



# Productivity and cost effectiveness: how do we measure up?

## CANSO releases first ever Global Air Navigation Services Performance Report

A few months ago the Civil Air Navigation Services Organization (CANSO) released the first ever performance report of air navigation service providers.

While some may not have noticed this data-rich report examining the performance of air navigation service providers in Mexico, Sweden, Spain, the United States and the UK as well as many other countries, it was an important milestone in transparency.

CANSO members had been sharing performance measurement data for some time, but this was the first time data had been published.

The report provides a comprehensive look at a variety of benchmarking data for 30 air navigation service providers, focused on productivity measures, cost-effectiveness and price. The report also tracks key performance areas over a five year period to identify trends for each of the focus areas.

For air navigation service providers, unlike industries that have a more direct competitive nature, the availability of data on how we are doing compared to our peers is sometimes limited. As airlines know well, measuring performance in a multitude of areas is essential to identifying where you are doing well and those areas where you could improve and should focus your efforts.

As we have learned, performance metrics can create exciting dialogue about best practices that have the potential to raise the level of performance globally.

Howard Goldberg, NAV CANADA Director, Insurance and Risk Management chaired the CANSO Global Benchmarking Working Group that developed the performance measures and gathered the data for this year's report.

"It was an incredibly worthwhile process" said Goldberg. "We have so much we can learn from each other. And the published report has spurred additional discussion with customers about ANS performance and their expectations.

"As far as how NAV CANADA is doing, we expected that we would fare well but we were very pleased with the results once all the numbers came in. The report shows higher than average productivity measures, and lower than average costs, using a variety of measures," added Goldberg.

### Productivity

IFR flight hours per operational air traffic controller is an important measure of productivity. NAV CANADA controlled 1,631 continental IFR flight hours per air traffic controller in 2009 compared to an average of 904. Trend analysis in the report shows that NAV CANADA improved this key productivity measure by, on average, 2.5 per cent per year, the highest for any ANSP of comparative size.



## Cost Effectiveness

NAV CANADA revenue per continental IFR flight hour in 2009 was \$334, well below the average of \$629 and even the first quartile marker of \$468. NAV CANADA's revenue per continental IFR flight hour went down over the five year period.

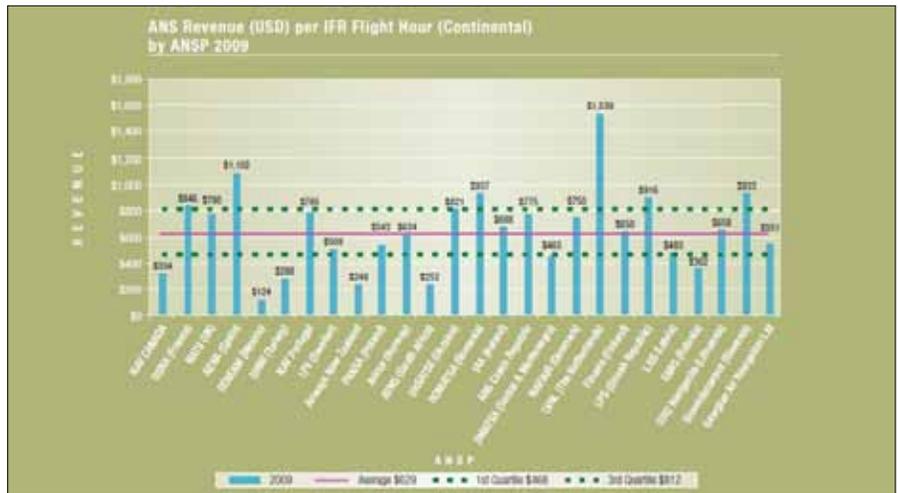
## Service Charges

As each ANSP's service charges are designed differently, with their particular circumstance in mind, CANSO chose to compare service charges by examining the consolidated en route, terminal and approach charges applicable to a theoretical 1,000 km flight by an A320.

NAV CANADA's charges of \$853 (USD) came in below the average of \$920.

HungaroControl has taken over as Chair of the CANSO Global Benchmarking Working Group as the group works on the next edition of the report. The report will now be released annually and CANSO intends to add additional performance indicators in areas such as safety, operations and the environment in the future.

The Global ANS Performance Report is available at [www.canso.org](http://www.canso.org).



## President's Point of View

Stakeholders in the aviation industry continue to watch global events carefully.

While the traffic picture remains positive, the rising price of oil, continued economic uncertainty, the impact of the crisis in Japan, and the unsettled conditions in the Middle East are beginning to have an effect on industry growth.

While such factors can make one feel that the situation is outside their control, and some things certainly are, continued focus on the things that matter will ensure that the industry is well positioned to weather current global circumstances.

Extending over several years—and regardless of fluctuating markets—NAV CANADA has kept costs per flight hour flat, while continuing to deliver the safe and efficient service our customers have come to expect.

The Global ANS Benchmarking Report issued by CANSO documents our performance against those of our industry peers.

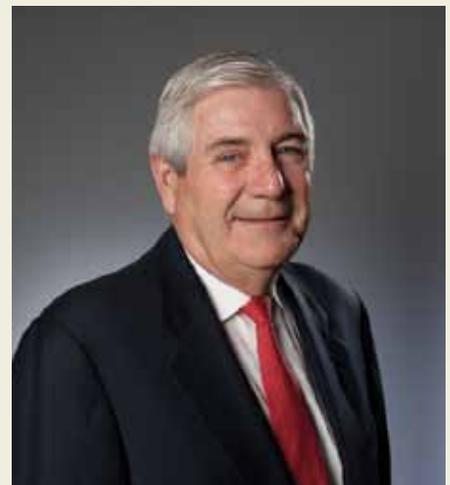
I encourage you to read the article in this edition of Direct Route highlighting some of the key metrics from the report.

These results come from working closely with our customers to ensure we are focused on the things that make our business better and stronger and deliver value to those we serve.

RLongSM is one of those things. We have been working hard with NATS to ensure systems are in place to support the safe reduction in separation standards in the oceanic airspace controlled by our two organizations. The efficiency benefits of increasing capacity in the busiest oceanic airspace in the world make those efforts worthwhile.

As an old Irish proverb says, "If you do not sow in the spring you will not reap in the autumn."

We remain focussed this spring on those things, like RLongSM, that bring efficiencies and other benefits worth celebrating, even when traffic volumes are not what we might have hoped.



# RLongSM implemented in Oceanic airspace

On March 30, NAV CANADA and NATS, the air navigation service provider in the UK, implemented reduced longitudinal separation minimum (RLongSM) for properly equipped aircraft operating in oceanic airspace.

The new procedure allows equipped aircraft to fly in oceanic airspace controlled by the Gander Oceanic Control Centre and the Shanwick Oceanic Control Centre with a longitudinal separation of five minutes versus the usual 10 minutes, potentially increasing capacity by a third. The reduced separation requirement also makes it easier for air traffic controllers to permit aircraft to transit through heavily loaded tracks to optimal altitudes that enable reduced fuel burn.

In order to be eligible for reduced separation, aircraft need to be equipped with a mix of GPS, Automatic Dependent Surveillance-Contract (ADS-C) and Controller-Pilot Data Link Communications (CPDLC).

It is estimated that RLongSM will enable a reduction in greenhouse gas emissions of 3,000 metric tons and reduce fuel costs by approximately \$1 million in the first year of implementation.

RLongSM is one of our CIPHER initiatives aimed at reducing greenhouse gas emissions and fuel

requirements. A 2011 update on NAV CANADA CIPHER initiatives is available at [navcanada.ca](http://navcanada.ca).

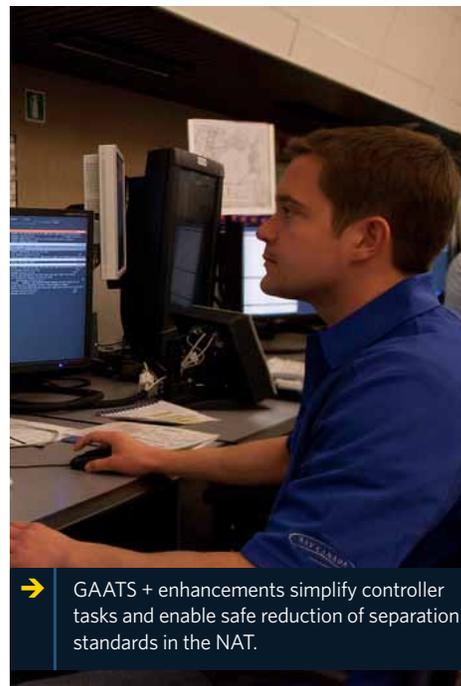
## The system behind RLong

The recently commissioned air traffic system that makes the implementation of RLongSM procedures possible—called the Gander Automated Air Traffic System Plus (GAATS+)—provides significant enhancements to the original GAATS system, including electronic flight strips and increased automation of data exchange with other ATC facilities. GAATS+ also integrates automated flight plan processing, track generation, advanced conflict prediction and data-link communication for position reports.

NATS also employs an advanced GAATS-derived system that enables RLong for Oceanic airspace under the ANS' control, called the Shanwick Automated Air Traffic System.

Further safety enhancements come from new GAATS+ integrated consoles, which use electronic flight strips, the latest LCD displays and advanced planning functionality.

Electronic strips make it easier to track and transfer responsibility for an aircraft between controller positions as the aircraft flies through sectors while automated updates mean less manual inputting of information



➔ GAATS+ enhancements simplify controller tasks and enable safe reduction of separation standards in the NAT.

into processors. The GAATS+ system also provides controllers with a snapshot of current and planned traffic as well as available conflict-free route profiles, allowing the controller to easily identify an aircraft's preferred route and provide a clearance.

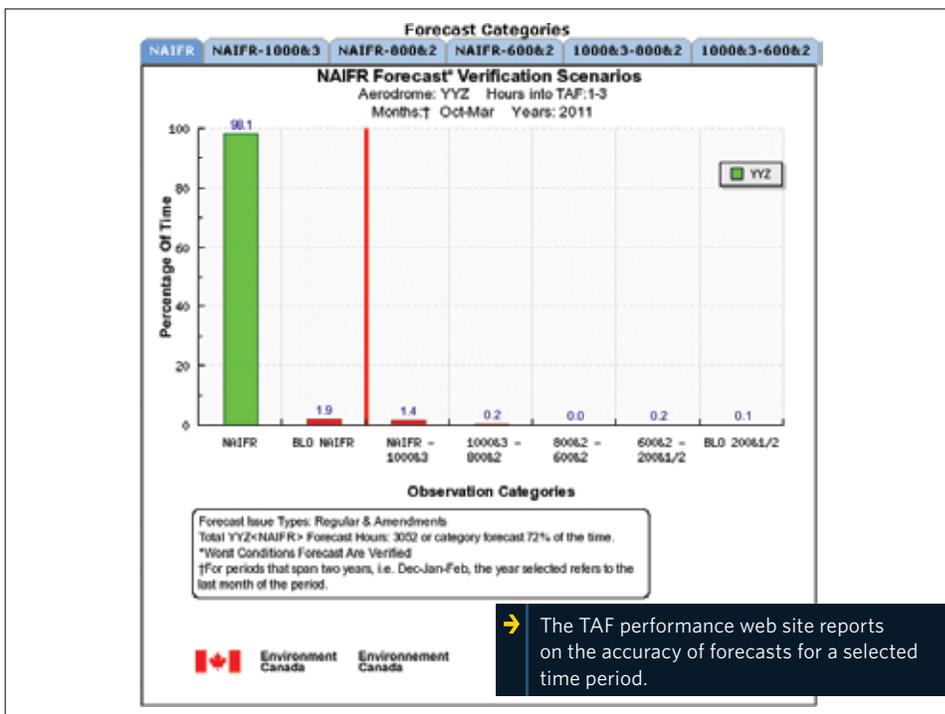
# TAF performance metrics add value for customers

NAV CANADA and Environment Canada recently announced the availability of improved Aerodrome Forecast (TAF) performance data for customers.

The initiative - called the Performance Measurement TAF Improvement Project (PMTIP) - provides pilots and dispatchers with additional information to gauge the accuracy of aerodrome forecasts.

In September 2010, Environment Canada began publishing TAF metrics for 180 aerodromes through the Environment Canada web site. The metrics allow customers to see how reliable past forecasts have been over a chosen time period at each of these aerodromes.

"It's a way for NAV CANADA to provide customers with a value-added metric that supports pre-flight decision making," says Larry Lachance, Assistant Vice President, Operational Support.



➔ The TAF performance web site reports on the accuracy of forecasts for a selected time period.

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For airlines, the most frequently used metric is NAIFR\*, or No Alternate IFR—an indication that the weather will not require the aircraft to carry additional fuel to divert to an alternate airport.

This means dispatchers and pilots can confidently make a decision to carry less reserve fuel. That makes the aircraft lighter, which in turn means less fuel burn. Being able to see how reliable historical NAIFR forecasts have been over a time period or season provides front-line decision makers with another layer of information.

“Predicting weather at some aerodromes can be more challenging,” says Larry Lachance.

“These metrics provide transparency and allow customers to consider localized forecasting accuracy in their decision making.”

The NAIFR metrics for Canada’s three busiest airports in the six month period from September 2010 to February 2011 show a high level of accuracy. NAIFR conditions were correctly predicted over 98 per cent of the time at all three airports (Toronto, Vancouver and Montreal).

The NAIFR section of the web site gives performance information for a number of scenarios in which the forecast is below NAIFR criteria and also provides

additional metrics related to the accuracy of Thunderstorm and Wind forecasts, which are popular with private pilots.

**For more information, visit [tafperformance.tor.ec.gc.ca](http://tafperformance.tor.ec.gc.ca).**

*\*NAIFR (No Alternate IFR) is defined as ceiling at or above 1,500 feet, visibility at or above six statute miles or ceiling at or above 2,500 feet, visibility at or above three statute miles. Additionally, there can be no forecast (including PROB) of thunderstorms, freezing rain or freezing drizzle.*

## NAVCANatm offers technology solutions

Following a decade of working with Air Navigation Service Providers on three continents to develop and deploy leading air traffic management technology solutions, NAV CANADA has taken the next step and unveiled a new, integrated product line called NAVCANatm.

This line of products—designed by NAV CANADA professionals and proven in many diversified and complex operational environments—offers an integrated

approach to a wide variety of air traffic management challenges.

At a glance, NAVCANatm provides air traffic services staff with access to critical airport, tower, terminal and enroute air traffic information, allowing the integration, manipulation and distribution of flight, surveillance and operational data.

Designed for Air Navigation Service Providers, airports and other customers looking to enhance air traffic safety and efficiency, NAVCANatm builds on successful technology

deployments that have occurred in Canada, the UK, Denmark, and the US. The largest deployment of the integrated suite is currently underway in Australia.

“This may be a novel approach, but it makes a great deal of sense,” said John Crichton, NAV CANADA President & CEO. “The underlying technology was designed by operational ATC people for the Canadian system. These same people have also built a credible track record of working with customers around the world to adapt the systems to local operating environments.

“Because the solutions are already proven in the field, there’s less time and money spent reinventing the wheel—and the industry as a whole benefits from reduced overall development costs, faster spread of technology, and the safety benefits of a more modern global ANS.”

At the heart of the new line are NAVCANsuite automation products which combine flight, surveillance and operational data to increase safety and enhance efficiency. An integrated working position can provide instant access to these products which include NAVCANstrips, NAVCANsitu, NAVCANinfo, NAVCANcontrol and NAVCANatis.

The NAV CANADA approach is not simply to sell off-the-shelf solutions. Flexibility in product design means that the Company works closely with its customers to respond to the unique challenges of each operational environment.

“The real strength behind NAVCANatm is the NAV CANADA people experienced in working with operational and engineering staff around the world on adapting and scaling these solutions to a wide variety of local needs,”



→ The NAVCANsuite tower-automation products simplify access to critical information.

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Crichton added. "And we know we've been successful when we hear how quickly controllers have embraced these products and how they've made a positive difference in performing their job."

An additional product line, known as NAVCANlink, supports collaborative decision-making by providing users—such as air carrier operations managers and airport operations managers—with a near-real-time view of an airport's radar, traffic, weather, airfield lighting and NAVAID status. It also includes a record-and-playback feature for analysis.

While NAVCANlink is a natural extension of NAVCANsuite applications, it is also designed to work with a variety of ATM data sources. To support today's active workforce, a mobile version of NAVCANlink is also being rolled out for use with tablets and smart phones.

All of these products have been developed and deployed to comply with stringent domestic and international standards such as ED-109. Each system is developed and installed using the Company's proven Safety and Quality Management process, tailored to the system safety levels and regulatory requirements specific to the facility. Testing occurs at the system, site and operational levels. Acceptance is based on system specifications, site integration requirements, and operational use.

"NAVCANatm technology solutions are backed by the NAV CANADA customer services team. This ensures each system is reliable, well-maintained and always available by providing redundancy and support, and by installing software updates and adaptations rapidly and efficiently," said Sid Koslow, Vice President and Chief Technology Officer.

As NAVCANatm technology evolves, the Company hopes to further integrate intelligent video solutions into its products, in collaboration with its partner, Searidge Technologies Inc. Said Koslow: "Searidge is an innovator in this field, and we are pleased to be pushing the boundaries of this technology with them. It promises to add even more value to our technology solutions within the Canadian ANS, and for customers around the world."

**For more information on NAVCANatm solutions go to [www.navcanatm.ca](http://www.navcanatm.ca).**



## New internet flight planning system will improve customer experience

NAV CANADA's new internet flight planning system—the Collaborative Flight Planning System (CFPS)—will make it possible to file, amend or cancel a flight plan online.

The new system, which will have a phased launch starting in spring 2011, is expected to improve collaboration between pilots, dispatchers, flight service specialists and air traffic controllers.

"CFPS will provide a flight planning experience that web users have come to expect—with quick registration, easy self-serve features and integration across other popular platforms," says Bill Crawley, Director, Air Traffic Services System Integration.

NAV CANADA originally launched an internet flight planning system in 2004, but usage rates were low because the system lacked a two-way flow of information. This meant customers did not receive a clear confirmation following a transaction and amendments to a flight plan would require a call to the FIC. Signing up for the service also required a mail-in form.

"With CFPS, you will be able to set up your account online," says Crawley. "And the vast majority of flight plan changes can be completed through your account."

The new system will seamlessly combine weather and NOTAM information from the Aviation Weather Web Site (AWWS), providing all the essential information needed



➔ Pilots will soon be able to file, amend or cancel a flight plan online.

to file a flight plan, and requiring only one login to access these services.

Air traffic services professionals will also have access to the same information on their displays. Changes made by customers to a flight plan will automatically be reflected on NAV CANADA's systems. Likewise, changes made by air traffic services would show up on a customer's account.

In addition, the intuitive flight plan form featured in CFPS will reduce the need for manual verification of flight plans while automatically flagging flight plans that do not meet standard parameters.

"It means time saved for our customers and more time for flight service specialists to focus on other safety tasks," says Crawley.

### Customer feedback a driving force

In developing the Collaborative Flight Planning System, NAV CANADA integrated significant feedback from customers.

"We heard from our customers that they wanted a viable self-serve option for filing a flight plan, and that they wanted it to be intuitive and integrated with other information sources they use, such as the AWWS," says Crawley.

To achieve this, the project team looked to an open source platform to build the web site and established a development team that included air traffic controllers, flight service specialists, pilots and in-house software programmers.

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"This has given us the flexibility to quickly implement changes to the system based on stakeholder feedback," says Crawley. "And we will maintain that flexibility after we roll the system out."

"In that sense, the term 'collaborative' refers to both how the system is being developed and enhanced, and how it will be employed by NAV CANADA staff and customers."

NAV CANADA plans to have the system ready for beta testing later this spring and will include customers and stakeholders in trials. The Company expects to be able to integrate additional feedback and have CFPS fully operational for VFR flight plans by fall 2011.

Initially, the system will allow customers to file a flight plan up to 24 hours in advance,

with this being expanded to 120 hours once new ICAO rules come into effect in 2012.

Existing registered users with AWWWS logins will be able to continue to use their login to access weather information on the AWWWS under "My Wx Data". Those who would like to set up a CFPS account will be invited to register for the new service, allowing them to use a single login to access both services from the AWWWS.

As always, customers will be able to file and update flight plans by contacting one of the professionals at NAV CANADA's eight flight information centres located across the country.

"CFPS is part of our ongoing commitment to improve the service experience for our customers and provides flexibility and choice in a very cost-effective manner," says Crawley.

**➤ The Collaborative Flight Planning System (CFPS) will provide customers with a modernized and intuitive option for flight plan filing. Some key features include:**

- the ability to file, amend, delay and cancel a flight plan
- the creation of templates that can be saved and updated for frequently used plans
- a single login for both the Aviation Weather Web Site and CFPS
- support for all desktop browsers, and
- ubiquitous flight plan information for flight service specialists, controllers and pilots.

## CATSA maintenance contract renewed

NAV CANADA was recently awarded a five-year contract with the Canadian Air Transport Security Authority (CATSA) to continue providing maintenance services for security screening equipment at all Canadian airports following a competitive bid process.

The contract, which runs from April 1, 2011 to March 31, 2016, includes a five-year renewal option and an increased scope to maintain new screening technologies being introduced at airports across the country.

"We are pleased to have the opportunity to continue working with CATSA," says Gerry Drisdelle, Director, Technical Operations Revenue Services. "This contract is a natural fit for NAV CANADA because it leverages our highly skilled and professional workforce already located across the country maintaining the ANS."

The NAV CANADA employees tasked with delivering these services are from the company's Technical Operations department. Known as Electronics Technologists, many of these employees also specialize in maintaining Communications, Navigation and Surveillance (CNS) systems.

More than 170 NAV CANADA Technologists play a direct or support role in maintaining CATSA systems.

Under the terms of the expanded contract, NAV CANADA will continue to provide maintenance services with the additional responsibility of managing the inventory of spare parts for passenger pre-boarding, hold baggage, and non-passenger screening equipment for 89 airports in Canada.

NAV CANADA staff are charged with delivering preventative maintenance to equipment on a fixed periodic basis. They also provide a quick response when unexpected corrective maintenance is required—with the objective of addressing failures within one hour at the eight Class 1 airports across the country.

"It's another way that NAV CANADA technologists are contributing to the safety and the overall efficiency of the aviation system in Canada," says Drisdelle. "And its two fold, because the revenue generated by providing these services is reinvested into the ANS."

### Supporting the drive towards advanced screening technologies

With heightened security at airports in Canada, screening technology is becoming more complex.

"We have seen the introduction of new generation multi-view X-rays, explosive detection equipment and full body scanners," says Drisdelle. "These systems require an additional level of care and attention compared to the systems we had just a few years back."

As a result, NAV CANADA technologists regularly undergo training to stay abreast of technological developments, maintaining the capability to install and maintain these systems.

"Our technologists in the field have built a very strong reputation with CATSA for their timely and accurate response to equipment issues," says Drisdelle. "That's engrained in the work they do every day for the ANS—where every second counts when you're helping keep aircraft, people and goods moving safely and efficiently."



➤ NAV CANADA employees keep ANS and airport security equipment functioning.

# Order AEROPUBS at the NAV CANADA Online Store



➔ Online ordering simplifies shopping for aeronautical publications.

Before shopping online, all customers—including those with existing accounts—must first register to obtain a user ID and password. Once registered, customers can order all the publications they need from the convenience of their desktop or laptop.

They also receive other benefits such as renewal notices for documents that are regularly updated. Payments for online ordering are through either Visa or MasterCard.

Online ordering is the first phase of an enhanced customer service initiative. NAV CANADA is also exploring the possibility of offering electronic downloads of its publications.

While ordering by phone or fax is still an option, online volumes indicate customers are catching on quickly to the new method, with sales orders at the Online Store increasing by 100 per cent in March compared to February.

“Ultimately we’d love to have all our customers order our publications online, but we think a target of about 75 per cent is more realistic,” said Ms. Denton.

Customers looking for a fast and convenient way to order aeronautical publications now have a new option—online shopping.

Launched in January, the NAV CANADA Online Store can be accessed by visiting [products.navcanada.ca](http://products.navcanada.ca).

“Our customers have been asking for online purchasing and now it’s available to all,” says Janelle Denton, Manager, Customer Contact Centre & Aeronautical Publications. “It enhances our customer service, and makes the ordering process more convenient for everyone.”

## Investment to improve accessibility

Beginning in August 2012, NAV CANADA will be upgrading its current service at St. John’s International Airport by establishing a new Instrument Landing System (ILS) Category (CAT) III capability on runway 11.

This will significantly increase airport accessibility during poor weather conditions, reducing the number of cancellations, delays and diversions. Analysis of historical data indicates that CAT III capability will increase airport usability by five per cent, from 94 per cent to almost 99 per cent.

On March 23rd the federal and provincial governments announced \$8.6 million in

funding each for the associated infrastructure improvements, including runway lighting improvements required to support CAT III ILS operations. NAV CANADA will pay the costs associated with the ILS.

Once installation is complete, the new ILS must be operational for a few months at CAT I before it can be certified to CAT III (what is known as a “burn in” period). It is expected that CAT III operations could begin in the first quarter of 2013.

The only other CAT III ILS in Canada are at the Vancouver International Airport and Lester B. Pearson International Airport in Toronto.



➔ Operating into St. John’s airport to become easier with new CAT III ILS.

### Direct Route

Direct Route is a NAV CANADA publication for customers and others interested in current and future initiatives by Canada’s Air Navigation Services Provider.

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# Multilateration to benefit Kelowna



→ Nine MLAT sensors will be installed around Kelowna beginning this spring.

NAV CANADA continues to expand the use of multilateration for surveillance to cost-effectively deliver safety and efficiency benefits to its customers.

This spring the company will begin installation of multilateration sensors in Kelowna BC. Nine sensors will be installed to provide surveillance in the area of the airport and surrounding valley.

Multilateration will improve situational awareness and reduce the amount of communication required between pilots and controllers for position verification. This will facilitate the provision of more effective traffic information and control service.

Currently, surveillance coverage in the area around Kelowna is very limited below 3,500 ft ASL. This requires controllers to increase separation between IFR arrivals, causing delays, particularly in IMC weather conditions.

It is estimated that reductions in delays once the system is operational will save customers over \$300,000 in fuel costs annually.

The Kelowna MLAT system is expected to be fully operational by April 2012.

Multilateration systems are now operational at airports in Fort St. John and Vancouver Harbour, BC and Montreal, QC.

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