Fee Modernization Proposal

Transport Canada

Aeronautical Product Approvals

Canadian Aviation Regulations (CAR) 104, Schedule V

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Executive Summary

The Canadian aerospace industry is diverse, ranging from multinational companies that develop and manufacture entire aircraft, to sole proprietorships offering engineering services, to owners who wish to modify or repair their aircraft. Collectively, these groups rely on Transport Canada (TC) to review and approve aeronautical product designs. In Canada, aeronautical product designs must be approved by TC, acting on behalf of the Minister of Transport. TC reviews aeronautical product designs to ensure that these designs meet Canadian and international standards. TC approval enables the use of these products in Canada and their exportation to the global market.

TC approvals are considered by many within the aerospace industry to be a "gold standard". Private companies benefit from the aeronautical product approval services provided by TC, not just because it allows them to sell their products in Canada, but because TC approvals are highly regarded by foreign authorities. TC approvals also benefit smaller companies and individuals, by allowing them to develop modifications to aircraft designs that could be marketed to the owners and or operators of aircraft, who can utilize these innovations. Aeronautical product approvals therefore offer significant benefits to the Canadian aerospace industry.

Currently, nearly all of the costs of providing aeronautical product approvals are borne by Canadian taxpayers. A key principle underlying any cost recovery initiative is that service recipients who receive a direct benefit above those enjoyed by the general public should pay a greater share of the costs. The fees for aeronautical product approvals need to be increased to ensure that this principle is realized. As a result, the playing field will be rebalanced, with Canadian taxpayers paying less of the costs associated with providing services that result in benefits to private companies or individuals.

While TC currently charges fees for aeronautical product approvals, the fees have not changed in approximately 20 years and only cover a small fraction of the cost of providing these services. Moreover, the fees for the most labour-intensive and complex approvals provided by TC are capped, meaning there is a maximum total charge that can be applied to a project, regardless of how long the work actually takes to complete. New technologies are making the approval of aeronautical product designs extremely complex and time-consuming. Designs can now take far more time and effort to approve, often far exceeding the number of hours that can be recouped through fees under the current regime.

TC currently provides some aeronautical product approval services for an hourly fee, others for fixed fees. It also provides many other services for which no fees are charged, such as various post-certification changes to approved designs. The current hourly fee is $40 per hour, while the fixed fees range from $180 to $2,455, depending on the service being provided.

Transport Canada performed a rigorous costing analysis, determining that the full cost of certifying aeronautical products is $263 per hour. This hourly cost is based on the average cost of delivering these services over the three year period covered by fiscal years 2014-15 to 2016-17. This is the hourly cost of providing all services associated with aeronautical product approvals, regardless of whether the services are currently provided for hourly or fixed fees, or are provided free of charge.

A more complex and time-consuming design review and approval process, the low hourly and fixed fee rates, and the existence of a hard fee cap, have combined to create a situation where TC is recovering a progressively smaller percentage of the actual costs of providing these services. Given this reality, the need to revise the fee structure and raise fees for aeronautical product approvals is apparent.

The goal of this Fee Modernization Proposal is to establish sustainable and equitable fees. The proposed fees more accurately reflect who benefits from the services provided by TC, while also taking into consideration the following factors:

- The benefit these services provide to companies and individuals;
- The fees other jurisdictions charge for similar services;
- The economic context of the aerospace industry, including companies' ability to pay higher fees; and
- The impact of rising fee levels on the industry.

Taking all these factors into account, TC proposes to:

- Set an hourly fee of $105;
- Remove the hard cap on hourly fees;
- Replace fixed fees with newly designed "hybrid fees", which would allow TC to recover a greater amount of its costs when a fixed fee project requires extensive time and resources;
- Raise the existing fixed fees from a range of between $180 and $2,455 to a range of between $450 and $3,544, depending on the service;
- Introduce new fees for some services it currently provides for free; and
- Compress some fee items to make the CAR 104, Schedule V less prescriptive and more flexible.

The fees for aeronautical product approvals will be raised to better reflect the benefits these services provide to the Canadian aerospace industry. The proposed changes would increase the overall cost recovery rate for aeronautical product approvals from approximately 2.9 percent to 15.2 percent. Canadian taxpayers will pay a smaller percentage of the costs while the beneficiaries of these services will be asked to pay more.

1.0. Context

1.1. The Importance of Aeronautical Product Approvals

Transport Canada (TC) performs many activities that directly benefit the Canadian aerospace industry, including approving aeronautical product designs (which can include anything from the design of an entire aircraft, such as Bombardier's Global 7000, to engines or the installation of Wi-Fi antennas). Approval of these designs is one step in the process necessary for an aircraft to receive "flight authority". Flight authority confirms that the aircraft is in compliance with the applicable type design and is fit and safe for flight. Flight authority is required before an aircraft is allowed to fly.

To receive flight authority, an aircraft's overall design and its major aeronautical components must be approved, indicating they meet design standards set by the International Civil Aviation Organization. These design standards are incorporated into Canadian law by the *Canadian Aviation Regulations* (CAR). In Canada, TC approves aeronautical products on behalf of the Minister of Transport. TC issues initial approval documents to Canadian-based companies, and facilitates the issuance of approval documents to Canadian companies in foreign jurisdictions, allowing these companies to sell their products abroad. TC also issues approval documents to foreign companies wishing to sell their products for use in Canada (generally after their domestic authority issues the initial approval, but occasionally such approvals are issued concurrently).

The important role played by TC in the development of aeronautical products has long been recognized by the members of the Canadian aerospace industry. The Aerospace Industries Association of Canada (AIAC) has frequently remarked that "[…] certification and regulatory approvals from [TC] are globally recognized as being the gold standard for civil aviation products and services. TC's reputation has given Canada's civil aviation manufacturing sector a critical competitive advantage since it facilitates Canadian trade and export opportunities around the world, opening doors for Canadian products and services into new markets […]"[1]. The success of the Canadian aerospace industry is tied to TC's ability to provide timely and high quality service.

1.2. The Growing Complexity of Aeronautical Product Approvals

The fees for design approval services have not increased since 1998, failing even to account for inflation. Moreover, the increasing technical complexity of aeronautical products has exponentially increased the number of TC specialist hours required for many projects. As a result, revenue from fees is covering progressively less of the costs of providing these services.

The industry is well-aware of these issues. In its annual pre-Budget consultation submissions over the last several years, the AIAC consistently recommends that additional funding be ear-marked for the

[1] See, for example, Pre-Budget Consultation submissions made by the AIAC in 2016 and 2017. These can be viewed at the following web addresses:
2016 (Budget 2017): https://www.ourcommons.ca/Content/Committee/421/FINA/Brief/BR8398534/br-external/AerospaceIndustriesAsscoiationofCanada-CivilAviation-e.pdf
2017 (Budget 2018): https://www.ourcommons.ca/Content/Committee/421/FINA/Brief/BR9073480/br-external/AerospaceIndustriesAssociationOfCanada-e.pdf
See also the AIAC's "Aerospace Innovation White Paper" (September 2016): http://aiac.ca/wp-content/uploads/2016/11/Innovation-Aerospace-White-Paper-Final_web.pdf

aircraft certification program.[2] Asking the primary beneficiaries to bear more of the costs of providing these services will increase the resources available to the aircraft certification program without having to increase the burden on Canadian taxpayers.

2.0. Issue

Section 104 of the CAR (CAR 104), provides the authority to charge fees for services. However, these fees have not been updated since 1998. Over the same period, new technologies have made the approval of aeronautical product designs a more complex undertaking. The fees therefore only recover a small proportion of the actual costs of providing these services.

About three percent of the total cost of providing aeronautical product approval services is currently covered through service fees, but TC estimates that approximately 80 percent of the benefits from these services go directly to private entities. As the primary beneficiaries of these services, these companies and individuals should pay more of the costs.

3.0. Objective

TC proposes to increase the fees it charges for aeronautical product approvals. Higher fees would lessen the burden these costs place on the Canadian taxpayer. Those who benefit the most from these services will pay a greater share of the costs.

4.0. Fee Modernization at Transport Canada

TC's Fee Modernization initiative will apply a consistent and coordinated approach to cost recovery that will affect more than 600 fees and other regulatory charges. A modernized cost recovery regime is consistent with the principles underlying the *Service Fees Act* and also aligns with the goals of the Transportation 2030 modernization initiative championed by the Minister of Transport.

Fee Modernization will allow TC to revise outdated marine and aviation safety regulatory frameworks, increase Canada's engagement with international partners and support the economic competitiveness of Canadian industries, enhancing its role as an economic enabler and ensuring that its regulatory activities are modern, flexible, and capable of encouraging and supporting innovation and investment.

Fee Modernization will result in:

- Increased Equity: Primary users pay a larger portion of the costs, rather than all Canadians.
- More Transparency: Stakeholders and government become more aware of actual costs of delivering services.
- Increased Sustainability: Reduce strain on the fiscal framework.
- Greater Accountability: Ensure services meet published performance standards.

By implementing a modern fee regime that asks the beneficiaries of services to pay a more equitable and sustainable level of the costs for these services, the Department will be able to redirect tax dollars to other activities with broader public benefits. Canadians and fee payers will both benefit from this rebalancing as TC undertakes Fee Modernization and other Transformation initiatives.

[2] Ibid.

5.0. Current Environment

5.1. Statutory Framework

Section 4.4 of the *Aeronautics Act* gives the Governor in Council the power to make regulations imposing charges "in respect of the issue, renewal, amendment or endorsement of any document issued or to be issued […] or any action preparatory thereto."

CAR 104, and its related Schedules I-VII, impose the fees envisioned by section 4.4 of the *Aeronautics Act*. Activities related to aeronautical product approvals are set out in CAR 104, Schedule V.

The relevant statutory provisions can be viewed on the Department of Justice website at the following links:

- Section 4.4 of the *Aeronautics Act*: http://laws-lois.justice.gc.ca/eng/acts/A-2/page-2.html#h-7
- CAR 104: http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/page-6.html#h-27

5.2. Current Fees

The current CAR 104, Schedule V fee structure is a mixture of hourly and fixed fees.

The current hourly fee is $40. There are 66 individual services charged at the hourly rate.

In addition, for each of the existing hourly fee services, a hard fee cap (a maximum chargeable amount over the life of a project) has been written into the regulations. Fees are charged at the hourly rate until the hard cap is reached, after which no further fees can be charged for that approval project, even if work is ongoing. The fee cap varies depending on the product and type of certification being performed, ranging from a low of $3,662 to a high of $504,680.

Hourly fee services do not always hit the applicable hard fee cap, but in the cases where the cap is reached, the impact on revenues is significant. The existence of the hard cap on hourly fees means that the effective hourly rate is often much lower than the nominal $40 per hour, as TC specialists can often put in thousands of hours of work after the hard cap has been reached.

A number of recent examples can be used to demonstrate this point. Table 1 below provides data until the end of fiscal year 2016-17 for projects that exceeded the applicable hard cap, and the impact of the hard cap.

Table 1 – Impact of the Hard Fee Caps on TC Revenues in 2016-17

Project	Applicable Cap	Hours to Reach the Cap (@$40 / hour)	Hours Used After Cap	Foregone TC Revenues ($40 / hour)	Effective Hourly Rate for all Hours Worked
A	$504,680	12,617	156,416	$6,256,640	$2.99
B	$185,160	4,629	4,943	$197,720	$19.34
C	$131,040	3,276	10,984	$439,360	$9.19
D	$42,590	1,065	863	$34,520	$22.10
E	$90,000	2,250	2,425	$97,000	$19.25

When a project hits the hard cap, it often does so months or years before work on a project is completed. The impact of the hard fee cap on the effective hourly rate TC recovers for its services is significant in these cases.

The CAR also allows TC to charge $120 per hour if, at the request of an applicant, TC assigns technical specialists to work on a file on a priority basis. This $120 per hour rate was intended to deal with "surge" demands for services to meet specific, short term needs in excess of basic levels of service. For example, this "surge" rate could be used if specialists work evenings or weekends in order to issue a design approval document in time to meet commercial commitments made by an applicant. It should be noted that, although this type of work occurs frequently, this charge is rarely used, due to the fact that these "surge" services are normally required only after a project has hit the applicable fee cap.

These figures do not include incremental expenses (e.g. transportation, lodging, meals, overtime) incurred if a specialist has to travel outside of Canada for certification work. CAR 104 allows TC to recover these expenses at a 100 percent rate, separate from the fees charged under Schedule V.

In addition to the services charged as hourly fees, CAR 104, Schedule V also includes 38 services that are provided for fixed fees. Fixed fees are charged for a variety of services (e.g. repair designs approvals and the issuance of supplemental type certificates), and range from $180 to $2,455.

CAR 104, Schedule V can be viewed on the Department of Justice website at the following link:

- Schedule V: http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/page-11.html#h-37

TC has recovered an average of approximately $1.56M per year from Schedule V fees, based on the three-year average from fiscal years 2014-15, 2015-16, and 2016-17. This represents an average of 2.9 percent of the costs associated with providing aeronautical product approval services.

6.0. Cost Analysis

TC undertook a comprehensive costing exercise using Activity Based Costing principles to estimate the cost of delivering services under CAR 104, Schedule V. The exercise adhered to the Treasury Board of Canada Secretariat's (TBS) *Guidelines on Costing* and followed TC's Cost Recovery Costing Policy to arrive at a defensible and transparent cost estimate.

6.1. Determining Full Cost

Costing for cost recovery purposes requires that the "full cost" of delivering an activity be calculated. According to the *Financial Administration Act* and applicable TBS guidance, full cost is the allowable upper legal limit that can be recovered through cost-based fees. Full cost represents the departure point for determining pricing options. A full cost estimate comprises all relevant resource costs incurred to deliver an activity or provide a service, including direct and indirect costs, specifically:

- Employee salaries;
- Operating and maintenance;
- Amortization of capital assets;
- Program support;
- Internal services;

- Centrally managed costs, such as employee benefit plans; and
- Services provided by other departments, such as office accommodations.

To capture these elements and calculate full cost, historical expenditure details and time-tracked data were analyzed to determine the resource consumption and level of effort needed to provide aeronautical product approval services. Data spanning three fiscal years (2014-15, 2015-16, and 2016-17) were reviewed to ensure the reliability and validity of the cost estimate.

Based on the results of the cost estimating analysis, the average full cost for delivering aeronautical product approval services is approximately $55.06M. This figures includes the cost of services for which fees are currently charged ($37.95M) and the cost of providing services for which there are currently no fees, but for which TC is proposing to introduce fees ($17.11M).

Further analysis determined that the cost per hour for delivering CAR 104, Schedule V services is $263. This is also the cost of design approval services currently provided for free. This figure represents the annual full cost of Schedule V services divided by the number of direct hours required to deliver the activities.

The $263 hourly cost figure was used as the basis for determining the average cost of delivering each fixed fee service. This is known as the “cost-per-unit”. Cost-per unit was calculated by first determining the total cost of delivering the service. The number of hours coded against that service, multiplied by an hourly cost of $263 gave the total cost associated with that service. The total cost was then divided by the number of approvals actually delivered. A three-year average was used to determine the estimated cost-per-unit.

For example, TC issued ten of a particular approval document in one year. The time coded in TC’s systems shows that TC staff spent a total of 100 hours working on those documents in the same year. At a cost of $263 per hour, the cost to TC of providing those approvals is $26,300. As TC issued ten such documents, the cost-per-unit of that particular approval would be $2,630.

The full cost per unit of providing each service currently performed for a fixed fee under CAR 104, Schedule V can be found at section 8.2.1, below.

7.0. Proposed New Fee Levels

7.1. Establishing Revised Fee Levels (Price)

The full cost of providing the aeronautical product approval services - $263 per hour - represents the maximum possible amount that TC can legally cost recover through fees. However, that is only the beginning of the analysis necessary to propose revised fee levels.

In order to arrive at the proposed fees for aeronautical product approval services, TC applied a series of analytical lenses to determine how to refine the full cost figure into equitable and sustainable fees. The analytical lenses:

- Assessed aeronautical product approval services to determine how much of the benefits derived from these services accrued to private companies or individuals, as opposed to the Canadian public generally;

- Examined comparable jurisdictions to see what, if any, fees were charged for similar services by foreign authorities; and
- Examined the economic context in which the Canadian aerospace industry operates to assess the impact rising fees would have on stakeholders and considered other factors that may impact members of the industry and therefore the ability of stakeholders to bear higher fees.

By utilizing these lenses, TC determined that setting fee levels at a rate that would recover 100 percent of its costs was not a viable option. The information considered as part of each lens, and the impact these lenses had on the proposed fees is described in greater detail below.

7.2. Applying the Analytical Lenses

7.2.1. Public-Private Assessment

Determining what constitutes public vs. private benefit is fundamental to initial decisions regarding which services should be subject to fees and what the cost recovery rate (the percentage of the costs paid by the user) should be for these services.

TC provides many services that offer neither purely public nor private benefit and must therefore set cost recovery rates that reflect where the activity falls along the public-private benefit continuum. While services that convey purely public or private benefit have obvious cost recovery rates (0 percent and 100 percent, respectively), setting the cost recovery rate for a service that provides a mix of private and public benefits requires complex considerations.

A Public-Private Assessment (PPA) was conducted using the PPA tool developed by TBS. The PPA tool estimates the degree to which a service provides a private benefit, if any, above and beyond benefits enjoyed by the general public. The PPA tool estimated that aeronautical product approvals are a private good, meaning the majority of the benefits from the service flow exclusively to the service recipient, rather than to Canadians more broadly. The PPA tool calculated that 80 percent of the benefits from aeronautical approval services accrue to private companies or individuals. TC has used this 80 percent private benefit figure as the “ceiling” for the cost recovery rate, meaning that the Department would attempt to recover at most 80 percent of the costs of providing these services.

Without giving consideration to any other factors, if 80 percent of the benefits of a service accrue to the service recipient then it is reasonable to expect that the service recipient would pay 80 percent of the costs associated with that service. In this case, that would be an hourly fee of $210, or fixed fees that represented 80 percent of the cost-per-unit of delivering each service.

However, where an activity falls along the public-private good continuum is only one of the lenses that must be applied when setting fee levels. The application of the other analytical lenses provided evidence that the proposed fees should be lower than 80 percent of the costs of these services.

7.2.2. International Comparisons

Other jurisdictions have adopted a variety of approaches to cost recovery related to aeronautical product certification. Like Canada, most of the jurisdictions reviewed have adopted a mixture of fixed and hourly fees for providing certification services. At the high end lies the European Union, represented by the European Aviation Safety Agency (EASA), which charges the equivalent of $359 CAD per hour,

while at the other end of the spectrum, the US Federal Aviation Administration (FAA) does not charge for its certification activities.

Table 2 below summarizes the hourly rates applied by other jurisdictions.

Table 2 - Hourly Fees in Foreign Jurisdictions Compared to Canada

Foreign Jurisdiction	Foreign Fee (Foreign Currency)	Foreign Fee (Canadian $ Equivalent)
Australia	$160 AUD / hour	$155 CAD / hour
Europe (EASA)	€233 EUR / hour	$359 CAD / hour
New Zealand	$284 NZD / hour	$257 CAD / hour
United States (FAA)	No Fee	N/A

*** Rates taken from http://www.xe.com/ as of 6:15am on May 8, 2018**
*** Figures have been rounded to the nearest dollar.**

Rates in Australia and New Zealand are about four and six times higher, respectively, than the rates charged in Canada. EASA charges nearly nine times as much as Canada for comparable activities. It should also be noted that EASA charges annual fixed fees for most certification activities that TC currently performs for an hourly fee. For example, EASA charges €1,785,000 (equivalent to about $2,679,187 CAD) for certification services relating to very large fixed wing aircraft. In comparison, TC charges $40 per hour for this service, to a maximum (hard cap) of $504,680. At most, TC can recover about one fifth of what EASA recoups annually for each equivalent certification in this category.

The most important comparators are the Europe Union and the United States (US). Members of the aerospace industry, particularly large, Original Equipment Manufacturers (OEMs), also want their products certified in the US and the European Union, as these represent significant markets for aeronautical products. The willingness of these companies to pay the significantly higher fees charged by EASA indicates that these companies could afford to pay a much higher hourly fee than the current $40 per hour charged by TC. It is important to note that the Canadian marketplace is a fraction of the size of the European Union. Consequently, companies lack the same economic incentives to accept and pay high fees in Canada, as the Canadian marketplace offers fewer opportunities to commercialize their goods.

Moreover, the fact that the US does not charge fees for certification activities is a counterbalancing factor that must be taken into consideration when revising Canadian fees. The geographical proximity of the US market means that the lack of US fees carries more weight than the willingness of companies to pay the relatively high fees charged by EASA. The lack of US fees means that TC must proceed cautiously to avoid raising its fees so much that companies would seek certification through the FAA rather than TC.

Refer to Annex A for a more thorough discussion of the cost recovery approaches taken in other jurisdictions.

7.2.3. Stakeholder Impact Analysis

The economic context in which members of the Canadian aerospace industry operate is an extremely important analytical lens in terms of proposing revised fees. The goal of TC's Fee Modernization initiative is to have those who benefit the most from services pay a more equitable share of the costs. This goal must be balanced with TC's role as a regulator and economic enabler. The fees proposed herein were developed within the context of the relative economic health of the industry, and are designed to be congruent with the ability of industry members to pay higher fees.

Stakeholder Profile

The users of aeronautical product approval services vary widely, ranging from large, multinational companies that are Original Equipment Manufacturers (OEMs) such as Bombardier, Pratt & Whitney Canada, and Bell Helicopter, to sole proprietorships developing and marketing individual aeronautical components (such as onboard Wi-Fi or radio antennae) that modify aircraft designs.

In order for an initial design approval to be provided by TC, the applicant must be Canadian-based. Large domestic companies are primarily clustered in Ontario and Quebec, while smaller companies and individual stakeholders are located across Canada. TC recognizes that the ability of different members of the Canadian aerospace industry to pay higher fees varies widely.

Stakeholders include both domestic companies and foreign-based companies developing aeronautical products. The stakeholder community can be further broken down into large companies holding or applying for Canadian design approvals and smaller companies holding or seeking the same. Other than OEMs, those seeking design approvals most often deal with TC by way of an intermediary. These intermediaries are known as Design Approval Organizations (DAOs) and Design Approval Representatives (DARs).

DARs and DAOs provide engineering services to the holder of a design approval document, or someone seeking such a document. There are currently 75 DARs, 50 DAOs, and 460 Authorized Persons (APs) employed in DAOs. A DAR is independent, whereas APs work for a DAO, but do not have independent authorization outside of their employment in the DAO. APs must have the same qualifications and experience as DARs.

If the owner or operator of an aircraft (or fleet of aircraft) wishes to modify the aircraft (e.g. by installing Wi-Fi or changing the materials on the seats), it is first necessary to apply for and receive an supplemental type certificate (STC), which confirms that the modified design still meets international and Canadian design standards. Most owners and operators are not themselves engineers, so they hire a DAO or a DAR to perform the work. DARs and DAOs provide the owners or operators of aircraft with the engineering services required to secure TC approval of aeronautical products.

Most of the interactions TC has with aeronautical product approval stakeholders are with OEMs or DAOs and DARs, not with the owners or operators of individual aircraft. As such, the OEMs, DAOs, or DARs are typically the ones who directly pay the TC fees charged for these services.

Independent DAOs or DARs will quote a price for providing the engineering services necessary to secure the approval. These prices include the TC fees for issuing the STC, but also include all the other work that goes into the project, from drawing up blueprints, to building a prototype, to testing. A DAR might

be paid $30,000 for a non-serialized STC. The TC fee for issuing such a document is $220. The remainder of the $30,000 price charged would be for all of the other engineering services being provided.

DAOs and DARs also perform certification work on behalf of the Minister of Transport. In this capacity, they are collectively referred to as "delegates". Delegates are authorized to issue some approvals on their own, with varying degrees of oversight from TC. The level of due diligence TC performs varies from delegate to delegate, based on the level of familiarity TC has with the delegate, the delegate's level of experience, and history. TC currently does not charge fees to become or retain delegate status, and does not plan to introduce such fees. Such fees would represent a barrier to entry that would discourage new delegates from entering the industry. All DAOs and DAR have some degree of delegated authority.

In total, stakeholders include the thousands of existing holders of Canadian design approvals (e.g. type certificates or supplemental type certificates), as well as new or aspiring entrants to the market for which TC does not have readily available data, and those individuals offering their services to help owners and operators secure these approvals. The delegates who perform the work necessary to meet the design approval requirements of the CAR are significant stakeholders. The remainder of the stakeholder group is made up of various trade and industry associations (often representing members of the primary stakeholder groups), and other stakeholders (such as airlines and other owners/operators of aircraft).

The proposed fees take into account the unique circumstances and differing ability to pay higher fees of this diverse range of stakeholders.

Global Trends in Aerospace

Aerospace is a global industry and, in the aggregate, the health of the industry is good. Both short- and medium-term forecasts for the global industry are generally positive, indicating that the industry as a whole can expect a period of growth after a slowdown in production during 2016.[3]

Moreover, during the course of the next two years, the world economy is expected to grow at an average rate of 3.6 percent.[4] Strong global economic growth will contribute to the ongoing health of the aerospace industry. Continued strong global airline passenger traffic is expected to result in an increase in demand for new commercial aircraft, particularly in the growing Middle Eastern and Asian markets.[5] Demand for new aircraft is therefore expected to remain steady for the foreseeable future, which is an important indicator of the aerospace industry's future health.

Impact on the Canadian Economy

Within this broader global context, the Canadian aerospace industry is the world's fifth largest, representing approximately four percent of the global trade in aerospace products.[6] The industry includes both civil and defence activities, but by far the greater proportion of activities occurs in the civil

[3] See, for example: Deloitte, 2017 Global aerospace and defense sector outlook. https://www2.deloitte.com/global/en/pages/manufacturing/articles/global-a-and-d-outlook.html [Deloitte] and Murillo, Carlos. *Canadian Industrial Outlook: Aerospace – Spring 2017*. Ottawa: The Conference Board of Canada. 2017 [Murillo].
[4] Murillo.
[5] Deloitte.
[6] Murillo.

aviation sector, which contributed close to $28 billion to Canada's gross domestic product (GDP) in 2016, and was directly or indirectly responsible for approximately 208,000 jobs. The industry's contribution to the Canadian economy was similar in 2014 and 2015.

A more granular picture of the industry's contribution to the Canadian economy can be seen in Table 3 below.

Table 3 - Canadian Aerospace Industry – 2016 Contribution to the Canadian Economy[7]

	Contribution to GDP	Contribution to Employment
Industry	$12.9B	87,200 Jobs
Suppliers	$8.5B	70,600 Jobs
Spending by Employees	$6.4B	49,900 Jobs
Total	$27.8B	207,700 Jobs

The Canadian aerospace industry can be categorized by two main activities: (1) manufacturing; and, (2) maintenance, repair, and overhaul (MRO). Manufacturing activities are centred in Ontario and Quebec while MRO activities are mostly located in Western Canada, although the industry maintains a presence in Atlantic Canada as well. The economic benefits created by the industry are therefore spread across the country.

The Canadian aerospace industry is highly integrated with its international counterparts. The manufacturing activities of the industry are primarily export-driven:

- More than 80 percent of the industry's finished products are exported;
- 60 percent of all Canadian aerospace-related exports are supply chain-related, as opposed to being finished products;
- Supply chain exports increased by 20 percent over the past 15 years, growing significantly faster than the export of finished products[8]; and
- Nearly half of all the industry's exports go to the United States (US).[9]

It is also important to note that what the industry currently pays in fees represents a very small fraction of both its overall revenues and what it invests in R&D.

Tables 4 and 5 provide some comparative examples of where TC's revenues and costs fall relative to the revenues and R&D spending by the industry.

[7] Innovation, Science and Economic Development Canada and the Aerospace Industries Association of Canada. *State of Canada's Aerospace Industry 2017 Report*. http://aiac.ca/industry-statistics/ [ISED]
[8] ISED.
[9] Murillo.

Table 4 – TC Revenues and Costs (Aeronautical Product Approvals)[10] Compared to Aerospace Industry Revenues and Research and Development Spending[11]

Fiscal Year	TC Revenues ($)	Estimated TC Costs ($)	Industry Revenues ($)	Industry R&D Spending ($)
2014-15	0.98M	58.76M	27,711M (2014)	1,936M (2014)
2015-16	1.53M	58.25M	29,828M (2015)	1,914M (2015)
2016-17	2.19M	47.71M	27,205M (2016)	1,680M (2016)
TOTAL	4.70M	164.72M	84,744M	5,530M

***Industry Revenues and costs are shown in millions of dollars for the sake of comparison.**

For the time period described in the table above, TC has recovered between approximately 1.7 and 4.6 percent of the costs of providing aeronautical approval services, depending on the fiscal year considered.

Table 5 – TC Revenues and Costs (Aeronautical Product Approvals) as a Percentage of Aerospace Industry Revenues and Research and Development Spending

Fiscal Year	TC Revenues / Industry Revenues	TC Costs / Industry Revenues	TC Revenues / Industry R&D Spending	TC Costs / Industry R&D Spending
2014-15	0.004%	0.212%	0.05%	3.04%
2015-16	0.005%	0.195%	0.08%	3.04%
2016-17	0.008%	0.175%	0.13%	2.84%
3-year Average	0.006%	0.194%	0.09%	2.97%

If TC implemented a cost recovery rate of 46 percent, it would still represent just one percent of industry R&D spending over the three year period reviewed.

Future Opportunities

The *Canadian Industrial Outlook Autumn 2016*: *Canada's Aerospace Manufacturing Industry*[12], produced by the Conference Board of Canada, notes that the potential "greening" of aerospace manufacturing, as reflected by recent international agreements such as the *Carbon Offsetting and Reduction Scheme for International Aviation*[13] will provide significant incentives for airlines (and consequently manufacturers) to move toward more modern and fuel efficient aircraft, and to invest in R&D.

[10] Source: Transport Canada Departmental Performance Report (DPR) and Internal Cost Calculations.
[11] Sources: The State of the Canadian Aerospace Industry – 2015 Report, State of Canada's Aerospace Industry – 2016 and 2017 Reports, Jointly published by Innovation, Science and Economic Development Canada (ISED) and the Aerospace Industries Association of Canada (AIAC).
[12] Conference Board of Canada. Canadian Industrial Outlook Autumn 2016: *Canada's Aerospace Manufacturing Industry.* Ottawa: The Conference Board of Canada, 2016 [Outlook].
[13] Please refer to the International Civil Aviation Organization website for more details: https://www.icao.int/environmental-protection/Pages/market-based-measures.aspx [accessed September 20, 2017].

Investments in more fuel efficient aircraft could be a boon to the Canadian industry, assuming it positions itself to take advantage of the coming "green" wave. As it is, even without investments in the development of green technologies, the Canadian aerospace industry has an order backlog worth approximately $50 billion, which is equivalent to nearly 30 months of work at current production rates.[14]

Future Challenges

Despite this generally positive picture, experts predict that the Canadian aerospace industry will face challenges in the near- and medium-term. The industry is sensitive to factors that may impact the export market, such as fluctuations in the Canadian dollar. Members of the sector also face rising non-labour cost pressures, particularly with respect to the acquisition of materials.

In its 2017 industry outlook, Deloitte notes that the aerospace supply chain is transforming to reduce costs, respond more quickly, and to invest more in product innovation. The Deloitte report goes on to note that there may be more consolidation within the industry as "[…] some of the smaller companies may not be able to meet the increased financial, program management, skills, risk-taking and investment requirements."[15] Given the importance of the supply chain to the overall health of the Canadian aerospace industry, these challenges could have a potentially negative impact on the industry.

Other Considerations

The Canadian aerospace industry is generally healthy, operating in an international marketplace with growing demand and opportunities. The industry has the ability to pay higher fees. The industry is not monolithic, however. Although the Canadian aerospace industry is driven by a few, large companies, it is actually made up of hundreds of firms of various sizes, ranging from manufacturers of individual parts, to engines, or entire aircraft. TC must therefore take into account not just the ability of a large, international company like Bombardier or Bell Helicopter to bear higher expenses resulting from having to pay higher fees, but must also consider the impact the proposed changes would have on smaller members of the industry.

TC is aware that the proposed removal of the hard cap on hourly fees represents a potentially large increase in the total amount of fees that could be charged to some members of the industry, as there would no longer be a maximum charge for hourly fee services.

During Preliminary Engagement sessions held with some OEMs in early spring 2018, the potential impact of eliminating the hard fee cap and the resulting loss of cost certainty were topics of concern. Stakeholders were concerned that the lack of a hard cap would make their budgeting process difficult, and worried about unpredictably high costs during the latter years of a project, when commercial pressures make getting a new product to market by a set date imperative. TC is currently examining various options, some of which have been suggested by industry members themselves to provide the industry with more of the cost certainty and predictability that industry has said it requires. The potential impact of this change was considered when setting the proposed hourly fee rate.

Moreover, the US has no fees for similar work performed by the FAA. A number of the companies using TC services are headquartered in the US with branches in Canada, and bilateral agreements between

[14] Outlook.
[15] Deloitte.

Canada and the US mean many products certified by the FAA are automatically accepted in Canada. A significant increase in Canadian fees could cause a competitive disadvantage to the Canadian aerospace industry, as the difference in the cost of aeronautical product approvals would be much greater than is currently the case. Fees should not become the deciding factor for applicants when selecting from which authority (TC or the FAA) to seek aeronautical product approvals and should not cause firms located in Canada to relocate south of the border. Such a move would negatively impact DARs and DAOs. TC also wishes to avoid US-based OEMs with Canadian operations relocating portions of their operations to the US as a result of higher fees.

A final consideration is that, until late 2017, Canada enjoyed a significant comparative tax advantage with the US, in terms of the cumulative burden of each jurisdictions levels of corporate taxation. Following the recent cut to the American federal corporate tax rate, that comparative advantage no longer exists, with an average combined federal-provincial and federal-state corporate rate in both Canada and the US of approximately 26 percent.[16]

It is also important to note that the primary users of hourly and proposed hybrid fees differ. This difference loosely corresponds with the relative size of the business. OEMs will typically use services that are charged at an hourly rate, whereas smaller companies will primarily access services with proposed hybrid fees. OEMs and smaller companies do not have the same financial capacity to absorb higher fees. The potential impact of higher fees on OEMs is different than the impact on smaller industry members, DAOs, or DARs. This indicates that the fees charged for aeronautical product approval services should be structured in a way that recognizes not only the level of effort to provide the service but also the reality of various stakeholder groups, and proposed fee type and level have been set accordingly.

7.3. Proposed Hourly Rate

TC has considered the factors described above in order to establish a new hourly fee that is balanced, equitable, and sustainable. TC is proposing fees that better reflect the level of effort to provide the services and the benefits that accrue to the recipients, aiming to align more with the user-pay principle.

TC proposes setting an hourly rate of $105. This figure represents 40 percent of the full hourly cost ($263). In the case of Aeronautical Products approvals, it is also more consistent with the market value of the services of a subject-matter expert in this field (e.g. an experienced engineering working in the aerospace industry).

The OEMs that most often require the services charged at an hourly rate are generally large, often multinational, companies. These companies invest heavily in research and development, employ significant numbers of Canadians, and have historically been the majority users of TC design approval services. Consequently, these companies have benefitted greatly from the low hourly rate and the fact that there is a maximum amount that can be charged for each Schedule V hourly fee service. It is assumed that these companies can afford to pay higher fees for the TC services from which they benefit. However, the elimination of the hard fee cap represents a fairly significant change, even without the

[16] Wudrick, Aaron. “Canada could get squashed by Trump’s tax overhaul”. CBC News, December 23, 2017: http://www.cbc.ca/news/opinion/canada-trump-taxes-1.4463400 [accessed January 8, 2017].

introduction of a new hourly rate. This was an important consideration when establishing the proposed hourly rate.

The current $40 per hour rate is far too low when compared to the cost of providing these services. A rate of $210 (or 80 percent of the costs) could be too high, given the factors considered above, particularly in light of the no-fee regime in the US. TC's analysis shows that the proposed $105 hourly fee strikes the balance between the user-pay principle and the ability to pay of industry, while continuing to support and recognize innovation be the Canadian aerospace industry.

7.4. Hybrid Fees

In addition to the hourly fee rate, the fees for services in CAR 104, Schedule V that are currently charged at a fixed rate will be raised and converted to hybrid fees. Some new fees being introduced will also be hybrid fees.

Hybrid fees would initially be fixed to a set value, valid for a pre-established level of effort (in hours) corresponding to the "typical" amount of time required to provide a service. Work performed after the pre-established level of effort is reached would be charged on an hourly basis. TC analysis indicates that setting the threshold at a maximum of 300 hours would ensure the vast majority of projects (90-95 percent) requiring these services would get charged fixed fees.

Adopting hybrid fees allows TC to:

- Avoid huge increases to fixed fees;
- Introduce a method to keep the fees for the services most often used by smaller companies at relatively low and predictable levels; and
- Ensure that the most time-consuming and labour-intensive projects – projects where the level of effort involved is far in excess of what would typically be associated with a fixed fee – continue to pay their fair share.

7.4.1. Why Introduce Hybrid Fees?

TC supports the Government of Canada's commitment to fostering small businesses and encouraging innovation and has therefore made an effort to keep fixed fees low to encourage continued growth and innovation within the industry. As fees have remained low and constant for 20 years, independent delegates and DAOs have not had to consider the fees charged by TC when setting the rates they charge for their services. The impact of rising fees on this group's profit margins could therefore be significant and may result in DARs and DAOs passing the fee increase to their clients.

Higher Canadian fees could be viewed in some cases as representing a competitive disadvantage to the Canadian aerospace industry, *vis a vis* American-based competitors. TC does not want to price small Canadian companies out of the market or motivate them to relocate their business south of the border. Weighted against this argument, however, is the favourable exchange rate of the Canadian dollar, which can make doing business in Canada, with Canadian firms, less expensive than working with their American equivalents.

The current fixed fees are far too low, given the cost-per-unit of delivering these services, but the economic viability of the stakeholders accessing these services could be compromised if they were asked to pay fees commensurate with the 40 percent cost recovery rate proposed for hourly fee

services. TC has therefore elected to keep the base component of the hybrid fee to a minimum. Introducing hybrid fees allows TC to minimize the increase to these fees, while also applying the hourly fee rate in cases where providing the service requires an extraordinary investment of time and resources on the part of TC. The proposed increase to the cost recovery rate associated with fixed (hybrid) fee services is therefore significantly less than the proposed hourly cost recovery rate.

7.4.2. How Hybrid Fees Work

All clients using hybrid fee services will pay the same initial fixed fee, regardless of whether the project takes one hour or the maximum number of hours to complete. Once the level of effort threshold has been reached, all remaining work will be charged at the $105 hourly rate. As such, the fixed portions of hybrid fees being proposed are between $450 and $3,544.

An example is where a hybrid fee might be a charge of $1000 for a service up to a threshold of 300 hours. If the service took 250 hours to complete, the fee would be $1000. If the service took 350 hours to complete, the total charge would be $6,250 ($1000 for the fixed portion of the fee corresponding to the first 300 hours of work, plus 50 hours multiplied by the hourly rate of $105). Currently, the same service may be subject to a fixed fee, regardless of how long the project took to complete.

Currently, the same fixed fee applies whether a project takes one or ten thousand hours. The hybrid fee model lets TC keep the vast majority of these fees low and fixed, while addressing the outliers and ensuring fairness between clients.

7.4.3. Hybrid Fee Rates for Work Performed by Delegates

TC has kept the proposed fees for services performed by delegates (either DAOs or individuals DARs) lower than similar services performed by TC specialists. The decision to keep fees for approvals provided by delegates low was taken for a number of reasons:

- Delegates perform a significant amount of the design approval work, easing workflow for TC staff by performing small, but potentially time-consuming functions;
- The level of effort for TC specialists in overseeing work performed by delegates is generally lower than the level of effort involved in TC actually delivering the service; and
- Lower fees for services performed by delegates could encourage small business growth, by potentially giving delegates a competitive advantage over TC and encouraging the use of delegates, rather than TC, for various aspects of aeronautical design approvals.

Fees have therefore been priced accordingly.

7.4.4. Proposed Hybrid Fees

The proposed fixed portion of the hybrid fees range from $450 to $3,544. This is an increase from the current range of between $180 and $2,455. The proposed hybrid fees for each service can be found in section 8.2.1 below.

The proposed hybrid fees represent a small proportion of the costs associated with providing these services. TC understands that the proposed fees could be viewed as significant. As such, TC's analysis of public policy considerations supports keeping these fees low.

7.5. Conclusion

The proposed revised fee levels balance TC's need for a sustainable revenue model with consideration of the industry's ability to bear increased fee levels. The proposed revised fees offer an equitable balance between these interests without compromising the economic health of the Canadian aerospace industry.

8.0. Proposed Regulatory Amendments

TC is proposing regulatory amendments that will raise the fees for Schedule V services as well as update and modernize the existing fee structure to make it more flexible and adaptable.

The proposed amendments will:

- Eliminate obsolete fee items;
- Add new fees that more accurately reflect current activities and workload; and
- Combine activities that are performed at the same time into a single fee to achieve a simpler regulation.

In addition, minor amendments will be made to improve the clarity and consistency of Schedule V.

8.1. Proposed Amendments to CAR 104.03 to 104.07

Fee Increases

The regular hourly fee described at CAR 104.03(1) will be raised. The proposed rate is $105 per hour.

The current "surge" fee of $120 per hour, described at CAR 104.03(2), will be repealed. The new authority in section 4.401 of the *Aeronautics Act* authorizing the Minister to enter into agreements for which the regulations could otherwise establish a charge, will be used in the future to negotiate case-by-case "surge" service agreements with companies that need or desire them.

Elimination of Hard Fee Caps

The proposed amendments to CAR 104 will eliminate the hard fee caps throughout Schedule V.

Cost Recovery for Domestic Travel in Exceptional Circumstances

A new subsection to CAR 104 is proposed, allowing TC to recover the costs of domestic travel (and any overtime) in "exceptional circumstances". The intention is to capture situations where travel:

- Is requested by an applicant; and
- Needs to take place immediately, or in the very near future, likely within a prescribed number of days; or
- Is necessary within a specific timeframe according to the applicant's schedule

Recovering costs for domestic travel is currently undertaken on an *ad hoc* basis, and this approach has proven agreeable to stakeholders. Adding the ability to recover the costs of travel in Exceptional Circumstances to the CAR would standardize the practice and ensure fairness.

Under this proposal, the costs associated with travel inside Canada not meeting these exceptional circumstances will not be separately recovered; they are folded into the standard hourly rate or fixed fees. This decision has been taken in recognition of the presence of stakeholders across Canada, with places of business that are at various distance from a TC office.

TC will develop policy guidance that will be made available to stakeholders clearly indicating how and when these charges would be applied.

8.2. Proposed Amendments to CAR 104, Schedule V

The elimination of capped fee amounts would allow Schedule V to be reorganized by fee type (hourly and hybrid). This will make the Schedule easier to read and understand.

Eleven new fees would be added to Schedule V. For the most part, these new fees represent existing services provided by TC that are currently provided without charge.

Services that are currently performed for low fixed fees would be converted to hybrid fees. As explained in Section 7.4 above, in the vast majority of cases, these services will remain as fixed fees. However, when these services represent major projects, requiring a significant investment of time and effort on the part of TC specialists, making these services chargeable at an hourly rate once a pre-established level of effort threshold has been met is more appropriate.

The illustrative text below is provided to help stakeholders see what the proposed amendments to Schedule V may look like. However, the final wording of the Schedule is subject to revision during the regulatory drafting process. It includes many of the same fees that can be found in the current Schedule V. However, the removal of hard fee caps and the overall reorganization of the Schedule mean that the revised Schedule V below looks very different from the current Schedule V. A crosswalk table between the current and proposed Schedules is provided at Annex D to assist the reader in understanding the relationship between the proposed and current Schedules.

In order to make the illustrative text clearer, Level 1, 2 and 3 reviews are described immediately below. Detailed descriptions of the others services related to each fee item and rationale supporting the need to charge fees for these services can be found at Annex B.

<u>Level 1, 2, and 3 Reviews</u>

When conducting a Level 1 review, TC accepts the certification from a foreign authority as is, and only concerns itself with examining any difference between the original foreign certification and the Canadian application. Level 1 reviews are undertaken with respect to applications for products originally certified by foreign authorities that TC has the highest confidence in, based on past experience, the existence of bilateral agreements, and other factors.

A Level 2 review is conducted in situations where TC has determined that it needs to examine specific areas of a technical design to see how the foreign authority found compliance with the design criteria. Such a review is typically undertaken if there is novelty in the design, special conditions attached to the approvals. A Level 2 review is geared toward foreign authorities TC has confidence in, based on past experience, the existence of bilateral agreements, and other considerations.

Level 3 reviews are more extensive; a Level 3 review is still restricted to examining aspects of the foreign approval that are of specific concern to TC, it just may be the case that these areas of specific concern are much more extensive than is the case with a Level 2 review. A Level 3 review also often involves meeting with the foreign authority in question to allow TC to determine how the foreign authority does its certification work (processes, testing, levels of rigor, etc.). Level 3 reviews are often necessary when TC is dealing with an unfamiliar foreign authority.

8.2.1. Illustrative Text – CAR 104, Schedule V

The three services that form Part 1 of Schedule V would all be charged at an hourly fee rate of $105.

Part 1: Services / Activities for which fees will be charged at an Hourly Rate ($105/hour)

1. Any action undertaken, upon request, preparatory to a formal application for certification services, whether or not an application results. This charge does not apply to general or routine enquiries, but to activities that require the investment of greater TC resources. **[New Fee]**

2. Issuance, renewal, amendment or endorsement of a type certificate or an amended type certificate to add derivative products
    - For aeronautical products that are the responsibility of the Department of Transport; or
    - Following a Level 2 or Level 3 type design examination for aeronautical products that are the responsibility of an airworthiness authority other than the Department of Transport.

3. Any action undertaken, upon request, to assist a client seeking foreign validation of a previously approved Canadian type certificate. **[New Fee]**

Part 2: Hybrid Fees – Fees that will normally be charged at Fixed Rates but will become Hourly Fees if the Level of Effort Threshold is surpassed

The table below indicates the TC cost-per-unit associated with providing hybrid fee items. The table also indicates the current fixed fee (or range of fees, in the event a fee item is being collapsed to remove a list of different product types), as well as the new fee level being proposed by TC.

The default position is that the fixed fee rate will apply. The hourly rate will only apply to the number of hours undertaken to provide the service after the proposed pre-established 300 hour threshold is surpassed. All hours of work undertaken before the threshold is reached will be charged at a single, fixed rate. The hourly fee (if applicable) will be $105. No decision has been made yet as to the threshold for each item.

Fee Item		Full Cost per Unit	Current Fee	Proposed Fee
1.	Issuance of amended documents under Part V of the *Canadian Aviation Regulations* necessary to make administrative changes. **[New Fee]**	$788	$n/a	$158

Fee Item		Full Cost per Unit	Current Fee	Proposed Fee
2.	Issuance, renewal, amendment or endorsement of a type certificate following a Level 1 type design examination of aeronautical products that are the responsibility of an airworthiness authority other than the Department of Transport.	$21,751	(a) $2,455 (b) $2,455 (c) $2,455 (d) $2,455 (e) $2,455 (f) $2,455 (g) $1,500 (h) $1,500 (i) $2,455 (j) $2,455 (k) $750	$3,544
3.	Issuance, renewal, amendment or endorsement of an amended type certificate following a Level 1 type design examination to add derivative products that are the responsibility of an airworthiness authority other than the Department of Transport.	$32,127	(a) $2,455 (b) $2,455 (c) $2,455 (d) $2,455 (e) $2,455 (f) $2,455 (g) $1,500 (h) $1,500 (i) $2,455 (j) $2,455 (k) $750	$3,544
4.	Issuance of the following design approval documents to record a change to the type design or associated with a repair or a replacement part for which the design was approved by an employee of the Department of Transport: (a) a supplemental type certificate. (b) a supplemental type certificate (single product serial number). (c) a supplemental type certificate (several product serial numbers). (d) a part design approval. (e) a repair design approval (repair design). (f) a repair design approval (repair process).	 (a) $31,745 (b) $13,227 (c) $26,454 (d) $26,454 (e) $9,547 (f) $12,729	 (a) $1,900 (b) $470 (c) $600 (d) $1,900 (e) $470 (f) $600	 $3,174 $1,323 $2,645 $2,645 $955 $1,273

Fee Item		Full Cost per Unit	Current Fee	Proposed Fee
5.	Issuance of the following design approval documents to record a repair or a change to the type design for which the design was approved by a delegate of the Department of Transport:			
	(a) a supplemental type certificate (single product serial number).	(a) $10,179	(a) $220	$550
	(b) a supplemental type certificate (several product serial numbers).	(b) $13,878	(b) $220	$550
	(c) a repair design approval.	(c) $12,029	(c) $220	$550
6.	Issuance of the following amended design approval documents associated with a repair, a replacement part or a change to the type design for which the design was initially approved by an employee of the Department of Transport:			
	(a) a supplemental type certificate.	(a) $15,872	(a) $200	$1,587
	(b) a supplemental type certificate (single product serial number).	(b) 6,614	(b) $200	$1,323
	(c) a supplemental type certificate (several product serial numbers).	(c) $13,227	(c) $200	$1,323
	(d) a part design approval.	(d) $13,227	(d) $200	$1,323
	(e) a repair design approval.	(e) $5,728	(e) $200	$573
7.	Issuance of the following amended design approval documents associated with a repair or a change to the type design for which the design was initially approved by a delegate of the Department of Transport:			
	(a) a supplemental type certificate (single product serial number).	(a) $6,487	(a) $180	$450
	(b) a supplemental type certificate (several product serial numbers).	(b) $6,487	(b) $180	$450
	(c) a repair design approval.	(c) $4,175	(c) $180	$450

Fee Item		Full Cost per Unit	Current Fee	Proposed Fee
8.	Any action undertaken, upon request, related to work undertaken with respect to the validation of a foreign supplemental type certificate: (a) intended to secure Canadian acceptance of the foreign supplemental type certificate. **[New Fee]** (b) intended to secure the issuance of a Canadian supplemental type certificate. **[New Fee]**	(a) $5,728 (b) $23,809	(a) $n/a (b) $n/a	$573 $2,381
9.	Any action undertaken, upon request, to assist a client seeking foreign validation of a previously approved Canadian supplemental type certificate. **[New Fee]**	$4,883	$n/a	$977
10.	Issuance of the following documents: (a) a ministerial exemption pursuant to subsection 605.84(3) of the *Canadian Aviation Regulations*. **[New Fee]** (b) an alternative means of compliance pursuant to subsection 605.84(4) of the *Canadian Aviation Regulations*; or an "AMOC-equivalent" letter, issued in cases where TC would have granted an alternative means of compliance if the aeroplane in question was Canadian registered. **[New Fee]**	(a) $2,053 (b) $2,976	$n/a $n/a	$595 $595
11.	Issuance of Canadian Technical Standard Order design approval, in respect of all appliances or parts.	$26,454	$700	$2,645
12.	Issuance of an amended Canadian Technical Standard Order design approval, in respect of all appliances or parts.	$13,227	$200	$1,323

Fee Item		Full Cost per Unit	Current Fee	Proposed Fee
13.	Review of post-certification design changes affecting Type Certificate Data Sheets (TCDS): (a) which results in revision of the TCDS. **[New Fee]** (b) which do not result in a revised TCDS. **[New Fee]**	(a) $76,351 (b) $38,176	$n/a $n/a	$3,818 $1,909
14.	Post-certification design changes that affect supplemental type certificates, part design approvals, and repair design approvals, but do not result in the issuance of amended design approval documents. **[New Fee]**	$6,614	$n/a	$1,323

9.0. Service Standards

Prior to June 22, 2018, there were no service standards in place for CAR 104, Schedule V fees. TC introduced service standards for these fees in order to meet the requirements of the *Service Fees Act*. These service standards can be viewed at the following link:

http://www.tc.gc.ca/en/transport-canada/corporate/transparency/service-standards-transport-canada/aviation-service-standards-2018-2019.html#product

Service standards relating to the new fees being proposed can be seen in Annex C.

9.1. Effective Date of Proposed Service Standards

The proposed service standards shown in Annex C would come into effect at the same time as the revised Schedule V comes into force, upon Governor in Council approval of the proposed regulatory amendments.

9.2. Remission Policy

The *Service Fees Act* requires TC to have a Remission Policy in place. The Remission Policy will be a public document and will inform fee payers on the circumstances when TC will reimburse fees or a portion of fees that have been collected, if the applicable service standard is not met. Remissions will take place in accordance with TC's remission policy and the TBS *Directive on Charging and Special Financial Authorities*.

10.0. Implementation

10.1. Transitional Provisions

Projects begun prior to the coming into force date of the proposed amendments to CAR 104, Schedule V will be charged according to the following formula:

- Hourly services begun before the coming into force date will be charged at $40 per hour for all work completed prior to that date and at $105 per hour for all work competed after that date.
- Ongoing projects that have already reached the hard fee cap for a particular service will start being charged again at $105 per hour for all work completed after the coming into force date. Work performed after the fee cap was reached but before the coming into force of the new rates will not be retroactively billed to the client.
- In the case of a service charged at a fixed fee that was commenced but not completed before the coming into force of the new fee structure, the charge imposed will be the charge payable before the coming into force date.
- The hourly portion of hybrid fees will not be applied to fixed fee services for which the fee has been invoiced prior to the coming into force date.

10.2. Other Implementation Considerations

TC will develop guidance and explanatory materials to ensure that the new fees are applied consistently across Canada, and to ensure that stakeholders can clearly understand how and when the fees will be applied and what their responsibilities and liabilities will be under the revised Schedule V. These materials will be developed based in part on feedback received from stakeholders in response to this Fee Modernization Proposal as well as throughout the regulatory process necessary to amend CAR 104 and Schedule V. These materials will be ready before the new fees come into force.

In accordance with the *Service Fees Act*, the proposed fees will be indexed annually, based on the previous year's Consumer Price Index published by Statistics Canada. The inflation-adjusted fee levels and the date they will come into effect will be published in TC's Departmental Report on Results and on the TC website annually.

11.0. Stakeholder Consultations

TC has engaged with the aerospace industry to seek feedback concerning cost recovery in the past. The most detailed consultations occurred in 2014, and took the form of industry participation in a TC-led working group struck to review and discuss the cost recovery options then under consideration.

More recently, engagement with industry members took place to make stakeholders aware that TC was in the process of developing this Fee Modernization Proposal. A general presentation was made to industry members at the plenary session of the Canadian Aviation Regulation Advisory Council (CARAC) meeting in February 2018. This presentation outlined the broad goals and timeframes associated with this initiative, and time was allotted following the presentation for stakeholders to ask questions.

Between March 2018 and May 2018, TC held five Preliminary Engagement sessions with different industry members – large and small, as well as with some of the trade associations representing members of the aerospace sector – in order to present some of the concepts TC was considering including in this Fee Modernization Proposal.

TC solicited feedback from those who attended these sessions on the following topics:

- Eliminating the hard fee cap;
- Introducing hybrid fees;
- Introducing new fees for services currently performed free of charge;
- Service standards under consideration; and
- A general "transformation" topic that allowed stakeholders to identify irritants or parts of the aircraft certification process that, if addressed, would positively impact their relationship with TC. The topics discussed under this heading were not limited to areas directly impacted by the fee modernization initiative.

TC received feedback during these sessions and again afterwards, via written comments provided by participants. In general, the OEM community accepted the need for TC to raise its fees, recognizing that the Department has not done so in two decades. Their primary concern was with the lack of cost certainty arising from the proposed elimination of the hard fee cap. They recognized that the hard cap is negatively impacting TC's ability to cost recover for the services it provides. However, they were concerned that without the hard cap, they faced unknown costs for certification projects.

Moreover, they noted that budgeting for an uncapped environment would be extremely difficult, given that the level of involvement on the part of TC can vary significantly from project to project, and from year to year over the lifetime of a single project. The OEMs consulted asked TC to consider some other means of providing cost certainty and predictability.

Feedback received from smaller industry participants focused on the aspects of the fee modernization that were most important to delegates and other companies accessing the current fixed and proposed hybrid fee services. These stakeholders were concerned about rising fees in a competitive landscape where many of their direct competitors located in the US are not subject to fees, and where several products previously certified in the US were accepted in Canada without fees being applied due to the existence of bilateral agreements between TC and the FAA.

The delegate community has told TC that a move to increase their own rates in order to compensate for higher TC fees would likely drive business to their US-based competitors, who are not subject to fees by the FAA. While this is a risk and could occur in some cases, the favourable exchange rate of the Canadian dollar vs the US dollar would also mean these clients would be paying proportionately more for the entire job, as opposed to a few hundred dollars more to account for the higher fee.

Both groups of stakeholders pointed out the need for more guidance and explanatory materials that would help them understand the application of the new fees (such as the pre-application consultation fees or fees for post-certification modifications) and for more refinement of the proposed 300 hour threshold for hybrid fees. Many stakeholders did not feel that setting a single threshold for all fees was appropriate. TC will continue to analyze its data to ensure that the hybrid fee thresholds ultimately proposed for each fee are appropriate to the service being delivered.

Stakeholders also expressed a desire to receive warning well before one of the hybrid fee services reached the level of effort threshold. For example, once 80 percent of the hours below the threshold had been used. TC agreed to pursue this suggestion.

TC intends to continue to engage fully with the Canadian aerospace industry, other stakeholders, and all Canadians in order to seek their views on the detailed contents of this Fee Proposal. These views will be taken into account in the Regulatory Impact Analysis Statement published with the proposed regulations in the *Canada Gazette*, Part I.

Annex A: International Benchmarking

The certification process and related fees charged in Australia, the European Union, New Zealand, and the US were used as comparators in the development of this Fee Proposal and are described in detail below.

Australia

Australia's Civil Aviation Safety Authority (CASA) was established in 1995 as an independent statutory authority separate from the Government of Australia. Despite its independent status, CASA is required to recover costs for providing regulatory services to the aviation industry, in line with Australian Government policy**.**

Fees are charged at hourly rates of $100, $130, $160 and $190 per hour, or as fixed fees, depending on the type of service being provided. The two lowest hourly rates apply to services that are predominantly administrative in nature or that require only a small degree of technical skill. The top two hourly rates apply where specialist technical expertise is required.

The $160 hourly rate is charged in all instances where the service does not fall under one of the items for which the $100 per hour or $130 per hour rates apply, or the service is not in relation to a high capacity Air Operators Certificate aircraft or does not require the involvement of a senior CASA officer.

The cost of domestic travel (including airfare and accommodation) is not chargeable. However, domestic travel time for CASA officers is billed at the relevant hourly rate. Travel time includes time spent on flights or driving to the job. However, CASA makes it clear that domestic travel time is only calculated from the location of the nearest CASA office, not necessarily from a particular specialist's point of origin. This approach recognizes the impact that the size of Australia could have on the fees charged to companies in remote locations, and the fact that CASA cannot have every type of specialist at every location, requiring specialists to travel to provide certification services.

If travel outside Australia is required to deliver a service, all international travel costs including flights and accommodation are recoverable. The cost also includes travel time and the provision of the service.

European Aviation Safety Agency (EASA)

Since 2003, EASA has been responsible for the certification of aircraft for the 32 EASA member states (the 28 members of the European Union, plus Switzerland, Norway, Iceland, and Liechtenstein). Amongst its varied responsibilities, EASA certifies and approves products and organizations in fields where EASA has exclusive competence (such as airworthiness). According to the EASA website, 66 percent of its overall budget is funded through fees paid by industry.

The fees charged by the EASA for certification services can be found in Commission Regulation (EU) No 319/2014. EU 319/2104 repeals and updates the 2007 regulation that initially established fees (EC No 593/2007) because, following a review, it was deemed that "[…] the tariffs need[ed] to be adjusted in order to ensure a balance between the costs incurred by the [EASA] for related certification tasks and services provided, and the revenues to cover said costs."

The regulation sets out the principles underpinning how fees should be set, and in an Annex provides a detailed breakdown for various fixed fees (based on product types further sub-divided by weight), and the hourly fee charged by the EASA.

EASA generally charges annual fixed fees for the type of work that TC currently does on an hourly basis, but these fixed fee are significantly higher than the current hard fee caps found in CAR 104, Schedule V. Itemized hourly tasks are charged at a rate of €233 per hour; this rate includes travel costs within EASA member states.

The hourly rate for services other than those specifically listed is €221 per hour, but does not include travel costs. These fees are subject to an annual increase based on the rate of inflation in the European Union. The regulation includes a formula for calculating travel costs outside the territory of EASA member states and for travel related to providing services charged at the lower hourly rate (which does not incorporate travel costs).It should be noted that the 2014 revision to the regulation lowered many of the highest fixed fees and reduced the hourly rate charged for EASA services.

New Zealand

The Civil Aviation Authority (CAA) of New Zealand was established in 1992. The CAA recovers the costs of its regulatory activities through a mix of Government funding, levies, and hourly and fixed fees.

In 2012, the CAA underwent a funding review. At the time, levies had not been amended since 2002, and fees and charges had not be revised since 1997. It was found that the CAA was struggling to keep pace with the technological changes inherent to the aerospace sector and with the increasingly diverse demands from the sector for regulatory approvals. As a result of the review, the hourly rate charged for services was progressively increased over a three year period from $135 per hour to $284 per hour, where it currently remains. A number of the fixed fees charged by the CAA were also increased to reflect the new hourly rates.

On July 1, 2017, further changes to CAA safety levies, fees and charges, designed to provide better safety incentives and help ensure that aviation participants are paying a fairer share of the costs of safety oversight, came into effect. The 2017 changes effectively re-balanced the field, reducing the fees charged to airlines while raising some fees charged to other commercial sectors.

United States of America

The responsible regulatory agency in the US is the FAA. The FAA website describes its aircraft certification services as follows:

> The [FAA's] Aircraft Certification Service (AIR) is part of the Office of Aviation Safety (AVS) and includes more than 1,300 engineers, scientists, inspectors, test pilots and other experts responsible for oversight of design, production, airworthiness certification, and continued airworthiness programs for all U.S. civil aviation products and foreign import products.

The FAA currently does not charge for its certification activities. However, the FAA does charge fees to recover the full cost of services provided outside the US (including compensation and benefits, travel, and other costs).

Annex B: Description of Proposed Amendments to CAR 104, Schedule V

Below, please find more detailed descriptions of the proposed changes to CAR 104, Schedule V. The information below is complementary to the "illustrative text" found at section 8.2.1 above.

Hourly Services (Proposed CAR 104, Schedule V, Part 1)

The fees listed in Part 1 of the proposed Schedule V would be charged at an hourly rate of $105 for each hour of work performed. The new fee items being added to Schedule V and the proposed amendments to existing fee items are described in more detail below.

Proposed Part 1, Fee Item 1: Pre-application Services **[New Fee]**

A new hourly fee would be added to the Schedule which would allow TC to recover costs associated with undertaking pre-application services related to certification. These services provide a direct benefit to the industry and are currently not subject to a fee.

When a company makes an application for certification, the application is valid for a five-year period of time and the design standards that must be met are frozen as of the date of application. It is often the case that the development of an aircraft takes far longer than the effective period of the application. It is therefore to a company's advantage to obtain some agreement from TC with respect to how a proposed project will be certified prior to making a formal application, because it means the company does not use up the five-year application validity period addressing these issues.

If the certification has not been completed when the period of validity expires, the standards are unfrozen and the applicant may be required to comply with newer standards implemented subsequent to its initial application. Such changes may necessitate expensive design changes on the part of the company.

Applicants therefore frequently want input from TC in advance of making a formal application. This pre-application service allows the applicant to ensure that as many potential issues as possible are resolved or identified before the clock starts on an application's validity period.

This fee is not meant to capture day-to-day inquiries, but would be applied following mutual agreement between TC and the applicant, in cases where the applicant see a clear advantage to seeking TC input prior to making a formal application.

Proposed Part 1, Item 2: Combination of Certain Fee Items **[Amendment]**

The distinction between existing Fee Items 1, 3, 5, 7, and 8 would be eliminated.

Removing the hard cap on hourly fees would allow some services to be compressed and combined. The only reason these activities exist as separate, individual Fee Items is that these activities have different fee caps.

As a result, distinguishing between the issuance of new and amended type certificates (existing Fee Items 1 and 5) is no longer necessary, as both activities would be performed at the same hourly rate.

Similarly, the distinction between the issuance of type certificates for Level 2 and 3 design examinations (existing Fee Items 3 and 4) and the distinction between the issuance of an amended type certificates for Level 2 and 3 design examinations (existing Fee Items 7 and 8) would also be eliminated.

The reason these existed as separate fee items is because the Level 2 and 3 reviews described at existing Fee Items 3, 4, 7, and 8 were subject to different fee caps due to the differing levels of time and effort involved in each type of review. Charged at an hourly, uncapped rate, there is no reason to distinguish between Level 2 and Level 3 examinations, or between issuing new or amended documents.

No longer distinguishing between these services for the purposes of applying a fee cap means that all six of these existing Fee Items can be captured in a single Fee Item in the proposed Schedule V. This makes the proposed Schedule V more flexible and will simplify reporting pursuant to the new *Service Fees Act*.

Proposed Part 1, Item 2: Deletion of Named Aeronautical Products **[Amendment]**

Currently, CAR 104, Schedule V, Fee Items 1, 3, 5, 7, and 8 list different aeronautical products (e.g. transport category airplanes or reciprocating engines) for which TC charges fees for performing certification services. In each instance, the list of products - (a) to (k) - is identical.

TC proposes to amend the Schedule to eliminate these lists.

The lists of products were originally included in Schedule V because each of the named product types was subject to a different fee cap. The elimination of the hard fee caps means that Schedule V would no longer need to itemize each product type in order to display the fee cap associated with a particular design approval for a particular product.

Moreover, the list of products provides a static picture of the aerospace industry (circa 1998). Items in the list are no longer reflective of industry output and having such a list therefore limits TC's ability to charge for the approval of new, innovative product lines. For example, the industry is developing new products that do not fit in the existing categories, such as electric engines or hybrid airships (that do not meet the regulatory definition of an airship). Eliminating the lists would therefore provide increased flexibility for the CAR to be fairly and consistently applied to all aeronautical products as the industry continues to innovate.

Proposed Part 1, Item 3: Assisting Companies Seeking Foreign Validation of a Previously Approved Canadian Type Certificate [**New Fee**]

TC proposes establishing an hourly fee for work undertaken to assist a company that is seeking to have a foreign flight authority validate a previously approved Canadian type certificate.

If TC issues an original type certificate, Canada is considered the State of Design for the product subject to the approval. In these cases, TC often travels abroad to support applications by Canadian companies who wish to have the Canadian design approvals validated in foreign jurisdictions. This work helps companies receive equivalent design approvals in these other jurisdictions, meaning that the products can be used on aircraft sold and flown in those jurisdictions.

Hybrid Fee Services (Proposed CAR 104, Schedule V, Part 2)

The conversion of current fixed fee activities to hybrid fees is intended to accommodate instances where a project is big in scope and therefore would require significant investment of resources by TC. In these cases, the level of effort involved in providing the service would not be reflected in the low fixed fee. For example, a recent regional project required the full time attention of several engineers for more than a year; this work was only chargeable against the very low fixed fee, which only recovered a small percentage of the costs associated with performing the work.

The default position would be to charge a fixed fee for the services described in Part 2 of the proposed Schedule V. When a pre-established level of effort threshold has been passed, the service would begin being charged at the $105 hourly rate. Upon request by an applicant, TC would provide non-binding estimates concerning whether the service would eventually require the application of the hourly rate.

TC proposes using 300 hours as the threshold for the point when an hourly fee should be applied to a project. This pre-established threshold is still being refined, and TC may choose to apply different thresholds to different Fee Items, if such action is appropriate, but preliminary analysis suggests that using a figure in the 300 hour range would accomplish the goal of keeping 90-95 percent of projects as fixed fee projects.

Hybrid fees are meant to provide fairness to Canadian taxpayers by ensuring they subsidize less work that results in private profit, but also to ensure that aerospace companies are treated fairly. In most cases, hybrid fees would remain as low fixed fees, because the level of effort involved would fall within the normal range for these activities. However, because hybrid fees would allow the applicant to be charged on an hourly basis in the event that their project would necessitate a significant level of effort on the part of TC, the initial fixed fee portion of each service can be set at a lower rate than it would be otherwise. The hourly rate paid by individual companies for outlying, large scale projects would pay more of TC's costs of providing these services, rather than all companies (through higher fixed fees) and Canadian taxpayers sharing these costs.

Proposed Part 2, Item 1: Charges for Making Administrative Changes to Documents **[New Fee**]

TC is proposing to introduce a new fee for issuing amended design approval certificates solely for the purposes of making administrative changes. TC currently does not charge for these services.

If a company that holds several certificates is sold and takes on a new operating name or address, TC is asked to reissue type certificates and other documents with the new address and company name.

Preparing and issuing amended certificates can represent a significant level of administrative time and effort, and these costs are currently not recovered from the companies in question. The proposed new fee would recoup some of these costs.

Proposed Part 2, Items 2-3: Deletion of Named Aeronautical Products **[Amendment]**

Currently, CAR 104, Schedule V, Fee Items 2 and 6 list different aeronautical products (e.g. transport category airplanes or reciprocating engines) for which TC can charge fixed fees for performing Level 1 reviews. In each Fee Item, the list of products to which the fees apply - (a) to (k) - is identical.

Schedule V would be amended to eliminate these lists.

The list of products – (a) to (k) – within these Fee Items is the same as the list found at existing Fee Items 1, 3, 4, 5, 7, and 8, and the rationale for eliminating these lists from these items is similar. While the fee cap does not play a role here, having the list of products in the CAR provides a static picture of the aerospace industry (circa 1998), and limits TC's ability to charge for certification of new, innovative product lines.

Moreover, acceptance of foreign type design approval or amended approval following a Level 1 review requires minimal review from TC subject matter experts. A Level 1 review is a relatively straightforward exercise.

As a consequence, issuance of these approvals is virtually an administrative function, regardless of the product type, because the level of effort does not vary significantly between products. Eliminating the lists of products from these Fee Items would simplify Schedule V.

Proposed Part 2, Items 4-7: Increases in Existing Fee Levels and Addition of Different Type of Supplemental Type Certificates **[Amendment]**

TC is not proposing any substantive changes to existing CAR 104, Schedule V, Fee Items 11(a) to (f) and 12 (a) to (c). However, these fees would be increased to more accurately reflect the full costs associated with providing these services.

Fee Items 13(a) and 14 (a) have been sub-divided into different types of STC to match the language and distinctions used at Fee Items 4 and 5 (which already exists in the current Schedule V).

It should also be noted that the fee items would be re-numbered in the proposed re-organized and revised Schedule V.

A STC is a certificate issued when an applicant has received approval to modify an aeronautical product from its original design. CAR 104, Schedule V, Fee Items 11(a) to (c) and 12(a) and (b) impose fees for the issuance of STCs issued by either an employee or a delegate of the Department of Transport.

A distinction is made in Schedule V between three types of STCs because the scope of the STC determines the level of effort TC must invest before issuing the STC.

Fee Item 11(a) is intended to cover an STC that applies to all products of a type (e.g. a change to the type design that can be installed on any Cessna 172, meaning the level of review required to ensure that the change can be repeatedly installed on all products is fairly high).

Fee Items 11(b) and 12 (a) are applicable to an STC corresponding to one-serial number only. There is consequently no need to worry about variations that may exist from one aircraft to another and to account for multiple different configurations. It therefore requires less effort to review and process.

Fee Items 11(c) and 12(b) lie somewhere in the middle of the other two extremes; the STC does covers a number of aircraft, so more review is required than is the case when issuing an STC for a single serial number, but it nevertheless constitutes less work than is required for an STC that applies to all product types.

Given the relatively different levels of effort involved to issue each type of STC, it is appropriate that there be a different fixed fee level for each. The increase to the fixed fees would more accurately reflect the true cost of providing these services.

However, certification services related to these fee items are charged at low fixed fees (ranging between $220 and $1900), regardless of the significance of the underlying change, complexity, novelty, or overall scope of the certification project.

Proposed Part 2, Item 8: Validation of a Foreign Supplemental Type Certificate [**New Fee**]

TC is not the only authority that issues STCs; typically, the State of Design (i.e. the authority that issued the initial type certificate) will be the first to issue a STC upon application by a company. In cases where a foreign authority has issued a STC, it is necessary for the holder of the STC to apply to TC for a Letter of Acceptance or a Canadian STC to provide the authority to modify and operate a Canadian registered aeronautical product in accordance with the foreign STC. The aeronautical product cannot be operated under a Canadian registration unless the product is in compliance with the type design, which needs the foreign STC to be accepted or validated through the issuance of a Canadian STC.

TC proposes to establish a new fee with respect to work undertaken to secure the validation of a foreign supplemental type certificate intended to secure either a Letter of Acceptance from TC or a Canadian STC.

Validation of a foreign type certificate requires TC specialists to conduct an airworthiness review (Level 1, 2 or 3). A Letter of Acceptance is issued in cases where a Level 1 review takes place, whereas if a Level 2 or 3 review is necessary, TC issues a Canadian STC. The differing levels of time and effort associated with Level 1 and Level 2 and 3 reviews accounts for why TC is proposing distinct fees for the issuance of a Letter of Acceptance and for the issuance of a STC for performing foreign validations.

TC currently does not recover the costs associated with performing these activities, although it devotes a large number of hours to providing this service. This service also offers a clear benefit to clients, as acceptance / validation allows the product in question to be sold and / or operated in Canada. These activities allow Canadian companies to gain access to improvements to product designs which may also benefit the Canadian public by allowing these companies to provide better products and access to potential safety improvements.

Proposed Part 2, Item 9: Assisting Companies Seeking Foreign Validation of a Previously Approved Canadian Supplemental Type Certificate [**New Fee**]

TC proposes establishing a fee for work undertaken to assist a company that is seeking to have a foreign flight authority validate a previously approved Canadian STC.

If TC issues an original STC, Canada is considered the State of Design for the product subject to the approval. In these cases, TC on occasion travels abroad to support applications by Canadian companies who wish to have the Canadian design approvals validated in foreign jurisdictions. This work helps Canadian companies receive equivalent design approvals in these other jurisdictions, meaning that Canadian-designed products can be exported for use on aircraft sold and flown in those jurisdictions.

Proposed Part 2, Item 10: Issuance of Alternative Means of Compliance (AMOC), AMOC-equivalent Letters, or Ministerial Exemptions made pursuant to CAR 605.84(3) and (4) **[New Fee**]

TC proposes to establish two new fees which would allow it to charge a fee for work related to the issuance of a ministerial exemption or an alternative means of compliance (AMOC) issued pursuant to CAR 605.84(3) or (4). Please note that these ministerial exemptions differ from those discussed below in the context of proposed Part 2, Fee Item 15.

An AMOC or ministerial exemption applies to Airworthiness Directives (ADs) rather than to requirements found in the CAR. ADs are used to correct unsafe conditions that have been identified on in-service products. These unsafe conditions are generally associated with deficiencies in the design or the maintenance program that were not identified during certification.

AMOCs or exemptions issued under these subsections of the CAR provide the holder with the opportunity to utilize a different method of meeting the requirements in the AD, or allows them to avoid complying with the AD altogether. In both cases TC may impose conditions.

An AMOC essentially allows a company to propose a method of achieving the same level of safety required by the AD, but in a different manner. Moreover, in certain situations, possessing an AMOC can offer a company a competitive advantage. An AD may require that a particular system on an aircraft be inspected once a week to ensure that it is operating properly. If a company develops a technique that allows it to maintain the same level of safety, but only conduct an inspection once a month, the company may seek an AMOC. Allowing the company to utilize its proprietary technique, thereby taking the aircraft out of service for maintenance less frequently, offers the company a competitive advantage.

As a simplified example, new tire gauges on cars that allow tire pressure to be monitored remotely and displayed on the dash provide the owner a time-saving advantage, as she does not need to manually stop the car to take tire pressure measurements.

An “AMOC-equivalent” letter is issued in cases where TC would have granted an alternative means of compliance if the aircraft in question was Canadian registered.

Exemptions to ADs are issued because an applicant requires such an exemption because it would be impossible for a client to comply with the AD (e.g. a situation where certain repair work needs to take place in order to meet the AD requirements, but the plane in question is located in northern Canada and cannot have the necessary work undertaken unless the plane can be flown to a different location).

TC currently does not have the statutory authority to charge for issuing these documents, although the work required to issue them can be quite time consuming and labour intensive.

It should be noted that the proposal intends to make it clear that TC has the flexibility to decline to apply this fee in situations where issuing an exemption or AMOC is in the public interest or is being issued to address an industry-wide issue wherein it would be unjust to impose the fee on a single company.

Proposed Part 2, Items 11-12: Canadian Technical Standard Orders (CAN-TSOs) **[Amendment]**

A Canadian Technical Standard Order (CAN-TSO) is a minimum performance standard issued by the Minister of Transport for specified materials, parts, processes, and appliances used on civil aircraft. Products with CAN-TSO design approval are eligible for use on Canadian type certified products.

CAN-TSO approvals can cover anything from a simple part, like a galley cart or a seat belt, to a complex, integrated avionics system.

CAR 104, Schedule V, Fee Items 9 and 10 currently impose fixed fees for the issuance of CAN-TSO design approval or amended design approval with respect to an appliance or a part. Currently, all services related to the issuance of CAN-TSOs, regardless of the scope of the underlying project, are charged at fixed fees ($700 for new design approvals and $200 for amended approvals). However, the level of effort required to issue design approval or amended design approval documents can vary significantly, depending on the complexity and novelty of the product involved.

CAN-TSO design approvals are therefore not always appropriate to be charged at a fixed fee. As such, it is proposed that former Fee Items 9 and 10 would be converted to new hybrid fees. The level of the initial fixed fee would also be increased to reflect the effort involved in issuing these approvals.

Proposed Part 2, Items 13-14: Review of Post-certification Changes **[New Fee]**

If the holder of a design approval wishes to effect changes to the approved type design of their product (but the changes are not significant enough to warrant the re-issuance of the design approval certificate), the change is known as a post-certification design change that revises technical data without re-issuance of an approval.

Although the CAR allows the certificate holder to make minor changes themselves if they have a documented process acceptable to the Minister, there are some post-certification changes which require review and approval by TC. This Fee Proposal includes the introduction of new fees for reviewing and approving such post-certification changes where TC involvement is required.

With respect to Fee Item 13 (dealing affecting Type Certificate Data Sheets), currently the way the fees in CAR 104, Schedule V have been interpreted is that new fees are only applied in cases when a new model designation is made; however, changes made to a product that do not involve a new model designation are not subject to fees. OEMs will often undertake projects of significant scope that do not trigger a new model designation (which would, in turn, require a change to the type certificate). For example, the addition of a new avionics suite or conversion to a new engine type.

This is distinct from an administrative change, which is subject to a separate (lower) fee (see Part 2, Fee Item 1).

Currently TC cannot charge for this type of post-certification work, but it represents a significant portion of the time and effort expended by TC.

Annex C: Aeronautical Product Approvals – Proposed Service Standards

For applications related to Hourly Fees (CAR 104, Schedule V, Part 1):

Fee Item		Proposed Service Standard
1.	Any action undertaken, upon request, preparatory to a formal application for certification services, whether or not an application results. This charge does not apply to general or routine enquiries, but to activities that require the investment of greater TC resources.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager assigned to the file and the hourly rate to be charged within 30 working days of receiving an application.
2.	Issuance of a type certificate or an amended type certificate to add derivative products (a) For aeronautical products that are the responsibility of the Department of Transport; or (b) Following a Level 2 or Level 3 type design examination for aeronautical products that are the responsibility of an airworthiness authority other than the Department of Transport.	**(a):** TC shall issue a design approval document within 60 working days after accepting the applicant's declaration attesting to the demonstration of conformity made pursuant to sub-paragraph 521.33(b) of the *Canadian Aviation Regulations*. **(b):** TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file and the hourly rate to be charged within 30 working days of receiving an application.
3.	Any action undertaken, upon request, to assist a client seeking foreign validation of a previously approved Canadian type certificate.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager assigned to the file and the hourly rate to be charged within 30 working days of receiving an application.

For applications related to Hybrid Fees (CAR 104, Schedule V, Part 2):

Note: “Level of effort threshold” refers to the total of number of hours that will be performed for the fixed fee described in section 8.2.1. Once the level of effort threshold has been reached, all additional work will be charged at the hourly rate.

Fee Item		Proposed Service Standard
1.	Issuance of amended documents under Part V of the *Canadian Aviation Regulations* necessary to make administrative changes.	TC shall issue the document within 30 working days of receipt of the request.
2.	Issuance of a type certificate following a Level 1 type design examination of aeronautical products that are the responsibility of an airworthiness authority other than the Department of Transport.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.
3.	Issuance of an amended type certificate following a Level 1 type design examination to add derivative products that are the responsibility of an airworthiness authority other than the Department of Transport.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.
4.	Issuance of the following design approval documents to record a change to the type design or associated with a repair or a replacement part for which the design was approved by an employee of the Department of Transport: (a) a supplemental type certificate. (b) a supplemental type certificate (single product serial number). (c) a supplemental type certificate (several product serial numbers). (d) a part design approval. (e) a repair design approval (repair design). (f) a repair design approval (repair process).	**All Items:** TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.

Fee Item		Proposed Service Standard
5.	Issuance of the following design approval documents to record a repair or a change to the type design for which the design was approved by a delegate of the Department of Transport: (a) a supplemental type certificate (single product serial number). (b) a supplemental type certificate (several product serial numbers). (c) a repair design approval.	**(a) and (b):** TC shall establish the initial certification basis, pursuant to section 521.204 of the *Canadian Aviation Regulations*, within 120 working days of being satisfied that all necessary regulatory and design standard requirements for the product's type design have been identified. **(c):** TC shall establish the initial certification basis, pursuant to section 521.254 of the *Canadian Aviation Regulations*, within 120 working days of being satisfied that all necessary regulatory and design standard requirements for the product's type design have been identified.
6.	Issuance of the following amended design approval documents associated with a repair, a replacement part or a change to the type design for which the design was initially approved by an employee of the Department of Transport: (a) a supplemental type certificate. (b) a supplemental type certificate (single product serial number). (c) a supplemental type certificate (several product serial numbers). (d) a part design approval. (e) a repair design approval.	**All Items**: TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.

Fee Item		Proposed Service Standard
7.	Issuance of the following amended design approval documents associated with a repair or a change to the type design for which the design was initially approved by a delegate of the Department of Transport: (a) a supplemental type certificate (single product serial number). (b) a supplemental type certificate (several product serial numbers). (c) a repair design approval.	**(a) and (b):** TC shall establish the initial certification basis, pursuant to section 521.204 of the *Canadian Aviation Regulations*, within 120 working days of being satisfied that all necessary regulatory and design standard requirements for the product's type design have been identified. **(c):** TC shall establish the initial certification basis, pursuant to section 521.254 of the *Canadian Aviation Regulations*, within 120 working days of being satisfied that all necessary regulatory and design standard requirements for the product's type design have been identified.
8.	Any action undertaken, upon request, related to work undertaken with respect to the validation of a Foreign Supplemental Type certificate: (a) intended to secure Canadian acceptance of the foreign supplemental type certificate. (b) intended to secure the issuance of a Canadian supplemental type certificate.	**All Fee Items:** TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.
9.	Any action undertaken, upon request, to assist a client seeking foreign validation of a previously approved Canadian supplemental type certificate.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.

Fee Item		Proposed Service Standard
10.	Issuance of the following documents: (a) a ministerial exemption pursuant to subsection 605.84(3) of the *Canadian Aviation Regulations*. (b) an alternative means of compliance pursuant to subsection 605.84(4) of the Civil Aviation Regulations; or an "AMOC-equivalent" letter, issued in cases where TC would have granted an alternative means of compliance if the aeroplane in question was Canadian registered.	**All Fee Items:** TC shall issue the document within 60 working days after accepting the request.
11.	Issuance of Canadian Technical Standard Order design approval, in respect of all appliances or parts.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.
12.	Issuance of an amended Canadian Technical Standard Order design approval, in respect of all appliances or parts.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.
13.	Review of Post-Certification design changes affecting Type Certificate Data Sheets (TCDS): (a) which results in revision of the TCDS. (b) which do not result in a revised TCDS.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager and the project number assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.

Fee Item		Proposed Service Standard
14.	Post-certification design changes that affect supplemental type certificates, part design approvals, and repair design approvals, but do not result in the issuance of amended design approval documents.	TC shall acknowledge receipt of the application and provide the applicant with the name of the responsible Project Manager assigned to the file, and the applicable level of effort threshold within 30 working days of receiving an application.

Annex D: Table of Changes - Crosswalk

In order to be understood, the table below must be read in conjunction with both the illustrative text of the proposed Schedule V (found at 8.2.1 above) and the current CAR 104, Schedule V (found at the Department of Justice website).

Current Schedule V to Proposed Schedule V		Proposed Schedule V to Current Schedule V	
Current Schedule V - Fee Item	**Proposed Schedule V - Part and Fee Item**	**Proposed Schedule V - Part and Fee Item**	**Current Schedule V - Fee Item**
Item 1 (a) to (k)	Part 1 / Item 2	Part 1 / Item 1	n/a
Item 2 (a) to (k)	Part 2 / Item 2	Part 1 / Item 2	Items 1, 3 to 5, 7 & 8 (a) to (k) for all
Item 3 (a) to (k)	Part 1 / Item 2	Part 1 / Item 3	n/a
Item 4 (a) to (k)	Part 1 / Item 2	Part 2 / Item 1	n/a
Item 5 (a) to (k)	Part 1 / Item 2	Part 2 / Item 2	Item 2 (a) to (k)
Item 6 (a) to (k)	Part 2 / Item 3	Part 2 / Item 3	Item 6 (a) to (k)
Item 7 (a) to (k)	Part 1 / Item 2	Part 2 / Item 4 (a) to (f)	Item 11 (a) to (f)
Item 8 (a) to (k)	Part 1 / Item 2	Part 2 / Item 5 (a) to (c)	Item 12 (a) to (c)
Item 9	Part 2 / Item 11	Part 2 / Item 6 (a) to (e)	Item 13 (a) to (c)
Item 10	Part 2 / Item 12	Part 2 / Item 7 (a) to (c)	14 (a) to (b)
Item 11 (a) to (f)	Part 2 / Item 4 (a) to (f)	Part 2 / Item 8 (a) to (b)	n/a
Item 12 (a) to (c)	Part 2 / Item 5 (a) to (c)	Part 2 / Item 9	n/a
Item 13 (a) to (c)	Part 2 / Item 6 (a) to (e)	Part 2 / Item 10	n/a
Item 14 (a) to (b)	Part 2 / Item 7 (a) to (c)	Part 2 / Item 11	Item 9
n/a	Part 1 / Item 1	Part 2 / Item 12	Item 10
n/a	Part 1 / Item 3	Part 2 / Item 13	n/a
n/a	Part 2 / Item 1	Part 2 / Item 14	n/a
n/a	Part 2 / Item 8		
n/a	Part 2 /Item 9		
n/a	Part 2 / Item 10		
n/a	Part 2 / Item 13		
n/a	Part 2 / Item 14		