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Intellectual property and the licensing of Canadian government geospatial data: an examination of GeoConnections' recommendations for best practices and template licences

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In Canada, Crown copyright permits government to assert control over its works. These Crown rights have often been justified on the basis that government must assert intellectual property rights so as to be better able to control the accuracy, integrity and quality of any information that reaches the public through Crown works. In this article, the authors examine GeoConnections' template agreements for the licensing of government geographic data. They argue that not only is the basis and scope of claims to intellectual property rights uncertain, the objectives of quality control, data integrity and accuracy do not appear to motivate the licence terms. The uncertainty as to the legal basis of the intellectual property claims is significant, as licences of this kind may give support to otherwise weak downstream claims by third parties to

La propriété intellectuelle et l'octroi de licences de données géospatiales du gouvernement du Canada: un examen des recommandations proposées par GéoConnexions sur les pratiques exemplaires et les modèles de licences

Au Canada, le droit d'auteur de la Couronne donne le pouvoir au gouvernement d'exercer un contrôle sur ses propres ouvrages. L'appropriation de ces droits par la Couronne se justifie souvent en invoquant que le gouvernement doit exercer des droits de propriété intellectuelle afin de pouvoir mieux contrôler la précision, l'intégrité et la qualité de l'information qui est communiquée au grand public via ses ouvrages. Cet article propose d'examiner les modèles d'entente produits par GéoConnexions pour l'octroi de licences de bases de données géographiques du gouvernement. Il est démontré que non seulement les fondements et les dispositions sur lesquels les droits de propriété intellectuelle sont établis ne sont pas rigoureux, mais que les objectifs poursuivis en matière de contrôle de la qualité, de l'intégrité des données, et de précision ne font pas partie du protocole de délivrance des licences. Les recours intentés en matière de propriété intellectuelle

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copyright in data products generated through the use of geographic data provided by the Crown.

Key words: copyright, licensing, intellectual property, geospatial data, government data, Crown copyright, GeoConnections

s'appuient sur des bases juridiques incertaines. En vertu de ce type de licences, des tiers pourraient se sentir justifiés de réclamer des droits d'auteur complémentaires sur les produits de données dérivés des bases de données géographiques appartenant à la Couronne.

Mots clés: droit d'auteur, octroi de licences, propriété intellectuelle, données géospatiales, données gouvernementales, droit d'auteur de la Couronne, GéoConnexions

Introduction

Governments are a major collector of geospatial data across a broad range of sectors. Consistent with practices in comparable nations, the Canadian government has moved towards making its collections of geospatial data publicly accessible through databases such as GeoBase (<http://www.geobase.ca>) and GeoGratis (<http://geogratis.cgdi.gc.ca/>). Although governments might make geospatial data widely available, public access may still be subject to legal conditions. Governments may choose to make the data available freely and without restrictions on use, or access to the data may be subject to licence terms that restrict certain uses and activities.

With a view to facilitating the dissemination of government geographic data in its broadest sense, GeoConnections (<http://www.geoconnections.org>), an organization led by Natural Resources Canada, has developed a best practices guide, *The Dissemination of Government Geographic Data in Canada: Guide to Best Practices (Best Practices)* (GeoConnections 2008), which includes a series of template licence agreements to assist all federal government agencies and departments in disseminating geographic data and to provide model terms to govern the access to such data online. As the *Best Practices Guide* makes clear, its templates seek to provide a uniform approach for geographic data across federal departments and agencies, and their application extends beyond data generated by Natural Resources Canada. To provide a sense of the scope covered by the document, the *Best Practices Guide* illustratively lists Agriculture and Agri-Food Canada's National Land and Water Information Service and National Agri-environmental

Health Analysis and Reporting Project; the Department of National Defence's Military Planning and Operations; Elections Canada's Election Planning and Management; Environment Canada's Canadian Ice Service, Meteorological Service of Canada, Environmental Emergencies Mapping Program, Climate Change Variability and Extremes, RésEau and Ontario Region's Information System for the Environment; Fisheries and Oceans Canada's GeoPortal, St. Lawrence Observatory, Canadian Hydrographic Service and Canadian Coast Guard; Health Canada; Indian and Northern Affairs Canada; Natural Resources Canada's National Atlas of Canada, National Forest Information System, GeoGratis, Earth Observation Data Services and Canadian Geoscience Knowledge Network; Parks Canada; Public Safety Canada's Emergency Preparedness and Response Coordination; Public Works and Government Services Canada; Royal Canadian Mounted Police; Statistics Canada's Population Census, Census of Agriculture and Canadian Environmental Sustainability Indicators (GeoConnections 2008, 16-17). The data covered by the licences thus range from geospatial coordinates to information represented in a geographic context.

These licences are founded on the assumption that the government holds intellectual property (IP) rights in its data. The licences also require express acknowledgement of government as the source of the base data in any downstream products, while at the same time disclaiming any responsibility for flawed or faulty data.

Like Canada, other jurisdictions are debating whether and how to license government geospatial data; however, each national context presents its own legal issues due to sometimes significant differences in rules around government

ownership of government works, the test for originality in copyright, and other variations in intellectual property law. For example, in the European Union (EU), an entirely different *sui generis* legal regime has been mandated for database protection, which provides different legal protection than what is generally available under national copyright law. Moreover, the EU also passed a specific directive in 2007 to establish an *Infrastructure for Spatial Information in the European Community* (INSPIRE) (EU 2007). Without affecting existing intellectual property rights in spatial information, INSPIRE is designed to create infrastructures to encourage data interoperability and data sharing by building on the existing infrastructures of the member states for spatial information.

Differences from jurisdiction to jurisdiction may pose significant challenges for those who seek to use various sets of data in complex trans-border applications such as air or marine navigation. While there is scholarship addressing the state of the law in other countries (Onsrud 1998; Onsrud and Lopez 1998; National Research Council 2004; Cho 2005), little has been done that focuses on the Canadian legal context. The GeoConnections *Best Practices Guide* and templates make an important contribution, and this paper engages with the complex issues raised by these licences.

In this paper we examine a GeoConnections template agreement. We explore the intellectual property claims on which the agreement is based and the underlying public policy issues. Crown copyright has long been a means by which government asserts control over its works, often with the expressed objective of ensuring the accuracy and integrity of any information they contain. In the case of GeoConnections' template licences, not only are the claims to intellectual property rights uncertain, the objectives of quality control, data integrity and accuracy do not appear to motivate the licence terms. Neither the *Best Practices* document nor the licences draw any meaningful distinctions between data in its raw form and data that are graphically represented, as in maps, aerial photographs, digital elevation models, subsurface visualizations and satellite imagery. Founded on weak intellectual property claims, the licences may actually bolster flimsy downstream claims by third parties to

copyright in data products generated through the use of government geospatial data. To the extent that intellectual property rights subsist in such data sets, we consider whether these rights are sufficiently leveraged in the template licences so as to maximize the integrity, accuracy and quality of the data in downstream uses.

Licence Examined

In *Best Practices*, GeoConnections offers a series of model templates for licence agreements. The templates vary depending on whether the licence is fee-based or not and whether there are end-use restrictions. The templates are provided following a discussion of the development of an integrated framework for the licensing of government geographic data. The integrated framework is grounded in the existing legal context, and *Best Practices* contains a discussion of the applicable laws, most notably those regarding intellectual property rights. While a number of different licence templates are provided, the underlying intellectual property principles are the same for all. We focus on the *No-Fee Unrestricted Use Web Wrap Licence Agreement for Government Geographic Data [Agreement]* in Appendix A to avoid excessive cross-referencing (GeoConnections 2008, 93-102).

The *Agreement* is an online contract that applies when users browse, download or access data through a web interface. As with most web-based contracts, users who access the data are presumed to have read the agreement and are legally bound by it. The first part of the *Agreement*, titled 'Background', declares that 'Canada is the owner, or licensee, of Intellectual Property Rights in and to Canada Digital Data' pertinent to the *Agreement*. According to the definitions in s. 1.3 of the *Agreement*, Canada Digital Data include the data, metadata and related documentation. Canada Digital Data may consist of 'Canada's Data', which is defined as the data in which the intellectual property rights vest with Canada, but may also include other data, in which the intellectual property rights vest with third parties and are licensed to Canada.

The *Agreement* grants the licensee a 'royalty-free, nonexclusive, world-wide, non-assignable licence to use, reproduce, extract, modify,

translate, further develop and distribute the Canada Digital Data, and to manufacture and license Value-Added Products, and to sublicense any or all of such rights' (s. 3.1). In exchange, the licensee must acknowledge the source of the data in any reproduction of the data according to the terms provided for in s. 4.1. If the data are incorporated in a value-added product, a separate notice must be prominently displayed on the product in the terms set out in s. 4.2. While licensees must acknowledge the source of the data in the stipulated terms, they may not use any other language or symbols that might suggest an association with or endorsement by the government of Canada (s. 4.3). Licensees must also not imply that they have an exclusive distribution arrangement for the data (s. 5.2). The licensed data may not be used in any way that 'may bring disrepute to or prejudice the reputation of Canada' (s. 5.3). The licensee agrees to submit any promotional literature referring to the data or a relationship with the government for approval. Licensees must also notify Canada of any third party infringement of the data, and must assist with the enforcement of 'Canada's Intellectual Property Rights'.

The *Agreement* includes a series of disclaimers which state that Canada makes no representations and gives no warranty with respect to the 'accuracy, usefulness, novelty, validity, scope, completeness or currency' of the data provided under the licence. The terms include a waiver of all liability relating to the possession or use of the data, and the licensee agrees to indemnify the Crown and its agents from all third-party claims relating to the use of the data in any way, including in the manufacture, distribution or publication of any value-added products (s. 6.1-6.3).

IP claims for geospatial and geographic data

The *Best Practices Guide* refers to 'geographic data', which is not defined, but which is clearly used in its broadest sense, and would include geospatial coordinates as well as representations of geographic features or phenomena. For example, the *Best Practices Guide* states: 'Government geographic data sets may consist of an arrangement of raw data such as facts, bare statistics, characters, symbols or other similar data; or may

be comprised, in whole or in part, of other copyrighted works'. (GeoConnections 2008, 58). Neither geographic nor geospatial data are defined terms in the licences. The *Best Practices Guide* contemplates the licensing of data in a variety of forms, from geospatial data to representations of that data such as maps or photographs.

The *Agreement*, like the other template agreements proposed by GeoConnections in *Best Practices*, is premised on Canada owning the intellectual property rights in Canada's Data. Canada's Data is defined as 'that Data contained in the Canada Digital Data, the Intellectual Property Rights of which vest in Canada'. 'Data' are separately defined as 'any expressed original data fixed in a form giving rise to Intellectual Property Rights' (s. 1.4), 'such as' (but presumably not limited to) the specific data sets identified in a schedule to each licence. Thus to come within the scope of the *Agreement's* definition of 'Data' and be subject to the licence, it is a necessary condition that the data can qualify for intellectual property protection. This may seem straightforward, and even tautological, but there are few legal avenues for data to qualify as protected intellectual property.

The *Agreement* is vague about the basis for any intellectual property claims. Intellectual property rights are defined in s. 1.5 as 'any and all intellectual property rights recognized by the law, including *but not limited to*, intellectual property rights protected through legislation' (emphasis added). The *Agreement* therefore contemplates that intellectual property protection can arise not only from the main statutes (*Copyright Act, Patent Act, Trade-marks Act*), but also from the common law, as, for example, in a claim for damages for the unauthorized disclosure of confidential information.

Although it is theoretically possible for data to be protected as confidential information, the terms of the *Agreement* are necessarily inconsistent with the legal requirements for this form of intellectual property protection. To qualify as confidential information at common law, the information must be secret, have value because of its secrecy, and have been subject to reasonable steps to keep the information secret (World Trade Organization 1994, art. 39(2)). Data made accessible through a public website cannot meet these criteria.

The only other reasonable basis for any intellectual property claim in the data would be copyright, a purely statutory form of legal protection. Indeed, the *Agreement's* definition of 'Data', in referring to 'any expressed original data fixed in a form...', uses language that is drawn from copyright law. For copyright protection, there must be an author, an original expression and fixation in a material form (Canada 1985, ss. 2, 3, 5). In Canada, 'originality' requires that a work 'must be the product of an author's exercise of skill and judgment' that 'must not be so trivial that it could be characterized as a purely mechanical exercise' (CCH 2004, paras. 15-16). By international agreement, copyright protection does not extend to 'ideas, procedures, methods of operation or mathematical concepts' (World Trade Organization 1994, art. 9(2)). As the Supreme Court of Canada recently affirmed, copyright protection 'does not extend to facts or ideas but is limited to the expression of ideas' (CCH 2004, para. 22).

Thus, raw data are not copyrightable subject matter, but data can be compiled or graphically represented and the original contributions in those products can qualify as 'original expressions' that come within copyright's scope. In simple terms, a factual datum, such as that an individual resides at a given address, does not qualify for copyright protection, but if a group of those facts were part of a compilation and the selection or arrangement was original, the choices making up the original selection or arrangement can be copyrightable. Additionally, graphic representations of data, such as 'drawings, maps, charts, plans, [and] photographs' are eligible for copyright protection as artistic works provided they are original (Canada 1985, s. 2). Peculiarly, the *Agreement's* definition of 'Data' refers to any 'expression of original data', which is quite a different thing from the standard for copyright protection, which is an 'original expression' of data or an original selection or arrangement of a compilation of data. If only original expressions can be copyrighted, the extent of any intellectual property claims in data under the licence is dubious and certainly cannot reach the raw underlying data.

Best Practices offers some insight into the grounds for the intellectual property claims on which the template agreements are based. In

Chapter 4, GeoConnections acknowledges that the raw data cannot be protected by copyright law, providing as a section head: 'Raw Data is not Protected under the Copyright Act' (ch. 4.2.3). The document goes on to state that copyright subsists 'in the depiction, representation or expression of such roads, distances and boundaries, provided they are original'. In other words, while raw location data cannot be protected, its expression in a map or chart, if original, can be. This is consistent with the *Copyright Act's* protection for artistic works, which includes maps, charts and plans (s. 2); however, the statement is hard to square with the *Agreement* itself, which refers only to 'Data', and not to copyrightable subject matter such as maps, charts or photographs that might be provided to the licensee.

Best Practices also states that data sets may qualify for protection as 'compilations' (ch. 4.2.4). This too is consistent with the *Copyright Act*, which protects compilations, including 'a work resulting from the selection or arrangement of data' (s. 2) as long as they meet the requirements of originality. However, it is clear that the originality must lie in the 'selection or arrangement' of the data and that the protection 'shall not extend to the data or material itself' (World Trade Organization 1994, art. 10(2)). What might constitute an original 'selection' of data under Canadian law is unclear (Scassa 2006), but it is likely that a data set, particularly a 'whole of universe' data set, that is ordered chronologically, numerically or alphabetically and where the entire data set is provided without selection, would not contain sufficient originality in its arrangement to attract copyright (Judge and Gervais 2009).

The fact that a set of geospatial data is the product of expensive, complex and labour-intensive processes will not suffice to make it original. The cost and work involved in compiling data do not render it protectable in copyright law, as the Supreme Court of Canada has expressly rejected the 'sweat of the brow' approach to originality in copyright law (CCH 2004). Where, however, the data are analyzed and compiled through an exercise of skill and judgement, sufficient originality to ground copyright may be found. For compilations, that originality will lie in the author's selection and arrangement of the data.

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Even if a data compilation were to be protected, copyright law would provide recourse only against an unauthorized reproduction of all or a substantial part of the original expression, that is, the selection or arrangement, and not the data itself (Gervais and Judge 2005, 37). If the underlying data were mined so as to present certain data in a new arrangement, there would likely be no copyright infringement, as there would be no copying of the protected original expression in the selection or arrangement. The new selection or arrangement would not only be unlikely to infringe any copyright, but, if original, would be protected. In an area so replete with uncertainty, it will often be difficult to determine the existence or scope of any copyright in a data set.

The situation is different with data that is represented graphically—such as a map or chart—as these can be eligible for protection as artistic works if they are original expressions. Maps are one of the oldest categories of copyright works, yet they still pose interesting challenges because it is difficult to separate unprotected factual geographic data from their protected original expression in the map. The location of a road, for example, is a representation of a non-copyrightable fact (the road exists); yet the depiction of the road may be the result of the map maker's interpretation of the data, as well as her choices as to how to represent it, which are protected if they reflect an exercise of skill and judgement. Despite these difficulties, maps are routinely protected by Canadian courts, including maps created using software and digital scanning equipment (Weetman 2001; Scassa 2003–2004, 60; *R v. Allen* 2006).

Aerial photographs also raise interesting issues. Photographs are protected as artistic works (Canada 1985, s. 2). However, like all other copyright works, they must be original. A photograph taken by a satellite would lack the requisite originality unless it could be shown that there was an exercise of skill or judgement by a human author and that it was not a purely mechanical result. Images from satellite equipment could be interpreted in two ways. If the satellite imagery is analogized to pictures from a camera, the resulting images would be protected if there was a human operator of that equipment (which could of course be remote) and the image reflected in-

dividual choices of composition, lighting, weather conditions, etc. If the satellite images are analogized to output from a computer, the images would be protected if there is original expression in the software code (Gervais and Judge 2005, 36, 28–30). In *Best Practices*, a 'case study' flow chart which labels an aerial photograph as 'Facts (raw data)' (59) is potentially misleading. Under copyright law, there is a significant difference between raw data and the representation of that data. Copyright protects the photograph—the visual representation—if it is an original expression but not the data.

It would seem, then, that the *Agreement* is based on intellectual property claims that are highly uncertain at best. There is very little case law in Canada on the extent of copyright in factual compilations, and it is doubtful whether any given compilation of data will present a sufficiently original selection or arrangement to attract copyright protection, especially if the data purports to be a 'whole of universe' data set. The protection would not extend to the underlying data. Further, while an interpretation of the data might require skill and judgment, it is unlikely that copyright would prevent any other party from using the same raw data to arrive at similar interpretations. Copyright clearly extends to maps or charts, but issues still remain about how to distinguish the protected original expression of geographic data from the unprotected underlying data.

Best Practices was created for use by the federal government and its departments; this raises additional issues regarding the scope of claims. The federal government holds copyright in its works by virtue of Crown copyright (Canada 1985, s. 12). However, an historical 'royal prerogative', preserved by the current copyright legislation, may give additional rights to the Crown. The contours of the royal prerogative are uncertain, but statutes, regulations and court decisions are typically considered to be protected through royal prerogative in perpetuity, and not just for the statutory copyright term of 50 years from first publication that applies to other government works, such as reports and studies, which must meet the normal requirements for copyright (Judge 2005). Although not all agree, since the eighteenth-century courts and governments have argued that Crown copyright enables

government to control the quality and integrity of works it produces and therefore is necessary and provides a public benefit (*Millar v. Taylor* 1769; *AG New South Wales* 1938; *Rex v. Bellman* 1938; UK Cabinet Office 1999, para. 5.1). As the scope of the royal prerogative in relation to government data has never been judicially considered, it is conceivable that the Crown might assert a form of copyright in its data that is distinct from the rights granted under the *Copyright Act*. Like the prerogative claims that protect certain official texts in perpetuity, this right could be asserted to protect official data (e.g., Canada's Data) in perpetuity.

Two final possibilities for legal protection of data should be mentioned. Some jurisdictions such as the European Union have separate laws apart from copyright that provide *sui generis* rights in databases that extend to their contents (EU 1996). Canada, however, has no such protection. Second, contract law can be used to protect data. A contract between the government and a licensee for use of government-generated data need not be predicated, as this *Agreement* is, on the government having underlying intellectual property rights in the data. However, a contract cannot create intellectual property rights that do not meet the legal requirements for subsistence.

The problems with the uncertain basis for the government's intellectual property claims in these data are compounded because they set the stage for third parties to make similar claims. According to the *Agreement*, licensees are permitted to improve and modify the licensed government geographic data and can retain intellectual property rights in those modifications, translations and developments (s. 2.1), while s. 2.2 preserves Canada's and third-party rights in the source Canada Digital Data. Licensees (excepting other Crown entities) could not base their intellectual property claims on the royal prerogative, and other grounds to protect the modifications would be vulnerable to the same weaknesses in the copyright claims that are discussed above. Yet, the wording of s. 2.1 suggests that the act of modifying data constitutes a basis for intellectual property rights to vest in the licensee. Section 2.1 does not make it clear that the modifications must constitute original expression. Purely mechanical changes, such as

changing the line weight for every street centre line in a map or changing the font in which all labels are expressed, would not be sufficient to attract copyright protection. Even where changes are more than purely mechanical, copyright law would only protect the expression, and would not extend to the facts expressed.

Implications of IP claims in licence

Given the doubtful basis under copyright law for a claim to rights in data, royal prerogative may be the strongest ground for the government's intellectual property claim in the *Agreement*. The Government could argue that the assertion of royal prerogative in geospatial data is justified for public policy reasons, such as the need to maintain control to ensure the integrity and quality of the data. Support could be drawn from statutes and case law, which are protected under the royal prerogative. The *Reproduction of Federal Law Order* permits the free reproduction of laws to ensure the goal of improving access, but on the conditions that the person reproducing the data exercises 'due diligence ... in ensuring the accuracy of the materials reproduced and the reproduction is not represented as an official version' (Canada 1996, para. 4). The *Agreement* does require that the government source of the data be acknowledged and it prohibits false suggestions of official endorsement (s. 4). However, the *Agreement* does not have comparable stipulations as in the *Reproduction of Federal Law Order* to protect accuracy and integrity.

Not only do the *Agreement's* intellectual property claims rest on doubtful foundations, but the government has not leveraged those claims to protect the quality of the government-generated data in downstream uses. It is relatively easy to control data quality if public access is limited to non-commercial uses such as individual database queries. It is a vexed question though how the government should, on the one hand, encourage innovation through the creation of value-added products based on government-generated geospatial data and, on the other hand, control the quality of that data in downstream products.

The *Agreement* anticipates and permits users to 'use, reproduce, extract, modify, translate, further develop and distribute the Canada Digital Data'(s. 3.1), and to manufacture and license

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Value-Added Products, providing certain conditions are met. The licensee must acknowledge that the data were reproduced with the permission of the particular government department (s. 4.1); for value-added products, state that the notice of the source shall not be construed as an endorsement (s. 4.2); and the acknowledgement must be separate from any promotional materials which cannot contain Canada's crest, name or flags, unless there is prior written approval (s. 4.3). Those conditions do nothing to prevent data quality problems that might arise from the use of data for purposes for which it is unsuited, the reliance on outdated data, or the combination of data sets of differing qualities in a value-added product. Because the licence contains no requirement to retain metadata, an end user might have difficulty gauging the suitability or quality of the underlying data.

Other licence provisions affecting data quality

Other provisions (or the absence of such provisions) in the *Agreement* further exacerbate the risks to data quality. Most pointed are the explicit disclaimers in s. 6, which provide that 'Canada makes no representation and gives no warranty of any kind with respect to the accuracy, usefulness, novelty, validity, scope, completeness or currency of the Canada Digital Data...'. In addition, the *Agreement* does not impose an obligation on licensees to ensure data quality or to preserve and maintain the associated metadata. This *Agreement*, which is an unrestricted licence, allows and encourages extractions, modifications and translations of the data.

Conclusion

The GeoConnections template agreements for licensing government data are based on weak and uncertain claims to intellectual property rights in data. In the absence of an express database protection regime such as exists in Europe, it is difficult to identify with any certainty the scope or extent of rights in any given compilation of data. It is remotely possible that government claims to rights in data are based on the royal prerogative, yet none of the hallmark public policy ob-

jectives of ensuring control over quality and integrity are present in the template agreements. In any event, claims based on the royal prerogative would not secure any rights for downstream developers that they would not be entitled to under the *Copyright Act*.

The scope of intellectual property rights in data is likely to continue to bedevil licensors and licensees of compilations of raw data, particularly 'whole of universe' data sets, in jurisdictions like Canada where there is no express database protection regime. In spite of a fairly weak intellectual property law foundation, GeoConnections proposes an Agreement that asserts a confident claim to rights in the underlying data. The Agreement is a missed opportunity for government licensors to address quality concerns. These concerns might be satisfied, at least in part, by a requirement to maintain and update as necessary, and in accordance with accepted standards, any metadata that accompanies the data.

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Query

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