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R & D Tax Credit

and Software Development

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Alternate Tax Solutions

Situational Analysis

Today, many companies are assuming that they do not qualify for the R & D Tax credit because their research activities do not represent any remarkable technical discovery. In 2001, the issue of what really constituted a remarkable discovery came before the court in the case of United Stationers v. U.S. The discovery test requirement at that time was as follows: "Discovery test required that research activities be undertaken to 'obtain knowledge that exceeds, expands, or refines the common knowledge of a skilled professional.'"

Members of Congress and many commentators criticized this as an incorrect interpretation of the intent of Congress. This debate was finalized in 2004 in Treasury Decision 9104, which states, "Research does not require the taxpayer to obtain information that exceeds, expands, or refines the common knowledge of a skilled professional in a particular field of science or engineering in which the taxpayer is performing the research."

In McFerrin v. U.S. in 2003, the district court ruled that the discovery test requirement prior to 2001 was applicable. (The discovery test required that research activities be undertaken to "obtain knowledge that exceeds, expands, or refines the common knowledge of a skilled professional.") **This ruling was based on old law and was successfully appealed and overturned**.

In this opinion, when the previous ruling was vacated, the judge stated: "Discovering information ... does not require the taxpayer to be seeking to obtain information that exceeds expands or refines the common knowledge of skilled professionals in the particular field of science or engineering in which the taxpayer is performing the research." Treas. Reg. § 1.41-4(a)(3)(ii). Rather, "[r]research is undertaken for the purpose of discovering information if it is intended to eliminate uncertainty concerning the development or improvement of a business component." Id. § 1.41-4(a)(3)(i). Thus, under the new regulations, qualified research must be intended to "eliminate uncertainty." "Uncertainty exists if the information available to the taxpayer does not establish the capability or method for developing or improving the business component, or the appropriate design of the business component." Id. "Process of experimentation" under the new regulations is also different, as it now involves three steps: (1) "the identification of uncertainty concerning the development or improvement of a business component," (2) "the identification of one or more alternatives intended to eliminate that uncertainty," and (3) "the identification and the conduct of a process of evaluating the alternatives (through, for example, modeling, simulation, or a systematic trial and error methodology.)" Id. § 1.41-4(a)(5)(i). The 2003 Regulations, thus, have different definitions for "discovering information" or "process of experimentation" than the definitions adopted by the district court."

In another court case in the same year, Union Carbide Corporation v. Commissioner, the Judge confirmed that the taxpayer does not have to be seeking to obtain information that exceeds, expands, or refines the common knowledge of a skilled professional in the particular field of science or engineering. The Judge (on page 191) establishes the "Qualified Research Test." To meet this test, Qualified Research must meet four criterions. First, the expenditures connected with the test must meet the "Section 174 Test." Second, the purpose of the research must be for the purpose of discovering technical information (the Technical Information Test). Third, the

taxpayer must intend that the information to be discovered will be useful in the development of a new or improved business component of the taxpayer (the Business Component Test). Fourth, substantially all of the research activities must constitute elements of a process of experimentation for a purpose relating to a new or improved function, performance, reliability, or quality (the Process of Experimentation Test). Sec. 41(d)(1)(C), (3).

When considering if the taxpayer research expenditures and activities qualify for the R & D Tax Credit, we apply the following four-point test:

1. Business Component Test
2. Process of Experimentation Test
3. Uncertainty Test
4. Technical in Nature Test

Below, we will discuss if the research and development expenditures involved in developing software, qualify for the R & D Tax Credit. In this process, we will look at Internal Revenue Code Sec 41 and the actual judge's rulings to explain how software development qualifies for R & D Tax Credits.

Business Component Test

Software development for external use and for revenue purposes constitutes a business component. When software is held for sale and it is a product, it clearly meets the business component test. Below, please see *Internal Revenue Code § 41*. (2) (B). What needs to be determined is what percentage or which type of research activities qualify for the R & D Tax Credit.

Internal Revenue Code § 41.
(2) Tests to be applied separately to each business component. For purposes of this subsection—
  (A) In general. Paragraph (1) shall be applied separately with respect to each business component of the taxpayer.
  (B) Business component defined. The term "business component" means any product, process, computer software, technique, formula, or invention which is to be—
      (i) held for sale, lease, or license, or
      (ii) used by the taxpayer in a trade or business of the taxpayer.
  (C) Special rule for the production processes. Any plant process, machinery, or technique for the commercial production of a business component shall be treated as a separate business component (and not as part of the business component being produced).

Judge's Ruling
Judge States:

Sec. 41(d) (20 (A)
"A business component includes a pertinent part, product or process that the taxpayer either holds for lease, sale, or license or uses in its trade of business."   **Union Carbide Corporation (UCC) v. Commission**

Judge's Ruling:
"We find that for each of the claim projects, there are two business components: (1) A process business component and (2) a product business component.
The activities that relate primarily to the improvement of UCC's processes are part of the process business component, and the activities that relate primarily to the production of products are part of the product business component."   **UCC v. Commission**

Judge's Ruling:

Accordingly, the Court finds that Trinity must stand or fall on an "Eighty percent of the whole ship" basis.

The Court finds that more than eighty percent of the overall costs of the two Mark V prototypes were incurred in a process of experimentation and qualified research, and therefore, Trinity is entitled to claim the QRE credit for the costs of the two Mark V prototypes.   **Trinity Industries, Inc. v. U.S.**

Process of Experimentation Test

The nature of software programing involves applying various theories and principles of computer science and mathematical analyses to determine which applications and systems work best in the intended environment. This is initiated by gaining an understanding of the end user requirements, generating multiple designs, running tests, and evaluating the applications that make the system function.

Below are common activities incurred when developing software solutions:

- Build a body of knowledge supported by observation and empirical evidence.

- Set a goal for the Software Development Project.

- Choose the appropriate processes, supporting methods, and tools.

- Develop multiple hypotheses based on a series of models that have algorithms that make assumptions to provide for a desired outcome.

- Perform numerous variations of empirical and quantitative tests.

- Analyze the data to evaluate the current practices, determine problems, record findings, and make recommendation for future software improvements.

- Refine models and other knowledge gained from other projects.

- Measure the software development project to determine how it is maturing.

- Analyze the knowledge being built from the test or experiments.

It is Alternate Tax Solutions' position that software programing and/or software engineering meets the standards established in the court case listed below:

Section 174
- The QRE (Qualified Research Expense) must be in connection with the trade or business.

- The QRE must represent research and development cost in an experimental or laboratory sense.

"A process of experimentation is 'a process designed to evaluate one or more alternatives to achieve a result where the capability or the method of achieving that result or the appropriate design of that result is uncertain as of the beginning of the taxpayer's research activities.'" **UCC v. Commissioner**

Legislative Language - Process of Experimentation
The term *Process of Experimentation* is defined as *a process involving the evaluation of more than one alternative design to achieve a result that is uncertain at the outset.* This may involve developing one or more hypotheses, testing and analyzing those hypotheses, and refining or discarding the hypotheses as the sequential design process evolves to develop the overall component.

Elimination of Uncertainty

A white paper called "The Uncertainty Principle in Software Engineering" (see attached), written by Hadar Zivd and Debra Richardson at the University of California Irvine, states, "Uncertainty is inherent and inevitable in software development processes and products." This white paper states that uncertainty exist in the following areas:
- Requirement analyses

- Transition from system requirements to design and code

- Software re-engineering

- Modeling real world domains

- Solution domain when debugging

- Human participation

- Requirement changes in the development process

- Test plan

Since at any given time one or more of the above conditions may occur in the software development process or products, Alternate Tax Solutions believes it will be elementary to prove that software development meets the Uncertainty Test.

Section 174-2 includes the following expenses:

- Development or improvement of a product
- Patents, such as attorney fees
- Activities intended to discover information that would eliminate uncertainty
- Uncertainty exists if the information available to the taxpayer does not establish the capability or methods in the developing or improving the product or the appropriate design of the product.

Judge's Ruling:

"Because the taxpayer need only be uncertain as to 'the capability or method, or the appropriate design' of the improvement, an uncertainty may exist even if the taxpayer knows that it is technically possible to achieve a goal but is uncertain of the method or the appropriate design to use to reach that goal."

UCC v. Commissioner

The current regulations provide that "A determination that research is undertaken for the purpose of discovering information that is technological in nature does not require that the tax payer be seeking to obtain information that exceeds, expands, or refines common knowledge of skilled professionals in a particular field of science or engineering in which the tax payer is preforming the research."

UCC v. Commissioner

"Technical in Nature" Test

Since a software development process fundamentally depends on computer science, it often passes the "Technical in Nature" Test.

Sec. 41(d)(1)(B)(i).

- The term "qualified research" means research…

(a) with respect to expenditures may be treated as expenses under section 174

(b) which is undertaken for the purpose of discovering information…

   (i) which is technical in nature

   (ii) the application for which is intended to be useful in the development of the new and improved business component.

(c) Substantially all of the activities which constitute elements of the processes of experimentation in paragraph (3)

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   (c) Substantially all of the activities which constitute elements of the processes of experimentation in paragraph (3)

Judge Ruling

The technological information test requires that the research be undertaken for the purpose of discovering information that is "technological in nature."

Information is "technological in nature" if it "fundamentally relies on principles of the physical or biological sciences, engineering, or computer science."   **UCC v. Commissioner**

Conclusion

In 2009, there were four important court cases settled that provided clarity and established precedent for taxpayers claiming the R&D Tax Credit. These court cases are important because of past restrictive interpretations of governing law by the IRS and being reversed and or tempered with. This is good news because there have been 14 extensions of the R&D Tax Credit since 1981. The President included the extension in his 2010 and 2011 budgets. On March 9, H.R. 942, was presented to Congress. It requested Congress to increase the Alternative Simplified Method rate from 14% to 20%.

The present trend seems to indicate that both the President and Congress want to make the R&D Tax Credit permanent, easier, and more robust.

The following are brief comments about significant rulings:

- In *TG Missouri v. Commissioner,* the Tax Court ruled that the cost of production of molds designed, modified, and ultimately sold to the customer but retained by TG Missouri for production may be considered a qualified supply expense because they were tangible property used in the research activity and not excluded because they were "property of a character subject to depreciation."

- In *Union Carbide v. Commissioner*, the Tax Court described the "primary purpose" of experimental trials as an indicator of qualified research activity (*e.g.*, to eliminate uncertainty in developing a new product or process). It also accepted—over IRS objections—various forms of oral testimony and information substantiation.

- In *FedEx Corp. v. U.S.*, a U.S. District Court said that the IRS may not apply two criteria (requiring new knowledge and "unique or novel" product) that the IRS had used to limit Internal Use Software claims. This had been known as the "discovery test" when it was excluded in the 2003 final regulations.

- In *U.S. v. McFerrin*, the U.S. Fifth Circuit Court reversed a federal district court's denial of a credit based on the failing to meet the "discovery test" (noted above) and a lack of contemporaneous evidence of research activities and expenses. Most significantly for the taxpayer, the court allowed reliance on the taxpayer's oral testimony and estimates (under the Cohan rule), that which the IRS had rejected.