

Aerospace Software Development Engineer
End Point Assessment Plan
(Version 27th March 2017)

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Foreword

The Aerospace Software Development Engineer Apprenticeship is delivered through the following approach:

- *A Foundation Phase*
- *A Development Phase*
- *An End Point Assessment*

We have:

- 1) *introduced a formal gate review at the conclusion of the foundation stage. Apprentices will not progress beyond this without successful completion of this stage.*
- 2) *introduced a viva and formal overall assessment of competence as part of the end point assessment for the Advanced Manufacturing and Engineering Sector, where, Apprentices will need to demonstrate skills, knowledge and behaviours developed across the Apprenticeship.*
- 3) *introduced an alignment of competence to “IEng” requirements - the recognised generic professional institution standard for an Incorporated Engineer. This is totally new and is supported by all the relevant Professional Engineering Institutions (PEIs). This provides an opportunity to establish future development activity for apprentices, linked to continued professional development.*

Due to the safety critical and complex nature of work activities undertaken in Advanced Manufacturing and Engineering, which is often externally regulated, training and on-programme assessment must be carried out ‘on a continuous basis’ to ensure that the skills, knowledge and behaviours that relate to organisation processes and procedures are fully imbedded in the apprentice’s skill set. Because of the safety critical nature of the work roles and the risks to both the apprentice and the organisation any deficiencies or gaps in skills, knowledge and behaviours must be identified early and corrected rather than being allowed to proliferate, only then to be picked up at the end of training when it is too late. Moreover, employers in the Advanced Manufacturing and Engineering sector are responsible for the competence of their employees and nobody other than the employer will be able to confirm occupational competence. Therefore, the assessment process we have adopted is more robust than ever before with the End Point Assessment comprising of Occupational Competence assessed by the employer and Professional Competence, assessed by a relevant Professional Engineering Institution. The assessment model, including end point, makes the Standard accessible and appropriate for employers, including SMEs. The mandatory requirements have been carefully selected to ensure that skills, knowledge and behaviours can be transferred across the Advanced Manufacturing and Engineering Sector.

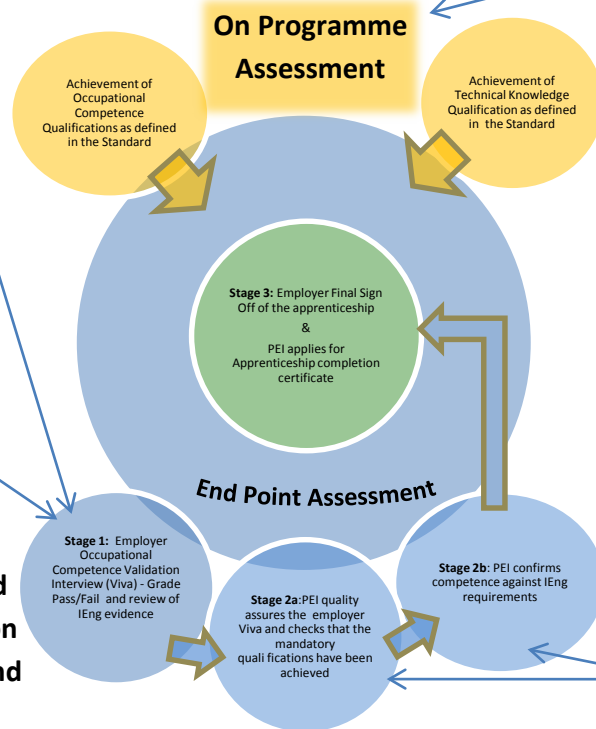
Section A: Summary of End Point Assessment

A1 Diagram 1a: End Point Assessment for an Aerospace Software Development Engineer

An Employer led portfolio based Occupational Competence Validation Interview (Viva)

Incorporated Engineer (IEng) Performance Indicators Recording Form* which has been completed by the apprentice and reviewed by the employer

NB * = Evidence for IEng criteria may be uploaded and recorded online depending on the relevant PEI processes and procedures.



Independent assessment and verification through employer selected Awarding Organisations regulated by Ofqual and in the case of HE qualifications the Quality Assurance Agency. These qualifications at Level 4 and 6 are achieved during the On Programme Phase of the Apprenticeship

- Technical Knowledge Qualification.** Level 6 Bachelor Honours Degree (BEng or BSc) stipulated by the employer and accredited by an Engineering Council licenced Professional Engineering Institution
- Occupational Competence Qualification.** Level 4 Diploma in Engineering and Advanced Manufacturing (Development Competence), knowledge, skills and behaviours assessed and verified in the workplace using a variety of assessment methods including observation of performance and organisation job/work records/log books. Apprentices will be assessed on a continuous basis with the final pieces of performance evidence accumulated typically during the last six months. On completion a binary grade will be awarded

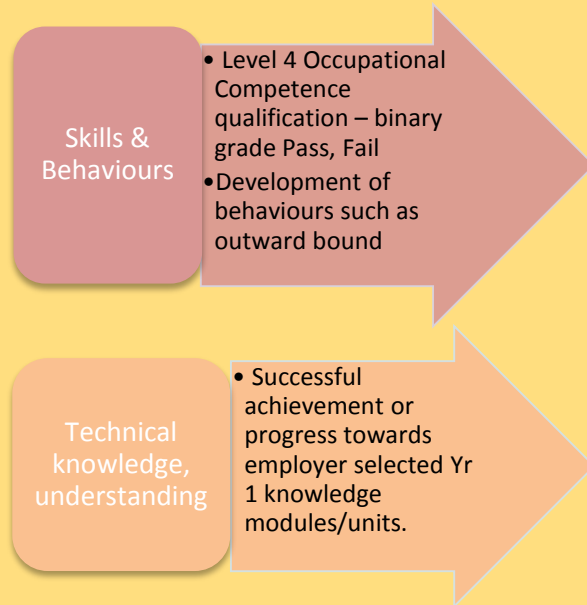
Professional Engineering Institution (PEI) - End Point Assessment is an independent assessment of behaviours, knowledge, skills and generic engineering competencies for an Incorporated Engineer as defined by the UK-SPEC, regulated by the Engineering Council. The PEI will also undertake an independent quality assurance of the Employer Viva Interview documentation and checks that the employer approved mandatory qualifications have been achieved and certificated.

In order for the PEI to apply for the apprenticeship completion certificate the PEI will be in receipt of and have quality assured the Employer Portfolio Based Occupational Competence Viva Interview document (Stage 1) signed by the employer and confirmed that the apprentice has achieved the correct mandatory qualifications specified in the Standard and Assessment Plan (Stage 2a). Confirmed that the apprentice has met as a minimum the pass grade criteria for professional competence as specified in the Assessment Plan and aligned to criteria for an Incorporated Engineer (IEng) as defined by the UK-SPEC (Stage 2b) and have received a final overall apprentice sign off from the employer (Stage3).

A2 Diagram 2a: Summary approach to “On-Programme” and End Point Assessment – Aerospace Software Development Engineer

Gateway 1

On Programme Assessment: Foundation Phase



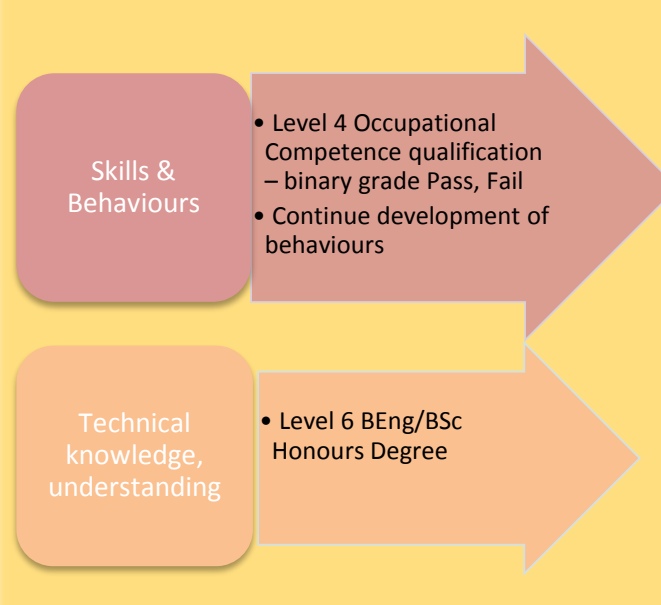
Gateway 1: Review & Assessment – Undertaken by the employer

The following must be completed before the apprentice can progress to the Development Phase of the apprenticeship:

- Satisfactory achievement or progress towards employer selected Yr 1 Degree modules/units
- satisfactory achievement or progress towards employer selected Yr 1 Occupational Competence qualification units
- Satisfactory progress towards the employer required behaviours

Gateway 2

On Programme Assessment: Development Phase



Gateway 2: Review & Assessment - Undertaken by the employer

In order to be ready for End Point Assessment the apprentice must have achieved:

- Level 6 Bachelor Honours Degree (BEng or BSc) stipulated by the employer and accredited by an Engineering Council licenced Professional Engineering
- A binary grade Pass in the Level 4 Diploma in Engineering and Advanced Manufacturing (Development Competence) Qualification
- The required competencies aligned to IEng
- English and Maths qualifications at Level 2

Gateway 2

End Point Assessment

The employer undertakes a Portfolio based Occupational Competence Validation Interview (Viva)

A nominated Professional Engineering Institution (PEI) undertakes the independent assessment to determine if the apprentice has met as a minimum the pass grade criteria for professional competence as specified in the Assessment Plan and aligned to criteria for an Incorporated Engineer (IEng) as defined by the UK-SPEC. The PEI will also undertake an independent quality assurance of the Employer Viva Interview documentation and checks that the employer approved mandatory qualifications achieved during the on programme phase and checked at Gateway 2 have been achieved and certificated (See Diagram 1a for full illustrated details of End Point Assessment)

Apprentice Completion Certificate: Final employer Sign Off & PEI applies for the Apprentice's completion certificate.

Certificate

Section B: Detailed explanation of the end point assessment

B1 What skills, knowledge and behaviours are being assessed?

B1.1 Occupational Competence

As part of the End Point Assessment Viva Interview employers will assess apprentices against the knowledge, skills and behaviours set out in the Standard.

B1.2 Professional Competence (IEng)

Employers in partnership with relevant Professional Engineering Institutions (PEIs) will also assess the apprentices' competence against the internationally recognised professional standard for an Incorporated Engineer (IEng). Apprentices will be assessed against the following criteria:

- Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.
- Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and re-cycle engineering processes, systems, services and products.
- Provide technical and commercial management
- Demonstrate effective interpersonal skills
- Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment

B1.3 Continuous Professional Development (CPD)

Refers to the process of tracking and documenting the skills, knowledge and experience that an individual gains both formally and informally. It's a record of what they experience, learn and then apply. If the apprentice does decide to apply for registration with a relevant Professional Engineering institution at IEng level, they must be committed to maintaining and enhancing their competence. They will be required to show evidence that they have taken steps to ensure this, and that they intend to continue to do this in line with the CPD Code for Registrants.

B1.3.1 What is it for?

The CPD process helps the individual manage their own development on an ongoing basis. Its function is to help them record, review and reflect on what they learn. The key features of the CPD process:

- be a documented process
- be self-directed: driven by the individual and not the employer
- focus on learning from experience, reflective learning and review
- help individuals to set development goals and objectives
- include both formal and informal learning.

B1.3.2 What are the benefits?

It can help individuals to reflect, review and document their learning and to develop and update their professional knowledge and skills. It is also very useful to:

- provide an overview of their professional development to date
- remind them of their achievements and how far they have progressed
- direct their career and helps them keep their eye on their career goals
- uncover gaps in their skills, knowledge and behaviours
- demonstrate their professional standing to employers and/or clients
- help with their career development.

B2 Assessment Methods

This assessment must take place in the final months of the Apprenticeship, using the following methods:

- An Occupational Competence Validation Interview (Viva) drawing from a portfolio of evidence of occupational competence
- Professional competence assessment undertaken by independent assessor(s) from the relevant PEI [using the IEng Performance Indicators Recording Form]
- Final employer endorsement of occupational and professional competence and overall completion of the apprenticeship

To support the end point assessment, Employers, Professional Engineering Institutions (PEIs) and employers have developed the following:

- a) an Occupational Competence Validation Interview (Viva) Recording Form and supporting guidance including how to prepare and undertake an effective and robust Viva interview and the technical requirements for employer assessors
- b) an Incorporated Engineer (IEng) Performance Indicators Recording Form and supporting guidance

These can be accessed by contacting, as applicable, the relevant Professional Engineering Institution (PEI) approved on the Register of Apprentice Assessment Organisations to deliver the end-point assessment for this standard. These methods of assessment are designed to test the following:

Incorporated Engineer (IEng) Professional Competencies	Aerospace Software Development Engineer Knowledge, Skills and Behaviours
Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.	All four knowledge and nine skills statements listed in the standard
Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and re-cycle engineering processes, systems, services and products.	All nine skills statements listed in the standard, and all the occupational specific statements
Provide technical and commercial management	Behaviour – Responsibility, management or leadership. Taking personal responsibility for their actions, managing projects, including resource management within their remit
Demonstrate effective interpersonal skills	Behaviour – Communication and inter-personal skills. Be able to demonstrate a range of communication styles and methods. Understanding the importance of networks within and across functions.
Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment	Behaviour - Demonstrating a personal and professional commitment to society, their profession and the environment, adopting a set of values and behaviours that will maintain and enhance the reputation of the profession

B2.1 Portfolio of Evidence

Before the Occupational Competence Validation Interview (Viva) each apprentice will prepare and submit a supporting portfolio of evidence to the employer which will be assessed during the interview. This portfolio will enable the apprentice to demonstrate to the employer the specific work related tasks that they have completed in order to demonstrate how they have achieved both occupational and professional competence set out in the Aerospace Software Development Engineer Standard and Employer Occupational Brief. The portfolio will also give the apprentice the opportunity to demonstrate to the employer that they understand the organisation in terms of their products, processes, procedures, tools, equipment, materials, documentation and information systems by showcasing what they have done, what they have learnt and how they have applied this knowledge and skills to real work tasks including solving problems encountered whilst undertaking activities in the workplace. The interview will cover all of the knowledge, skills and behaviours in the standard, through a combination of the work produced in the portfolio, and the apprentice's responses to the questions raised during the viva. Apprentices will need to respond to a bank of questions, which will cover the knowledge, skills and behaviours specified in the Standard. This will confirm occupational competence.

The portfolio of evidence will show how the apprentice has demonstrated the knowledge, skills and behaviours required to be competent as an Aerospace Software Development Engineer as detailed in the Standard including professional competence at IEng level.

The portfolio will include as a minimum:

B2.1.1 Occupational Competence

Three different examples of competent performance evidence that must include:

- Specific records of the work undertaken by the apprentice including any quality/compliance records, reports or documents produced as part of the work activity together with:
- Evidence of the way the apprentice carried out the activities to meet the requirements of the Standard, such as assessor observations, supervisor/mentor references/ witness testimonies or authenticated apprentice reports of the activities undertaken.

B2.1.2 Professional Competence – Incorporated Engineer (IEng)

The apprentice's portfolio will also contain sufficient, valid and reliable evidence which is referenced to the professional competence requirements. This will be recorded in the Professional Competence Performance Indicators Recording Form demonstrating where the apprentice has met the appropriate professional competence criteria:

Incorporated Engineer (IEng)

- Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.

- Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and re-cycle engineering processes, systems, services and products.
- Provide technical and commercial management
- Demonstrate effective interpersonal skills
- Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment

Employer Assessors/mentors and/or their nominated Training Provider/Assessor should assist the apprentice in planning, creating and recording evidence to create the portfolio to ensure opportunities to obtain all the necessary competencies, skills and knowledge and behaviours are identified but it is the employer who determines whether the portfolio demonstrates the required standard for occupational competence, the portfolio will be submitted to the employer representative undertaking the Occupational Competence Validation Interview (Viva). Further guidance on how to conduct a viva interview will be provided by the relevant PEI.

If the review and assessment of the portfolio of evidence, in its entirety does not contain sufficient evidence to meet the standard then it will be deemed not yet ready to submit for Occupational Competence Validation Interview (Viva). The apprentice will be advised about the shortfalls in evidence and how this can be addressed.

B2.2 Occupational Competence Validation Interview (Viva)

The Occupational Competence Validation Interview is an interactive interview focused on all the components of the Apprenticeship Standard, which will enable the employer to validate the apprentices' occupational competence. It is a structured and formal discussion between the apprentice and their employer, drawing upon a portfolio of evidence, and records of how the apprentice has performed during the Apprenticeship. It covers both what tasks the apprentice has completed in the workplace, the standard of their work, and the behaviours they have demonstrated throughout, such as, being a team player, having a positive attitude, a strong work ethic, being responsible employee, self-motivated and a proven commitment to the organisation. This enables the end point assessment to cover a broad range of knowledge and understanding, skills and behaviours set out in the standard, such as:

- the methods and techniques used in the design and development of engineering software including equipment and resources as applicable to the work tasks undertaken
- the organisation's quality/compliance processes and procedures and documentation
- the technical knowledge required to carry out work tasks safely and effectively
- being proactive in finding solutions to problems and identifying areas for improving the organisation.
- demonstrate effective interpersonal skills (behaviours)
- complying with statutory, regulatory, organisational and health and safety regulations while carrying out the design and development of engineering software

It will also be an opportunity for the employer to:

- clarify any points and/or probe the apprentice on the evidence they have presented in their portfolio
- confirm and validate that the portfolio of evidence is the apprentices own work
- confirm and validate the judgements about the quality of the work the apprentice has completed
- explore particular areas of work presented in the portfolio, how it was carried out, any problems that they encountered and how these were resolved.
- validate the apprentice's skills and knowledge and understanding of the organisation in terms of their products, processes, procedures, tools, equipment, materials, documentation and information systems.

The Occupational Competence Validation Interview will also elicit the apprentice's depth and breadth of understanding of the professional competence requirements. This will be evidenced in the appropriate Professional Competence Performance Indicators Recording Form.

Note: Before the Occupational Competence Validation Interview (Viva) can take place, the employer must have evidence that the apprentice has achieved the mandatory vocational qualifications/certification requirements for this Standard - completed during the "On Programme" phase of the apprenticeship. On completion of the Occupational Competence Validation Interview (Viva) the apprentice will be awarded a grade of Pass or Fail. i.e. Competent or not yet Competent.

Independent Assessment of Professional Competence (IEng) and quality assurance of the Employer Viva

On successful completion of the Occupational Competence Validation Interview (Viva i.e. achieving as a minimum a pass grade, the completed Incorporated Engineer Performance Indicators Form and any supporting evidence will be sent to the employer designated Professional Engineering Institution (PEI) to assess the apprentice's readiness for professional recognition at IEng Level.

Evidence against all 5 UK-Spec Incorporated Engineer (IEng) competency areas must be provided in order to meet the requirements of the Aerospace Software Development Engineer Standard. In partnership with employers, relevant PEIs will work collaboratively to produce a common approach to grading the apprentices' evidence detailed in the Incorporated Engineer (IEng) Performance Indicators Recording Form. There will be two potential assessment grades.

- Not pass (guidance provided)
- Pass (meets minimum requirements) as specified in the Assessment Plan

Achieving a **Pass** grade demonstrates that the apprentice has made significant progress towards their journey towards demonstrating professional competence in all 5 areas required for IEng. The grading system will take into account that apprentices may not have had the opportunity or time to demonstrate and put into practice their experiential learning to provide sufficient evidence they have been working competently at the required level for a sufficient amount of time during the apprenticeship to achieve professional registration.

On completion of the assessment if there is a shortfall in the evidence against the minimum requirements, a **Not pass** grade will be given. The PEI will then provide detailed feedback on the areas where the apprentice needs to provide more evidence of competence and/or experience to meet the **Pass** grade. This will enable the apprentice and the employer to develop a CPD plan to enable the apprentice to develop the additional competencies/experience required to achieve the **Pass** grade.

On completion of the assessment if all minimum requirements ARE met, where applicable the PEI will confirm in writing stating that the apprentice has met the **Pass** grade requirements for the Level 6 Aerospace Software Development Engineer Apprenticeship Standard. This will enable the employer and the apprentice to progress toward the **Final Sign Off – Endorsement Phase** and where applicable apply for the apprenticeship completion certificate.

Incorporated Engineer (IEng) – Summary of Minimum Requirements for achieving a Pass Grade for the Apprenticeship

UKSPEC Incorporated Engineer Criteria	Evidence requirements of Knowledge and Understanding	Evidence requirements of Professional Competence
A1 Maintain and extend a sound theoretical approach to the application of technology in engineering practice.	Meet in Full	Meet in Full
A2 Use a sound evidence-based approach to problem-solving and contribute to continuous improvement.	Meet in Full	Meet in Full
B1 Identify, review and select techniques, procedures and methods to undertake engineering tasks.	Meet in Full	Meet in Full

B2 Contribute to the design and development of engineering solutions.	Meet in Full	Demonstration of progress towards achieving full competence
B3 Implement design solutions and contribute to their evaluation.	Meet in Full	Demonstration of progress towards achieving full competence
C1 Plan for effective project implementation.	Meet in Full	Meet in Full
C2 Manage tasks, people and resources to plan and budget.	Meet in Full	Meet in Full
C3 Manage teams and develop staff to meet changing technical and managerial needs.	Meet in Full	Demonstration of progress towards achieving full competence
C4 Manage continuous quality improvement.	Meet in Full	Demonstration of progress towards achieving full competence
D1 Communicate in English ² with others at all levels.	Meet in Full	Meet in Full
D2 Present and discuss proposals.	Meet in Full	Meet in Full
D3 Demonstrate personal and social skills.	Meet in Full	Meet in Full
E1 Comply with relevant codes of conduct.	Meet in Full	Meet in Full
E2 Manage and apply safe systems of work.	Meet in Full	Meet in Full
E3 Undertake engineering activities in a way that contributes to sustainable development.	Meet in Full	Meet in Full
E4 Carry out and record CPD necessary to maintain and enhance competence in own area of practice	Meet in Full	Meet in Full
E5 Exercise responsibilities in an ethical manner.	Meet in Full	Meet in Full

Final Sign Off – Employer Endorsement & Application for Apprenticeship Completion Certificate

If successful, i.e. the employer has received confirmation from the selected Professional Engineering Institution (PEI) stating that the apprentice has met the professional competence criteria, the employer will undertake the Final Sign Off of the Apprenticeship by signing the last section on the Occupational Competence Validation Interview (Viva) document along with the apprentice. The relevant Professional Engineering Institution (PEI) who are on the Register of Apprentice Assessment Organisations and approved for this Standard, then applies for the apprenticeship completion certificate.

B3 Who will do the assessment?

The end point assessment will be undertaken by a range of parties depending upon the nature of what is being assessed. For final judgements to be made the following is required:

- 1) The employer will have final judgement on the Occupational Competence of the apprentice.
- 2) The Independent Assessor(s) from the relevant Professional Engineering Institution (PEI) will have final judgement on the Professional Competence of the apprentice by reviewing, assessing and verifying the evidence and any supporting documentation contained in the following:
 - Occupational Competence Validation Interview (Viva)
 - Incorporated Engineer (IEng) Professional Competence Performance Indicators Recording Form

B3.1 The Employer

- The employer will conduct the Occupational Competence Validation Interview (Viva) to assess occupational competence. The employer is best placed to determine whether an apprentice has the required knowledge, skills and behaviours to fulfil the designated role, a support guide will be produced and available to assist the employer during the interview and is available from the relevant Professional Engineering Institution (PEI). The employer will have understanding and expertise in the area in which the apprentice works and will know what questions to ask the apprentice in order to ascertain their level of competency. This will be particularly important due to the health and safety critical nature of the sector. During this Viva, the apprentice will need to demonstrate competence of the appropriate knowledge, skills and behaviours specified in the Standard to the employer, drawing from real work based tasks accomplished, presenting not only what they have done, but how they have done it and why. The apprentice's use of a Portfolio of Evidence is important here so that the employer can see tangible evidence. This will be recorded in the Occupational Competence Validation Interview (Viva) document.

- The employer will also review the relevant Professional Competence Performance Indicators Recording Form in preparation for submission to the relevant Professional Engineering Institution (PEI) for a final independent assessment of professional competence.

B3.2 Independent Assessor(s) from the relevant Professional Engineering Institution (PEI)

- Independent assessor(s) will assess the initial judgement made by the employer recorded on the IEng Professional Competence Performance Indicators Recording Form. In terms of making their final independent judgement of Professional Competence this will be based on the Incorporated Engineer (IEng) requirements as defined in the Engineering Council's UKSPEC. The independent assessor(s) must be affiliated to the relevant Professional Engineering Institution (PEI) with which the employer has selected to undertake the independent end point assessment.
- Assessor(s) from the Professional Engineering Institution (PEI) will also quality assure the Viva documentation, signed by the employer and used to assess Occupational Competence. They will also check that the employer approved mandatory qualifications have been achieved and certificated. However, it is the employer who will make the final judgement of an apprentice's Occupational Competence.

B3.3 Final Sign Off – Employer Endorsement & Application for Apprenticeship Completion Certificate

If successful, the employer will undertake the Final Sign Off / Employer Endorsement stage of the Apprenticeship by:

- accepting the assessment decision of the Professional Engineering Institution (PEI) including the quality assurance of the Viva, the confirmation that the apprentice has achieved the correct mandatory qualifications and have received confirmation from the Professional Engineering institution (PEI) that the apprentice has met the appropriate professional competencies i.e. IEng
- signing the last section on the Occupational Competence Validation Interview (Viva) document along with the apprentice

Applying for the Apprenticeship completion certificate

- On receipt of the fully signed Viva Form the selected Professional Engineering Institution (PEI) approved on the Register of Apprentice Assessment Organisations to deliver the end-point assessment for this standard then applies for the apprenticeship completion certificate.

B4 How will assessments be quality assured?

B4.1 Internal QA –Professional Competence – Incorporated Engineer (IEng)

- The Professional Engineering Institutions (PEIs). All end point assessment applications will be reviewed by a minimum of 2 trained assessors against the Engineering Council UKSPEC requirements. The performance of IEng assessors is continuously monitored. In addition, all PEIs are required by the Engineering Council to conduct internal audit reviews of the process, on a sampling basis.
- All those involved in the assessment process, are required to undertake initial and on-going training. This includes updating on UK-SPEC requirements, good practice in assessing, process and any quality issues that could be raised during the assessment process.
- Requirements for IEng Assessors:
 - IEng Assessors must be registered via a relevant Professional Engineering Institution at IEng level or above
 - Have up to date working knowledge of the engineering sector including the specific competencies required by an Incorporated Engineer
 - They will understand the Apprenticeship Standard End Point Assessment process including the evidence required to meet the IEng criteria and Employer Occupational Competence Validation Interview (Viva).
- As the licencing body for the professional engineering institutions, the UK Engineering Council sets and upholds the standards for professional registration against which all assessments are made in all PEIs – UK-SPEC. The Engineering Council undertakes regular monitoring of the PEIs, including a full audit every 5 years, with an interim review audit in between.

B4.2 PEI Internal QA of Employer Occupational Competence Validation Interview

- Hold and maintain a register of employer designated technical experts approved to undertake the occupational competence validation interview aligned to the criteria specified in the guidance documentation. These experts are likely to have been selected from the apprentice's employer, and will have been identified as competent to do this role.
- Provide training for employer designated technical experts undertaking the end point assessment - occupational competence validation
- Monitor employer designated technical experts' moderate outcomes
- The relevant PEI holds regular standardisation events with employer designated technical experts including the review and moderation of assessment decisions and provide feedback to ensure the standardisation of assessment decisions and to provide the basis for improvement and CPD opportunities
- Provide employers with Internal Quality Assurance process and End Point Assessment recording documents including
 - The Occupational Competence Interview (Viva) Recording Form and supporting guidance
 - The Incorporated Engineer (IEng) Performance Indicators Recording Form and supporting guidance
 - A register of employer and PEI approved Awarding Organisation qualifications
- Maintain and manage a complaints' and appeals procedure for both the occupational competence and professional competence stages of the End Point Assessment. If unresolved the Independent Assessment Organisation will contact the EQA organisation and follow their appeals process

B4.3 External Quality Assurance

We are investigating options for External Quality Assurance with the Engineering Council and the Assessment Plan will be updated once those arrangements are confirmed.

SECTION C – Grading

C1 How will grading be applied?

The following grading will apply for the End Point Assessment:

- For the Occupational Competence Validation Interview (viva) this will be a binary pass / fail grade
- For the Professional Competence this will be pass / fail i.e. a pass will mean that apprentices have met the requirements for the apprenticeship, a Pass and ready to apply for IEng will mean that if the apprentice wishes to apply for professional registration they are, subject to professional interview deemed as IEng ready.

Due to the complex and safety critical nature of the industry a grading exemption note has been granted.

SECTION D - Implementation

D1 Affordability

The costs allocated to end point assessment equates to no more than 10% of the overall cost of this apprenticeship. The cost for end point assessment includes the following:

- Occupational Competence Validation Portfolio Collation
- Occupational Competence Validation Interview (Viva)
- Assessment of Professional competence
- Viva quality assurance including checking that the mandatory qualifications have been achieved
- Employer "Final sign off"
- Apprenticeship Certificate
- External Quality Assurance

D2 Capacity planning for End Point Assessment Volumes

Employers and the relevant Professional Engineering Institutions (PEIs) have conducted a feasibility analysis to ensure that there will be sufficient capacity to meet the number of apprentices requiring End Point Assessment including when, during the calendar year that the assessment is likely to be required. We are planning to start with 50 in order to test the process and this will allow us to fully understand the challenges and plan accordingly to meet future needs of the 200 apprentices by 2020 that will be using this Standard.

SECTION E – The Journey to End Point Assessment - “On Programme”

E1 Foundation and Development Phase Mandatory Qualifications

- Level 2 Maths and Level 2 English
- Level 4 Diploma in Engineering and Advanced Manufacturing (Development Competence)
- Level 6 Bachelor Honours Degree (BEng/BSc) stipulated by the employer and accredited by an Engineering Council licenced Professional Engineering

E2 The Employer Occupational Brief (EOB) – Information for Awarding Organisations

The Employer Occupation Brief is an all-embracing term and will contain a number of separate documents including:

- a) Foundation Phase - Employer Units of Competence.
- b) Foundation Phase - Qualification Structure(s)
- c) Development Phase - Employer Units of Competence
- d) Development Phase - Qualification Structure(s)
- e) Qualification Assessment Strategy for Foundation & Development Phase Occupational Competence qualifications
- f) A register of employer and PEI approved Awarding Organisation qualifications (this must be used by the EPA Organisation when checking that the correct mandated qualifications have been achieved)

The EOB must be used by Awarding Organisations in order to develop the mandatory occupational competence qualifications achieved during the on programme phase of the apprenticeship.

The Employer Occupational Brief and associated documents can be accessed from Semta - standards@semta.org.uk