NOTICE

DOCUMENT TITLE: Example of Form T661 (PDF, 83 KB)

http://www.cra-arc.gc.ca/txcrdt/sred-rsde/pblctns/xmplt661-eng.html

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Canada Revenue Agency **Agence du revenu du Canada**

SCIENTIFIC RESEARCH AND EXPERIMENTAL DEVELOPMENT (SR&ED) EXPENDITURES CLAIM

Use this form:
- to provide technical information on your SR&ED projects;
- to calculate your SR&ED expenditures; and
- to calculate your qualified SR&ED expenditures for investment tax credits (ITC).

To claim an ITC, use either:
- Schedule T2SCH31, *Investment Tax Credit – Corporations*, or
- Form T2038(IND), *Investment Tax Credit (Individuals).*

Your SR&ED claim must be filed within 12 months of the filing due date of your income tax return.

To help you fill out this form, use the T4088, *Guide to Form T661,* which is available on our Web site: **www.cra.gc.ca/sred**.

Part 1 – General information

Complete this part for the business making the claim.

010 Name of claimant **T661 LTD**	Enter one of the following:
	Incorporated business: **98765 4321 RC0001** Business Number (BN)
Tax year From: **2 0 0 8 0 1 0 1** Year Month Day To: **2 0 0 8 1 2 3 1** Year Month Day	Individual: _____ Social Insurance Number (SIN)
050 Total number of projects you are claiming this tax year: **1**	Partnership: _____ Partnership Identification Number (PIN)

100 Contact person for the financial information **C. Ounter**	**105** Telephone number/extension **555-555-5555**	**110** Fax number **555-555-5551**
115 Contact person for the technical information **D. Boss**	**120** Telephone number/extension **555-555-5559**	**125** Fax number **555-555-5551**

151 If this claim is filed for a partnership, was Form T5013 filed? .... 1 ☐ Yes 2 ☐ No

If you answered **no** to line 151, complete lines 153, 156 and 157.

153 Name of Partners	**156** %	**157** BN or SIN
1		
2		
3		
4		
5		

Complete a separate Part 2 for each project claimed this year.

Section A – **Project identification**

200 Project title (and identification code if applicable)

Data warehouse management – Project code 98-0001

202 Project start date

2008	Mar
Year	Month

204 Completion or expected completion date

2008	Nov.
Year	Month

206 Field of science or technology code
(See guide for list of codes)

1.02.03

Project history

208 1 ☐ Continuation of a previously claimed project

210 1 ☑ First claim for the project

218 Was any of the work done jointly or in collaboration with other businesses? . . . . 1 ☐ Yes 2 ☑ No

If you answered **yes** to line 218, complete lines 220 and 221.

220 Names of the businesses	**221** BN
1	
2	
3	

The work was carried out (check any that apply)

222 1 ☐ By analysis only

223 1 ☐ In a laboratory

224 1 ☑ In a dedicated research facility

226 1 ☐ In a commercial plant or facility

228 1 ☐ Others, specify **229** _____

Purpose of the work

230 1 ☑ To achieve technological advancement for the purpose of creating new or improving existing materials, devices, products or processes.
(Go to Section B – Experimental development)

232 1 ☐ For the advancement of scientific knowledge.
(Go to Section C – Basic or applied research)

Section B – **Experimental development**

The technological advancement you are trying to achieve with this work will result in:

	Materials, devices, or products	Processes
The development of new	**235** 1 ☑	**236** 1 ☐
The improvement of existing	**237** 1 ☑	**238** 1 ☐

240 What **technological** advancements were you trying to achieve? *(Maximum 350 words)*

The technological objective of this project was to improve data warehouse management techniques by concentrating on the compression of relational database tables. At the time this work began, numerous database compression methods were available and many of these had been commercialized in larger software applications. However, practically all of the methods relied on data being uniformly distributed and static in nature.

By contrast, the overwhelming proportion of data entering data warehouses could not be assumed to be uniformly distributed and was almost certainly dynamic in character. We assumed that conventionally available data compression methods, such as the loss-less dictionary approach, could be surpassed by developing methods that would exploit the unique properties of those data sets that were not uniformly distributed and were dynamic. A technological advancement was therefore sought in this project through the development of data compression algorithms based on an analysis of the dynamic character and non-uniform distribution of the data sets entering the data warehouse. This work generated new technological knowledge regarding:

- the discovery and use of column value frequency of initial tables rows to create a block-based compression dictionary;
- the use of a table-wide list of most frequent values for the compression dictionary;
- the restriction of query/update/refresh operations to compressed blocks rather than entire tables;
- the organization and control of compression dictionaries in the buffer cache when calls are made to uncompress multiple blocks.

The performance of the various prototypes developed in this work was benchmarked using a number of measures based on CPU utilization and data throughput for operations including parallel load, delete/update operations, full table scan, and table access by row ID. One additional outcome of this work was that the dynamic, non-uniform data compression method developed here actually provided performance improvements for data backup and recovery operations when applied to very large databases in excess of 2.5 million rows (1.3 GB) such as those encountered in data warehouses.

[320 words]

242 What **technological** obstacles did you have to overcome to achieve those advancements? *(Maximum 350 words)*

There were a number of specific technological obstacles that drove the systematic investigations described further.

We were looking for an appropriate methodology of modeling our dynamic, non-uniform data distribution in real data for the purposes of the compression prototypes.

There were no methodologies, techniques, or models available to us to characterize dynamic, non-uniform data. Our review of available techniques revealed in the early phase of the project that we had to undertake investigation leading to the development of a dataset model suitable to reflect in an efficient way our specific dataset characteristics. The second technological shortcoming was that we did not know and we could not find any technique or methodology related to the data compression, which would specifically deal with this data model related to dynamic, non-uniform data. We realized that if we develop a suitable model to characterize dynamic, non-uniform data then we would find no established techniques to be applied to the data compression aspect that would effectively and efficiently exploit the general features of this abstract data model previously mentioned. The effectiveness of each feature had to be verified in terms of data integrity and benchmark performance comparisons. Once a series of candidate compression algorithms became available the subsequent technical shortcomings were associated with the possibility of implementing a dynamic compression technique for dataset additions and/or updates on a batch basis. Finally, we were planning to develop an acceptable and valid methodology of setting up some general rules related to an optimal data table compression-block size applicable to both the initial data set analysis and the dynamic analysis. We felt that such a relationship should exist and we decided to undertake an investigation to be able to prove it. We also realized that such methodology is not readily available so we would have to address this issue and develop a technique potentially leading to determining an optimal data-block size.
 [314 words]

244 What work did you perform **in the tax year** to overcome those technological obstacles? (Summarize the systematic investigation) *(Maximum 700 words)*

Following a review of available software methods and dataset characterization techniques, beginning in March 2008 the first phase of the investigations focused on the analysis of a very large data set (known to be dynamic with a non-uniform distribution) in relational database form. This analysis involved a number of investigations, using selected well-known methods in software engineering, with the aim of creating a generalized model of a data set. This also included the extraction of a number of dataset-specific conclusions regarding row and column correlations and distributions, some of which are briefly outlined above in the technological advancements section. At the end of this first phase we found that a reasonably accurate data set model could be created. This was further tested and the data set model accuracy was verified and validated against several concrete smaller-sized relational databases available to us in the data warehouse.

In the second phase, starting in May 2008, a number of compression methods were developed in prototype forms to exploit the general features of the data model. Each prototype carried a set of specific assumptions regarding how the dataset characteristics might be exploited and each was subsequently verified for integrity and then benchmarked for performance. This benchmarking was done through measures of CPU utilization and data throughput for parallel load, delete/update operations, full table scan, and table access by row ID. In direct support of this work, several test scripts were written to test the compression algorithm. Although the development of these scripts included no significant technological challenge, they were necessary to benchmark the new algorithms and determine the most appropriate solution. The benchmarking results were documented and are available for further review if requested.

The third phase was carried out in June and July 2008. Three candidate compression algorithms were modified to include an implementation of several different dynamic compression techniques for dataset additions and/or updates. Each of these again had the data integrity verified and performance benchmarked, the latter now including update/refresh-specific performance measures. In August 2008, a final prototype was selected for widespread commercial implementation ending this aspect of the experimental development.

During October 2008 the implemented prototype was used to determine whether or not an optimal data table compression-block size could be determined by both the initial data set analysis and the dynamic analysis. However, this work failed to establish that such a relationship existed and was subsequently abandoned, ending the project in November 2008.

As part of this effort the Company engaged an outside contractor for a period of two months to extend the data compression method to a wider range of common data warehouse operations in September 2008. Included in this work was an exploration into use of the implemented compression prototype for data backup and recovery operations. As the result of this work it was found out and further documented that the prototype provided measurable performance improvements when applied to very large databases in excess of 2.5 million rows (1.3 GB) such as those typically encountered in data warehouses. Subsequent investigations revealed that this was primarily due to the construction of the compression dictionary rather than the data blocks.
[521 words]

(Go to Section D)

Section C – Basic or applied research

250 Describe the scientific knowledge that you were trying to advance. *(Maximum 350 words)*

252 Summarize the work performed **in the tax year**, and explain how that work contributed to the advancement of scientific knowledge. (Summarize the systematic investigation) *(Maximum 700 words)*

Section D – Additional project information

Who prepared the responses for Section B or Section C?

253 1 [√] Employee directly involved in the project	**254** Name D. Tester	
255 1 [ ] Other employee of the company	**256** Name	
257 1 [ ] External consultant	**258** Name	**259** Firm

List three key employees directly involved in the project and indicate their qualifications.

260 Names	**261** Qualifications/experience and position title
1 D. Boss	M.Sc. Computer Science / Lead Developer
2 D. Ata	B.Cc. Electrical Engineering / Programmer
3 M. Acro	Diploma in Electronics / Data base developer

265 Are you claiming any salary or wages for SR&ED performed outside Canada? . . . . 1 [ ] Yes 2 [√] No

266 Are you claiming expenditures for SR&ED carried out on behalf of another party? . . . . 1 [ ] Yes 2 [√] No

267 Are you claiming expenditures for SR&ED performed by people other than your employees? . . . . 1 [√] Yes 2 [ ] No

If you answered **yes** to line 267, complete lines 268 and 269.

268 Names of individuals or companies	**269** Social Insurance Number or Business Number
1 A. Beta	222 222 222
2	

What evidence do you have to support your claim? (Check any that apply)
You do not need to submit the evidence with the claim. However, you are required to retain them in the event of a review.

270 1 [√] Project planning documents		**276** 1 [√] Progress reports, minutes of project meetings		
271 1 [√] Records of resources allocated to the project, time sheets		**277** 1 [√] Test protocols, test data, analysis of test results, conclusions		
272 1 [ ] Design of experiments		**278** 1 [ ] Photographs and videos		
273 1 [ ] Project records, laboratory notebooks		**279** 1 [ ] Samples, prototypes, scrap or other artefacts		
274 1 [√] Design, system architecture and source code		**280** 1 [√] Contracts		
275 1 [ ] Records of trial runs		**281** 1 [ ] Others, specify **282** _____		

Section E – Project cost

Project expenditures claimed in the year:

285 Salary or wages	$ 194,600
286 Materials consumed and transformed	$
287 SR&ED contracts	$ 32,000
289 Overhead and other expenditures (if you use the traditional method in Part 3)	$

Part 3 – Calculation of SR&ED expenditures

What did you spend on your SR&ED projects?

Section A – Select the method to calculate the SR&ED expenditures

I elect (choose) to use the following method to calculate my SR&ED expenditures and related investment tax credits (ITCs) for this tax year.
I understand that my election is irrevocable (cannot be changed) for this tax year.

160 [√] I elect to use the proxy method
(Tip: Enter "0" on line 360. Complete Part 5 and no need to track any expenditure incurred for overhead)

162 [ ] I choose to use the traditional method
(Tip: Enter "0" on line 355. Complete line 360, and track any expenditure incurred for overhead)

Section B – Calculation of allowable SR&ED expenditures (to the nearest dollar)

- SR&ED portion of salary or wages of employees directly engaged in the SR&ED:

  a) Employees other than specified employees for work performed in Canada . . . . **300** + 94,600

  b) Specified employees for work performed in Canada . . . . **305** + 100,000

  Subtotal (add lines 300 and 305) . . . . . . **306** = 194,600

  c) Employees other than specified employees for work performed outside Canada (subject to limitations – see guide) . . . . **307** +

  d) Specified employees for work performed outside Canada (subject to limitations – see guide) . . . . **309** +

- Salary or wages identified on line 315 in prior years that were paid in this tax year . . . . **310** +
- Salary or wages incurred in the year but not paid within 180 days of the tax year end . . . . **315** [   ]
- Cost of materials consumed in performing SR&ED . . . . **320** +
- Cost of materials transformed in performing SR&ED . . . . **325** +
- Contract expenditures for SR&ED performed on your behalf:

  a) Arm's length contracts . . . . **340** + 32,000

  b) Non-arm's length contracts . . . . **345** +

- Lease costs of equipment used:

  a) All or substantially all (90% of the time or more) for SR&ED . . . . **350** +

  b) Primarily (more than 50% of the time but less than 90%) for SR&ED. (Enter 50% of lease costs if you use the proxy method or enter "0" if you use the traditional method) . . . . **355** +

- Overhead and other expenditures (enter "0" if you use the proxy method) . . . . **360** +
- Third-party payments (complete Form T1263*) . . . . **370** +

Total current SR&ED expenditures (add lines 306 to 370; do not add line 315) . . . . **380** = 226,600
(Tip: Corporations may need to adjust line 118 of schedule T2SCH1)

- **Capital Expenditures** (see guide for what qualifies for SR&ED) . . . . **390** + 15,000
(Tip: These capital expenditures should not be included on schedule T2SCH8)

Total allowable SR&ED expenditures (add lines 380 and 390) . . . . **400** = 241,600

Section C – Calculation of pool of deductible SR&ED expenditures (to the nearest dollar)

Amount from line 400 . . . . **420** 241,600

Less

- provincial government assistance for expenditures included on line 400 . . . . **429** − 36,240
- other government assistance for expenditures included on line 400 . . . . **431** − 7,500
- non-government assistance for expenditures included on line 400 . . . . **432** −
- SR&ED ITCs applied and/or refunded in the prior year (see guide).   No claim filed in the prior year. **435** − 0
- sale of SR&ED capital assets and other deductions . . . . **440** −

Subtotal (line 420 minus lines 429 to 440) . . . . **442** = 197,860

Add

- repayments of government and non-government assistance that previously reduced the SR&ED expenditure pool . . . . **445** +
- prior year's pool balance of deductible SR&ED expenditures (from line 470 of prior year T661) . . . . . **450** +
- SR&ED expenditure pool transfer from amalgamation or wind-up . . . . **452** +
- amount of ITC recaptured in the prior year . . . . **453** +

Amount available for deduction (add lines 442 to 453) . . . . **455** = 197,860
(enter positive amount only, include negative amount in income)

- Deduction claimed in the year . . . . **460** − 197,860
(Tip: Corporations should enter this amount on line 411 of schedule T2SCH1)

Pool balance of deductible SR&ED expenditures to be carried forward to future years (line 455 minus 460) . . . . **470** = 0

* Form T1263, *Third-Party Payments for Scientific Research and Experimental Development (SR&ED)*

Part 4 – Calculation of qualified SR&ED expenditures for investment tax credit (ITC) purposes

The resulting amount is used to calculate your refundable and/or non refundable ITCs.

Enter the breakdown between current and capital expenditures		Current Expenditures		Capital Expenditures
Total expenditures for SR&ED (from lines 380 and 390)	**492**	226,600	**496**	15,000
Add				
• payment of prior years' unpaid amounts (other than salary or wages)	**500**	+		
• prescribed proxy amount (complete Part 5) (Enter "0" if you use the traditional method)	**502**	+ 111,865		
• expenditures on shared-use equipment (see guide)			**504**	+
• qualified expenditures transferred to you (complete Form T1146**)	**508**	+	**510**	+
Subtotal (add lines 492 to 508, and add lines 496 to 510)	**511**	= 338,465	**512**	= 15,000
Less				
• provincial government assistance	**513**	− 50,770	**514**	− 2,250
• other government assistance.	**515**	− 7,500	**516**	−
• non-government assistance and contract payments	**517**	−	**518**	−
• current expenditures (other than salary or wages) not paid within 180 days of the tax year end	**520**	−		
• amounts paid in respect of an SR&ED contract to a person or partnership that is not a taxable supplier	**528**	−		
• prescribed expenditures not allowed by regulations (see guide)	**530**	−	**532**	−
• other deductions (see guide)	**533**	−	**535**	−
• non-arm's length transactions				
– assistance allocated to you (complete Form T1145*)	**538**	−	**540**	−
– expenditures for non-arm's length SR&ED contracts (from line 345)	**541**	−		
– purchases (limited to costs) of goods and services from non-arm's length suppliers (see guide)	**542**	−	**543**	−
– qualified expenditures you transferred (complete Form T1146**)	**544**	−	**546**	−
Subtotal (line 511 minus lines 513 to 544 and line 512 minus lines 514 to 546)	**557**	= 280,195	**558**	= 12,750
Qualified SR&ED expenditures (add lines 557 and 558)			**559**	= 292,945
Add				
• repayments of assistance and contract payments made in the year			**560**	+
Total qualified SR&ED expenditures for ITC purposes (add lines 559 and 560)			**570**	= 292,945

* Form T1145, *Agreement to Allocate Assistance Between Persons Not Dealing at Arm's Length for Scientific Research and Experimental Development (SR&ED)*

** Form T1146, *Agreement to Transfer Between Persons Not Dealing at Arm's Length Qualified Expenditures Incurred in Respect of Scientific Research and Experimental Development (SR&ED) Contracts*

Part 5 – Calculation of prescribed proxy amount (PPA)

A notional amount representing your overhead and other expenditures.

This part calculates the PPA to enter on line 502 in Part 4. Do not complete this part if you have chosen to use the traditional method in Part 3 (line 162)
You can only claim a PPA if you elected to use the proxy method for the year in Part 3 (line 160).

Special rules apply for specified employees. Calculate your salary base in Section A and the PPA in section B.

Section A – Salary base

Salary or wages of employees other than specified employees (from lines 300 and 307) . . . . **810** + 94,600

Less:

Bonuses, remuneration based on profits, and taxable benefits that were included on line 810 . . . . **812** −

Subtotal (line 810 minus 812) . . . . **814** = 94,600

Salary or wages of specified employees

850	852	854	856	858	860
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Name of Specified Employee	Total salary or wages for the year (SR&ED and non-SR&ED) excluding bonuses, remuneration based on profits, and taxable benefits	% of time spent on SR&ED (maximum 75%)	Amount in column 2 multiplied by percentage in column 3	2.5 x A x B/365 A = Year's maximum pensionable earnings B = Number of days employed in tax year	Amount in column 4 or 5, whichever amount is less
1 D. Boss	90,000	75%	67,500	112,250	67,500
2 D. Owner	100,000	10%	10,000	112,250	10,000
3					
4					
5					
6					
7					
8					
9					
10					

(Enter total of column 6 on line 816) 77,500 **816** + 77,500

Salary base (total of lines 814 and 816) . . . . **818** = 172,100

Section B – Prescribed proxy amount (PPA)

Enter 65% of the salary base (line 818 X 65%) . . . . **820** = 111,865
Enter the amount from line 820 on line 502 in Part 4 unless the overall cap on PPA applies to you.

Overall cap on PPA

The amount you can claim on line 502 in Part 4 is limited to the expenses of your business minus certain specific deductions such as rent for a building, capital cost allowance, and interest expense. (See the guide for an explanation)

Part 6 − Additional information

Expenditures for SR&ED performed by you (line 400 minus lines 340, 345, and 370) . . . . **605** `209,600`

From the total you entered on line 605, estimate the percentage of distribution of the sources of funds
for SR&ED performed within your organization.

		Canadian (%)		Foreign (%)
Internal	**600**	96%		
Parent companies, subsidiaries, and affiliated companies	**602**		**604**	
Federal grants (do not include funds or tax credits from SR&ED tax incentives)	**606**	4%		
Federal contracts	**608**			
Provincial funding	**610**			
SR&ED contract work performed for other companies on their behalf	**612**		**614**	
Other funding (e.g., universities, foreign governments)	**616**		**618**	

Enter the number of SR&ED personnel:

Scientists and engineers	**632**	2
Technologists and technicians	**634**	2
Managers and administrators	**636**	
Other technical supporting staff	**638**	

Part 7− Claim checklist

Documents required for a complete claim. Make sure you have:

1. used the current version of this form . . . . √

2. entered the method you have chosen for reporting your SR&ED expenditures in Section A of Part 3 . . . . √

3. completed Part 2 for each project . . . . √

4. filed a completed Schedule T2SCH31 or Form T2038(IND) to claim ITCs on your qualified SR&ED expenditures . . . . √

5. filed a completed Form T1145, T1146, T1174* and/or T1263 including any required attachments, if applicable . . . . ☐

To expedite processing your claim, make sure you have:

1. completed Form T2, *Corporation Income Tax Return* or Form T1, *Income Tax and Benefit Return* . . . . √

2. filed the appropriate provincial and/or territorial tax credit forms, if applicable . . . . √

3. retained documents to support the SR&ED expenditures you claimed . . . . √

4. checked boxes 231 and 232 on page 2 of your T2 return to indicate attachment of Form T661 and Schedule T2SCH31 . . . . √

* Form T1174, *Agreement Between Associated Corporations to Allocate Salary or Wages of Specified Employees for Scientific Research and Experimental Development (SR&ED)*

Part 8 − Certification

I certify that I have examined the information provided on this form and on the attachments and it is true, correct, and complete.

165	D. Boss	**170**	
	Name of authorized signing officer of the corporation, or individual	Signature	Date

175	RD Tax Professionals
	Name of person/firm who completed this form