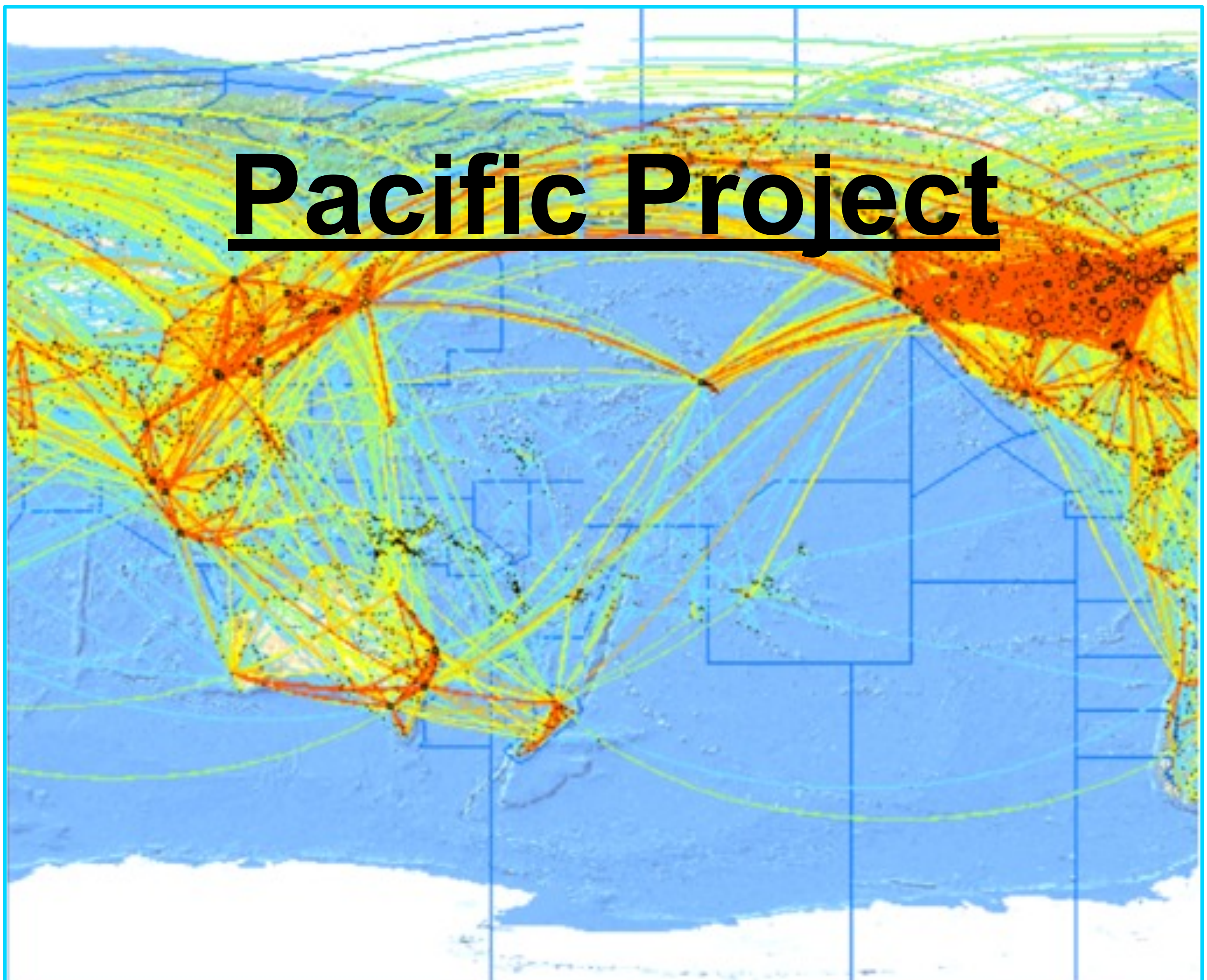
Pacific Project



Pacific Project

Objective

This project aims to substantially improve operational efficiency and environmental outcomes on the major air traffic flow between North America and Asia.

The key to this objective is to enable aircraft to more effectively utilise current onboard technology while flying User Preferred Routes (UPR).

The project will integrate capability with NEXTGEN and SESAR and provide a link to the Asia Pacific “Seamless Skies” initiative launched at this year’s Directors General Conference in Japan.

Background

The North Pacific is characterised by large geographic volumes of airspace managed by Canada, Japan, Russia and the United States.

Over the last two decades new routes and procedures have increased capacity and improved efficiency.

However, this capacity has been absorbed by air traffic growth, which will continue to outpace capacity increases.

Over the same period airlines have invested heavily in improved aircraft capability, which is now well in advance of ATC capabilities and supporting infrastructure. Unfortunately this creates a situation where proven technology and procedures cannot be employed to deliver available benefits in safety, capacity and efficiency.

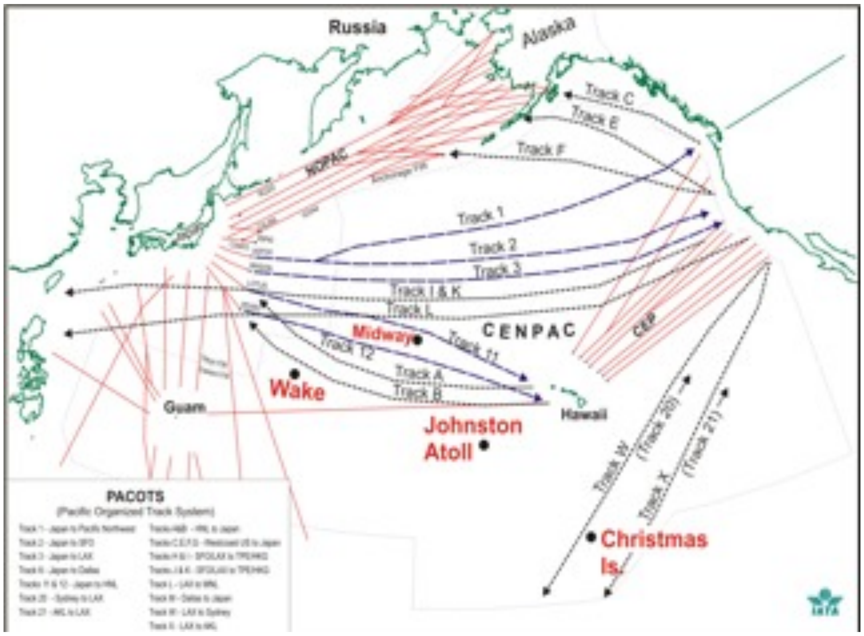
The "Pacific Project" aims to collectively generate improvements in airspace management to more effectively utilize this airborne capability. In so doing this will increase airspace capacity and assist to satisfy future demand without the ongoing escalation of inefficiencies.

Current Situation

The current route structure is based on fixed tracks (NOPAC, RTE, etc) together with flexible tracking (PACOTS) and User Preferred Routes (UPR) in defined areas.

- Many of the fixed tracks are based on terrestrial aids
- NOPAC fixed tracks condense traffic into a confined area
- NOPAC fixed tracks are assigned priority limiting the benefits which could be obtained from more a flexible route structure
- Flights that transit Russian airspace have limited entry/exit points and therefore little track flexibility
- The great circle nature of fixed tracks does not allow best use of prevailing winds and avoidance of unfavourable winds
- Demand for the limited number of tracks frequently exceeds capacity
- The design of fixed tracks does not take advantage of developing navigation capacity such as PBN

PACOTS do generate efficiencies but they are limited in their generic nature, validity periods, lead-time for publishing and operational restrictions against NOPAC.



UPRs are available in some areas but operational restrictions can negate any possible benefit due to the priority allocated to both PACOTS and fixed tracks.

A “seamless” operation is not possible because of the varying separation and navigation requirements and the surveillance and communication capabilities.

Benefits

The greatest benefit will clearly be obtained by the use of UPR.

Benefits include reduced flight times and fuel burn, increased payload capability and significantly reduced environmental emissions[1].

The long-haul nature of flights between North America and Asia enables enormous gains if aircraft are able to take advantage of upper wind patterns.

Modelling conducted to date between LAX/HKG suggests that a B777 UPR flight time reduces on average by 25 minutes. There are similar savings LAX/BJS.

Of greater significance, B747 aircraft UPR LAX/HKG have potential winter flight time reductions of 70-80 mins and payload increases of 5%.
This is a saving of 8000kg of fuel and CO2 reduction of some 25000Kg.

Extrapolating these savings across the number of aircraft which fly in this area manifestly demonstrates the potential benefit.

Environment

[1] Examples of expected benefits for a B772 detailed at Appendix 1

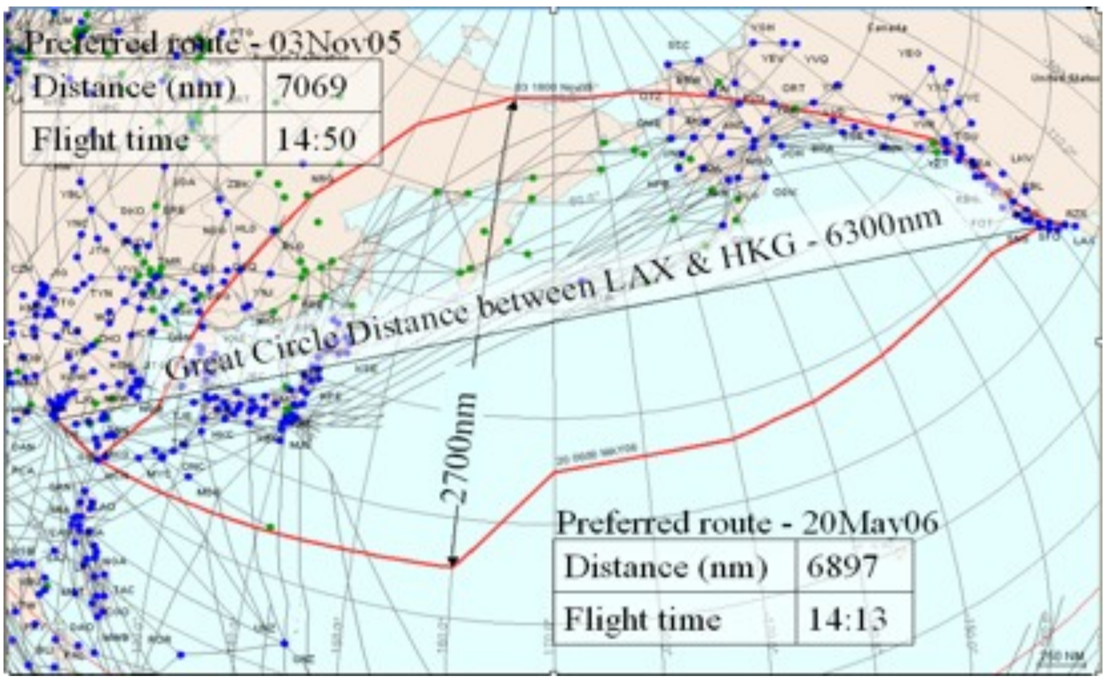
Aviation must reduce CO2 emissions.

The aviation industry has agreed ambitious environmental targets[2].

Efficient airspace management will be an integral part of attaining these targets.

Initiatives such as the ASPIRE demonstration flights have shown the efficiencies possible if all other aircraft are removed from the trial aircraft's desired profile.

The Pacific Project will enable ALL aircraft to fly their desired profile and ALL aircraft to obtain the efficiencies, which we know are obtainable.



Whilst this may, on the face of it, seem an insurmountable challenge today the seasonal variation will provide a partial solution. Flights eastbound would look to take advantage of westerly jet streams whereas flights westbound would be looking to avoid these areas. Nature effectively producing a uni-directional flow arrangement.

Next Steps

Whilst various forums, such as IPACG & CPWG, have facilitated significant regional gains there is no single forum for this project.

Therefore, we propose that a specific project be established to consider operations between North America and Asia collectively and from end-to-end**.**

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[2] ICAO HLM on Environment

This project requires the involvement of the key stakeholders, Canada, Japan, Russia, USA and IATA/Airlines. Significant input is also required from China to provide connector routes for aircraft to feed into the North Pacific area. Other stakeholders DPR Korea, the Philippines and South Korea also need to be engaged during the project to facilitate connector routes.

IATA will be promoting this project at both Operational and Political forums to gain endorsement. We are looking to the States to provide the necessary support to this project to begin the quest to reduce airline costs and reduce CO_2 emissions.

Summary

We believe that the benefits are undeniable.

Conversely we do not under estimate the challenge.

We acknowledge Industry has worked tirelessly, together, to provide benefits across the current North Pacific track structure.

We applaud current efforts to demonstrate where environmental savings can be obtained in an attempt to coalesce action.

We now look for Leadership, from all parties, to agree that these benefits are worth the effort required and that we should now join together and work out a plan.

And from planning to action – the time has come.

Any comments or questions please contact

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Example Data of Projected Benefits B772
(Oct 2009-Oct 2010 based on historical winds)

EASTBOUND			TIME			FUEL			DIST		
			NOW	FLEX	Δ mins	NOW	FLEX	Δ kgs	NOW	FLEX	Δ NM
PEK	**YVR**	OCT	9.28	9.16	12	55,006	53,302	1,704	4,447	4,318	129
		APR	9.31	9.24	7	65,869	64,693	1,176	4,427	4,350	77
PEK	**LAX**	OCT	11.16	10.48	28	84,307	80,132	4,175	5,330	5,096	234
		APR	11.04	10.36	28	79,847	76,034	3,813	5,107	4,910	197
NRT	**YVR**	OCT	8.20	8.10	10	57,857	56,623	1,234	3,895	3,823	72
		APR	8.05	8.03	2	54,607	54,469	138	3,722	3,721	1
NRT	**LAX**	OCT	9.48	9.41	7	70,212	68,989	1,223	4,628	4,562	66
		APR	9.05	9.05	0	62,325	62,282	43	4,188	4,195	-7
HKG	**YVR**	OCT	11.23	10.47	36	83,802	78,249	5,553	5,412	5,098	314
		APR	11.01	10.56	5	80,775	80,091	684	5,164	5,116	48
HKG	**LAX**	OCT	13.07	12.26	41	98,049	93,581	4,468	6,270	5,923	347
		APR	11.54	11.47	7	86,327	85,265	1,062	5,554	5,507	47
SIN	**YVR**	OCT	14.15	13.46	29	105,029	102,228	2,801	6,823	6,583	240
		APR	13.39	13.32	7	100,099	99,313	786	6,435	6,377	58
SIN	**LAX**	OCT	15.43	15.15	28	113,460	110,671	2,789	7,531	7,286	245
		APR	14.32	14.25	7	104,928	104,159	769	7,727	7,703	24

WESTBOUND			TIME			FUEL			DIST		
			NOW	FLEX	Δ mins	NOW	FLEX	Δ kgs	NOW	FLEX	Δ NM
YVR	PEK	OCT	10.35	10.13	23	78,033	74,989	3,044	4,985	4,797	188
		FEB	10.33	10.07	26	76,719	72,117	4,602	4,715	4,695	20
		JUN	9.57	9.47	10	73,325	71,636	1,689	4,659	4,566	93
LAX	PEK	OCT	12.29	12.03	26	93,573	91,116	2,457	4,179	4,251	-72
		FEB	12.26	12.00	26	91,669	88,454	3,215	4,448	4,393	55
		JUN	11.52	11.30	22	88,478	86,288	2,190	5,565	5,403	162
YVR	NRT	OCT	9.04	8.55	9	65,202	63,989	1,213	4,179	4,251	-72
		FEB	9.31	9.24	7	68,599	67,553	1,046	4,448	4,393	55
		JUN	9.06	9.02	4	65,810	65,024	786	4,271	4,228	43
LAX	NRT	OCT	10.20	10.12	8	76,094	74,887	1,207	4,874	4,838	36
		FEB	11.10	11.03	7	82,851	81,791	1,060	5,262	5,198	64
		JUN	10.58	10.54	4	81,992	81,803	189	5,190	5,174	16
YVR	HKG	OCT	12.16	12.01	15	92,084	90,582	1,502	5,804	5,678	126
		FEB	13.22	12.46	36	97,817	94,203	3,614	6,286	5,997	289
		JUN	12.11	11.54	17	91,425	89,798	1,627	5,759	5,613	146
LAX	HKG	OCT'09	13.37	13.21	16	100,215	98,669	1,546	6,463	6,326	137
		NOV	14.52	14.28	24	106,533	104,117	2,416	6,998	6,797	201
		DEC	14.44	14.25	19	105,957	104,129	1,828	6,942	6,787	155
		JAN	14.49	14.06	43	105,868	102,149	3,719	6,931	6,634	297
		FEB	15.12	14.31	41	108,713	104,794	3,919	7,162	6,836	326
		MAR	14.56	14.40	16	107,090	105,430	1,660	7,035	6,890	145
		APR	14.29	13.47	42	104,105	100,550	3,555	6,792	6,469	323
		MAY	13.36	13.21	15	99,841	98,404	1,437	6,443	6,321	122
		JUN	14.15	13.55	20	104,606	102,757	1,849	6,786	6,637	149
		JUL	13.53	13.27	26	102,561	99,786	2,775	6,624	6,413	211
		AUG	13.49	13.38	11	101,733	100,677	1,056	6,563	6,492	71
		SEP	13.58	13.37	21	101,983	99,878	2,105	6,585	6,421	164
		OCT'10	14.17	13.59	18	104,396	102,263	2,133	6,781	6,612	169
YVR	SIN	NOV	14.44	14.36	8	107,408	106,573	835	7,034	6,976	58
		MAR						0			0
		JUL						0			0
LAX	SIN	OCT	16.59	16.39	20	120,141	118,206	1,935	8,120	7,956	164

		FEB	17.12	16.38	34	120,491	117,251	3,240	8,153	7,899	254
		JUN	16.29	16.13	16	117,109	115,485	1,624	7,873	7,731	142

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