

R&D relief: where AI changes the test

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Advisers preparing software R&D claims must consider how AI affects qualifying activity and the evidence needed to support claims.

Key Points

What is the issue?

Advisers preparing R&D tax relief claims need to consider how the growing use of AI in software development affects what is 'readily deductible' and where genuine technological uncertainty begins.

What does it mean to me?

Advisers need to establish where AI-assisted approaches reached their limits, what technological uncertainty remained and what work competent professionals undertook to resolve it.

What can I take away?

Strong claims will require clear project narratives and contemporaneous evidence showing why AI could not readily resolve the uncertainty and documenting the work undertaken beyond its capabilities.

The increasing use of AI in software development could have significant implications for R&D tax relief, particularly when determining what constitutes technological uncertainty and what could be readily deduced by a competent professional.

AI changes the R&D landscape

It remains the case that, to meet the definition of R&D for tax purposes as set out in the Department for Science, Innovation and Technology (DSIT) Guidelines, a project must be seeking an advance in the wider field of science or technology through the resolution of scientific or technological uncertainty.

For software projects, HMRC's focus is on the underlying technology rather than the end-user functionality. The question is whether the way the software is designed, the processes it uses or the technical choices involved represent an advance in publicly available knowledge that could not readily have been deduced by a competent professional using existing expertise, tools and techniques.

The problem must therefore be something that a competent professional could not readily resolve by applying their expertise or using standard tools, established techniques or publicly available information, such as documentation or online forums.

However, AI is moving to the forefront of software development. The January 2026 JetBrains AI Pulse Survey of professional software developers, based on a sample of more than 10,000 developers worldwide, found that 74% had adopted specialised AI development tools, including coding assistants, editors and agents.

Where a company is undertaking fundamental AI research, a technological advance may be relatively straightforward to demonstrate, provided there is genuine technological uncertainty and documented work to resolve it. However, in AI-assisted projects, the benchmark for what is considered 'readily deducible' is becoming harder to define. Problems that once required extensive engineering effort

and literature reviews can now be resolved much more quickly with the support of AI tools drawing on a vast body of publicly available knowledge.

How AI may affect scrutiny

Software R&D claims may be reviewed with support from specialists in HMRC's Chief Digital and Information Office (CDIO). Their questions may cover the underlying technologies, the competent professionals involved and the state of knowledge and capability in the wider field at the outset of projects.

These considerations take on greater significance as the growing availability of AI-assisted development tools influences what may be considered 'readily deducible' to a competent professional. HMRC enquiries may increasingly consider whether an available AI development tool could have resolved the problem, requiring claimants to explain why it could not do so and what technological uncertainty remained.

The HMRC Corporate Intangibles Research and Development Manual (CIRD), which includes guidance on the application of the R&D guidelines to software, does not explicitly address the treatment of AI-assisted development. There is therefore little formal guidance on how its use may affect judgements about what is readily deducible.

For advisers, the challenge is less about understanding the technology and more about being able to interrogate it. When AI has played a significant role in development, the starting point is not to ask whether AI was used, but to establish exactly where its contribution ended and where a competent professional had to take over. Advisers preparing or reviewing a claim need to test this boundary directly with the claimant: which parts of the solution came from AI output with little modification, and which parts required judgement, experimentation or the rejection of AI-generated options?

Where qualifying R&D begins

Most commonly, companies are using commercial AI tools, such as large language models and other pre-trained AI systems. Simply using advanced technology, even where it delivers significant commercial benefit, is not in itself sufficient for R&D tax purposes. The project must seek an advance in science or technology, rather than

simply applying existing tools in a standard way.

It is therefore important for R&D claimants to articulate clearly where the technological uncertainty genuinely lay, why it could not be resolved by competent professionals using existing knowledge, with or without AI assistance, and how the project went beyond what a competent professional, supported by available AI tools, could readily deduce at the outset.

In practice, AI tools may take a project part way towards a solution, without fully addressing the underlying technological uncertainty. The focus then shifts to whether resolving the remaining uncertainty would have been readily deducible to a competent professional. AI may therefore shift the starting point for qualifying activity rather than prevent a project from qualifying altogether.

AI and qualifying R&D

To illustrate how AI can sit within a qualifying project, consider the following examples.

In each of these scenarios, AI accelerates exploration but does not remove the work required by competent professionals to resolve technological uncertainty. Subject to the relevant criteria being met, a qualifying R&D tax claim may still arise.

Scenario 1: Resolving uncertainty: A development team is designing a system with demanding performance requirements. AI tools suggest possible approaches, but cannot establish whether they will work at the required scale. Engineers must therefore experiment with competing approaches and discard those that fail.

Scenario 2: Reframing the problem: AI tools can turn what would previously have been a series of smaller technical problems into a broader challenge about how the system should be designed. Rather than exploring individual improvements, the team must determine whether a different overall design will work.

Scenario 3: Testing AI-generated options: AI tools produce multiple plausible solutions to a problem involving the processing of data. Each option must be systematically tested, refined and, in some cases, abandoned due to unforeseen technical limitations. The uncertainty is only resolved through experimentation, not by accepting AI outputs at face value.

Scenario 4: Regulated environments: A development team is implementing a process using AI within a highly regulated environment. While AI tools can generate code and suggest ways of incorporating it into existing systems, uncertainty remains around how the solution can meet strict requirements relating to audit, traceability, security or data storage and processing. The uncertainty lies not in the adoption of AI itself but in determining how it can operate within the project's constraints.

By contrast to the above scenarios, AI-related work will not in itself qualify as R&D where it involves:

- software that is new only to the business, rather than representing an advance in science or technology;
 - using off-the-shelf AI tools, platforms or interfaces in the way they are intended to be used;
 - routine training or adjustment of AI models; or
 - the automation or digitisation of existing business processes where there is no scientific or technological uncertainty.
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Evidence of qualifying R&D

As development practices evolve in this way, traditional indicators such as lines of code are becoming less meaningful on their own. Instead, evidence of R&D activity may be found in:

- documentation showing a process of experimentation, including failed experiments using AI;
- records of testing across the system where outcomes could not be predicted in advance;
- records of changes to the software, such as development histories held in Git repositories, showing iterative development and abandoned approaches used in attempts to resolve uncertainty;
- design and architectural records showing trade-offs, rejected approaches and the reasons for key decisions, including AI-generated options that were discounted even if not attempted in practice; and
- evidence that apparent software failures were actually the result of unsuccessful technical experiments.

For advisers, a useful rule of thumb is that claimants should not only be able to explain how AI assisted the development process, but also what technological thinking and work remained once AI-assisted approaches had reached their limits. Three simple questions can help get to the heart of this:

1. At what point did AI-generated suggestions or code cease to provide a sufficient solution?
2. What technological uncertainty or technical constraints remained after AI-assisted approaches had been explored? For example, were there unresolved issues involving performance, the ability of the system to operate at greater scale, speed, security or integration with other systems?
3. Can the claimant demonstrate the decisions, trade-offs and reasoning that took place beyond the outputs generated by AI?

Equally, while it is important to identify where AI stops and R&D starts, it is important to avoid relying upon hindsight. R&D tax claims can be made up to two years after the end of the accounting period in which the work was undertaken. As solutions mature and become incorporated into standard development practices, the uncertainty that existed at the outset can easily be underestimated. The relevant test remains what a competent professional could reasonably have established at the time, not what is apparent in retrospect.

Looking ahead

AI does not negate R&D activity, but it may change what a claim needs to demonstrate. Companies will need to identify precisely where technological uncertainty existed and what work was required once AI-assisted approaches had reached their limits.

For advisers, the key is to identify where competent professionals moved beyond what AI, a search engine or a textbook could reasonably have told them. Clear project narratives and contemporaneous evidence will be increasingly important, and advisers who build this approach into the evidence-gathering process will be better placed to demonstrate why an R&D claim is robust.