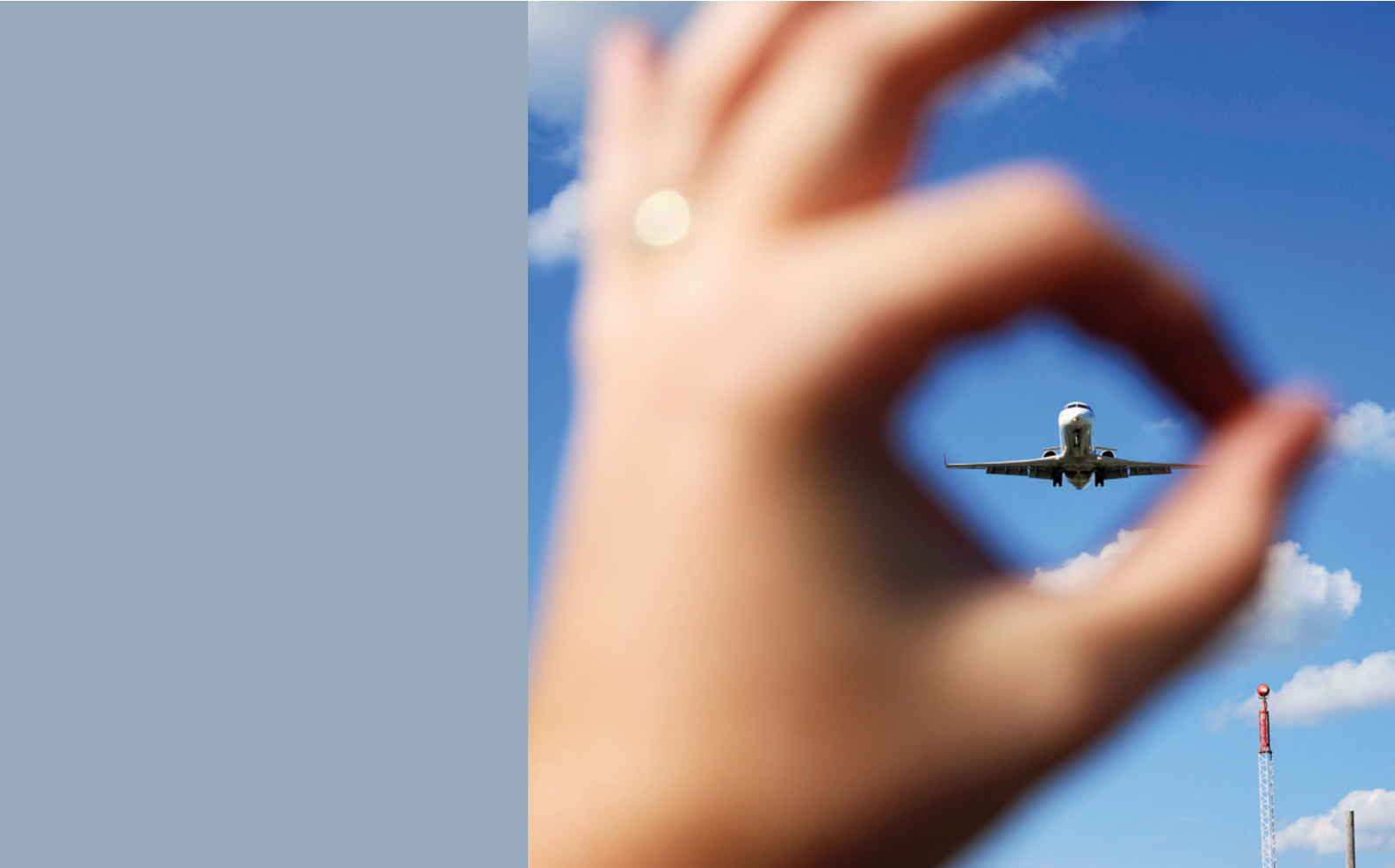


OSYRIS

Collaborative Flow Management



BARCO

Visibly yours

Collaborative Flow Management



What is Collaborative Flow Manager (CFM)?

Collaborative Flow Manager (CFM) is a new addition to the OSYRIS queue management tools, which also include Arrival and Departure Managers. CFM is an automated internet-based application that provides a system of allocating controlled off blocks, take-off and arrival times to a flight destined for a CFM controlled aerodrome. CFM first became operational in New Zealand in 2007. It has won two IT Industry Awards recognizing it as an innovative, leading edge use of technology. Since its introduction, CFM has delivered efficiency gains to Air Navigation Service Providers (ANSPs), generated significant fuel savings and emission reductions for airlines, and provided substantial benefits to airline passengers by way of increased on time performance.

“CFM is a next generation tool that is further optimizing the management of aircraft delays, ensuring they are incurred on the ground and not in the air. It allows us to be pro-active in managing our network to optimize the impact of delays and also assign priorities to better manage the needs of our passengers connecting to other flights.”

Bob Fletcher, Head of Operations Support at Air New Zealand

The benefits of CFM

- A dynamic, internet-based application, enabling airlines to manipulate their fleet and network configurations in real time so that delays are incurred on the ground rather than in the air - reducing fuel consumption and CO₂ emissions.
- Accessed by a standard web browser over the internet (via a secure login) CFM is capable of providing services to all departments and personnel - from operations scheduling centers, to pilot briefing areas, to gate handling.
- CFM provides the same visibility to airports, enabling them to see all flights planned for and airborne to them, with estimated time of arrival and all other information updated in real time from the air traffic management system.
- The collaborative nature of CFM means that operators are able to interact directly with the CFM system.
- CFM information is also sent to the Air Traffic Management system and is therefore visible to Air Traffic Control and Flight Service personnel.
- CFM is configured to work within a Flight Information Region (FIR), and can provide flow management to all airports within the FIR. It can also be adapted to work with sector capacities rather than airport capacities, when required.
- For major airports CFM planning can be easily combined with other queue management tools like AMAN and DMAN which are focused on tactical and pretactical tasks.

Airways New Zealand: CFM case study

Since CFM was installed, Airways New Zealand, one of the world's leading ANSPs, estimates that the tool has contributed to NZ\$22 million in fuel savings and reduced CO₂ emissions by 46 million kilos across the total New Zealand fleet.

"CFM is a proven technology that has certainly demonstrated its worth. It has saved airlines money, reduced the impact of delays on their customers and allowed Airways to make progress on our mission, which is to help our customers succeed," Airways Capacity Management Specialist Chris McGaw says.

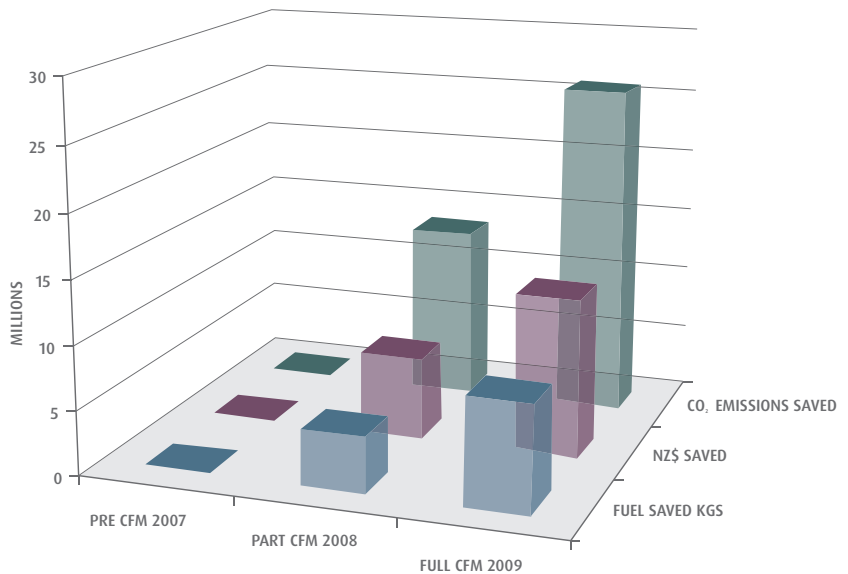
CFM enables airlines to jointly agree on priority flights and reschedule their services by matching demand to capacity at New Zealand's three main trunk airports. CFM exchanges data with the air traffic management system and uses it to calculate options to reduce inflight delay. The result is reduced fuel consumption and greenhouse gas emissions.

"CFM enables airlines to work collaboratively together - and with Airways - to schedule departures and arrivals to avoid congestion," Chris McGaw continues. "Airlines can now move their aircraft around to best suit their fleet and

their customers' needs. The result: less airborne holding, delays for domestic flights are incurred on the ground wherever possible, trajectory modeling is more precise, and because international arrivals are visible to CFM two hours away, air traffic controllers can make better flow assessments because the data is available to them much earlier."

In 2010 Barco will install an integrated AMAN-CFM solution for Auckland International Airport. CFM will debunch forecasted traffic peaks by providing optimal departure times and AMAN will provide speed advice to enable continuous descents.

Fuel savings realized through CFM



	Fuel saved kgs	Fuel cost saved (NZ\$)	CO ₂ emissions saved
Pre CFM 2007	0	0	0
Part CFM 2008	4,262,000	6,435,000.00	13,467,920
Full CFM 2009	8,211,000	12,398,000.00	25,946,760

If you're an ANSP...

CFM will help you realize efficiency gains through:

- Smoothing the flow of traffic.
- Making rosters more predictable (because air traffic is less prone to spikes in demand).
- Ensuring breaks in rosters can be fitted around quieter periods of demand, determined from the CFM display.
- Provision of automatic data recording and reporting, enabling analysis of ATM system bottlenecks and performance/non-conformance of individual flights.
- Allowing ANSPs to be proactive in managing their network.

If you're an airline...

CFM will help realize savings by:

- Giving you complete, real-time visibility into the progress of flights from the time a flight plan is filed through to landing.
- Jointly agreeing (with ANSPs) on priority flights and then rescheduling your own services (re-allocated delay) into the most cost effective configuration you choose.
- Ensuring that fuel savings derived from Performance Based Navigation, User Preferred Route, and other direct routing systems are not lost through arrival holding or delay vectoring. CFM ensures that these benefits can be maintained.
- CFM can quickly and easily produce several different reports, including a full CFM/ATM History report on a particular aircraft in a variety of downloadable formats.
- Additional flexibility available to the air traffic system flow coordinator allowing airlines to request priority handling for exceptional circumstances.



M00346-R00-0210-PB

Barco is an ISO 9001 registered company. The information and data given are typical for the equipment described. However any individual item is subject to change without any notice. The latest version of this product sheet can be found on www.barco.com.

Barco nv
Pres. Kennedypark 35, B-8500 Kortrijk
Europe, Middle-East, Africa: +32 56 26 20 09
USA: +1 678 475 8000
Latin America: +55 11 38421656
Japan: +81 3 5762 8727
China: +86 400 88 22726
Or mail to sales.airtraffic@barco.com

BARCO

Visibly yours