

# GUIDANCE NOTE

Issued: 1<sup>st</sup> October 2020

## Infrastructure Technician (ST0125)

### END-POINT ASSESSMENT ADDITIONAL GUIDANCE ON SELECT COMPETENCY STANDARDS FROM THE OCCUPATIONAL BRIEF

This guidance is designed to support End-Point Assessment Organisations (EPAOs) by providing some clarity to those parts of the occupational brief that have caused some uncertainty when assessing and moderating apprenticeship work.

The following table shows what the minimum expected requirements are for a pass on some of the criteria listed in the occupational brief and offers guidance on how this could be interpreted. Note that there are other criteria (competency standards) in the occupational brief and this table focuses on just those competency standards EPAOs felt needed further guidance.

This is indicative guidance only and represents an attempt to develop a shared understanding of how the competency standards can be interpreted.

## The what – what the apprentice has shown they can do

Competency Standard	Minimum, expected, requirements for a pass	Guidance to aid understanding
<p><b>Communication</b></p> <p>Works both independently and as part of a team and following the organisations standards; competently demonstrating an ability to communicate both in writing and orally at all levels, using a range of tools and demonstrating strong interpersonal skills and cultural awareness when dealing with colleagues, customers and clients during all tasks.</p>	<p>The apprentice should be able to use a minimum of 3 tools to communicate:</p> <ul style="list-style-type: none"> <li>• Oral</li> <li>• Face-to-face</li> <li>• <b>Remote</b></li> <li>•</li> </ul> <p><b>Diagrammatic</b></p> <p>The apprentice should be able to demonstrate and compile three different forms of <b>written professional correspondence</b>.</p> <p>The apprentice must be able to explain 3 types of <b>communication styles</b> to ensure cultural awareness and appropriateness for customer is taken into account.</p>	<p>Social Media and collaboration tools are in scope.</p> <p><b>'Remote'</b> could involve collaborative tools such as MS Teams, Zoom and other video conferencing. Remote assistant/remote desktop applications are also in scope.</p> <p><b>'Diagrammatic'</b> could, for example, involve network diagrams, troubleshooting flow charts, floorplans and wiring diagrams.</p> <p><b>Written professional correspondence</b> could include tickets from helpdesk software, email, formal reports, fault logs etc.</p> <p>Communication styles might involve adapting language to suite different audiences, use of non-technical language, minimising use of jargon, demonstrating a cultural awareness and cultural sensitivity, and the appropriateness of using informal or formal methods of communication.</p>
<p><b>IT Security</b></p> <p>Demonstrates the necessary skills and behaviours to securely operate across all platforms and areas of responsibilities in line with organisational guidance, legislation</p>	<p>The apprentice must demonstrate how they <b>comply with organisational security processes</b> and how they would recognised and escalate issues.</p> <p>The apprentice must be able to locate and follow policies and legislation.</p>	<p><b>Complying with organisational security processes</b> could involve:</p> <ul style="list-style-type: none"> <li>• Log on process</li> <li>• Process for changing user passwords</li> <li>• Updating Anti-virus software</li> <li>• Locking systems when not at workstation</li> <li>• Encrypting data</li> <li>• Applying user and group permissions</li> </ul> <p>Escalating issues could involve:</p> <ul style="list-style-type: none"> <li>• Helpdesk software</li> <li>• Email</li> <li>• Face to face contact (virtual or actual)</li> </ul>

<p><b>Remote Infrastructure</b></p> <p>Effectively operates a range of mobile devices and securely add them to a network in accordance with organisations policies and procedures</p>	<p>The apprentice must demonstrate how to securely connect a minimum of two different types of devices (e.g. laptop/mobile) to access the organisation's network services (e.g. email, files, applications).</p>	<p>This can be done using both wired and wireless connectivity.</p> <p>Connecting devices can include:</p> <ul style="list-style-type: none"> <li>• Connecting to the network after a OS reinstall             <ul style="list-style-type: none"> <li>o Reinstalls OS on a laptop</li> <li>o Connects laptop to network; demonstrating joining WiFi network with SSID and Key</li> <li>o Access Network Resources - access Internet for updates, and/or configuring mail client, and/or connecting to domain, and/or connecting to Azure account.</li> <li>o Configure built in firewalls</li> </ul> </li> </ul> <p>This doesn't need to be a reinstall it could also be configuring a new laptop or tablet to connect to the WIFI.</p> <ul style="list-style-type: none"> <li>• Configuring router and access point             <ul style="list-style-type: none"> <li>o Connecting laptop with an Ethernet cable to router and manually configuring IP settings (This can be done using both wired and wireless connectivity).</li> <li>o Installing and Configuring secure settings on access point; secure network, WPA2, SSID and Key.</li> <li>o Configuring DNS and DHCP</li> <li>o Reconnecting laptop through WiFi and connecting other devices to network</li> <li>o Testing network with ping commands between devices.</li> <li>o Configuring firewall rules</li> </ul> </li> </ul> <p>While plugging in ethernet cable and domain joining doesn't count on its own, if tested using WIFI it counts as remote.</p> <ul style="list-style-type: none"> <li>• Connecting a phone to WiFi             <ul style="list-style-type: none"> <li>o Connecting phone to WiFi network using SSID and Key (this could be connecting a guest to the guest network)</li> <li>o Accessing network resources: Internet and/or configuring mail client</li> </ul> </li> </ul> <p>Also in scope can be examples of how apprentices have set up users to work from home during lockdown:</p> <ul style="list-style-type: none"> <li>• Installing a VPN on a laptop/PC to connect to the main office.</li> <li>• Configuring remote desktop on a user's home PC or laptop to connect to their work PC.</li> </ul> <p>Also in scope is an apprentice setting up an VPN connection in the office to allow remote users to access the corporate resources.</p> <p>Joining a computer to a domain or just using Remote Assistance, such as LogMeIn or similar should not be considered sufficient or appropriate on its own.</p> <p>The MOD and some other specialist employers may use</p>
---	--	---

		<p>remote radar systems, and some are now configuring, operating and integrating drones into their systems and technology (feeding data back to servers etc).</p> <p>Technology is moving fast, and EPAOS should be flexible enough to recognise this.</p>
<p><b>Data</b></p> <p>Effectively records, analyses and communicates data at the appropriate level using the organisation's standard tools and processes and to all stakeholders within the responsibility of the position</p>	<p>The apprentice must be able to select and securely use three appropriate tools when working with and analysing data.</p>	<p>Data recording allows important information to be stored and analysed. There is a wide range of ways to record, analyse and communicate data, depending on what the data is needed for. For example, troubleshooting tools can provide sources of data, which can be used to identify and resolve performance issues.</p> <p>Apprentices should be able to show how data from appropriate tools are recorded, analysed, and communicated using organisational processes.</p> <p>The tools used could include:</p> <ul style="list-style-type: none"> <li>• Ping network utility tool: used to test the reachability of a host on an IP network. The outcome of a ping can be analysed to determine if a network device is reachable. Key point to bear in mind is how the data collected from a tool like this (and Tracert/Traceroute) is then used. For example, if an apprentice has been asked to record information about which devices are reachable on a network then the ping tool can be used to collect the data. Patterns can even be identified from the data collected. For example, establishing if tablets or printers on a particular network segment are reachable or unreachable.</li> <li>• Tracert/Traceroute are diagnostic tools that can be used to trace the path from one network to another or to identify the route taken by data to reach its destination. Information from the tool can be analysed to resolve issues. Again, the emphasis is on how the data being found out is recorded and then acted on.</li> <li>• Wireshark network traffic analyser: data from Wireshark can be used to troubleshoot and gather information regarding the types of data packets on a network, in real-time. This information can be analysed to troubleshoot latency issues, dropped packets, and malicious activity on the network.</li> <li>• Ipconfig can be used to troubleshoot network connectivity issues, providing data on IP addresses, subnet mask and default gateway for all adapters, and more depending on the parameters used.</li> </ul> <p>Ways of communicating data could include:</p> <ul style="list-style-type: none"> <li>• Fault logs - record data that can be analysed and used to investigate problems on systems. Information on system errors and incidents can be used to fix reoccurring faults.</li> <li>• Helpdesk software - can be used to log incidents and communicate with customers.</li> <li>• Job sheets - to document the lifecycle of a job and record all details which allow all information about the</li> </ul>

		<p>job to be viewed in one location and with ease.</p> <ul style="list-style-type: none"> <li>• Emails - to communicate information with clients and all stakeholders.</li> <li>• Spreadsheets and charts - to store information, analyse data, and communicate the outcome.</li> </ul>
--	--	---

<p><b>Performance</b></p> <p>Optimises the performance of hardware, software and Network Systems and services in line with business requirements</p>	<p>The apprentice must be able to demonstrate how to configure a minimum of three pieces of hardware and configure three different types of software in line with business requirements.</p>	<p>Hardware configuration represents a demonstrable change made to a device such that some measurable attribute changes after the configuration e.g. RAM is added and the total amount available changes.</p> <p>Many infrastructure technicians may work with Cloud infrastructure and will be making alterations to computer subsystems and documenting those changes.</p> <p>Mainframe configuration is becoming more niche and to cover the standard appropriately other examples of competence with physical hardware should be looked for. EPAOs should expect to see at the very least ONE OTHER example of a more transferrable hardware configuration competence.</p> <p>Apprentices may also be installing software on virtual platforms which will contribute to the software requirements of this competence.</p>
--	--	---