

PERSONAL INFORMATION

**Taimoor Zahid**



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Sex Male | Date of birth 04/06/1987 | Nationality Pakistani

WORK EXPERIENCE

01/10/2020–Present

**Manager (Ground Systems & Operations)**

Satellite Control Facility Islamabad , **SCF-I (for LEO Satellite Operations)**

**PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO), Islamabad (PAKISTAN)**

I am currently working at LEO Satellite Control Facility, Islamabad (**SCF-I**) on the following tasks/ responsibilities:

- Defining the Statement of Work (SOW) in line with the product assurance referential with the multi-mission project schedule objectives mainly focusing on mission operations and control softwares (including the satellite simulator). Review the Operational deliverables (e.g. FOM, FOM procedures).
- Preparation of System requirements documents and reference documents for future mission and system studies. System/ sub-system modelling for end-to-end performance simulation for future EO missions. Contribute in defining Naming Convention, System Operations File, SATCOG, Analyst Operations Guide and Reporting Operations Guide.
- Work in close coordination with Ministry of Information Technology and Telecommunication (MoITT) for conducting study and monitoring work of study groups of ITU-R for satellite communication, spectrum planning & monitoring and satellite technology services.
- After- launch operations preparation and Phase- D of the project lifecycle (ECSS project life-cycle) including Assembly & Integration, installation and commissioning of **Viasat, USA S/X TT&C/TDRS** antenna system as well as upgrade of an X-Band to S/X antenna system and RF link for a multi-satellite mission.
- Integration, Verification and Validation (IV&V) of a new S/X ground station, TRR`s, On-Site Acceptance test (OSAT/SAT) for all GCS/GCN equipment, On-Site Acceptance Review (OSAR), Ground Station compatibility test, System dry run test at Satellite Control Facility, Islamabad.
- SVT preparation activities, including delivering main documentation (e.g. SVT Plan, SVT test specifications, SVT procedures, TRR and TRB data package), as well as to the SVT execution.
- Review of all data packs CDRL`s/contractual and milestone documents, configuration management, development of test plans, test reports, the **VCD / VCRM** and coordinate with the contractors and external partners through project office for NC`s, PC`s, CCNs, RFW`s, RFD`s and monitoring of KPI`s and AI`s.
- Phase B & C of the project life cycle, PDR and CDR of the project; analysis of requirement and overall design of ground station and its subsystems. Interface with suppliers to write requirements specification as input to develop solutions tailored to the system and coordinating with the internal and external interfaces (partners) to maintain important documents and baselines like the ICD and IRD etc.
- System Engineering and technical review in all phases of the project lifecycle right from the inception of the project to the after launch operations, COTS assessment (COTS Hardware, COTS Software) and implementation of a distributed network.
- Phase-A of the project life cycle; System Requirements Definition, maintaining technical budgets, maintaining existing requirements baselines, conflict resolution and validation, requirements allocation, tracing and requirements change control.
- Requirement analysis/ definition for a small/micro satellite constellation ground station which also includes **CAPEX** and **OPEX** (using polar stations) analysis. (**cost benefit analysis**)
- Development of work packages in FSDS including requirements analysis, preparation of RFP`s & SoW`s, analysis of proposals by maintaining existing requirements baselines of a multi-mission ground station and future envisaged projects.

- Feasibility analysis for a potential ground station for small/micro satellite constellation which includes site surveys, RFI/EMI testing, obstruction analysis for an S/X TT&C/TDRS antenna and help develop **SRO** for government approval.
- Definition of Integrated Logistic Support (ILS), Obsolescence analysis and development of release strategies for minor and major evolutions of the Ground Station and preparation of RFP to establish/upgrade satellite ground station for PRSS-O2 (EO satellite) which is to replace PRSS-1 satellite. Provide technical assistance to procurement team for technical inventory management. Perform technical analysis of system architecture and specification evolutions for interfaces coherence and compatibility checks.
- Maintain and develop Subject Matter Expert (**SME**) training material. Organizing Satellite Operation and Ground Station operations in-house training and demonstration programs for HRD and capacity building at the ground station for new inductees to the organization

26/12/2017–Present

### **Manager (Mobile & Satellite/Ground Segment Systems)**

Satellite Control Facility Islamabad , **SCF-I(for LEO Satellite Operations)**

#### **PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO), Islamabad (PAKISTAN)**

I am currently working at Satellite Control Facility, Islamabad (**SCF-I**) of PRSS-1 on the following tasks/ responsibilities:

- Over 12 years of versatile experience in the field of satellite communication/ground segment system engineering for space and/or ground systems in the area of Communication as well as Earth Observation Satellites with the ability to analyse systems from an end-to-end perspective.
- Team lead at main station for **PRSS-1** and back-up station of **PakTES-1A**.
- 24x7 real-time monitoring and control of TT&C operations, preparation of SOP's for anomaly analysis and resolution, operation and maintenance in coordination and liaison with other related control/flight operations, data processing and management.
- Preparation and planning of contingency operations of the ground station. Preparation of ground station system operations SOP's, maintenance documents and schedules.
- Obsolescence analysis and development of release strategies for minor and major evolutions of the Ground Station communication and infrastructure. Provide technical assistance to procurement team for technical inventory management. Perform technical analysis of system architecture and specification evolutions for interfaces coherence and compatibility checks.
- Analysis, investigations and resolution of system and ground segment level anomalies. Assessment of Engineering Tasks with high degree of autonomy and good analytical skills to provide System Engineering expertise to CRB's and ARB's.
- Integration, Verification and Validation (IV&V) experience of ground stations, TRR's, On-Site Acceptance test (OSAT/SAT) for all GCS/GCN equipment, SCC system and Ground Application Station, On-Site Acceptance Review (OSAR), Ground Station compatibility test, System dry run test and End-to-End system test at Satellite Control Facility, Islamabad. Preparation and participation for In Orbit Acceptance Review (IOAR) and Final System Acceptance (FSA), System Readiness Review (SyRR) of the Ground Station and IOT activity.
- Review of all CDRL's/contractual and milestone documents, configuration management, development of test plans, test reports, the **VCD** and coordinate with the contractors and external partners through project office for NC's, PC's, CCNs, RFW's, RFD's.
- System Engineering and technical review in all phases of the project lifecycle right from the inception of the project to the after launch operations, COTS assessment (COTS Hardware, COTS Software) and implementation of a distributed network.
- System Requirements Definition, maintaining technical budgets, maintaining existing requirements baselines, conflict resolution and validation, requirements allocation, tracing and requirements change control. Feasibility reporting, working on work packages in FSDS including requirements analysis, preparation of RFP's and work on SRR.
- Good understanding of ITU-R, ECSS, CCSDS standards related to space and ground communications. Technical review of all system engineering documents and compliance matrix documents like **SCSRD**, **OGSRD**, **MSRD**, QMR reports, PDR, CDR, making/generating RID's and AI's, project requirement flow-down and traceability.
- Interface requirements, applying system modelling engineering methods and techniques. Interface with suppliers to write requirements specification as input to develop solutions tailored to the system and coordinating with the internal and external interfaces (partners) to maintain important documents and baselines like the ICD and IRD etc.
- Deep understanding of the configuration and management of most ground station softwares and equipment including the monitoring and control (**MCS**) software, ACU's, tracking receivers,

- SSPA's, LNA's, LNB's, TCE's, TMDs, Cortex Base Band Equipment, GPS / GSM modules and other RF equipment. In depth understanding of RF-IF, IF-IP and IP-RS422/232 conversions in uplink and downlink chain, frame synthesis in Cortex BBE and TM processing in SCC
- Design of requirements, technical assistance/coordination, preparation of technical scrutiny report (TSR) for procurement of **VSAT/teleport system**. Installation and commissioning of VSAT/teleport system for inter-site backup connectivity, RF equipment, projector & multi-viewer system for ground control station of PRSS-1
- Ground Station site infrastructure monitoring and coordinating with development contractors for facilities like HVAC, Electrical Power, IT for interconnections with different sites and interface with external entities like Survey of Pakistan and Frequency Allocation Board of Pakistan.
- Being a part of KPI driven service environment, an important task is preparation of daily progress report and monthly presentations of the installation and related activities so that the work can be reported and completed as per the Master Plan
- Technical review of electrical design of PRSS-1 Ground Control Station. Provision of technical assistance during installation, testing and commissioning of Generator and **APC** UPS sets for the Ground Control Station

30/04/2015–25/12/2017  
05/03/2010–29/04/2015

**Manager ( Ground Station / Satellite Communication Operations )**  
**Assistant Manager (Ground Station / Satellite Communication Operations)**  
Satellite Control Facility Lahore **SCF-L(GEO Satellite Operations)**

**PAKISTAN SPACE AND UPPER ATMOSPHERE RESEARCH COMMISSION (SUPARCO), LAHORE (PAKISTAN)**

Worked in Pakistan Space and Upper Atmosphere Research Commission (**SUPARCO**) as an Assistant Manager and later on as a **Manager** at **Paksat-1R** Satellite Control Facility Lahore (SCF-L) with key responsibilities and core competencies of:

- Versatile experience of all ground segment routine operations including **O&M(operation and maintenance)**, acceptance testing, planning, documentation and **M&C(monitors and control)** activities.
- Experience of Commissioning/Configuration of new Earth stations, RF equipment and microwave links. Installation, testing and commissioning of Swe-Dish VSAT Systems for remote sites. Deployment of COT-P and SOT-M terminals for reliable satellite communications and teleporting. Real-time Operations and experience on DSNGs installation, DVB Broadcasting and IP streaming via Satellite.
- I was a part of our Cyber Security Team, I have the responsibility of management of all ICT equipment and **inter and intra leased line links** between ground control segments and data centres.
- **Team lead** for 24/7 monitoring and control of TT&C operations, preparation of SOP's for operation and maintenance in coordination and liaison with other related control/flight operations teams, fault analysis and troubleshooting of all front end equipment till the baseband (**Cortex-XL,&Q/ Cortex HDR**) equipment including the antenna control units (**ACU, ACU-DTR**), HPA's, up-converters, down-converters, LNA's, LNB's TCE's, TMD's, TWTA's, GPS modules and the bore site tower (BST).
- I was involved in training, installation and **site acceptance test SAT** activities of C-13m, C-9m, C-7.3m, C-4.8m, Ku-9m, Ku-7.3m antenna systems with the engineers of **CAST,BITTT,CLTC** (China), **Telesat** (Canada) and **General Dynamics** (U.S.A).
- I gained deep understanding and experience of spacecraft operations environment to ensure smooth end-to-end systems operations. I worked in **24/7** shifts for 7 years on the satellite control facility which has helped me in deep understanding of the configuration and calibration of most ground station softwares and equipment .
- I have good understanding of the orbital mechanics of DFH-4 platform based satellites by working in SUPARCO. I have been involved in preparation/defining , integration acceptance testing **validation and verification (V&V)** and operation of mission data / the control plan of Paksat-1R, control & work on satellite manoeuvring, monitoring the nominal behaviour of all spacecraft subsystems, TM trend and anomaly analysis.
- I have participated in the in orbit test **IOT** activities of PAKSAT-1R in 2011 as well as **SVT** and **ESVA** activities. I have good understanding of link budgets, **ECSS, CCSDS**, and **ITU-R** standards as I worked in COCC/CSM and SCC team. I also have experience in working as **interference analyst** (ILS) on the **GEO-Location** system and working with PAKSAT-International which deals with commercial satellite and micro wave data link.

Worked at Satellite Control Facility, Lahore (**SCF-L**) of PAKSAT-1R (**GEO**) with two additional task/responsibilities:

1. First task was system engineering, development and dismantling / installation of an interim ground control station setup and a permanent ground control station setup along with a relay system for a **gap-filler** satellite project (Communication Satellite).
2. Second major task was being a **team lead** of preparation/developmental activities of a new ground control station (GCS) and ground application station (GAS) for Pakistan's first remote sensing satellite, PRSS-I and perform the following tasks:
  - I worked on the planning, technical coordination, establishment and testing including frequency coordination and RFI testing with the **Frequency Allocation Board (FAB)** of Pakistan for development of the **Ground Control Station (GCS), Ground Application Station (GAS)** and a mobile station for PRSS-I which is Pakistan's first **remote sensing satellite (Earth Observation)**. I have conducted the RFI testing of **C, Ku, X, S** and **L** bands for a potential ground station site for PRSS-I (**LEO**). I was also a team member of the team working on the development activities of the ground station of **PakTES-1A (EO)**.
  - I also have worked with **China's Space Star Technology Co. Ltd (SSTC)** and **China Satellite Launch and Tracking Control General (CLTC)** for the final RFI/EMI testing of a Ground Control Station (GCS) site and a Ground Acquisition Site (GAS) in June-July 2016.

15/09/2010–31/01/2011

### Research Student

**CENTRE FOR COMMUNICATION SYSTEMS RESEARCH (CCSR), UNIVERSITY OF SURREY, U.K, GUILDFORD, (UNITED KINGDOM)**

Worked as a research student sponsored by Pakistan Space and Upper Atmosphere Research Commission (SUPARCO) to do extended work in my Masters thesis at Centre for Communication Systems Research (CCSR) which is now called Institute of Communications (ICS), Faculty of Engineering and Physical Sciences (FEPS) in University of Surrey, U.K

## EDUCATION AND TRAINING

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15/07/2009–15/09/2010

### M.S Mobile & Satellite Communication Systems

**UNIVERSITY OF SURREY, U.K  
GUILDFORD, GU2 7XH (UNITED KINGDOM)**

[www.surrey.ac.uk](http://www.surrey.ac.uk)

Mobile Communications (A&B)

Satellite Communications (A&B)

Network & Service Management & Controls

Data & Internet Networking

Digital Communications

Principle of Telecommunications and Packet Networks

01/10/2005–30/05/2009

### B.S Communication Systems Engineering

**INSTITUTE OF SPACE TECHNOLOGY, ISLAMABAD (PAKISTAN)**

Satellite Communications, Mobile and wireless Communication Systems, Antenna and Propagation, Digital Signal Processing, Radars and Sonar, Embedded Systems, VLSI, Electronic Devices, Engineering Management, Optical Communications, Control Systems, Information Theory & Queuing theory, Digital Communications, Spacecraft Engineering.

17/05/2021–13/06/2021

### MBSE: Model Based Systems Engineering

**University at Buffalo, New York, USA**

Online non-credit course authorized by University at Buffalo. The State University of New York and offered through Coursera. My Certificate of Achievement is available on (<http://www.coursera.org/L6FS8EEXCSMD>)

- 15/08/2022–09/09/2022 **Mid-Tier Management Course**  
**Institute of Space Technology, Islamabad, Pakistan**  
An mandatory / pre-requisite training course to prepare for future managerial roles with a wider scope and higher level of difficulty( Manager to General Manager promotion in Pakistan Space and Upper Atmosphere Research Commission (SUPARCO)) and focusing on soft skills, organizational behaviours, conceptual and decision making skills, to grow and develop a multitude of human and managerial competencies and skills
- 24/10/2016–25/11/2016 **Monitoring the Oceans from Space: The Optical View**  
**European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)**  
Online course providing an introduction to ocean monitoring Earth Observation (EO) satellite data, and its uses, types and challenges. It explains how the data is acquired and used, the range of data types available, and the terminology and techniques involved. The course is by **EUMETSAT** in support of the **Copernicus** Programme. My Certificate of Achievement is available on (<https://www.futurelearn.com/certificates/shrq47>)
- 12/09/2016–14/10/2016 **Earth Observation from Space: The Optical View**  
**European Space Agency (ESA)**  
Online course on the role of optical Earth observation satellite technology and data in monitoring various aspects of the Earth system and human interaction with it. My Certificate of Achievement is available on (<http://www.futurelearn.com/certificates/rhpzedd>)
- 12/04/2020–17/04/2020 **Introduction to Rocket and Satellite Engineering**  
**Lomonosov Moscow State University, Skoltech, Space Research Institute of the Russian Academy of Sciences, International Academy of space law (IASL), Valles Marineris International (India), Analog Astronaut Training Center (Poland).**  
Online course providing Basics of rocket and satellite systems, Basics of remote sensing, Fundamentals of materials science for space, Research methods in space flights, Fundamentals of health protection in space, Fundamental aspects of international space law, Space educational technologies.  
The number of my Certificate is **35599527**.
- 06/02/2017–03/03/2017 **INTERNET OF THINGS**  
**KING'S COLLEGE LONDON**  
Online course on evolution and transformation of the Internet of Things, pros and cons of the emerging wireless connectivity ecosystem, Open data, data analytics and the privacy implications of the Internet of Things, Creating a business model for an Internet of Things company, Understanding IoT security issues.  
My Certificate of Achievement is available on (<https://www.futurelearn.com/certificates/7buh5qk>)
- 20/06/2018–20/07/2018 **Satellite Control and Ground-Station Control Training (LEO/Earth Observation Satellite)**  
**CLTC,BITTT (China) and Satel Conseil International (France)**  
Satellite Control Operation and Ground Station Control Training for PRSS-1 provided by Engineers and technical consultants from DFH / China Academy of Space Technology (CAST), Xian Satellite Control Center (XSCC) China, China satellite launch and tracking control general (CLTC), Beijing Institute of Tracking and Telecommunications Technology (BITTT) and the consultant company Satel Conseil International (France).
- 19/08/2019–30/08/2019 **Training Course on Installation and Commissioning of a 1.8M VSAT System for inter site back-up Communications**  
**M/S MULTI-TECH SYSTEMS, ISLAMABAD (PAKISTAN)**  
A Two (02) weeks training Course on1.8 Meter Ku Band VSAT SYSTEM including GDSatCom antenna, CDM 625A Modem & 200W Block UP Converter Manufactured by **Comtech** EF Data USA & M/s TERRASAT Communication Inc., Canada. The system also includes ICT equipment of Huawei technologies used for inter-site backup communications.

- 01/04/2011–01/08/2011 **Satellite Control and Ground-station Control Equipment Training (GEO Satellite)**  
**CAST, CLTC, BITTT (China) and Telesat (Canada)**  
 Satellite Control Operation and Ground Station Equipment Training provided by Engineers and technical consultants from China Academy of Space Technology (CAST), Xian Satellite Control Center (XSCC) China, China satellite launch and tracking control general (CLTC) and Telesat Canada at Satellite Control Facility of PAKSAT-1R
- 21/11/2014–29/11/2014 **Satellite Communications Training/Testing**  
**GENERAL DYNAMICS (SATCOMS Technologies, U.S.A)**  
 Testing / Hands-on training course for Operation, Maintenance and M&C of C and Ku Band Antenna Systems at Satellite Control Facility of PAKSAT-1R
- 07/07/2015–10/07/2015 **Network Node Manager i (NNMi) Training**  
**HEWLETT PACKARD , LAHORE (PAKISTAN)**  
 HP® NNMi training provided by HP® certified trainers from Jaffer Group in Lahore, Pakistan
- 01/11/2015–01/12/2015 **Vector Network Analyser, Vector Signal Generator And Spectrum Analyser Training**  
**RHODE AND SCHWARZ, GERMANY AND AIGILENT (KEYSIGHT) TECHNOLOGIES, U.S.A**

12/05/2014–30/05/2014 **Junior Management Course**  
**PAKISTAN SOCIETY FOR TRAINING AND DEVELOPMENT, LAHORE (PAKISTAN)**  
 Communication Skills  
 Management/Leadership  
 Total Quality Management

Mother tongue(s) Urdu

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C2
	English Proficiency Certificate for Studies Abroad by Institute of Space Technology, Islamabad.				
Arabic	A2	C2	A1	A1	C1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user  
[Common European Framework of Reference for Languages](http://www.cerl.eu/CEFR/)

- Communication skills
- I have very good communication & interpersonal skills and proactive attitude with strong ability to work effectively in a diverse team environment. I have attended a three week *Junior Management Course* which helps in improving communication and managerial skills.
  - Participated in many volunteering schemes during my study at University of Surrey, U.K and Institute of Space Technology, Islamabad.
  - I also conducted and delivered lectures on Space Technology Awareness in different schools and Colleges of Islamabad which helped in improving my communication skills and public speaking ability.

- Organisational / managerial skills
- Organized multiple events in World Space Week (WSW) during my academic career at Institute of Space Technology, Islamabad.
  - Coordination Manager of frequency coordination and planning for PRSS-I with Frequency

Allocation Board (FAB) of Pakistan

- Coordination Manager and external interface of the organization with Survey of Pakistan for survey and measurement activities.
- I coordinate and participate in conduction of awareness and technical know-how lectures for the new inductees in SUPARCO which help them to get on board with the current activities of the organization.

#### Job-related skills

- Procurement of Ground Station Equipment Spares for multiple Satellite control Stations.
- Team-lead in 24/7 operations and maintenance and troubleshooting of ground control station equipment.
- Technical review of documents related to development of satellite control facility.
- Technical Scrutiny Reports of Ground Station Equipment and software.

#### Computer skills

- Good command on Office Suite (word processor, spread sheet and presentation software).
- Experience and good command on technical softwares e.g. Matlab, NEC-WIN/Pro, Satmaster, UML, Opnet etc.

#### Driving licence

A, B

### ADDITIONAL INFORMATION

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#### Seminars

I am very interested and have attended many seminars/lectures/workshops on 4G communications, 5G communication technologies and wireless sensor networks.

I actively participated in many robotics competitions held in Institute of Space Technology, Islamabad

#### Publications

*Electrical Power Conditioning Unit Design for Space Qualified C-Band Receiver in GEO Satellite Applications* (**Fourth International Conference on Aerospace Science and Engineering ICASE-2015**)

*Radiation Characteristics of Side Fed Bifilar Helix Antenna for L-Band LEO Satellites and Terrestrial Mobile Communications* (**10th European Conference on Antennas and Propagation EuCAP-2016**)

*Design of a Fuzzy Logic Water Level Controller* (**Fourth International Conference on Aerospace Science and Engineering ICASE-2015**)

*A Modified Sphere Decoding Technique for Multi-Antenna Systems* (**Fifth International Conference on Aerospace Science and Engineering ICASE-2017**)

*Comparative Study on Stability of Input Impedance and Total Gain of Side Fed Bifilar Helix Antenna* (**Fifth International Conference on Aerospace Science and Engineering ICASE-2017**)

*Design and Implementation of a Configurable Digital Modem* (**Fifth International Conference on Aerospace Science and Engineering ICASE-2017**)

#### Thesis/Project

*Sphere Decoders for Multi-User MIMO Communications.* (University of Surrey, U.K)

*Design and Implementation of a Configurable Digital Modem* (Institute of Space Technology, Islamabad)

#### Honours and awards

Distinguished Service Award from Chairman of Pakistan Space and Upper Atmosphere Research Commission (**SUPARCO**) for my work in PRSS-1 project

Recipient of Government Scholarship for Masters study in U.K

Got many performance based scholarships during my studies in school and college.

President of Satellite and GIS Club at Institute of Space Technology, Islamabad.

#### References

*Will be furnished on request*