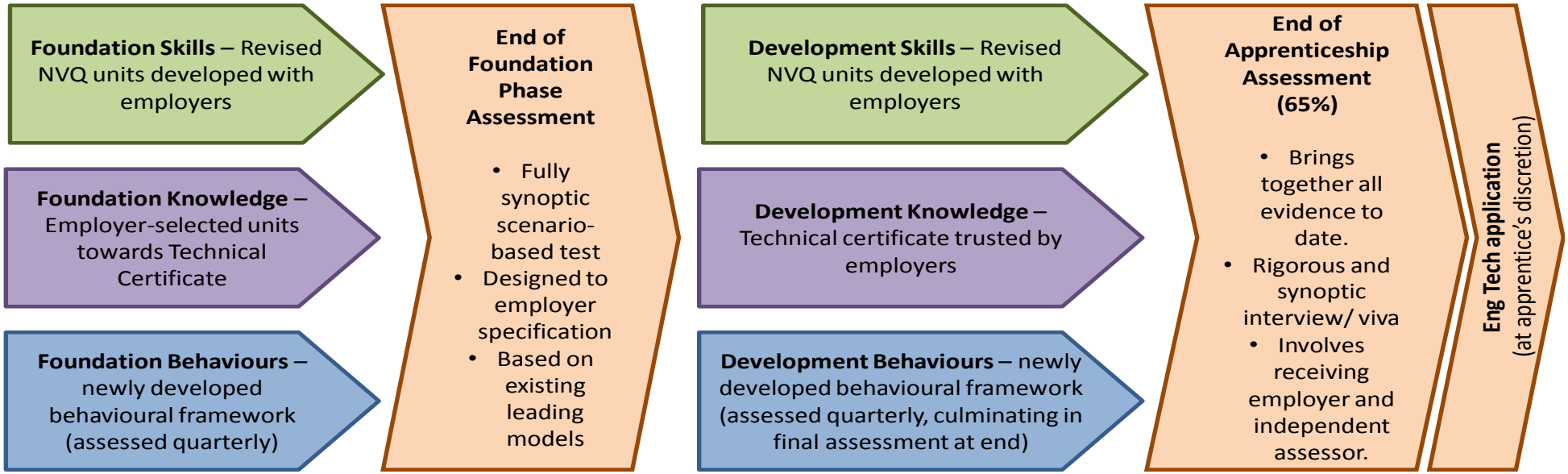
Automotive Trailblazer – Control / Technical Support Engineer – Assessment Summary



1. Range of methods	As set out above, incorporates practical test, written test, behavioural assessment and rigorous interview.	**6. Grading**	Knowledge and behaviour will be graded and these grades will be shown on the final certificate. Skills will be binary graded for this standard.
2. Independence	Foundation-phase end test fully independent. Qualifications independently assessed by AOs. Independent assessor at final interview.	**7. Affordability**	This model is affordable within the funding model being trialled for 2014/15 for Trailblazers. The majority of that funding will be for training.
3. Consistency	Employers have charged three awarding organisations to work together on a single set of tools to ensure consistency.	**8. Manageability**	The Trailblazer group is working with education and training providers to ensure deliverability. The foundation phase test is based on existing practice.
4. Validity	Assessment methodologies chosen by experienced companies to test full competence and run by recognised awarding organisations.	**9. Professional body recognition**	We have worked closely with IMechE on the design of the assessment, which will give an apprentice everything they need to apply for Eng Tech.
5. Synoptic	Assessments at the end of both the foundation and development phases are synoptic, looking back across the full range of knowledge and skills.	**10. Assessment largely at the end**	Whilst there will be ongoing assessment during the Apprenticeship, the majority (65%) of formal assessment will be at the end point.

Automotive Trailblazer – Control/Technical Support Engineer

Assessment plan

This assessment specification has been developed by employers in order to ensure that apprentices completing the Control/Technical Support Engineer Standard meet business needs in terms of the Knowledge, Skills and Behaviours required for them to be signed off as fully competent. This is a clear statement of intent from industry in working collaboratively to develop further the existing robust procedures and processes for our industry, which are trusted in place within Apprenticeship frameworks. It will also deliver best practice and ground breaking new approaches and gateways which collectively make the standard world class.

The approach supports consistent and reliable judgements, ensuring independence where required and sets out the range of assessment methods to be used, including which are to be graded, how they are weighted and which are synoptic, whilst taking into account the requirements of professional body recognition. This will not only drive up the quality of the Apprentices but also hold to account providers in ensuring the rigour, robustness, breadth and depth required to meet the economic challenges in responding to areas of scarce skills within the country.

1. USING A RANGE OF ASSESSMENT METHODS

We have deliberately chosen a range of assessment methods for the Apprenticeship, including a practical test at the end of the foundation phase, a Technical Certificate, assessment of the apprentice's behaviours and an end test based around an in depth review in order to ensure that the overall assessment process is both broad and rigorous.

This is set out in more detail in the table below, which details the various gateways and requirements for Apprentices to progress from the Foundation Phase to the Development Phase and final employer endorsement.

A summary of the assessment methods is provided in Table 1.1 below:

Programme	Qualification	Assessment	Assessment weighting
Foundation Phase Skills	Internal portfolio evidence maintained with extensive additional mandatory pre-approved NVQ (+ optional units). It is expected that this training will be completed in specialist training centres in an off the job environment. In general, we would anticipate this requiring a minimum of vocationally focused 1400 GLH's	**Revised high quality Foundation Phase units designed and selected with employers (Skills)** All units need to have successfully completed before foundation phase end point assessment takes place. In line with an Employer Occupational Brief (that will support the agreed standard) the Apprentice will be assessed in terms of demonstrating comprehensive occupational competence (internal and external verification)	100% of units need to be passed before Foundation Phase end point assessment
Foundation Phase Knowledge	HND or Foundation Degree	Formative and summative assessments that include problem based assignments, work based projects, individual exercises, experimental work	It is required that the Apprentice has passed the HND or Foundation Degree

		and work based assignments and phase tests.	
Foundation Phase Behaviours	Whilst the behavioural framework is not a formal qualification in itself it still requires the same level of rigour and independence as the skills and knowledge element. To ensure this happens it needs to be reviewed with an appropriately trained assessor as part of the quarterly review system (PIC review)	**Foundation Phase (Behaviours)** Newly developed assessment summation of high performance occupational behaviours (BARS -at least 3 behavioural reviews before Foundation Phase end point assessment takes place so Apprentices are clear of what is expected from them at the Foundation Phase end test	It is expected that the Apprentice achieves "Acceptable" or above behavioural rating to progress to the Development Phase. Any exceptions are at organisations discretion and internal guidance or if required performance management procedures and processes to be used in order to address any unacceptable or improvement required
End of Foundation Phase Knowledge, Skills & Behaviours	Control/Technical Support Engineer Foundation Competence Accreditation	**Foundation Phase End Test (Incorporating newly developed Knowledge, Skills, & Behavioural assessments)** Scenario based competency assessment likely to last between 1 and 3 days depending on the final design agreed (based on the synoptic assessment that gives a broad view of foundation stage competence achievement)	This is a synoptic assessment. The standard must be passed in order to progress to development stage. This test can only be taken once Foundation Phase skills and knowledge units have been completed, along with at least 3 behavioural reviews.
Development Phase Skills (Level 4)	**Control/Technical Support Engineer Development Competence** Internal portfolio evidence maintained with extensive additional mandatory pre-approved NVQ level 4 in Engineering Manufacture Units (+ optional units)	**Development Phase units towards revised high quality NVQ units (skills)** All units need to have been successfully completed before progressing to the end point assessment. The Apprentice will be assessed in terms of demonstrating comprehensive occupational competence (internal and external verification)	It is required that the Apprentice has passed the revised more rigorous NVQ Level 4 (designed in partnership with employers) in order to move to the end point assessment.
Development Phase Knowledge (Level 6) Degree		**Development Phase Knowledge Assessment Optional Pathway's at Level 6 (BSC or BEng Degree)** External knowledge, theory and applied conceptual assessment / exam Existing and trusted knowledge, theory and applied conceptual assessment / exam	It is required that the Apprentice has passed the Degree
Development Phase Behaviours	Whilst the behavioural framework is not a formal qualification in itself it still requires the same level of	**Development Phase Test (Behaviours)** Newly developed assessment	During the last three months of the Apprenticeship it is expected that the Apprentice achieves in 3 consecutive

	rigour and independence as the skills and knowledge element of the framework. To ensure this happens it needs to be reviewed with an appropriately trained assessor that has accountability for the Apprentice framework skills funding agency quarterly review system (PIC review)	summation of high performance occupational behaviours (BARS)	reviews acceptable or above behavioural ratings in all reviews in order to meet the gateway requirements of the Employer Endorsement. Internal guidance or if required performance management.
Employer endorsement of full occupational competence	**Control/Technical Support Engineer Apprenticeship Completion Certificate (Level 6)**	**Newly developed rigorous end point interview/viva by employer (Knowledge, Skills, & Behaviours)** An end-point interview, based on a synoptic review of the full evidence provided and detailed technical questions to test the apprentice's full competence. An independent assessor will also be present and the rigorous structured competency interview will cover: • high-performance occupational behaviours assessment • on-the job knowledge and skills competence evidence employer sign-off of full "occupational readiness"	All mandatory outcomes demonstrating competence achieved (100%) *Should anyone not achieve either knowledge, skills or behavioural requirements they will not gain the endorsement of the employer

***** The final outcome of the Apprenticeship would reflect achievement in all components against the standard. Grades for the knowledge and behaviour elements will appear on the completion certificate alongside achievement of the NVQ elements.

2. ENSURING INDEPENDENCE

The assessment is largely independently set, assessed and verified / moderated by recognised Awarding Organisations to ensure the robustness and fairness of judgements made within it. Whilst this is not a radical departure from existing methods, it does give greater depth and breadth. There is already a high level of confidence in the overall assessment strategies and standards. The High Performance Behavioural reviews, the NVQ and Higher level Qualifications (HND/Foundation Degree and Engineering Degree) all have an auditable trail of sign off to ensure independence and rigour.

The Foundation Phase

The *Foundation Phase*, provides a comprehensive grounding in preparation for the development phase of a Control/Technical Support Engineering Apprenticeship, which will usually be completed in specialist training centres. While individual apprentices are employed by a specific employer from the outset, in order to meet the standard apprentices will need to complete a rigorous training programme of "off-the-job" training. This will focus on what the apprentice needs to achieve the standard and would typically last around 12 months (1400 Vocational GLH's), including starting 360 of the minimum required 720 Academic GLH (Depending on Business need this may increase to the optional 1080 academic GLH) which equips them with sufficient knowledge, skills and the

behavioural reviews required to operate at the standard required to be able to enter an industrial or manufacturing-based workplace setting.

Foundation Phase End Test

It is expected that individual apprentices at the end of the Foundation Phase are independently assessed for the necessary competencies, prior to carrying out substantial tasks in a demanding work place setting during the Development Phase. This is essential as employers (who assume the personal, legal, reputational and commercial risks associated with the new employee) must be satisfied that each apprentice has the required base competencies and capabilities to operate safely and effectively from this point onwards. This end test also gives Employers confidence that the training providers are applying the appropriate rigour to the apprentices training.

To guarantee these aims the approach requires an independent synoptic assessment combining skills, knowledge and behavioural requirements must be passed. This gives the employer confidence that each apprentice has met the required standard in its entirety for this phase. This acts as a formal "gateway" for accessing the Development Phase of the Apprenticeship as all apprentices must pass this before moving to the next phase. This End Test will be achieved through a summative external assessment set in a combination of practical & high performance behavioural tests and examination-style academic tests that demonstrate foundation stage competencies. The three independent Awarding Organisations that we are working with have been commissioned (by Sept/ Oct 2014) to design these end test assessments so they can consistently applied and audited in a way to ensure that the requisite standards can be independently verified. There are strong examples from existing schemes at the likes of Toyota and JLR, as well as Electrical AM1/AM2 exams that can be considered as a basis to develop a robust scalable foundation phase end assessments

The Development phase

The Development Phase requires independent verification of standards through two core qualifications (Completion of the Degree and completion of the NVQ level 4 Qualification), the first of which is externally set and marked, and the NVQ internally and externally verified.

Whilst on first glance this approach appears to be quite traditional, in reality it has greater depth and breadth applied to it.

This is a tried, tested and trusted approach that gives employers confidence that the Apprentice will be ready at the end point assessment because they will be able to perform value adding operations in order to demonstrate competence during the course of the Engineering Apprenticeship.

The behavioural framework reviews continue during the Development Phase and whilst this is not a formal qualification in itself it still requires the same level of rigour and independence as the skills and knowledge element of the framework. To ensure this happens it ideally needs to be incorporated within the skills funding agency quarterly apprentice review system (PIC review)

End Point Employer Endorsement and Sign- Off

The endpoint employer endorsement and sign-off process ensures that all apprentices completing their Apprenticeship are fully rounded professionals. This employer endorsement sign off provides independence from the various providers in ensuring the training and development provided to the Apprentice is fit for purpose via a competency based rigorous structured interview covering high performance behaviours and on the job knowledge and skills competence, this will be recorded on a newly specifically designed standardised template. This standardised approach will be designed to ensure employers apply the judgments consistently and fairly. As set out in the table above, it

will also be supported in the final meeting by their independent Apprentice Assessor. Only with this final sign off documentation complete will the Apprentice meet the requirements of full occupational readiness. A Control/Technical Support Engineering Apprenticeship completion certificate can then be applied from FISSS as all mandatory outcomes would have been reviewed, questioned, demonstrated and confirmed.

Independence is also assured by involving the “Customer” (the receiving line manager) and it is their strong business interest to have a trained and competent technician and would not sign off an Apprentice who had not met the required standard.

Professional Recognition

Completion of this Apprenticeship standard will be recognised by the relevant professional institutions to initially obtain Eng Tech status. Post employer endorsement and sign off, the Apprentice may choose to seek professional body registration in the form of providing further evidence towards Incorporated Engineer Registration (IEng) through a professional review.

3. DELIVERING CONSISTENT (RELIABLE) JUDGEMENTS

Three awarding organisations (City and Guilds, Pearson; and EAL) have been commissioned to work collaboratively to develop the externally assessed Foundation Phase assessments (by Sept/ Oct 2014) that will comprise the Foundation Phase Competence Qualification. This will act as an important gateway towards achievement of the Apprenticeship standard. The awarding bodies plan to produce an assessment specification for each element of the framework based on this specification document. This approach that builds upon a base used in AM1/AM2 and good practise from the Likes of JLR & Toyota will ensure that there is no variation between the content being assessed, the performance evidence considered, and the standard applied between different assessment providers.

As employers, we have set a clear specification for this work and charged the awarding organisations to work together on a single approach for consistency. They will check back with us regularly on developments to ensure that they continue to align with our needs and we will sign off the final approach before it is used.

The skills proficiency-based practical Foundation Phase end test is crucial for determining whether apprentices are adequately trained and sufficiently competent to make the transition from the off the job phase which are largely simulated environments to a work-based setting in automotive manufacturing. It is envisaged that the assessment will use a similar assessment approach to the established AM1/AM2 testing for electricians, insofar as it will include a comprehensive practical test being delivered, which is still work in progress but we expect this foundation stage test to last somewhere between 1 to 3 days depending on how scalable the assessment can be made in terms of practicalities including finding suitable assessors, cost and availability of test kit. In principle the Apprentices will be required to demonstrate full competence for the foundation stage of learning in authentic engineering simulated scenarios. This approach ensures that the assessment is a true and reliable measure of an individual's performance and occupational competence and also provides a tool that tests that the providers are applying appropriate rigour in the foundation stage.

The programme content has been thoroughly reviewed for both phases to ensure that it exercises and measures all aspects of the industry-defined Control/Technical Support Engineer standard through its mandatory units, with optional units available for apprentices to extend their understanding and proficiency in further areas of engineering. The common mandatory core, with limited extension optional units that align more specifically to sector needs, increases the breadth, depth and consistency and rigour of standards across the programme.

The Development Phase of the Apprenticeship programme is completed largely "on-the-job". It is subject to both the continual assessment of knowledge, completion of the Engineering Degree, high-performance behavioural requirements, as well as more detailed unit assessment, based upon the recently revised and bought off NVQ Level 4 qualification in terms of adding greater breadth and depth of core and optional units. This phase culminates in a comprehensive audit-based employer verification, endorsement and sign-off process.

The requirement to demonstrate total criterion-referenced competence for each phase through the Competence Qualifications and a high-performance behavioural assessment which maximises the reliability of the assessment approach. Independent verification of the full occupational standard and associated gateways are a key feature throughout the programme and guarantees reliable outcomes before certification can be awarded.

So, by setting a very clear direction as employers, working with a small number of Awarding Organisations who we have asked to collaborate on a single set of tools, we will ensure consistency in the judgements made in assessing Apprentices under this standard. There will be full visibility of any developments made.

4. DELIVERING ACCURATE (VALID) JUDGEMENTS

The Control/Technical Support Engineering Apprenticeship programme draws from models of engineering excellence and well established practices within some of the leading automotive companies in the UK and overseas. The delivery of the core engineering competences has been developed and refined over many years, but the Automotive Trailblazer has revised all NVQ unit content to develop its strengths, and to increase breadth and depth.

The development process guarantees validity in two fundamental ways: through the expertise and evidence that is being accessed in the development work, and in the multiplicity and rigour of the assessment regime.
The programme has involved the most advanced automotive engineering manufacturers, skills bodies and specialist training providers, comparative analysis and benchmarking of international standards in Europe and elsewhere. As well as the collaboration with the professional engineering institutions has been key to ensure that programme content, coverage, performance evidence, and assessment methodologies provide valid, sufficient and accurate judgements against all aspects of the occupational standard should the apprentice wish to apply for IEng Accreditation.

Valid and accurate judgements are reinforced by the nature and range of evidence accumulation and assessment across the stages from Foundation to Development phase and finally, the Employer endorsement process.

These assessments methods include:

- the envisaged use of high tech specialist, simulation based equipment in the Foundation phase;
- intensive, practical assessments which reflect the demanding core competence focussed employment situations for the Foundation phase;
- the inclusion of incisive, time limited assessments that confirm standards alongside underpinning concepts, theory and knowledge;
- the requirement for the demonstration of all of the competences in a range of contexts, and on multiple occasions, in live work-settings for the Development phase;
- The use of demanding and observation-based, assessments and critical appraisals of real life engineering work being carried out and of outcomes, in terms of knowledge, skills and behaviour, with stringent internal and external verification.

The programme is introducing rigorous external, summative assessments to independently assess and ensure the standards are achieved at key stages, while maintaining the more protracted, intensive, and authentic NVQ work-based assessment methods, to ensure that validity is not compromised.
Finally a standardised template will be designed to ensure consistent, accurate and valid judgements are made during the employer end review and sign off of occupational competence.

5. SYNOPTIC ASSESSMENT

The assessment process for the new Control/Technical Support Engineering Apprenticeship is focussed upon the measurement of performance in realistic contexts, whether they are conducted "off-the-job" or in "live work settings". In this way, they are able to clearly identify and accurately measure the ability of individual apprentices to respond to complex, multi-dimensional workplace demands.

The Foundation Phase culminates in rigorous and comprehensive assessments, which between them measure performance in all aspects of the foundation phase of the programme, in terms of skills, behaviours, theoretical understanding, and underpinning knowledge. It is envisaged that the practical scenario-based test assesses the ability to assimilate relevant knowledge, skills and behaviour, and to apply them safely and effectively in potentially unforeseen and unfamiliar real-life situations. The ability of the apprentice to demonstrate the standard synoptically is central to achieving the Foundation Phase of the standard and as a gateway to the Development Phase.

The scenario-based skills test will be undertaken through a number of different exercises to ensure that a synthesis of applied skills, knowledge and behaviour can be assessed in authentic situations against the full range of competencies that comprise the occupational standard.

The end point assessment of the development phase takes synoptic assessment further by capturing performance evidence in real life settings throughout the apprenticeship:

- detailed occupational development records and portfolio evidence based upon prescribed job-based tasks and assignments. This evidence is collated and brought to the final end test interview/viva;
- incorporated formal behavioural assessments, based upon Behaviourally Anchored Rating Scales (BARS) in defined areas. These are completed regularly and culminate in a final check against these behaviours at the end of the Apprenticeship;
- Finally, and most importantly, at the end-point endorsement and sign-off process by the employer. The employer will use a specifically designed template to review and question the evidence presented by the apprentice and ask detailed and probing questions across a range of work task examples that demonstrate competency across the expected job role. This will be designed to ensure that the apprentice has to draw synoptically on their knowledge and skills from across their Apprenticeships. For example, the apprentice might be asked how they have tackled a common technical issue and then presented with a complex problem requiring them to relate it to the work and knowledge they have gained through the Apprenticeship to describe how they would tackle it. In this way, the final interview/viva will ensure that successful apprentices are fully competent and rounded professionals.
- Only on successful completion of the sign off document will the apprentice be able to apply for the apprenticeship completion certificate.

6. GRADED ASSESSMENTS

The Foundation and Development Phases of the Automotive Apprenticeship for a Control/Technical Support Engineer incorporate both competence-based requirements and also graded assessment, all of which contributes to the overall achievement of the full Apprenticeship and will be represented in the final certification.

In both phases, the NVQ skill based assessments comprehensively assess the apprentice against all of the requisite competencies at the level by means of final, exacting binary judgements; each of which must be achieved against a challenging minimum threshold to achieve a pass. The knowledge based assessments are graded, with outcomes on a scale that includes Pass, Merit and Distinction for the foundation phase, as well as the standard degree grading for the development phase. These will appear on the Apprenticeship certificate.

The High-Performance Behavioural Assessments are graded using the Behaviourally Anchored Rating Scales (BARS). This system uses a five-point grading scale (**5** Outstanding; **4** Very Good; **3** Acceptable; **2** Improvement required; and **1** Unacceptable) in relation to five broad performance areas (*Working effectively in teams*; *Focus on quality and problem-solving*; *Personal responsibility and resilience*; *Effective communication and interpersonal skills*; and *Continuous development*).

All assessment methods contribute to the final assessment outcome and the grades awarded for the knowledge and behaviours. All elements will be recorded on the final Apprenticeship completion certificate, clearly showing the grades for Knowledge and Behaviour and also the NVQ binary outcome. The certificate will not show an overall grade.

7. AFFORDABILITY

The Automotive Trailblazer has provided details of the indicative costs for all aspects of the development and implementation of these changes to the Automotive Apprenticeship programme. Due to the greater breadth and depth it is anticipated that the apprenticeship in total (both training and assessment) will cost circa £46K to deliver but will provide a very high return on investment in providing a pipeline in tackling scarce skills. Training will make up the vast majority of this cost, but it is also important that we factor in and pay for rigorous assessment to ensure that the successful apprentices are fully competent in this role. We can estimate that the costs for implementing such testing will be circa £3000 per Apprentice. This estimate is based upon trade testing which is already carried out by training providers for industry. We have had to make assumptions such as scaleability and marking fees from exam / awarding bodies, however we would not anticipate that any such assessment would exceed training costs.
Assessor ratios will need to be agreed as part of the employer / provider cost models. Benchmark data gathered would indicate something in the region of 1:20 ratio of Assessor to Apprentices would deliver suitable rigour and high performance outcomes. These costing’s are in accordance with the funding model being trialled in 2014/15 for Trailblazers.

However, the Automotive Trailblazer still believes that it will be important for skills bodies to monitor how funding and resources are distributed, allocated and accessed across the sector, particularly as smaller enterprises need to be able to access the same level of equipment, expertise, training and assessment personnel as the larger manufacturing companies, without favour based upon size, location or apprenticeship volumes.

8. MANAGEABLITY/ FEASIBILITY

The Trailblazer group is working closely with a small number of pilot phase education and training providers and their representative bodies to ensure that they are ready and able to take on the role of training and assessing this new Apprenticeship.

By starting small and building up, we will test and ensure the manageability and feasibility of the assessment approach and key elements (such as the end-of-foundation-stage test) will be based on excellent examples already in use in companies such as Toyota and Jaguar Land Rover, giving us a high degree of confidence in their deliverability.

We are also very conscious of the need to ensure that this approach is feasible for smaller companies. The Automotive Trailblazer is consulting widely across the sector about these Apprenticeship reforms and, while it has been ambitious in its objectives for securing greater breadth and depth and higher standards and quality, it remains attentive to the diversity of needs and requirements across the industry, and determined that any changes introduced are viable for all stakeholders in particular SMEs.

It is a key concern of the Automotive Trailblazer - one frequently expressed by the larger, better resourced companies - that these reforms do not lead to a two-tier system where only companies with the greatest influence and resources are able to benefit from the standard.

Pilot organisations have submitted expected numbers and the plan moving forward will be to encourage wider participation, particularly from the value chain / SMEs.

We will continue to work on the development of the Foundation Phase, including with colleagues in other engineering and manufacturing disciplines to ensure that the end-point synoptic assessments are manageable, cost effective and deliverable across different types of providers, or through accessible hubs.

9. PROFESSIONAL BODY RECOGNITION

Professional bodies: The Institution of Mechanical Engineers (I.Mech.Eng).

The I.Mech.E on behalf of the Engineering sector is closely involved in all aspects of the development of the Automotive Trailblazer standard.

Representatives of the I. Mech E are directly involved in developing the content requirements (including coverage, sufficiency, demand, formal standards, and levels), the validity and reliability of the assessment framework and the focus and assessment methods for occupational behaviours, for each stage of the programme. Such institutions are primarily concerned with ensuring that achievement of the full Apprenticeship Certificate will reflect the professional bodies' recognition criteria for the "Engineering Technician" standard.

All of the changes relating to the programme content (competence, knowledge and behavioural standards), its assessment methods and outcomes, must satisfy the professional bodies that the full standard for the Control/Technical Support Engineer has been demonstrated in the Development Phase, and that this standard accords with the full set of "Engineering Technician" criteria. To this end, the professional bodies are involved in the review and quality assurance of all of the changes to unit content and to the assessment framework that comprise the Foundation and Development Phases of the Automotive Trailblazer.

It is important to note, however, that while the achievement of the end-point assessments and completion of the full Apprenticeship will support professional recognition at the level of

"Engineering Technician", the process of seeking professional recognition is additional to the Apprenticeship requirements and is voluntary. Professional recognition by these membership bodies is bestowed upon individuals rather than as an entitlement, based upon a programme outcome or level of achievement, and professional bodies will continue to require adherence to their institution-based rules and codes of conduct, for example. Post employer endorsement and sign off the Apprentice may choose to seek professional body registration in the form of providing further evidence towards Incorporated Engineer Registration (IEng) through a professional review.

10. END-POINT ASSESSMENT

As outlined above, this assessment plan features a clear end point assessment of the Apprenticeship.

The Automotive Control/Technical Support Engineering Apprenticeship is structured in two fundamental, level-specific stages (Foundation and Development phases), followed by employer endorsement at the end of the 5 - 6 year programme. In order to articulate the specific levels of skills, knowledge and behaviours required to be achieved and assessed in demonstrating full occupational competence, the employers on the Trailblazer group will develop a detailed Employer Occupational Brief (EOB). This brief informs the awarding organisations of the required elements of knowledge, behaviours and vocational skills within this Apprenticeship standard. It also provides a clear basis for on-going development within the Apprenticeship to ensure credibility and consistency of the Apprenticeship outcome is maintained.

Each phase incorporates multiple assessment methods to ensure validity and reliability in the performance standards, however, the overall programme is designed to be progressive and lead to full professional competence, including skills proficiency, consolidated sector-specific theory and knowledge, and high-performance behaviour-related occupational readiness, at key "gateway" stages.

In existing Apprenticeships today there are currently no synoptic end point assessments and / or employer sign off, by using synoptic and end point assessment methods we are building on tried, tested and reliable elements which employers already have a high level of confidence in. This combination of methods builds on this in a practical, manageable sustainable and consistent manner.

Achievement of the formal qualifications is part of a broader audit-based end-point employer endorsement with a rigorous interview/viva, which incorporates a detailed occupational development record and portfolio of evidence including;

1. an evidence-based record of the high-performance behavioural assessments
2. a demanding knowledge and theory-based assessment as part of the HND or Foundation Degree;
3. a full NVQ Level 4 Competence Qualification, with stringent evidence requirements and robust quality assurance processes;
4. completion of an Engineering Degree (Bsc or BEng)
5. an overarching employer endorsement of the full standard at the conclusion of the programme through a rigorous interview/viva, resulting in confirmation of "occupational competence” of the Apprentice.

Apprentice certification can only be awarded when all 5 elements have been achieved.