Transition assessment of Signalling Maintenance Testing Handbook Competences for entry to Sentinel

Contents

Before you start your assessment
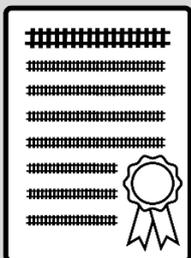
On 01 March 2025, paper evidence of competence for the Signal Maintenance Testing Handbook competencies of aspect testing, cable function testing, core skills, diversion of a circuit and points testing will no longer be accepted on Network Rail Managed Infrastructure.

After 01 March 2025 all competence holders must prove they hold the appropriate competences via their Sentinel competence profile.

This document is designed to guide candidates through the online assessment process to confirm competence holders' eligibility for transition to Sentinel.

Each section provides information to make the experience as easy and effective as possible.

Before you can access the Network Rail SMTH transition assessment platform, provided by Inspera (referred as the assessment platform for the rest of this document), you will need to check you have everything ready to make sure that your experience of the assessment platform is a positive one. To help, please read through the following information carefully so you are ready to log in.

General requirements

To access the assessment platform and start your assessment(s) you will need:

- To have confirmed you are able to access the internet, the assessment platform will not work without an internet connection.
- To be able to navigate to the Network Rail section of the Inspera platform to undertake the assessment https://smthtransition.inspera.com/get-iep
- The password, username, and SEB (pin) code sent to you in an email from Network Rail on 02 December 2024, the system will request these details every time you log into the assessment platform and access the assessments your primary sponsor has confirmed you are eligible to take.
- To have exited or disconnected from all secondary monitors or screens connected to your desktop or laptop computer, you are only permitted one primary monitor to use during your test.
- Enough time to complete the test(s) you will be assessed on; whilst the tests do not have a time limit, we would expect a candidate taking all six tests to take an average time of four hours. You do not need to take all tests in one go.
- You will also need to be able to show your sentinel ID card or app to your webcam, clearly showing your photograph, as part of the process.

Browser compatibility

The assessment platform has some restrictions around the type of browsers you can use, to avoid issues during your assessment you should check that:

- You have access to a supported browser (Microsoft edge, Google chrome, Mozilla Firefox, or Apple safari), the assessment platform supports the two most recent releases of each of the four browsers listed. Apple safari is supported on macOS only.
- You are sure that the internet browser you are using is up to date, this will prevent errors or interface issues during your assessment. Browser versions more than two versions old may restrict access and cause connectivity issues with the assessment platform.
- You have saved and exited all background applications, some applications may not be compatible with the assessment platform and cause assessment instability or unexpected errors.

Additional equipment you can use:

- Bluetooth/USB dongle keyboard and mouse
- Wired keyboard and mouse
- External USB webcam

Minimum system requirements

To use the assessment platform, you will need access to a desktop or laptop device meeting the minimum requirements for the Network Rail SMTH assessment platform. The platform has been tested on Windows, and macOS.

You will not be able to use a tablet or mobile phone to access the assessment platform.

Your device will need to meet the minimum system requirements below:

The assessment platform and Inspera resilience proctoring

Requires the following minimum specifications:

- **Operating system**: You will need a minimum operating system of Windows 10 or MacOS 11 – 13.6
- **Graphics Driver**: OpenGL 2.0
- **Processor**: CPUs newer than 2011 (Intel Sandy Bridge, Core i3, i5, and i7 or newer)
- **Storage space**: 75 MB (for resilience proctoring) and 500 MB free storage space per hour (for the assessment platform)
- **Web camera and microphone**: Internal or external front facing camera and microphone.
- **Internet connection**: Broadband connection with a minimum upload speed of 0.15 Mbps

Downloading the assessment platform software

Follow the link to the Inspera integrity browser https://smthtransition.inspera.com/get-iep or copy this address into your browser to download the assessment software to your computer in advance of starting the assessment. We recommend you do this at least 24 hours before you plan to take the assessment(s).

Accessibility requirements

The assessment platform allows candidates to adjust some of the settings to allow for accessibility requirements. Instructions to help you change your settings are included later in the "during the assessment" section of this document, if you have any further reasonable adjustments to help you successfully complete your assessment, please contact your Primary Sponsor.

Refreshing your knowledge

Before you take the assessment, you can refresh your knowledge of the SMTH principles against the current standard(s) and familiarise yourself with the assessment platform, this will help your confidence when answering the assessment questions. Take some time to use the information contained in this user guidance and the list of useful standards providing information relevant when undertaking SMTH activities:

- NR/L3/SIG/10064   General Instructions to Staff Working on S&T Equipment
- NR/L3/SIG/10663   Signal Maintenance Specifications (SMS)
- NR/L3/SIG/11231   Signal Maintenance Testing Handbook (NR/SMTH)
- NR/L3/SIG/11303   Signalling Installation (Formerly RT/E/S/11303)
- GERT8000   RSSB Rule book handbook

A copy of the Signalling Maintenance Testing Handbook and a copy of the Signal Maintenance Specifications is loaded into the assessment platform so that you can refer to them during the assessment as we would expect you to in the workplace. Sections of these documents will be accessible as PDFs for you to use during the assessment,

Accessing the demonstration area of the assessment platform:

The assessment platform allows you to access a demonstration area, you can use this to familiarise yourself with how the platform works and the layout before you sit your assessment. To access the platform you can use the following link Inspera Assessment or type https://smthtransition.inspera.com/student into your browser. You will then see this screen:
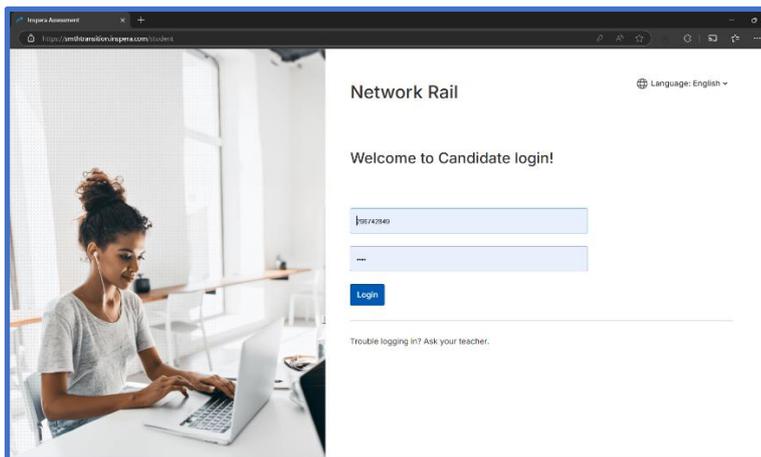
Once you have entered your login details you will move to the next screen showing the demonstration area:
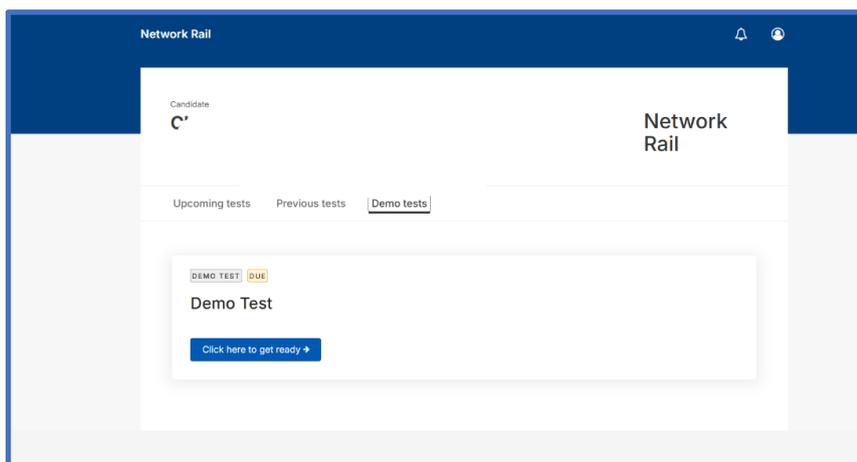
Topics in the SMTH Signalling Principles Test:

The list below shows some topic areas you should have knowledge of because they will be covered during the assessment(s). The list is not exhaustive and other areas will also be covered.

- Basic Signalling Principles including but not limited to:
    - Route naming conventions.
    - Basic interlocking principles to determine the requirements for a signal to give a proceed aspect.
    - Ability to read and interpret signalling diagrams including signalling nomenclature (signalling alphabet), circuit, location, and scheme plan symbols.
- How colour light signals interface with the interlocking and how information is presented to the signaller including junction route indicators, ground position lights, route indicators and banner repeater signals.
- How to undertake cable and earth tests including interpretation of the readings taken.
- The structure of NR/L3/SIG/10663 - Signal Maintenance Specifications (SMS)
- The limits of the authority of a signal maintenance tester.
- Identification of the types of train protection utilised on the UK Rail network and how they interface with the signalling system.
- What test equipment is required when working on signalling equipment.
- Identify right and wrong side failure conditions.
- The sections of the rule book that are applicable to working on signalling equipment.
- Identification of silver migration and wire degradation, the risks they present and how these issues are managed.

Note: This part of the assessment is based on principles outlined within Basic Signalling 1 / Signal Engineering Maintenance 1 and Basic Signalling 2 / Signal Engineering Maintenance 2.

Topics in all other SMTH tests:

- The structure of NR/L2/SIG/11231 - Signal Maintenance Testing Handbook (NR/SMTH).
- The principles and testing processes applicable to Signal Maintenance Testing activities (Part 01 and its sub modules 01 – 16).
- The applicable defined checks and tests in part 03.
- Interpretation of cable and earth testing values and identify the correct course of action.

Additional tips and hints:

- Make sure you have access to a compatible browser.
- Check that your system meets the minimum requirements.
- Refresh your knowledge using the current version of NR/L3/SIG/11231 Signal Maintenance Testing Handbook (NR/SMTH) and other referenced standards.
- Give yourself enough time to complete the assessment, a minimum of four hours will be needed for all six tests.
- Remember you do not need to complete all the tests in one session, but you must complete each test once you have started it.
- You can take the assessment three times, but there are minimum time limits between each attempt.
- If you need to take all three attempts allowed to successfully complete the assessment, then you will need to have started the third attempt at least 28 days before assessment platform closes on 01 March 2025.

Assessment platform validation

Network Rail is using an online assessment platform provided by a company called Inspera to confirm that you have the minimum knowledge required in each of the SMTH competence(s) you hold to transfer to Sentinel. The information in this section will explain how to access the assessment, complete system checks and navigate the assessment platform.

Where should I sit to take the assessment?

The environment you choose to sit the assessment in will have an impact on your success. This assessment is proctored, so specific conditions will need to be met, proctoring means that the software will allow you to sit the assessment whilst also recording your screen, audio from your microphone and video from your webcam. Recordings will be used to satisfy Network Rail that you completed the test independently and without access to additional information or support, they will be retained until all assessments and associated appeals are concluded.

By completing the assessment, you are providing permission for Network Rail to retain the recordings for the purpose of review to confirm independent completion of the test, should the proctoring show you did not meet the minimum requirements in this guidance document for proctoring then your assessment will be disqualified and your Primary Sponsor notified.

This proctoring software will also prevent you from accessing any other documents or websites on your computer during the assessment. To support accurate proctoring please make sure you consider:

The environment you sit the test in:

- **Find somewhere comfortable:** If you are using a laptop, moving it mid-test could cause the system to highlight your assessment for review.
- **Position the computer at the correct height** this will help make sure you are comfortable during the assessment and the webcam can see you. You will need to be able to complete both the ID check and the assessment with your face in the camera frame. Adjusting the camera for comfort after starting the test could result in your face being out of the frame, which could disqualify your assessment.
- **Find a plain background**: A busy or patterned background could cause the webcam to focus on a different subject to you (a book, pattern, or other item), this might mean the camera does not record your face.
- **No light source behind you**: This could cause the camera to adjust the exposure to match the light making your face difficult to see.
- **Choose a quiet location**: The microphone on your computer will pick up sound in the surrounding area, a quiet location will also help you to concentrate.

During the assessment:

- **The area surrounding your position will also be monitored:** This is to confirm that you are alone and had no assistance from anyone else during the assessment. There must not be anyone in the room with you during the entirety of the assessment(s).
- **Screenshots cannot be taken:** The Inspera assessment platform will not allow you to take or save any screenshots.
- **No interruptions:** During the assessment you must not be disturbed. This includes not making or receiving telephone calls, there must not be any other person or animal physically present in the room regardless of the duration.

Accessing the assessment platform

To access the assessment platform, you should enter this web address into your browser: https://smthtransition.inspera.com/get-iep.

Once the system software is downloaded (and you may have completed this in preparation as recommended earlier in the guidance), you can use the installed icon to log into the platform using the username, password, and SEB (PIN) code provided by Network Rail. The system will run a system check and log into your account

If you have not received your individual login details (username, password, and SEB code), please email: SignallingCompetencyFramework@networkrail.co.uk.

What will happen when I access the assessment platform?

Initially, you will see the introductory screen to guide you through each step.
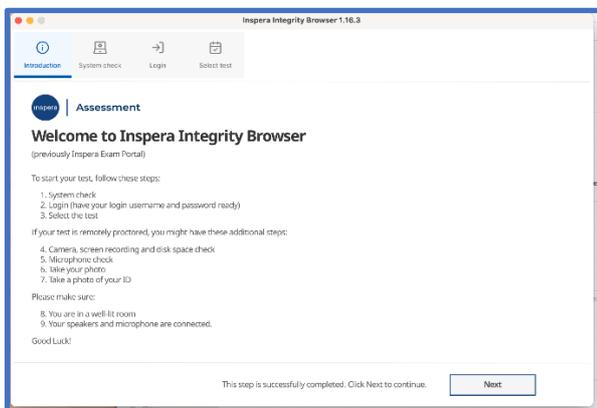
The screen below will help you navigate through the welcome screen:
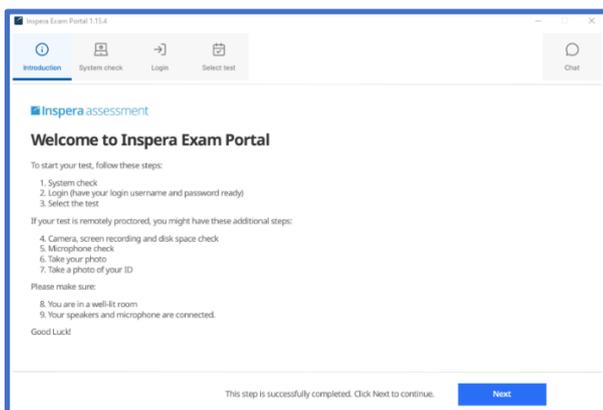
This will be followed by some initial steps:

- Step 1: The assessment platform will run a system check.
- Step 2: You will log into your account (with the password, username and SEB (pin) code supplied by Network Rail)
- Step 3: You will select the assessment you want to take.
- Step 4: The assessment platform software will perform a camera, screen recording, and disk space check.
- Step 5: The assessment platform software will perform a microphone check.
- Step 6: The assessment platform software will take your photograph to match against your Sentinel ID.
- Step 7: Take a snapshot of your ID – this must be your current Sentinel ID (either card or app version)

Step 1 – Checking the system requirements

Once you have successfully entered your username and password and completed login the system will use the integrity browser to move to the introduction page. This will guide you through the initial processes to confirm your equipment is suitable to support the assessment software. Tests will include systems checks to confirm that the equipment being used is to the minimum specification required and the camera and microphone is operating as expected.

System checks will include:

System check	Overview
App version	Checks for the correct version of Inspera integrity browser.
Clock accuracy	Confirmation that the computer clock and global clock match.
Connection quality	Validation that the internet connection meets the minimum standard to support the assessment platform.
Number of displays	Confirmation that the computer is connected to only one display monitor.
Login configuration	Ensures correct sign-in option (SSO or one-time user).
CPU features	Ensures you meet the minimum requirements for CPU.
Process blocklist	Retrieves and enforces the list of blocked processes.
App location (Mac only)	This system check will confirm that the app is stored in the correct location within your computer.
Environment	Virtual machine checks and remote session checks.

When you have successfully completed the system checks please use the **next** button shown in the screen shot to navigate to the login page:
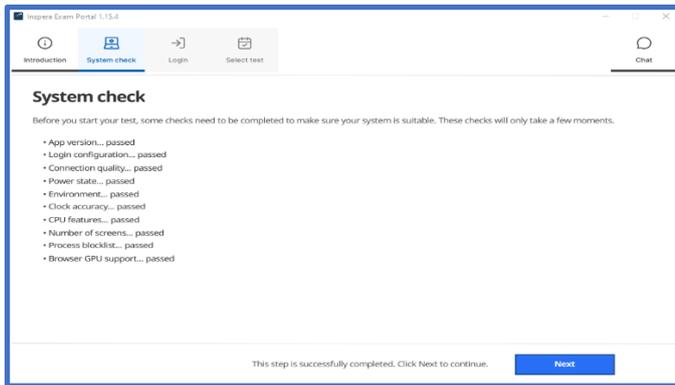
Step 2: Logging into your account

You have been issued with a username and a password, you will be asked to login to your permanent user account with these details to initially login and to confirm access to each assessment. Once you have entered the details press **next** to continue to the next screen.

Step 3: Selecting your assessment

Assessments underway will appear at the top of your assessment list, those not yet started or completed will be at the bottom of the list.

- Select the assessment that you would like to take.
- You will need to add the assessment pin code referred to as the SEB code.
- Click **Unlock and select.**
- Click **Next** to continue.
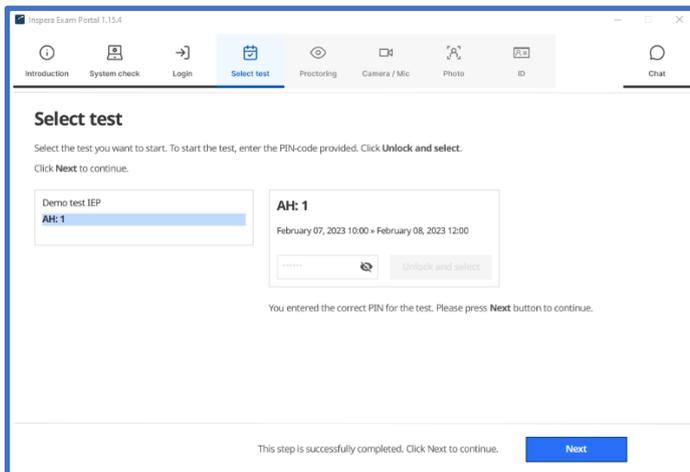
Step 4: Confirming camera, screen recording, and disk space accuracy

Once you have successfully logged into the system an additional set of checks will be performed to support the proctoring of assessments:

- **Available disk space:** A minimum of 500 MB is required.
- **File upload:** Access to log files is required.
- **Webcam Capture:** The system will use the webcam to create recordings of you undertaking the assessments to confirm you did this independently.
- **Screen Capture:** The system will need to access screen recordings to confirm how you undertook the assessments.

When the system checks have successfully confirmed that your equipment will support proctoring you can click **Next** to continue.
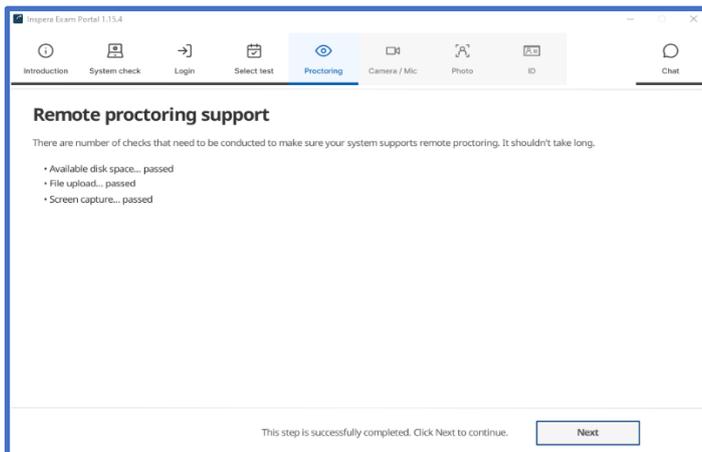
Step 5: Camera / microphone

Choose your preferred camera and microphone capture hardware by selecting the audio and video devices dropdown. The microphone test is conducted to test voice levels. Make sure that your levels are in the green area by testing your voice in the microphone, please see the screenshot below demonstrating what the dropdown menu's look like.
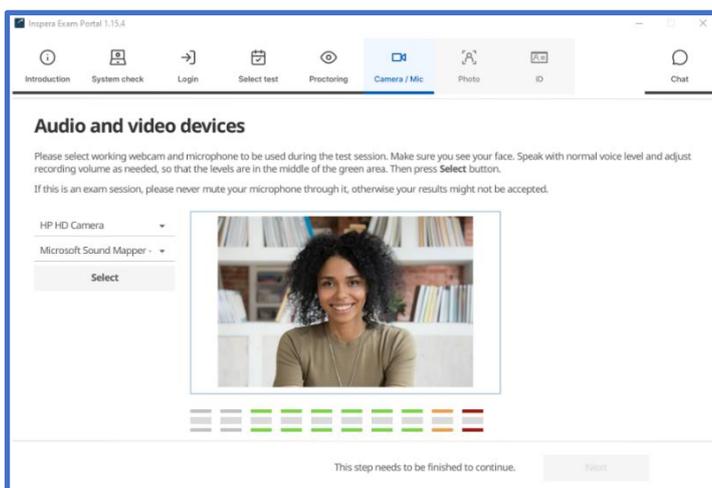
When you have finished click **next** to continue.

Step 6: Take your photograph

When you log into the assessment platform you will be prompted to take a photograph of yourself. The screenshot below shows you what you will be expected to do, you will need to align your face in the camera and have good lighting with no reflection.

- Click **take photo** to take a photograph of yourself using the webcam.
- When complete you will need to click **next** to continue.
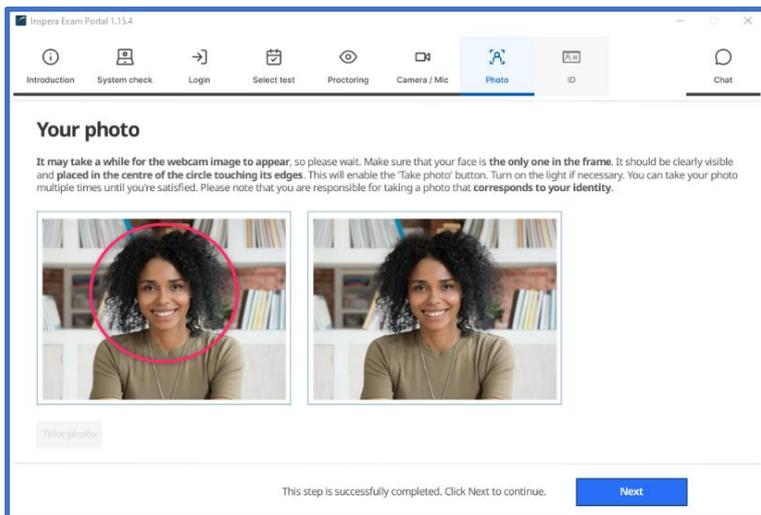
Step 7: Take a photo of your Sentinel ID card

The last step is to take a photograph of your Sentinel ID card, to allow the system to confirm that the person sitting the test is the person on the Sentinel ID card you must make sure that the photograph, name, and sentinel number are clearly visible.

When your ID is clearly visible and is centred in the rectangle, click **take photo**.
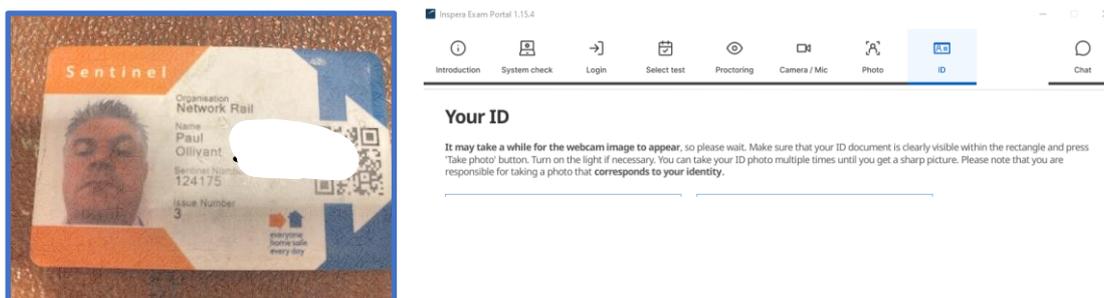
Photograph and ID check will take place every time you log into the test. The original ID and photo will be used for invigilation. Click **next** to launch your test.

The SMTH industry competence management standardisation project team wish you the best of luck with your assessment(s).

Additional tips and hints:

- Be aware of the environment you sit the test in, find somewhere comfortable, quiet and where you will not be interrupted.
- Check that the equipment you are planning to use meets the minimum requirements outlined.
- Disable any peripheral accessories which can not be used such as second display screens.
- Make sure you have access to your password, username, and SEB code, you can find them on the email sent to you on 02 December 2024 by Network Rail.
- Have your sentinel ID card with you, you will be asked to photograph it as part of the access requirements.

Taking your assessments

Once your system capabilities are confirmed you will be able to progress through the assessments your Primary Sponsor has confirmed you hold.

You will be able to adjust the accessibility settings to support your own preferences.

Proctoring requirements

During each assessment we ask you to make sure that you do not do any of the following so we can confirm you undertook the test independently:

- The test is being recorded, using your computer camera, the camera must not be obscured at any time.
- You should avoid leaving your computer during your test.
- You must not receive or make telephone calls during your test.
- You must not engage in conversation with others whilst taking the test.
- There is to be no one to the sides or behind you during the test.
- You must not take photographs or screen shots of the test.
- You must not refer to paper documents or other electronic devices whilst taking the tests.

Accessibility

To navigate to the accessibility settings menu, you can click the three-line icon at the top right-hand side of the screen shot below that will take you to a menu where you can adjust contrast, change screen or text colour, or enable the speech to text functionality.
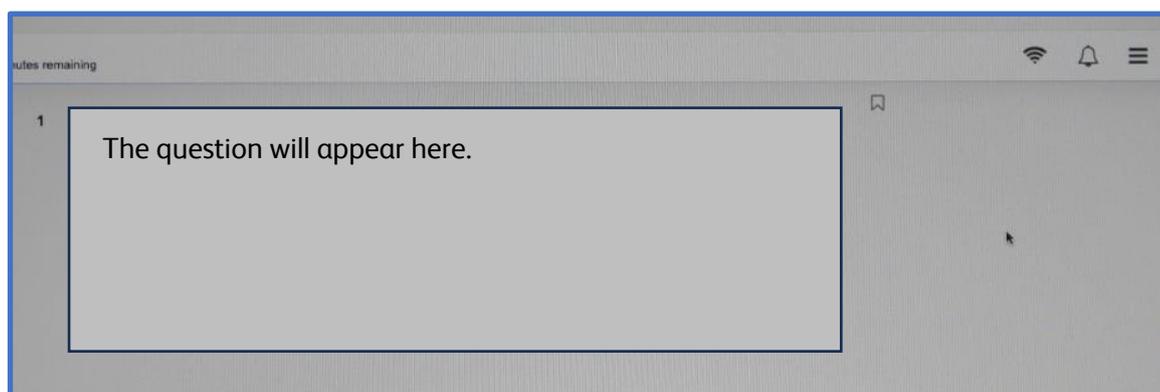
Number of attempts:

- You have three opportunities to sit each test.
- The second test can be taken 24 hours after the first attempt if you do not pass.
- The third test can be taken 28 days after the second test if you do not pass the second attempt.
- If you do not pass the third attempt, you need to be retrained on the competences which you did not pass, or on the whole of the signal maintenance testing if you failed the assessments associated with the core skills competence.

Assessment requirements

Principles Test

This assessment contains 30 questions. This is a closed book test on signalling principles:

- Questions one and two are mandatory and must be answered correctly to pass. You will end up with a negative score if you get one of these wrong.
- The questions are either multiple choice or true/false.
- The pass mark is 24 of 30 questions (inclusive of the mandatory questions).
- All questions must be answered prior to submitting the assessment results.
- The browser will close once you have submitted your answers.
- To take another test please re-enter the browser.

Core Skills Test (SMTH.a)

This assessment contains 30 questions. This is an open book test and access to the Signal Maintenance Specifications and Signal Maintenance Testing Handbook will be available to view in the assessment solution to aid with the responses.

- Questions one to eight are mandatory, you will receive a negative score if you get any of these wrong
- The questions are either multiple choice or true/false.
- The pass mark is 24 of 30 questions (inclusive of the mandatory questions).
- All questions must be answered prior to submitting the test results.
- The browser will close once you have submitted your answers.
- To take another test please re-enter the browser.
- You need to pass both the principles test and the core skills test to transition your core skills competence.

Aspect Test (SMTH.b)

This assessment includes 25 questions, you will be provided with access to signal sighting records on the system to answer some questions.

You will also require access to the Signal Maintenance Testing handbook, also loaded on to the system for this test. It is an open book test.

- The questions are a mixture of multiple choice and True/False
- The pass mark is 20 of 25 questions.
- Please answer all the questions before hitting the submit button.
- The browser will close once you have submitted your answers.
- To take another test please re-enter the browser.

Points Test (SMTH.c)

This assessment contains 14 questions, you will require access to the Signal Maintenance Testing Handbook on the system. It is an open book test.

- The questions are a mixture of multiple choice and True/False.
- The pass mark is 11 out of 14 questions.
- Please answer all the questions before hitting the submit button.
- The browser will close once you have submitted your answers.
- Please re-enter the browser.

Cable Testing (SMTH d)

This assessment contains 13 questions, you will require access to the Signal Maintenance Testing Handbook and Signal Maintenance Specifications for this test. It is an open book assessment.

- The questions are a mixture of multiple choice and True/False
- The pass mark is 10 out of 13 questions.
- Please answer all the questions before pressing the submit button.
- The browser will close once you have submitted your answers.
- To take another test please re-enter the browser.

Cable Diversion (SMTH f)

This assessment contains 11 questions, you will require access to the Signal Maintenance Testing Handbook and Signal Maintenance Specifications for this assessment. It is an open book assessment.

- The questions are a mixture of multiple choice and True/False
- The pass mark is 8 out of 11 questions.
- Please answer all the questions before hitting the submit button.
- The browser will close once you have submitted your answers.
- To take another test please re-enter the browser.

Additional tips and hints:

- Make sure you understand and adhere to the proctoring requirements, your assessment could be disqualified if you breach them.
- The system has accessibility options you can use to adjust contrast, change screen or text colour, or enable the speech to text functionality.
- You have a total of three attempts to pass the test.
- Each test has a mandatory amount of time before you can sit the next test
- If you need to take the test a third time you will need to have completed that attempt at least 28 days before the platform closes on 01 March 2025.

After your assessment

Once you have completed your assessment you will receive an overall grade, however your pass status will not be confirmed until Network Rail have reviewed the proctoring for your assessment. The information below will help you to understand the next steps.

On completion of your assessment, you will be notified of your result(s), if you have enough marks to achieve a pass, congratulations. You should however be aware that all initial results will be subject to the review of proctoring recordings.

Appeals Process

If you have undertaken the assessment three times and did not achieve enough marks to pass you will need to be retrained on the assessment(s) or on the whole of the signal maintenance testing if you did not pass the core skills assessment SMTH.A.

If you would like to appeal the result of any of your assessment because you believe there are some extenuating circumstances that should be considered, you can use the appeals process.

Stage 1

If you disagree with the assessment outcome you can appeal by following the process outlined below:

- When you complete your assessment attempt, if you have not yet passed and you feel there are extenuating circumstances you can submit a stage one appeal.
- You should submit your appeal using the stage one appeal form which can be found on the Safety Central site: https://safetycentral.wpenginepowered.com/wp-content/uploads/2024/10/Stage-1-Appeal-Form.docx.
- You should complete section A and attach the form to an email and submit it to SignallingCompetencyFramework@networkrail.co.uk within 10 days of receiving the assessment outcome.
- Whilst your stage one appeal is being considered the 28-day period required before your third attempt will continue to reduce.
- The results of the appeal you submitted will be provided after a consideration of the information you submit, and a review of the information collected during proctoring.
- The SMTH industry competence management standardisation project team will respond to your appeal in writing within seven working days.
- If the decision is to uphold your appeal, then records of your assessment outcome will be amended as appropriate.
- If you agree with the decision then the appeal will be marked as resolved and closed, where you are not satisfied with the decision and wish to escalate, the appeal will move to stage two.

Stage 2

When you have received your stage one appeal outcome, if you do not believe the issue is resolved you can follow the steps below to complete a stage two appeal:
- You should contact the SignallingCompetencyFramework@networkrail.co.uk to provide notification of your intention to submit a stage two appeal.
- The stage two appeal will be considered in conjunction with your Principal Sponsor.
- Network Rail will provide information to your Principal Sponsor to help them to conduct a secondary review within five working days of the appeal submission, this will include:

    o Your original assessment record and evidence collected during the assessment.
    o Your completed appeal form with part 1 completed.

- Your Primary Sponsor will review all the information and consider if they believe the assessment decision is appropriate, this will normally involve an evaluation of:

    o The evidence and associated records
    o The rationale for the stage one appeal decision
    o The opinion of another assessor (with the appropriate subject matter
    o knowledge).
    o Your opinion provided in the stage one appeal form.

- Once the Primary Sponsor has completed the review of evidence they will decide if a stage two appeal form should be submitted.
- Your Primary Sponsor is responsible for submitting the Stage 2 appeal form, a copy can be found in Safety Central https://safetycentral.wpenginepowered.com/wp-content/uploads/2024/10/Stage-2-and-Stage-3-Appeal-Form.docx
- The form should be attached to an email and sent to SignallingCompetencyFramework@networkrail.co.uk. The SMTH industry competence management standardisation project team will provide you with written feedback and the outcome of the appeal within five working days of receiving the appeal.
- If you remain dissatisfied with the outcome of the appeal process and wish to proceed to stage three of the appeal process you should notify SignallingCompetencyFramework@networkrail.co.uk that you intend to submit a stage three appeal.

Stage 3

When a stage three appeal is submitted a panel of technical experts will be convened to review the appeal and all associated evidence. The decision of the panel will be final.