



**INLAND REVENUE BOARD OF MALAYSIA**

**TAX TREATMENT OF RESEARCH AND  
DEVELOPMENT EXPENDITURE  
PART I –  
QUALIFYING RESEARCH AND  
DEVELOPMENT ACTIVITY**

**PUBLIC RULING NO. 5/2020**

*Translation from the original Bahasa Malaysia text*

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**DIRECTOR GENERAL'S PUBLIC RULING**

Section 138A of the Income Tax Act 1967 (ITA) provides that the Director General is empowered to make a Public Ruling in relation to the application of any provisions of the ITA.

A Public Ruling is published as a guide for the public and officers of the Inland Revenue Board of Malaysia. It sets out the interpretation of the Director General in respect of the particular tax law and the policy as well as the procedure applicable to it.

The Director General may withdraw this Public Ruling either wholly or in part, by notice of withdrawal or by publication of a new Public Ruling.

**Director General of Inland Revenue,  
Inland Revenue Board of Malaysia.**

## **1. Objective**

The objective of this Public Ruling (PR) is to clarify the definition of research and development (R&D) and its qualifying criteria, to assist in determining whether an activity undertaken for R&D in the ordinary course of a business, qualifies as an R&D activity.

## **2. Relevant Provisions of the Law**

- 2.1 This PR takes into account laws which are in force as at the date this PR is published.
- 2.2 The provisions of the Income Tax Act 1967 (ITA) related to this PR are sections 2, 7 and 8, subsections 33(1) and 34(7), sections 34A and 34B.

## **3. Interpretation**

The words used in this PR have the following meaning:

- 3.1 “Approved research institute” means an institute, including a company licensed under section 45 of the Companies Act 2016, approved by the Minister to mainly carry on research in an industry specified in the approval and to commercially exploit the benefit of such research.
- 3.2 “Person” includes a company, a body of persons, a limited liability partnership and a corporation sole.
- 3.3 “Resident” means resident in Malaysia for the basis year for a year of assessment by virtue of section 7 or 8 of the ITA.
- 3.4 “Research and development” means any systematic, investigative and experimental study that involves novelty or technical risk carried out in the field of science or technology with the object of acquiring new knowledge or using the results of the study for the production or improvement of materials, devices, products, produce, or processes, but does not include –
  - (a) quality control or routine testing of materials, devices or products;
  - (b) research in the social sciences or the humanities;
  - (c) routine data collection;

- (d) efficiency surveys or management studies;
  - (e) market research or sales promotion;
  - (f) routine modifications or changes to materials, devices, products, processes or production methods; or
  - (g) cosmetic modifications or stylistic changes to materials, devices, products, processes or production methods.
- 3.5 “In-house R&D” means R&D activity carried out in Malaysia by a person within his business for the purpose of using the results of the R&D activity for furthering his own business.
- 3.6 “Science” is the systematic study of the nature and behaviour of the material and physical universe.
- 3.7 “Company” means a body corporate and includes any body of persons established with a separate legal entity by or under the laws of a territory outside Malaysia and a business trust.
- 3.8 “Research and Development Company” has the same meaning assigned to it under section 2 of the Promotion of Investments Act 1986 (PIA) and fulfils the conditions specified by the relevant Ministry.
- 3.9 “Contract research and development company” has the same meaning assigned to it under section 2 of the PIA and fulfils the conditions specified by the relevant Ministry.
- 3.10 “Approved research company” means a company, other than a company licensed under section 45 of the Companies Act 2016, approved by the Minister to mainly carry on research in an industry specified in the approval and to commercially exploit the benefit of such research thereof.
- 3.11 “Technology” is the practical application of science, especially in the field of industry and commerce.

#### **4. Introduction**

Companies often spend resources on certain investigative undertakings in an effort to make discoveries (new knowledge), which can help develop new products or create new technology or information, that can improve the effectiveness of products or make the production of products more efficient. The discovery and

development of better technology begins with R&D where new knowledge is an expected objective. In Malaysia, companies across a broad spectrum of industries have been encouraged by the Government to embark on R&D in order to remain globally competitive. One of the measures in encouraging R&D among businesses in Malaysia is an incentive in the form of -

- (a) a special provision under subsection 34(7) of the ITA (**single deduction**) for R&D expenditure, non-capital in nature; or
- (b) a special deduction under section 34A of the ITA (**double deduction**) for in-house R&D expenditure, non-capital in nature; and
- (c) a special deduction under section 34B of the ITA (**double deduction**), for –
  - (i) contribution in cash to an approved research institute;
  - (ii) payment for the use of the services of an approved research institute or approved research company; or
  - (iii) payment for the use of the services of a R&D company or a contract R&D company.

## **5. Eligibility Criteria to Claim an Incentive**

A person would be eligible to claim an incentive in the form of a single or double deduction for the allowable expenditure incurred for R&D, if all of the following conditions are satisfied i.e the person must:

- (a) be a resident for tax purposes in Malaysia;
- (b) be carrying on a business in Malaysia;
- (c) undertake an R&D activity in relation to his business in Malaysia whether –
  - (i) in-house within his business; or
  - (ii) outsourcing the activity to approved research institute or company, or an R & D company or a contract R & D company in Malaysia;
- (d) undertake an R&D activity which fulfils the definition of R&D, and its qualifying criteria to qualify as a qualifying R&D activity; and
- (e) obtain an approval for the R&D activity from the Director General of Inland Revenue of Malaysia (DGIR) for which the Minister of Finance has delegated

such powers to the DGIR, if the double deduction claimed is under section 34A of the ITA; or

- (f) engage the services of an institute or company that is approved by the relevant Minister, if the double deduction claimed is under section 34B of the ITA.

### **Example 1**

An electronic component manufacturing company in Malaysia has been in operation for 35 years. The company decided to embark on an R&D study on new cross breeds for reforestation.

The electronic component manufacturing company undertook an R&D activity that is not in relation to the nature of its business. Therefore, the company would not be eligible to claim any deduction under the special provision or special deduction under the ITA. The R&D expenditure incurred for an activity that is not related to the company's business would also not be an allowable expense under subsection 33(1) of the ITA as it is not wholly and exclusively incurred in the production of gross income.

## **6. Research and Development Activity and Project**

A person in the ordinary course of a business may occasionally or continuously undertake to perform specific activities, in relation to the business and refer to these activities as R&D activities. Although the activity is referred to as R&D but it does not automatically mean that the activity qualifies as an R&D activity for income tax purposes. The specific facts and circumstances of each R&D activity has to be examined, to ascertain whether the definition of R&D and its qualifying criteria have been fulfilled, in order to be recognised as a qualifying R&D activity.

### **6.1 R&D activity**

#### **6.1.1 An R&D activity –**

- (a) can be described as the sum of actions deliberately undertaken (planned and budgeted) by R&D performers, in order to generate new knowledge based on original concepts and their interpretation or hypothesis, to achieve an advancement in a field of science or technology;
- (b) is uncertain about its final outcome (or at least about the quantity of time and resources needed to achieve it);

- (c) should serve to resolve scientific or technological uncertainties and challenges associated with achieving an advance in overall knowledge or capability in a field of science or technology; and
- (d) should achieve an advancement in scientific or technological knowledge and capability as a whole in a field of science or technology. Where an activity is conducted using existing science or technology solely to advance a person's existing knowledge and capability alone, this is not an R&D activity.

#### 6.1.2 Qualifying R&D activity

An activity for purposes of R&D must fulfil the definition of R&D and its qualifying criteria under section 2 of the ITA to qualify as a qualifying R&D activity. For more information on the determination of a qualifying R&D activity for income tax purposes, please refer to paragraph 7 of this PR.

#### 6.2 R&D project

Generally, R&D projects undertaken to create new knowledge, or new or improved processes to develop new products or services comprises of R&D activities. In many cases, **each R&D project** –

- 6.2.1 consists of **a set of R&D activities** as set out in paragraph 6.4 of this PR; and
- 6.2.2 is organised and managed for a specific purpose i.e. with its own objectives and expected outcomes, even at the lowest level of formal R&D activity (organised and managed).

#### 6.3 Qualifying R&D level

Eligibility for a tax incentive in the form of a double deduction / single deduction under the ITA is ascertained at the qualifying **R&D activity** level and not project level.

6.4 Summary of the distinction between activities carried out for qualifying and non-qualifying R&D activities, and R&D projects are as follows –

<b>R&amp;D Project [Refer to paragraph 6.2.1]</b>	<b>Activity Referred to as an R&amp;D Activity Fulfils the Definition of R&amp;D and Qualifies as a Qualifying R&amp;D Activity [Refer to paragraph 6.1.2]</b>	<b>Qualifying and Non-Qualifying R&amp;D Activities Grouped to Form an R&amp;D Project</b>
Project MAH 1 activity	Qualifying R&D activity	Qualifying R&D activity forms an R&D project
Project YUD 2 activities	Qualifying R&D activity	Qualifying R&D activities grouped to form an R&D project
	Qualifying R&D activity	
Project COV 3 activities	Qualifying R&D activity	Qualifying R&D activity and non-qualifying R&D activities grouped to form an R&D project. (Only qualifying R&D activity qualifies for an incentive)
	Non-qualifying R&D activity	
	Non-qualifying R&D activity	
Project 19 2 activities	Non-qualifying R&D activity	Non-qualifying R&D activities grouped to form an R&D project. (Both non-qualifying R&D activities do not qualify for an incentive)
	Non-qualifying R&D activity	

#### 6.5 Main Works of R&D

R & D is a term that covers the following three main works:

(a) Basic research

Basic research is experimental or theoretical work undertaken primarily to understand a subject matter and acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view.

(b) Applied research

Applied research is an original investigation work undertaken in order to acquire new knowledge. It is directed towards a specific objective which aims to determine methods to address a specific customer or industry need or requirement regarding products or processes.

(c) Experimental development

Experimental development is systematic work drawing on existing research results and directed specifically towards the creation of new and improved products or processes.

## **7. Determination of a Qualifying Research and Development Activity**

**Effective 28.12.2018**, an activity for R&D has to fulfil the qualifying criteria under **the new definition of R&D under section 2 of the ITA** to be considered a qualifying R&D activity. Non-qualifying R&D activities have been specifically excluded from the scope of qualifying R&D activities in the definition.

### **7.1 R&D conducted in-house or outsourced**

A person carrying on a business in Malaysia may undertake R&D activities either in-house or through an approved service provider i.e. an approved research institute or company, or a contract R&D company, as the case may be. The R&D activities would have to be related to a business of that person.

### **7.2 Criteria to qualify as a qualifying R&D activity**

A qualifying R&D activity has to jointly fulfil the following **three criteria** i.e. -

(a) have an objective to –

- (i) acquire new knowledge;
- (ii) create new products or processes; or
- (iii) improvement of existing products or processes.

(b) involved in something new (novelty) or technical risk; and

(c) is a systematic, investigative and experimental (SIE) study in a field of science or technology.

### **7.3 First Criteria – Objective of R&D activity**

The first criteria that has to be fulfilled to qualify as a qualifying R&D activity is the objective of the study, as explained below.

- (a) Before an R&D activity commences, the objective of the study has to be clearly defined. The reason for the study, that is, the specific accomplishment or the desired outcome that the R&D activity aims to achieve has to be stated in the objective of the study. The specific accomplishment includes answering a research question or testing a research hypothesis to acquire new knowledge, create new or improve existing products or processes.
- (b) The objective of an R&D activity must be to –
  - (i) acquire new knowledge;
  - (ii) create new products or processes; or
  - (iii) improvement of existing products or processes.
- (c) Acquiring new knowledge refers to the seeking of new additional knowledge and devising new applications of available knowledge, to achieve an advancement in the overall knowledge or capabilities in a field of science or technology.
- (d) Creating new products or processes refers to the incorporation or representation of an increase in the overall knowledge or capability in a field of science or technology through the new product or process.
- (e) Improvement of an existing product or process refers to a substantial improvement through scientific or technological changes to the existing product or process.
- (f) An R&D undertaking must seek to address a scientific or technological uncertainty to achieve an outcome, which could be the development of a new product, system or process. This means that even a competent professional in the related field is uncertain whether the scientific or technological uncertainty can be resolved.
- (g) The R&D objective should state the scientific or technological uncertainties / challenges that needs to be overcome, in order to close the gap between the state of the knowledge and technology, existing at

the time of commencement of the R&D activity and the desired outcome.

- (h) Prior to undertaking an R&D activity, a person has to ensure that a search for an existing solution to achieve the desired outcome has been made. The solution to achieve the outcome may already be known in the same industry or may already be achieved by someone in Malaysia, but the knowledge required to achieve that outcome is not reasonably or **not publicly available in the world**. **Not publicly available in the world** means including no published literature reviews, knowledge not found in public domain, a trade secret of a competitor, a competent professional is uncertain of a scientific or technological resolution. **“Publicly available”** does not refer to information that is only obtainable for free. The information may be available on payment of a fee.
- (i) A competent professional may be able to use and apply existing scientific or technological knowledge to identify an approach to successfully develop a new product, system or process. Although the development of this new product, system or process may be new to the world, but the related R&D activity may not qualify as a qualifying activity. The definition of R&D, and its qualifying criteria has to be fulfilled jointly.
- (j) There may be a breakthrough to a scientific or technological uncertainty and the knowledge gained may already be reasonably available to a competent professional working in the field. Therefore a lack of knowledge on the part of a company due to a lack of diligence in seeking that solution or lack of appropriate expertise within the company does not constitute scientific or technological uncertainty.

#### 7.4 Second criteria – Novelty or technical risk

The second criteria that has to be fulfilled as a qualifying R&D activity is the existence of novelty or the involvement of technical risk in the study, as explained below.

##### 7.4.1 Novelty

- (a) Novelty means something that is new and original. New knowledge is an expected objective of an R&D activity. An R&D activity must have a significant or important objective of seeking to create new knowledge, or new or improved products and processes. The purpose for this requirement is to disqualify new knowledge or applications that are discovered by accident.

- (b) As R&D is the formal creation of knowledge, including knowledge embodied in products and processes, the measurement focus is on the new knowledge, not on the new and significantly improved products or processes resulting from the application of the knowledge.
- (c) The additional knowledge added to the existing stock of knowledge in a field of science or technology, which was achieved through the resolution of a scientific or technological uncertainty refers to the first of its kind in Malaysia.
- (d) To establish whether there is potential novelty or newness in an R&D activity in relation to the creation or improvement of knowledge, products or processes, it has to be assessed by comparison with the existing stock of knowledge in the industry, which is already available or accessible in the industry.
- (e) An R&D activity within an R&D project must result in findings that are new to the business and not already in use in the industry.
- (f) **There is no element of novelty** in knowledge acquired from R&D activities undertaken to copy, imitate or reverse engineer as a means of gaining knowledge; and
- (g) Novelty does not include activities to create content based products such as movies, electronic versions of print media which does not involve SIE.
- (h) Where knowledge, products or processes are already available outside Malaysia, the mere importation of that knowledge, product or process into Malaysia, without undertaking a SIE study (as explained in paragraph 7.5 of this PR), would not be a qualifying R&D activity.
- (i) The creation or improvement of knowledge, products or processes involves more than minor or routine upgrading. To distinguish between an R&D activity and a related activity is the presence of a significant or important element of novelty in R&D and the resolution of scientific or technological uncertainty.

7.4.2 Technical risk

- (a) An R&D activity would involve technical risks if scientific or technological uncertainty arises from a knowledge gap between the intended activity outcome and the state of scientific or technological knowledge, information or experience that is reasonably and publicly available at the time of commencement of the R&D activity.
- (b) Scientific or technological uncertainty can arise in several situations. Among them are –
- (i) whether a goal to achieve a desired outcome is scientifically possible or technologically feasible;
  - (ii) whether the outcome will meet desired specifications such as response time, reliability, reproducibility or cost;
  - (iii) how to achieve the outcome in practice;
  - (iv) no publicly available or reasonably accessible information, anywhere in the world that would enable a competent professional to resolve the uncertainty; or
  - (v) a competent professional in the relevant field of science or technology could not deduce how to produce the same product without undertaking a systematic –
    - process of prototyping; or
    - experimentation to test the possible approaches.
- (c) A competent professional is a person who:
- (i) is knowledgeable about and experienced in the relevant field of science or technology;
  - (ii) possesses the relevant qualifications and / or experience to participate in the relevant field with a reasonable level of skill;
  - (iii) is aware of the current state of knowledge in the field;
  - (iv) has access to knowledge from around the world, including access to publicly and generally available resources, for example internet, purchasing a license or right to use, relevant industry journals and from other professionals; and

- (v) may or may not be an employee of the person undertaking the R&D activity.
- (d) Where the expected outcome is achieved easily, it would be an indication that there may not be the element of technical risk involved.
- (e) Although businesses may systematically undertake R&D activity but as long as the activity does not involve the resolution of scientific or technological uncertainty as a whole, there would be no advancement in the field of science or technology. Therefore, the R&D activity would not qualify as a qualifying R&D activity.

### **7.5 Third criteria - SIE study in the field of science or technology**

The third criteria that has to be fulfilled to qualify as a qualifying R&D activity is the systematic, investigative and experimental approach that is required in the study i.e. as explained below.

The characteristics of SIE are as follows:

#### **7.5.1 Systematic in the field of science or technology**

- (a) Planned and structured activities
  - (i) Systematic means the steps or activities to be undertaken in the study are methodical i.e. in a structured planned logical sequence (generally according to a recognised methodology), to test possible solutions and generate valid results to a scientific or technological uncertainty. Systematic excludes work carried out randomly, or on a trial and error basis regardless of whether anything useful was discovered.
  - (ii) Planning requires companies to think strategically about their R&D activities as a critical part of their business. Planning is ongoing in an effective R&D project where lessons are learned and opportunities for improvement are discovered.
- (b) Documentation of R&D

Knowledge and record management is important in R&D. Knowledge management includes management of results,

knowledge and lessons learned throughout the R&D activity. Managing records and documentation is necessary in order to build on the results of experimental investigation in a systematic way. The steps and activities (processes followed) undertaken in the study must be documented such that another person in the same field can reproduce the same results (outcome) by following the same procedures. The test for a systematic approach in research context is whether the methodology is sufficiently structured and documented so that it can be reproduced.

(c) Documentary evidence to determine a qualifying R&D activity

It is important for companies to maintain systematic records of the processes and outcome of each activity as it develops. Each action or activity should be well documented showing clearly that every element is relevant with the R&D activity or R&D project as a whole. Failure to have such documentation would indicate the absence of a SIE approach in the R&D activity undertaken. Among the documents to be maintained are:

- (i) Approval by management of the R&D activity where the purpose is to document the justification of the R&D activity. Other information to be included are the background of the R&D activity, the anticipated business benefits and savings to be gained, the options considered (with reasons for rejecting or carrying forward each option), the estimated cost of development, source of funding and implementation against the risks. Documents to show that there was approval to carry on the R&D activity such as minutes of the Board of Directors meeting and other relevant substantiating documents;
- (ii) The knowledge or technology that existed when the R&D activity was undertaken and what new knowledge (such as improved materials, products, devices, processes or services) was being sought through the R&D activity;
- (iii) Details of the researchers involved such as their full name and qualifications;

- (iv) Data and research from literature reviews, patent or other searches, scientific or technological reviews and articles, trade journals etc. that the company conducted. These evidence or documents are to show that the knowledge or information that was being sought from the R&D activity was not already publicly available;
- (v) Detailed description of the hypothesis (i.e. the idea or theory) for determining the new knowledge, experiments conducted to test the hypothesis, results of experiments and analysis of the results;
- (vi) Records of changes to the hypothesis or experiments throughout the course of the R&D activity;
- (vii) Raw materials and equipment used;
- (viii) Equipment specially purchased for the R&D activity;
- (ix) Staff time sheets [man-hours spent on each activity (R&D activity and unrelated activities) for each day of every month for the duration of the R&D activity];
- (x) Gantt charts (to show the expected progress of the R&D activity before the commencement of an activity and to show the actual progress of the R&D activity for each financial year end);
- (xi) Dates activities conducted;
- (xii) Prototype run sheets;
- (xiii) Production sheets;
- (xiv) Photos / videos;
- (xv) Data collected and the conclusions in respect of the hypothesis being tested;
- (xvi) Contractor invoices;
- (xvii) Minutes of project meetings;

- (xviii) Written description of the qualifying R&D activity in accordance with the definition of R&D under section 2 of the ITA;
- (xix) Detailed explanation of the scientific and technological uncertainty so as to enable a competent professional to make a judgement as to whether a systematic approach was required to assess possible solutions i.e the tests, prototype or analysis;
- (xx) How the activity applied a systematic approach of work;
- (xxi) How the experimental activity was conducted;
- (xxii) Actual activities undertaken to test the possible solutions;
- (xxiii) Documentation to chart the lifetime of the R&D activity / project from start to finish including milestones achieved;
- (xxiv) Separate set of records are to be maintained for each different R&D activity;
- (xxv) R&D expenditure records must be maintained separately for each different R&D activity;
- (xxvi) R&D expenditure records of an in-house R&D unit has to be maintained independently from the overall production costing;
- (xxvii) For outsourcing R&D activities, documentation such as contracts with the approved service provider, proof of payment made for the service, details of the R&D activities undertaken and details of the R&D expenditure incurred as confirmed by the approved service provider; and
- (xxviii) Other relevant documents.

#### 7.5.2 Investigative in the field of science or technology

The investigation stage of studies undertaken should be –

- (a) an original and planned investigation into new scientific or technical knowledge and understanding;
- (b) an application of existing research findings or knowledge to a plan or design for production or introduction of new or substantially improved products or processes;
- (c) a possible solution (e.g. new technology or new processes) to an uncertainty i.e. the idea, proposal or hypothesis that is being investigated using the systematic approach;
- (d) a systematic investigation, being an activity that involves planning for a particular time frame that incorporates data collection, either quantitative or qualitative, and data analysis to answer a question;
- (e) activities undertaken to explore and uncover information to help in the understanding of the problem and to find out how to close the gap between the desired outcome and the state of scientific or technological knowledge prior to the commencement of the study. In other words, investigative does not refer to activities undertaken just to confirm information which is already known or a fact. **“Already known”** refers to publicly available knowledge and a competent professional in the field is able to resolve the uncertainty based on the existing knowledge available.

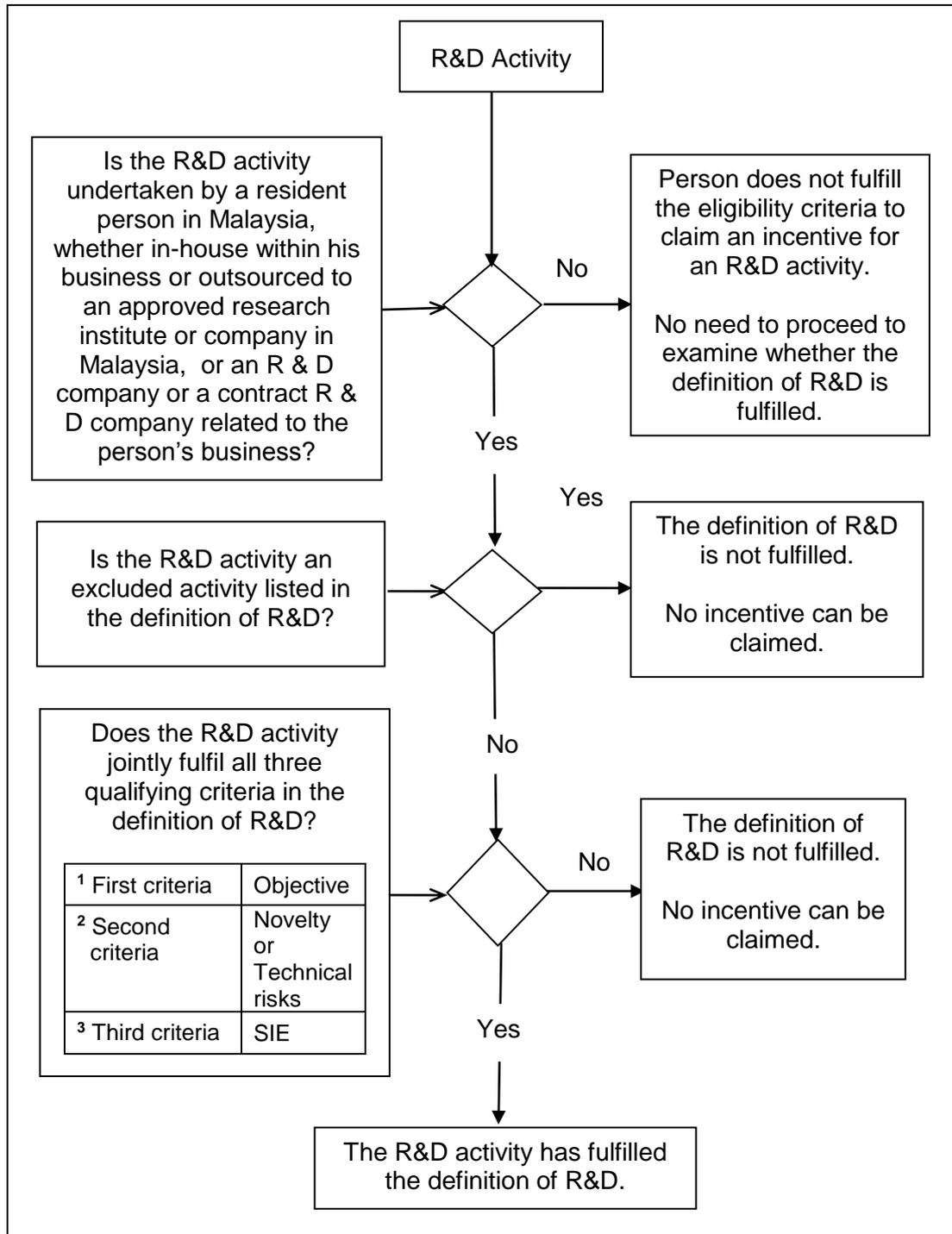
### 7.5.3 Experimental in the field of science or technology

Experimental activities mean –

- (a) the outcome of the experiment cannot be known or determined in advance on the basis of current knowledge, information or experience;
- (b) the outcome of the experiment can only be determined by applying a systematic series of structured steps, undertaken to test the potential solution (e.g. new technology or new devices) for solving a technical problem or creating a new thing that –
  - (i) is based on principles of established science; and
  - (ii) proceeds from hypothesis to experiment, observation and evaluation, and leads to logical conclusions;

- (c) experiments are conducted to generate new knowledge including in the form of new or improved materials, products, devices, processes or services;
- (d) an iterative (repetitive) process is often needed because the outcome is unknown and results from each round of repeated cycle of testing, analysis or cycle of operations would provide more knowledge than before. The objective is to bring the desired outcome closer to discovery with each repetition with further refinements or new developments.

7.6 Flow chart to determine both the eligibility of a person to claim an incentive for an R&D activity and a qualifying activity



<sup>1,2,3</sup>Note

<sup>1</sup> First Criteria

Is the objective of the R&D activity to:

- (i) Acquire new knowledge;
- (ii) Create new products or processes; or
- (iii) Improve existing products or processes.

<sup>2</sup>Second Criteria

Does **novelty** exist in the newly acquired knowledge, or new and improved existing products and processes? Is the newness the first of its kind in Malaysia?

OR

Is there an involvement of **technical risks** in achieving the desired outcome due to scientific or technological uncertainties that cannot be resolved by a competent professional in the relevant field?

<sup>3</sup>Third Criteria

Was the R&D activity carried out using a systematic, investigative and experimental approach to resolve a scientific or technological uncertainty which is not readily deducible?

**7.7 Illustrations to show whether an activity undertaken for R&D qualifies as an R&D activity**

For the purposes of these examples, it is assumed that all the activities are not listed in the exclusion list.

**Example 2**

An oil palm plantation company in Malaysia undertook long term research activities for the purpose of producing new genotypes that have higher oil yields from oil palm fresh fruit bunches (FFB). This move was to enhance its global competitiveness by reducing production cost. The research entailed breeding, selection and cloning to increase the oil yield per hectare. Details of the study are as follows:

**R&D Activity – Breeding and Selection of New Superior Progenies**

<b>Study Plans</b>	<b>Details of Activities</b>	
Objective	To improve the genetic yeild potential of oil palm by cross breeding and selection of superior genotypes to form the source of improved planting material for the future.	
Existing Knowledge	(a) Existing knowledge and capabilities in the field were investigated to explore the current information available in and outside Malaysia on the genetic development of the cross breeding that the company intended to undertake.  (b) Competent professionals in the field were consulted.	
Methodology	<b>Activities</b>	<b>Year</b>
	(a) Collect nucleus breeding materials	1 to 2
	(b) Establish plot trials	2
	(c) Record growth in the plot	6 to 14
	(d) Record growth of FFB, oil and kernels	6 to 14
	(e) Data processing and analysis	6 to 14
	(f) Selection	6 to 14
	(g) Progeny testing	6 to 14

	(h) Cloning (i) Further breeding and improvement of the base breeding populations.	6 to 14 6 to 14
Tests to be carried out	<b>Activities</b>	<b>Year</b>
	(a) Pollen testing (b) Crossing-over (c) Processing cross (d) Plot trials preparation (e) Plot growth measurement (f) FFB recorded in the plot trial (g) Data processing and analysis	1 to 2 1 to 2 1 to 2 3 6 to 14 6 to 14 6 to 14
Trials	The company embarked on many trials to evaluate the performance of the various cross breeding. The stages of the trials are as follows:	
	<b>Stages of Activities</b>	<b>Details of Activities</b>
	Stage 1 Plot Planting	<ul style="list-style-type: none"> <li>• Land area - 9 hectares</li> <li>• 15 cross breeding planted</li> <li>• Semi commercial scale planting</li> <li>• Bulk recording</li> <li>• Signboard and palm labeling well prepared before palms are declared matured at age 3 years after plot planting.</li> </ul>
Stage 2 Yield Recording	<ul style="list-style-type: none"> <li>• Recording starts when plot declared matured</li> <li>• Proposed yield recording – a round every 10 days for 5 years or more, as necessary.</li> <li>• Actual rounds may be less due to challenges</li> </ul>	

		faced – shortage of workers, flood etc
	Stage 3 Bunch Collection	<ul style="list-style-type: none"> <li>• Bunch collection for bunch analysis starts when bunches are 4.5 kilogram or more.</li> <li>• Once a good progeny is identified, a minimum of 2 extra bunches will be collected to reconfirm the initial results.</li> </ul>
	Stage 4 Vegetative Measurement	<ul style="list-style-type: none"> <li>• To evaluate the growth performance of the palms</li> <li>• Measurement of the rachis length, petiole section and leaf area.</li> </ul>
	Stage 5 Result	<ul style="list-style-type: none"> <li>• Once sufficient FFB yield data and bunch analysis data is obtained, data processing, data analysis and genetic analysis to determine heritability characters measured for potential genetic exploitation will begin.</li> </ul>

**Whether the activity carried out for research and development fulfils all 3 criteria to qualify as a qualifying R&D activity**

<b>Criteria</b>	<b>Has the criteria been fulfilled?</b>	<b>Has the company carried out a qualifying R&amp;D activity?</b>
<b>First Criteria –</b>	(a) The aim of the company for undertaking the activity was to develop new progenies through	

<p><b>Objective</b></p>	<p>cross breeding and selection of new genotypes that have higher oil yeilding FFB.</p> <p>(b) To achieve the company's objective, it had to undertake breeding, selection and clonal evaluation studies to obtain an advance in the overall knowledge and capabilities of science or technology.</p> <p>The objective of the activity was to acquire new knowledge from the cross breeding and selection of new genotypes to create new progenies that have higher yielding FFB.</p> <p>Therefore, the first criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
<p><b>Second Criteria – Novelty or Technical Risks</b></p>	<p>(a) The cross breeding to produce new superior genotypes which are not available in Malaysia is still being tested before any genetic exploitation can begin.</p> <p>(b) The outcome i.e discovering higher oil yielding FFB will initially be known in the sixth year of research onwards.</p> <p>(c) The scientific or technological uncertainties arises as the outcome of the research to produce higher oil yeilding FFB cannot be determined in advance.</p> <p>(d) The knowledge gap between the intended outcome of the activity to produce higher oil yeilding FFB and the state of the knowledge, experience or information that was reasonably and publicly</p>	

	<p>available at the time the research activity commenced involved technical risks.</p> <p>Therefore, the second criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
<p><b>Third Criteria – SIE in the field of study of science or technology</b></p>	<p>(a) The company’s research was planned and structured with the methodology and tests to be undertaken to generate the valid results.</p> <p>(b) All steps were documented and this would enable the methodology to be reproduced in future.</p> <p>(c) The company explored to uncover whether they could produce new and substantially improved oil yielding FFB by cross breeding superior genotypes.</p> <p>(d) They explored by applying existing research findings and knowledge to produce new genotypes through data collection and data analysis as part of their investigative studies.</p> <p>(e) The investigative studies conducted were to close the gap between the desired outcome (higher oil yielding FFB) and the state of knowledge at the time of commencement of the study based on the information available in the public domain.</p> <p>(f) The stages of the tests and trials carried out were conducted to generate new knowledge from the cross breeding to increase the genetic variability. From the observation</p>	<p><b>Yes.</b></p> <p><b>(All three criteria were jointly fulfilled)</b></p>

	<p>and evaluation of the results, logical conclusions were drawn at this experimental stage.</p> <p>Therefore, the third criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
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**Example 3**

An oil palm plantation company undertook an activity to investigate the effectiveness of an organic acid called ET1 against the prevention of ganoderma infection in the nursery up to plot planting of oil palm from 2019 to 2029.

**Project – Effect of ET1 against Basal Stem Rot Disease (Ganoderma) infecting Oil Palm on Peat Soil**

<b>Study Plans</b>	<b>Details of Activities</b>	
Objective	To investigate the effectiveness of organic acid ET1 against basal stem rot disease (Ganoderma) infecting oil palm on peat soil.	
Existing Knowledge	<p>(a) Existing knowledge and capabilities in the field were investigated to explore the current information available in and outside Malaysia on the effectiveness of the already existing ET1 against the disease called ganoderma.</p> <p>(b) Competent professionals were consulted.</p>	
Methodology	<b>Activities</b>	<b>Period</b>
	(a) Establish plot trials	Jan to June 2019
	(b) Treatment application	Jan to June 2019
	(c) Record growth in the plot	Jan to June 2019
	(d) Oil palm physical observation	Jan to June 2019
	(e) Record yield of FFB	Jan to June 2019
	(f) Record of disease recurrence	Jan to June 2019
	(g) Data processing and analysis	Jan to June 2019

Testing	Activities	Period
	(a) Plot trials preparation	Nil
	(b) Treatment application	Jan to June 2019
	(c) Plot growth measurements	Jan to June 2019
	(d) Fresh fruit bunch yields	Nil
	(e) Data processing and analysis	Nil

**Whether the activity carried out for research and development fulfils all  
3 criteria to qualify as a qualifying R&D activity**

Criteria	Has the criteria been fulfilled?	Has the company carried out a qualifying R&D activity?
<b>First Criteria – Objective</b>	<p>(a) The objective is to test the effectiveness of an existing organic acid ET1 against a disease, ganoderma.</p> <p>(b) There is no new knowledge acquired from the activity conducted by the company as ET1 has already been in use in the industry for ganoderma</p> <p>(c) The activity carried out by the company has not produced any new products or processes, or improved the existing product or processes.</p> <p>Therefore, the first criteria to qualify as a qualifying R&amp;D activity has not been fulfilled.</p>	
<b>Second Criteria – Novelty or Technical</b>	<p>(a) There is no novelty or technical risk involved in the activity conducted by the company.</p> <p>(b) The company is just testing the</p>	

<p><b>Risks</b></p>	<p>use of the existing ET1 in its plantation. There is no scientific or technological uncertainty involved in the activity of the company and there is no advancement in the field of science and technology to be derived from the said activity.</p> <p>Therefore, the second criteria to qualify as a qualifying R&amp;D activity has not been fulfilled.</p>	<p style="text-align: center;"><b>No.</b></p> <p style="text-align: center;"><b>(All the criteria were not fulfilled)</b></p>
<p><b>Third Criteria – SIE in the field of study of science or technology</b></p>	<p>(a) The activities carried out were planned and documented.</p> <p>(b) The investigative studies conducted were to close the gap between the desired outcome and the state of knowledge at the time of commencement of the study based on the information available in the public domain. The outcome was already a known fact.</p> <p>Therefore, the third criteria to qualify as a qualifying R&amp;D activity has not been fulfilled.</p>	

**Example 4**

A manufacturing company in the chemical industry in Malaysia embarked on an R&D activity that is related to its business to develop termite products that are able to kill the termite colony within a targeted duration.

**R&D Activity – Development of New Product to Kill Termites**

Study Plans	Details of Activities
Objective	To develop termite products that are able to kill the termite colony within a targeted duration.

Existing Knowledge	<p>(a) Existing knowledge and capabilities in the field were investigated to explore the current information available in and outside Malaysia.</p> <p>(b) Competent professionals were engaged to determine the formulation of ingredients required.</p> <p>(c) The required information was not reasonably or publicly available. There was scientific or technological uncertainty faced by the company.</p>	
Methodology	<b>Stages</b>	<b>Activities</b>
	Define stage	Initiation of project, project background and objective defined
	Design stage	Design and verification stage
	Optimisation stage	Finalise and fine tune the formulation, sample preparation, physical test, biological efficacy test, product stability test, packaging stability test, active ingredients analysis, mouldy test, review of test results.
	Control stage	Compilation of results in report, preparation of supporting documents
Testing	<p>Termites for biological efficacy testing was required to test the formulation of the product. The active ingredient available that was used in the formulation is not suitable due to its fast acting mechanism that kills the termite worker before it can reach the termite queen. As a result, the termite population cannot be reduced within the targeted duration.</p>	

**Whether the activity carried out for research and development fulfils all  
3 criteria to qualify as a qualifying R&D activity**

<b>Criteria</b>	<b>Has the criteria been fulfilled?</b>	<b>Has the company carried out a qualifying R&amp;D activity?</b>
<b>First Criteria – Objective</b>	<p>The objective was to acquire new knowledge to create a new product to kill termite colonies in Malaysia.</p> <p>Therefore, the first criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	<p><b>Yes.</b></p> <p><b>(All the criteria were fulfilled)</b></p>
<b>Second Criteria – Novelty or technical risks</b>	<p>The achievement of the desired outcome was uncertain due to the scientific or technological uncertainties faced by the company in terms of the the available active ingredients that were found to be unsuitable. The R&amp;D activity had faced technical risks in achieving the desired outcome.</p> <p>Therefore, the second criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
<b>Third Criteria – SIE in the field of study of science or technology</b>	<p>(a) The R&amp;D activities were planned and structured with the methodology that was used.</p> <p>(b) Documentation was prepared and compiled.</p> <p>(c) The investigative studies conducted did not close any gap between the desired outcome and the state of knowledge at the time of commencement of the study based on the information available in the public domain.</p> <p>(d) The experiments conducted did</p>	

	<p>not succeed to produce a formulation of active ingredients to kill the termite colony within the targeted duration.</p> <p>Nevertheless, the third criteria to qualify as a qualifying R &amp; D activity has been fulfilled regardless of the outcome from the activities.</p>	
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**Example 5**

ABC Sdn Bhd, a pharmaceutical company in Malaysia undertook an R&D activity to formulate and develop a generic oral solid product. ABC Sdn Bhd benchmarked from the innovator, controloc tablet manufactured by XYZ Ltd in the United States of America (USA).

**R&D Activity - To develop a generic oral tablet**

<b>Study Plans</b>	<b>Details of Activities</b>
Objective	To develop a generic oral tablet from an original tablet that is a trade secret of the innovator in the USA.
Existing Knowledge	<p>(a) Existing knowledge and capabilities in the field were investigated to explore the current information available in and outside Malaysia.</p> <p>(b) Competent professionals were engaged to determine the formulation of ingredients required.</p> <p>(c) The required information is a trade secret of the innovator. There was scientific and technological uncertainty faced by the company in trying to produce a generic tablet.</p>
Methodology	<p>(a) Researching the formulation design by doing literature searches.</p> <p>(b) Finding the active pharmaceutical ingredients (API) sourcing to do benchtop trials which follows the innovator product parameters.</p>

Testing	Doing stability batch testing to pass bioequivalence studies.
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**Whether the activity carried out for research and development fulfils all 3 criteria to qualify as a qualifying R&D activity**

<b>Criteria</b>	<b>Has the criteria been fulfilled?</b>	<b>Has the company carried out a qualifying R&amp;D activity?</b>
<b>First Criteria – Objective</b>	The objective was to acquire new knowledge to create a new product i.e a generic oral tablet in Malaysia.  Therefore, the first criteria to qualify as a qualifying R&D activity has been fulfilled.	<b>Yes.</b>  <b>(All the criteria were fulfilled)</b>
<b>Second Criteria – Novelty or technical risks</b>	The achievement of the desired outcome was uncertain due to the scientific and technological uncertainties faced by the company as the formulation of the active pharmaceutical ingredients (API) is a trade secret of the innovator in the USA. The R&D activity had faced technical risks in achieving the desired outcome.  Therefore, the second criteria to qualify as a qualifying R&D activity has been fulfilled.	
<b>Third Criteria – SIE in the field of study of science or technology</b>	(a) The R&D activities were planned and structured with the methodology that was used.  (b) Documentation was prepared and compiled.  (c) The investigative studies conducted <b>did not close any gap between the desired outcome</b> and the state of	

	<p>knowledge at the time of commencement of the study based on the information available in the public domain as the knowledge of the formulation of the API was a trade secret.</p> <p>(d) The experiments conducted was to test the stability batch testing.</p> <p>The third criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
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**Example 6**

A pharmaceutical company in Malaysia undertook an R&D activity that is related to its business to create Vitamin C with various flavour.

**R&D Activity - To introduce/create Vitamin C with various flavour**

<b>Study Plans</b>	<b>Details of Activities</b>
Objective	To change an existing Vitamin C product with orange flavour to strawberry and blueberry flavour.
Existing Knowledge	<p>(a) Existing knowledge and capabilities in the field were investigated to explore the current information available in and outside Malaysia by using food additives available in the market.</p> <p>(b) Competent professionals were consulted.</p>
Methodology	<p>(a) Establish plot trials</p> <p>(b) Treatment application</p> <p>(c) Record temperature growth with ratio of food additives in the laboratory</p> <p>(d) Record yield of Vitamin C with strawberry and blueberry flavour</p> <p>(e) Data processing and analysis</p>
Testing	<p>(a) Plot trials preparation</p> <p>(b) Treatment application</p> <p>(c) Record temperature growth measurements</p> <p>(d) Data processing and analysis</p>

**Whether the activity carried out for research and development fulfils all  
3 criteria to qualify as a qualifying R&D activity**

<b>Criteria</b>	<b>Has the criteria been fulfilled?</b>	<b>Has the company carried out a qualifying R&amp;D activity?</b>
<b>First Criteria – Objective</b>	<p>(a) The objective was to change an existing Vitamin C product with orange flavour to new flavour i.e. strawberry and blueberry.</p> <p>(b) There is no new knowledge acquired from the activity conducted by the company as the food additives has already been in use in pharmaceutical industry.</p> <p>(c) The introduction of new flavour will not be considered as a new product. In addition, it is a cosmetic modification to the product or process.</p> <p>(d) Therefore, the activity carried out by the company has not produced any new products or processes, or improved the existing product or processes.</p> <p>Therefore, the first criteria to qualify as a qualifying R&amp;D activity has not been fulfilled.</p>	
<b>Second Criteria – Novelty or technical risks</b>	<p>(a) There is no novelty or technical risk involved in the activity conducted by the company.</p> <p>(b) The company is just testing the use of the existing food additives available in the market. There is no scientific or technological uncertainty involved in the activity of the company and there is no</p>	<p><b>No.</b> <b>(All the criteria were not fulfilled)</b></p>

	<p>advancement in the field of science or technology to be derived from the said activity.</p> <p>Therefore, the second criteria to qualify as a qualifying R&amp;D activity has not been fulfilled.</p>	
<p><b>Third Criteria – SIE in the study of science or technology</b></p>	<p>(a) The activities carried out were planned and documented.</p> <p>(b) The investigative studies conducted were to close the gap between the desired outcome and the state of knowledge at the time of commencement of the study based on the information available in the public domain. The outcome was already a known fact.</p> <p>Therefore, the third criteria to qualify as a qualifying R&amp;D activity has not been fulfilled.</p>	

**Example 7**

Auto Dynamic (M) Sdn Bhd, a manufacturing company in the software development in Malaysia embarked on an R&D activity that is related to its business to develop infotainment system with Apps such as Android Auto, Apple CarPlay (CP) and Smart Device Link (SDL) Apps.

**R&D Activity - To design and develop infotainment system for automotive industry**

<b>Study Plans</b>	<b>Details of Activities</b>
Objective	<p>(a) To design and develop infotainment system with Apps such as Android Auto, Apple CP and SDL Apps.</p> <p>(b) To produce a vehicle infotainment system for automotive industry which meets original equipment manufacturer (OEM) specific requirement. It will have</p>

	<p>Automotive Linux Operating System (OS) based system as platform that allow high fidelity<sup>1</sup> audio playback that support latest hi-resolution audio format.</p> <p>Note:<sup>1</sup>Audio reproduction approaches the original sound performance.</p>
Existing knowledge	<p>Competent professionals were engaged to learn the software development technique i.e. mobile application, audio format playback via Linux OS and software testing and integration in order to upgrade the skills of companys' software engineers.</p>
Methodology	<p>(a) Specification research and discussion with customer i.e. project research and design discussion</p> <p>(b) Programmer/engineer study using evaluation board while patent study and checking for compliance</p> <p>(i) Printed Circuit Board (PCB) &amp; software design</p> <p>(ii) Development of design specification and review in electrical, software and features</p> <p>(iii) Circuit troubleshooting and performance evaluation</p> <p>(c) Benchmark Test</p> <p>(i) Tooling fabrication and selection of mechanical parts</p> <p>(ii) Software module development</p> <p>(iii) Design &amp; implementation of certain modules</p> <p>(iv) Software integration &amp; test</p> <p>(v) Circuit diagram modification</p> <p>(d) Benchmark evaluation and manufacturing feasibility evaluation</p>

	<ul style="list-style-type: none"> <li>(i) Quality control (QC) lab testing</li> <li>(ii) Core board sample build</li> <li>(iii) Performance evaluation</li> <li>(iv) Design &amp; implementation of APP Radio, Telephony, Media Framework, Device Management &amp; Integration, Audio Management, Graphic, AV Processing, Clock</li> <li>(v) Circuit design improvement</li> <li>(vi) PCB layout improvement</li> <li>(vii) Sent engineers to Thailand to run Radiated Emission (RE) Test and Volatile Organic Compounds (VOCs) Test</li> </ul> <p>(e) Benchmark evaluation and manufacturing feasibility evaluation</p> <ul style="list-style-type: none"> <li>(i) Design improvement</li> <li>(ii) QC Testing</li> <li>(iii) Final design review</li> <li>(iv) Design improvement for Apple CP certification</li> <li>(v) Location &amp; experimental test</li> </ul>
Testing	<p>Sent software and mechanical engineers to –</p> <ul style="list-style-type: none"> <li>(a) South Korea to perform safety test on the car unit in accordance with the International Electrotechnical Commission (IEC) standards.</li> <li>(b) Singapore for field trials &amp; on-site support for Apple CP certification.</li> </ul>

**Whether the activity carried out for research and development fulfils all  
3 criteria to qualify as a qualifying R&D activity**

<b>Criteria</b>	<b>Has the criteria been fulfilled?</b>	<b>Has the company carried out a qualifying R&amp;D activity?</b>
<b>First Criteria – Objective</b>	<p>The objective was to acquire new knowledge to generate new knowledge to design and develop infotainment system with Apps such as Android Auto, Apple CP and SDL Apps for automotive industry which meets OEM specific requirement.</p> <p>Therefore, the first criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	<p><b>Yes.</b></p> <p><b>(All the criteria were fulfilled)</b></p>
<b>Second Criteria – Novelty or technical risks</b>	<p>(a) The achievement of the desired outcome was uncertain due to the scientific and technological uncertainties faced by the company in terms of producing a vehicle infotainment system which is not in accordance with the IEC standards.</p> <p>(b) The R&amp;D activity had faced technical risks in achieving the desired outcome.</p> <p>Therefore, the second criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
<b>Third Criteria – SIE in the field of study of science or technology</b>	<p>(a) The R&amp;D activities were planned and structured with the methodology that was used.</p> <p>(b) Documentation was prepared and compiled.</p> <p>(c) The investigative studies conducted did not close any gap</p>	

	<p>between the desired outcome and the state of knowledge at the time of commencement of the study based on the information available in the public domain.</p> <p>(d) The stages of the tests and trials carried out were conducted to generate new knowledge from the software development technique.</p> <p>(e) The R&amp;D activities have a different mechanical and software form from the product manufactured before.</p> <p>The third criteria to qualify as a qualifying R&amp;D activity has been fulfilled.</p>	
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## 8. Activities Excluded from Being a Research and Development Activity

Certain activities undertaken for R&D are excluded from being a qualifying R&D activity for tax purposes by virtue of the definition of R&D under section 2 of the ITA.

8.1 The reasons for the exclusion are as follows:

- (a) Although these activities may involve tests or systematic processes but they do not fulfil the criteria of resolving a scientific or technological uncertainty for the advancement of science or technology; or
- (b) Some of the activities within an R&D project may have occurred before the scientific or technological uncertainty is identified or after it has been resolved. These activities are related to commercial or administrative objectives and not to the resolution of scientific or technological uncertainty.
- (c) Activities related to commercial objectives include –
  - (i) pre-production work prior to commercial production;

- (ii) engineering follow-through in an early phase of commercial production;
  - (iii) quality control during commercial production including routine testing of products or processes;
  - (iv) troubleshooting in connection with breakdowns during commercial production; and
  - (v) adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity.
- (d) Activities related to administrative objectives includes legal and administrative work in connection with patent applications, records and litigation and the sale or licensing of patents.

8.2 The following activities are excluded as a qualifying R&D activity:

- (a) Quality or routine testing of materials, devices or products

- (i) Routine testing

Routine testing involves routine work to refine, enhance or improve the quality of existing products or processes.

- (ii) Quality testing

Quality testing or quality control is conducted to maintain standards and includes testing to establish whether the characteristics of a product, process or service are within acceptable boundaries such as monitoring:

- the characteristics of natural products eg. foodstuff as they enter the commercial production process;
- service response times and quality characteristics;
- production process; or
- for medical diagnostic purposes.

- (b) Research in the social sciences or the humanities

Activities that are concerned with the:

- (i) study of individuals, society and/or human social function or relationships;
  - (ii) design, production or performance of human artistic expressions; and
  - (iii) study or production of literature.
- (c) Routine data collection
- Routine collection of data for production of products that are not part of the R&D activity.
- (d) Efficiency surveys or management studies
- Activities that are conducted to provide information to assist management decision making about efficient and effective business operations. Adaptation of a capability that exists for a specific need or to fulfil the needs of customers as part of the continuous commercial activity.
- (e) Market research or sales promotion
- (i) Activities that are conducted to investigate consumers' preferences and / or potential interest in a product or service.
  - (ii) Activities conducted to investigate the characteristics or features of a product or service which appeal or might appeal to a customer segment.
  - (iii) Activities designed to encourage the consumption of goods or services.
- (f) Routine modifications or changes to materials, devices, products, processes or production methods
- (i) Routine development of products, processes or services, which does not involve new technology or a significant scientific advance such as routine design of tools, jigs, moulds and dyes.
  - (ii) A systematic work programme to update the existing product, process or service through the application or the introduction of well established techniques or devices.

- (g) Cosmetic modifications or stylistic changes to materials, devices, products, processes or production methods

Cosmetic or stylistic qualities are not themselves science or technology. Cosmetic modifications or stylistic changes include seasonal or periodic design changes to existing products or processes. Therefore, without resolving any scientific or technological uncertainty, any work to improve cosmetic or aesthetic appeal of a material, device, products, processes or production methods would not be a qualifying R&D activity.

## **9. Non-Research Activities and Development**

R&D activities must be distinguished from a wide range of related activities. The activities that are not R&D in nature include:

- (a) general education and training;
- (b) scientific and technical information services;
- (c) fabrication or modification of machinery / equipment;
- (d) general commercial activities will not be considered as R&D including –
  - (i) the range of commercial and financial steps necessary for innovation and development and marketing of a new product, process or service such as a business plan, cost benefit analysis, management or policy studies;
  - (ii) the production and distribution of goods and services;
  - (iii) administrative and other supporting services (such as secretarial, clerical, book keeping or security);
  - (iv) general support services (such as transportation, storage, upkeep, cleaning, repair and maintenance); and
- (e) activities including design and construction engineering, related to construction, relocation, rearrangement, or startup of facilities or equipment, other than facilities or equipment used solely for a particular research project.

## **10. Commencement and Completion of a Research and Development Activity**

Commencement of a qualifying R&D activity means the date the specific R&D activity commences. Completion of an R&D activity means the date whereby

testing of a prototype product has been completed or the principles of a new production process have been established. The duration of an R&D activity may spread over two or more basis periods.

### **Example 8**

Company Aveeno Sdn. Bhd. undertakes an in-house R &D activity in the year of assessment 2018. The company closes its accounts on 31 December annually. The objective of the R&D activity is to acquire new knowledge to create a new product in Malaysia. The R&D activity commences on 1.1.2018 and immediately carries out studying which is Systematic, Investigative and Experimental in the field of science. The final testing of prototype finishes on 30.6.2018. Production starts on 1.7.2018.

For the purpose of this Example, it is assumed that the R&D definition and its qualifying criteria have been fulfilled. The company commenced its R&D activity on 1.1.2018 and completed it on 30.6.2018. The company would be eligible to claim a special deduction under section 34A of the ITA on the allowable R&D expenditure incurred from 1.1.2018 to 30.6.2018 for the year of assessment 2018.

### **Example 9**

Company Pearl Sdn. Bhd. commenced an in-house R&D activity on 1.6.2018 to create a new process to enhance its production and reduce its production costs. The R&D activity was completed on 31.5.2019. The company closes its accounts on 31 December annually.

For the purpose of this Example, it is assumed that the R&D definition and its qualifying criteria have been fulfilled. The R&D activity commenced on 1.6.2018 and was completed on 31.5.2019. The company would be eligible to claim the allowable R&D expenditure incurred from 1.6.2018 to 31.12.2018, and from 1.1.2019 to 31.5.2019 for the years of assessment 2018 and 2019 respectively.

## **11. Updates and Amendments**

- (a) PR No. 5/2004 titled Double Deduction Incentive On Research Expenditure and Addendum to PR No. 5/2004 has been amended, rewritten and updated, and published in two parts as follows:
  - (i) PR No. 5/2020 titled Tax Treatment of Research and Development Expenditure, Part I – Qualifying Research and Development Activity; and

- (ii) PR No. 6/2020 titled Tax Treatment of Research and Development Expenditure, Part II – Special Deductions.
  
- (b) This PR and PR No. 6/2020 should be read together with the guidelines titled Guidelines on The Application Procedure for A Special Deduction in Respect of A Qualifying Research and Development Activity dated 13.8.2020 which can be downloaded under Technical Guidelines from Inland Revenue Board of Malaysia's official portal at [www.hasil.gov.my](http://www.hasil.gov.my).

## 12. **Disclaimer**

The examples in this PR are for illustration purposes only and are not exhaustive.

**Director General of the Inland Revenue Board,  
Inland Revenue Board Malaysia.**