



FILE 20140722-00601

**PARTICULAR CONDITIONS FOR PRELIMINARY
DESIGN FOR PTC INSTALLATIONS IN BRAZILIAN
RAILWAY NETWORK.**

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1 PURPOSE

The purpose of this document is to establish the terms of reference (TOR) to select a Company (henceforth the Consultant) to develop a Preliminary Design Project based on **PTC** (Positive Train Control) for Brazilian Railway Network.

The aim of this work consist of developing a Preliminary Design Project for Brazilian EPL in order to define the Signaling and Telecommunications Installations and the Operation Control Centre (OCC) necessary to ensure the interoperability of systems in all of the existing and new lines of the railway network in Brazil.

2 SCOPE

Works to be developed as a result of this TOR are the next:

- Preliminary Design Project based on PTC (Positive Train Control) for railway installations will consist of the documents listed below:
 - Functional description.
 - Technical description (design).
 - Cost of Signaling and telecommunications systems (budget).
 - Maintenance Cost of the scenarios analyzed.
 - RAMS (Reliability, Availability, Maintainability and Safety).
- To prepare a Presentation of the Preliminary Design Project using Microsoft PowerPoint.
- Trip to Brasilia (Brazil) with INECO to attend the workshops with our client (EPL), and present the Preliminary Design Project.

2.1 PRELIMINARY DESIGN PROJECT

The Consultant will develop a single Preliminary Design Project on Signaling and Telecommunications based on PTC, which must define the architecture of the whole systems, as well as the Signaling and Telecommunications Installations and the Operation Control Centre (OCC), including the indoor and outdoor equipment which are necessary for Brazilian Railway Lines according to their requirements for each type of traffic. The following four scenarios will be possible:

- Railway line with heavy traffic density.
- Railway line with medium traffic density.
- Railway line with low traffic density.
- Railway line with very low traffic density.

The Preliminary Design Project will define the best possible solution for these four different scenarios, analyzing the following cases:

- New railway line with PTC as principal system.
- Existing railway lines in Brazil with PTC as an overlay system over existing installations or if technically not possible, to consider the substitution of actual systems for ATMS.

2.1.1 FUNCTIONAL DESCRIPTION

This document will include the architecture of the proposed systems, including:

- System design criteria.
- Analysis of the way the system works in each scenario.
- Interoperability requirements.
- Specific regulatory frame to install the PTC equipment.

2.1.2 TECHNICAL DESCRIPTION

Technical Description will contain a descriptive Memory and different Annexes about a preliminary design of the whole PTC System, Signaling and Telecommunications Installations and the Operation Control Centre (OCC), including the indoor and outdoor equipment which are necessary for Brazilian Railway Network. It includes next documents:

1. This document will include, among other issues, the following points:
 - Preliminary Design of the PTC System, including detailed functionality.
 - Interlocking and automatic blocking system detailed functionality for the new lines.
 - Adaption of existing interlocking.
 - Telecommunication installations.
 - Interfaces between the existing electronic or electric interlocking and the PTC system in rolling stock.
 - Interfaces with the railway telecommunication facilities and the rolling stock.
 - Field elements, such as: signals, track-side train detection systems (if necessary) and switches.
 - Level crossing equipment.
 - Operation Control Centre (OCC).
 - Low Voltage Power Supply and Energy Remote Control & Telemangement.
 - Auxiliary and Civil Works.
 - Description of the PTC equipment connection, including the cabling and installation requirements.
 - Earthing and bonding concept.
 - Space needed to install the indoor equipment in the existing technical rooms and a total surface area needed for the new buildings.
2. Besides, the Technical Description will contain basic Drawings, including, in particular, the following issues:
 - Connection diagrams for the PTC installation in the different scenarios.
 - Interlocking scope for each type of traffic line.
 - Indoor equipment drawings
 - Outdoor equipment drawings, including the connection scheme for each one of the devices
 - Electrical drawings and diagrams necessary for the connection of equipment.
3. The Technical Description will contain Technical Specifications, including, among other issues, the following points:
 - Technical Specifications description about the supply, installation and connection of PTC equipment.
 - Technical Specifications description of safety and reliability.

2.1.3 COST OF SIGNALING AND TELECOMMUNICATIONS SYSTEMS

This document will contain a Budget of the different considered solutions, including the costs of technological needed equipment for Signaling and Telecommunications systems.

The Budget for each solution will be broken down into chapters and it will include different sections such as: measurements, a table showing the price level and a Summary of Budget for chapters and of work.

2.1.4 MAINTENANCE COST

This document will contain a maintenance cost of the different considered solutions.

2.1.5 RAMS (RELIABILITY, AVAILABILITY, MAINTAINABILITY, AND SAFETY)

This document will include, among other issues, the following points:

- Requirements of reliability, availability, maintainability and safety to the preliminary design concept of the ATM system.
- Technical characteristics of the systems with regard to security.

It will be described criteria defined in other lines now in operation.

2.1.6 FORMATS AND PAPERS PRESENTATIONS

The Preliminary Design Project will be developed to INECO in “pdf” and in the “original” format of each document.

Programs used for documents will be:

- Word for general documents.
- Excel for budgets.
- AutoCAD for schemes and drawings.

It will be necessary to send to INECO a version of the Preliminary Design Project three weeks before the presentation in Brasilia.

2.2 PRESENTATION OF THE PRELIMINARY DESIGN PROJECT

It will be necessary to develop a PowerPoint Presentation in order to be able to present in Brasilia the Preliminary Design Project.

This presentation will be send to INECO two weeks before the scheduled trip to Brasilia.

2.3 TRIP TO BRASILIA

It will be included in the Budget a trip to Brasilia for two persons of the Consultant during a week.

The expected duration of the trip will be:

- A stay of three days in Brasilia.
- Trip to Brasilia.

The trip is expected between 13th October and 17th October 2014.

3 REQUIRED MEDIA

The Consultant will supply the personal media needed to a correct implementation of the proposed Preliminary Design Project and other Works.

The Consultant in coordination with the responsible person in charge of the Preliminary Design Project for INECO will define procedures to a correct development of the different tasks included in this term of references. In order to achieve this objective, the responsible for INECO will give the technical information kept by INECO and relevant for the Preliminary Design Project.

In case of discrepancy with the assigned personal to the Preliminary Design Project, the Consultant will have the duty to replace immediately this person, giving guarantee of the correct development of the Preliminary Design Project.

3.1 PERSONAL MEDIA

The team to develop the Preliminary Design Project will consist of engineers with appropriated qualification, at least:

- A Principal Engineer
- Engineer for Signaling
- Engineer for Communications

It will be required experience in Signaling and Telecommunications in PTC (Positive Train Control).

The Preliminary Design Project will be developed in the Consultant offices except the trip to Brasilia.

INECO reserves the right to reject the human resources presented for the accomplishment of the service if he was thinking that they do not expire with anyone of the points gathered in this sheet.

3.2 TECHNICAL MEDIA

Technical and material means will be supplied by the Consultant in their own offices.

4 TERMS AND CONDITIONS

It will be applicable the general methods of procurement published in “Perfil del contratante” of INECO (www.ineco.es) and in the procurement of the Spanish State site (www.contrataciondelestado.es) and the terms of references of this document.

The Consultant will assume the confidentiality of the information received to develop the Preliminary Design Project.

The Consultant will be responsible of the quality of the developed Works.

The Consultant will send the names and Curriculum Vitae of the persons in charge of the Works.

The Consultant will be obliged to fulfill the current regulation about labor laws and safety and health.

The nonfulfillment of these duties will not imply responsibility for INECO.

Submission of tender implies acceptance of the Terms of Ineco and these Conditions, the order of priority of contract documents stipulated in Article 20 of the General Terms and Conditions of Ineco

5 SCHEDULE AND DEADLINE

The deadline for the service will be three (3) months after the formalizing of the agreement.

Expected Schedule will be:

- 22th September 2014: final deliver of the Preliminary Design Project to INECO.
- 29th September 2014: prepare and send presentation to INECO.
- 13th-17th October 2014: trip to Brasilia (Brazil).

This preview can be modified after agreement with Brazilian EPL depending on the date of signature of the services required in this TOR.

6 MAXIMAL AMOUNT

The maximal amount that INECO will pay to the Consultant for all the concepts included in the present term of references will be **FORTY THOUSAND EUROS (40.000 €)**, VAT not included.

Offers which will exceed this quantity will be rejected.

The economic offer will be divided in three chapters:

- Preliminary Design Project on Signaling and Telecommunications Systems based on PTC for Brazilian Railways Network.
- Presentation of the Preliminary Design Project (in Microsoft PowerPoint).
- Trip to Brasilia (Brazil).

The third point “Trip to Brasilia” can be removed.

7 TECHNICAL SOLVENCY

Bidders must provide in the technical offer at least the information indicated below

7.1 REFERENCES

A list, undersigned by a legal company representative, containing the following:

- The main services or work carried out during the last three years, including a project description, amount, dates and their public or private beneficiaries, with accreditation of at least one PTC project included in the bid.

7.2 TECHNICAL AND PERSONAL MEANS

- Curriculum Vitae of the persons involved in the indicated Preliminary Design Project.

8 VALUATION

The received offers which fulfill the technical solvency will be classified according to their economic value and technical methodology. It will be selected the one with higher punctuation added both concepts (economic and technical) according to the next criteria: The punctuation that will be applied will be 70 points for the economic part and 30 points for the technical part.

8.1 EXCLUSIVE CRITERIA

It will be a motive of exclusion the following reasons:

- There will be excluded the offers that reach a technical valuation lower than 50 % of the punctuation.
- Not to contribute the means needed in the previous paragraph 3 (required media).
- The offers that exceed the budget indicated in the previous paragraph 6 (maximal amount).
- Not to fulfill the requirements of solvency established in the previous paragraphs 7 and 8 (technical solvency and economical solvency).
- Not to be given of discharge in the record of suppliers of INECO, or in his fault not to attach a commitment to do it in a period of fifteen (15) calendar days from which INECO asks it from him.

8.2 CRITERIA OF TECHNICAL VALUATION (30 POINTS)

An assessment of between 0 and 30 points shall be given at additional references, regarding the minimum required reference in section 7.1. with budgets similar to that of this contract.

- Each additional work (5 points) up to 30 points

8.3 ECONOMIC VALUE (70 POINTS)

The economical offer will be valued by a total of 70 points and will be valued according to the next weighted formula:

$$\text{Economic Score (ES)} = \frac{\text{(the \% age that the price is lower than the maximum budgeted price)}}{\text{(\% age that the lowered received offer price is lower than the maximum budgeted price)}} \times 70 + 30$$

The economical offer will be considered as disproportionate offer if it is lower 20 per cent than the average received economical offers of the tenders submitted by the Consultants. In this case, INECO can request to the Consultant a detail report justifying its economic offer.

In the case of a submitted reckless bid offer, it will be disregarded.

9 CONTENTS OF THE OFFER

It will be necessary to include in the offer the next documents:

9.1 TECHNICAL AND ADMINISTRATIVE OFFER

9.1.1 TECHNICAL OFFER

It will be included a Technical Memory of the works to be developed.

In addition, it will be necessary to include the next documents:

- References of other similar developed works.
- Curriculum Vitae of the persons which will develop the Preliminary Design Project.

9.1.2 ADMINISTRATIVE OFFER

The following documentation must be submitted:

- Company details: Name, VAT Registration Number, authorized activity (copy of Articles of Association and/or amendments to the Articles of Association), registered address.
- Details of company's agent: Full name, copy or reference of deed designating the agent or power of attorney conferred upon the agent for contract signature purposes, Fiscal ID Number of agent (photocopy).

Other supporting documentation regarding the requirements described in these Specifications in relation to the tenderer's human resources, and technical and economic capacity must also be submitted.

9.2 ECONOMIC OFFER

The economic offer must be signed by the legal representative of the tenderer and must include the Budget with the three chapters indicated in point number 6 (maximal amount), and for the total cost.

10 SUBMISSION OF TENDERS

All tenders shall be submitted in digital format to the following address: ofertas@Ineco.com.

Bids shall include the file reference number that can be found at the front of this document.

Economic tender shall be identified as O.E.- 20140722-00601--COMPANY and the file that contains the technical tender shall be identified as O.T.- 20140722-00601--COMPANY.

The technical and economic tenders must be submitted on separate files, without the technical tender referencing the economic tender.

In the event of non-compliance with any of the requirements established in this section with regards to submitting tenders to a different address than that indicated, the bidder, at the discretion of the Purchasing and Procurement Unit.