MINISTRY OF HUMAN RESOURCES

HRD CORP
HUMAN RESOURCE DEVELOPMENT CORPORATION

FIRST EDITION

# INDUSTRIAL SKILLS FRAMEWORK TELECOMMUNICATIONS

## Radio Network Facilities

IN COLLABORATION WITH:

MCMC TM maxis measat Digital Nasional BERHAD celcomdigi

# CONTENT



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# PREFACE

Malaysia's Telecommunications industry is fast-growing and significantly contributes to the national economy. HRD Corp recognized the importance of developing the IndSF document for this industry in 2023. The focus areas covered and enriched the information on current talent development skills required with new job positions after the pandemic. HRD Corp, through its collaborators, Telekom Malaysia, Maxis Broadband Sdn Bhd, Celcom Digi Berhad, MEASAT, Malaysia Communications and Multimedia Commission (MCMC), and Digital Nasional Berhad (DNB), have identified subject matter experts (SMEs) that will be involved in the initiative. Workshop sessions were conducted both physically and online.


# ACKNOWLEDGMENT

## SUBJECT MATTER EXPERTS

We would like to thank all 13 subject matter experts and Validator who have contributed to the development of the Industrial Skills Framework document for Telecommunications - Radio Network Facilities .

| | |
|---|---|
| Mohd Mokhtar Bin Daud | Malaysia Digital Economy Corporation Sdn Bhd |
| Poh How Sing | ZTE (Malaysia) Corporation Sdn Bhd |
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| Ts.Hj. Mohd Yusairi Abu Hassan | TM Technology Services Sdn Bhd |
| Abdullah Bin Salleh | Unifi Mobile TM |
| Ir Dr Nordin bin Ramli | MIMOS Berhad |

# FOREWORD

## YBHG. DATUK WIRA SHAHUL DAWOOD
## CHIEF EXECUTIVE
## HUMAN RESOURCE DEVELOPMENT CORPORATION

As the custodian of Malaysia's human capital development efforts, HRD Corp has always been committed to ensuring that every Malaysian talent and member of the workforce is given the chance to develop their skills and knowledge. Our levy programme and strategic initiatives have been geared towards providing skills training, placement and income-generation opportunities to all Malaysians. This is because we believe these are the fundamentals that can help them grow personally and professionally.

Beyond that, we work closely with our registered employers, businesses and industry players to ensure they have the right training and development pathways to support their employees' career journeys, all while creating avenues to make it easier for them to invest in their workforce. At the same time, we collaborate with Malaysian trainers and training providers to strengthen the country's training and development ecosystem, ensuring that the training community can offer high-quality, industry-relevant current and future work skills

Given our far-reaching impact and engagement, HRD Corp regularly receives requests for feedback from individuals, businesses, industries and the Government on the status and potential of Malaysia's skills development landscape. We are also often tapped to provide counsel and recommendations on what industry players can do to address skills gaps within their respective industries and provide relevant and high-quality training programmes for their talents.

For these reasons, I am immensely proud to introduce to you the Industrial Skills Framework, a visionary initiative that not only answers the above-mentioned requests, but is also a comprehensive document designed to empower the workforce of today and tomorrow. This remarkable framework is a testament to HRD Corps' unwavering commitment to drive excellence in the industry.

The Industrial Skills Framework serves as a comprehensive guide that not only identifies the critical skills demanded by industries but also outlines the pathways to acquire and enhance these skills. It is a roadmap for individuals seeking to thrive in the modern industrial landscape, and for organisations aiming to remain competitive by nurturing a skilled workforce.

On behalf of HRD Corp, I thank our industry partners and collaborators for their effort and commitment in making the IndSF a reality. I also hope that the IndSF will continue to be the main source of reference for all talents, professionals and leaders as they seek new opportunities and work together to elevate their respective industries.

# FOREWORD

## YAU CHYONG LIM
## CHIEF OPERATING OFFICER
## MEASAT SATELLITE SYSTEMS SDN BHD

I am delighted to introduce the Industrial Skills Framework in Telecommunications, a groundbreaking initiative aimed at shaping the future of our industry. As the COO of MEASAT I am proud to be part of an endeavor that focuses on advancing the skills and expertise crucial for the ever-evolving Telecommunications landscape.

In an era defined by rapid technological advancements, the need for a skilled workforce in telecommunications has never been more vital. The Industrial Skills Framework presented herein reflects our commitment to fostering innovation, knowledge, and proficiency within our workforce.
This comprehensive framework has been developed in collaboration with industry experts, educators, and thought leaders, ensuring that it aligns seamlessly with the dynamic demands of the telecommunications sector. It serves as a guiding beacon, not only for our organization but for the entire industry, providing a roadmap for individuals to enhance their skills and contribute meaningfully to the growth of our field.

I extend my gratitude to all those who have contributed to the development of this framework, from the dedicated professionals who shared their insights to the teams that worked tirelessly to bring this vision to life. Together, we are laying the groundwork for a workforce that will drive innovation, create sustainable solutions, and propel the telecommunications industry into a new era of excellence.

I encourage every stakeholder in the telecommunications community to embrace this framework, leveraging it as a tool for personal and collective growth. Let us collectively embark on this journey towards a future where skills meet opportunity, and where our industry stands as a beacon of technological prowess.

Thank you for your commitment to excellence.

# FOREWORD

## YBHG. DATO AHMAD ZAKI
## CHIEF STRATEGY OFFICER
## DIGITAL NASIONAL BERHAD

Foreword by Digital Nasional Berhad DNB is dedicated to fostering a skilled local workforce, which perfectly aligns with HRD Corp's vision of propelling the nation's economic growth through high-performing human capital. The establishment of the STCs in 2014 has played a pivotal role in driving HRD Corp's training programs to meet the needs of the latest development of Mobile Communication and Digital technologies across industries.

In line with HRD Corp's plans for the 2022-2024 term, we are honoured to be part of the reestablishment of the STC for Telecommunications and serve on this commitee to help bring key perspectives on human capital development in the industry, ensuring that the training offered to the industry remains current, relevant, and aligned with the latest advancements in wireless technology, particularly 5G.

Indeed, Malaysia has achieved switch progress in 5G rollout with coverage of populated areas (COPA) reaching 76.1 per cent as of 30 November 2023, in tandem with its 80 per cent COPA target by the end of 2023. Meanwhile, 5G adoption has also progressed rapidly, with 3.6 million 5G service subscriptions as of 31 October 2023, indicating a penetration rate of 10.8 per cent. In addition, enterprise adoption of 5G services has begun in earnest and is poised to grow quickly in the country.

Through our collaboration with HRD Corp and industry experts, we can enhance the productivity and competitiveness of our workforce, fuelling economic growth and posing Malaysia as a regional leader in the Telecommunications sector. We believe that this partnership will pave the way for a brighter future for our workforce and for our nation.

# FOREWORD

## MR GOH SEOW ENG
## CHIEF EXECUTIVE OFFICER
## MAXIS BROADBAND SDN BHD

The telecommunications industry has undergone rapid growth and transformation. The landscape continues to be reshaped by groundbreaking advances, notably in 5G development and AI.

The Telecommunications Industrial Skills Framework (IndSF) will help ensure that our industry and our people are always at the forefront of this rapid transformation. It sets a standard for skills, certifications, and career pathways in our industry. This publication marks the commencement of the Sectoral Training Committee's work for 2023-2024.

I would like to express my thanks to the subject matter experts (SMEs), the Sectoral Training Committee members, the secretariats, and HRD Corp for their invaluable contribution in time, ideas, and effort to produce this Framework.

# GUIDELINES

1. THIS DOCUMENT SERVES AS A GUIDE FOR INDIVIDUALS, EMPLOYERS, AND TRAINING PROVIDERS ON KNOWLEDGE, EXPERIENCES, AND SKILLS MASTERY IN THE HOSPITALITY INDUSTRY.

2. THE JOB MATRIX SERVES AS A REFERENCE FOR CAREER PROGRESSION WITHIN THE INDUSTRY

3. THE INDUSTRIAL SKILLS FRAMEWORK FOR THE HOSPITALITY INDUSTRY WILL FOCUS ON LEVEL 4 OF THE MALAYSIAN SKILL CERTIFICATION (OR ITS EQUIVALENT) AND ABOVE

4. THIS DOCUMENT FOCUSES ON JOB DESCRIPTIONS, SKILLS AND TRAINING NEEDED IN THE HOSPITALITY INDUSTRY.

5. IT IS A COMPLEMENTARY DOCUMENT TO EXISTING REFERENCES DEVELOPED BY THE NATIONAL OCCUPATIONAL SKILLS STANDARD (NOSS) AND MALAYSIAN QUALIFICATIONS FRAMEWORK (MQF)

6. THE INDUSTRIAL SKILLS FRAMEWORK DOCUMENT IS NOT EXHAUSTIVE AND MAY BE REVIEWED FROM TIME TO TIME FOR CONTINUOUS IMPROVEMENTS IN PARALLEL WITH THE LATEST CHANGES WITHIN THE INDUSTRY

# HRD CORP INDUSTRIAL SKILLS FRAMEWORK

Human Resource Development Corporation (HRD Corp) was established in 1993. As an agency under the Ministry of Human Resources, it is responsible for the collection of levy from key industries and the disbursement of training grants to registered employers through its internal mechanics known as the Human Resources Development Fund (HRDF). Today it has expanded its role to include training and development programmes for all Malaysian talents and employers, as well as providing income-generating opportunities to all communities in need.

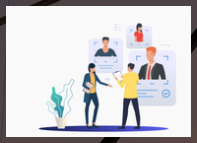
The Industrial Skills Framework (IndSF) was developed by HRD Corp to support the industry in acquiring a skilled workforce that meets the level of competencies and experience needed by the industry. The development is supported by the participation of subject matter experts who represent industry associations and employers in the apparel and footwear manufacturing industry. This is done based on the underlying principles below:


**Focus on all levels of Malaysian Skills Certification or its equivalent and above.**

**Accommodate the needs of in-service workers.**

**Built upon the National Occupational Skills Standard (NOSS).**

**Developed together with the industry and benchmarked against successful frameworks or model(s).**



**Meet the competency requirements of sectors currently covered under the PSMB Act 2001.**

With the IndSF, employees and employers can enhance their skills for career progression. The levy utilisation process also becomes more guided as employers can choose from a list of industry-relevant training programmes that can provide a greater return on investment for their company.

# SECTORAL INFORMATION

## BUSINESS OUTLOOK

### TRAINING SCENARIO IN THE TELECOMMUNICATIONS INDUSTRY

| NO. OF REGISTERED EMPLOYERS | NO. OF EMPLOYEES |
|---|---|
| 456 | 49,315 |

| | |
|---|---|
| LEVY COLLECTED | RM 61,692,644 |
| LEVY CLAIMED | RM 38,010,338 |
| LEVY UTILISED | 61.6 % |
| FINANCIAL ASSISTANCE APPROVED | RM54,209,689 |
| TRAINING PLACES APPROVED | RM 75,355 |
| TRAINEES TRAINED | RM 37, 489 |
| PROFESSIONAL TRAINING ATTENDED | 22.2 % |

*(Source: HRD Corp Internal Data,Jan - July 2023)*

# SECTORAL INFORMATION

## BUSINESS OUTLOOK

## TOP 5 SKILLS
## TELECOMMUNICATIONS INDUSTRY

**2023**

1. Management and Leadership
2. Digitalisation
3. Productivity
4. Safety
5. Sales, Marketing, Customer Service and Retail

**2022**

1. Management and Leadership
2. Digitalisation
3. Linguistics
4. Safety
5. Sales, Marketing, Customer Service and Retail

**2021**

1. Management and leadership
2. Quality
3. Digitalisation
4. Safety
5. Marketing And Sales

*Source: HRD Corp Internal Data, As of July 2023*

# SECTORAL INFORMATION

## BUSINESS OUTLOOK

| EMPLOYER | FUTURE TALENT | CURRENT EMPLOYEE |
|---|---|---|
| Refer to the Skills Framework to find out about employees skills standards. | Refer to the Skills Framework to find out about careers in the sector. | Refer to the Skills Framework to find out how to chart their career progression. |
| **IDENTIFY** relevant/required training programmes and succession plans for the employees based on the occupation. | **IDENTIFY** the job opportunities in the sector along with career pathways attributes based on the occupation. | **IDENTIFY** skill gaps in their current job role to upskill and reskill. |
| **PLAN** training sessions for employees and their career advancement. | **UNDERSTAND** the skills required to perform the job and identify relevant training for professional self development. | **PLAN** their career progression. |

**IDENTIFY** relevant training programmes.

**TRAINING PROGRAMMES**

**Embarking on a career**

Programmes that equip future talents with the relevant knowledge.

Programmes that will upskill/reskill the current employees.

**Lifelong learning to fulfill existing and emerging demands of the industry**

# SKILLS & DESCRIPTION OF COMPETENCIES

# MALAYSIAN OCCUPATIONAL SKILLS QUALIFICATION FRAMEWORK (MOSQF)

For IndSF Telecommunications, job position levels from 1 to 8 are categorized according to the formal structure of the Malaysian Occupational Skills Qualification Framework (MOSQF), as defined below. This classification determines career progression and can be further explored in detail within the **career pathway** section of the document.

| LEVEL | DESCRIPTION |
|---|---|
| 1 | • Skilled at handling various routine tasks. |
| 2 | • Capable of handling a wide range of diverse tasks in different situations, including some non-routine activities that demand individual responsibility and autonomy. |
| 3 | • Skilled in carrying out a wide range of diverse and often complex work activities in different situations. Involves significant responsibility, autonomy, and occasionally requires guiding or overseeing others. |
| 4 | • Skilled in handling diverse and complex technical or professional tasks independently, with significant personal responsibility. May involve overseeing others and managing resources. Demonstrates advanced technical skills. |
| 5 | • Skilled in applying fundamental principles and advanced techniques across diverse and unpredictable situations. Requires high personal autonomy, substantial responsibility for others' work, resource allocation, and personal accountability for various tasks. Specialization in a specific technical skill area is expected. |
| 6 | • Capability to apply knowledge and skills to solve complex problems with unclear definitions. It involves taking charge of planning and implementing actions leading to significant changes or advancements, demonstrating autonomy and judgment. It also indicates an understanding of diverse perspectives, approaches, and underlying theories. |
| 7 | • Skillful to adapt and apply knowledge, methods, and approaches to handle complex situations with multiple factors. It involves planning and implementing actions for significant change, demonstrating autonomy and judgment. It also shows an understanding of theoretical and methodological perspectives relevant to the specific area of study or work. |
| 8 | • Indicates the capability to expand knowledge or professional practices within a specific area. It involves addressing complex situations by initiating and conducting research, development, or strategic activities. This achievement demonstrates broad autonomy, judgment, and leadership in contributing to the development of a field or bringing about significant change. It also shows a critical understanding of relevant theoretical and methodological perspectives and their impact on the field of knowledge or work. |

**Source: Organisational Framework (OF), 2017**

# REQUIRED COMPETENCY LEVEL (RCL)


| LEVEL | INDICATOR | DESCRIPTION |
|---|---|---|
| 0 | None | Denotes a lack of competence in a specific area or topic |
| 1 | Basic | Denotes an understanding of fundamentals and some initial practical application. |
| 2 | Intermediate | Denotes a solid conceptual understanding and some practical application. |
| 3 | Advanced | Denotes significant conceptual knowledge and practical experience in performing a competency to a consistently high standard. |
| 4 | Expert | Denotes extensive knowledge, refined skills and prolonged experience in performing a defined competency at the highest standards. |

# TELECOMMUNICATIONS INDUSTRY IN MALAYSIA

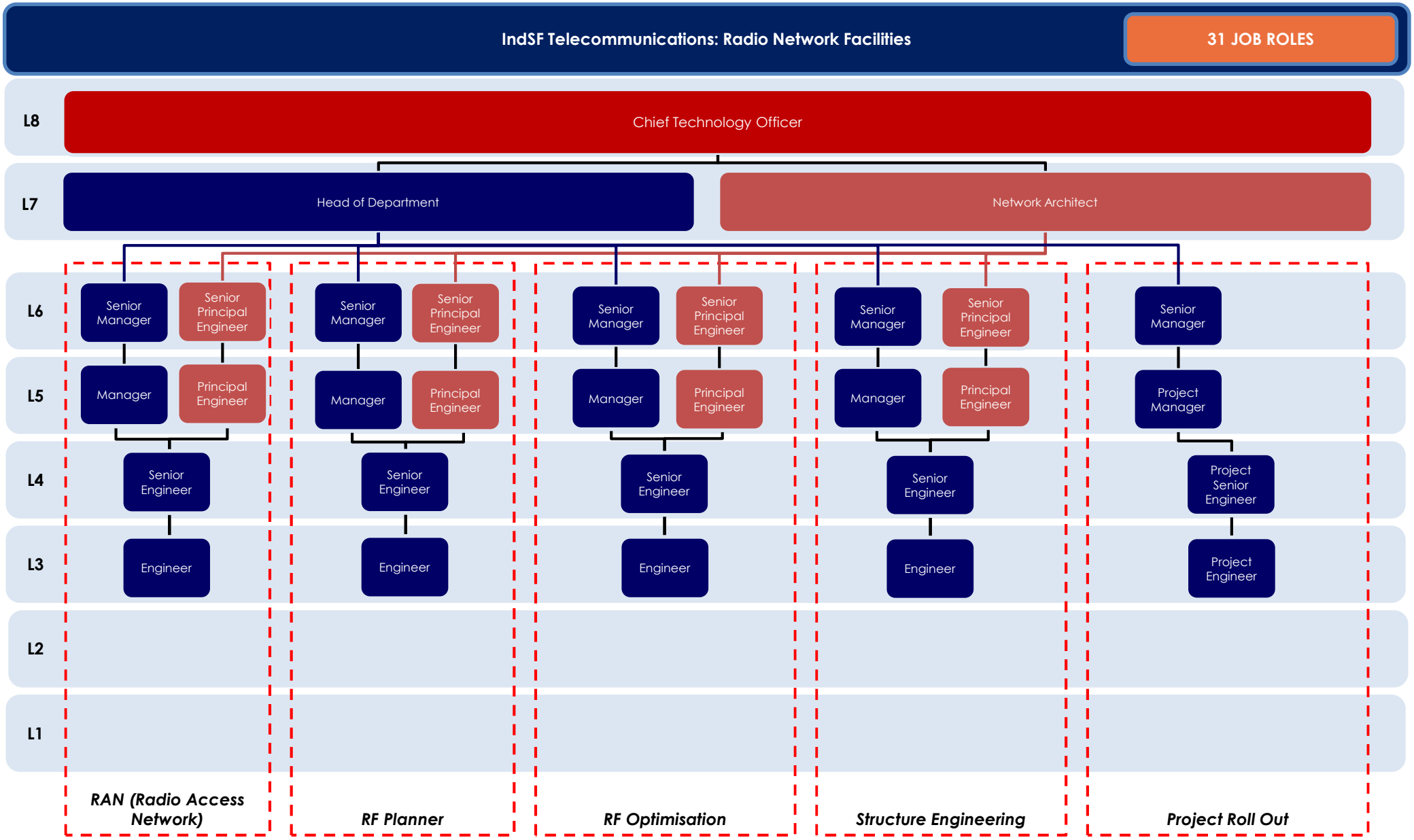
## THEN

The telecommunications sector in Malaysia combines a storied past with forward-thinking strategies for the future. Since the installation of the inaugural telegraph line in Kuala Kangsar linking the British Resident to the Deputy British Resident in Taiping back in 1874, Malaysia's telecommunications landscape has experienced numerous transformations, evolving into a robust industry powerhouse. Notably, Malaysia stands out as one of the early adopters in Asia, proactively embracing the dynamic shifts inherent in the ever-evolving communications sector.


As Malaysia gears up for the advent of 5G, there is a rapidly increasing demand for uninterrupted and seamless connectivity. The emergence of 5G is not merely viewed as a generational leap but as a catalyst for societal progress in Malaysia, fostering a more connected future by narrowing the digital gap between urban and rural communities. The implementation of 5G technology is poised to bring about widespread advancements in various sectors, including automotive, agriculture, healthcare, manufacturing, education, entertainment, and beyond, enhancing industry applications and optimizing delivery mechanisms.

## NOW

# FOCUS AREA: RADIO NETWORK FACILITIES




*Career pathway positions are categorized from levels 1 to 8, in accordance with the formal framework of the Malaysian Occupational Skills Qualification Framework (MOSQF).*

| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : RAN (Radio Access Network)** |
| **Job Title : Engineer** | **Level : 3** |

**Job Description**

A Radio Access Network (RAN) **Engineer** plays a pivotal role in the design, implementation, and maintenance of radio access network infrastructure. This professional is entrusted to ensure the optimal performance, reliability, and efficiency of radio access equipment.

**Roles and Responsibilities:**

**1. RAN Hardware (Antenna, Baseband, Control & Radio Unit)**
- Health check, configuration check, alarm clearing, troubleshooting & system maintenance.

**2. System Software**
- Base station software upgrade.
- Software patches.

**3. Radio Features**
- Licensing control.
- Features deploy/trial align with 3GPP standard.

**4. Provisioning & Commissioning**
- Script preparation, engineering commissioning.
- Site health verification.
- Site on air declaration.

**5. Network Performance Monitoring**
- Using tools and software to monitor network metrics like signal strength, interference, and throughput.

**Pre-Requisite**
1. Bachelor's degree in electrical engineering, Telecommunications, or any related field.
2. Fundamental knowledge of wireless communication principles, technologies, and protocols.
3. Familiarity with industry standards such as 3GPP, LTE, and 5G.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Collaboration Skills | 2 | • Collaboration<br>• Team Collaboration |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Capacity Planning | 1 | • 2/3/4/5G Capacity Planning |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Coverage Planning | 1 | • 2/3/4/5G Coverage Planning |
| 3. Basic Air Interface | 1 | • 2/3/4/5G Basic Air Interface<br>• Signalling Analysis |
| 4. Troubleshooting | 1 | • Base Station Troubleshooting Guide<br>• Interference troubleshooting Guide<br>• Base Station Common Alarm Troubleshooting Guide |
| 5. Optimisation | 1 | • Radio Network KPI Overview<br>• Radio Network KPI Optimisation Guide |
| 6. RAN Hardware (Antenna, Baseband & Radio) | 1 | • RAN Product & Hardware Introduction Training |
| 7. System Software | 1 | • Base Station Software Upgrade Guide Training |
| 8. Radio Features | 1 | • Base Station Feature Commissioning Training |
| 9. Provisioning & Commissioning | 1 | • Base Station Data Configuration Guide<br>• Introduction to Site Commissioning |
| 10. Programming | 1 | • Fundamental Concept of Programming |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : RAN (Radio Access Network)** |
| **Job Title : Senior Engineer** | **Level : 4** |

**Job Description**

RAN **Senior Engineer** builds upon the responsibilities of a RAN Engineer, incorporating leadership and expertise, aspects. This position requires a much more experience in the RAN engineering field work. Senior RAN engineer must pose an in-depth understanding of RAN technologies and its overall ecosystem, industry trends, and best practices. This role is critical to guide the development, optimization, and expansion of the wireless network.

**Roles & Responsibilities:**

**1. RAN Hardware (Antenna, Baseband, Control & Radio Unit)**
- Product/solution low level design, high level design.
- Health check, configuration check, alarm clearing, troubleshooting & system maintenance.

**2. System Software**
- Base station software upgrade.
- Software patches.

**3. Radio Features**
- Licensing control.
- Features deploy/trial align with 3GPP standard.

**4. Provisioning & Commissioning**
- Script preparation and verification, engineering commissioning.
- Site health verification.
- Site on air declaration.

**5. Network Performance Monitoring**
- Using tools and software to monitor network metrics like signal strength, interference, and throughput.

**Pre-Requisite:**
1. Bachelor's/ Master Electrical Engineering, Telecommunications, or a related field.
2. 5+ years of relevant work experience as a RAN Engineer or in a related role.
3. Extensive experience in designing, implementing, and optimizing radio access networks.
4. Advanced technical skills and expertise in troubleshooting and maintaining equipment of wireless technologies (2G, 3G, 4G, 5G), wireless network design, basic RF optimization, RF engineering and frequency planning.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Interpersonal | 2 | • Interpersonal Skills |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

***Disclaimer**:* *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Interpersonal Communication |
| 5. Presentation Skills | 2 | • Presentation Skills<br>• Effective Presentation |
| 6. Decision Making Skills | 2 | • Decision Making<br>• Problem Solving & Decision Making |
| 7. Team Management Skills | 2 | • Supervisory & Team Management |
| 8. Leadership Skills | 2 | • Leadership<br>• Leadership & Communication |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Capacity Planning | 2 | • 2/3/4/5G Capacity Planning |
| 2. Coverage Planning | 2 | • 2/3/4/5G Coverage Planning |
| 3. Basic Air Interface | 2 | • 2/3/4/5G Basic Air Interface<br>• Signalling Analysis |
| 4. Troubleshooting | 2 | • Base Station Troubleshooting Guide<br>• Interference Troubleshooting Guide<br>• Base Station Common Alarm Troubleshooting Guide |
| 5. Optimisation | 2 | • Radio Network KPI Overview<br>• Radio Network KPI Optimisation Guide |
| 6. Project Management Skills | 2 | • Introduction to Project Management<br>• Project Management Fundamentals |
| 7. Site Level Design | 2 | • Low Level Site Design Overview<br>• High Level Site Design Overview |
| 8. RAN Hardware (Antenna, Baseband & Radio) | 2 | • RAN Product & Hardware Introduction Training |
| 9. System Software | 2 | • Base Station Software Upgrade Guide Training |
| 10. Radio Features | 2 | • Base Station Feature Commissioning Training |
| 11. Provisioning & Commissioning | 2 | • Base Station Data Configuration Guide Training |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

***Disclaimer**:* *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Introduction to Site Commissioning Training |
| 12. Programming | 1 | • Fundamental concept of programming |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : RAN (Radio Access Network )** |
| **Job Title : Manager** | **Level : 5** |

**Job Description**

A RAN **Manager** is responsible for leading and managing a team of engineers in the operations, maintenance, and continuous improvement of the radio access network infrastructure. This position requires a seasoned professional with a proven track record in leadership, project management, and a comprehensive understanding of radio access technologies.

**Roles and Responsibilities:**

**1. RAN equipment Planning and Strategy:**

- Developing the long-term RAN equipment strategies aligned with the organization's goals and industry trends. Leading the RAN equipment technical sourcing process, including technical specifications, site deployment details, equipment life cycle management.
- Evaluating new technologies and equipment for potential network enhancements and preparing the necessary management proposals.
- Equipment life cycle management.

**2.Team Leadership:**

- Managing a team of RAN engineers and technicians, providing leadership, mentorship, and guidance.
- Assigning tasks and projects, setting performance objectives, and conducting performance evaluations.
- Ensuring the team has the necessary skills and training to perform their roles effectively.

**3.Vendor Management:**

- Collaborating with equipment vendors and suppliers, negotiating contracts, and managing vendor relationships.
- Evaluating vendor proposals and assessment on the most suitable equipment and solutions for the network.
- Provide for contract performance inputs.

4**. Change Management**

- Ensure the necessary approvals and justifications for network change request.

**Pre-Requisite:**

1. Bachelor's/ Master Electrical Engineering, Telecommunications, or a related field.
2. 7+ years of experience in Electrical Engineering, Telecommunications, or a related field
3. Proven managerial experience in leading teams involved in the design, implementation, and optimization of radio access networks.
4. In-depth knowledge of wireless communication principles, technologies, and protocols, including expertise in 5G.
5. Strong understanding of industry standards such as 3GPP, LTE, and emerging trends in the telecommunications sector.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Problem-Solving Skills | 3 | • Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication at Workplace |
| 4. Interpersonal | 3 | • Interpersonal Skills Interpersonal Communication |
| 5. Presentation Skills | 3 | • Presentation Skills Effective Presentation |
| 6. Decision Making Skills | 3 | • Decision Making Problem Solving & Decision Making |
| 7. Team Management Skills | 3 | • Supervisory & Team Management |
| 8. Strategic Thinking | 3 | • Strategic Leadership Strategic Management Strategic Planning |
| 9. Stakeholder Engagement | 3 | • Stakeholder Management |
| 10. Leadership Skills | 3 | • Leadership & Communication |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Capacity Planning | 2 | • 2/3/4/5G Capacity Planning |
| 2. Coverage Planning | 2 | • 2/3/4/5G Coverage Planning |
| 3. Basic Air Interface | 2 | • 2/3/4/5G Basic Air Interface<br>• Signalling Analysis |
| 4. Project Management Skills | 3 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management*<br>• Project Management Training |
| 5. Site Level Design | 2 | • Evaluate Technologies and Equipment For Potential Network Enhancements Training |
| 6. Risk Management | 3 | • Risk Management Professional* |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : RAN (Radio Access Network )** |
| **Job Title : Principal Engineer** | **Level : 5** |

**Job Description**

A RAN **Principal Engineer** assumes the leadership role with key focus on advanced engineering, strategic planning, and orchestration of critical initiatives. The role demands an experienced professional with extensive background in radio access technologies, to drive innovation, provide technical leadership, serving as a subject matter expert in RAN engineering covering 2G, 3G, 4G, and 5G technologies, and contribute to the strategic advancement of the radio access network infrastructure. The Principal Engineer is responsible for developing and overseeing the design, architecture, and strategic planning of the RAN infrastructure. Additionally, they collaborate with the R&D team to resolve complex and escalated network issues, identifying root causes and implementing solutions.

**Roles and Responsibilities:**

**1. RAN Hardware (Antenna, Baseband & Radio)**
- Product/solution low level design, high level design.
- Health check, alarm clearing, troubleshooting & system maintenance.

**2. System Software**
- Base station software upgrade.
- Software patches.

**3. Radio Features**
- Licensing control.
- Features deploy/trial align with 3GPP standard.

**4. Provisioning & Commissioning**
- Script preparation and verification, engineering commissioning.
- Site health verification.
- Site on air declaration.

**5. Network Performance Monitoring**
- Using tools and software to monitor network metrics like signal strength, interference, and throughput.

**Pre-Requisite:**

1. Bachelor's Degree/ Master's degree in Electrical Engineering, Telecommunications, or a related field.
2. 7+ years of experience in Electrical Engineering, Telecommunications, or a related field and experience in a leadership role involving the design, implementation, troubleshooting, maintenance and optimization of radio access networks.
3. Extensive experience (8+ years) in a leadership role involving the design, implementation, and optimization of radio access networks.
4. Expertise in advanced wireless communication principles, technologies, and protocols, including a deep understanding of 5G and beyond.
5. Comprehensive knowledge of industry standards such as 3GPP, LTE, and a forward-looking perspective on emerging trends in the telecommunications sector.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving & Decision Making |
| 3. Collaboration Skills | 3 | • Collaboration<br>• Team Collaboration |
| 4. Communication Skills | 3 | • Communication at Workplace |
| 5. Interpersonal | 2 | • Interpersonal Skills<br>• Interpersonal Communication |
| 6. Presentation Skills | 3 | • Presentation Skills<br>• Effective Presentation |
| 7. Decision Making Skills | 2 | • Problem Solving & Decision Making |
| 8. Team Management Skills | 2 | • Supervisory & Team<br>• Management |
| 9. Strategic Planning | 2 | • Strategic Planning |
| 10. Innovative Thinking | 2 | • Creativity & Innovative Thinking<br>• Innovative Thinking in Leadership |
| 11. Stakeholder Engagement | 2 | • Stakeholder Management |
| 12. Adaptability | 2 | • Adaptability & Flexibility |
| 13. Leadership Skills | 2 | • Leadership & Communication |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Capacity Planning | 3 | • 2/3/4/5G Capacity Planning |
| 2. Coverage Planning | 3 | • 2/3/4/5G Coverage Planning |
| 3. Advance Air Interface | 3 | • 2/3/4/5G Advance Air Interface<br>• Advance Signalling Analysis |
| 4. Troubleshooting | 3 | • Base Station Troubleshooting Guide<br>• Interference troubleshooting Guide<br>• Base Station Common Alarm Troubleshooting Guide |
| 5. Optimisation | 3 | • Radio Network KPI Overview<br>• Radio Network KPI Optimisation Guide |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 6. Project Management Skills | 2 | • Introduction to Project Management<br>• Project Management Fundamentals<br>• Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management*<br>• Project Management Training |
| 7. Site Level Design | 3 | • Advance Low Level Site Design<br>• Advance High Level Site Design |
| 8. Risk Management | 2 | • Risk Management Professional* |
| 9. RAN Hardware (Antenna, Baseband & Radio) | 3 | • RAN Product & Hardware Introduction Training |
| 10. System Software | 3 | • Base Station Software Upgrade Guide Training |
| 11. Radio Features | 3 | • Base Station Feature Commissioning Training |
| 12. Provisioning & Commissioning | 3 | • Base Station Data Configuration Guide Training<br>• Introduction to Site Commissioning Training |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : RAN (Radio Access Network )** |
| **Job Title : Senior Manager** | **Level : 6** |

**Job Description**

**Senior Manager** within the Radio Access Network Department is a leadership position with role necessitates a seasoned professional with a profound understanding of radio access technologies, exemplary leadership skills, and the capability to oversee the strategic and operational facets of the department.

**Roles and Responsibilities:**

**1. Network Planning and Strategy:**

- Developing long-term RAN equipment strategies aligned with the organization's goals and industry trends.
- Evaluating new technologies and equipment for potential network enhancements.

**2.Team Leadership:**

- Managing a team of RAN engineers and technicians, providing leadership, mentorship, and guidance.
- Assigning tasks and projects, setting performance objectives, and conducting performance evaluations.
- Ensuring the team has the necessary skills and training to perform their roles effectively.

**3.Vendor Management:**

- Collaborating with equipment vendors and suppliers, negotiating contracts, and managing vendor relationships.
- Evaluating vendor proposals and selecting the most suitable equipment and solutions for the network.

**4. Cross-Functional Collaboration**

- Collaborate with other departments, including the Transmission and Core Network.

**Pre-Requisite:**

1. Bachelor's/ Master's degree in Electrical Engineering, Telecommunications, or a related field.
2. 10+ years of experience in civil & structural engineering, with extensive experience in a leadership role involving the design, implementation, and optimization of radio access networks.
3. In-depth knowledge of wireless communication principles, technologies, and protocols, including expertise in 5G.
4. Strong understanding of industry standards such as 3GPP, LTE, and emerging trends in the telecommunications sector.
5. Proven managerial experience in leading teams involved in the design, implementation, and optimization of radio access networks.
6. Excellent project management skills with a track record of successfully delivering complex projects on time and within budget.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Problem-Solving Skills | 4 | • Problem Solving & Decision Making |
| 3. Collaboration Skills | 4 | • Collaboration<br>• Team Collaboration |
| 4. Communication Skills | 4 | • Communication at Workplace |
| 5. Interpersonal | 4 | • Interpersonal Skills<br>• Interpersonal Communication |
| 6. Presentation Skills | 4 | • Presentation Skills<br>• Effective Presentation |
| 7. Decision Making Skills | 4 | • Decision Making<br>• Problem Solving & Decision Making |
| 8. Team Management Skills | 4 | • Supervisory & Team Management |
| 9. Strategic Planning | 4 | • Strategic Planning |
| 10. Strategic Thinking | 4 | • Strategic Leadership<br>• Strategic Management Strategic Planning |
| 11. Innovative Thinking | 4 | • Creativity & Innovative Thinking<br>• Innovative Thinking in Leadership |
| 12. Stakeholder Engagement | 4 | • Stakeholder Management |
| 13. Adaptability | 4 | • Adaptability & Flexibility |
| 14. Leadership Skills | 4 | • Leadership & Communication |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Capacity Planning | 3 | • 2/3/4/5G Capacity Planning |
| 2. Coverage Planning | 3 | • 2/3/4/5G Coverage Planning |
| 3. Advance Air Interface | 3 | • 2/3/4/5G Advance Air Interface<br>• Advance Signalling Analysis |
| 4. Project Management Skills | 4 | • Introduction to Project Management<br>• Project Management Fundamentals<br>• Certified Associate In Project Management (CAPM)* |

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Project Management Professional*<br>• Certified Associate In Project Management*<br>• Project Management Training |
| 5. Site Level Design | 3 | • Evaluate New Technologies and Equipment For Potential Network Enhancements Training |
| 6. Risk Management | 4 | • Risk Management Professional* |

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- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : RAN (Radio Access Network )** |
| **Job Title : Senior Principal Engineer** | **Level : 6** |

**Job Description**

The **Senior Principal Engineer** in the Radio Access Network Department is a highly technical and responsible position requiring a deep understanding of RAN equipment and technologies. The ideal candidate should have a proven track record of success in leading and managing a team of engineers, along with expertise in developing and implementing new technologies. This role plays a key part in ensuring that the company's RAN equipment aligns with customer needs and maintains a leading position in RAN technology. The Senior Principal Engineer also communicates with R&D to resolve complex and escalated network issues, identifying root causes and implementing solutions.

**Roles and Responsibilities:**

**1. RAN Hardware (Antenna, Baseband & Radio)**
- Product/solution low level design, high level design.
- Health check, alarm clearing, troubleshooting & system maintenance.

**2. System Software**
- Base station software upgrade.
- software patches.

**3. Radio Features**
- Licensing Control.
- Features deploy/trial align with 3GPP standard.

**4. Provisioning & Commissioning**
- Script preparation, engineering commissioning.
- Site health verification.
- Site on air declaration.

**5. Network Performance Monitoring**
- Using tools and software to monitor network metrics like signal strength, interference, and throughput.

**6. Industry Collaboration**
- Strategic technical discussion forums e.g., standardization by MTSFB participation.

**Pre-Requisite:**
1. Bachelor's/ Master's degree in Electrical Engineering, Computer Engineering, or a related field
2. 2. 10+ years of experience in RAN Engineering, with at least 5 years of experience in a supervisory or management role
3. Strong technical expertise in RAN equipment and technologies.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving & Decision Making |
| 3. Collaboration Skills | 4 | • Collaboration<br>• Team Collaboration |

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- ** : Certification programmes available*

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*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 4. Communication Skills | 4 | • Communication at Workplace |
| 5. Interpersonal | 4 | • Interpersonal Skills<br>• Interpersonal Communication |
| 6. Presentation Skills | 4 | • Presentation Skills<br>• Effective Presentation |
| 7. Decision Making Skills | 4 | • Problem Solving & Decision Making |
| 8. Team Management Skills | 4 | • Supervisory & Team Management |
| 9. Strategic Planning | 4 | • Strategic Planning |
| 10. Strategic Thinking | 4 | • Strategic Leadership<br>• Strategic Management Strategic Planning |
| 11. Innovative Thinking | 4 | • Creativity & Innovative Thinking<br>• Innovative Thinking in Leadership |
| 12. Stakeholder Engagement | 4 | • Stakeholder Management |
| 13. Adaptability | 4 | • Adaptability & Flexibility |
| 14. Leadership Skills | 4 | • Leadership<br>• Leadership & Communication |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Capacity Planning | 4 | • 2/3/4/5G Capacity Planning |
| 2. Coverage Planning | 4 | • 2/3/4/5G Coverage Planning |
| 3. Advance Air Interface | 4 | • 2/3/4/5G Advance Air Interface<br>• Advance Signalling Analysis |
| 4. Troubleshooting | 4 | • Base Station Troubleshooting Guide<br>• Interference troubleshooting Guide<br>• Base Station Common Alarm Troubleshooting Guide |
| 5. Optimisation | 4 | • Radio Network KPI Overview<br>• Radio Network KPI Optimisation Guide |
| 6. Project Management Skills | 3 | • Introduction to Project Management |

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*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Project Management Fundamentals<br>• Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management*<br>• Project Management Training |
| 7. Site Level Design | 4 | • Advance Low Level Site Design<br>• Advance High Level Site Design |
| 8. Risk Management | 3 | • Risk Management Professional* |
| 9. RAN Hardware (Antenna, Baseband & Radio) | 4 | • Advance Low Level Site Design<br>• Advance High Level Site Design |
| 10. System Software | 4 | • Base Station Software Upgrade Guide Training |
| 11. Radio Features | 4 | • Base Station Feature Commissioning Training |
| 12. Provisioning & Commissioning | 4 | • Base Station Data Configuration Guide Training<br>• Introduction To Site Commissioning Training |

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- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Planner** |
| **Job Title : Engineer** | **Level : 3** |

**Job Description**

The **Engineer** in the RF Planner Department is responsible for planning the radio access network (RAN) to ensure optimal coverage, capacity, and performance of wireless networks.

**Roles and Responsibilities:**

**1. Technical Site Survey**

- Candidate identification/selection for nominal sites based on desktop study.
- Site candidate review.
- Site structure review.
- RAN BOQ review.
- CME (Civil Mechanical Engineering) work review.

**2. RF Coverage Planning**

- RF coverage and sites database integrity.
- RF parameters planning.
- Coverage simulation with nominal sites proposal.

**3. RF Capacity Planning**

- Spectrum resources, efficiency planning, layering strategy.
- Constant review of RAN capacity (congestion) threshold.
- Capacity simulation based on projected number of users and traffic profile.

**Pre-Requisite:**

1. Bachelor's degree in Electrical Engineering, Computer Engineering, or a related field.
2. Basic technical knowledge of RAN technologies and network planning principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Teamwork | 2 | • Teamwork<br>• Team Bulding |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 1 | • 2/3/4/5G Principle and Key Technologies<br>• 2/3/4/5G Physical Layer Analysis |

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- ** : Certification programmes available*

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Radio Network Planning | 1 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning |
| 3. Link Budget | 1 | • Link Budget Calculation |
| 4. Traffic Model | 1 | • Traffic Model Guide |
| 5. RAN Antenna | 1 | • Antenna Basic Knowledge and Selection Guide |
| 6. Network Planning Tools | 1 | • Coverage And Capacity Planning Tools Guide (ATOLL, PLANET & ETC) |
| 7. Simulation Software | 1 | • Radio Network Coverage Simulation Software Guide (ATOLL, PLANET & ETC) |
| 8. Technical Site Survey | 1 | • Radio Network Site Survey and Site Selection Guide |
| 9. Radio Network Parameter Planning | 1 | • 2G/3G/4G/5G Radio Parameter Planning |

| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Planner** |
| **Job Title : Senior Engineer** | **Level : 4** |

**Job Description**

The **Senior Engineer** in the RF Planner Department is responsible for the design, planning, and dimensioning of the radio access network (RAN). This includes conducting site surveys, simulate and implement network RF plans according to requirement.

**Roles and Responsibilities:**

**1. Technical Site Survey**

- Candidate identification/selection for nominal sites based on desktop study.
- Site candidate review.
- Site structure review.
- RAN BOQ review & verification.
- CME (Civil Mechanical Engineering) work review.

**2. RF Coverage Planning**

- Coverage and capacity planning.
- RF parameters planning.
- Coverage simulation.
- Model tuning and validation of propagation parameters, including antenna systems, antenna patterns.
- New feature activation planning.

**3. RF Capacity Planning**

- Spectrum resources, efficiency planning, layering strategy.
- Constant review of RAN capacity (congestion) threshold.
- Capacity simulation based on projected number of users and traffic profile.
- Monetization insights to marketing/ sales team.

**Pre-Requisite:**

1. Bachelor's degree in Electrical Engineering, Computer Engineering, or a related field.
2. 5+ years of experience in RF planning.
3. Strong technical knowledge of RAN technologies and RF network planning principles

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Teamwork | 2 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 2 | • Leadership<br>• Effective Leadership |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 2 | • 2/3/4/5G Principle and Key Technolgies,<br>• 2/3/4/5G Physical Layer Analysis |
| 2. Radio Network Planning | 2 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning |
| 3. Link Budget and Model Tuning | 2 | • Link Budget Calculation<br>• Model Tuning And Validation Of Propagation Parameters |
| 4. Traffic Model | 2 | • Traffic model guide |
| 5. Ran Antenna | 2 | • Advance Antenna Knowledge and Selection Guide |
| 6. Network Planning Tools | 2 | • Coverage And Capacity Planning Tools Guide (Atoll, Planet & ETC) |
| 7. Simulation Software | 2 | • Radio Network Coverage Simulation Software Guide (Atoll, Planet & ETC) |
| 8. Technical Site Survey | 2 | • Radio Network Site Survey and Site Selection Guide |
| 9. Radio Network Parameter Planning | 2 | • 2G/3G/4G/5G Radio Parameter Planning |

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Planner** |
| **Job Title : Manager** | **Level : 5** |

**Job Description**

The **Manager** in the RF Planner Department for the Radio Network Facilities Division is responsible for leading and managing a team of RF planners in the design and development of the company's radio access network (RAN). This includes planning the RAN for capacity, coverage, and quality of service. The manager role also involves planning and submitting the Annual Operating Plan (AOP) for RAN CAPEX and OPEX in accordance with the business plan requirement.

**Roles and Responsibilities:**

**1. Technical Site Survey**

- Site candidate review.
- Site structure review.
- CME (Civil Mechanical Engineering) work review.

**2. RF Planning & Capacity**

- Coverage and capacity planning.
- RF parameters planning.
- Coverage simulation.
- Model tuning and validation of propagation parameters.
- New feature activation planning.

**3. RF Budget Requirement**

- Plan for the required budget to execute RAN programs.

**Pre-Requisite:**

1. Bachelor's degree in Electrical Engineering, Computer Engineering, or a related field.
2. 7+ years of experience in RF planning, with at least 2 years of experience in a supervisory or management role.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network planning. Understanding of RF propagation, modulation, and interference management is crucial.
4. Project management skills to plan and lead network deployment and optimization projects. The ability to manage resources and meet project deadlines is important.
5. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication at Workplace |
| 4. Teamwork | 3 | • Teamwork<br>• Team Building |

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- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 5. Management Skills | 3 | • Team Management<br>• Project Management |
| 6. Leadership Skills | 3 | • Leadership<br>• Effective Leadership |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 2 | • 2/3/4/5G Principle and Key Technolgies,<br>• 2/3/4/5G Physical Layer Analysis |
| 2. Radio Network Planning | 2 | • Radio network coverage and capacity planning<br>• Propagation Models<br>• Frequency Planning, |
| 3. Link Budget and Model Tuning | 2 | • Link Budget Calculation<br>• Model Tuning and Validation of Propagation Parameters |
| 4. Traffic Model | 2 | • Traffic Model Guide |
| 5. Ran Antenna | 2 | • Advance Antenna Knowledge and Selection Guide |
| 6. Network Planning Tools | 2 | • Coverage And Capacity Planning Tools Guide (ATOLL, PLANET & ETC) |
| 7. Simulation Software | 2 | • Radio Network Coverage Simulation Software Guide (ATOLL, PLANET & ETC) |
| 8. Technical Site Survey | 2 | • Radio Network Site Survey and Site Selection Guide |
| 9. Radio Network Parameter Planning | 2 | • 2G/3G/4G/5G Radio Parameter Planning |

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- *** : Certification programmes available**

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Planner** |
| **Job Title : Principal Engineer** | **Level : 5** |

**Job Description**

A **Principal Engineer** in the RF Planner Department plays a pivotal role in providing technical leadership and expertise in RF planning for the deployment and optimization of radio network facilities. This position demands a highly experienced professional with advanced technical skills, strategic vision, and the ability to guide within the RF planning domain.

**Roles and Responsibilities:**

**1. Technical Site Survey**

- Site candidate review.
- Site structure review.
- CME (Civil Mechanical Engineering) work review.

**2. RF Planning**

- Coverage and capacity planning.
- RF parameters planning.
- Coverage simulation.
- Model tuning and validation of propagation parameters.
- New feature activation planning.
- Pre-sales support.
- Technical discussion with counterparts in operator/third party.

**Pre-Requisite:**

1. Bachelor's degree in Electrical Engineering, Computer Engineering, or a related field.
2. 7+ years of experience in RF planning.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network planning. Understanding of RF propagation, modulation, and interference management is crucial.
4. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication at Workplace |
| 4. Teamwork | 3 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 2 | • Leadership<br>• Leadership & Communication |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Radio Network Planning | 3 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning, |
| 2. Link Budget | 3 | • Link Budget Calculation<br>• Model Tuning and Validation Of Propagation Parameters |
| 3. Traffic Model | 3 | • Traffic Model Guide |
| 4. RAN Antenna | 3 | • Advance Antenna Knowledge and Selection Guide |
| 5. Network Planning Tools | 3 | • Coverage And Capacity Planning Tools Guide (ATOLL, PLANET & ETC) |
| 6. Simulation Software | 3 | • Radio Network Coverage Simulation Software Guide (ATOLL, PLANET & ETC) |
| 7. Technical Site Survey | 3 | • Radio Network Site Survey and Site Selection Guide |
| 8. Radio Network Parameter Planning | 3 | • 2G/3G/4G/5G Radio Parameter Planning |

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- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Planner** |
| **Job Title : Senior Manager** | **Level : 6** |

**Job Description**

**Senior Manager** in the RF Planner Department will assume a pivotal leadership role responsible for overseeing the strategic planning, optimization, and efficient utilization of radio frequency resources. This role necessitates a seasoned professional with an exemplary track record in RF technology (planning, designing, deployment, optimization and O&M), team leadership, and a comprehensive understanding of wireless communication technologies.

**Roles and Responsibilities:**

**1. Planning, Optimisation, And Management of Radio Networks**

- Ensure optimal network coverage, and high-quality service delivery.
- Ensure efficient use of spectrum.
- Oversee site selection, frequency planning, and network design activities.
- Vendor management.
- Evaluate network capacity requirements, plan for capacity expansion, and implement solutions to accommodate growing user demand.

**Pre-Requisite:**

1. Bachelor's degree in Electrical and Electronic Engineering, Computer Engineering, or a related field.
2. 10+ years of experience in RF optimisation, with at least 4 years of experience in a supervisory or management role.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network planning. Understanding of RF propagation, modulation, and interference management is crucial.
4. Project management skills to plan and lead network deployment and optimization projects. The ability to manage resources and meet project deadlines is important.
5. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Communication at Workplace |
| 4. Teamwork | 4 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 4 | • Leadership<br>• Leadership & Communication |
| 6. Project Management | | • Certified Associate In Project Management (CAPM)* |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
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*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Project Management Professional*<br>• Certified Associate In Project Management* |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 3 | • 2/3/4/5G Principle and Key Technologies<br>• 2/3/4/5G Physical Layer Analysis |
| 2. Radio Network Planning & Designing | 3 | • Radio Network Coverage And Capacity Planning<br>• Propagation Models<br>• Frequency Planning, |
| 3. Link Budget and Model Tuning | 3 | • Link Budget Calculation<br>• Model Tuning and Validation Of Propagation Parameters |
| 4. Traffic Model | 3 | • Traffic Model Guide |
| 5. Antenna Technology | 3 | • Advance Antenna Knowledge and Selection Guide |
| 6. Network Planning Tools | 3 | • Coverage and Capacity Planning Tools Guide (Atoll, Planet & ETC) |
| 7. Simulation Software | 3 | • Radio Network Coverage Simulation Software Guide (Atoll, Planet & ETC) |
| 8. Technical Site Survey | 3 | • Radio Network Site Survey and Site Selection Guide |
| 9. Radio Network Parameter planning | 3 | • 2G/3G/4G/5G Radio Parameter Planning |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- *** : Certification programmes available**

***Disclaimer**:* *a. The document is not exhaustive in terms of the recommended training programs.*
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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Planner** |
| **Job Title : Senior Principal Engineer** | **Level : 5** |

**Job Description**

The **Senior Principal Engineer** in the RF Planning Department is a role that involves leading and managing RF planning projects, developing strategies for network improvement, and collaborating with other departments. They are pivotal in aligning planning efforts with network goals, overseeing the implementation of advanced technologies, and providing mentorship to engineers. Additionally, they also communicate with R&D on RF planning technologies and strategies.

**Roles and Responsibilities:**

**1. Technical Site Survey**

- Site candidate review.
- Site structure review.
- CME (Civil Mechanical Engineering) work review.

**2. RF Planning**

- Coverage and capacity planning.
- RF parameters planning.
- Coverage simulation.
- Model tuning and validation of propagation parameters.
- New feature activation planning.
- Pre-sales support.
- Technical discussion with counterparts in operator/third party.

**Pre-Requisite:**

1. Bachelor's degree in Electrical and Electronic Engineering, Computer Engineering, or a related field.
2. 10+ years of experience in RF planning.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network planning. Strong analytical and problem-solving skills to identify and resolve network issues, interference problems, and performance bottlenecks.
4. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Communication at Workplace |
| 4. Teamwork | 4 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 3 | • Leadership<br>• Leadership & Communication |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

***Disclaimer***: *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Radio Network Planning | 4 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models,<br>• Frequency Planning |
| 2. Link Budget and Model Tuning | 4 | • Link Budget Calculation<br>• Model Tuning and Validation of Propagation Parameters |
| 3. Traffic Model | 4 | • Traffic Model Guide |
| 4. Antenna System & Technology | 4 | • Advance Antenna Knowledge and Selection Guide |
| 5. Network Planning Tools | 4 | • Coverage And Capacity Planning Tools Guide (ATOLL, PLANET & ETC) |
| 6. Simulation Software | 4 | • Radio Network Coverage Simulation Software (ATOLL, PLANET & ETC) |
| 7. Technical Site Survey | 4 | • Radio Network Site Survey and Site Selection Guide |
| 8. Radio Network Parameter Planning | 4 | • 2G/3G/4G/5G Radio Parameter Planning |

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- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Optimisation** |
| **Job Title : Engineer** | **Level : 3** |

**Job Description**

The **Engineer** in the RF Optimisation Department is responsible for optimising the performance of the company's radio access network (RAN). This includes monitoring the performance of the RAN, identifying areas for improvement, and implementing changes to improve the coverage, capacity, and quality of service of the RAN.

**Roles & Responsibilities:**

**1. Testing & Acceptance**

- SSV (Single Site Verification).
- Cluster acceptance.
- Zone acceptance.

**2. KPI Optimisation**

- RAN Network KPI optimisation.
- User complaint handling.
- Data Consistency check.

**Pre-Requisite:**

1. Bachelor's degree in Electrical & Electronic Engineering, Computer Engineering, or a related field.
2. Basic technical knowledge of RAN technologies and optimisation principles.
3. Basic knowledge of wireless communication principles, technologies, protocols, and optimisation principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Teamwork | 2 | • Teamwork<br>• Team Building |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 1 | • 2/3/4/5G Principle and Key Technologies<br>• 2/3/4/5G Physical Layer Analysis<br>• Voice Communication<br>• Signalling Analysis<br>• Network Optimization Procedure |

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- ** : Certification programmes available*

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Radio Network Planning Overview | 1 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning<br>• Radio Parameter Planning |
| 3. Coverage and Capacity Optimisation | 1 | • RAN Coverage and Capacity Optimisation |
| 4. Drive Test KPI Analysis and Optimisation | 1 | • Single-Site Verification<br>• Common Drive Test Tools Guide<br>• DT KPI Optimisation |
| 5. OSS KPI Analysis and Optimisation | 1 | • Radio Network KPI Overview<br>• Radio Network KPI Troubleshooting and Optimisation Guide<br>• Accessibility KPI Optimisation<br>• Call Drop KPI Optimisation<br>• Handover KPI Optimisation<br>• Throughput KPI Optimisation<br>• Interference Troubleshooting and Optimisation<br>• Voice Call Performance Optimisation<br>• Load Balance Optimisation |

| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Optimisation** |
| **Job Title : Senior Engineer** | **Level : 4** |

**Job Description**

a **Senior Engineer** within the RF Optimization Department, you'll assume a pivotal role in elevating the performance and efficiency of radio frequency networks. This senior-level position requires an experienced professional with a robust technical foundation, an in-depth grasp of RF optimization techniques, and the capability to actively contribute to the ongoing enhancement of wireless communication systems.

**Roles & Responsibilities:**

**1. Testing & Acceptance**

- Execute SSV (Single Site Verification).
- Oversee Cluster and Zone acceptance processes.
- Ensure stability acceptance of RF networks.
- Conduct feature trials to assess their impact.
- Optimize RAN network Key Performance Indicators (KPIs).

**Pre-Requisite:**

1. Bachelor's degree in Electrical and Electronic Engineering, Computer Engineering, or a related field.
2. 5+ years of experience in RF planning.
3. Strong technical knowledge of RAN technologies and network optimisation principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication Skills<br>• Communication at Workplace |
| 4. Teamwork | 2 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 2 | • Leadership<br>• Leadership & Communication |
| 6. Strategic Thinking | 2 | • Strategic Leadership<br>• Strategic Management Strategic Planning |

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- ** : Certification programmes available*

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*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 2 | • 2/3/4/5G Principle and Key Technologies<br>• 2/3/4/5G Physical Layer Analysis<br>• Voice Solution<br>• Signalling Analysis<br>• Network Optimization Procedure |
| 2. Radio Network Planning Overview | 2 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning<br>• Radio Parameter Planning |
| 3. Coverage and capacity Optimisation | 2 | • RAN Coverage and Capacity Optimisation |
| 4. Drive Test KPI Analysis and Optimisation | 2 | • Single-Site Verification<br>• Common Drive Test Tools Guide<br>• DT KPI Optimisation |
| 5. OSS KPI Analysis and Optimisation | 2 | • Radio Network KPI Overview<br>• Radio Network KPI<br>• Troubleshooting And Optimisation Guide<br>• Accessibility KPI Optimisation<br>• Call Drop KPI Optimisation<br>• Handover KPI Optimisation<br>• Throughput KPI Optimisation<br>• Interference Troubleshooting and Optimisation<br>• Voice Call Performance Optimisation<br>• Load Balance Optimisation |

| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Optimisation** |
| **Job Title : Manager** | **Level : 5** |

**Job Description**

The **Manager** in the RF Optimization Department for the Radio Network Facilities Division is responsible for leading and managing a team of RF optimiser in the design, development, and optimization of the company's radio access network (RAN). This includes optimising the RAN for capacity, coverage, and quality of service. The Manager will also be responsible for ensuring that the RAN KPIs meets the target of the company's customers and complies with all applicable codes and regulations.

**Roles & Responsibilities:**

- RAN Network Optimisation.
- Equipment selection.
- SSV (Single Site Verification).
- Cluster acceptance.
- Zone acceptance.
- Stability acceptance.
- Feature trial.
- User complaint optimisation.

**Pre-requisite:**

1. Bachelor's degree in Electrical & Electronic Engineering, Computer Engineering, or a related field. Having the MBA or equivalent degree is a plus.
2. 7+ years of experience in RF optimisation, with at least 2 years of experience in a supervisory or management role.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network optimisation. Understanding of RF propagation, modulation, and interference management is crucial.
4. Project management skills to plan and lead network deployment and optimization projects. The ability to manage resources and meet project deadlines is important.
5. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication Skills<br>• Communication at Workplace |
| 4. Teamwork | 3 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 3 | • Leadership |

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- ** : Certification programmes available*

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| | | |
|---|---|---|
| | | • Leadership & Communication |
| 6. Strategic Thinking | 3 | • Strategic Leadership<br>• Strategic Management Strategic Planning |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 2 | • 2/3/4/5G Principle and Key Technologies<br>• 2/3/4/5G Physical Layer Analysis<br>• Voice Solution<br>• Signalling Analysis<br>• Network Optimization Procedure |
| 2. Radio Network Planning Overview | 2 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning<br>• Radio Parameter Planning |
| 3. Coverage and Capacity Optimisation | 2 | • RAN Coverage and Capacity Optimisation |
| 4. Drive Test KPI Analysis and Optimisation | 2 | • Single-Site Verification<br>• Common Drive Test Tools Guide<br>• DT KPI Optimisation |
| 5. OSS KPI Analysis and Optimisation | 2 | • Radio Network KPI Overview<br>• Radio Network KPI Troubleshooting and Optimisation Guide<br>• Accessibility KPI Optimisation<br>• Call Drop KPI Optimisation<br>• Handover KPI Optimisation<br>• Throughput KPI Optimisation<br>• Interference Troubleshooting and Optimisation<br>• Voice Call Performance Optimisation<br>• Load Balance Optimisation |

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- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Optimisation** |
| **Job Title : Principal Engineer** | **Level : 5** |

**Job Description**

The **Principal Engineer** in the RF Optimization Department is a highly experienced professional responsible for leading complex optimization projects. Their duties include managing projects, developing strategies for network enhancement, analysing performance issues, collaborating with other departments, overseeing technology implementation, and providing mentorship to fellow engineers.

**Roles & Responsibilities:**

**1. TESTING & ACCEPTANCE**

- SSV (Single Site Verification).
- Cluster acceptance.
- Zone acceptance.
- Stability acceptance.
- Feature trial.

**2. KPI OPTIMISATION**

- RAN Network KPI optimisation.
- User complaint handling.
- Data consistency check.

**3. Network KPI Audit**

- Handover strategy optimisation.

**Pre-requisite:**

1. Bachelor's degree in Electrical & Electronic Engineering, Computer Engineering, or a related field.
2. 7+ years of experience in RF optimisation.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network optimisation. Strong analytical and problem-solving skills to identify and resolve network issues, interference problems, and performance bottlenecks.
4. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication Skills<br>• Communication at Workplace |
| 4. Teamwork | 3 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 2 | • Leadership<br>• Effective Leadership |

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- ***** *: Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 6. Strategic Thinking | 3 | • Strategic Leadership<br>• Strategic Management Strategic Planning |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 3 | • 2/3/4/5G Principle and Key Technologies,<br>• 2/3/4/5G Advance Physical Layer Analysis<br>• Voice Solution<br>• Advance Signalling Analysis<br>• Network Optimization Procedure |
| 2. Advance Coverage and Capacity Optimisation | 3 | • Advance RAN Coverage and Capacity Optimisation |
| 3. Radio Network Planning Overview | 3 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning<br>• Radio Parameter Planning |
| 4. Coverage and capacity Optimisation | 3 | • RAN Coverage and Capacity Optimisation |
| 5. Drive Test KPI Analysis and Optimisation | 3 | • Single-Site Verification<br>• Common Drive Test Tools Guide<br>• DT KPI Optimisation |
| 6. OSS KPI Analysis and Optimisation | 3 | • Radio Network KPI Overview<br>• Radio Network KPI Troubleshooting and Optimisation Guide<br>• Accessibility KPI Optimisation<br>• Call Drop KPI Optimisation<br>• Handover KPI Optimisation<br>• Throughput KPI Optimisation<br>• Interference Troubleshooting and Optimisation<br>• Voice Call Performance Optimisation<br>• Load Balance Optimisation |

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- ** : Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Optimisation** |
| **Job Title : Senior Manager** | **Level : 6** |

**Job Description**

**Senior Manager** in the RF Optimization Department will assume a leadership position of paramount importance, responsible for driving the strategic direction, operational efficiency, and continuous improvement of radio frequency optimization initiatives. This role demands a seasoned professional with exceptional leadership skills, a profound understanding of RF optimization strategies, and the ability to steer the department towards excellence in wireless communication systems.

**Roles & Responsibilities:**

**1. Planning, Optimisation, And Management of Radio Networks**

- Driving the network improvement strategic direction.
- Ensure operational efficiency.
- Continuous improvement of radio frequency optimization.
- Vendor management.
- Ensure network stability.
- Oversee network quality improvement activities.

**Pre-requisite:**

1. Bachelor's degree in Electrical and Electronic Engineering, Computer Engineering, or a related field.
2. 10+ years of experience in RF optimisation, with at least 4 years of experience in a supervisory or management role.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network optimisation. Understanding of RF propagation, modulation, and interference management is crucial.
4. Project management skills to plan and lead network deployment and optimization projects. The ability to manage resources and meet project deadlines is important.
5. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Communication Skills<br>• Communication at Workplace |
| 4. Teamwork | 4 | • Teamwork<br>• Team Building |
| 5. Leadership Skills | 4 | • Leadership |

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- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Leadership & Communication |
| 6. Strategic Thinking | 4 | • Strategic Leadership<br>• Strategic Management Strategic Planning |
| 7. Business Acumen | 4 | • Developing Business Acumen |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 3 | • 2/3/4/5G Principle and Key Technologies,<br>• 2/3/4/5G Physical Layer Analysis<br>• Voice Solution<br>• Signalling Analysis<br>• Network Optimization Procedure |
| 2. Radio Network Planning Overview | 3 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning<br>• Radio Parameter Planning |
| 3. Coverage and capacity Optimisation | 3 | • RAN Coverage and Capacity Optimisation |
| 4. Drive Test KPI Analysis and Optimisation | 3 | • Single-Site Verification<br>• Common Drive Test Tools Guide<br>• DT KPI Optimisation |
| 5. OSS KPI Analysis and Optimisation | 3 | • Radio Network KPI Overview<br>• Radio Network KPI Troubleshooting and Optimisation Guide<br>• Accessibility KPI Optimisation<br>• Call Drop KPI Optimisation<br>• Handover KPI Optimisation<br>• Throughput KPI Optimisation<br>• Interference Troubleshooting and Optimisation<br>• Voice Call Performance Optimisation<br>• Load Balance Optimisation |

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- ***** *: Certification programmes available*

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| | |
|---|---|
| **Focus Area : Radio Network Facilities** | **Department : Radio Frequency (RF) Optimisation** |
| **Job Title : Senior Principal Engineer** | **Level : 6** |

**Job Description**

The **Senior Principal Engineer** in the RF Optimization Department is a role that involves leading and managing RF optimization projects, developing strategies for network improvement, conducting root cause analysis of performance issues, and collaborating with other departments. They are pivotal in aligning optimization efforts with network goals, overseeing the implementation of advanced technologies, and providing mentorship to engineers. Additionally, they also communicate with R&D on innovative RF optimization technologies and strategies.

**Roles & Responsibilities:**

**1. Testing & Acceptance**

- SSV (Single Site Verification).
- Cluster acceptance.
- Zone acceptance.
- Stability acceptance.
- Feature trial.

**2. KPI Optimisation**

- RAN Network KPI optimisation.
- User complaint handling.
- Data consistency check.

**3. Network KPI Audit**

- Handover strategy optimisation.
- Technical discussion with counterparts in operator/third party.

**Pre-requisite:**

1. Bachelor's degree in Electrical and Electronic Engineering, Computer Engineering, or a related field.
2. 10+ years of experience in RF optimisation.
3. In-depth knowledge of RF engineering principles, wireless communication technologies, and network optimisation. Strong analytical and problem-solving skills to identify and resolve network issues, interference problems, and performance bottlenecks.
4. Leadership and team management skills are valuable.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Communication Skills<br>• Communication at Workplace |
| 4. Teamwork | 4 | • Teamwork |

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- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Team Building |
| 5. Leadership Skills | 4 | • Leadership<br>• Leadership & Communication |
| 6. Strategic Thinking | 4 | • Strategic Leadership<br>• Strategic Management Strategic Planning |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. RAN Fundamental and Theory | 4 | • 2/3/4/5G Principle and Key Technologies<br>• 2/3/4/5G Advance Physical Layer Analysis<br>• Voice Solution<br>• Advance Signalling Analysis<br>• Network Optimization Procedure |
| 2. Advance Coverage and capacity Optimisation | 4 | • Advance RAN Coverage and Capacity Optimisation |
| 3. Radio Network Planning Overview | 4 | • Radio Network Coverage and Capacity Planning<br>• Propagation Models<br>• Frequency Planning<br>• Radio Parameter Planning |
| 4. Coverage and Capacity Optimisation | 4 | • RAN Coverage and Capacity Optimisation |
| 5. Drive Test KPI Analysis and Optimisation | 4 | • Single-Site Verification<br>• Common Drive Test Tools Guide<br>• DT KPI optimisation |
| 6. OSS KPI Analysis and Optimisation | 4 | • Radio Network KPI Overview<br>• Radio Network KPI Troubleshooting and Optimisation Guide<br>• Accessibility KPI Optimisation<br>• Call Drop KPI Optimisation<br>• Handover KPI Optimisation<br>• Throughput KPI Optimisation<br>• Interference Troubleshooting and Optimisation<br>• Voice Call Performance Optimisation<br>• Load Balance Optimisation |

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- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Structure Engineering** |
| **Job Title** | **: Engineer** | **Level** | **: 3** |

**Job Description**

The **Engineer** in the Structure Engineering Department is responsible for designing, developing, and constructing the structural infrastructure for the company's radio access network (RAN). This includes designing and constructing cell towers, antenna masts, and other supporting structures. The Engineer will also work with other departments within the company to ensure that the structural infrastructure meets the needs of the RAN and complies with all applicable codes and regulations.

**Roles and Responsibilities:**

**1. Roll Out**

- Site candidate search.
- Site acquisition.
- Civil works.
- Electrical & Electronic work.
- Tower design.
- Tower acceptance.
- Tower loading and integrity.
- RAN installation equipment.

**Pre-Requisite:**

1. Bachelor's degree in Civil or Mechanical Engineering or a related field; or.
2. Fundamental knowledge of civil & structural engineering principles and practices.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 1 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 1 | • Problem Solving & Decision Making |
| 3. Communication Skills | 1 | • Communication at Workplace |
| 4. Time Management | 1 | • Time Management |
| 5. Team Collaboration | 1 | • Collaboration<br>• Team Collaboration |
| 6. Risk Management | 1 | • Risk Management Training |
| 7. Teamwork | 1 | • Teamwork<br>• Team Building |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Structural Design Software | 2 | • AutoCAD Training<br>• STAADPRO Training<br>• MS Tower Training<br>• PROKON Training |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Construction Knowledge | 2 | • Structural Design and Analysis<br>• Foundation Design<br>• Structural Integrity<br>• Slope Design<br>• Material Selection<br>• Tower Standards and Regulations |
| 3. Site Survey and Assessment | 2 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card)<br>• Working at Height Competency<br>• Regulatory Compliance |
| 4. Roll Out | 2 | • Basic Project Management Training<br>• Certified Associate Project Management (CAPM) |

| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Structure Engineering** |
| **Job Title** | **: Senior Engineer** | **Level** | **: 4** |

**Job Description**

The **Senior Engineer** in the Structure Engineering Department is responsible for leading and managing a team of engineers in the design, development, and construction of the structural infrastructure for the company's radio access network (RAN). This includes designing and constructing cell towers, antenna masts, and other supporting structures. The Senior Engineer will also work with other departments within the company to ensure that the structural infrastructure meets the needs of the RAN and complies with all applicable codes and regulations.

**Roles and Responsibilities:**

**1. Roll Out**

- Site candidate search.
- Site acquisition.
- Civil works.
- Electrical and Electronic work.
- Tower design.
- Tower acceptance.
- Tower loading and integrity.
- RAN installation equipment.
- Manage & train group of engineers.

**Pre-Requisite:**

1. Bachelor's degree in Civil or Mechanical Engineering or a related field.
2. 5+ years of experience in civil & structural engineering or a related field.
3. Strong technical knowledge of civil & structural engineering principles and practices.
4. Knowledge of management principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 2 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication Skills<br>• Communication at Workplace |
| 4. Time Management | 2 | • Time Management |
| 5. Team Collaboration | 2 | • Collaboration<br>• Team Collaboration |
| 6. Strategic Thinking | 2 | • Strategic Leadership<br>• Strategic Management<br>• Strategic Planning |
| 7. Teamwork | 2 | • Teamwork |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

***Disclaimer:*** *a. The document is not exhaustive in terms of the recommended training programs.*
*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| | | • Team Building |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Structural Design Software | 2 | • AutoCAD Training<br>• STAADPRO Training<br>• MS Tower Training<br>• PROKON Training |
| 2. Construction Knowledge | 2 | • Material Selection<br>• Tower Standards and Regulations |
| 3. Site Survey and Assessment | 2 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card)<br>• Working at Height Competency<br>• Regulatory Compliance |
| 4. Roll Out | 2 | • Certified Associate Project Management (CAPM)<br>• Project Management Professional (PMP) |
| 5. Structural Analysis | 2 | • Structural Design and Analysis<br>• Foundation Design<br>• Structural Integrity<br>• Slope Design |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Structure Engineering** |
| **Job Title** | **: Manager** | **Level** | **: 5** |

**Job Description**

The **Manager** in the Structure Engineering Department is responsible for leading and managing a team of engineers in the design, development, and construction of the structural infrastructure for the company's radio access network (RAN). This includes designing, installing, implementing, and constructing cell towers, antenna masts, and other supporting structures. The Manager will also work with other departments within the company to ensure that the structural infrastructure meets the needs of the RAN and complies with all applicable codes and regulations.

**Roles and Responsibilities:**

- Site candidate search.
- Site acquisition.
- Civil works.
- Electrical work.
- Tower design.
- Tower acceptance.
- Tower loading and integrity.
- RAN installation equipment.
- Structure/Tower installation & implementation.

**Pre-Requisite:**

1. Bachelor's degree in Civil Engineering, Electrical Engineering or a related field.
2. 7+ years of experience in civil & structural engineering or a related field.
3. Strong technical knowledge of structural engineering principles and practices.
4. Strong knowledge of management.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving<br>• Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication Skills<br>• Communication at Workplace |
| 4. Time Management | 3 | • Time Management<br>• Project Scheduling |
| 5. Team Collaboration | 3 | • Collaboration<br>• Team Collaboration |
| 6. Strategic Thinking | 3 | • Strategic Leadership<br>• Strategic Management Strategic Planning |
| 7. Business Acumen | 3 | • Developing Business Acumen |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 8. Stakeholder Engagement | 3 | • Stakeholder Management |
| 9. Team Management Skills | 3 | • Supervisory & Team Management |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management Skills | 3 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional* |
| 2. Risk Management | 3 | • Risk Management Professional* |
| 3. Structural Design Software | 1 | • AutoCAD Training<br>• STAADPRO Training<br>• MS Tower Training<br>• PROKON Training |
| 4. Construction Knowledge | 2 | • Material Selection<br>• Tower Standards and Regulations |
| 5. Site Survey and Assessment | 2 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card)<br>• Working at Height Competency<br>• Regulatory Compliance |
| 6. Roll Out | 2 | • Certified Associate Project Management (CAPM)<br>• Project Management Professional (PMP) |
| 7. Structural Analysis | 3 | • Structural Design and Analysis<br>• Foundation Design<br>• Structural Integrity<br>• Slope Design |

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- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Structure Engineering** |
| **Job Title** | **: Principal Engineer** | **Level** | **: 5** |

**Job Description**

The **Principal Engineer** in the Structure Engineering Department oversees the design, analysis, and construction of radio network facilities structures, including towers, masts, antennas, and associated equipment. They play a pivotal role in ensuring compliance with codes and standards, overseeing construction, and maintaining existing structures. Additionally, the Principal Engineer contributes to the development and implementation of innovative structure engineering technologies and practices. Their duties also encompass collaborating with other departments, such as RF Planning and Network Engineering, to align structures with network requirements, and providing technical mentorship to fellow engineers.

**Roles and Responsibilities:**

**1. Roll Out**

- On site installation and adjustment
- Site candidate search.
- Site acquisition.
- Civil works.
- Electrical work.
- Tower design.
- Tower acceptance.
- Tower loading and integrity.
- RAN installation equipment.
- Overseeing and leading projects.
- Ensuring specification met industry standards.

**Pre-Requisite:**

1. Bachelor's degree in Civil Engineering, Structural Engineering, or a related field.
2. 7+ years of experience in civil & structural engineering or a related field.
3. Technical knowledge of civil & structural engineering principles and practices.
4. Demonstrate strong leadership.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 3 | • Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication at Workplace |
| 4. Time Management | 3 | • Time Management |
| 5. Team Collaboration | 3 | • Collaboration<br>• Team Collaboration |
| 6. Teamwork | 3 | • Teamwork<br>Team Building |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management Skills | 2 | • Certified Associate In Project Management*<br>• Project Management Training |
| 2. Risk Management | 3 | • Risk Management Professional* |
| 3. Structural Design Software | 3 | • AutoCAD Training<br>• STAADPRO Training<br>• MS Tower Training<br>• PROKON Training |
| 4. Construction Knowledge | 3 | • Material Selection<br>• Tower Standards and Regulations |
| 5. Site Survey and Assessment | 3 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card)<br>• Working at Height Competency<br>• Regulatory Compliance |
| 6. Roll Out | 3 | • Certified Associate Project Management (CAPM)<br>• Project Management Professional (PMP) |
| 7. Structural Analysis | 3 | • Structural Design and Analysis<br>• Foundation Design<br>• Structural Integrity<br>• Slope Design |

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- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Structure Engineering** |
| **Job Title** | **: Senior Manager** | **Level** | **: 6** |

**Job Description**

The **Senior Manager** in the Structure Engineering Department is responsible for leading and managing a team of engineers in the design, development, and construction of the structural infrastructure for the company's radio access network (RAN). This includes designing and constructing cell towers, antenna masts, and other supporting structures. The Senior Manager will also work with other departments within the company to ensure that the structural infrastructure meets the needs of the RAN and complies with all applicable codes and regulations.

**Roles and Responsibilities:**

- Site candidate search.
- Site acquisition.
- Civil works.
- Electrical work.
- Tower design.
- Tower acceptance.
- Tower loading and integrity.
- RAN installation equipment.
- Oversees and manage the section operations & process.
- Communicate with different sections head.

**Pre-Requisite:**

1. Bachelor's degree in Civil Engineering, Electrical Engineering, Communication Engineering or a related field.
2. 10+ years of experience in civil & structural engineering, with at least 5 years of experience in a supervisory or management role.
3. Strong technical knowledge of civil & structural engineering principles and practices.
4. Strong knowledge and skills in management.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Communication Skills Communication at Workplace |
| 4. Time Management | 4 | • Time Management |
| 5. Team Collaboration | 4 | • Collaboration Team Collaboration |
| 6. Strategic Thinking | 4 | • Strategic Leadership Strategic Management Strategic Planning |

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- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 7. Business Acumen | 4 | • Developing Business Acumen |
| 8. Stakeholder Engagement | 4 | • Stakeholder Management |
| 9. Team Management Skills | 4 | • Supervisory & Team Management |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management Skills | 4 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management*<br>• Project Management Training |
| 2. Risk Management | 4 | • Risk Management Professional* |
| 3. Structural Design Software | 2 | • AutoCAD Training<br>• STAADPRO Training<br>• MS Tower Training<br>• PROKON Training |
| 4. Construction Knowledge | 2 | • Material Selection<br>• Tower Standards and Regulations |
| 5. Site Survey and Assessment | 2 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card)<br>• Working at Height Competency<br>• Regulatory Compliance |
| 6. Roll Out | 3 | • Certified Associate Project Management (CAPM)<br>• Project Management Professional (PMP) |
| 7. Structural Analysis | 3 | • Structural Design and Analysis<br>• Foundation Design<br>• Structural Integrity<br>• Slope Design |

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- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Structure Engineering** |
| **Job Title** | **: Senior Principal Engineer** | **Level** | **: 6** |

**Job Description**

The **Senior Principal Engineer** in the Structure Engineering Department leads complex projects for new and existing radio network facilities. They design, analyze, and construct structures, ensuring compliance with codes and standards. Responsibilities include overseeing construction, maintenance, and repair, collaborating with other departments, and developing innovative structure engineering technologies and practices. The Senior Principal Engineer also provides mentorship, guidance to engineers, and contributes to research and development in the field.

**Roles and Responsibilities:**

**1. Roll Out**

- Site candidate search.
- Site acquisition.
- Civil works.
- Electrical work.
- Tower design.
- tower acceptance.
- Tower loading and integrity.
- RAN installation equipment.
- Overseeing and leading projects.
- Ensuring specification met industry standards.

**Pre-Requisite:**

1. Bachelor's degree in Civil, Electrical and Structural Engineering or a related field.
2. 10+ years of experience in structural engineering, with at least 5 years of experience in a supervisory or management role.
3. Strong technical knowledge of civil & structural engineering principles and practices.
4. Demonstrate strong leadership.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Communication at Workplace |
| 4. Time Management | 4 | • Time Management |
| 5. Team Collaboration | 4 | • Collaboration<br>• Team Collaboration |
| 6. Leadership Skills | 4 | • Leadership<br>• Leadership & Communication |
| 7. Teamwork | 4 | • Teamwork<br>• Team Building |

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- ***** *: Certification programmes available*

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management Skills | 2 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional* |
| 2. Risk Management | 3 | • Risk Management Professional* |
| 3. Structural Design Software | 4 | • AutoCAD Training<br>• STAADPRO Training<br>• MS Tower Training<br>• PROKON Training |
| 4. Construction Knowledge | 4 | • Material Selection<br>• Tower Standards And Regulations |
| 5. Site Survey and Assessment | 4 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card<br>• Working At Height Competency<br>• Regulatory Compliance |
| 6. Roll Out | 4 | • Certified Associate Project Management (CAPM)<br>• Project Management Professional (PMP) |
| 7. Structural Analysis | 4 | • Structural Design And Analysis<br>• Foundation Design<br>• Structural Integrity<br>• Slope Design |

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Project Roll-Out** |
| **Job Title** | **: Project Engineer** | **Level** | **: 3** |

**Job Description**

The **Project Engineer** in the Project Roll Out Department is responsible for planning, executing, and managing the rollout of new radio access network (RAN) sites and upgrades to existing RAN sites. This includes working with a team of engineers and other professionals to develop and implement project plans, coordinate with vendors and contractors, and oversee the installation and commissioning of RAN equipment. The Project Engineer will also be responsible for ensuring that all projects are completed on time, within budget, and to the required quality standards.

**Roles and Responsibilities:**

**1. Project Planning:**

- Contribute to the development of comprehensive project plans.
- Outline key milestones, timelines, resource requirements and project scope.
- Focus on the deployment of radio network facilities.
- Conduct site surveys to assess environmental conditions, structural requirements, and critical factors for project success.
- Collaborate with relevant teams to address site-specific challenges.

**2. Coordination and Collaboration:**

- Collaborate with cross-functional teams, including RF planners, structure engineers, and operations teams.
- Ensure seamless coordination in the implementation of network projects.

**3. Project Roll Out:**

- Supervision of Project Roll Out, Civil Mechanical Electrical work.
- Reporting progress of Project.
- Supervision for installation and commissioning.

**4. Vendor Management:**

- Interface with vendors and contractors.
- Ensure adherence to project specifications, timelines, and quality standards.
- Manage relationships with external partners for smooth project execution.

**5. Quality Assurance:**

- Implement robust quality assurance processes.
- Ensure project deliverables meet defined standards and regulatory requirements.
- Conduct regular audits and inspections throughout the project lifecycle.

**Pre-requisite:**

1. Bachelor's degree in Telecommunications Engineering, Electrical/Electronic Engineering, or a related field; or.
2. 2+ years of experience in project management, preferably in the telecommunications industry.
3. Basic engineering knowledge of RAN technologies and network design principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |

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- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Problem-Solving Skills | 1 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Time Management | 2 | • Time Management |
| 5. Team Collaboration | 1 | • Collaboration<br>• Team Collaboration |
| 6. Stakeholder Management | 1 | • Stakeholder Management |
| 7. Teamwork | 1 | • Teamwork<br>• Team Building |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management | 1 | • Basic Project Management Training |
| 2. Network Design | 1 | • 2/3/4/5G Principle and Key Technologies,<br>• 2/3/4/5G Physical Layer Analysis |
| 3. RAN technology | 1 | • Ran Hardware and Architecture Training |
| 4. Site Survey and Assessment | 1 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card) * |

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- ***** *: Certification programmes available*

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*b. Job descriptions are general and may undergo changes based on organizational preferences and technology advancement.*

| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Project Roll-Out** |
| **Job Title** | **: Senior Project Engineer** | **Level** | **: 4** |

**Job Description**

The **Senior Project Engineer** in the Project Roll Out Department is responsible for leading a team of engineers in the planning, execution, and management of the rollout of new radio access network (RAN) sites and upgrades to existing RAN sites. This includes developing and implementing project plans, coordinating with vendors and contractors, overseeing the installation and commissioning of RAN equipment, and managing the project budget and resources. The Senior Project Engineer will also be responsible for report preparation and project progress tracking, and for ensuring that all projects are completed on time, within budget, and to the required quality standards.

**Roles and Responsibilities:**

**1. Project Planning:**

- Contribute to the development of comprehensive project plans.
- Outline key milestones, timelines, resource requirements and project scope.
- Focus on the deployment of radio network facilities.
- Conduct site surveys to assess environmental conditions, structural requirements, and critical factors for project success.
- Collaborate with relevant teams to address site-specific challenges.
- Prepare report and project progress tracking.

**2. Coordination and Collaboration:**

- Collaborate with cross-functional teams, including RF planners, structure engineers, and operations teams.
- Ensure seamless coordination in the implementation of network projects.

**3. Project Roll Out:**

- Supervision of Project Roll Out, Civil Mechanical Electrical work.
- Reporting progress of Project.
- Supervision for installation and commissioning.

**4. Vendor Management:**

- Interface with vendors and contractors.
- Ensure adherence to project specifications, timelines, and quality standards.
- Manage relationships with external partners for smooth project execution.

**5. Quality Assurance:**

- Implement robust quality assurance processes.
- Ensure project deliverables meet defined standards and regulatory requirements.
- Conduct regular audits and inspections throughout the project lifecycle.

**Pre-Requisite:**

1. Bachelor's degree in Telecommunications Engineering, Electrical/Electronic Engineering, or a related field; and
2. 5+ years of experience in project management, preferably in the telecommunications industry.
3. Strong technical knowledge of RAN technologies and network design principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 2 | • Critical Thinking & Analytical Skills |

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- ***** *: Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Problem-Solving Skills | 2 | • Problem Solving & Decision Making |
| 3. Communication Skills | 2 | • Communication at Workplace |
| 4. Time Management | 2 | • Time Management |
| 5. Team Collaboration | 2 | • Collaboration<br>• Team Collaboration |
| 6. Stakeholder Management | 2 | • Stakeholder Management |
| 7. Teamwork | 2 | • Teamwork<br>• Team Building |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management | 3 | • Project Management Professional*<br>• Certified Associate In Project Management*<br>• Project Management Training |
| 2. Network Design | 2 | • 2/3/4/5G Principle and Key Technologies,<br>• 2/3/4/5G Physical Layer Analysis |
| 3. RAN technology | 2 | • Ran Hardware and Architecture Training |
| 4. Site Survey and Assessment | 2 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card) * |

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- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Project Roll-Out** |
| **Job Title** | **: Project Manager** | **Level** | **: 5** |

**Job Description**

The **Project Manager** in the Project Roll Out Department is responsible for the overall planning, execution, and management of the rollout of new radio access network (RAN) sites and upgrades to existing RAN sites. This includes developing and implementing project plans, coordinating with vendors and contractors, overseeing the installation and commissioning of RAN equipment, and managing the project budget and resources. The Project Manager will also be responsible for ensuring that all overall projects progress is completed on time, within budget, and to the required quality standards.

**Roles and Responsibilities:**

**1.Project Planning:**

- Drive the development of comprehensive project plans.
- Approve key milestones, timelines, resource requirements and project scope.
- Focus on the deployment of radio network facilities.
- Approve site surveys to assess environmental conditions, structural requirements, and critical factors for project success.
- Lead Collaboration with relevant teams to address site-specific challenges

**2. Coordination and Collaboration:**

- Lead collaboration with cross-functional teams, including RF planners, structure engineers, and operations teams.
- Accountable towards seamless coordination in the implementation of network projects.

**3. Project Roll Out**:

- Managing Project Roll Out, Civil Mechanical Electrical work.
- Reporting Project progress.
- Approve installation and commissioning.

**4. Vendor Management:**

- Lead interface with vendors and contractors.
- Accountable to project specifications, timelines, and quality standards.
- Manage relationships with external partners for smooth project execution.

**5. Quality Assurance:**

- Drive robust quality assurance processes.
- Accountable towards project deliverables meet defined standards and regulatory requirements.
- Manage regular audits and inspections throughout the project lifecycle.

**Pre-Requisite:**

1. Bachelor's degree in Telecommunications Engineering, Electrical/Electronic Engineering, or a related field; and
2. 7+ years of experience in project management, preferably in the telecommunications industry
3. Strong technical knowledge of RAN technologies and network design principles

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 3 | • Critical Thinking & Analytical Skills |

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 2. Problem-Solving Skills | 3 | • Problem Solving & Decision Making |
| 3. Communication Skills | 3 | • Communication at Workplace |
| 4. Time Management | 3 | • Time Management |
| 5. Team Collaboration | 3 | • Collaboration<br>• Team Collaboration |
| 6. Stakeholder Management | 3 | • Stakeholder Management |
| 7. Leadership Skills | 3 | • Leadership<br>• Leadership & Communication |
| 8. Reporting and Presentation Skills | 4 | • Report Writing Training<br>• Presentation Course |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management | 4 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management* |
| 2. Network Design | 3 | • 2/3/4/5G Principle and Key Technologies,<br>• 2/3/4/5G Physical Layer Analysis |
| 3. RAN technology | 3 | • Ran Hardware and Architecture Training |
| 4. Site Survey and Assessment | 3 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card)* |

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | **Department** | **: Project Roll-Out** |
| **Job Title** | **: Senior Manager** | **Level** | **: 6** |

**Job Description**

The **Senior Manager** in the Project Roll Out Department is accountable in managing the department in the planning, execution, and management of the rollout of new radio access network (RAN) sites and upgrades to existing RAN sites. This includes developing and implementing project plans, coordinating with vendors and contractors, overseeing the installation and commissioning of RAN equipment, and approving the department's budget and resources. The Senior Manager will also be accountable for overseeing overall project progress, ensuring that all projects are completed on time, within budget, and to the required quality standards.

**Roles and Responsibilities:**

**1.Project Planning:**

- Approve the development of comprehensive project plans (key milestones, timelines, resource requirements, and project scope).
- Focus on the deployment of radio network facilities.
- Managing collaboration with relevant teams to address site-specific challenges.

**2. Coordination and Collaboration:**

- Approve the collaboration with cross-functional teams, including RF planners, structure engineers, and operations teams.
- Accountable towards seamless coordination in the implementation of network projects.

**3. Project Roll Out:**

- Managing project roll out, civil mechanical electrical work.
- Oversee project progress and report to higher management.
- Decision maker for the overall project.

**4. Vendor Management:**

- Managing the interface with vendors and contractors.
- Approve project specifications, timelines, and quality standards.
- Manage relationships with external partners for smooth project execution.

**5. Quality Assurance:**

- Approve quality assurance processes.
- Accountable towards project deliverables meet defined standards and regulatory requirements.
- Approve regular audits and inspections throughout the project lifecycle.

**Pre-Requisite:**

1. Bachelor's degree in Telecommunications Engineering, Electrical/Electronic Engineering, or a related field; and
2. 10+ years of experience in project management, preferably in the telecommunications industry.
3. Strong technical knowledge of RAN technologies and network design principles.

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Problem Solving & Decision Making |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ** : Certification programmes available*

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 3. Communication Skills | 4 | • Communication at Workplace |
| 4. Time Management | 4 | • Time Management |
| 5. Team Collaboration | 4 | • Collaboration<br>• Team Collaboration |
| 6. Stakeholder Management | 4 | • Stakeholder Management<br>• Conflict Management Training |
| 7. Leadership Skills | 4 | • Leadership<br>• Leadership & Communication |
| 8. Business Acumen | 4 | • Developing Business Acumen |
| 9. Reporting and Presentation Skills | 4 | • Report Writing Training<br>• Presentation Training |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management | 4 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management* |
| 2. Network Design | 3 | • 2/3/4/5G Principle and Key Technologies,<br>• 2/3/4/5G Physical Layer Analysis |
| 3. RAN technology | 3 | • Ran Hardware and<br>• Architecture Training |
| 4. Risk Management | 4 | • Risk Management Professional* |
| 5. Site Survey and Assessment | 3 | • Radio Network Site Survey<br>• Site Selection Guide<br>• CIBD Construction Personnel (Green Card) * |

- *Job positions are classified from levels 1 to 8 within the Malaysian Occupational Skills Qualification Framework (MOSQF).*
- ***** *: Certification programmes available*

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | | |
| **Job Title** | **: Head of Department** | **Level** | **: 7** |

**Job Description**

The **Head of Department** within the Radio Network Facilities Division assumes a pivotal leadership role overseeing overall projects in strategic planning, optimization, efficient utilization, design, development, and construction of structural infrastructure for the company's RAN. This multifaceted position demands a seasoned professional with a profound understanding of radio access technologies, exemplary leadership skills, a comprehensive track record in RF planning, optimization, structure engineering, and project rollout. The incumbent will drive strategic direction, operational efficiency, continuous improvement, and ensure compliance with codes and regulations while managing teams across various departments to achieve excellence in wireless communication systems.

**Roles and Responsibilities:**

**1. Strategic Leadership:**

- Provide visionary leadership to the Radio Network Facilities Division, setting the strategic direction aligned with organizational goals.
- Develop and execute plans to enhance the overall efficiency and success of radio network infrastructure projects.

**2. Departmental Oversight:**

- Directly oversee all activities within the division, ensuring alignment with organizational objectives and industry standards.
- Coordinate with cross-functional teams, including RF planners, structure engineers, and project managers.

**3. Resource Management:**

- Efficiently manage divisional resources, including budgetary considerations, human resources, and equipment.
- Ensure optimal allocation of resources for the successful execution of projects.

**4. Stakeholder Management:**

- Effectively manage relationships with internal and external stakeholders, ensuring clear communication and alignment of divisional goals with organizational expectations.
- Collaborate with other departments for integrated and harmonized operations.

**5. Innovation and Continuous Improvement:**

- Drive innovation and the adoption of best practices within the division.
- Implement continuous improvement initiatives to enhance operational efficiency and project

**Pre-Requisite:**

1. Bachelor's degree in Civil Engineering, Electrical Engineering, Computer Engineering, Telecommunications or a related field
2. 12+ years of experience in RAN planning, deployment, and maintenance, with at least 5 years of experience in a supervisory or management role
3. Strong technical knowledge of RAN technologies and network design principles

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Advanced Critical Thinking & Analytical Skills |
| 2. Problem-Solving Skills | 4 | • Advanced Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Advanced Communication Course |
| 4. Decision Making Skills | 4 | • Advanced Problem Solving & Decision Making |
| 5. Team Management Skills | 4 | • Supervisory & Team Management |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Vendor Management | 4 | • Vendor Management Training<br>• Vendor Negotiation Training |
| 2. Network Design | 4 | • Overview Network Design |
| 3. Project Management | 4 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management* |
| 4. Stakeholder Engagement | 4 | • Stakeholder Management<br>• Conflict Management |
| 5. Business Acumen | 4 | • Developing Business Acumen |
| 6. Change Management | 4 | • Change Management |
| 7. Business Risk Governance | 4 | • Business Risk Management |

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | | |
| **Job Title** | **: Network Architect** | **Level** | **: 7** |

**Job Description**

The **Network Architect** is a highly technical and responsible role, requiring expertise in Radio Access Network (RAN) equipment and technologies. This multifaceted position involves leading and managing various aspects of RAN, including RF Planning and Optimization projects, with a proven track record in team leadership, project management, and implementing new technologies. It holds senior management-level responsibilities on a technical perspective, network planning, etc. The Network Architect plays a pivotal role in ensuring the company's RAN equipment aligns with customer needs, maintaining a leading position in RAN technology. Responsibilities include defining RAN architecture, specifying components, developing, and implementing deployment plans, and collaborating with other departments. Additionally, the Network Architect communicates with R&D to address complex network issues, identifies root causes, and implements effective solutions. This role contributes to the research and development of innovative technologies and practices in the field, ensuring the company's radio network facilities are at the forefront of industry standards.

**Roles and Responsibilities:**

**1. Network Design and Architecture:**

- Develop comprehensive network architectures that meet the current and future requirements of the Radio Network Facilities Division.
- Collaborate with cross-functional teams to understand project requirements and translate them into scalable and efficient network designs.

**2. Technology Evaluation and Integration:**

- Evaluate emerging technologies and industry trends to identify opportunities for innovation and improvement in network architecture.
- Integrate new technologies and solutions into existing network frameworks to enhance overall performance.

**3. Security and Compliance:**

- Implement robust security measures within network architectures to ensure the confidentiality, integrity, and availability of data.
- Ensure compliance with industry standards and regulatory requirements in network design.

**4.Capacity Planning and Optimization:**

- Conduct capacity planning to anticipate network growth and scalability requirements.
- Optimize network performance through continuous monitoring, analysis, and implementation of improvements.

**5. Collaboration and Communication:**

- Collaborate with stakeholders, including project managers, engineers, and executives, to ensure alignment of network architectures with organizational goals.
- Clearly communicate architectural decisions and strategies to technical and non-technical stakeholders.

**Pre-Requisite:**

1. Bachelor's degree in Electrical Engineering, Computer Engineering, Civil Engineering, Telecommunications or a related field
2. 12+ years of experience in RAN design, development, and implementation
3. Strong technical knowledge of RAN technologies and network design principles

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*IndSF TELECOMMUNICATIONS*

| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Advanced Critical Thinking & Analytical Skill |
| 2. Problem-Solving Skills | 4 | • Advanced Problem Solving & Decision Making |
| 3. Communication Skills | 4 | • Advanced Communication Course |
| 4. Team Management Skills | 4 | • Supervisory & Team Management |
| 5. Strategic Thinking | 4 | • Strategic Leadership<br>• Strategic Management<br>• Strategic Planning |
| 6. Leadership Skills | 4 | • Leadership<br>• Leadership & Communication |
| 8. Change Management | 4 | • Change Management |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Network Design and Solution | 4 | • Network Design and Solution Training |
| 2. Technology Strategy and Planning | 4 | • Network Strategy training |
| 3. RAN Technology | 4 | • Network Architect training |

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| | | | |
|---|---|---|---|
| **Focus Area** | **: Radio Network Facilities** | | |
| **Job Title** | **: Chief Technology Officer** | **Level** | **: 8** |

**Job Description**

As the **Chief Technology Officer (CTO)** within the Radio Network Facilities Division, you'll play a key role in leading strategic planning, optimization, and the development of structural infrastructure for the company's Radio Access Network (RAN). This diverse position demands an experienced professional with in-depth knowledge of radio access technologies, strong leadership skills, and a proven track record in RF planning, optimization, and project rollout. Responsibilities will extend to driving strategic direction, ensuring operational efficiency, and maintaining compliance with codes and regulations for both technical and management aspects across multiple fields. Managing cross-departmental teams, you'll be instrumental in achieving excellence in wireless communication systems. Moreover, as a hands-on technical leader, you'll oversee RAN aspects, including RF Planning and Optimization projects, contributing to innovative technologies and practices. Simultaneously, as the CTO, you'll be responsible for shaping and implementing the company's technology strategy, defining the technological vision, setting priorities, and managing the technology budget to meet business needs and regulatory requirements.

**Roles and Responsibilities:**

**1. Technology Strategy and Vision**:

- Develop and communicate a clear technology strategy aligned with organizational goals and industry trends.
- Provide visionary leadership to shape and drive the overall technology vision of the company.

**2. Innovation Leadership:**

- Foster a culture of innovation within the organization, encouraging the exploration and adoption of emerging technologies.
- Lead research and development initiatives to stay ahead of industry advancements.

**3. Technology Governance and Compliance:**

- Establish and enforce technology governance frameworks, ensuring adherence to industry regulations and standards.
- Mitigate technology-related risks and ensure compliance with data security and privacy regulations.

**4. Collaboration with Executive Leadership:**

- Collaborate with other C-level executives to align technology initiatives with business strategies.
- Provide insights and recommendations on how technology can drive business growth and efficiency.

**5. Team Leadership and Development:**

- Lead and manage the technology team, providing mentorship and guidance.
- Foster a high-performing and collaborative team culture that attracts and retains top technology talent.

**Pre-Requisite:**

1. Bachelor's degree in Computer Science, Electrical Engineering, or a related field.
2. 15+ years of experience in a senior technical role, preferably in the industry in which the company operates.
3. Strong technical knowledge of a wide range of technologies.

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| Soft Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Analytical Skills | 4 | • Business Analytical Course |
| 2. Problem-Solving Skills | 4 | • Interpersonal Skills Course |
| 3. Communication Skills | 4 | • Communication Skills<br>• Communication |
| 4. Team Management Skills | 4 | • Supervisory & Team Management |
| 5. Strategic Thinking | 4 | • Strategic Leadership<br>• Strategic Management<br>• Strategic Planning |
| 6. Decision Making Skills | 4 | • Decision Making<br>• Problem Solving & Decision Making |
| 7. Innovation and Adaptability | 4 | • Adaptability & Flexibility |
| 8. Stakeholder Management | 4 | • Stakeholder Management |
| 9. Collaboration | 4 | • Collaboration<br>• Team Collaboration |
| 10. Risk Management | 4 | • Risk Management Professional* |
| 11. Asset Management | 4 | • Asset Management and Security |
| 12. Business Risk Governance | 4 | • Risk Management Fundamentals<br>• Strategic Risk Management |
| 13. Investor Relationship | 4 | • Strategic Investor Relations<br>• Management Training |
| 14. Business Strategy | 4 | • Business Strategy Training<br>• Strategy Planning Training |
| 15. Media Handling | 4 | • Media Handling Training |

| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 1. Project Management | 4 | • Certified Associate In Project Management (CAPM)*<br>• Project Management Professional*<br>• Certified Associate In Project Management* |
| 2. Governance and Compliance | 4 | • Compliance Training |
| 3. Innovation Management | 4 | • Innovation Management Training |

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| Technical Skills | Competency Level | Recommended Training |
|---|---|---|
| 4. Technology Strategy and Planning | 4 | • Technology Strategy and Planning |

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# SOURCE


- **The evolution of Malaysia's telecom industry**, https://www.telecomreviewasia.com/news/featured-articles/1841-the-evolution-of-malaysia-s-telecom-industry
- **HRD Corp Internal Data 2023.**
- **Organisational Framework (OF), 2017**