Plan to achieve "a country with decent employment opportunities for the population", by improving their capacities to promote decent work and reduce both unemployment and underemployment.

Eptisa will provide technical assistance to the SLSS and other relevant institutions during the implementation of the contract with follow-up activities, supervision, advice and assistance in the coordination process. The idea is to achieve the following results thanks to the project:

- Definition and implementation of a framework for joint action between the Government and the social partners (workers and employers) to address and resolve employment issues.
- Support the SLSS to strengthen their capacities to promote decent work.
- Access to the benefits of decent and productive work for the workers and employers in 14 municipalities.
- Creation of processes that facilitate the integration and interconnection of the various systems of communications in order to establish an information system focusing on employment, production and social security.
- Execution of the administrative and financial management tasks required for the successful implementation of the Programme.

## ARGENTINA

Eptisa continues working on the technical assistance for the **Improvement of Regional Economies and Local Development** project that aims to contribute to improving the quality of life and the municipal development of ten disadvantaged regions in the north of the country. Specific technical assistance is provided to the following sectors under this programme: food processing, tanning, metal mechanics, textiles and the environment, all specialty fields of the National Institute of Industrial Technology (INTI) with the aim

of modernising the companies' services and providing consultancy to ensure that the project has greatest impact among small enterprises.

The project has increased the number of micro-enterprises using INTI centre services, thus contributing to the significant improvement in the competitiveness of SMEs and the technical capacity of the industrial fabric of the northwest and northeast regions of Argentina.



## BRAZIL



Eptisa is responsible for the design of the premises of the International Broadcast Centre for the 2016 Olympic Games in Rio de Janeiro. The project includes detailed design of 90 premises with a total area of 50,000 m<sup>2</sup> intended for use by the media for transmitting radio and television signals during the Games.

The works include the design of the drawings with Revit (BIM) and CAD for the design for implementation in each premise including technical specifications for construction works, detailed construction documentation and technical assistance.

## PANAMA

In 2015 Eptisa completed the **cadastral survey** of the properties of the Azuero Peninsula within the Rural Land Regularization Project for the National Land Management Authority (ANATI). This project aims to provide legal certainty on land ownership to the people of the provinces of Herrera, Los Santos and Veraguas by creating title deeds.

The work done so far consists of a cadastral survey of a total of 40,000 hectares of rural land and processing of the title files required for registration in the Public Registry. Thanks to this work around 4,000 title deeds have been generated to date.



Rural cadastre of the Azuero Peninsula in Panama

## NICARAGUA

In the **water sector** we started the El Carmen hydroelectric project, a new contract awarded this year by this central American country. Our work is to develop the construction design of a hydroelectric installation with a dam 93-meters high including the hydraulic circuit, the machinery hall and a substation. The installed power is 100 MW with a design flow of 140 m<sup>3</sup>/s.

During 2015 we continued with the implementation of the third phase of the **Institutional Strengthening** programme for the Government of Nicaragua to support development of a **Medium-Term Expenditure Framework (MTEF)**. Following the successful completion of the second phase, the Swiss Cooperation Agency of the State Secretariat for Economic Affairs entrusted the consortium led by Eptisa with implementation of the third phase, adding a regional approach with the support of the COSEFIN Secretariat and its member countries. The duration of this project is three years and its objectives are the diagnosis, design and institutionalisation of the budget formulation focusing on results, monitoring and evaluation of programmes.

The creation of the MTEF Virtual Learning Platform and organisation of the Annual MTEF Seminar where the participants were able to learn from the experiences of the member countries of COSEFIN in adopting the MTEF Model were among the year's outstanding successes.

After working for three years with the Ministry of the Interior and the rural sector of the country, in October 2015 Eptisa successfully concluded the technical assistance for **Institutional Strengthening of the Development Policies** of Nicaragua. This project has been extremely successful. On the one hand, it has created planning tools and strengthened cross-sector dialogue and coordination mechanisms between the beneficiary institutions and donors. And on the other, the measures recommended by the environmental and gender analyses were integrated into the action plans of the beneficiary institutions of the project. The technical assistance focused on accompanying, in a non-invasive manner, the institutional strengthening process with an important reorganisation of local civil servants and support staff.

## COLOMBIA

In Colombia we continue with the technical assistance project to the New Territories of Peace in the field of **institutional, economic and social development**. The only goal of this project is to contribute to building peace, democracy and the rule of law in Colombia by fostering socio-economic initiatives.

The consortium led by Eptisa focuses on reducing economic inequality and mitigating the effects of political and social violence, promoting regional, economic and social development based on principles of participation and democratic governance in the Bajo Magdalena, Canal del Dique, Departamento del Caquetá and Guaviare regions.

The New Territories of Peace programme aims to establish a bridge between peace activities - often carried out by civil society-led movements that foster

a peace-oriented culture and peaceful solutions to conflicts - and official integrated regional development policies.



## PERU

Eptisa has consolidated its position in the country with new projects in the **information technology** field.

The National Port Authority commissioned Eptisa to develop a **geographic information system** to ensure that all users have easy access to the data on the assets of the Authority and other port infrastructures.

We continue to work on developing an indexing and document search solution based on Google Search Appliance (GSA) technology for the intranet of the Superintendency of Banking, Insurance and Private Pension Funds (SBS). In order to perform the monitoring, prevention and detection of money laundering and terrorist financing, the agency needs to search for documents produced and stored by several governmental agencies in a fast, centralised manner, respecting the security

rules and the inherent confidentiality of each system.

In the **R&D** field the National Fund for Scientific, Technological Development and Technological Innovation (FONDECYT) awarded us the contract for development of a georeferenced platform for real-time management of water infrastructures. The aim of the project is to develop a geographic information system based on SCADA technology to unify all infrastructure and users and social indicators data to optimize the management of the integrated water cycle.

Another sector in which Eptisa has achieved a new contract award is **water**. In this case we are entrusted with the design of the hydroelectric installation for the Carhuac power station which includes the tendering study for works and electromechanical equipment.

### Development of a corporate geographic information system: SEICU

The National Port Authority of Peru has requested us to develop a corporate geographic information system to ensure that all users have easy, visual access to the data on the assets of the Authority and other port infrastructures.

Based on this premise, we conducted a georeferenced inventory, ensuring the integrity between the graphic and alphanumeric information, incorporating items such as areas of influence, origin and destination of cargo, routes, freight, land and water access, docks, fenders and statistics.

We developed a geographic information system that enables visualization of assets, port and oceanographic maps, searches for items and assets and access to alphanumeric information and documents through a web viewer.







## BOLIVIA

Eptisa continues to strengthen its presence in Bolivia with the award and implementation of various projects in the transport, water, environmental and institutional, economic and social development sectors, a consequence of the success we have achieved with our work in the country.

In the **transport** sector we have been awarded a new project to provide technical assistance to Arias Hermanos Construcciones during construction works on section I from Monteagudo to Muyupampa of the Monteagudo - Ipati highway. Eptisa performed the study and optimization of sections under various international standards.

The National Energy Company of Bolivia (ENDE) has awarded us three new contracts in the **water** sector. The first is for the detailed design, technical specifications and tendering documentation for construction of the Rositas hydroelectric power station, that will last 18 months. It is expected to generate an annual average power output of around 14,000 GWh/year. We also held several technical seminars for the Empresa Electrica Corani S.A. staff within the framework of this project.

Another award is the of technical-financial and environmental feasibility study of the La Pesca

hydroelectric power station, a 150 metre-high dam which will produce 740 MW. We will also perform the review and updating of the pre-feasibility study of the Rio Grande hydroelectric development. This job involves the study of a series of hydroelectric power stations which between them will produce more than 3,000 MW: Seriprona, Cañahuecal, Las Juntas, Peña Blanca, La Pesca and Rositas.

In the same sector we also won the consulting contract for supervision of the execution of the Miguillas hydroelectric project that includes two other plants: Umapalca (87 MW) and Palillada (121 MW).

In the **environmental** sector we continue participating in the Programme to Support Sustainable Conservation of Biodiversity (PACSBio) the overall objective of which is to provide technical assistance to contribute to the conservation of biodiversity and sustainable development in Bolivia through support the policies within the framework of the National Protected Areas System (SNAP).

One of the highlights of 2015 was the creation of the new municipal protected area *Great Tectonic Lakes of Exaltación*, in the department of Beni. The idea is to turn the area into a real opportunity for its people where sustainable use is made of the

natural resources. A major challenge in the short and medium term.

In 2015 we successfully completed another project financed by the EU in Bolivia: consultancy and operational support for the Ministry of Mining and Metallurgy for **Improving Working Conditions and Employment Generation in the Mining Areas of Bolivia (EMPLEOMIN)** Programme. The activities carried out by the technical assistance team contributed significantly to the generation and transfer of experiences, enabling institutional strengthening at various levels especially in relation to the Ministry of Mining and Metallurgy.

Along these lines we would highlight the support provided for drafting of the Sector Plan for Mineral and Metallurgical Development and the Ministry's Institutional Strategic Plan.

The technical assistance to the PRO BOLIVIA agency and other beneficiaries identified in the **Support Programme to the Productive Development Sector Plan with Decent Employment** carried out in a consortium led by Eurecna was also finalised. The project contributed to improving the entrepreneurial capacity of the production units to promote productive development and institutional strengthening.

### Final Design, Technical Specifications and Tendering Documentation for Construction of the Rositas Hydroelectric Power Station in Bolivia

The National Electricity Company of Bolivia (ENDE) has awarded Eptisa a new consultancy services contract for the final design and tendering documents of the construction project for the Rositas Hydroelectric Power Station. The duration of the works will be 18 months.

The planned works, located in Cordillera in the Department of Santa Cruz, consist of an earth dam with clay core. It has a height of 156 metres from the riverbed, a crest length of 655 metres and a useful reservoir of 6,860 hm<sup>3</sup>. It will also be equipped with a spillway consisting of 4 20-metre spans regulated by gates. The planned total installed capacity will be 3,072 MW and the annual average power output will be 13,940 GWh/year.

Eptisa is responsible for the final design of the Rositas Hydroelectric Project, preparing all necessary documentation to enable the tendering and construction processes, as well as drafting the technical-financial and environmental feasibility project of the second hydroelectric power station on the Rio Grande. The works include conducting the basic mapping and topography, geology and geomorphology, climatology, hydrology and hydro-sedimentary studies, the specific environmental assessments and review and update of the Rositas Rio Grande Hydroelectric Project Feasibility Study and the Rio Grande Hydroelectric Development Pre-feasibility Study with an analysis of 6 alternative dams for selection of an additional hydroelectric project.

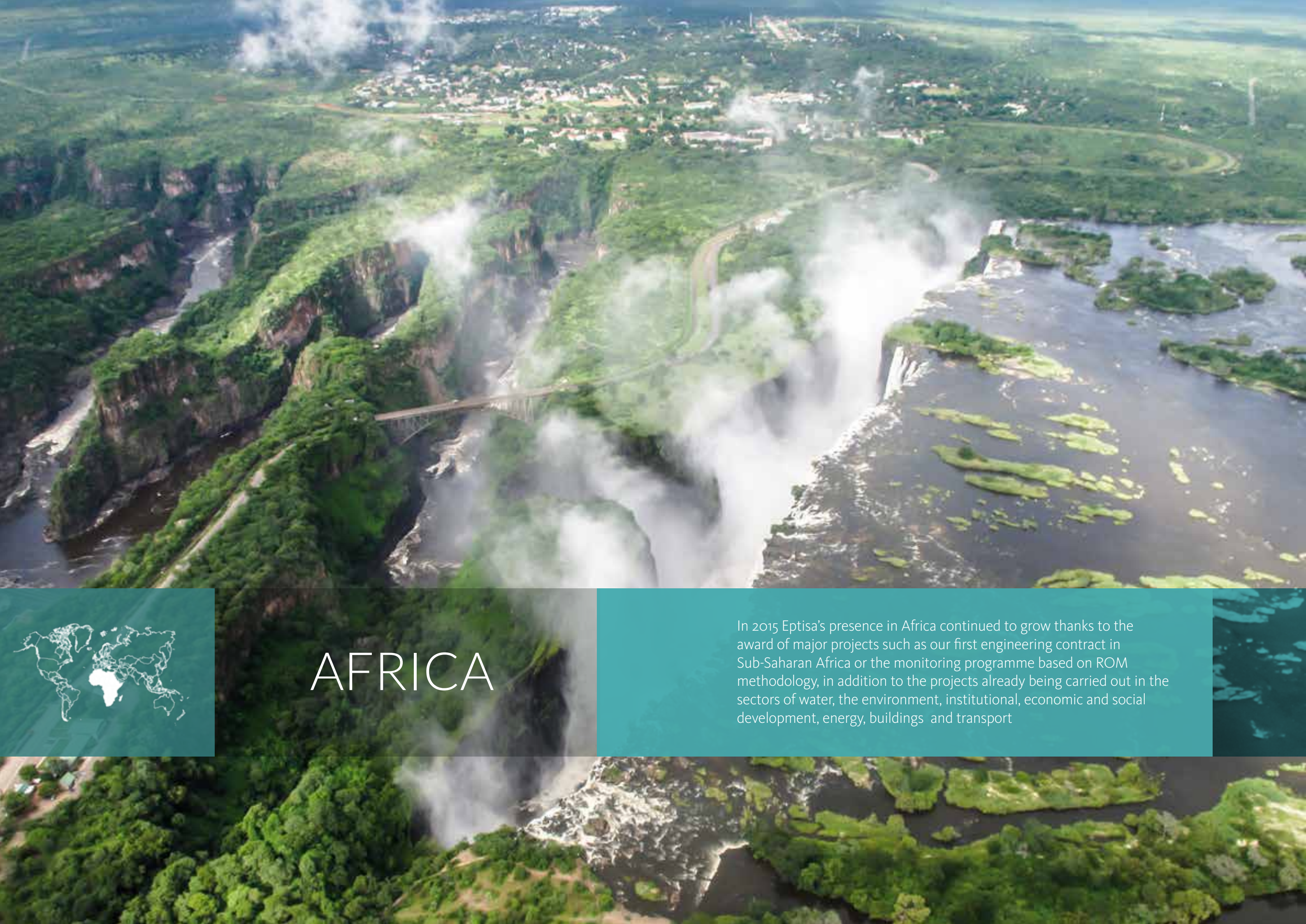
The Rositas hydroelectric power station works are located one kilometre downstream from the confluence of the Rio Grande and Rositas rivers. The plant is 16 kilometres upstream from the town of Abapó and 140 kilometres south of the department of Santa Cruz.

As a result of this project Bolivia aims to raise the electric power production figures, increase agricultural production, raise the income and employment levels in the region, connect the rural and indigenous population, organically integrate the country, organise settlements in virgin areas and drive the supply of potable water.



▲ Eptisa is responsible for the final design of the Rositas Hydroelectric Project, preparing all necessary documentation to enable the tendering and construction processes





# AFRICA

In 2015 Eptisa's presence in Africa continued to grow thanks to the award of major projects such as our first engineering contract in Sub-Saharan Africa or the monitoring programme based on ROM methodology, in addition to the projects already being carried out in the sectors of water, the environment, institutional, economic and social development, energy, buildings and transport





Source: R. Paolicelli

## AFRICA

2015 was a significant year for Eptisa in Africa, in which the company achieved some major milestones. One example is the winning of our first engineering contract in a Sub-Saharan country, as design consultants on structures for the A104 road in Kenya.

In the **water** sector, work progressed satisfactorily on the turnkey project for the drinking water plant for Fez and Meknes in Morocco, along with those at Abkou and Bou Ismail in Algeria, at which we are responsible for control, monitoring of construction and operation.

In the field of **energy**, we continued working with the European Union on the technical assistance project for countries and regional organisations in west and central Africa in the framework of the Sustainable Energy for All initiative (SE4All). The idea is to achieve universal access to such energy by 2030, providing modern energy services, doubling the rate of improvement in energy efficiency and the percentage of renewable in the energy mix.

Regarding **institutional, economic and social development**, we are working for the European Union on technical assistance for the Regional Capacity Building Programme within the Civil Society Facility for the South, with the aim of strengthening the capacity of non-state actors so as to promote national reform and enhance public responsibility in states on the southern rim of the Mediterranean such as Morocco, Algeria, Tunisia, Libya, Egypt, Israel, the Occupied Palestinian Territory, Jordan, Lebanon and Syria.

In 2015 a new monitoring programme was started up based on **Results Oriented Monitoring** (ROM) of the cooperation programmes and projects funded by the EU in Africa, giving technical assistance to European Commission services and their missions in Sub-Saharan Africa by reporting on the implementation of projects and programmes funded in the framework of EU foreign aid.

As consultants we are responsible for organising the monitoring of each project selected and preparing the relevant reports so as to guarantee objective, impartial and rigorous quality control of the results of EU aid and cooperation programmes in Africa, within a perspective of improving performance and enhancing future impacts. Overall nearly 600 projects have been visited in virtually all countries in the Sub-Saharan region.

### Technical Assistance for the evaluation of the cooperation projects and programmes of the European Union in Africa

Eptisa initiated in 2015 a technical assistance for conducting external review missions of projects and programmes financed by the European Union in Africa. Promoted by the European Commission and managed through the ROM (Result Oriented Monitoring) Coordination Unit, the project is currently being implemented in consortium with the companies Eco 3 and Epes Mandala.

The objective is to provide technical assistance to support the services of the European Commission and its delegations in sub-Saharan Africa through the submission of reports on the implementation of the projects and programmes financed within the framework of the UE external aid, through specific budgets and the European Development Fund (EDF). This assistance is the continuation of the previous ROM system, developed since the start of the decentralization in the year 2000.

The services provided include the development of follow-up missions of the works being implemented, with the aim to propose recommendations to improve the achievement of the objectives and of the prospects of impacts. Throughout the year 2015, around 600 missions were conducted. The services included the measurement of the results obtained by the European cooperation through the new Framework of International Cooperation and Development Results of the EU and covered the projects and programmes implemented both nationally and regionally in sub-Saharan Africa.

On the whole, 600 projects were visited in virtually all countries in sub-Saharan Africa



The company achieved major milestones over 2015 such as winning a first engineering contract in Sub-Saharan Africa, where we are working as design consultants on structures for the A104 road in Kenya





▲ Eptisa has provided technical assistance services to develop a national housing strategy in Djibouti

## DJIBOUTI

Djibouti is listed as high risk country for the probability of various natural hazards. With nearly 30% of its population living in high risk zones, about 35% of the country's economy and sustainable development are also affected by natural hazards.

The contract, financed by the Global Facility for Disaster Reduction and Recovery (GFDRR) and administered by the World Bank, aims to improve the building standards and housing conditions to

include considerations for risk management and make safe housing affordable. Within this context, Eptisa has provided technical assistance services to develop a **national housing strategy** in Djibouti. The project is based on the results of seismic and flooding vulnerability in the country and their risk assessments.

For this purpose, a guide for house self-construction has been developed and the Djibouti building code has been revised.

## IVORY COAST

The contract, which consists of carrying out external missions for technical audit and specialized expertise in the framework of the **support program to cooperation activities** to ensure effectiveness and quality of the Ivory Coast - European

Union partnerships (SEQUACI), remains under implementation.

This project financed by the European Union aims to assure the good results of the ongoing and future EU cooperation programmes in the Ivory Coast.

## KENYA

Our extensive experience and good work have allowed us to enter countries like Kenya, where we have been awarded our first project. The company GIBB Africa has contracted us to carry out the detailed design for the widening and improvement structures for a 12 km section of the A104 dual

carriageway **road**, intended to ease traffic congestion in the capital Nairobi.

Eptisa has prepared conceptual design alternatives for the viaduct, preliminary design for superstructures, preliminary cost estimate and detailed design for the A104 viaduct and ramps 1 and 2.

## MOZAMBIQUE

In spite of the fact that Mozambique is growing in economic terms, more than 50% of its population still lives below the poverty threshold. The insufficient quality and quantity of food means that more than 30% of homes are chronically affected by food insecurity, with alarming rates of retarded growth among children. In this context in 2015 Eptisa has maintained its support to the Mozambique **Food Security and Nutrition Secretariat** (SETSAN) with a view to reducing the number of suffering from hunger. SETSAN's capacities are to be boosted so that it may undertake additional coordination, monitoring and assessment tasks.

In the **health** sector, we have been working since 2012 in the EU-funded project for **Institutional Strengthening of the Ministry of Health (MISAU)** with the title: Support to the Development of Human Resources for Health Sector Management and Administration. The aim is to improve the population's standard of health with an equitable expansion of basic health services of quality, stressing infrastructure and human, material and financial resources. Highlights of the work have been the definition and preparation of a curriculum, profiles and training programmes for hospital administration officials, and teacher training in technical, pedagogical and methodological aspects.

Due to the success of the program in 2015, it was decided to extend its implementation to the end of 2016.

In 2015 the European Commission awarded the consortium formed by Eptisa and the company CESO a new technical assistance contract for the **PALOP-East Timor Cooperation Programme** with the European Union (PALOP-ET / EU), whose beneficiary is the National Authorising Officer of the European Development Fund in Mozambique. The aim of the contract is to implement a single coordination mechanism for the PALOP-ET programme through enhanced partnership and coordination between the institutions involved with the aim of promoting synergies. A wide range of services linked to coordination, management, communication and training are being provided to meet the assistance objectives.

Our company is still carrying out the implementation of the pilot phase of the nationwide **cartography** project on a scale of 1:25,000 designed to strengthen the institutional capacities of the Mozambique National Cartography and Remote Sensing Centre (CENACARTA) as regards the collection, processing, storage and supply of basis GIS data, satellite images, and cartography of an area of Maputo province.

### Implementation of the pilot phase of the nationwide cartography project in Mozambique

Eptisa continues developing the pilot phase of the nationwide cartography project on a scale of 1:25,000, designed to strengthen the institutional capacities of the Mozambique National Cartography and Remote Sensing Centre (CENACARTA) as regards the collection, processing, storage and supply of basis GIS data, satellite images, and cartography of all country. This program seeks to cover the existing demands of official cartography both institutionally and in different sectors such as agriculture, transport infrastructure, energy and telecommunications.

The program supports the procurement of modern equipment and software, as well as training and transfer of knowledge and technology in the following areas: topography, geodesy, photogrammetry, remote sensing and geographic information systems.

The area for the implementation of this pilot project is located in Bajo Incomati, in the province of Maputo, where our technical team works closely with technicians from CENACARTA, accompanying them in the process of production of the first maps at 1:25,000 scale that are carried out in Mozambique.





## MOROCCO

In the **water** sector, we continued working on the **turnkey project** for a drinking water plant for Fez and Meknes, for the National Electricity and Drinking Water Office (ONEE). The project includes design, construction, facilities and commissioning for a drinking water treatment plant with a capacity of 172,800 m<sup>3</sup>/day (2,000 l/s).

We also continued providing technical assistance to the Moroccan Ministry of Agriculture and Fisheries for the modernisation of **irrigated agriculture** in the areas of Gharb, Haouz and Souss Massa. This is part of a European Investment Bank project within the national agricultural transformation programme, intended to convert an area of more than 21,000 hectares to drip irrigation.

In the sector of **institutional, economic and social development**, the EU Delegation in Morocco has continued implementing phase II of the **Support**

**Programme for the implementation of the National Literacy Strategy.** In 2015 the following actions were carried out:

- Boosting the impact of the sectoral strategy for literacy in rural areas among those aged 15 to 24, in regions with higher literacy and in institutional and governmental management.
- Improving professional practice in order to guarantee a more efficient strategy as regards the individualised monitoring of beneficiaries and their socio-occupational integration, the monitoring and assessment of NGOs and improvements in the training of literacy professionals.
- Development of post-literacy intervention capacities
- Implementation of a professional and cross-sectoral view of literacy as regards the assessment and certification system, and development of partnership mechanisms with local NGOs and economic stakeholders.

### Technical assistance for the modernization of irrigated agriculture

Since 2013, we are working on a European Investment Bank project providing technical assistance services to the Ministry of Agriculture and Fisheries of Morocco for the modernization of irrigated agriculture in the country. The project involves the transition from traditional irrigation processes such as sprinkler or gravity irrigation to drip irrigation. It is being carried out in three regions: Gharb (Kenitra), Haouz (Marrakesh) and Souss Massa (Agadir), covering an area of over 21,000 hectares.

This institutional development and technical cooperation project is part of the national program for agricultural transformation of Morocco "Maroc Vert", which is having a very positive impact on remote management systems, configuration of hydrants in plots, computerized monitoring and on environmental management plans in irrigated areas. Eptisa offers continuous support to the Directorate of Irrigation of the Ministry of Agriculture and its regional offices, advising them on social and environmental aspects in the program areas, which has traditional agriculture and diverse climate.

The program is aimed to support nearly 8,000 farmers so that the use of irrigated agriculture optimizes the use of limited natural resources of the country.



### Turnkey project: Design, construction and commissioning of the drinking water treatment plant of Fez and Meknes

The ONEE (Office National de l'Electricité et de l'Eau Potable) has awarded the construction of the drinking water treatment plant in Fez to the consortium formed by Eptisa and GS Inima, with an amount of € 25.2 million. The project includes the design, construction, equip and commissioning of a treatment plant with 172,800 m<sup>3</sup>/day (2,000 l/s) of capacity. The water coming from the Idriss reservoir will be treated in the water treatment plant to reach the required parameters for human consumption. A pumping station will drive the water from the treatment plant to the water storage tanks for its distribution in Fez and Meknes municipalities.

The scope of the works includes the design, basic engineering and detailed engineering of the DWTP, water reservoir and pumping station. Construction of civil works; installation of mechanical, electrical and automation and control equipments; construction of buildings for facilities; testing and commissioning of the facilities.

The water line of the DWTP has: manhole for flow regulation and measurement, mixing chamber 1, lamellar separator, mixing chamber 2, flocculation, lamellar clarifiers, sand filters, filter washing, filtered water reservoir, dirty washwater recovery tanks, washwater separator, treated water reservoir with 20,000 m<sup>3</sup> of capacity, pumping station and measurement of treated water. The sludge line has sludge draining, sludge tank, gravity thickening and drying beds. The reagent line includes dosage of aluminum sulfate, ferric chloride, polyelectrolyte, lime, chlorine gas, activated carbon and potassium permanganate. The plant will be completed with drinking water networks, water services, emptying network, electrical connection, electrical transformer center, instrumentation and remote control, lighting, control building, urbanization and enclosure.

In 2015 we have carried out all the detailed engineering of all the facilities: civil works, electromechanical equipment, buildings and ancillary facilities. Once the plans and equipment were approved, the works begun, advancing towards the goal of completion in 2017.



■ In 2015 we have been carried out all the detailed engineering of all DWTP facilities with a capacity of 172,800 m<sup>3</sup>/day



## EGYPT

Eptisa, as part of a consortium, continues to provide technical assistance services for the **Integrated and Sustainable Community Development Programme** in **El Cairo**. This programme financed by the European Investment

Bank aims to improve the building quality and more generally, the living conditions of the citizens with fewer resources in order to facilitate their access to housing through the creation of employment for people at risk.

## ALGERIA

With a view to safeguarding the environment, the Algerian Ministry of Water Resources is developing various **wastewater treatment plants (WWTP)** across the country. Eptisa continues working in the control and monitoring of the construction and operation of the plants in the towns of Akbou and Bou Ismail (Tipaza province), as well as providing technical assistance over the warranty period and operating services.

For the Ministry of Land Management and **Environment** we have also been providing technical assistance for the Support Programme for the Environmental Sector in Algeria (PAPSE), whose general purpose is to support the Algerian authorities in the design and implementation of environmental policy from a sustainable development perspective. Notable activities in

the project in 2015 included the validation by the Ministry of the Integrated Training Plan for the Environment Sector.

In the **transport** sector, we continued preparing the construction design for a section of more than 32 km of the new passenger and goods railway line between the towns of Realizane, Tiaret and Tissemsilt, with a length of 185 km. The design includes the layout of tracks and platforms, earthworks, the formation level, sub-ballast and ballast, cross and side drainage, track superstructure, railway and non-railway installations, replacement of affected utilities and structural protection of gas pipelines near the route. Also included is the design of roads and tracks crossed by the new railway line and their replacement, ensuring that the line is permeable to cross-traffic.

### Technical Assistance to the Ministry of Land Management and Environment of Algeria in the implementation of its sectoral policy

Since 2014, Eptisa has been implementing a technical assistance contract for the Programme to Support the Environmental Sector in Algeria (PAPSE). Financed by the European Union, the project is developed in consortium with the companies GFA Consulting Group and Tragsatec.

The main purpose of the project is to support Algerian authorities in the design and implementation of a sectoral environmental policy in the metropolitan area of the capital, Algiers, based on the principle of sustainable development. The Programme aims to strengthen the Algerian environmental capacities and set up a baseline for sectoral strategies.

In addition to provide advisory services, the team is also implementing a follow-up of the execution of the Programme to ensure the successful achievement of the proposed outcomes. The project is scheduled to take place over a period of 40 months, ending in December 2017.



▲ The main purpose of the project is to support Algerian authorities in the design and implementation of a sectoral environmental policy



### Control and supervision of the construction works and operation of the wastewater treatment plant in Bou Ismail in Algeria

In the Tipaza province, we continue working in the control and monitoring of the construction and operation of the WWTP of Bou Ismail, intended for wastewater treatment of 230,000 equivalent inhabitants in 2030 with an estimated daily flow of 32,000 m<sup>3</sup>/day. The biological treatment has three lines and will be a low-loaded activated sludge plant. The WWTP will have three circular secondary clarifiers in parallel and the sludge will be treated by two gravity thickeners and two centrifuges. In order to allow the reuse of water for irrigation, in a first phase it is planned UV disinfection for the 50% average hourly flow.

The activities carried out by Eptisa are:

- Control and approval of drawings and construction design, established by the contractor, in terms compatible with the program of works of the contractor.
- Technical control and permanent monitoring of the execution works, setup and commissioning of the equipment.
- Visits of experts during the works, setup and commissioning of all facilities.
- Administrative and technical assistance during the guarantee and operation.
- Reporting, control of drawings and construction design, monitoring of works, of commissioning and of the final documents of the facilities.

In addition to its role in the commissioning of the infrastructure, and once operational, the company will also provide technical and administrative assistance during the warranty period and operation.

▲ The new WWTP will have an estimated daily flow of 32,000 m<sup>3</sup>/day and it will provide services to 230,000 equivalent inhabitants



# MIDDLE EAST PERSIAN GULF

In line with our plan for geographical expansion, in 2015 we have successfully increased our presence in the Middle East and Persian Gulf region where Eptisa has been awarded during the course of the year several projects in the sectors of water, waste management and institutional, economic and social development





Thanks to its high level of specialization in water treatment engineering, Eptisa has worked in collaboration with other Spanish companies in the sector to carry out basic designs for treatment plants in Spain and internationally. For example, in the Middle East our company has participated in the preparation of several tenders, as part of a consortium, for desalination plants in Barka and Sohar in Oman, and Jeddah 4 in Saudi Arabia.

## JORDAN

Jordan is one of the countries with the greatest **water** shortages in the world. Therefore the proper management of water resources and their use is essential. In this situation, the Ministry of Water & Irrigation has awarded to Eptisa a contract for the development of a national water information system, including the assessment and preliminary design, the development of a new water information system, with a functional design, as well as the upgrade of existing information systems. The goal of this project is to enable data sharing between all the relevant institutions in a flexible and efficient manner.

Besides, in Jordan we continue our work providing technical assistance to the program to promote democratic **governance** and support to civil society and organizations based in the communities and to help them engage effectively in a political dialogue with the authorities. In this project, Eptisa has worked in partnership with the German company GFA Consulting Group and the Jordan NGO Partners Jordan-Centre for Civic Collaboration, to achieve three main results: strengthening the institutional and administrative capacity of the Chamber of Deputies, developing provincial institutions and supporting non-state actors.



### Development of a national water information system

The availability of exploitable freshwater in Jordan, without counting the water coming from the desalination and wastewater reuse process, is about 130 m³ per capita per year, according to data from 2012. In spite of its scarcity, an efficient distribution and management of water is essential for the development of the country and, for that reason, the Ministry of Water & Irrigation has commissioned Eptisa to carry out the development of a national water information system.

The contract includes the assessment and preliminary design, the development of a new water information system with a functional design, as well as the upgrade of existing information systems. The objective is to enable water data sharing between all the relevant institutions in a flexible, efficient and non-bureaucratic manner. The project will have an initial duration of approximately 5 years.

The first phase of the project aims to deliver a new fully functional Water Information System (WIS) that can be consulted by all stakeholders using a username and password. The data contained in the old WIS will be migrated to the new one and data feed from other existing systems within the Ministry of Water & Irrigation will be established. Besides, to ensure the

efficiency of the new WIS, the information system of other concerned entities will be assessed and support will be given to improve capacity.

Finally, Eptisa will provide the general specifications and a data model for the new national WIS, including mainly GIS data and knowledge information, and will also draft a set of procedures for data management for the Ministry of Water & Irrigation.



## LEBANON

In 2015 we received the award of a new contract for technical assistance to support the **Promotion of Social Dialogue in Lebanon**, financed by the European Commission. The objective of the project is to increase

the capacity for dialogue between the Lebanese Ministry of Labour, the social partners and civil society with the aim of reinforcing social protection and consolidate in this way the labour legislation.

## BAHRAIN

Another example of our worldwide expansion is Eptisa's work in Bahrain, where we were awarded a first contract for the elaboration of a tender project for the Integrated **Waste Management** System of the country.

This included a major urban solid waste treatment centre and related facilities, such as a material recovery facility to treat municipal solid waste, commercial and industrial waste, as well as a composting facility for green waste, an incineration

plant for the disposal of deceased animals, a landfill and an emergency spillway, including a storage area for refuse-derived fuel. The total investment for the civil works is estimated at € 100 million.

Eptisa has prepared the conceptual design and all preliminary work, the structural and civil works design, the mechanical and electrical design, as well as the bill of quantities and the detailed design.

▲ The contract includes the assessment and preliminary design, development of a new WIS with a functional design, and upgrade of existing information systems



# CORPORATE SOCIAL RESPONSIBILITY

Aware of the significance that company's Corporate Social Responsibility has acquired in this new context, throughout 2015 Eptisa has continued the process of implementing Corporate Social Responsibility in the company.

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 public interest and sustainability.







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

In 2015 it has been fostered in Eptisa an environmental and socio-economic approach in our services and management processes, by including social, economic and environmental development criteria that will bring sustainability to our solutions for the clients and will add value to society.

In the following sections we set forth the main aspects of Eptisa's Corporate Social Responsibility policy and the progress of its implementation.

## 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. 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 organization without overlooking strategic management and operational efficiency.

- 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.

### 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;

### 1. 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

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

■ The implantation of Corporate Governance best practices directly enhances trust, safety and value creation within the Company



## 2. 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:



**Mr. Ángel Corcóstegui**

*Chairman of Eptisa and Founding Partner of Magnum Capital Industrial Partners*

Prior to founding Magnum Capital Industrial Partners in 2006, Ángel 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.

Ángel is currently Chairman of Eptisa, Iberchem and Orliman and Board member of Generis, Geriatros, Nace, Lauder 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.



**Mr. 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.



**Mr. 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 has an MBA from the IE Business School and holds a Master Science of degree in Civil Engineer from the Polytechnic University of Madrid.



**Mr. Francisco Javier Sanz**

*Executive Director since 2015 and General Manager of Eptisa in Spain*

Javier Sanz has been General Manager of Eptisa in Spain since 2010 and has held managerial positions in various activities related to civil engineering for over 25 years.

He also is Executive Director of Eptisa Ingeniería i Serveis and Eptisa Tecnologías de la Información and represents Eptisa in different organizations of FIDEX and TECNIBERIA.

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



**Mr. Enrique de Leyva**

*Board Member 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 Pretersa and Geriatros and Board Member of Iberwind, Eptisa, Vendap, Iberchem and Orliman.

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.



**Mr. João Talone**

*Board Member of Eptisa since 2007 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, and from 2002 to 2003, was Special Commissioner for the Portuguese Government. 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 Chairman 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.



**Mr. Alberto Bermejo**

*Board Member 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, and, before that, 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.



Eptisa's Board of Directors is assisted by its Secretary, Gonzalo García 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.

### 3. 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:

- Mr. Luis Villarroya Alonso
- Mr. Javier Andreu Posse
- Mr. Ignasi Cantarell Taxonera
- Mr. Gonzalo García Alonso
- Mr. Gerardo Roiz de la Parra
- Mr. Javier Sanz Urbina
- Mr. José Ignacio Soriano Artacho
- Mr. David Pascual Braña
- Mr. Nuno José Figueira Martins Fragoso
- Mr. José María Pascual González-Babe
- Mr. Fernando Varela de Ugarte



## Commitment to personal and professional development

### Creating a better working environment

Eptisa launched a participative internal campaign to create more attractive working conditions in the company. The aim of the initiative was to foster debate that would give rise to proposals for specific improvement measures. After several months the debate group concluded its work with a programme of initiatives to improve the work-life balance, manage cultural diversity, foster the development of women and the creation of engagement and internal communication systems.

### Technical Resources Department

Eptisa promotes training, creativity and synergy among its professional to enhance efficiency, productivity and knowledge management. With this aim, the technical resources department provides 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.

### 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.,

■ Eptisa is committed to the welfare and professional development of people



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 OHS 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. 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.

## Personalized Professional Career Development Plan

Among other actions, a management plan for the attraction and retention of talent has been designed, defining a procedure for recruitment and the contracting company profile, which Eptisa must meet to attract the best talent.

In Eptisa we want to foster the access to junior employment, developing a roadmap to attract and promote the youngest talent through a scholarship program and collaborations with universities, masters, etc. to allow them to access to their first job.

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

Eptisa is working on integrating socio-economic and environmental criteria in our production processes that guarantee the sustainability of the solutions provided and add value to the environment to be a driver of the social development. To do this, each of Eptisa's business units develops and implements detailed operational plans to protect environmental sustainability. Among others, these include:

### 1. Transport

In the transport sector Eptisa is committed to optimizing mobility in order to minimize the environmental and economic impact, as well as maintain the growth of the welfare state without over-exploiting the resources of the earth.

### 2. Energy

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

### 3. 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. It also collaborates on projects for the efficient management of water supply and sanitation networks to prevent drinking water losses.

## Internal Management of Buildings and Environmental Performance

In 2015 the following environmental initiatives were carried out, some of them for the optimization of services and saving resources, aimed to maintain our competitiveness and adapt our business to the current times of crisis.

### Initiatives implemented in 2015

In 2015 Eptisa designed and implemented a number of environmental initiatives in line with global environmental policy trends, the business needs of the company and the needs of places where we operate in order to contribute to their sustainability and competitiveness. These include:

- *Development of a method for including Sustainability Criteria in infrastructure works projects.* We worked on this initiative in 2015, developing sustainability criteria guidelines to be implemented during the design phase in certain projects to be carried out by Eptisa in 2016. In addition to environmental actions, these criteria include social, economic and technological aspects. They are open to the option of introducing measures to enhance quality and the company's corporate responsibility to the communities and stakeholders with which it works.
- *Initiatives aimed at reducing emissions into the atmosphere.* In this respect, we have fostered several initiatives, some of which had already been launched in late 2014 but have only been fully developed initiatives 2015.
- We continue to *renew the company car fleet*, opting for smaller vehicles with lower emissions.

# Commitment to Environmental Sustainability

The companies that work in solutions and services in order to improve the management of resources and guarantee the socio-environmental sustainability will positively affect in 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 production processes to guarantee long-term sustainability in all projects, mainly in developing countries.

The effects of climate change are producing devastating consequences in the basic infrastructures of the countries at risk, and thus deteriorating the quality of life of the population. Eptisa has become one of the best partners for international institutions in the development of projects within programs financed by multilateral agencies to mitigate the risk

and to design infrastructure resilient to the effects of climate change.

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,

■ Eptisa is committed to the development of solutions to guarantee the socio-environmental sustainability of our planet and improve the development of society



Currently 70% of the vehicle fleet consists of cars with ECO engines. We have also acquired an electric vehicle with zero local emissions.

- *Implementation of the new travel policy.* This policy imposes measures to minimise business trips by prioritising other kinds of collaborative tool such as videoconferencing, telephone calls, etc. The use of public transport in preference to other means of transport is also encouraged to contribute to reducing pollution.
- *Measuring the carbon footprint.* Knowledge of our carbon footprint is necessary to raise awareness of the importance of all aspects of the operation of Eptisa as CO<sub>2</sub> generators and to identify opportunities for reducing emissions. Some of the contributions were calculated in 2015 and we expect to have final data during 2016.
- *Sustainable consumption-related initiatives*
  - *Launch of the document print-out policy* to reduce power consumption and paper and toner waste.
  - *Project to renew the printing devices:* this policy was introduced in November 2015 with the aim of providing offices with new printers managed by print optimization software that enables better implementation and control of the current printing policy.

### Objectives achieved in 2015

Thanks to all environmental initiatives implemented in Eptisa has been possible to achieve a large majority of the proposed environmental targets for 2015. The most significant achievements are summarized below:

- 10% reduction of paper consumption over the previous year. In this regard it is important to note that we have followed the trend of decreasing

paper consumption last year that there was a 50% reduction.

- 16% reduction of fuel consumption over the previous year. This reduction is in addition to those achieved in the previous three years, which in total represents a decrease of accumulated fuel consumption of nearly 36%.
- 5% overall reduction of toner consumption.

### Objectives for 2016

To achieve continuous improvement of environmental performance and processes, Eptisa defines an environmental programme every year in which the objectives deriving from the various strategies are specified. The objectives for 2016 are based on four significant aspects.

- Implementation of sustainability criteria in infrastructure projects
- Saving on printing
- CO<sub>2</sub> footprint calculation
- Reduction of plastic waste

### ISO 14001 Environmental Management Certification

Eptisa's Environmental Management System is certified by BUREAU VERITAS, organization internationally accredited by UKAS, 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

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.

Quality management for achieving excellence is Eptisa's commitment to its clients







Source: R.P.

# Commitment to Social Development

Much of the population growth occurs in emerging and developing countries, where it is concentrated much of the global demand for infrastructure and service to ensure the development of society. To achieve the objectives, these countries need better institutions and better governability.

Engineering projects in the new emerging countries pose major professional challenges. Companies with experience in developing countries and a pro-development approach, able to adapt them to the local context, generate more value for society and operate with lower risks.

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.

## General principles for interventions in socially vulnerable areas

Socially vulnerable areas are disadvantaged areas in any country where a certain social insecurity is generated by poverty, unemployment, etc. In other words, areas where it is particularly important that interventions are transformational and create opportunities for social change. These contexts, often characterised by severe institutional weakness, require different approaches from those implemented in regions free from these problems.

The experience of Eptisa in developing countries evidences that there are not purely technical

▲ The companies with experience in developing countries and a pro-development focus, able to adapt to the local context, generate more value to society and operate with less risk

projects: 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.

Throughout 2015 we developed a declaration of general principles in the context of highly socially vulnerable countries or areas. It includes a number of basic guidelines on the approach, orientation and behaviour expected of employees, partners and subcontractors and establishes the bases on how to perform the company's activities in these contexts.

All company activity in socially vulnerable areas is governed by the following principles:

- Principle of adaptation
- Principle of participation and communication
- Principle of contribution to local development
- Principle of use of local resources
- Principle of the usefulness of the services
- Principle of professional conduct
- Principle of adaptation to international standards
- Principle of conservation of rights
- Principle of transfer

## Institutional, Economical and Social Development

Since 1996, Eptisa develops a specialized activity in the institutional, economical and social development sector with the main objective of combining business opportunities that benefit the Company with activities which also benefit society as a whole.

Eptisa is now a reference for the management of multilateral funds and works with leading international development agencies.

Eptisa understands that the companies have a very important role for the transformation of reality. The culture of development cooperation advocates for a balanced transformation (between economic, social and environmental dimensions) and in where the efforts are focused on generating opportunities for more vulnerable or disadvantaged countries or regions. As a consulting company, we provide useful services to entities in the beneficiary countries in order to strengthen their capacities to improve the conditions of its population.

The socio-economical development has many objectives with a common focus on reducing poverty. This scope requires players with very different skills, for example: the engineering companies, which have an 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 high level demanding commitments.

## Responsibility and Respect of the Local Community

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, have facility for interact and understand the needs of the population, have experience in the design of social interventions and normally knowledge of the local appropriate techniques / technologies.

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.

In 2015 the donations and collaborations programs with NGOs and associations has intensified thanks to the commitment and solidarity of the group's employees. We have collected food for Caritas and the Order of Malta, and toys for Spanish Red Cross.



# Commitment to Innovation

The "Vision 2050" report, a new agenda for business of the World Business Council for Sustainable Development, in which 29 large companies have developed a worldview centred on sustainability, affirms that it is necessary to understand a "global and sustainable" market as a reality that will be imposed for companies and in the markets. For which, the change of behaviour and social innovation are as crucial as better solutions and technological innovation.

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.

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 to create innovative products in order to meet the needs of clients and society, and to optimize internal management processes in order to foster managerial modifications focussed on improving the economic and social potential of the Company.

## WATEPAC project: Georeferenced monitoring and management of water supply networks in Peru

The National Fund for Scientific, Technological Development and Technological Innovation (FONDECYT) of Peru has commissioned us to develop a georeferenced platform based on integration of GIS and SCADA technologies for real-time management of water infrastructures. The aim of the project is to obtain an information system that employs tools such as ICT, georeferencing, real-time monitoring networks, remote control, GIS and automated monitoring networks applied to various sectors and infrastructures, and which enables optimisation of the use of integrated water cycle-related infrastructures. The idea is to unify, in the same application, data from numerous variables that affect its deployment such as:

- Geolocalisation of users and subscribers (Q, X, Y and Z indicators)
- Economic and social activity indicators (X, Y, Z)
- Mapping: street map of the city

- Digital inventory of all infrastructures
- Real time or deferred georeferenced control variable (T, X, Y, Z)

The tool collects and analyses geodata in real time, enabling integrated performance of processes usually provided independently by other systems. Thus a management platform - currently nonexistent on the market - will be made available to help improve decision making both in daily operation and planning of future infrastructures.

## Integrated Pavement Management System - P@vement Check

P@vement Check is a pavement management system that enables the Administrator to perform efficient management of infrastructure on the basis of objective inspections by mobile mapping technology and software for development model prediction and investment strategies. It is a portable recording device that can be adapted to any vehicle. It enables high performance data collection and is integrated with a GIS environment, pavement condition assessment software, a predictive model of long-term behaviour and an investment simulator.



P@vement Check is co-funded by the Ministry of Industry, Energy and Tourism within the 2013-2016 National Plan for Scientific Research, Development and Technological Innovation with project reference number TSI-100502-2013-10.

Eptisa has developed the following activities related to the project:

- An Integrated Pavement Management Guidelines that articulates and standardises the methods to be used.
- The use of a 5MP resolution camera capable of obtaining a correlative series of images with a configurable distance of 1 to 20 metres between each frame depending on the purpose, equipped with 50-channel differential GPS, an inertial measurement unit (IMU) to correct positioning in areas of low GPS cover and a barometric sensor to obtain a high precision position.
- Software for automatic post-processing that enables quantification and georeferencing of damage to the pavement or sidewalk. The

software is provided with photogrammetric functions in three dimensions which enables:

- 3D positioning of the items visible in the image.
- Directly digitalisation on the image of the points, polylines and polygons of the items to be inventoried.
- 3D measurement: distance between 2 points, height, width and length of each object, area measurement.
- The option of superimposing existing mapping layers, both raster and vector, with geo-referenced data produced with 3D photogrammetrics.
- Pavement management software that enables classifying the condition of the paving, obtaining predictive models of pavement behaviour in the future and having a conservation investment in simulator.
- Field testing and application in projects entailing pavements of different types and different infrastructures (roads, airports, ports, cycle lanes or sidewalks).

To sum up, this tool enables conservation planning and integrated maintenance of the pavement of multiple infrastructures. It enhances the management of financial resources and the efficiency of mobility, all of which leads to a reduction in the risks of accidents and less greenhouse gas emissions.

## First remote-controlled prototype for measuring the effectiveness of decontaminating materials

In 2015 Eptisa, in collaboration with the Centre for Industrial Technological Development (CDTI), finalized the research programme aimed at developing the first remote-controlled research and testing method applied to photo-catalytic materials. This new technology will enable on-the-ground measurement of the decontamination effects of pavements treated with photo-catalytic products and definition (among other applications) and determine the variables that influence their conduct through laboratory testing.

The activities that will be carried out within this program are aimed at achieving three objectives. In the first place, 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. Secondly, to design and develop the first device for testing the efficiency of pavements treated with decontamination materials both in situ and in the laboratory. And thirdly, to design and develop automated tests.

## ROMA (Road Management System)

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.

ROMA Pavement Management is both an independent or integrated module that consists of working tool that allows to know how, when, where and why the pavement should be intervened, and the associated costs to such investment.

## Auscultation system of energy collectors in solar thermal power plants

Eptisa continues the strategic alliance with The Energy and Resources Institute (TERI) of India to carry out an R&D project to design an auscultation system of energy collectors in solar thermal power plants, forming part of the Indo-Spanish Joint Programme for Technological Cooperation (ISIP).

The overall objective of the project is the design and development of an auscultation and diagnostic system for energy collectors in solar thermal power plants and the associated assessment procedures. The system will measure geometric parameters and energy capture efficiency in the solar field of the power plants. To do so it will automatically measure the relative positioning between the reflectors and the heat transfer pipes in the structures that comprise the solar field so that the percentage of incident radiation from the reflector on the pipe can be quantified, thus enabling diagnosis of which devices are within or outside the design parameters.

In this project Eptisa will be responsible for designing and developing all components of the instrumentation, control units, operation and manoeuvring of the system (hardware, software and firmware) and for the testing procedures and methodology including assessment algorithms integrated into the data evaluation system.

## Pathology Prevention Warning System and Maintenance Management in Wind Turbines

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 activities that Eptisa carries out are a mobile dynamic test unit for these preventive measurements and monitoring and automation through SAYTL<sup>Dynamic</sup>. 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 SAyTL<sub>Dynamic</sub> 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.

The preventive measurements enables 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.

#### Air quality control on photocatalytic pavements in the District of Villaverde. Madrid City Council

Photocatalysis is a process by which some common atmospheric pollutants such as NOx, SOx and VOCs are removed from the atmosphere through an oxidation process activated by solar energy. In the Villaverde project photocatalytic coatings were applied to more than 40,000 m<sup>2</sup> of pavement and 3,000 m<sup>2</sup> of tunnels.

#### Giro Project: new architectural solutions for a new gerontological care person-focused model

The population ageing set an unavoidable and not hypothetical challenge, because the elderly of

the future already inhabit the earth. The current health care and social protection model is facing a changing conception of the elderly. The older person is now an active entity responsible for his/her own care. Society in general and providers of health care services in particular has to increase the value of the elderly rejecting negative stereotypes and changing its working models and health care systems. Older people constantly express their desire to age in their home, even when they are depending people and need help in several areas of their life. When this is not possible, they prefer alternatives to their home to ensure the motto "live like at home", focusing on small accommodation or cohabitation units in traditional centers in order to develop care person-focused models.

Definitely, we are facing a change of the health care model paradigm. The overall objective of this project is the development of new products, environments and services to build and remodel efficient gerontological centres based on Gerontological Care Person-Focused Model, which covers the needs, tastes and expectations of elderly and favour the development of their capabilities, comfort and welfare. To do this, we take as basis the characteristics of the environment of the people that have special needs and live in residences for the elderly.

The Eptisa's work will be to search architectural solutions that improve the people's welfare. The new gerontological model will be able to offer a homely feel, as well as stimulus that encourage the

feeling of control the medium and of the activities of daily life, where the affective relationships are cultivated.

In this project it is intended to propose new architectural designs for:

- Development of a new accommodation person-focused model with con modular building solutions: the private room is not only "a bedroom" but "his/her new home".

- Promoting people's welfare: integral and friendly accessibility; creation of "large small spaces and small large spaces"
- Encouraging social interaction with open spaces and corridors that favour the meeting and exchange, combined with places from which they can observe the daily life.
- Taking care over specific designs for caring for people with dementia: design appropriate spaces to facilitate and allow wandering

## Integrity Management System Code of Ethics

Eptisa's Management has approved to establish the principles, norms, values and basic rules of conduct that should guide the behaviour of all people and collaborators who work in Eptisa in the development of their professional activity.

Following up with the commitment of the Eptisa's Management to transparency, ethics and professional development of our management structure, in 2015 we continue working on the design of an Integrity Management System.

The Integrity Management System includes the policies that, based on principles, values and corporate commitments (CSR Policy), govern our business activity and management. The management system articulates the communication of policies and ensures it compliance through a communication plan, and a monitoring, reporting and management system.

The Statutory Compliance Regulation was approved, a Compliance Officer was appointed and a complaints channel was implemented in order to meet the objectives. This new Integrity Management System brings together all the company's action policies: the CSR policy, the Good Governance Code, the Code of Ethics, etc.

In 2015 we continued working on the definition of a Code of Ethics for Eptisa to set the principles, norms, values and basic rules of conduct that must guide the conduct of all the people and partners who make up Eptisa 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
- All 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

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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