SPECIFICATION - LEVEL 4 CNFE - CELLULAR NETWORK FIELD ENGINEER v1.0 (ST1299)

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Introduction

The Cellular Network Field Engineer Level 3 apprenticeship develops the skills and knowledge to install, maintain, and optimise the UK's cellular network infrastructure. Working to industry regulations set by Ofcom, MATS, and the HSE, engineers lead the delivery of complete wireless mobile solutions, including complex DC/AC electrical systems, fibre cabling, RF systems, and associated steelwork. The role involves working at height, in varied locations, and often in remote environments, ensuring safe practices and compliance with rigorous technical and safety standards.

Key Information	
Name	Cellular Network Field Engineer (CNFE) ST1299
Level	4
Duration	36 months on-programme, 6 months EPA window
Funding Band	£27,000
Prerequisites and Entry Requirements	Before final assessment of the qualification, the Learner must be employed in a relevant role, meet Gateway requirements before taking the End-Point Assessment. have completed a portfolio of evidence and, if applicable, have passed the required Functional Skills. There are no mandatory qualifications required for this this End-Point Assessment.
Methods of Assessment	There are three assessment methods, practical assessment (with questions) in a simulated environment, multiple-choice test and a professional discussion (underpinned by a portfolio of evidence).
Simulated Assessment	The practical assessment and questioning will take place in a simulated environment selected by the EPAO. This may include the EPAO's premises, a training provider's premises, an employer's training facility, a test centre, or another suitable simulated environment.
Grading	Learners will be assessed across all assessment components and awarded a grade of Fail, Pass, or, where applicable, Distinction. The results from each assessment method will be combined to determine the overall grade of a Fail, Pass or Distinction. Grading combinations and criteria are set out in the End-Point Assessment Plan and associated guidance documents.
Link to assessment plan	CNFE - Cellular network field engineer / Skills England

End-Point Assessment Objective

The End-Point Assessment (EPA) confirms the apprentice's ability to work independently as a Cellular Network Field Engineer, safely installing, connecting, and testing DC/AC electrical systems, fibre, RF, and radio transmission equipment to industry standards. This includes demonstrating competence in working at height, interpreting technical requirements, and delivering high-quality installations and maintenance across diverse and challenging environments.

Programme Structure

Throughout the programme, apprentices will gain practical skills and underpinning knowledge in a variety of settings. They will be employed in a relevant role for typically 36 months, during which they will compile a portfolio of evidence with support from their assessor. The assessor will monitor progress against the standard to ensure the apprentice is fully prepared for the EPA.

Available Support

Sample assessment materials for the practical assessment, multiple-choice test and a professional discussion are available to approved training providers to support learner preparation and ensure consistency in delivery.

KSB Mapping Table

Knowledge	Assessment Method
K1 Awareness of Health and safety legislations, regulations and safe working practices, network operator and tower estate owners design and construction rules and guidelines, relevance to the occupation and the operative's responsibilities. Including Health and Safety at Work Act, Control of Substances Hazardous to Health (COSHH). Manual handling. Working at height regulations. Working in confined spaces. Situational awareness. Isolation and emergency stop procedures. Emergency evacuation procedures. Safety equipment: guards, signage, fire extinguishers	Multiple-choice test
K2 Tower climbing techniques	Professional discussion underpinned by portfolio of evidence
K3 Safety control equipment and how to use personal protective equipment (PPE)	Practical assessment with questions
K4 International commission non-Ionising radiation protection (ICNIRP): frequency ranges	Multiple-choice test
K5 Principles of Transverse Electromagnetic Wave (TEM) propagation: Hyugen's theorem	Multiple-choice test
K6 Principles of electromagnetic field	Multiple-choice test
K7 Fibre transmission and modes	Multiple-choice test
K8 Lifting and lowering techniques, slings, knots and attachments, for rooftop, greenfield and street works	Professional discussion underpinned by portfolio of evidence
K9 Site standards, survey requirements and site set up for any specific activity: Site inductions, toolbox talks, dynamic risk assessments (DRA), scope of work, Risk Assessments & Method Statements (RAMS), identification of hazards, lines of reporting and required control measures	Professional discussion underpinned by portfolio of evidence
K10 Site inspection requirements: validity, duration, standard industry practice, Working at Height (WAH), Electrical, Civil and Environment –	Professional discussion underpinned by portfolio of evidence

awareness of how to access, Barber portal, relevant sources and Person in charge of Works (PICW)	
K11 Statutory requirements for maintaining electrical equipment: distribution boards, power support units, battery supplies, mains supplies, Remote radio boxes (RRB's) Break out boxes (BOB)	Multiple-choice test
K12 Statutory requirements for maintaining environmental equipment: detecting or removal of asbestos, site pollution, bird nesting, Weil disease.	Multiple-choice test
K13 Statutory requirements for maintaining civil equipment: avoiding danger from undergrounds services, permission to dig, cat scanning, excavations, tower roots, cabinet plinths group repairs	Multiple-choice test
K14 Statutory requirements for maintaining working at height equipment: Site specific structures, antenna systems, feeders, Remote Radio Unit (RRU), Remote Radio Head (RRH), Mast head amplifiers (MHA's), Directional Radio Link (DRL) and associated fixings, frequency bands	Professional discussion underpinned by portfolio of evidence
K15 Communication techniques and methods when communicating with people in different roles	Professional discussion underpinned by portfolio of evidence
K16 Methods of interpreting and extracting relevant information from drawings, specifications and work instructions using paper based and digital methods	Practical assessment with questions
K17 Roles and Responsibilities of site personnel	Professional discussion underpinned by portfolio of evidence
K18 Personal responsibilities and obligations in protecting safety of self, colleagues and the public whilst undertaking work	Professional discussion underpinned by portfolio of evidence
K19 Process and procedures for the planning, of electrical systems Including Alternating Current (AC) and Direct Current (DC), Low Voltage (LV), Protective Extra Low Voltage (PELV)	Professional discussion underpinned by portfolio of evidence
K20 Process and procedures for the set up and installation of electrical systems Including Alternating Current (AC) and Direct Current (DC), Low Voltage (LV), Protective Extra Low Voltage (PELV)	Practical assessment with questions
K21 Process and procedures for the inspection and testing of electrical systems Including Alternating Current (AC) and Direct Current (DC), Low Voltage (LV), Protective Extra Low Voltage (PELV)	Practical assessment with questions
K22 Full and partial isolation processes of electrical circuits including Electrotechnical systems and electrical systems and equipment	Practical assessment with questions
K23 Tools, equipment, components used in role	Practical assessment with questions
K24 Power supplies: Uninterruptible power supply (UPS), Generators, Standby and Primary Sources	Multiple-choice test

K25 Principles of sustainability: Energy efficiency and reuse of materials, recycling, principles of control and management of emissions and waste, efficient use of resources	Professional discussion underpinned by portfolio of evidence
K26 Principles of sustainable development and their impact on the occupation: net-zero carbon emissions, low carbon processes, environmental policies and legislations, and the climate change act	Multiple-choice test
K27 Equity, Diversity and Inclusivity and its principles in the workplace including routes for reporting unethical behaviour	Professional discussion underpinned by portfolio of evidence
K28 Industry recognised standards as defined within current British standards including wiring regulations and Electrical Installation Certificate (EIC)	Multiple-choice test
K29 Maintenance techniques for cell site apparatus	Professional discussion underpinned by portfolio of evidence
K30 Fault finding and repair techniques for cell site apparatus	Practical assessment with questions
K31 Decommission techniques for cell site apparatus	Professional discussion underpinned by portfolio of evidence
K32 Principles of electrical design: design load, sizing and safe route of cabling, overcurrent, undercurrent, circuit protection, earthing and lightning protection, equipotential bonding	Multiple-choice test
K33 Tower rescue and casualty management techniques	Professional discussion underpinned by portfolio of evidence
K34 Leadership and management techniques: planning, work scheduling, delegation techniques	Professional discussion underpinned by portfolio of evidence
K35 Wellbeing: mental and physical health considerations and how to access support	Professional discussion underpinned by portfolio of evidence
K36 Cellular Network and transmission design and topology	Multiple-choice test
K37 Radio access, network structure and interactions	Multiple-choice test
K38 Commission and integration testing processes on Base Station Sub-System (BSS)	Professional discussion underpinned by portfolio of evidence
K39 Construction phase plan (CPP)	Professional discussion underpinned by portfolio of evidence

K40 Information required for handover pack	Practical assessment with questions
K41 Client specifications for frequency limits pass and fail parameters	Practical assessment with questions
K42 Process and procedures for the planning and testing, of Radio frequency (RF) complying with regulations International Commission on Non-Ironizing Radiation Protection (ICNIRP)	Practical assessment with questions
K43 Radio Frequency (RF) testing equipment: Open, short and load	Multiple-choice test
K44 Telecom connectors:7/16 N type 43..10	Multiple-choice test
Skill	Assessment Method
S1 Compile and verify a construction phase plan (CPP)	Professional discussion underpinned by portfolio of evidence
S2 Conduct, produce and write a risk assessment and method statement at site level	Professional discussion underpinned by portfolio of evidence
S3 Recognise, record and monitor risks, escalating to relevant personnel	Professional discussion underpinned by portfolio of evidence
S4 Comply with health and safety regulations	Practical assessment with questions
S5 Identify and use personal protective equipment (PPE)	Practical assessment with questions
S6 Comply with electrical regulations	Practical assessment with questions
S7 Delegate and assign tasks according to scope of works and specific skillset and Health and safety	Professional discussion underpinned by portfolio of evidence
S8 Conduct site surveys to meet client's installation criteria	Professional discussion underpinned by portfolio of evidence
S9 Review and compile information to produce handover pack	Practical assessment with questions
S10 Select, implement and evaluate control measures	Professional discussion underpinned by portfolio of evidence
S11 Install electrical systems	Practical assessment with questions

S12 Inspect and test electrical systems	Practical assessment with questions
S13 Isolate electrical circuits	Practical assessment with questions
S14 Maintain cell site apparatus	Professional discussion underpinned by portfolio of evidence
S15 Find faults and repair cell site apparatus	Practical assessment with questions
S16 Decommission cell site apparatus	Professional discussion underpinned by portfolio of evidence
S17 Commission and conduct integration testing on Base Station Sub-System (BSS)	Professional discussion underpinned by portfolio of evidence
S18 Select and use work restraint, work positioning, and fall arrest equipment	Practical assessment with questions
S19 Climb site towers	Professional discussion underpinned by portfolio of evidence
S20 Use lifting and lowering techniques using slings, knots and attachments	Professional discussion underpinned by portfolio of evidence
S21 Select and use tools and equipment when working at ground level and at height	Practical assessment with questions
S22 Conduct tower rescue and casualty management	Professional discussion underpinned by portfolio of evidence
S23 Apply sustainable principles and low carbon processes to implement site environmental solutions and disposal of waste	Professional discussion underpinned by portfolio of evidence
S24 Apply equity, diversity and inclusion principles	Professional discussion underpinned by portfolio of evidence
S25 Communicate with internal and external stakeholders using sector specific terminology through written or verbal means	Professional discussion underpinned by portfolio of evidence
S26 Interpret design drawings	Practical assessment with questions

S27 Use Radio Frequency (RF) monitor	Practical assessment with questions
S28 Conduct site inspections	Professional discussion underpinned by portfolio of evidence
Behaviours	Assessment Method
B1 Take Responsibility for own actions and for the actions of those under their supervision or direction with respect to safety	Professional discussion underpinned by portfolio of evidence
B2 Demonstrate commitment to workplace health, safety	Practical assessment with questions
B3 Take responsibility for and promote sustainable working practices	Professional discussion underpinned by portfolio of evidence
B4 Committed to continued professional development (CPD) to maintain and enhance competence in own area of practice	Professional discussion underpinned by portfolio of evidence
B5 Encourage a diverse and inclusive culture	Professional discussion underpinned by portfolio of evidence
B6 Recognise limitations, seek input from others and escalate issues when required	Professional discussion underpinned by portfolio of evidence