

FANS1/A Performance Based Communications and Surveillance On-Line Analysis Tool



ISPACG FIT/24
6-7 March 2017
Honolulu, Hawaii.



Overview on using the tool

User Interface as at 1 October 2016



Overview Page

PBCS Analysis



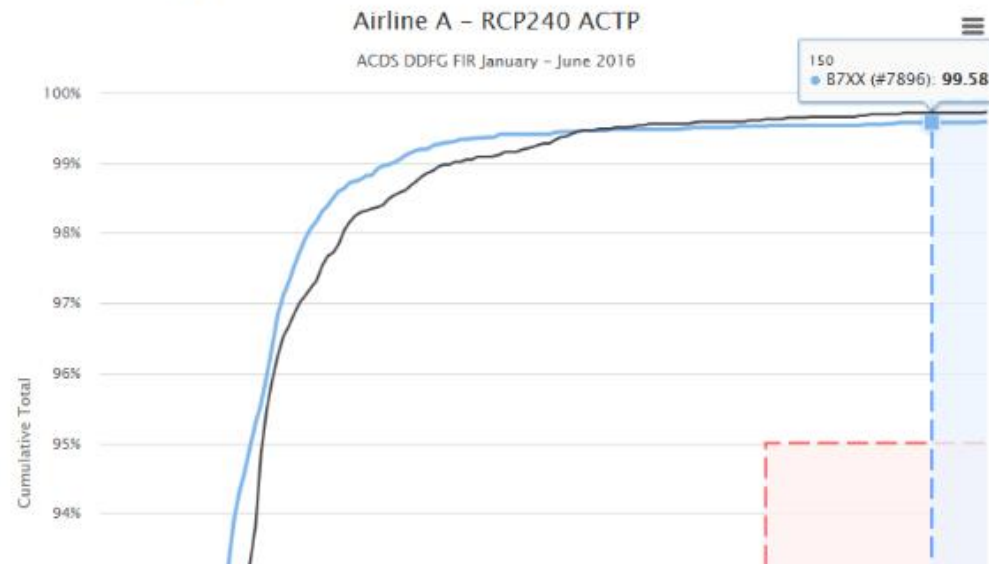
Performance Based Communications and Surveillance (PBCS) analysis

This website enables the analysis of ADS-C and CPDLC data that has been extracted in accordance with the guidelines in ICAO Performance Based Communications and Surveillance Manual Doc 9869 Appendix D

You must be an authorized user to access this website. For further information contact paul.radford@airways.co.nz

Log on

Example reports



Log on

Log on



PBCS Analysis

- Overview
- Import ADS-C CSV
- Clean Imported ADS-C Data
- ADS-C Graphs
- ADS-C Tabular
- Import CPDLC CSV
- Clean Imported CPDLC Data
- CPDLC Graphs
- CPDLC Tabular
- Delete ADS-C Data
- Delete CPDLC Data
- Admin Interface

After entering your username and password the menu items allowed by your user permissions are displayed in the menu bar.

You must have a user account to access this website

Username:

Password:

[login](#)
[Lost password?](#)

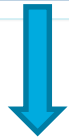


Paul Radford

Username: paul

Email Address: paul.radford@airways.co.nz

[Edit Profile](#) [Logout](#)



Edit Username : paul

First Name:

Last Name:

Email Address:

Password:

Confirm:

- Your password can't be too similar to your other personal information.
- Your password must contain at least 8 characters.
- Your password can't be a commonly used password.
- Your password can't be entirely numeric.

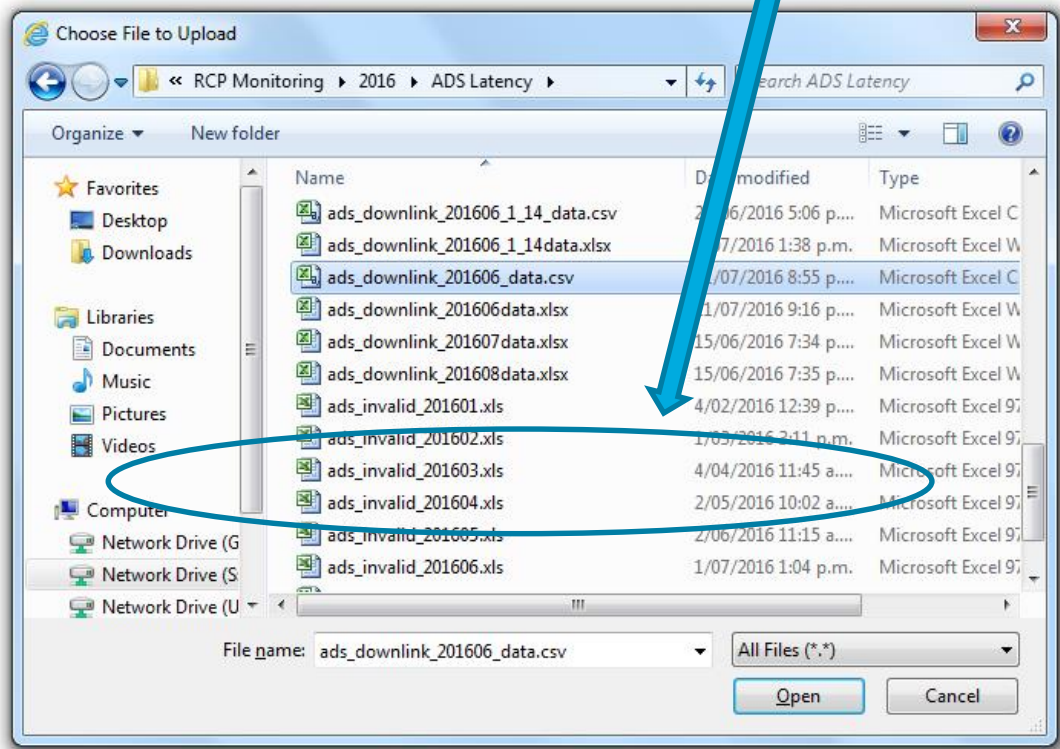
[Submit](#)

Importing .csv data



Import Data

Select CSV File to upload:



Importing .csv data

PBCS Analysis

- Overview
- Import ADS-C CSV**
- Clean Imported ADS-C Data
- ADS-C Graphs

Import Data

Select CSV File to upload :

PBCS Analysis

- Overview
- Import ADS-C CSV
- Clean Imported ADS-C Data
- ADS-C Graphs
- ADS-C Tabular
- Import CPDLC CSV

Importing CSV Data

5500 of 46651 records loaded

Time to completion : 2 minutes 29 seconds


PBCS Analysis

- Overview
- Import ADS-C CSV
- Clean Imported ADS-C Data
- ADS-C Graphs
- ADS-C Tabular
- Import CPDLC CSV
- Clean Imported CPDLC Data
- CPDLC Graphs
- CPDLC Tabular

Importing CSV Data

46651 of 46651 records loaded

Time to completion : 0 minutes 0 seconds

 Please Wait - Tidying imported data...

Clean/Filter imported data

- Shows all imported data , user can sort, review , and view invalid records that will be discarded.
- User can fix missing type/company for any tail number.
- Find and designate bad tails and outages.



23	NZZO	UAE	A388	A6EDO	20160601	XXA	-37.256699	170.670029	W	00:35:13	00:35:21	8	NORMAL	SAT
24	NZZO	ANZ	B772	ZKOKG	20160601	MTS1	-22.470646	-161.346756	P	00:36:46	00:36:56	10	NORMAL	SAT
25	NZZO	RNZAF	C130	NZ7005	20160601	XXP	-29.682514	171.903595	P	00:37:05	00:37:15	10	NORMAL	SAT

Showing 1 to 25 of 46,651 entries

Previous 1 2 3 4 5 ... 1867 Next

Find Outages/Bad-Tails

Duration Range :



From Line (Click):

To (Alt-Click):

Set Outage

Selected Tail:

To (Ctrl-Click):

Set Bad Tails

Fix missing AC Type/AC Company

Tail Number:

AC Type:

AC Company:

Set missing values

Invalid data to be discarded

Show 25 entries

Search:

Line	ATSP	AC Company	AC Type	Tail No	Date	RGS	Latitude	Longitude	Report Type	Aircraft Time	OCS Time	Duration	Designation	RGS type
No data available in table														

Showing 0 to 0 of 0 entries

Previous Next

Copy Imported Data to Main Database

Search:

Report Type	Aircraft Time	OCS Time	Duration	Designation	RGS type
P	02:58:33	02:59:01	28	NORMAL	SAT
P	03:12:30	03:12:45	15	NORMAL	SAT
W	03:18:04	03:18:11	7	NORMAL	SAT
P	03:19:53	03:20:00	7	NORMAI	SAT

Copy Imported Data to Main Database



Once you have finished correcting and errors you may copy this data to the main database.

Are you sure you wish to proceed?

Copy data

Continue cleaning data

Downlink Delay Analysis

Overview

Import ADS-C CSV

Clean Imported ADS-C Data

ADS-C Graphs

ADS-C Tabular

Import CPDLC CSV

Clean Imported CPDLC Data

CPDLC Graphs

Delete ADS-C Data

Delete CPDLC Data

Admin Interface

Data Transfer Complete



All data transferred from Import table to Main database.

Moved 33453 records.



ADS-C Graphical Analysis Page

PBCS Analysis Profile

Overview

Import ADS-C CSV

Clean Imported ADS-C Data

ADS-C Graphs

ADS-C Tabular

Import CPDLC CSV

Clean Imported CPDLC Data

CPDLC Graphs

CPDLC Tabular

Delete ADS-C Data

Delete CPDLC Data

Admin Interface

Graphical Data Selection

Series Name <input type="text" value="Series"/>	Aircraft Company <input type="text"/>	Aircraft Type <input style="float: right; color: red; font-weight: bold;" type="text"/> ×
Designation <input type="text" value="×NORMAL ×"/>	ATSP <input type="text"/>	Tail Number <input style="float: right; color: orange; font-weight: bold;" type="text"/> ↻
	Media Type <input type="text" value="All"/>	RGS <input type="text"/>

+ Add new graph↻ Reload all graphs

Date From <input style="width: 80%;" type="text" value="2016-01-01"/>	Date To <input style="width: 80%;" type="text" value="2016-12-31"/>	
Chart Minimum Percentage <input type="text" value="90"/>	Chart Minimum Time (sec) <input type="text" value="240"/>	RSP <input style="width: 80%;" type="text" value="RSP180"/>
Chart Title <input type="text" value="Title"/>	Sub-title <input type="text" value="Chart Sub-title"/>	

1 Select date range “Date From” – “Date To”; RSP - select RSP180 or RSP400 analysis. Select “Chart Minimum Percentage” = Y Axis ; Chart Minimum Time (sec) = X Axis. Enter “Chart Title”; Sub-title.

9 |

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ADS-C Graphical Analysis Page

- Overview
- Import ADS-C CSV
- Clean Imported ADS-C Data
- ADS-C Graphs**
- ADS-C Tabular
- Import CPDLC CSV
- Clean Imported CPDLC Data
- CPDLC Graphs
- CPDLC Tabular
- Delete ADS-C Data
- Delete CPDLC Data
- Admin Interface

Graphical Data Selection

Series Name	<input type="text" value="Series"/>	Aircraft Company	<input type="text"/>	Aircraft Type	<input type="text"/>	
				Tail Number	<input type="text"/>	
Designation	<input type="text" value="xNORMAL"/>	ATSP	<input type="text"/>	RGS	<input type="text"/>	
		Media Type	<input type="text" value="All"/>			

Add new graph

Reload all graphs

Date From	<input type="text" value="2016-01-01"/>	Date To	<input type="text" value="2016-12-31"/>
-----------	---	---------	---

Chart Minimum Percentage	<input type="text" value="90"/>	Chart Minimum Time (sec)	<input type="text" value="240"/>	RSP	<input type="text" value="RSP180"/>
--------------------------	---------------------------------	--------------------------	----------------------------------	-----	-------------------------------------

Chart Title	<input type="text" value="Title"/>	Sub-title	<input type="text" value="Chart Sub-title"/>
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Enter "Series Name" for this graph and then select from "Aircraft Company" "Aircraft Type" "Tail Number" "RGS Type" "RGS" and "ATSP".

selecting this button calculates the graph and when loaded a is displayed – selecting deletes the graph

ADS-C Graphical Analysis Page

PBCS Analysis Profile

Overview

Import ADS-C CSV

Clean Imported ADS-C Data

ADS-C Graphs

ADS-C Tabular

Import CPDLC CSV

Clean Imported CPDLC Data

CPDLC Graphs

CPDLC Tabular

Delete ADS-C Data

Delete CPDLC Data

Admin Interface

Graphical Data Selection

Series Name <input type="text" value="Series"/>	Aircraft Company <input type="text"/>	Aircraft Type <input style="float: right; text-align: right;" type="text"/> ×
Designation <input type="text" value="×NORMAL ×"/>	ATSP <input type="text"/>	Tail Number <input style="float: right; text-align: right;" type="text"/> ↻
	Media Type <input type="text" value="All"/>	RGS <input type="text"/>

+ Add new graph4

5

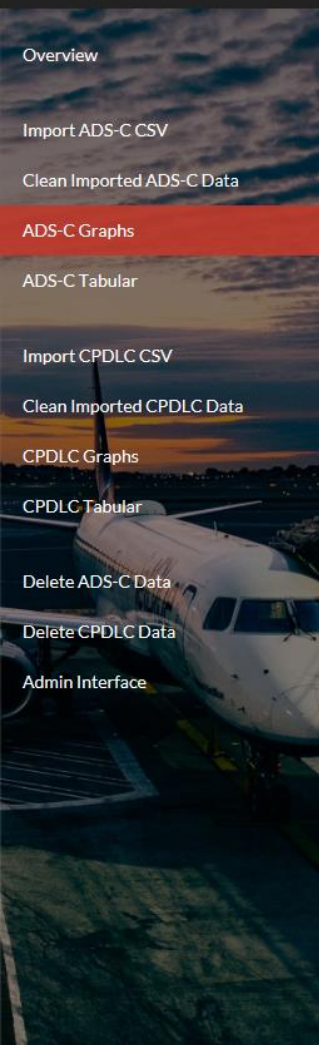
↻ Reload all graphs

Date From <input style="width: 100%;" type="text" value="2016-01-01"/> <small>2016-01-01</small>	Date To <input style="width: 100%;" type="text" value="2016-12-31"/> <small>2016-12-31</small>	
Chart Minimum Percentage <input type="text" value="90"/>	Chart Minimum Time (sec) <input type="text" value="240"/>	RSP <input style="width: 100%;" type="text" value="RSP180"/>
Chart Title <input type="text" value="Title"/>	Sub-title <input type="text" value="Chart Sub-title"/>	

4 Selecting + Add new graph adds a new graphical data selection area.

5 Select ↻ Reload all graphs if changing a date range or other selection field to reload all graphs selected.

ADS-C Graphical – Building a Graph



Graphical Data Selection

1st graph selection

Series Name	<input type="text" value="ANZ B77W"/>	Aircraft Company	<input type="text" value="×ANZ"/>	Aircraft Type	<input type="text" value="×B77W"/>	<input type="button" value="×"/>
		Tail Number	<input type="text"/>	Designation	<input type="text" value="×NORMAL"/>	<input type="button" value="×"/>
RGS Type	<input type="text"/>	ATSP	<input type="text" value="×NZZO"/>			<input type="button" value="↻"/>

2nd graph selection

Series Name	<input type="text" value="ANZ B772"/>	Aircraft Company	<input type="text" value="×ANZ"/>	Aircraft Type	<input type="text" value="×B772 "/>	<input type="button" value="×"/>
		Tail Number	<input type="text"/>	Designation	<input type="text" value="B772"/>	<input type="button" value="×"/>
RGS Type	<input type="text"/>	ATSP	<input type="text" value="×NZZO"/>		<input type="text" value="B77W"/>	<input type="button" value="↻"/>
					<input type="text" value="B789"/>	

Date From	<input type="text" value="2016-01-01"/>	Date To	<input type="text" value="2016-06-30"/>
Chart Minimum Percentage	<input type="text" value="90"/>	Chart Minimum Time (sec)	<input type="text" value="240"/>
Chart Title	<input type="text" value="ANZ RSP180 NZZO FIR"/>	Sub-title	<input type="text" value="Jan - June2016"/>

Aircraft Type pulldown filters the types (B772, B77W, B789) for the selected Aircraft Company (ANZ) automatically

ANZ RSP180 NZZO FIR
Jan - June2016

ADS-C Graphical – Building a Graph

Graphical Data Selection

Series Name	<input type="text" value="ANZ B77W"/>	Aircraft Company	<input type="text" value="×ANZ"/>	Aircraft Type	<input type="text" value="×B77W"/>	<input type="button" value="×"/>
RGS Type	<input type="text"/>	Tail Number	<input type="text"/>	Designation	<input type="text" value="×NORMAL"/>	<input type="button" value="×"/>
		ATSP	<input type="text" value="×NZZO"/>			<input checked="" type="checkbox"/>

Series Name	<input type="text" value="ANZ B772"/>	Aircraft Company	<input type="text" value="×ANZ"/>	Aircraft Type	<input type="text" value="×B772"/>	<input type="button" value="×"/>
RGS Type	<input type="text"/>	Tail Number	<input type="text"/>	Designation	<input type="text" value="×NORMAL"/>	<input type="button" value="×"/>
		ATSP	<input type="text" value="×NZZO"/>			<input checked="" type="checkbox"/>

Series Name	<input type="text" value="ANZ B789"/>	Aircraft Company	<input type="text" value="×ANZ"/>	Aircraft Type	<input type="text" value="×B789"/>	<input type="button" value="×"/>
RGS Type	<input type="text"/>	Tail Number	<input type="text"/>	Designation	<input type="text" value="×NORMAL"/>	<input type="button" value="×"/>
		ATSP	<input type="text" value="×NZZO"/>			<input checked="" type="checkbox"/>

+ Add new graph

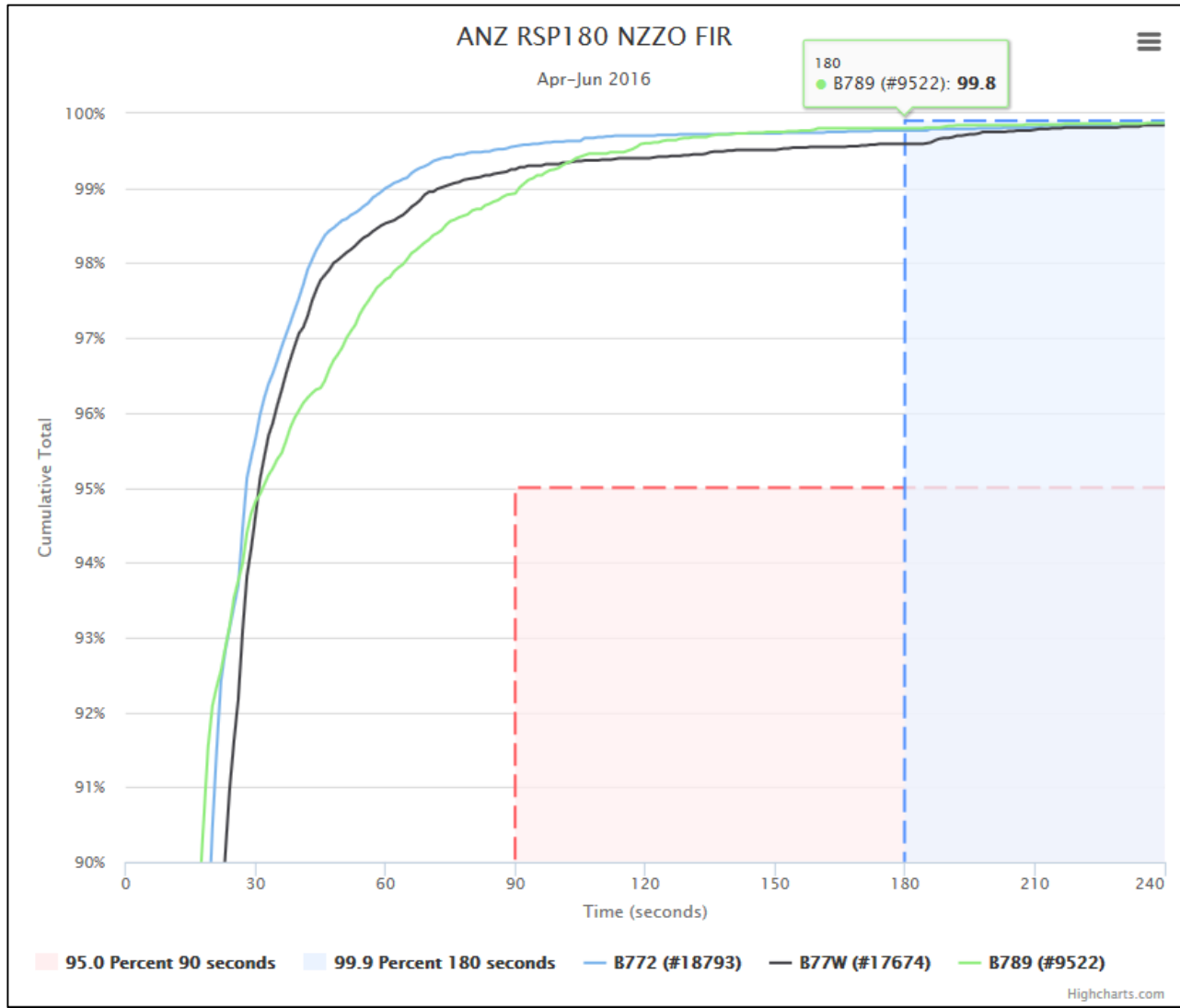
Reload all graphs

Date From	<input type="text" value="2016-01-01"/>	Date To	<input type="text" value="2016-06-30"/>
-----------	---	---------	---

Chart Minimum Percentage	<input type="text" value="90"/>	Chart Minimum Time (sec)	<input type="text" value="240"/>	RSP	<input type="text" value="RSP180"/>
--------------------------	---------------------------------	--------------------------	----------------------------------	-----	-------------------------------------

Chart Title	<input type="text" value="ANZ RSP180 NZZO FIR"/>	Sub-title	<input type="text" value="Jan - June2016"/>
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ADS-C Graphical – Example



ADS-C Tabular Analysis Page



ADS-C Tabular Data Selection

Aircraft Company **Aircraft Type** **Tail Number** **ATSP**
Show each **Show each** **Show each** **Show each**

RGS **Media Type** **Date From** **Date To**
Show each

Title **Hide Rows Fewer Than**

Load table data Table rows to be generated : 9

ADS-C Performance								
Colour Key		Period -					95% RSP180 Benchmark	99.9% RSP180 Benchmark
Media Type	RGS	Aircraft Type	Operating Company	Tail Number	ATSP	Message Count	RSP <= 90 sec	RSP <= 180 sec
Analysis by								

1 Clicking in each data selection field will activate a drop down menu of available selections. A blank field will select all. Available data selection fields are : Aircraft Company; Aircraft Type; Tail Number; ATSP; RGS; Media Type; Date From; Date To.

2 Enter a title for the table which is displayed on the title bar **3** As data selections are made the application displays the number of rows that will be generated - when complete select **Load table data**

ADS-C Tabular - Building a Table

Filter displayed table to remove rows of less than specified number of messages.

Title

ANZ B772 RSP180 NZZO

Hide Rows Fewer Than

1

✓ Load table data

Table rows to be generated : 2

ADS-C Performance								
Colour Key		Period 1 Jan 2015 - 31 Dec 2015					95% RSP180 Benchmark	99.9% RSP180 Benchmark
■ Meets Criteria								
■ 99.0%-99.84%								
■ Under Criteria								
Media Type	RGS	Aircraft Type	Operating Company	Tail Number	ATSP	Message Count	RSP <= 90 sec	RSP <= 180 sec
ANZ B772 RSP180 NZZO								
SATCOM All	All	B772	ANZ	All	All	44330	99.49	99.81
VHF All	All	B772	ANZ	All	All	13578	99.89	99.99

ADS-C Tabular - Example

ADS-C Performance								
Colour Key		Period 1 Apr 2016 - 30 Jun 2016					95% RSP180 Benchmark	99.9% RSP180 Benchmark
■	Meets Criteria							
■	99.0%-99.84%							
■	Under Criteria							
Media Type	RGS	Aircraft Type	Operating Company	Tail Number	ATSP	Message Count	RSP <= 90 sec	RSP <= 180 sec
A332 KZAK NZZO								
SATCOM All	All	A332	CAL	All	All	1409	99.07	99.29
SATCOM All	All	A332	CCA	All	All	5166	99.59	99.76
SATCOM All	All	A332	CES	All	All	16238	99.4	99.66
SATCOM All	All	A332	CSN	All	All	1856	99.73	99.78
VHF All	All	A332	CAL	All	All	435	99.54	99.77
VHF All	All	A332	CCA	All	All	968	99.79	99.79
VHF All	All	A332	CES	All	All	1723	99.7	99.82
VHF All	All	A332	CSN	All	All	513	99.61	99.61
HF All	All	A332	CCA	All	All	326	85.27	96.93
HF All	All	A332	CES	All	All	814	79.23	92.38
HF All	All	A332	CSN	All	All	79	75.94	88.6

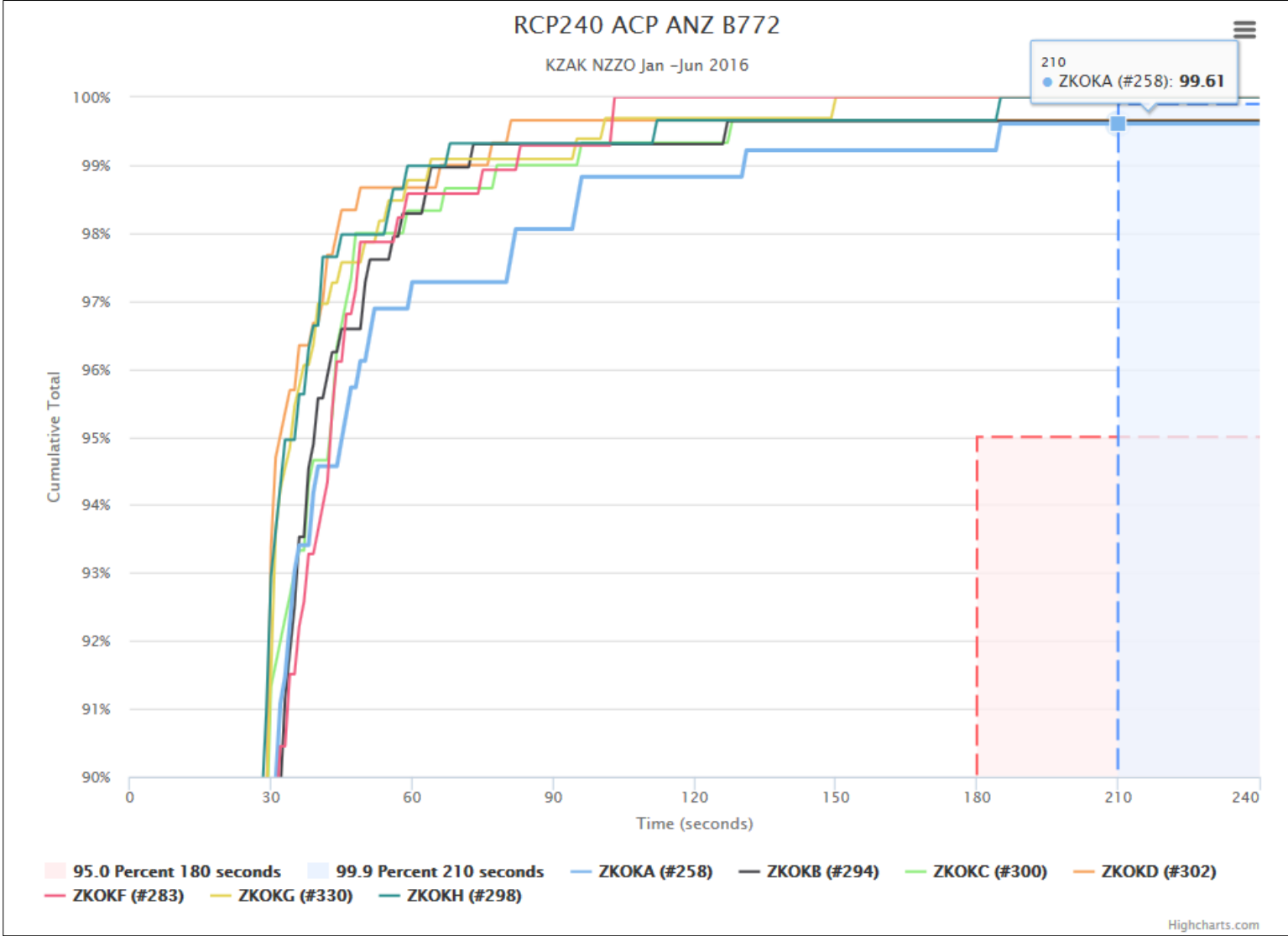
CPDLC Graphical – differences

The screenshot shows a web interface for CPDLC graphical analysis. At the top, there are two input fields labeled 'RGS Type' and 'ATSP'. Below them is a green button labeled '+ Add new graph' with a blue callout '1' next to it. The 'Field' dropdown menu is set to 'ACTP' with a blue callout '1' next to it. The 'Filter' dropdown menu is set to 'FULL' with a blue callout '2' next to it. The 'Date From' field is set to '2016-01-01'. Below these are three input fields: 'Chart Minimum Percentage' (90), 'Chart Minimum Time (sec)' (160), and 'RCP' (RCP240) with a blue callout '3' next to it. At the bottom, there are two input fields for 'Chart Title' (Title) and 'Sub-title' (Chart Sub-title), with a blue callout '3' next to the 'Sub-title' field. A '100%' progress indicator is visible at the bottom left.

- 1 Field - select ACTP, ACP, or PORT analysis
- 2 Filter – select FULL or RESTRICTED filter
- 3 RCP – select RCP240 or RCP400 analysis

Note: FULL = Filter out messages - Route: UM79-84, UM91, UM92 Resume Normal Speed: UM116
Contact Instructions: UM117-UM123
RESTRICTED = Don't filter Contact Instructions.

CPDLC Graphical – example



CPDLC Tabular - differences

The screenshot shows a web interface for CPDLC Tabular. At the top, there are two input fields labeled 'RGSType' and 'ATSP'. Below them is a green button labeled '+ Add new graph'. The main area contains several form fields: 'Field' (dropdown menu with 'ACTP' selected, callout 1), 'Filter' (dropdown menu with 'FULL' selected, callout 2), 'Date From' (text input with '2016-01-01' and a calendar icon), 'Chart Minimum Percentage' (text input with '90'), 'Chart Minimum Time (sec)' (text input with '160'), 'RCP' (dropdown menu with 'RCP240' selected, callout 3), 'Chart Title' (text input with 'Title'), and 'Sub-title' (text input with 'Chart Sub-title'). At the bottom, there is a 'Title' and 'Chart Sub-title' label and a '100%' progress indicator.




1 Field - select ACTP, ACP, or PORT analysis

2 Filter – select FULL or RESTRICTED filter

3 RCP – select RCP240 or RCP400 analysis

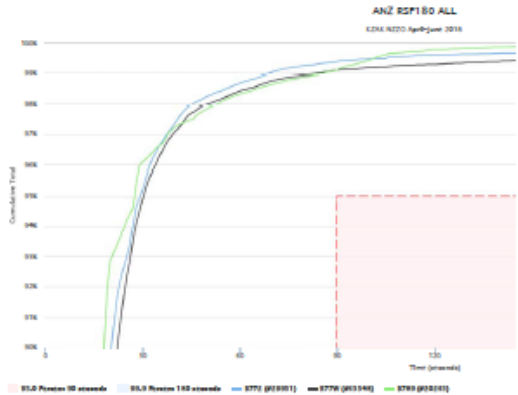
Note: FULL = Filter out messages - Route: UM79-84, UM91, UM92 Resume Normal Speed: UM116
Contact Instructions: UM117-UM123
RESTRICTED = Don't filter Contact Instructions.

CPDLC Tabular - example

CPDLC Performance										
Colour Key		Period 1 Apr 2016 - 30 Jun 2016					95% RCP240 Benchmark	99.9% RCP240 Benchmark		
	Meets Criteria	Media Type	RGS	Aircraft Type	Operating Company	Tail Number	ATSP	Message Count		
	99.0%-99.84%								RCP <= 120 sec	RCP <= 150 sec
	Under Criteria	RCP240 ACTP KZAK NZZO ANZ								
		SATCOM I4	All	B772	ANZ	All	All	538	99.44	99.44
		SATCOM I4	All	B77W	ANZ	All	All	1413	99.15	99.29
		SATCOM I4	All	B789	ANZ	All	All	51	100	100
		SATCOM MTSAT	All	B772	ANZ	All	All	817	99.75	99.75
		SATCOM MTSAT	All	B77W	ANZ	All	All	279	99.64	99.64
		SATCOM MTSAT	All	B789	ANZ	All	All	435	100	100

Printing graphs and tables

- Tool uses the normal print capability available in most browsers



ADS-C Performance								
Period 1 Apr 2016 - 30 Jun 2016							95% RSP180 Benchmark	99.9% RSP180 Benchmark
Media Type	RGS	Aircraft Type	Operating Company	Tail Number	ATSP	Message Count	RSP <= 90 sec	RSP <= 180 sec
KZAK NZZO ANZ B77W B789								
SATCOM I4	AME1	B77W	ANZ	All	All	21988	99.08	99.5
SATCOM I4	APK1	B77W	ANZ	All	All	5664	98.58	99.13
SATCOM I4	AME1	B789	ANZ	All	All	1441	99.44	100
SATCOM MTSAT	MTS1	B77W	ANZ	All	All	5452	99.35	99.7
SATCOM MTSAT	MTS1	B789	ANZ	All	All	15055	98.89	99.88

Note : considering enhancement that will allow user to save graphs and tables on-line and allow access to others by individual url links

2/08/2016

2/08/2016

Delete imported records

PBCS Analysis Pro

Overview

- Import ADS-C CSV
- Clean Imported ADS-C Data
- ADS-C Graphs
- ADS-C Tabular
- Import CPDLC CSV
- Clean Imported CPDLC Data
- CPDLC Graphs
- CPDLC Tabular
- Delete ADS-C Data** 1
- Delete CPDLC Data
- Admin Interface

Delete data loaded from selected files

If you continue all data imported from the selected files, will be deleted.

This will delete 454340 records from the database

Are you sure you wish to proceed?

3Delete data Cancel

Filename		Records	Select
ads_downlink_201509.csv	April 30, 2016, 8:01 a.m.	42134	<input type="checkbox"/>
ads_downlink_201510.csv	April 30, 2016, 8:08 a.m.	45445	<input type="checkbox"/>
ads_downlink_201511.csv	April 30, 2016, 8:21 a.m.	44342	<input type="checkbox"/>
ads_downlink_201512.csv	April 30, 2016, 8:28 a.m.	50816	<input type="checkbox"/>
ads_downlink_201601_data.csv	April 30, 2016, 8:37 a.m.	51966	<input type="checkbox"/>
ads_downlink_201602_data.csv	April 30, 2016, 8:47 a.m.	50030	<input type="checkbox"/>
ads_downlink_201603_data.csv	April 30, 2016, 8:54 a.m.	51073	<input type="checkbox"/>
ads_downlink_201604_data.csv	May 13, 2016, 11:04 a.m.	43912	<input type="checkbox"/>
ads_downlink_201503.csv	June 15, 2016, 9:37 p.m.	30354	<input type="checkbox"/>
ads_downlink_201605_data.csv	June 16, 2016, 12:14 p.m.	45271	<input type="checkbox"/>
ads_downlink_201606_data.csv	July 11, 2016, 8:56 p.m.	46651	<input type="checkbox"/>
ads_oakland_201607_data.csv	July 19, 2016, 7:46 p.m.	417681	<input type="checkbox"/>
ads_oakland_201608_data.csv	July 19, 2016, 10:04 p.m.	437482	<input type="checkbox"/>
ads_oakland_201609_data.csv	July 20, 2016, 2:56 a.m.	454340	<input type="checkbox"/>

2 Delete Selected Data

Success

Deleted 454340 rows of previously imported data

4

Thank you

