# INDUS BASIN IRRIGATION SYSTEM (IBIS) AUTOMATION OF 27 KEY SITES FOR DISCHARGE MONITORING

### IRSA's Operation and Maintenance Staff for Telemetry Project

## Introduction

WAPDA is facilitating Indus River System Authority (IRSA) in management of Consultancy Contract and EPC procurement of Telemetry Network for the key sites. However, the system will finally be handed over to IRSA upon successful completion of Defect Liability Period (DLP). The present strength of IRSA is incapacitated to operate and maintain the telemetry system; therefore, the project envisages of strengthening the IRSA through hiring of required technical resources on its permanent payroll, who will be responsible for maintaining the system, independently.

The Consultant recommends that some of the IRSA's technical staff to be inducted for O&M of the system be hired, immediately, so that they participate in the design process and procurement activities of the telemetry network. This will be an excellent opportunity for them to learn from the professionals about installation and O&M of the system. Accordingly, the Consultant recommends hiring of all managerial staff and one field team members in the Phase-1 while remaining technical staff may also be hired in Phase-2, i.e., before commissioning of Telemetry Network, so that the field teams can be part of the commissioning activity and get firsthand experience of O&M during DLP.

## Job Descriptions and Qualifications of the O&M CORE Staff

### 1.      Director General (Monitoring) PPS-10- One Post

**Job Description**
The main role of the Director General (Monitoring) will be to over manage the installed systems and lead the O&M team. Tasks include:

- To get work plans from P.D. Telemetry with time line / Critical Path Method.
- To ensure that these time lines are followed qualitatively and quantitatively and closely monitor these activities in a way for the timely completion of the project.
- To inform the Authority about any issue/concerns/delays in the Project for its early resolution in Authority or Project Steering Committee or Consensus Development Committee as the case may be.
- To held monthly progress review meetings with PD, Telemetry Project and update the Authority accordingly.
- To represent IRSA in all meetings related to the Telemetry Project at all forums.
- To formulate a plan about recruitment of O&M Staffing at various stages of the Telemetry Project.
- To plan all O&M activities at various stages of the Project cycle management which includes but not limited to staffing, training, logistics, inventory and security of the large project etc.
- He / She will report to Chairman, IRSA.
- Any other duties assigned to him by the Chairman/Authority.

**Qualification and Experience Requirements**
The candidate with age up to 55 years having following qualifications: -

- B.E/B.Sc. (Civil) Engineering from HEC recognized university with 15 years of experience in management and supervision of similar project.

- Preference will be given having Master degree holder.
- Should have working knowledge and prior experience of Dams, Irrigation schemes, tender documents and contract management, etc.
- Should have experience of project management and security of large projects/organization.
- Minimum 5-years leading and supervisory role in any large project.
- Preference will be given to previous management, administration & Coordination experience.
- Proficient in Microsoft Office.

## 2. Deputy Director (Monitoring) PPS-08-One Post

### Job Description
The main role of the Deputy Director (Monitoring) will be to assist Director General (Monitoring) and manage the field teams in maintaining the installed systems. Tasks include:

- To collaborate with the Director General (Monitoring) to operate and maintain the system.
- To oversee and manage subordinate field teams to ensure smooth functioning of the Telemetry System.
- Ability to attend to and rectify faults.
- To supervise Assistant Directors for efficient system operation with optimal use of resources.
- To draw up demand for spares etc. based on observed fault patterns.

### Qualification and Experience Requirements
The candidate with age up to 40 years having following qualifications:-

- M.Sc. Electrical/Electronics with 8 years of experience in design/installation of equipment, OR
- B.Sc. Electrical/Electronics Engineering with 12 years of experience in design/installation of equipment.
- Design/installation of at least one SCADA and telecommunication project.
- He/She should have working knowledge with Solar, Power and IoT technology.
- Preference will be given to previous management, administration & Coordination experience.
- Fully proficient in Microsoft Office and relevant technical software/HMI.

## 3. Assistant Director (Monitoring) PPS-7-Three Posts

### Job Description
The main role of the Assistant Director (Monitoring) will be leading the field team for timely addressal of faults and smooth function of the system. Tasks include:
- To collaborate with the IRSA HQ monitoring team for managing the technical issues with the system
- To fault detection and addressal in view of the Operation and Maintenance (O&M) manuals.
- Timely highlighting the requirement of spare parts and replacement of sensors/batteries.

**Qualification and Experience Requirements**

The candidate with age up to 35 years having following qualifications: -

- Bachelor's degree in Electrical/Electronic Engineering from HEC recognized university
- Participated in installation of at least one telecommunication project, or alternatively O&M of one such project.
- Preferably 5 years of experience. He/she should have experience of Telecommunication, Electrical/Solar/ Power and knowledge IoT technology.
- Working on SCADA will be preferred.
- Proficient in Microsoft Office.

## 4. Assistant Director (MIS/IT) - PPS-7-One Post

**Job Description**

The main role of the Assistant Director (MIS/IT) will be to lead the MIS/IT team for maintaining the application as well as data center. Tasks include: -
- Proficiency in management information System

**Qualification and Experience Requirements**

The candidate with age up to 35 years having following qualifications: -

- M.Sc degree in MIS/IT or relevant discipline from HEC recognized university.
- Preferably having 5 years' experience in case of MSc degree& 7 years in case of BSc degree.
- Knowledge of hardware and software of data centers will be preferred.
- Net applications and preparing requirement analysis documents.

## 5. Assistant Director (Flow Measurement) PPS-7 - One Post

**Job Description**

The main role of the Assistant Director (Flow Measurement) will be to lead the field teams for flow measurements. Tasks include:
- To plan and supervise flow measurement field staff in carrying out the measurements, collection of data, processing, and reporting.
- To implement international standards/guidelines (USGS, ISO, etc.,) in all measurements and observations to maintain quality of collected data.
- To assist to generate monthly, quarterly, and annual reports providing details of measurements and results.

**Qualification and Experience Requirements**

The candidate with age up to 35 years having following qualifications: -

- B.Sc degree in Civil/ Agriculture from HEC recognized university
- M.Sc in Hydrology/Water Resources will be preferred.
- Preferably two years' experience in hydrometry/flow measurements in rivers and canals.
- Understanding of flow dynamics/ seasonal variations of Indus River and its tributaries

- Proven skills in use of conventional current meter, ADCP, GPS and software related to hydrometry.
- Knowledge of safety requirements in flow measurements.


## 6.      Network Administrator - PPS-07-One Post

**Job Description**

The main role of the Network Administrator will be to assist IRSA in maintaining infrastructure needs of the new system. The responsibilities include:
- Server configuration and maintenance.
- Responsible for effective provisioning, installation/configuration, operation, and maintenance of hardware and software related infrastructure.
- Responsible for maintaining windows Server-based machines in production environment.
- Tasks will involve basic/ initial level Server configuration and maintenance.
- Responsible for performing daily system monitoring, verifying the integrity and availability of all hardware, server resources, systems and key processes,
- Reviewing system and application logs, and verifying completion of scheduled jobs such as backups.
- Responsible for performing regular security monitoring to identify any possible intrusions.
- Responsible for perform daily backup operations, ensuring all required file systems and system data are successfully backed up to the appropriate media.
- To provide Tier I support as per request from our various departments. Investigate and troubleshoot issues.
- Coordinate with Hardware and software vendors for support and warranty claims.
- To apply OS patches and upgrades on a regular basis, and upgrade administrative tools and utilities. Configure / add new services as necessary.
- To upgrade and configure system software that supports GIS infrastructure applications
- To maintain data center environmental and monitoring equipment.

**Qualification and Experience Requirements**

The candidate with age up to 35 years having following qualifications: -

- BSc (Computer Science)/ BE (Software Engineering)/Computer Engineering) from HEC recognized university.
-  MSc. in relevant discipline will be preferred.
- Preferably 5 years' experience.
- CCNA, MCITP (Highly Desirable).


## 7.      GIS/Web GIS Analyst PPS-07- One Post

**Job Description**

The main role of the GIS/Web-GIS Analyst will be to assist IRSA in maintaining GIS application. The responsibilities include: -
- Proficient in using ESRI ArcMap, ArcCatalog with 3D Analyst and Spatial Analyst Extensions.

- Ability to provide technical support to identify appropriate data sources, acquisition/retrieval, storage and archiving of data/imagery (digital),
- Processing, interpretation and analysis of remotely sensed and GIS data.
- Ability to lead the processing of digital imagery and GIS datasets using image processing software such as ERDAS Imagine, ENVI.
- Ability to provide training and academic guidance to project staff.
- Understanding and Installation experience of ESRI ArcGIS Software (Desktop) and setting up of ArcMap License.
- Understanding and experience of handling of GIS data layers in ArcMap (viewing only).
- Understanding and experience of handling GIS attribute data in ArcMap (viewing only)
- Understanding and experience of making spatial queries and analysis on ArcMap
- Understanding and experience of creating GIS reports in ArcMap environment
- Understanding and experience of creating thematic maps from layer symbology
- Understanding and experience of updating satellite imagery from free public domain (Landsat and Google Earth)
- Understanding and experience of management of Web GIS Services
- Good communication skills

## Qualification and Experience Requirements
The candidate with age up to 35 years having following qualifications: -

- Bachelor degree in (IT/GIS/Computer Science) from HEC recognized university.
- MSc. in related discipline will be preferred.
- Preferably 5 years' experience.


## 8.     Hydrographer - PPS-05-One Post

### Job Description
The main role of the Hydrographer will be to operate the flow measurements equipment for flow measurement in rivers and canals. Tasks include: -
- To assemble/ mount the equipment at sites and conduct flow measurements with conventional current meter/ ADCP through wading/boat or bridge.
- To maintain log of observations and data during the observations as per the standard requirements/ instructions by the expert.

### Qualification and Experience Requirements
The candidate with age up to 30 years having following qualifications and processing skills in operating the flow measurement equipment: -
- Minimum DAE Civil/Mechanical from a recognized institute.
- One year experience in operating the flow measurement equipment will be preferred.


## 9.     Monitoring Assistant (Electrical/Electronics) - PPS-5 - One Post

**Job Description**

The main role of the Monitoring Assistant will be to compile the flow measurement and comparisons with the reported telemetry discharges. Tasks include: -

- To collect and compilation of field observations during flow measurements
- To assist his/her hierarchy in issuance of various report on flow measurement
- To compare the flow measurement and report discharges with the hydraulic formulae and highlight the requirement of updating the rating curves at key sites.

**Qualification and Experience Requirements**

The candidate with age up to 30 years having following qualifications: -

- DAE in Electrical/Electronics from a recognized institute.
- Preferably 5 years' experience on water related structures
- Good understanding of barrage and canal operations
- Good communication skills.
- Proficient in Microsoft Office.

## 10.     Technician (Electrical) - PPS-3-One Post

**Job Description**

The main role of the Technician will be to assist Sub Engineer (Power/Telecom/Electronics) for field equipment maintenance and repairing, testing and troubleshooting electronic systems and components.

**Qualification and Experience Requirements**

The candidate with age up to 30 years having following qualifications: -

- One-year technical certification in Electrical/Electronics from Govt. recognized vocational /technical /training institute.
- Preferably 3 years' experience.
- Proficiency in reading and interpreting technical drawings, schematics, and manuals.
- Strong understanding of electronic principles, circuits, and components.
- Computer literate.

## 11.     Boat Operator - PPS-1-One Post

**Job Description**

The main role of the Boat Operator is to help the flow measuring team.

**Qualification and Experience Requirements**

The candidate with age up to 35 years having following qualifications: -

- Literate
- To operate the boat for flow measurement using new procured flow measurement equipment.
- Possessing swimming skills

## 12 - Computer Operator - PPS-6 - Two Posts.

**Job Description**

The main role of the Computer Operator to prepare working papers, presentations, to arrange meetings, noting, drafting and typing.

**Qualification and Experience Requirements**

The candidate with age up to 33 years having following qualifications: -

- Bachelor's Degree in Computer Sciences (BCS) from HEC recognized university.
- 2 years relevant experience will be preferred.
- Proficient in Microsoft Office.

### 13. Assistant (Admn) - PPS-6- One Post

**Job Description**

The main role of the Assistant Admn is to prepare noting, drafting, typing, cataloging, logistic, inventories management. He/she will perform his/her duties in accordance with Secretariat Instruction of Federal Government.

**Education and Experience Requirements**

The candidate with age up to 33 years having following qualifications:-

- BA/B.Sc./B.com/Bachelor's Degree in any discipline from HEC recognized university.
- Noting drafting and typing.
- Proficient in Microsoft Office.

### 14. Senior Clerk- PPS-4- One Post

**Job Description**

The main role of the Senior Clerk is to prepare noting, drafting and typing. He/she will perform his/her duties in accordance with Secretariat Instruction of Federal Government.

**Qualification and Experience Requirements**

The candidate with age up to 30 years having following qualifications: -

- B.A.
- Typing work, Diary and dispatch.
- Proficient in Microsoft Office.

### 15. Junior Clerk- PPS-3-Two Posts

**Job Description**

The main role of the Junior Clerk is to prepare noting, drafting, typing and record keeper in the administration. He/she will perform his/her duties in accordance with Secretariat Instruction of Federal Government.

**Qualification and Experience Requirements**

The candidate with age up to 30 years having following qualifications: -

- Minimum having Higher Secondary Certificate
- Looking after the movement of files within and outside the office and keep a record of the same.
- Typing work, Diary and dispatch.
- Proficient in Microsoft Office.

### 16.    Driver - PPS-2-Two Posts

**Job Description**
The main role of the Driver is to drive the vehicle for local and field duty.

**Qualification and Experience Requirements**
The candidate with age up to 35 years having following qualifications: -

- Matric with LTV license.
- To drive and maintain the vehicles.

### 17.    Naib Qasid - PPS-1-Two Post

**Job Description**
The main role of the Naib Qasid is to attend the officers/ officials.

**Qualification and Experience Requirements**
The candidate with age up to 30 years having following qualifications: -
- Middle.
- To clean the office, files and furniture.

### 18.    Sanitary Worker - PPS-1-One Post

**Job Description**
The main role of the Sanitary Worker is to clean the office and its premises.

**Qualification and Experience Requirements**
The candidate with age up to 30 years having following qualifications: -
- Literate.
- To keep the cleanliness of the offices and its premises.

### 19.    Security Guard - PPS-1-One Post

**Job Description**
The main role of the Security Guard is to provide security to field installations.

**Qualification and Experience Requirements**
The candidate with age up to 35 years having following qualifications: -

- Middle.
- To provide security to field installations.
- Retired Armed Forces personnel's will be given preference.