# ACTIINFRA MotorSport Facilities

Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C.

Index



Advisory, consulting and engineering services related to the construction, maintenance and operation of infrastructures.





Specialists in design, supervision, technical assistance, management, independent engineering.... and general asset management of **Motorsport Infrastructures** and **Facilities.** 

### Vision, Mission & Values



Talent, commitment and quality tailored to specific needs in service to society. **Your Strategic Partner...** 

Generating comprehensive, innovative, sustainable and optimal engineering solutions to our clients, as well as providing advisory ana consulting services in infrastructure and MotorSport ... **ready to solve your problems.**..





Humility, Transparency, Integrity, Honesty, Inclusion, Awareness, Social Responsibility, Sustainability, and Excellence are continuously projected in our Services. ... in our only way!!!

Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C., ACTIINFRA, registered in the Public Registry of Commerce of Mexico City under legal entity folio 137,776, is a company that, despite its **recent establishment** on October 9, 2020, has experienced exponential growth from its inception (exceeding 50% annually). This growth can be attributed to the **significant trust continually placed by its clients**, the proven value of its members and collaborators in the market, and the **outstanding performance in its projects** that the company consistently delivers day by day.



Geographical scope



### Quality Management. ISO 9001:2015.

At **ACTIINFRA**, we are dedicated to meeting and exceeding the needs and expectations of our clients by generating integrated, innovative, sustainable, and optimal engineering solutions, as well as providing advisory and consulting services in Infrastructure and MotorSport. To achieve our objectives, we are committed to adopting a **Quality Management System based on ISO 9001:2015.** This system enables us to enhance our capabilities, increase efficiency, boost customer satisfaction, and promote continuous improvement.



Quality



At **ACTIINFRA**, we have experts who are **Certified in Management Systems** by the Mexican Institute of Standardization and Certification, A.C. (IMNC) with competencies including:

- Consultant in Quality Management Systems ISO 9001:2015,
- Responsible of Management Systems,
- Leader of Project Optimization (documentation of substantive activities, quality manuals, operation manuals, process mapping, development of KPIs, function analysis, etc.),
- Internal Auditor, Supplier Auditor, Certification Auditor, and Lead Auditor at all three levels of the aforementioned audits.

Based on all the above, we have the necessary know-how to offer services aimed at:

Implementing ISO 9001:2015 Quality Management Systems in any organization;

Identifying and characterizing processes (strategic, operational, support);

Identifying, developing, monitoring, analyzing, and evaluating performance indicator systems (KPIs);

Identifying, analyzing, and evaluating Risk and Opportunity Analysis of an implemented Management System by implementing action plans to address them;

Addressing Non-Conformities and Non-Conforming Outputs according to various methodologies for root cause analysis;

Conducting internal audits of Quality Management Systems and leading audit teams in the role of lead auditor by preparing audit plans, opening meetings, auditing top management, closing meetings, developing the audit report, and drafting audit findings.

#### Business Areas / Services



#### Human Resources





Multidisciplinary team comprised of professionals with proven expertise in the engineering and construction sector, specializing in advisory, consulting, structuring, design, supervision, technical assistance, management, independent engineering, assessment, and administration of MotorSport Facilities and Installations.

This team is led by Eng. Leopoldo Javier Zambonino Pulito, **founding partner** and **the company's CEO**.

Eng. Leopoldo Javier Zambonino Pulito

#### Leopoldo Javier Zambonino Pulito. Civil Engineer

Founding partner of the firm, Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C., ACTIINFRA

A highly accomplished professional, holding a degree in **civil engineering, with an extensive 23-year track record** in the engineering, advisory, consulting, and construction industry. Specializing in the intricate aspects of design, supervision, technical assistance, management, and administration within the dynamic realm of **MotorSport Facilities and Installations**. Presently, serving as an esteemed independent Advisor and Consultant for Infrastructures & MotorSports and proudly contributing as a **founding partner to the success of Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C., ACTIINFRA.** 

In the early years, the focus was primarily on contract management for road assets, particularly in the field of **road safety**. Leveraging the expertise gained in this area, the knowledge was successfully **applied to safety in the realm of MotorSport**, including speed circuits, racetracks, and kart tracks worldwide. Today, he stands as one of the few global experts in this specialized field.

Since April 2011, he has been working in Mexico, where, among other contracts, he has been involved in infrastructure **asset management** contracts for transportation, applying performance standards. He has also participated in the **structuring (legal, financial, and technical)** of these contracts, serving as the Independent Engineer appointed by the Property/Trust and Legal Representative of Special Purpose Entities (SPE) with the goal of managing the **operation, maintenance, and rehabilitation of several assets** for the National Bank of Public Works and Services. Additionally, he played an active role in structuring the rehabilitation and conservation of different toll road assets within the free road network of the Ministry of Infrastructure, Communications, and Transportation, utilizing the **Public-Private Partnerships Law**.

Simultaneously, he continued these responsibilities while serving as the **Director of the Motorsport Facilities Division at TYPSA Group** globally. In this role, he led various technical services related to motor sports facilities of diverse categories in different parts of the world.

Over the past few years, and equipped with a significant technical, commercial, and management background, he shifted his focus to the **General Management of MEXTYPSA**, a company that grew to have over 300 employees across its various divisions and departments. In this role, he managed the company at all levels, defining and coordinating global strategies and priorities. Under his leadership, the company experienced **a notable growth in both corporate and business areas, with an increase of over six times from his entry to his departure from the position.** In his final stint, he even managed to concurrently hold the positions of General Director of the company and Director of the Project Management Office for the Tren Maya project at FONATUR, an over 1500 km railway infrastructure development in the Yucatán Peninsula in Mexico.

Since September 2020, and now as an **independent professional and founding partner of the company Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C., ACTIINFRA.** he has been dedicated to providing strategic advisory and consulting services in the field of infrastructure. He has played a prominent role, including serving as the General Coordinator of Technical Advisors for the Tren Maya project, directly reporting to the head of FONATUR Administration, the government agency in charge of executing the aforementioned project.



Eng. Leopoldo Javier Zambonino Pulito

#### Leopoldo Javier Zambonino Pulito. Civil Engineer

Founding partner of the firm, Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C., ACTIINFRA

In the companies where he worked, he always held the highest technical and commercial responsibility in the MotorSport division, and in each of them, he was the creator of the mentioned business line based on his accumulated experience.

He is a regular collaborator with the Federación Mexicana de Automovilismo Deportivo AC., FEMADAC, and Organización Mexicana de Automovilismo Internacional, OMDAI, providing continuous support and advice through presentations and courses to these sports institutions on the design and safety of race tracks and karting facilities, in accordance with the regulations issued by the Fédération Internationale de l'Automobile, FIA, and the Commission Internationale de Karting, CIK.



FOM	
9th February 2009	
Mr Leopoldo J Zambonino Pulito	
Mour Sport Circuis Department Marie Curie 2 Parque Fernológico de la Cartuja 41092 Sevilla Spain	
Dear Mr Zambonino Pulito	
This is a short note to acknowledge that I have received your letter of 4th February 2009 together with the company information for which I thank you.	
I have, as you know seen and experienced personally what your company has achieved in Valencia for the occasion of the FIA Formula One World Championship <sup>10</sup> in August 2008. I am sure there will be some occasion in the near future to meet you in person.	
Best wishes	
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	Charlie Whiting <cwhiting@fiamc.co m&gt; 03/03/2009 18:47</cwhiting@fiamc.co 	Para cc cco Asunto	"Izambonino@ayesa.es" <izambonino@ayesa.es> Racing Track Design and Contruction</izambonino@ayesa.es>
Historial:	Este mensaio h	na sido ren	nitido.

Mr Zambonino

k you very much for your letter last December which I read with great interest

re of course familiar with your work and are extremely enthusiastic about it, I for one would have esitation in recommending your company to anyone who enquires about new race track design.

hope we can meet up sometime soon, possibly when I next visit Valencia in preparation for the Grand Prix.

best wishes

Charlie Whiting FIA Formula One Race Direct:

He has been awarded and commended on several occasions for his expertise in the field of circuits, racetracks, kart tracks, and MotorSport.



#### Eng. Leopoldo Javier Zambonino Pulito

#### Leopoldo Javier Zambonino Pulito. Civil Engineer

Founding partner of the firm, Asesoría y Consultoría Técnica en Ingeniería e Infraestructuras, S.C., ACTIINFRA

#### Main Skills

- An extensive knowledge of the severe **prescriptions issued by FIM/FIA/CIK and the different promoters**, to advise on the different phases of design and construction of MotorSport facilities.
- The design of computer applications and softwares for speed simulation on track and loss of control (AR<sup>2</sup>TS) have been a keystone to expand the specialty in the design of speed tracks and to generate safe and balanced circuits for all types of categories.





- He has carried out conceptual, schematic designs and construction projects for permanent and temporary high-speed circuits, applying international regulations.
- He has also **supervised and managed circuit construction works** for different degrees of FIA/FIM/CIK approval, **urban Formula 1 included**.
- Eng. Zambonino has also developed **consultancy** both in the genesis (**feasibility studies**) and in the completion (**maintenance and operation**) of the projects.







### Strategic Design and Construction of MotorSport Facilities.



#### Integral Services Cycle

#### **Integral Services Cycle Description** III. Construction Project Topography • Geotechnical studies **Environmental Studies** I. Feasibility Study II. Schematic Design **MotorSport Project** (FIA/FIM/CIK... Criteria) Technical Objectives Areas and adjacent services ٠ Social Emplacement Earthworks Political **Technical Feasibility Pavements** Environmental **Previous Studies** Economical Drainage (photogrammetric flight and **Global Sustainability** Foundations restitution, initial simulation) Edification Partial Feasibility FIA/FIM/CIK... Criteria **Technical approval** ٠ Sport Approval FIA/FIM/CIK... Dossier • **Conceptual Project** VI. Operation and V. Rehabilitation Revamping IV. On Site Construction Maintenance and Grade Improvement Construction works Operation Program •

- Conservation Program
- Maintenance Supervision

- Actual state study
- **Investment Planning**
- Upgrades & updates Homologation

- Construction works supervision
- **Sport Supervision**
- Homologation procedure
- "as built" Project

**Environmental Feasibility** 

**Economic Feasibility** 

Integral Services Cycle

### **Integral Services Cycle Description.**

### I. Feasibility Study Business and Objectives study. **Technical Feasibility** Social Feasibility **Global sustainability Political Feasibility**



Integral Services Cycle

### **Integral Services Cycle Description.**

### II. Schematic Design

#### Technical / Sport Feasibility.

- Photogrammetric flight and restitution
- Soil report
- Previous environmental study
- Sustainable and compatible uses analysis
- Previous Sport approval
- **Conceptual Project**



Integral Services Cycle

### Integral Services Cycle Description.

# **III. Construction Project**

Comprehensive sustainable projects, general and specific procedures, technical and investment documentation for construction.

- Topography
- Soil report
- Environmental Study
- Foundations Project
- MotorSport Project
- Services and adjacent areas Project

- Earthworks Study
- Pavements Study
- Structures project
- Edification project
- Technical Approvals
  - Sports approvals: FIA/FIM Dossier







Integral Services Cycle

### **Integral Services Cycle Description.**

### **IV. On Site Construction**

#### Projects materialization, ensuring the quality as defined in the Construction Project.

- Construction works
- Construction Supervision
- Sport Supervision
- Homologation procedures
- "as built" Project
- Construction Management
- Project Management

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Integral Services Cycle

# Integral Services Cycle Description.

## V. Rehabilitation, Revamping and Grade Improvement

**Improving the operational capabilities of an existing circuit** by **introducing diverse user categories** to foster a **SUSTAINABLE** MotorSport experience that includes considerations in sports, politics, culture, social interactions, the environment, and economics.



### Integral Services Cycle Description.

### V. Rehabilitation, Revamping and Grade Improvement

### Homologation Criteria FIA/FIM/CIK (FIA/FIM/CIK Dossier)

- Track length
  - Start/Finish straight
  - Rest of the Track
- Track Width
  - Start/Finish straight
  - Rest of the Track
- Maximum slope
- No. Of Boxes
- Pit lane

- Paddock
- Services Park
- Medical Centre
- Race Management
- Briefing Room
- Vending
- Track services
- Accesses
- ... among others...





Integral Services Cycle

### **Integral Services Cycle Description.**

### **VI.** Operation and Maintenance

- Operation Manual
- Operation Program
- Maintenance Manual
- Maintenance Program
- Maintenance Supervision
- Conservation Program
- Operation Management
- …among others…





Experiences

SAFETY CAR

INF 2

Start / Finish line offset: 118 m i1 @ 945 m / i2 @ 1844 m

MEXICO CITY Track Length : 2.628 km

### Fórmula E Mexico City E-PRIX 2023.

Design of pavements and review of construction projects, supervision of civil and pavement works, and technical assistance before, during, and after the event, including assessment reports and postevent recommendations.

In summary, the services are structured into three different phases based on their scope:

DIgital Flags (11) Marshall Post number

START

WORLD CHAMPIONSHIP

**CIRCUIT MAP** 

SAFETY CAR

(1) Turn Number

- Phase I: Pavement design and construction project review.
- Phase II: Supervision of pavement works, ensuring that the tasks are carried out according to the required standards.
- Phase III: Technical assistance and evaluation pre, during, and post-event

Location: Mexico City

Date: 2023

**Customer:** Formula E Race Operations Limited **Amount:** 



#### Experiences

### Fórmula E Sao Paulo E-PRIX 2023.

Pavement design, construction project review, civil and pavement works supervision, and technical assistance during the event.



**Customer:** Formula E Race Operations Limited **Amount:** 



In summary, the services were structured into three different phases based on their scope:

- Phase I: Pavement design and construction project review.
- Phase II: Supervision of pavement works:
  - Part 1: Civil works inside the Sambadrome
    - Specifications and details of civil works.
    - Tender prepared by the Supplier based on specifications and details of civil works.
  - > Part 2: Civil works in the rest of the track
    - Specifications and details of civil works.
    - Tender prepared by the Supplier based on specifications and details of civil works.
- Phase III: Technical assistance pre, during, and post the Event.

Location: Sao Paulo, Brazil Date: 2023

### Urban Circuit of Formula 1. Valencia, Spain.

- Technical assistance to Construction Management Unit corresponding to various improvements in the track of the F1 urban circuit of Valencia
- Basic project, and detail of the infrastructures and urbanization, including the own elements of the circuit







- Health and Safety Coordination of all works and in the technical assistance to the management of five of these works: Connection infrastructure Alameda - Av. Francia -Puerto; Connection infrastructure of the Alameda and Av. Francia with the Port and the Marina Real Juan Carlos I; Footbridge over the River Turia; Gardening and street furniture (permanent and mobile); Paddock, parking and complementary facilities
- Construction Management of three Projects: Structure and architecture of shed no. 4; Structure and architecture of shed no. 5; shed services no. 4 and 5 of the urban circuit

**Customer:** Formula 1 World Championship. **Amount:** 

Location: Valencia, Spain Date: 2008

### Racetrack "Óscar y Juan Gálvez". Buenos Aires, Argentina

#### Study of Technical and Economic Feasibility to host possible events of the Formula 1 World Championship.

- Investment feasibility analysis to remodel the racetrack, more than 6 km in length, with possible modifications of track, as well as the facilities for its operation, in addition to taking into consideration the necessary infrastructure required by the Formula 1 category.
- Risk Analysis and Mitigation and Investment Phases Planning.
- The different phases of investment considered, correspond to different degrees of FIA homologation, from Grade 3 to Grade 1.
- May 2016



**Customer:** Dirección General de Gestión de Inversiones, Subsecretaría de Inversiones, Ministerio de Modernización, Innovación y Tecnología. Gobierno de la Ciudad de Buenos Aires **Amount:**  Location: Buenos Aires, Argentina Date: 2016

Experiences (\*)

### Urban Circuit of Formula E. Santiago de Chile ePrix 2018

- Feasibility studies: Technical, economical, environmental, and socio-political.
- FIA Dossier elaboration including CSAS analysis (Computer Safety Analysis System).
- Design of the circuit and location of Formula E technical areas (Pits, Race Control, Spare Parts, FIA Pit, Michelin Pit, Official Cars Pit, Formula E Offices Buildings, Aquafuel, E-Village, E-Motion Club, Medical Centre, Media Centre, Briefing Room, Team & Crew Catering, Satellite Kitchen, Podium, Giant Screens and TV Compound).
- Executive Project: Design and elaboration of constructive and sport material layouts.
- Technical assistance on construction site of safety elements for the 1st protection line (concrete walls).







- Technical assistance for temporary pavement instalation to preserve heritage areas (Purisima street).
- Mounting supervision for 1st, 2nd and 3rd protection line.
- Mounting supervision of kerbs, painting and signaling works.

**Customer:** Formula E Operations Limited **Importe:** 

### Urban Racetrack "American Airlines Arena". Miami, USA

#### Study of Technical and Economic Feasibility to host possible events of the Formula-e World Championship.

• Investment feasibility analysis to adapt the facilities of the stadium, for a racetrack of 2,157.66 meters length, taking into account the necessary infrastructure required by the Category and the Promotors.



**Customer:** Formula E Operations Limited **Amount:** 

Location: Miami, Florida, USA Date: 2013

### Dolphins Stadium Racetrack Formula E. Miami, USA.

#### Study of Technical and Economic Feasibility to host possible events of the Formula E World Championship.

- Feasibility studies: Technical, economical, environmental, socio-political feasibility studies.
- Investment feasibility analysis to propose the racetrack, more than 2.3 km in length, as well as the facilities for its operation, in addition to set the investment line and action for the correct adequacy of the stadium facilities and its upgrading to the highest level of performance required by the Formula E category.
- Development of studies of the 3rd grade circuit and location of technical areas such as: Pits, Race Control, Spare Parts, FIA Pit, Michelin Pit, Official Cars Pit, Formula E Offices Buildings, Aquafuel, E-Village, E-Motion Club, Medical Centre, Media Centre, Briefing Room, Team & Crew Catering, Satellite Kitchen, Podium, Giant Screens and TV Compound.
- Proposal and location for grandstands within the stadium complex.



**Customer:** Formula E Operations Limited **Amount:** 

Location: Miami, Florida, USA Date: 2013

### Urban Racetrack "Rio de Janeiro". Rio de Janeiro, Brazil

#### Study of Technical and Economic Feasibility to host possible events of the Formula-e World Championship.

• Investment feasibility analysis to adapt the facilities of the city, for a racetrack of 2,911.66 meters length, taking into account the necessary infrastructure required by the Category and the Promotors.



**Customer:** Formula E Operations Limited **Amount:** 

**Location:** Río de Janeiro, Brazil **Date:** 2012

### Experiences (\*)

### Urban Circuit of Formula E. Cancun, Mexico

#### Study of Technical and Economic Feasibility to host possible events of the Formula E World Championship.

 Investment feasibility analysis to propose the racetrack, more than 2.5 km in length, as well as the facilities for its operation, in addition to set the investment line and action for the correct adequacy of Cancun facilities and its upgrading to the highest level of performance required by the Formula E category.





- Design of the circuit to fulfill 3rd Grade requirements and location of Formula E technical areas (Pits, Race Control, Spare Parts, FIA Pit, Michelin Pit, Official Cars Pit, Formula E Offices Buildings, Aquafuel, E-Village, E-Motion Club, Medical Centre, Media Centre, Briefing Room, Team & Crew Catering, Satellite Kitchen, Podium, Giant Screens and TV Compound).
- Proposal and location for grandstands within the urban surroundings.

**Customer:** Formula E Operations Limited **Amount:** 

Experiences (\*)

### Circuit of Formula E. México ePrix 2020 en el Autódromo Hermanos Rodriguez, Mexico.

#### Study of Technical and Economic Feasibility for the Formula E championship, season 6.

Investment feasibility analysis to increase the racetrack length from 2.0 km to 2.2 km, increasing lap time from 60 to 70 seconds.





- Circuit design under FIA standards to fullfill 3rd grade homologation, and location of Formula E technical areas (pits, race control, etc.).
- Prepare FIA dossier, including CSAS (computer safety analysis system).
- Technical assistance for civil works construction.
- Quality assurance for sport materials assembly (Kerbs, walls and TECPRO).
- Technical assistance for special elements assembly like pedestrian bridges, gantries, etc.

**Customer:** Formula E Operartions Límited **Amount:** 

Experiences (\*)

### Racetrack "Don Carlos". Santiago Tianguistengo, State of México

#### Construction Project.

- Design of a 3,597 m long grade 3 FIA racetrack.
- Topographic survey and geotechnical studies
- Sports Design, CSAS (Computer Safety Analysis System) Study
- Earthworks project, drainage works, signaling, design of sports pavements
- Pits building foundation and pit-entry and pit-exit
- February 2016



**Customer:** La Peninsular Compañía Constructora, S.A. de C.V. **Amount:** 

Location: Santiago Tianguistengo, State of Mexico, Mexico Date: 2016

### Racetrack "Don Carlos". Santiago Tianguistengo, State of Mexico

#### Expert Supervision and Technical Advising during Construction.

- Expert advice on construction works on a grade 3 FIA racetrack of 3,597 m long.
- Continuous qualitative verification following the designs and specifications of the project.
- Expert advice in case of doubts in construction.
- Continuous coordination with the project team to solve doubts, omissions or contradictions of the project itself.
- Interlocution and coordination with the project construction staff of the boxes building.



**Customer:** La Peninsular Compañía Constructora, S.A. de C.V. **Amount:** 

Location: Santiago Tianguistengo, State of Mexico, Mexico Date: 2016

### Testing Circuit At the Nokian Tires Technology Center. Toledo, Spain

- 300-hectare site with various circuits and facilities for tire testing, in particular the 7 km long High-Speed Oval Circuit.
- The works developed are:
  - > Study of alternatives and preliminary study of the chosen solution
  - > Drafting of the terms of reference for a subsequent project and construction contest



**Customer:** Nokian Tyres, tires manufacturer **Amount:** 

Location: Toledo, España Date: 2018

### Experiences (\*)

### Jerez de la Frontera. Cadiz, Spain

Execution Project for High-Speed Racetrack, subsequent remodeling and adaptation to new international regulations.

The adaptation includes the design of the control and services building, containing the pits, mezzanines and VIP lounge.

There are 43 pits measuring 12.50 x 6.15 m on the ground floor and the upper floors house the press rooms, administration, services and 10 VIP mezzanines.

A large VIP lounge is located on the start straight in an exclusive building with excellent views across the racetrack.



TECHNICAL DATA			
Constructed Surface Area	11,610.00 m <sup>2</sup>	No of pits	43
No of floors	Ground + 4	No of VIP spectators	500



**Customer:** Ayuntamiento de Jerez de la Frontera **Amount:** 

**Location:** Jerez de la Frontera, Cadiz, Spain **Date:** 2000

### Experiences (\*)

### Los Arcos Circuit. Navarra, Spain

Analysis of safety measures (Computer Safety Analysis System) during the construction of the Navarra Speed Circuit (Los Arcos), with the aim of obtaining the necessary homologation license to host official events corresponding to a 1T FIA Grade.

For the most unfavorable vehicle, an exhaustive study of optimal trajectories to materialize over the track layout and over the pitlane has been carried out. After analyzing the model of speeds and accelerations for a typical vehicle depending on the degree to be required (Grade 1T FIA), a series of recommendations are made, general, on the start/finish line, in run off areas, on verges, in complementary facilities and in emergency roads and accesses.

This is the basic document to undertake works in a circuit whose works are in construction, which aim to culminate with the homologation pursued by the FIA, CIK-FIA and FIM.





**Customer:** Government of Navarra **Amount:** 



#### Distinctive Features:

- FIA Grade: 1T
- Vehícle: F1 (year 2009)
- Possible Variants: 2
- Track Length: 3.933 m.
- Trajectory Length: 3.888 m.
- Pit-Lane Length: 701 m.

- Track Width: 12 m. (15 m. start/finish straight)
- Curves: 13
- Right Turns: 8
- Left Turns: 5
- Run off áreas type: mixed (asphalt and gravel)

Location: Navarra, Spain Date: 2009

### Experiences (\*)

### Jarama Circuit. Madrid, Spain

#### **Recovery Action Plan**

The study's main objective is to outline the optimal investment and action plan for the 100% renewal and recovery of all possible and compatible activities in the facilities of the Jarama Circuit.

This strategic approach, based on a preliminary assessment of a series of planned actions, considers functional, aesthetic, and economic criteria while prioritizing safety aspects for all types of facility users, participants, and the public.



facilities so that they align with the current and future times. This initiative positions the circuit to face an increasingly challenging competition in the sector.

The plan, scheduled for the triennium between 2011 and 2013, anticipates a total investment of €13,092,212.98, including fees for project drafting and relevant technical assistance during the construction management.



Customer: Real Automovil Club de España Amount:



#### **Distinctive Features:**

- F.I.A. Grade: 2 .
- Total Area: 46 Ha
- Possible Variants: 1
- Track Length: 3,905 m
- Pit-Lane Length: 589 m
- Track Width: 12 m (15 m on the main straight)
- Number of Curves: 13
- **Right Turns: 8**
- Left Turns: 5Runoff
- Area Type: Gravel

Location: Madrid, Spain Date: 2010

Experiences (\*)

### La Curiscada Racetrack. Tineo, Asturias, Spain

Analysis of safety measures (Computer Safety Analysis System) for the Construction Project of the Kart and Motorcycle Circuit in La Curiscada (Tineo), with the objective of obtaining the licence required to hold official events corresponding to a Grade 3 F.I.A.

For the worst-case vehicle, an exhaustive study has been made of the paths along the two variants of the route.

Following the analysis of the speed and acceleration models for a type of vehicle according to the grade required (FIA Grade 3), a series of general recommendations are put forward for finishing straights, escape lanes, margins, complementary installations and emergency and access lanes.

This is the basic document to undertake work on a circuit where the project is under tender, and the aim of which is to comply with the standardization required by the F.I.A., the C.I.K.-F.I.A. and the F.I.M.





#### **Distinctive Features:**

- F.I.A. Grade: 3
- Study Vehicle: F3 (year 2008)
- Possible Variants: 2
- Track Length (short track): 3,504.696 m
- Track Length (after CSAS): 3,513.971 m
- Pit-lane Length: 498.302 m
- Track Width: 12 m (15 m in finishing straight)
- Number of Curves: 20
- Turns to the Right: 9
- Turns to the Left: 11
- Types of Escape Zones: asphalt

Customer: Prointec Amount:

Experiences (\*)

### San Carlos International Racetrack. Cojedes, Venezuela

Analysis of safety measures (Computer Safety Analysis System) at the San Carlos International Racetrack in Venezuela.

For the worst-case vehicle, an exhaustive study has been made of the paths along the two variants of the route.

Following the analysis of the speed and acceleration models for a type of vehicle according to the grade required (FIA Grade 3), a series of general recommendations are put forward for finishing straights, escape lanes, verges, complementary installations and emergency and access lanes.

This is the basic document to undertake work on an existing circuit which aims to meet the standardization required by the FIA.



#### **Distinctive Features:**

- F.I.A. Grade: 3
- Study Vehicle: F3 (year 2008)
- Possible Variants: 2
- Track Length (long variant): 4,015.821 m
- Track Length (short variant): 3,053.864 m
- Pit-lane Length: 355.562 m
- Track Width: 12 m
- Number of Curves: 12
- Turns to the Right: 8
- Turns to the Left: 4
- Types of Escape Zones: natural and gravel

Customer: Easykart Venezuela Amount:

### Marga Marga Racetrack. Quilpue, Chile

Schematic Design

SUMMARY OF GENERAL CHARACTERISTICS		
Track	Automobile	
Track Length (m)	2327.95	
Track Width (m)	12 (15 m in finishing	
	straight)	
Total Area (Ha)	3.06	
Distance From the Finish Line to the First Turn (m)	267.02	
Number of turns	18.00	
Turns to the Right	7.00	
Turns to the Left	11.00	
Types of Escape Zones	Asphalt	





SUMMARY OF GENERAL CHARACTERISTICS		
Track	Karts	
F.I.A. Grade	Not Approvable	
Possible Variants	3	
Variant 1 Length: National Category (m)	1501.10	
Variant 2 Length: Intermediate (m)	1339.74	
Variant 3 Length: Beginners/Private (m)	938.11	
Track Width (m)	12 (15 m in finishing straight)	
Total Area (Ha)	0.63	
Length in Finish Line Straight (National Variant)	237.69	
Distance From the Finish Line to the First Turn (m)	100.00	
Number of turns (National Variant)	14.00	
Types of Escape Zones	Asphalt	

**Customer:** Government of Quilpue **Amount:** 

Location: Quilpue, Chile Date: 2014

### Kart Track "Los Manantiales". Acatitlán Valle de Bravo, Mexico

#### Study of Technical and Economic Feasibility for its construction.

- Investment feasibility analysis for the construction of the "Grade A" Kart track, complying with applicable regulations of CIK-FIA 2016 (Commission linternationale de Karting-FIA)
- Analysis for a track of 833.58m in length, 7 to 8 m wide and 5 variants, making connections in curves of the same track
- Building proposal to meet the needs and functionality to accommodate 20 Kart vehicles.
- The analysis of economic feasibility has considered the different variants, increase of security elements and facilities for track lighting
- December 2016



Customer: ALSEA S.A. DE C.V. Amount: Location: Valle de Bravo, Estado de México, México Date: 2016

### Experiences (\*)

### Simón Bolívar Kart Track. Miranda, Venezuela

The project area covers a total area of 18.78 hectares, situated in the state of Miranda, approximately 6 km from the capital district of Caracas. The terrain features a complex topography with significant natural slope magnitudes.

The primary objective pursued with this design is to promote coexistence at all levels among different stakeholders and users of karting, both professional and amateur. It aims to enable potential users to engage in various activities that facilitate balancing family life with the practice of this sport.

Summary of General Characteristics		
FIA Grade	A	
Total Area (Ha)	18.78	
Possible variants	3	
Main Variant Length (m)	1,237.78	
Track width (m)	9 (10 m in finishing straight)	
Max speed (km/h)	128.32	
Min speed (km/h)	49.50	
Average speed (km/h)	78.71	
Number of curves	19	
Right-hand Turns	10	
Left-hand Turns	9	
Types of escape zones	Gravel	





Summary of Surface Characteristics (m2)		
Tracks	11.804,18	
Berms	4.572,40	
Pit lane	1.550,00	
Escape Zones	8.231,48	
Service Road	7.850,20	
Access roads	13.267,83	
Paddock	12.878,76	
Race Management	596,92	
Parking	20.821,39	
Merchandising	3.074,51	
Grandstands	3.487,57	
Other	18.810,67	



**Customer:** Government of Miranda **Amount:** 

Location: Miranda, Venezuela Date: 2012

### Vargas International Kart Track. Vargas, Venezuela

Basic Project of areas and substructure, including the C.S.A.S. (Computer Safety Analysis System) study for KF2-type karts, for the implementation of a Grade A CIK-FIA Karting track on the Caribbean coast of Venezuela, in the state of Vargas, northern Venezuela. The facilities cover a total area of 7.8 hectares, with the study developed up to the surface level, considering ephemeral and removable buildings that can be projected and executed permanently in the future.





**Customer:** Government of Vargas **Amount:** 

Resumen de Características Superficiales (m <sup>2</sup> )		
Tracks	11,858.09	
Berms	4,583.95	
Pit lane	1,478.80	
Escape Zones	7,519.96	
Service Road	7,115.00	
Access roads	7,813.58	
Paddock	12,467.27	
Race Management	150.00	
Parking	6,801.34	
Merchandising	1,829.49	
Grandstands	3,828.48	
Other	12,600.00	

Resumen de Características Generales		
FIA Grade	A	
Total Area (Ha)	7,80	
Possible variants	1	
Main Variant Length (m)	1,273.32	
Track width (m)	9 (10 en recta de meta)	
Max speed (km/h)	133.00	
Min speed (km/h)	52.91	
Average speed (km/h)	74.52	
Number of curves	14	
Right-hand Turns	8	
Left-hand Turns	6	
Types of escape zones	grava	

Location: Vargas, Venezuela Date: 2012

### AR<sup>2</sup>TS, ACTIINFRA Roads & RaceTracks Simulator

C With the increased emphasis on safety concepts, the International Automobile Federation (FIA), which must approve projects for international recognition, introduced in the study and approval process the use of a tool generically known as the Computer Safety Analysis System (CSAS). This tool analyzes most of the logical possibilities to correct errors or unforeseen events that may occur during sports events by drivers



Based on the above, ACTIINFRA developed a proprietary computer application named AR<sup>2</sup>TS, ACTIINFRA Roads & RaceTracks Simulator, that conducts safety studies for any type of facility with any kind of vehicle. AR<sup>2</sup>TS has been used to perform homologation studies and prepare FIA/FIM/CIK dossiers for new circuits/roadways and existing ones undergoing renovation and improvement. AR<sup>2</sup>TS simulates the behavior of any vehicle on the track during an ideal lap, as well as its behavior at any point on the track in case of loss of control. It even calculates impacts that contribute to the adoption of appropriate mitigation measures.

### ISTRAM ®

Ownership License: 200297 Module No.1: Cartography Module No.2.1: Roads Module No.2.2: Railways Module No.3: Surface Modeling Contract Ref: CC4281021A1



Softwares

Tool that enables the **design and constructive control of civil engineering projects**, offering software that is likely the most intuitive, versatile, and powerful internationally.

The working environment is specifically designed to allow the engineer to **automate the geometric data of different project elements**, providing graphical results and information immediately, without the need for complex dialogue boxes.

**ISTRAM**<sup>®</sup> allows designing everything from the simplest to the most complex infrastructure. The **calculation power**, project control, and design philosophy based on surfaces and codes enable tackling **any type of construction singularity**. It stands out for the ease and versatility with which tunnel sections can be defined.

The application provides assistance to meet and verify common design regulations.

The possibility of **customizing graphic outputs and the utilities and add-ons developed** allow the engineer to have **comprehensive plans and reports.** 

One of the most effective utilities is defined by the calculation engine that enables **obtaining all types of volumetric measurements**, allowing the **economic valuation of all construction units** in your project.

#### Softwares

### NEODATA®

NEODATA is a powerful tool that provides solutions for project management and cost estimation in the engineering and construction industry. Below are some of the features that make NEODATA the most valuable choice for professionals in the sector:



#### **Cost Estimation:**

- Allows for accurate budget calculations.
- Provides updated price databases.

#### Unit Price Analysis (UPA):

- Uses NEODATA to break down costs in projects.
- Identifies optimization areas.

#### **Cost Control and Monitoring:**

- Monitors expenses in real time.
- Informs the client and makes adjustments to prevent deviations.

#### Integration with Other Tools:

- NEODATA integrates with construction software.
- Improves team efficiency.

#### Concepts and Resources:

- ACTIINFRA uses its library.
- Streamlines budget creation and is regularly updated.

In summary, NEODATA is a comprehensive tool used by ACTIINFRA for cost estimation and project management in the engineering and construction industry. Its features enable accurate budgeting, detailed analysis, cost control, and the generation of professional reports, all within an integrated environment.

#### Softwares

### ZWCAD<sup>®</sup>

ZWCAD is computer-aided design (CAD) software that excels in the creation of two and three-dimensional drawings (2D and 3D). Widely used in industries such as architecture, engineering, and construction, ZWCAD provides powerful tools for creating precise models and visual representations. Its intuitive interface and advanced features enable easy and accurate design of plans and models in the digital world.

Innovative market leaders like ACTIINFRA use it in their processes for creating studies and projects in various areas, including building, civil engineering, transportation, and motorsports.





In summary, ZWCAD is presented as a comprehensive tool employed by ACTIINFRA for reviewing, creating, modifying, and managing projects within the engineering and construction industry. ACTIINFRA uses this software to enhance efficiency and precision in bringing engineering and architectural ideas and designs to fruition. Eng. Leopoldo Javier Zambonino Pulito Founder Partner & CEO Lzp@actiinfra.com Mob: +52 56 1987 1260 Eng. Daniel Citeri Barreiro Production Manager <u>dcb@actiinfra.com</u> Mob: +52 55 3516 4539



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