Drone Based Telecom Operations Dy. Manager

QP Code: TEL/Q6225

Version: 1.0

NSQF Level: 5

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TEL/Q6225: Drone Based Telecom Operations Dy. Manager

Brief Job Description

Drone Based Telecom Operations Dy. Manager is responsible for planning, coordinating, and managing drone-enabled operations in telecom infrastructure projects. The individual in this role ensures optimal use of drones for deployment, inspection, and monitoring of telecom assets by leveraging 4G/5G networks, GPS tracking, and telemetry systems. The role also involves ensuring seamless command and control (C2) communication, real-time data transmission, and cloud-based processing for operational efficiency.

Personal Attributes

The individual in this role should possess strong analytical and coordination skills, with a foundational understanding of telecom technologies and drone systems. The individual should be detail-oriented, proactive in problem-solving, and capable of managing complex operations involving real-time communication. The individual should also exhibit effective communication, decision-making, and stakeholder management abilities.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. TEL/N6288: Plan and Coordinate Drone-Based Telecom Logistics Operations
2. TEL/N6289: Manage Drone-Based Logistics Operations for Telecom Services
3. TEL/N6290: Integrate Telecom Networks and Systems for Real-Time Drone Operations
4. TEL/N6291: Manage Telecom Connectivity and Data Transmission During Drone Missions
5. TEL/N6292: Implement safety and regulatory procedures in drone operations
6. DGT/VSQ/N0102: Employability Skills (60 Hours)

Qualification Pack (QP) Parameters

Sector	Telecom
Sub-Sector	Network Managed Services
Occupation	Network Operation and Maintenance
Country	India
NSQF Level	5

Credits	18
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2523.0100
Minimum Educational Qualification & Experience	Completed 2nd year of UG (UG Diploma) (3-years/ 4-years) with NA of experience OR Completed 2nd year diploma after 12th with NA of experience OR 12th grade Pass with 2 Years of experience Relevant Experience OR Previous relevant Qualification of NSQF Level (4.5) with 1.5 years of experience Relevant Experience OR Previous relevant Qualification of NSQF Level (4) with 3 Years of experience Relevant Experience
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	
Version	1.0

TEL/N6288: Plan and Coordinate Drone-Based Telecom Logistics Operations

Description

This OS covers the competencies required to plan, schedule, and prepare drone-based inspection activities for telecom infrastructure.

Scope

The scope covers the following :

- Assess telecom inspection requirements
- Plan flight path and mission parameters
- Allocate fleet and schedule operations
- Ensure compliance and risk preparedness

Elements and Performance Criteria

Assess telecom inspection requirements

To be competent, the user/individual on the job must be able to:

PC1. identify the type, location, and inspection scope of telecom infrastructure requiring drone-based assessment.

PC2. interpret client requirements and project specifications for the inspection task.

PC3. review historical inspection records, maintenance logs, and asset health indicators.

PC4. evaluate environmental and geographical constraints of the site to determine inspection feasibility.

PC5. identify telecom signal availability, obstacles, and airspace restrictions near the inspection area.

Plan flight path and mission parameters

To be competent, the user/individual on the job must be able to:

PC6. prepare and submit drone flight plans for transporting telecom equipment or tools as per DGCA/UTM regulations.

PC7. conduct controlled test flights in accordance with standard operating procedures.

PC8. obtain approvals from Digitalsky or UTM platforms when operating near telecom towers, dense urban zones, or restricted areas

PC9. monitor NOTAMs and real-time alerts that affect drone delivery of telecom payloads (e.g., antennas, RF kits).

PC10. define specific drone flight parameters including altitude, speed, overlap, and waypoints.

PC11. select appropriate flight modes (manual, autonomous, waypoint-based) based on the mission type.

PC12. identify and rectify anomalies encountered during test flights.

PC13. determine payload requirements such as visual, thermal, or LiDAR sensors based on inspection objectives.

PC14. evaluate telecom connectivity (LTE/5G) for real-time telemetry and video streaming.

PC15. validate signal strength and latency for the mission zone using pre-flight test tools.

Allocate fleet and schedule operations

To be competent, the user/individual on the job must be able to:

PC16. assign drone units based on payload compatibility, flight time, and operational readiness.

PC17. check UAV airworthiness, battery health, and software/firmware updates before deployment.

PC18. allocate qualified pilots and support personnel for the scheduled operations.

PC19. coordinate with clients, site engineers, and regulatory agencies for mission clearance.

Ensure compliance and risk preparedness

To be competent, the user/individual on the job must be able to:

PC20. ensure adherence to DGCA, telecom authority, and local airspace regulations for the operation.

PC21. prepare and validate documentation such as SOPs, risk assessments, and flight plans.

PC22. implement Geofencing and fail-safe protocols in case of signal loss or mechanical failure.

PC23. maintain communication logs, checklists, and mission readiness reports for accountability.

PC24. ensure emergency response protocols are in place for lost signal, crash, or system failure.

PC25. maintain backup flight plans with alternative routes, landing zones, and pilot overrides to ensure mission continuity during unexpected disruptions.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. different types of telecom infrastructure (e.g., towers, rooftop sites, small cells) and their inspection needs.

KU2. telecom-specific logistics needs: tower parts, OFC cables, routers, SIMs, IoT devices.

KU3. principles of drone flight, airspace classifications, and mission planning best practices.

KU4. standard pre-flight and post-flight procedures and checklists.

KU5. national and international drone operation regulations and airspace classification.

KU6. DGCA/UTM regulatory frameworks applicable to drone delivery of telecom assets.

KU7. types of drones suitable for telecom spares, equipment, and document movement.

KU8. criticality of SLAs in telecom and how drones can support uptime commitments.

KU9. use of mapping software and GIS tools for defining and simulating flight paths.

KU10. factors affecting signal strength, latency, and interference in telecom environments.

KU11. types of drone payloads (visual, thermal, LiDAR) and their application in telecom inspections.

KU12. functionalities of LTE/5G networks, telemetry links, and GPS modules in

KU13. roles and responsibilities of ground crew, pilots, clients, and site engineers during inspections.

KU14. emergency handling protocols for lost signals, crashes, or technical failures.

KU15. documentation standards for inspection planning including risk logs, permits, and flight plans.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate effectively with clients, drone pilots, and telecom stakeholders to align on project goals.

GS2. apply critical thinking to assess environmental, technical, and regulatory factors before operations

GS3. make quick and informed decisions in response to flight challenges or emergencies.

GS4. adapt to changing regulatory frameworks and airspace restrictions.

GS5. resolve operational issues and conflicts with stakeholders professionally.

GS6. manage time efficiently to coordinate resources and meet inspection schedules.

GS7. organize and prioritize tasks to ensure thorough pre-flight planning and documentation.

GS8. work collaboratively with cross-functional teams to ensure mission readiness.

GS9. apply problem-solving techniques to optimise flight performance and safety.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assess telecom inspection requirements	**8**	**14**	**-**	**2**
PC1. identify the type, location, and inspection scope of telecom infrastructure requiring drone-based assessment.	1	3	-	1
PC2. interpret client requirements and project specifications for the inspection task.	2	2	-	-
PC3. review historical inspection records, maintenance logs, and asset health indicators.	2	2	-	-
PC4. evaluate environmental and geographical constraints of the site to determine inspection feasibility.	2	3	-	1
PC5. identify telecom signal availability, obstacles, and airspace restrictions near the inspection area.	1	4	-	-
Plan flight path and mission parameters	**11**	**22**	**-**	**4**
PC6. prepare and submit drone flight plans for transporting telecom equipment or tools as per DGCA/UTM regulations.	1	3	-	-
PC7. conduct controlled test flights in accordance with standard operating procedures.	2	3	-	1
PC8. obtain approvals from Digitalsky or UTM platforms when operating near telecom towers, dense urban zones, or restricted areas	1	1	-	1
PC9. monitor NOTAMs and real-time alerts that affect drone delivery of telecom payloads (e.g., antennas, RF kits).	1	1	-	-
PC10. define specific drone flight parameters including altitude, speed, overlap, and waypoints.	1	2	-	-
PC11. select appropriate flight modes (manual, autonomous, waypoint-based) based on the mission type.	1	2	-	1
PC12. identify and rectify anomalies encountered during test flights.	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. determine payload requirements such as visual, thermal, or LiDAR sensors based on inspection objectives.	1	2	-	1
PC14. evaluate telecom connectivity (LTE/5G) for real-time telemetry and video streaming.	1	2	-	-
PC15. validate signal strength and latency for the mission zone using pre-flight test tools.	1	3	-	-
Allocate fleet and schedule operations	**4**	**7**	**-**	**2**
PC16. assign drone units based on payload compatibility, flight time, and operational readiness.	1	2	-	-
PC17. check UAV airworthiness, battery health, and software/firmware updates before deployment.	1	3	-	1
PC18. allocate qualified pilots and support personnel for the scheduled operations.	1	-	-	1
PC19. coordinate with clients, site engineers, and regulatory agencies for mission clearance.	1	2	-	-
Ensure compliance and risk preparedness	**7**	**17**	**-**	**2**
PC20. ensure adherence to DGCA, telecom authority, and local airspace regulations for the operation.	1	2	-	1
PC21. prepare and validate documentation such as SOPs, risk assessments, and flight plans.	1	3	-	-
PC22. implement Geofencing and fail-safe protocols in case of signal loss or mechanical failure.	1	4	-	-
PC23. maintain communication logs, checklists, and mission readiness reports for accountability.	1	3	-	-
PC24. ensure emergency response protocols are in place for lost signal, crash, or system failure.	2	2	-	1
PC25. maintain backup flight plans with alternative routes, landing zones, and pilot overrides to ensure mission continuity during unexpected disruptions.	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	60	-	10

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6288
NOS Name	Plan and Coordinate Drone-Based Telecom Logistics Operations
Sector	Telecom
Sub-Sector	
Occupation	Network Operation and Maintenance
NSQF Level	5
Credits	4
Version	1.0
Next Review Date	NA

TEL/N6289: Manage Drone-Based Logistics Operations for Telecom Services

Description

This OS pertains to managing drone-based logistics operations in the telecom sector.

Scope

The scope covers the following :

- Assess and plan feasibility of telecom-related drone deliveries
- Plan and optimize delivery routes and schedules for telecom use
- Monitor drone logistics performance and address service gaps
- Enhance field engineer coordination and customer service
- Apply cost-effective strategies in telecom drone logistics

Elements and Performance Criteria

Assess and plan feasibility of telecom-related drone deliveries

To be competent, the user/individual on the job must be able to:

PC1. review delivery requests for telecom components like signal boosters, batteries, IoT modules, etc., evaluating weight, fragility, and security needs.

PC2. match appropriate drones based on distance to telecom towers, terrain (e.g., hills, remote sites), and payload specifications.

PC3. consider RF interference zones or telecom blackspots that may affect drone GPS or connectivity during route planning.

PC4. conduct risk assessments for high-value telecom assets and assign fail-safe protocols.

Plan and optimize delivery routes and schedules for telecom use

To be competent, the user/individual on the job must be able to:

PC5. use telecom-integrated logistics software or AI routing systems to plan tower-to-tower or warehouse-to-site deliveries.

PC6. incorporate restricted airspaces near telecom hubs or RF zones in route design.

PC7. avoid overlaps in mission scheduling and enable multi-point deliveries to telecom field engineers.

PC8. implement hub-and-spoke or forward stocking locations (FSL) for high-demand telecom spare parts.

PC9. enable dynamic rescheduling to support emergency telecom restoration tasks.

Monitor drone logistics performance and address service gaps

To be competent, the user/individual on the job must be able to:

PC10. track delivery success rates and fleet KPIs specific to telecom service-level timelines.

PC11. compare planned vs. actual delivery routes, flight times, and delays in reaching telecom sites.

PC12. diagnose issues like signal jamming, payload drop failures, or weather-triggered mission aborts.

PC13. recommend improvements based on route heatmaps, drone reliability, and telecom urgency analysis.

PC14. document telecom-linked delivery deviations and generate improvement reports.

Enhance field engineer coordination and customer service

To be competent, the user/individual on the job must be able to:

PC15. share real-time drone tracking and ETAs with telecom field engineers or installation teams.

PC16. verify that telecom payloads (e.g., RF tools, SIM kits, cables) are delivered securely and in working condition.

PC17. update telecom clients or NOC teams on any expected delivery disruptions proactively.

Apply cost-effective strategies in telecom drone logistics

To be competent, the user/individual on the job must be able to:

PC18. use predictive demand data (e.g., tower outages, maintenance cycles) to plan preemptive delivery missions.

PC19. optimize route clusters for telecom projects based on geography, SLAs, and drone utilization.

PC20. reassign or rotate drones for balanced usage across telecom regions/zones.

PC21. evaluate cost per mission and propose savings via energy optimization and load bundling.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. DGCA/UTM regulatory frameworks applicable to drone delivery of telecom assets.

KU2. types of drones suitable for telecom spares, equipment, and document movement.

KU3. telecom-specific logistics needs: tower parts, OFC cables, routers, SIMs, IoT devices.

KU4. predictive analytics tools to forecast telecom service and maintenance needs.

KU5. emergency protocols for drone delivery in telecom outage situations.

KU6. payload handling SOPs for fragile or high-frequency telecom components.

KU7. cost-benefit frameworks specific to telecom logistics automation.

KU8. protocols for responding to delivery failure, crash events, or service disputes.

KU9. real-time tracking integration with telecom field management platforms.

KU10. environmental challenges (wind, tower interference, rooftop access) in telecom delivery points.

KU11. telecom-specific KPIs for delivery support efficiency.

KU12. geo-tagging and logging drone performance near telecom towers.

KU13. use of IoT sensors for smart payload management in telecom.

KU14. NOC/client communication requirements in telecom repair logistics.

KU15. data protection and anti-tamper measures for telecom payloads.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate clearly with ATC, UTM platforms, and telecom operations teams.

GS2. interpret GIS maps, UTM zones, and telecom tower coordinates.

GS3. respond rapidly to emergency delivery requirements from telecom NOCs.
GS4. prioritize deliveries for outage restoration, service provisioning, or SLA adherence.
GS5. record and interpret flight logs, payload data, and mission reports.
GS6. coordinate cross-functionally with telecom engineers, logistics teams, and drone pilots.
GS7. resolve conflicts, delays, or discrepancies in telecom delivery missions.
GS8. keep updated on telecom-sector trends influencing drone logistics (e.g., 5G, FWA).

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assess and plan feasibility of telecom-related drone deliveries	**5**	**11**	**-**	**1**
PC1. review delivery requests for telecom components like signal boosters, batteries, IoT modules, etc., evaluating weight, fragility, and security needs.	1	2	-	1
PC2. match appropriate drones based on distance to telecom towers, terrain (e.g., hills, remote sites), and payload specifications.	2	3	-	-
PC3. consider RF interference zones or telecom blackspots that may affect drone GPS or connectivity during route planning.	1	3	-	-
PC4. conduct risk assessments for high-value telecom assets and assign fail-safe protocols.	1	3	-	-
Plan and optimize delivery routes and schedules for telecom use	**8**	**14**	**-**	**3**
PC5. use telecom-integrated logistics software or AI routing systems to plan tower-to-tower or warehouse-to-site deliveries.	1	4	-	-
PC6. incorporate restricted airspaces near telecom hubs or RF zones in route design.	2	2	-	1
PC7. avoid overlaps in mission scheduling and enable multi-point deliveries to telecom field engineers.	1	3	-	1
PC8. implement hub-and-spoke or forward stocking locations (FSL) for high-demand telecom spare parts.	2	3	-	-
PC9. enable dynamic rescheduling to support emergency telecom restoration tasks.	2	2	-	1
Monitor drone logistics performance and address service gaps	**8**	**12**	**-**	**2**
PC10. track delivery success rates and fleet KPIs specific to telecom service-level timelines.	2	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. compare planned vs. actual delivery routes, flight times, and delays in reaching telecom sites.	2	2	-	1
PC12. diagnose issues like signal jamming, payload drop failures, or weather-triggered mission aborts.	1	2	-	-
PC13. recommend improvements based on route heatmaps, drone reliability, and telecom urgency analysis.	2	1	-	1
PC14. document telecom-linked delivery deviations and generate improvement reports.	1	3	-	-
Enhance field engineer coordination and customer service	**3**	**9**	**-**	**2**
PC15. share real-time drone tracking and ETAs with telecom field engineers or installation teams.	1	4	-	1
PC16. verify that telecom payloads (e.g., RF tools, SIM kits, cables) are delivered securely and in working condition.	1	4	-	-
PC17. update telecom clients or NOC teams on any expected delivery disruptions proactively.	1	1	-	1
Apply cost-effective strategies in telecom drone logistics	**6**	**14**	**-**	**2**
PC18. use predictive demand data (e.g., tower outages, maintenance cycles) to plan preemptive delivery missions.	2	3	-	1
PC19. optimize route clusters for telecom projects based on geography, SLAs, and drone utilization.	1	4	-	-
PC20. reassign or rotate drones for balanced usage across telecom regions/zones.	2	3	-	1
PC21. evaluate cost per mission and propose savings via energy optimization and load bundling.	1	4	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6289
NOS Name	Manage Drone-Based Logistics Operations for Telecom Services
Sector	Telecom
Sub-Sector	
Occupation	Network Operation and Maintenance
NSQF Level	5
Credits	3
Version	1.0
Next Review Date	NA

TEL/N6290: Integrate Telecom Networks and Systems for Real-Time Drone Operations

Description

This OS covers the competencies required to configure and integrate telecom systems (4G/5G, SIM/eSIM modules, telemetry, GPS) with UAV platforms for real-time command and control (C2), data transmission, and drone fleet coordination.

Scope

The scope covers the following :

- Configure telecom modules for drone connectivity
- Calibrate GPS and telemetry systems
- Map and validate telecom signal zones
- Integrate command, control, and cloud systems

Elements and Performance Criteria

Configure telecom modules for drone connectivity

To be competent, the user/individual on the job must be able to:

PC1. install and configure SIM/eSIM modules for 4G/5G connectivity in drones.

PC2. validate compatibility of telecom modules with the drone's flight control and telemetry systems.

PC3. set parameters for data throughput, signal switching, and fallback mechanisms in case of network loss.

PC4. document IMEI, SIM ID, APN settings, and network profiles for each drone system.

Calibrate GPS and telemetry systems

To be competent, the user/individual on the job must be able to:

PC5. integrate GPS units with drone autopilot and telemetry systems.

PC6. calibrate GNSS settings based on the operating region and satellite availability.

PC7. synchronize GPS and telemetry data with onboard and ground systems for real-time feedback.

PC8. validate signal strength and positional accuracy using drone diagnostic tools.

PC9. align telemetry protocols (e.g., MAVLink) with ground control software.

Map and validate telecom signal zones

To be competent, the user/individual on the job must be able to:

PC10. use signal mapping tools to assess 4G/5G coverage and latency in operational areas.

PC11. identify zones with potential signal drop, dead zones, and high-latency risks.

PC12. cross-reference coverage maps with mission flight paths to avoid loss of connectivity.

PC13. record signal strength, jitter, and latency values during test flights.

PC14. recommend alternate telecom networks or mission parameters for low-coverage zones.

Integrate command, control, and cloud systems

To be competent, the user/individual on the job must be able to:

PC15. establish secure telecom links between UAV and Ground Control Station (GCS).
PC16. configure cloud-based platforms for real-time data streaming and control via telecom networks.
PC17. ensure redundancy of communication channels using dual SIM or fallback modules.
PC18. monitor C2 system health and signal continuity throughout flight operations.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. features and limitations of SIM vs eSIM modules in UAV systems.
KU2. role of APN settings, IMEI numbers, and network locking/unlocking for module activation.
KU3. fundamentals of GNSS (GPS, GLONASS, Galileo) used for drone navigation.
KU4. telemetry systems and their integration with drone autopilots and ground control software.
KU5. network performance indicators such as signal strength (RSSI), jitter, latency, and packet loss.
KU6. telecom interference sources and how to mitigate them during drone missions.
KU7. configuration of dual-channel or redundant communication links for C2 continuity.
KU8. cloud platforms and APIs used for real-time drone data streaming.
KU9. data security practices for telecom-based UAV communication.
KU10. legal and regulatory norms for telecom module usage in UAVs.
KU11. troubleshooting methods for network disconnection, module failure, or GPS signal loss.
KU12. documentation standards for connectivity settings, calibration logs, and system configurations.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate technical information clearly to team members and clients.
GS2. identify and troubleshoot network connectivity issues in real time.
GS3. apply logical reasoning to optimize telecom configurations for different missions.
GS4. manage time efficiently to ensure all modules are configured and tested before missions.
GS5. work collaboratively with cross-functional teams to ensure mission readiness.
GS6. adapt to evolving telecom technologies and UAV communication systems.
GS7. think critically to assess mission risk due to connectivity limitations.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Configure telecom modules for drone connectivity	**8**	**13**	**-**	**2**
PC1. install and configure SIM/eSIM modules for 4G/5G connectivity in drones.	2	4	-	-
PC2. validate compatibility of telecom modules with the drone's flight control and telemetry systems.	2	2	-	1
PC3. set parameters for data throughput, signal switching, and fallback mechanisms in case of network loss.	2	4	-	1
PC4. document IMEI, SIM ID, APN settings, and network profiles for each drone system.	2	3	-	-
Calibrate GPS and telemetry systems	**7**	**19**	**-**	**3**
PC5. integrate GPS units with drone autopilot and telemetry systems.	2	4	-	-
PC6. calibrate GNSS settings based on the operating region and satellite availability.	2	4	-	1
PC7. synchronize GPS and telemetry data with onboard and ground systems for real-time feedback.	2	4	-	-
PC8. validate signal strength and positional accuracy using drone diagnostic tools.	1	3	-	1
PC9. align telemetry protocols (e.g., MAVLink) with ground control software.	-	4	-	1
Map and validate telecom signal zones	**10**	**14**	**-**	**3**
PC10. use signal mapping tools to assess 4G/5G coverage and latency in operational areas.	2	4	-	-
PC11. identify zones with potential signal drop, dead zones, and high-latency risks.	2	2	-	1
PC12. cross-reference coverage maps with mission flight paths to avoid loss of connectivity.	2	4	-	1
PC13. record signal strength, jitter, and latency values during test flights.	2	4	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. recommend alternate telecom networks or mission parameters for low-coverage zones.	2	-	-	1
Integrate command, control, and cloud systems	**5**	**14**	**-**	**2**
PC15. establish secure telecom links between UAV and Ground Control Station (GCS).	1	4	-	-
PC16. configure cloud-based platforms for real-time data streaming and control via telecom networks.	1	4	-	-
PC17. ensure redundancy of communication channels using dual SIM or fallback modules.	2	3	-	1
PC18. monitor C2 system health and signal continuity throughout flight operations.	1	3	-	1
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6290
NOS Name	Integrate Telecom Networks and Systems for Real-Time Drone Operations
Sector	Telecom
Sub-Sector	
Occupation	Network Operation and Maintenance
NSQF Level	5
Credits	3
Version	1.0
Next Review Date	NA

TEL/N6291: Manage Telecom Connectivity and Data Transmission During Drone Missions

Description

This OS pertains to managing telecom infrastructure, ensuring robust connectivity, and enabling seamless drone-to-cloud data transmission during UAV missions.

Scope

The scope covers the following :

- Evaluate telecom infrastructure and mission readiness
- Configure and validate drone communication system
- Monitor in-flight telecom connectivity and telemetry health
- Troubleshoot and respond to connectivity disruptions
- Ensure reliable data transmission and cloud integration

Elements and Performance Criteria

Evaluate telecom infrastructure and mission readiness

To be competent, the user/individual on the job must be able to:

PC1. analyze signal coverage and cell tower distribution using RF propagation tools (e.g., Atoll, TEMS).

PC2. assess uplink/downlink latency, bandwidth, and network stability using performance test tools.

PC3. conduct spectrum analysis to detect EMI/RFI sources along the drone route.

PC4. evaluate terrain-related coverage risks in urban, rural, or industrial environments.

PC5. review C2 link and GPS alignment feasibility prior to flight.

Configure and validate drone communication system

To be competent, the user/individual on the job must be able to:

PC6. configure LTE/5G routers, modems, and eSIM/SIM modules with appropriate APN and QoS settings.

PC7. perform pre-flight benchmarking for latency, jitter, and throughput using IPerf or similar tools.

PC8. set up dual-redundant communication links (e.g., LTE/RF) with automatic handover logic.

PC9. verify compatibility and synchronization protocols between IoT sensors and telecom modules (e.g., MQTT-SN, NTP).

PC10. conduct validation of SIM provisioning and M2M connectivity with cloud dashboards.

Monitor in-flight telecom connectivity and telemetry health

To be competent, the user/individual on the job must be able to:

PC11. continuously monitor signal quality metrics (e.g., RSSI, RSRP, SINR, BER) using telemetry dashboards.

PC12. track telemetry packet flow, jitter, video feed latency, and command delays in real time.

PC13. validate live synchronization of drone location and sensor output with GCS/cloud servers.

PC14. detect network congestion, frame drops, and signal loss during video or data streaming.

PC15. assess bandwidth fluctuation and impact on drone-to-cloud data uploads.

Troubleshoot and respond to connectivity disruptions

To be competent, the user/individual on the job must be able to:

PC16. use RF analyzers, LTE sniffers, SDR kits, and Wireshark to identify root causes of signal disruption.

PC17. diagnose and resolve issues related to tower handoffs, line-of-sight, and SIM registration failures.

PC18. reconfigure drone network parameters mid-flight for optimal connectivity or fallback operation.

PC19. trigger fallback protocols (e.g., RTL, land, loiter) based on signal loss thresholds.

PC20. implement adaptive bitrate streaming and data buffering in low-bandwidth conditions.

PC21. activate redundant telemetry links (e.g., RF, LTE) upon primary failure.

PC22. capture and analyze network performance logs post-flight to identify performance bottlenecks.

PC23. troubleshoot connectivity errors including IP conflicts, APN failures, or SIM denial of service.

PC24. communicate real-time alerts to operations teams via Ground Control Station or mission software.

PC25. document anomalies such as GPS drift or data sync lags for compliance and post-mission review.

Ensure reliable data transmission and cloud integration

To be competent, the user/individual on the job must be able to:

PC26. integrate drone telemetry and payload data (video, sensor) with edge/cloud platforms via telecom backhaul.

PC27. retrieve sensor data (images, video, LiDAR, etc.) from onboard storage or transmission systems.

PC28. use software tools to process geospatial and image data collected during flight missions.

PC29. monitor and validate timestamp accuracy for cloud-ingested data using NTP protocols.

PC30. apply data filters, corrections, and coordinate mapping for accuracy.

PC31. apply secure transmission protocols (e.g., TLS, VPN, IPsec) for data integrity and privacy.

PC32. maintain drone-to-cloud pipeline reliability using MQTT, RTMP, FTP, or HTTP POST protocols.

PC33. generate analytical reports and visualizations from collected drone data.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. 4G/5G network architecture and relevance to UAV operations.

KU2. telecom KPIs: RSSI, SNR, RSRP, BER, latency, jitter, throughput.

KU3. functionality and configuration of LTE/5G routers, modems, and SIM/eSIMs.

KU4. spectrum analysis and EMI/RFI interference identification.

KU5. C2 and telemetry protocols (UDP, TCP/IP, RTP, MQTT, etc.).

KU6. use and interpretation of tools like Atoll, NetMonster, SDR kits, and IPerf.

KU7. public vs private 5G use cases for logistics and inspection missions.

KU8. drone-to-cloud transmission protocols and mechanisms (e.g., RTMP, MQTT, HTTP POST).
KU9. cloud and edge data ingestion principles for real-time analytics.
KU10. redundancy strategies in communication (dual-link RF/LTE, SATCOM).
KU11. GPS-telecom integration methods and synchronization protocols (e.g., NTP).
KU12. network planning and RF propagation concepts (link budget, cell coverage).
KU13. causes of drone connectivity degradation: tower handoff, terrain, weather.
KU14. security protocols for UAV telecom systems: TLS, VPN, firewalls.
KU15. fail-safe and fallback protocol logic based on connectivity failure.
KU16. legal and regulatory telecom restrictions for drone operations.
KU17. data logging, audit trail requirements, and diagnostic reporting standards.
KU18. use of Ground Control Software for live telemetry and fail-safe management.
KU19. SOPs for pre-flight telecom assessment, fallback execution, and post-mission reviews.
KU20. techniques for collecting and processing data using drone platforms (e.g., photogrammetry, NDVI).
KU21. software tools for data processing (e.g., Pix4D, DroneDeploy, QGIS).
KU22. best practices for data security, storage, and compliance with data protection norms.
KU23. safety standards, risk assessment methods, and emergency procedures in UAV deployment.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate technical findings with engineers, pilots, and cloud teams.
GS2. interpret graphs, logs, and dashboards for real-time analysis.
GS3. apply logical reasoning and structured troubleshooting methods.
GS4. work under time pressure and prioritize responses to critical connectivity events.
GS5. collaborate with telecom service providers and UAV hardware vendors.
GS6. maintain situational awareness during live missions to avoid signal blackouts.
GS7. continuously learn from flight data to improve performance and reliability.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Evaluate telecom infrastructure and mission readiness	**5**	**10**	**-**	**1**
PC1. analyze signal coverage and cell tower distribution using RF propagation tools (e.g., Atoll, TEMS).	1	2	-	-
PC2. assess uplink/downlink latency, bandwidth, and network stability using performance test tools.	1	2	-	-
PC3. conduct spectrum analysis to detect EMI/RFI sources along the drone route.	1	2	-	-
PC4. evaluate terrain-related coverage risks in urban, rural, or industrial environments.	1	2	-	-
PC5. review C2 link and GPS alignment feasibility prior to flight.	1	2	-	1
Configure and validate drone communication system	**5**	**10**	**-**	**1**
PC6. configure LTE/5G routers, modems, and eSIM/SIM modules with appropriate APN and QoS settings.	1	2	-	-
PC7. perform pre-flight benchmarking for latency, jitter, and throughput using IPerf or similar tools.	1	2	-	-
PC8. set up dual-redundant communication links (e.g., LTE/RF) with automatic handover logic.	1	2	-	-
PC9. verify compatibility and synchronization protocols between IoT sensors and telecom modules (e.g., MQTT-SN, NTP).	1	2	-	-
PC10. conduct validation of SIM provisioning and M2M connectivity with cloud dashboards.	1	2	-	1
Monitor in-flight telecom connectivity and telemetry health	**5**	**10**	**-**	**2**
PC11. continuously monitor signal quality metrics (e.g., RSSI, RSRP, SINR, BER) using telemetry dashboards.	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. track telemetry packet flow, jitter, video feed latency, and command delays in real time.	1	2	-	-
PC13. validate live synchronization of drone location and sensor output with GCS/cloud servers.	1	2	-	1
PC14. detect network congestion, frame drops, and signal loss during video or data streaming.	1	2	-	-
PC15. assess bandwidth fluctuation and impact on drone-to-cloud data uploads.	1	2	-	1
Troubleshoot and respond to connectivity disruptions	**10**	**20**	**-**	**3**
PC16. use RF analyzers, LTE sniffers, SDR kits, and Wireshark to identify root causes of signal disruption.	1	2	-	-
PC17. diagnose and resolve issues related to tower handoffs, line-of-sight, and SIM registration failures.	1	2	-	1
PC18. reconfigure drone network parameters mid-flight for optimal connectivity or fallback operation.	1	2	-	1
PC19. trigger fallback protocols (e.g., RTL, land, loiter) based on signal loss thresholds.	1	2	-	-
PC20. implement adaptive bitrate streaming and data buffering in low-bandwidth conditions.	1	2	-	-
PC21. activate redundant telemetry links (e.g., RF, LTE) upon primary failure.	1	2	-	-
PC22. capture and analyze network performance logs post-flight to identify performance bottlenecks.	1	2	-	-
PC23. troubleshoot connectivity errors including IP conflicts, APN failures, or SIM denial of service.	1	2	-	-
PC24. communicate real-time alerts to operations teams via Ground Control Station or mission software.	1	2	-	1

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. document anomalies such as GPS drift or data sync lags for compliance and post-mission review.	1	2	-	-
Ensure reliable data transmission and cloud integration	**5**	**10**	**-**	**3**
PC26. integrate drone telemetry and payload data (video, sensor) with edge/cloud platforms via telecom backhaul.	-	1	-	-
PC27. retrieve sensor data (images, video, LiDAR, etc.) from onboard storage or transmission systems.	1	2	-	1
PC28. use software tools to process geospatial and image data collected during flight missions.	-	1	-	-
PC29. monitor and validate timestamp accuracy for cloud-ingested data using NTP protocols.	1	1	-	1
PC30. apply data filters, corrections, and coordinate mapping for accuracy.	-	1	-	-
PC31. apply secure transmission protocols (e.g., TLS, VPN, IPsec) for data integrity and privacy.	1	1	-	-
PC32. maintain drone-to-cloud pipeline reliability using MQTT, RTMP, FTP, or HTTP POST protocols.	1	1	-	-
PC33. generate analytical reports and visualizations from collected drone data.	1	2	-	1
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6291
NOS Name	Manage Telecom Connectivity and Data Transmission During Drone Missions
Sector	Telecom
Sub-Sector	
Occupation	Network Operation and Maintenance
NSQF Level	5
Credits	4
Version	1.0
Next Review Date	NA

TEL/N6292: Implement safety and regulatory procedures in drone operations

Description

This OS describes the skills and knowledge required to implement health, safety, and regulatory procedures related to drone operations.

Scope

The scope covers the following :

- Identify and monitor safety risks in drone operations
- Ensure regulatory and organisational compliance

Elements and Performance Criteria

Identify and monitor safety risks in drone operations

To be competent, the user/individual on the job must be able to:

PC1. identify and assess potential safety risks associated with drone related activities, including take-off, landing, and payload handling.

PC2. monitor weather conditions and environmental hazards that could impact drone operations.

PC3. ensure drones are deployed in accordance with safety protocols and organisational procedures.

PC4. verify that drone operators and support staff follow personal protective and operational safety measures.

PC5. maintain updated records of safety checks, incidents, and corrective actions taken.

PC6. report safety breaches, near misses, and unsafe practices to designated authorities within the organisation.

PC7. review incident reports to recommend preventive measures and reduce operational risks.

PC8. coordinate with relevant departments to ensure emergency response plans are in place and communicated.

Ensure regulatory and organisational compliance

To be competent, the user/individual on the job must be able to:

PC9. record and report safety breaches, near misses, and accidents using organisational protocols.

PC10. ensure adherence to national and local airspace regulations and drone operation guidelines.

PC11. verify that drone equipment meets licensing, certification, and airworthiness requirements.

PC12. monitor compliance with data privacy and security standards during drone operations.

PC13. maintain accurate records of drone usage, flight paths, and logs for regulatory audit readiness.

PC14. update internal teams on changes in drone regulations or organisational safety policies.

PC15. facilitate regular compliance audits and inspections of the drones.

PC16. promote a safety and compliance culture through regular briefings and training support.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. applicable national and regional aviation regulations relevant to drone operations.
KU2. organisational policies on health, safety, and environmental (HSE) compliance.
KU3. risk assessment methodologies in the context of drone operations.
KU4. common safety hazards in drone handling, flight, and operations.
KU5. emergency procedures for various operational incidents such as loss of control or crash.
KU6. importance of weather data and terrain information in flight safety.
KU7. documentation and reporting requirements for compliance tracking.
KU8. data protection and privacy considerations while handling sensitive information.
KU9. protocols for internal and external safety audits.
KU10. use of digital tools to log, monitor, and analyse safety and compliance data.
KU11. role of communication and training in maintaining operational safety.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicate safety and compliance guidelines effectively to team members.
GS2. prioritise tasks during emergencies to ensure quick and safe response.
GS3. collaborate with internal teams and regulatory authorities to resolve compliance gaps.
GS4. maintain accuracy and attention to detail in documentation and recordkeeping.
GS5. apply critical thinking to identify risks and recommend proactive safety measures.
GS6. foster a positive and responsible safety culture in the workplace.
GS7. stay updated on evolving safety standards and regulations.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Identify and monitor safety risks in drone operations	**15**	**30**	**-**	**6**
PC1. identify and assess potential safety risks associated with drone related activities, including take-off, landing, and payload handling.	2	4	-	1
PC2. monitor weather conditions and environmental hazards that could impact drone operations.	2	4	-	-
PC3. ensure drones are deployed in accordance with safety protocols and organisational procedures.	2	2	-	1
PC4. verify that drone operators and support staff follow personal protective and operational safety measures.	2	4	-	1
PC5. maintain updated records of safety checks, incidents, and corrective actions taken.	2	4	-	-
PC6. report safety breaches, near misses, and unsafe practices to designated authorities within the organisation.	1	4	-	1
PC7. review incident reports to recommend preventive measures and reduce operational risks.	2	4	-	1
PC8. coordinate with relevant departments to ensure emergency response plans are in place and communicated.	2	4	-	1
Ensure regulatory and organisational compliance	**15**	**30**	**-**	**4**
PC9. record and report safety breaches, near misses, and accidents using organisational protocols.	2	4	-	-
PC10. ensure adherence to national and local airspace regulations and drone operation guidelines.	2	4	-	1
PC11. verify that drone equipment meets licensing, certification, and airworthiness requirements.	2	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. monitor compliance with data privacy and security standards during drone operations.	2	4	-	1
PC13. maintain accurate records of drone usage, flight paths, and logs for regulatory audit readiness.	2	4	-	-
PC14. update internal teams on changes in drone regulations or organisational safety policies.	1	3	-	1
PC15. facilitate regular compliance audits and inspections of the drones.	2	4	-	1
PC16. promote a safety and compliance culture through regular briefings and training support.	2	4	-	-
NOS Total	**30**	**60**	**-**	**10**

National Occupational Standards (NOS) Parameters

NOS Code	TEL/N6292
NOS Name	Implement safety and regulatory procedures in drone operations
Sector	Telecom
Sub-Sector	
Occupation	Network Operation and Maintenance
NSQF Level	5
Credits	2
Version	1.0
Next Review Date	NA

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. identify employability skills required for jobs in various industries

PC2. identify and explore learning and employability portals

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC5. recognize the significance of 21st Century Skills for employment

PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC7. use basic English for everyday conversation in different contexts, in person and over the telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC16. select financial institutions, products and services as per requirement

PC17. carry out offline and online financial transactions, safely and securely

PC18. identify common components of salary and compute income, expenses, taxes, investments etc

PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all

GS4. how to work in a virtual mode

GS5. perform calculations efficiently
GS6. solve problems effectively
GS7. pay attention to details
GS8. manage time efficiently
GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**2**	**4**	**-**	**-**
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	**1**	**2**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	**2**	**2**	**-**	**-**
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**2**	**-**	**-**
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	**-**	**-**
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**4**	**-**	**-**
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
Entrepreneurship	**2**	**3**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2028
NSQC Clearance Date	07/10/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each Element/PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.

4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
TEL/N6288.Plan and Coordinate Drone-Based Telecom Logistics Operations	30	60	0	10	100	18
TEL/N6289.Manage Drone-Based Logistics Operations for Telecom Services	30	60	0	10	100	18
TEL/N6290.Integrate Telecom Networks and Systems for Real-Time Drone Operations	30	60	0	10	100	18
TEL/N6291.Manage Telecom Connectivity and Data Transmission During Drone Missions	30	60	0	10	100	18
TEL/N6292.Implement safety and regulatory procedures in drone operations	30	60	0	10	100	18
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	10
Total	**170**	**330**	**-**	**50**	**550**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.

Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.