

the substantially all requirement of section 41(d)(1)(C) and paragraph (a)(2)(iii) of this section is satisfied. Substantially all of X's activities constitute elements of a process of experimentation because X evaluated alternatives to achieve a result where the method of achieving that result, and the appropriate design of that result, were uncertain as of the beginning of X's research activities. X identified uncertainties related to the improvement of a business component and identified alternatives intended to eliminate these uncertainties. Furthermore, X's process of evaluating the identified alternatives was technological in nature and was undertaken to eliminate the uncertainties. Because substantially all (in this example, eighty-five percent) of X's activities to update its current model vehicle constitute elements of a process of experimentation for a qualified purpose described in section 41(d)(3)(A), all of X's activities to update its current model vehicle meet the requirements of qualified research as set forth in paragraph (a)(2) of this section, provided that X's remaining activities (in this example, fifteen percent of X's total activities) satisfy the requirements of section 41(d)(1)(A) and are not otherwise excluded under section 41(d)(4).

(b) * * *

(2) *Shrinking-back rule.* The requirements of section 41(d) and paragraph (a) of this section are to be applied first at the level of the discrete business component, that is, the product, process, computer software, technique, formula, or invention to be held for sale, lease, or license, or used by the taxpayer in a trade or business of the taxpayer. If these requirements are not met at that level, then they apply at the most significant subset of elements of the product, process, computer software, technique, formula, or invention to be held for sale, lease, or license. This shrinking back of the product is to continue until either a subset of elements of the product that satisfies the requirements is reached, or the most basic element of the product is reached and such element fails to satisfy the test. This shrinking-back rule is applied only if a taxpayer does not satisfy the requirements of section 41(d)(1) and paragraph (a)(2) of this section with respect to the overall business component. The shrinking-back rule is not itself applied as a reason to exclude research activities from credit eligibility.

(3) *Illustration.* The following example illustrates the application of this paragraph (b):

Example. X, a motorcycle engine builder, develops a new carburetor for use in a motorcycle engine. X also modifies an existing engine design for use with the new carburetor. Under the shrinking-back rule, the requirements of section 41(d)(1) and paragraph (a) of this section are applied first to the engine. If the modifications to the engine when viewed as a whole, including

the development of the new carburetor, do not satisfy the requirements of section 41(d)(1) and paragraph (a) of this section, those requirements are applied to the next most significant subset of elements of the business component. Assuming that the next most significant subset of elements of the engine is the carburetor, the research activities in developing the new carburetor may constitute qualified research within the meaning of section 41(d)(1) and paragraph (a) of this section.

(c) * * *

(2) * * *

(iv) *Clinical testing.* Clinical testing of a pharmaceutical product prior to its commercial production in the United States is not treated as occurring after the beginning of commercial production even if the product is commercially available in other countries. Additional clinical testing of a pharmaceutical product after a product has been approved for a specific therapeutic use by the Food and Drug Administration and is ready for commercial production and sale is not treated as occurring after the beginning of commercial production if such clinical testing is undertaken to establish new functional uses, characteristics, indications, combinations, dosages, or delivery forms for the product. A functional use, characteristic, indication, combination, dosage, or delivery form shall be considered new only if such functional use, characteristic, indication, combination, dosage, or delivery form must be approved by the Food and Drug Administration.

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(4) *Duplication of existing business component.* Activities relating to reproducing an existing business component (in whole or in part) from a physical examination of the business component itself or from plans, blueprints, detailed specifications, or publicly available information about the business component are not qualified research. This exclusion does not apply merely because the taxpayer examines an existing business component in the course of developing its own business component.

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(6) *Internal use software for taxable years beginning on or after December 31, 1985.* [Reserved].

(7) * * *

(ii) *Apportionment of in-house research expenses.* In-house research expenses paid or incurred for qualified services performed both in the United States, the Commonwealth of Puerto Rico and other possessions of the United States and outside the United States, the Commonwealth of Puerto Rico and other possessions of the United States must be apportioned between the services performed in the United States, the Commonwealth of Puerto Rico and other possessions of the United States and the services performed outside the United States, the Commonwealth of Puerto Rico and other possessions of the United States. Only those in-house research expenses apportioned to the services performed within the United States, the Commonwealth of Puerto Rico and other possessions of the United States are eligible to be treated as qualified research expenses, unless the in-house research

expenses are wages and the 80 percent rule of § 1.41-2(d)(2) applies.

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(10) *Illustrations.* The following examples illustrate provisions contained in paragraphs (c)(1) through (9) (excepting paragraphs (c)(6) of this section) of this section. No inference should be drawn from these examples concerning the application of section 41(d)(1) and paragraph (a) of this section to these facts. The examples are as follows:

Example 1. (i) *Facts.* X, a tire manufacturer, develops a new material to use in its tires. X conducts research to determine the changes that will be necessary for X to modify its existing manufacturing processes to manufacture the new tire. X determines that the new tire material retains heat for a longer period of time than the materials X currently uses for tires, and, as a result, the new tire material adheres to the manufacturing equipment during tread cooling. X evaluates several alternatives for processing the treads at cooler temperatures to address this problem, including a new type of belt for its manufacturing equipment to be used in tread cooling. Such a belt is not commercially available. Because X is uncertain of the belt design, X develops and conducts sophisticated engineering tests on several alternative designs for a new type of belt to be used in tread cooling until X successfully achieves a design that meets X's requirements. X then manufactures a set of belts for its production equipment, installs the belts, and tests the belts to make sure they were manufactured correctly.

(ii) *Conclusion.* X's research with respect to the design of the new belts to be used in its manufacturing of the new tire may be qualified research under section 41(d)(1) and paragraph (a) of this section. However, X's expenses to implement the new belts, including the costs to manufacture, install, and test the belts were incurred after the belts met the taxpayer's functional and economic requirements and are excluded as research after commercial production under section 41(d)(4)(A) and paragraph (c)(2) of this section.

Example 2. (i) *Facts.* For several years, X has manufactured and sold a particular kind of widget. X initiates a new research project to develop a new or improved widget.

(ii) *Conclusion.* X's activities to develop a new or improved widget are not excluded from the definition of qualified research under section 41(d)(4)(A) and paragraph (c)(2) of this section. X's activities relating to the development of a new or improved widget constitute a new research project to develop a new business component. X's research activities relating to the development of the new or improved widget, a new business component, are not considered to be activities conducted after the beginning of commercial production under section 41(d)(4)(A) and paragraph (c)(2) of this section.

Example 3. (i) *Facts.* X, a computer software development firm, owns all substantial rights in a general ledger accounting software core program that X markets and licenses to customers. X incurs