Substantiating an experiment: the R&D tax conundrum

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Abstract: The research and development (R&D) tax incentive is a new entitlement-based program that is in effect for financial years commencing on or after 1 July 2011. It replaces the former R&D tax concession program. The incentive offers a 45% refundable tax offset for companies with a group turnover of less than $20m and 40% non-refundable tax offset for companies with a group turnover exceeding $20m. Companies have been able to register their R&D activities under the incentive since 1 July 2012. However, lack of clarity around changes that have been made to the R&D tax legislation, together with recent decisions by the Administrative Appeals Tribunal (AAT) about substantiation of claims, have contributed to uncertainty for taxpayers during the transition to the new regime. This article provides an overview of the new requirements, examines the implications of the AAT decisions, discusses the difference between documentation and substantiation, and provides a case study.

Summary

The research and development (R&D) tax incentive (the incentive) is the government's new entitlement-based program that is in effect for financial years commencing on or after 1 July 2011. It replaces the R&D tax concession (the concession) program.

The incentive offers a 45% refundable tax offset for companies with a group turnover of less than $20m and 40% non-refundable tax offset for companies with a group turnover exceeding $20m. Companies have been able to register their R&D activities under the incentive since 1 July 2012.[1]

While the incentive offers a more generous base rate of recoupment than the concession, it places greater emphasis on the taxpayer's responsibility to provide evidence of compliance with the new R&D tax legislation.

The problem with the incentive is the lack of clarity around changes that have been made to the R&D tax legislation, which makes it difficult for the incentive to function effectively as a program under Australia's self-assessment tax regime.

Changes to the definition of eligible activities, uncertainties around the definition of new terms, such as "dominant purpose", and recent decisions handed down in the Administrative Appeals Tribunal (AAT) regarding substantiation, have all contributed to additional uncertainty for taxpayers during the transition.

In the AAT, three consecutive decisions have been handed down, deciding against taxpayers on the basis that the documents provided were insufficient or inappropriate for substantiating the R&D claims.

While the recent decisions deal with applications under the former concession, they offer an insight into a new "best practice" that AusIndustry and the Australian Taxation Office (ATO) will require of taxpayers when claiming under the incentive. Therefore, it is important for companies to re-evaluate the nature of their activities and how those activities are documented in the context of a rapidly evolving compliance framework.

Introduction

Changes to the former concession program were instigated following the 2008 *Review of the National Innovation System*, which recommended that the government increase the base concession, but refine the definition of R&D and/or establish limits on eligible expenditure.

As the chairperson of the expert panel tasked with reviewing Australia's national innovative system, Dr Terry Cutler led the panel to examine "the coherence and effectiveness of existing government support for innovation", "identify gaps and weaknesses in the innovation system", and "develop proposals to address them".[2] The findings were published in *Venturous Australia*, which is also known as the Cutler Review.

To encourage innovation by Australia-based businesses, the Cutler Review recommended that:

- "the existing R&D Tax Concession … be replaced with a Tax Credit in order to raise the level of business expenditure on research and development by providing a less complex and more predictable support mechanism";[3] and
- "[f]urther exploration … to see if there are practicable ways of expanding the definition of eligible activities to include some of the less technically risky activities involved in innovation in services".[4]

To curb large R&D claims for "commercial" activities, the review recommended that:

- "guidelines … be reviewed to clearly identify what is eligible activity";[4] and
- "appropriate measures be taken to heavily constrain 'whole of mine' and similar claims against the existing R&D Tax Concession program or proposed Tax Credit program".[4]

Following the recommendations of the review to drive innovation by increasing the benefits for businesses that take on the risks of conducting R&D activities, it may appear that the changes made to the R&D program are counterintuitive to the overarching recommendation of the review.

In an effort to minimise claims on commercial activities, the new, stringent record-keeping requirements and the uncertainty around the new legislation are deterring companies from lodging applications under the incentive program — despite the potentially generous benefits —

Table 1

Positive aspects of the incentive	Negative aspects of the incentive
Faster processing times for registrations and payment (relative to the concession).	Delayed release of guidance materials from the ATO and AusIndustry.
More certainty around the nature of core and supporting activities (particularly in the registration form).	Delays in responses for companies that have sought advanced findings (private rulings).
No limits on the amount of expenditure subject to a refundable offset (previous limit was $2m).	Uncertainty around the dominant purpose test criterion within the context of a production environment.
Up to 50% of expenditure can be incurred overseas, subject to certain requirements (the previous limit was 10%).	Uncertainty around the scope and application of feedstock provisions (particularly with prototypes).
An exempt entity can own up to 50% of an eligible company claiming R&D (the previous limit was 25%).	Uncertainty around substantiation sufficiency (AAT decisions have only clarified what is insufficient).

Table 2

Concession regime	Incentive regime
Formal requirement for R&D plans (Parts A and B).	No formal requirement for R&D plans.
Contemporaneous documentation can be used to satisfy eligibility requirements in lieu of R&D plans.	Documentation must be contemporaneous; particularly showing evidence of experiments employing a scientific method and conclusions drawn from those experiments.
Scientific method is demonstrated through documentation only where the registered activity involves high levels of technical risk.	Documentation must show a direct, close and immediate link between core and supporting activities.
	Where the dominant purpose test applies, documentation must prove that the activity's primary purpose is to support a core R&D activity, ie assertions without evidence are not permitted.

because they are unsure whether they are meeting the requirements. Small to medium enterprises (SMEs), in particular, may determine that the cost of administration outweighs the benefits of claims.

Table 1 outlines the positive and negative aspects of the incentive as identified to date.

AusIndustry will be conducting the first round of compliance reviews under the incentive over the second half of the 2013 financial year. The assessment format and tactics employed by AusIndustry will be influenced by both the form of the new legislation and the content within the recent AAT decisions.

Overview of the new requirements

Under the incentive, taxpayers are required to self-assess each of their activities as either core or supporting, and provide contemporaneous documentation to support their assessment.

Core activities

According to the new *Tax Laws Amendment Act (Research and Development) Act 2011* (the 2011 Act), documentation for core activities must demonstrate the following:

(1) the scientific method is applied:

(a) the activity is experimental;

(b) involved a systematic progression of applied work that was based on science principles; and

(c) proceeded from hypothesis to experiment, observation and evaluation, and led to logical conclusions; and

(2) new knowledge is generated:

(a) the activity is conducted for the purpose of generating new knowledge, including new knowledge in the form of new or improved materials, products, devices, processes or services; and

(b) the outcome could not be known or determined in advance on the basis of current knowledge, information or experience.[5]

Familiar terms under which the concession operated, such as "systematic, investigative and experimental activities, innovation and technical risk", have been replaced by new terms such as *"new knowledge, experimental activity and scientific method"*. However, there is no clear definition as to what each term constitutes, how they should be documented and the extent to which activities should be documented to be compliant.

Supporting activities

According to the 2011 Act, supporting activities are activities directly related to core R&D activities. Where the supporting activities are conducted in a commercial setting, they are subject to exclusion unless it can be proven that they have been undertaken for the dominant purpose of supporting the core R&D activities.

Substantiation

The key differences in substantiation requirements between the incentive and the concession are outlined in Table 2.

Under the incentive, a core activity is substantiated by documenting its systematic progression, which must be based on scientific principles. A supporting activity is substantiated by documenting the nexus between the main purpose of the supporting activity and the progression of a core activity.

Due to these requirements, the incentive has more stringent documentation requirements than that of the concession. However, there is growing anxiety among taxpayers that, without a statutory

substantiation framework similar to that of the concession, uncertainty around sufficiency and practicality of maintaining adequate documentation will increase the risks of their R&D claims not meeting the more stringent requirements.

Implications of AAT decisions

Administrative Appeals Tribunal decisions have addressed the issue of substantiating activities for R&D tax purposes but, as a recent decision has yet to be made in favour of a taxpayer, questions relating to the sufficiency of documentation and the practicality of successfully substantiating a claim remain unanswered.

In a bid to demystify the process of substantiating activities under the incentive, different views have been expressed on how to identify and measure innovation (or the scientific method) within a core activity. However, there can be no one-size-fits-all method to substantiation. Given the intimate relationship between the identification of an activity and the documentation required to support that activity, an activity could be substantiated in different ways.

Confidential and IR&D Board

Since 1985, it has been asserted, in principle, that R&D activities involving the creation of new knowledge or innovation could be substantiated by demonstrating the presence of either quality in the outcome of an R&D project.

In *Confidential and IR&D Board* (*Confidential*),[6] Deputy President McMahon commented that:

> "If what is produced is an innovative product then the activity must, as a matter of logic, involve innovation."

McMahon J's comment presents a reasoning that, before an experimental activity that involves a specific quality (ie innovation) can be substantiated, that quality must first be identified.

Here the Tribunal has:

(1) assumed that the creation of the new product can only occur through creating new processes;

(2) assumed that that new processes were created using the scientific method; and

(3) measured the knowledge gap by considering the level of new knowledge in the final outcome of the activity against the existing state of knowledge that was reasonably accessible prior to the commencement of the activity.

Figure 1. Demonstration of knowledge gap though the documentation of two points

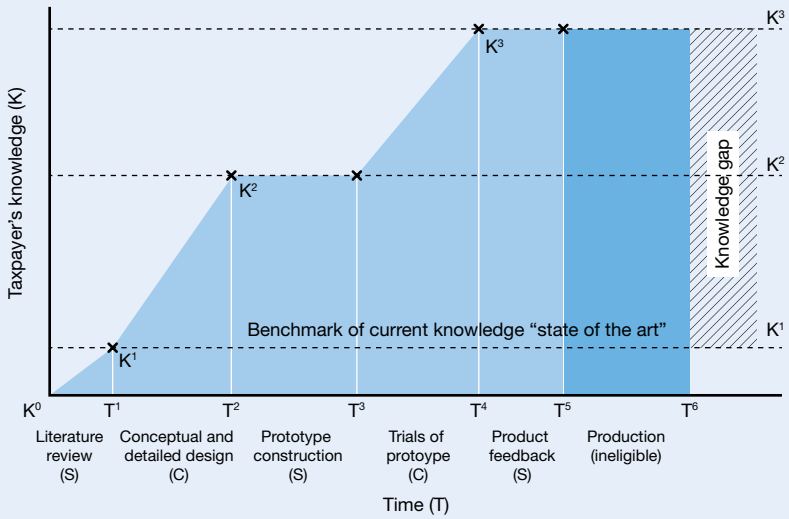
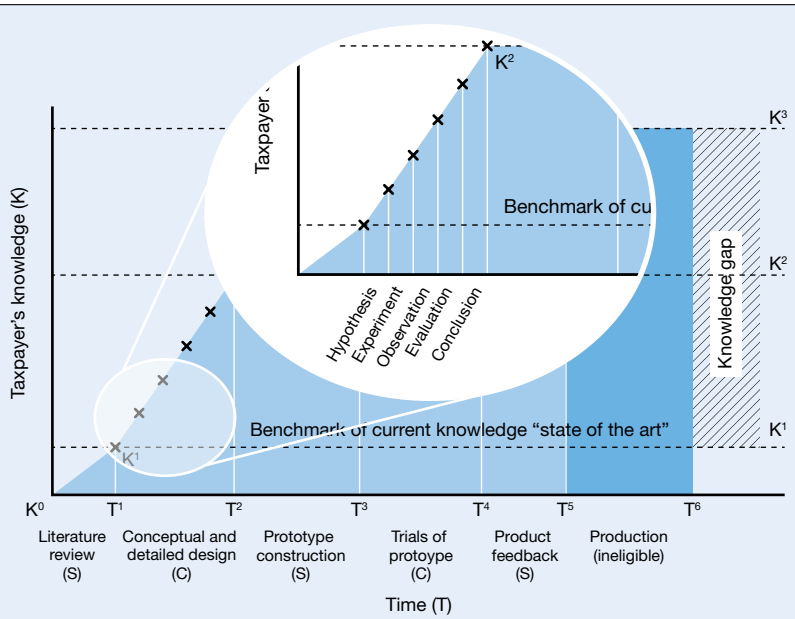


Figure 2. Demonstration of the knowledge gap through a series of iterative steps (or points)



From a product development perspective, this rationale could be identified graphically as shown in Figure 1. The documented points are labelled with a cross.

Figure 1 shows that the core activity named "Conceptual and detailed design" is eligible where:

(1) a literature review detailing the state of knowledge prior to starting that core activity (K^1) can be produced; and

(2) a finalised schematic of the detailed design highlighting the new knowledge within the core activity (K^2) can be produced.

RACV and Innovation Australia

Recently, in the case of *RACV Sales and Marketing Pty Ltd and Innovation Australia* (*RACV*),[7] this long-established principle was disputed. Referencing the case of *Jones v Dunkel*,[8] Deputy President Forgie presented a reasoning that was polarising

to Deputy President McMahon's reasoning in the *Confidential* case. Forgie J said:

> "One does not pass from the realm of conjecture into the realm of inference until some fact is found which positively suggests [so]; that is to say [a fact] that provides a reason, special to the particular case under consideration, for thinking it likely that in that actual case a specific event happened or a specific state of affairs existed."

Forgie J's comment suggests that innovation within an activity cannot be assumed to have occurred without producing evidence of the state of affairs that led to its occurrence.

HZXD and Innovation Australia

This idea is further emphasised in the recent decision of *HZXD and Innovation Australia* (*HZXD*),[9] where Deputy President McDonald and Tribunal Member Ermert said:

> "The first thing to determine is the activities in which the applicant was engaged. The usual way in which activities are determined is by reference to records. Usually, records will be in a documentary or computer-generated, time-sequenced form and consist of R&D plans, outcomes of test results ..."

The decisions of the *HZXD* and *RACV* cases suggest that, in order to assess innovation within an activity, the series of iterative steps leading to its final outcome must first be examined (ie the scientific method).

This reasoning is illustrated in Figure 2. The documented points are labelled with a cross.

The basis of the *RACV* and *HZXD* decisions forms an extension of the view expressed in the decisions of the *Confidential* case. That is, in addition to substantiating the state of knowledge at the start of the project and the innovation or level of knowledge in the final product, the process between those two variables must also be documented.

Documenting v substantiating: the importance of evidence

For the taxpayer, the crucial question is then: what is the difference between documenting and substantiating?

Under Australia's self-assessment tax regime, the taxpayer is responsible for providing evidence of compliance with any tax requirements to the assessor (in this case, AusIndustry or the ATO). The assessor is not responsible for interpreting a taxpayer's documents in a way that would assist the taxpayer in meeting legislative requirements. For the most part, the taxpayer is responsible for:

(1) adequate documentation of the experimental activities to be claimed; and

(2) adequate communication of the nature of those activities to the assessor, in the event of a review.

NaughtsnCrosses and Innovation Australia

In the recent AAT decision of *NaughtsnCrosses Pty Ltd and Innovation Australia* (*NaughtsnCrosses*),[10] Deputy President Hack said:

> "[A] project such as this can involve systematic, investigative and experimental activities … [however, the activities] appear to have been poorly documented and have been even more poorly *evidenced*." (emphasis added)

He further said:

> "[Assertions were made] without reference to the evidence on which they [the assertions] are based."

Hack J's comments suggest that the R&D activities conducted by RACV could have met the eligibility requirements. But, while there was documentation, and it could have been inferred from the nature of the activities that they would develop in a systematic, scientific method, the documents presented were inadequate in proving that requirements were indeed met. The documents presented were deemed ineligible because:

(1) they could not be constructed in a way that helped demonstrate the experimental nature of each activity; and

(2) any relevant documents produced were not communicated to the tribunal in a way that assisted it in understanding that experimental nature.

Similarly, the importance of the quality of documentation is evident in the decision handed down by Deputy President McDonald in the *HZXD* case. The decision follows the reasoning that the claimant was unable to provide "particularisation of any testing carried out as the project advanced due to the lack of contemporaneous records".[11]

McDonald J further commented that, without sufficient supporting evidence, "the Tribunal [was] unable to calculate what portion, if any, of the application should be accepted as involving innovation or a high degree of technical risk … [as] … it is unknown what experiments were carried out …".[12]

The decisions of the *HZXD*, *RACV* and *NaughtsnCrosses* cases reaffirm the long-standing AusIndustry principle that, unless an R&D activity can be proven to have occurred, it cannot be assumed to have occurred.

The content of the decisions suggests that relevant documentation refers to documents that are purposeful and timely. These documents give substance to claims; they are tangible or measurable evidence of the occurrence and nature of the activities.

Case study

Battery Company is developing a long-life, rechargeable battery for smartphones by combining two existing chemicals in a new way to provide longer battery life (the Battery Project). As part of the design process, various theoretical calculations are performed, including computer model simulations. Battery Company also constructed a prototype battery for laboratory testing. The prototype is constructed for the dominant purpose of supporting the R&D activities.

Considering the *HZXD*, *RACV* and *NaughtsnCrosses* decisions, Battery Company identified the activities set out in Table 3 as part of the project.

The core activities relate to:

(1) the experimental development of a battery design and testing of its performance using a computer model; and

(2) testing of the prototype battery in laboratory trials.

These activities are eligible as core R&D activities because:

(1) the outcome cannot be determined in advance based on current knowledge, ie based on the literature review, the information available is inadequate to help determine, for certain, that combining two types of existing chemicals in the method employed will extend battery life;

(2) the scientific method is applied to test a hypothesis about the battery-life performance by experimenting with a new method, observing the results of the experiment, and evaluating the outcome in view of making a logic conclusion; and

(3) the activities are conducted for the purpose of generating new knowledge

Table 3

Activity	Description	Classification
Literature review	Set a benchmark for the new knowledge to be gained, through a review of existing battery technologies in smartphone applications.	Supporting
Conceptual and detailed design	Development of an initial product design followed by detailed calculations on its theoretical workings, including use of computer simulations. Hypothesis: Combining two types of existing chemicals in a new way will extend the battery life. Experiment: Testing the battery-life performance of the new design using theoretical calculations and computer simulations. Observation: Recording the results of the experiment, including computer modelling predictions and results from theoretical calculations. Evaluation: Analysing and assessing the effectiveness of the predicted battery-life performance against design specifications. Conclusion: Determining whether further design changes are necessary to meet design specifications.	Core
Prototype construction	Construction of a prototype battery.	Supporting
Trial of prototype	Testing of prototype battery-life performance against specifications and analysis of the prototype performance in laboratory trials. Hypothesis: Combining two types of existing chemicals in a new way will extend the battery life. Experiment: Testing the performance of the prototype battery in laboratory trials. Observation: Recording the results of the laboratory experiments. Evaluation: Analysing and assessing the effectiveness of the prototype's battery-life performance against design specifications. Conclusion: Determining whether further design changes are necessary to meet design specifications.	Core
Product feedback	Recommendations for improvements to existing design.	Supporting

Table 4

Scientific method	Description[13]	Examples of relevant substantiation document
Hypothesis	A proposition (or set of propositions) suggested as an explanation for the occurrence of some specified group of phenomena, either asserted merely as a provisional conjecture to guide investigation (a working hypothesis), or accepted as highly probable in the light of established facts.	Statement of hypothesis in any document (eg business cases, project scopes, trial plans, test reports, close-out reports, scientific papers etc).
Experiment	A test or trial; a tentative procedure; an act or operation for the purpose of discovering something unknown or testing a principle, supposition etc.	Description of the experimental method (eg trial plans, test reports, scientific papers, close-out reports, engineering drawings etc).
Observation	The act of viewing, or noting something, for some scientific or other special purpose.	Results of the experiment (eg logbook records, trial results, test reports, scientific papers, close-out reports etc).
Evaluation	To ascertain the value or amount of; appraise carefully.	Discussion of results (eg alpha-test reports, close-out reports, scientific papers etc).
Logical conclusion	The science that investigates the principles governing correct or reliable inference, and then comes up with a result, issue or outcome.	Summary of findings (eg alpha-test reports, close-out reports, scientific papers etc).

about the improved battery design, eg if the improved design performs as anticipated, the hypothesis is proved; if the improved design fails, the hypothesis is disproved.

Suggestions for relevant documentation

Core activities

Application of the scientific method. Table 4 provides examples of documentation that may be used to demonstrate that the scientific method was applied.

Generation of new knowledge. Table 5 provides examples of documentation that may be used to demonstrate the level of knowledge at the various stages throughout the R&D project.

Supporting activities

Supporting activities must be substantiated in a way that demonstrates a direct, close and relatively immediate connection to core activities.

This relationship between the activities within the Battery Project could be depicted as two distinct groups of activities, as illustrated in Figure 3.

Therefore, documents should aim to demonstrate how core activities will be affected in the absence of supporting activities.

Examples of such documentation could include those set out in Table 6.

Conclusion

The new R&D incentive has both its advantages and disadvantages. While the base benefit has increased, substantiation requirements have become more stringent.

As a strategy to prevent mendacious R&D claims, the stringent requirements of the incentive could be effective in forcing companies to, at the very least, re-evaluate the nature of and spend on their activities.

The main challenge of the incentive is to find a way of encouraging genuine, economy-building innovation by developing a formal statutory framework that provides taxpayers with certain guidelines about eligibility criteria and substantiation requirements.

Recent AAT decisions indicate a move by the government towards a more stringent expectation of record-keeping; however, there remains differing views regarding the understanding of an R&D activity, which lead to questions as to the level of substantiation required under the new incentive.

Table 5

Knowledge at project commencement	Example documentation
Publicly available knowledge	Time-stamped literature reviews, patent searches, scientific or technical reviews, trade journals, Google search results.
Initial project objectives	Project scopes, business cases, Capex and Opex approvals, expenditure requests.
Identification of knowledge gap	Analysis of a literature review, or a range of literature reviews, and identification of potential knowledge gap.
New knowledge generated from R&D	**Example documentation**
Design outcomes	Time-stamped design reports, specifications, technical drawings, progress reports, contractor reports.
Experimental results	Trial reports, test results (laboratory trials, in-situ trial or modelling), trial notes or logbook entries, issues register.
Final knowledge attained	Patent applications, scientific papers, awards, government grants, university reports, peer-review reports, close-out documents.

Figure 3. Illustration of the relationship between activities within the Battery Project

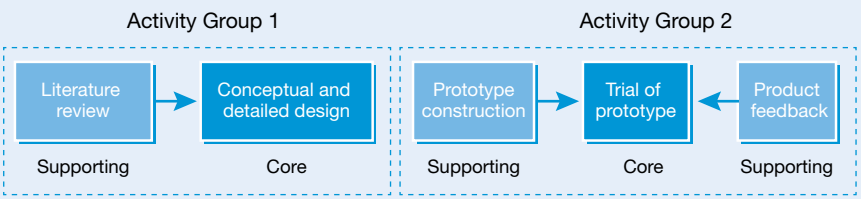


Table 6

Supporting activity	Example documentation
Literature review	Time-stamped literature reviews with details of the existing technology upon which the new design aims to build.
Prototype construction	Capex or Opex requests stating requirement for prototype to validate design and/or trials. Trial reports recommending the construction of a prototype, or prototypes, for the validation of the design. This documentation can also be used to meet dominant purpose test. Internal reports outlying the success/failure of a prototype relative to the initial proposed design.
Product feedback	Finalisation report that incorporates critical evaluation of design with improvement points. Time-stamped customer feedback with evaluation of design and suggestions (eg field/acceptance reports).

Already, many companies have either decided not to claim for the 2012 financial year, or to re-assess the viability of conducting R&D activities for years to come.

For many resource-stretched SMEs, it may be too costly and impractical for them to document their R&D activities to the standards of research centres and science laboratories. The resulting effect is that R&D may become more of a liability for companies. Rather than supporting innovation, the new incentive may discourage it.

In resolving the conflicting AAT decisions around the definitions of an R&D activity, there is a need to consider the reality that many businesses face on a daily basis and review the level of documentation required for R&D to continue to be a commercially viable activity for businesses.

Is there a medium or alternative that would sufficiently demonstrate genuine R&D without impinging on real, commercial concerns?

Would uneducated entrepreneurs such as Henry Ford, who developed the assembly line out of a commercial need to reduce production cost, have followed a scientific method as deemed logical by engineering science principles?

Historical records have shown that Thomas Edison, an entrepreneur who is not schooled as a scientist but widely regarded as one, was often more interested in patenting his invention than in documenting the R&D process. If the incentive were available in his time, would he have been eligible to claim?

Until the issues surrounding the definition of R&D activities are resolved in the Federal Court, uncertainty will continue and the substantiation conundrum will perpetuate.

Until there is more clarity around the definition of an R&D activity within the context of the new legislation, claiming on R&D may be viewed as an unfounded risk and many more companies may decide not claim.

For the moment, regardless of the view taken, it would be prudent for companies intending to make future claims to organise their activities in view of the entire R&D process, and apply a "best practice" approach that aligns with the more recent AAT decisions in the cases of *HZXD*, *RACV* and *NaughtsnCrosses.*

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