



# South Atlantic FANS by SITA

CNMC/6, SAT/FIT/11  
and SAT/21

June/2016

## Agenda

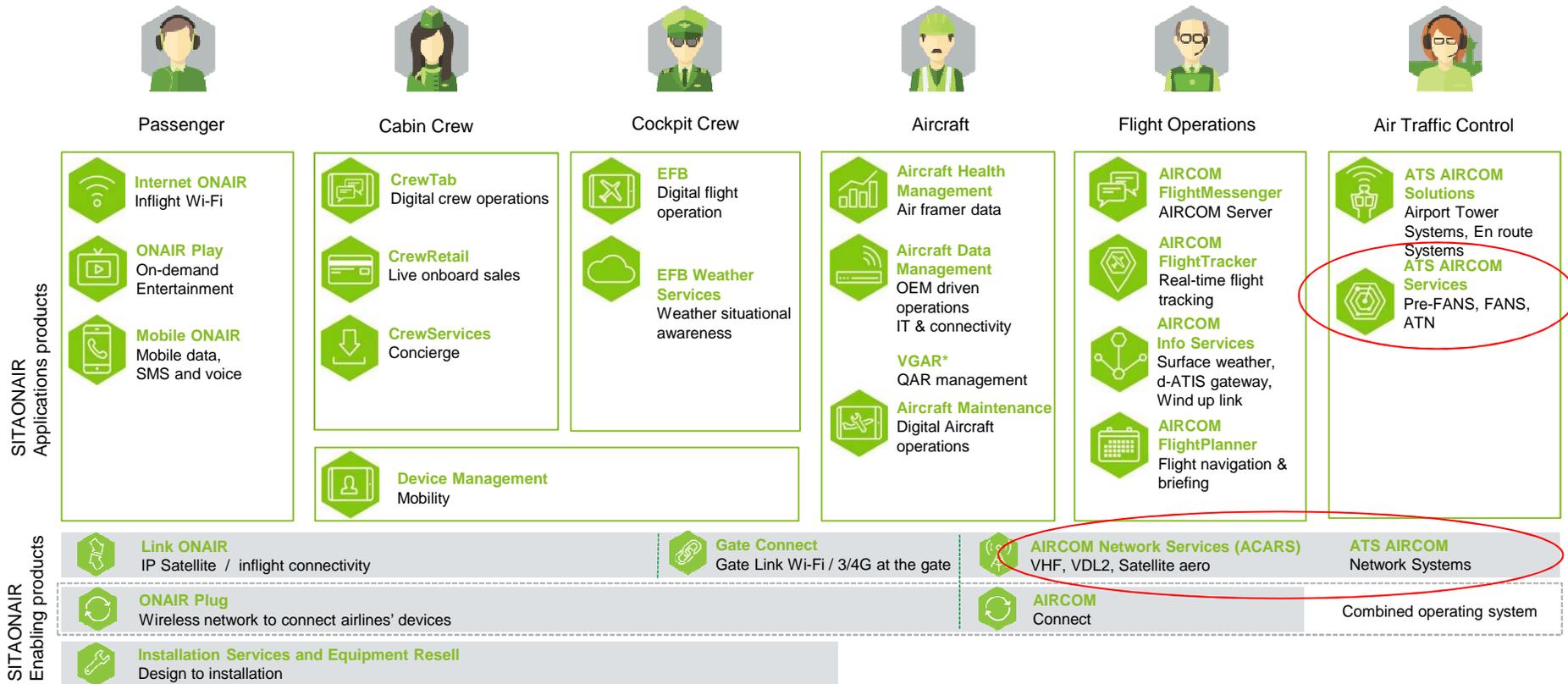
1. Introduction to SITAONAIR
2. FANS Operation overview
3. Regional context
4. South Atlantic FANS traffic
5. AIRCOM Datalink performance

## SITAONAIR a new organisation to serve the connected aircraft market

# SITA

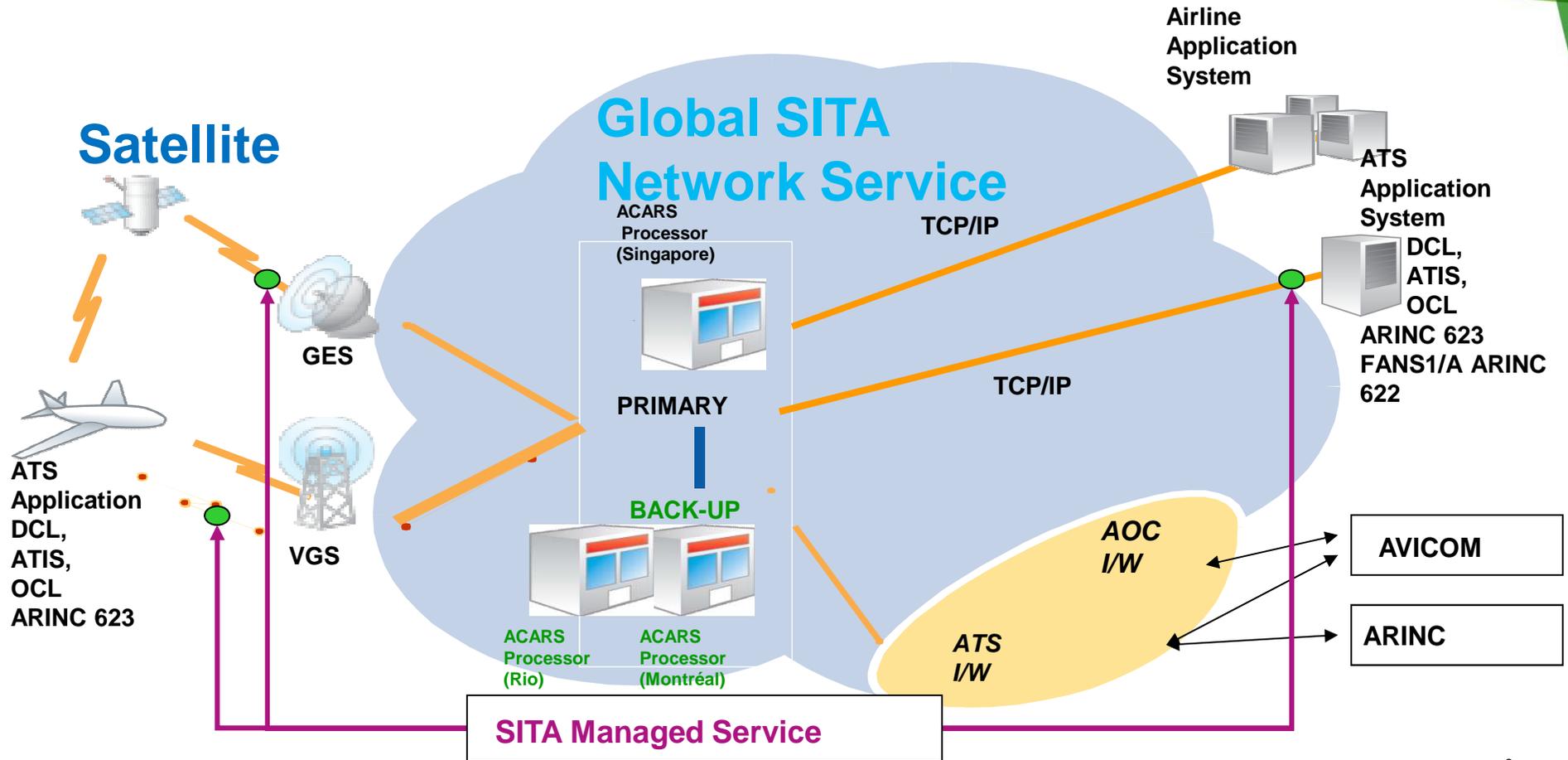


# Pioneering e-Aircraft™ solutions

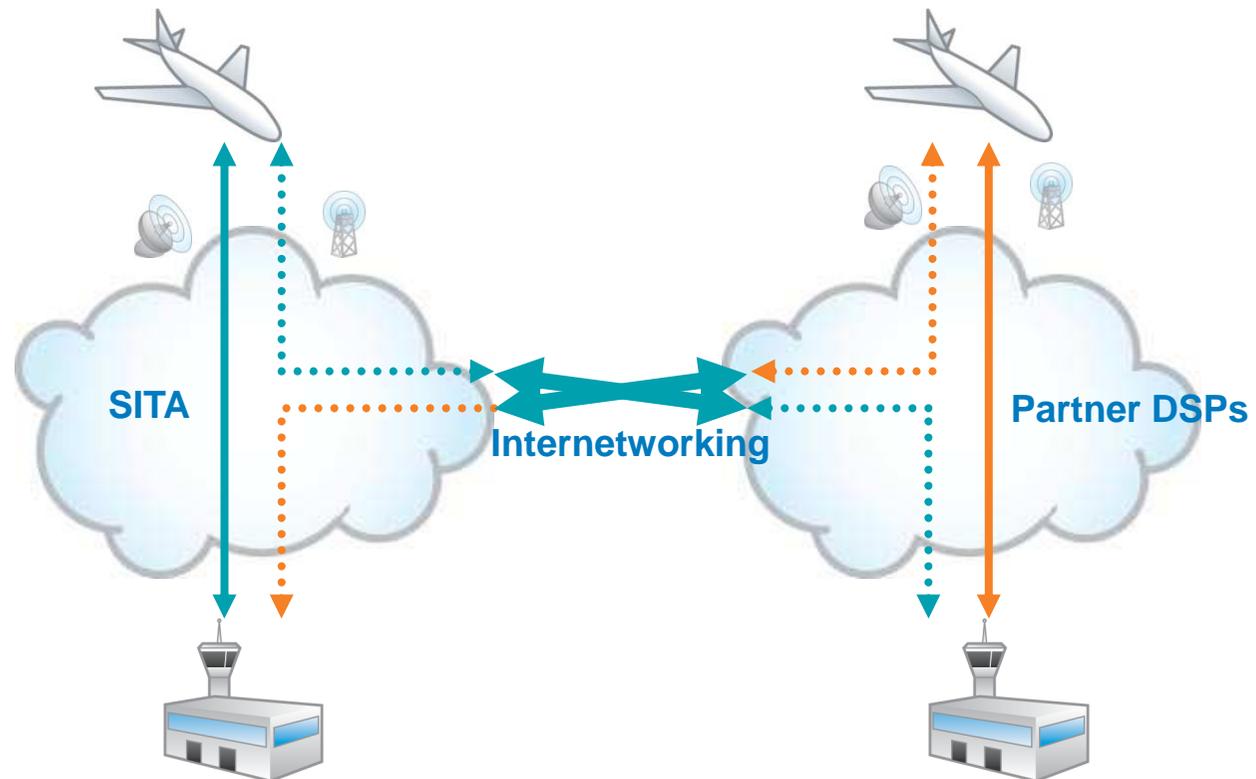


## 2. FANS OPERATIONS

# HOW DOES IT WORK IN SITA?



## ATS Internetworking



## 3. REGIONAL CONTEXT

## SAT FIRs (contracted in green)



## Status of ADS/CPDLC implementation

Country	ANSP	Status	Service Provider	Ground System Provider
Argentina	ANAC	Pre-Operational	SITA	INDRA
Brazil	DECEA	Operational	SITA	ATECH
Senegal	ASECNA	Operational	SITA	Thales
Cape Verde	ASA CV	Operational	SITA	Indra
Chad	ASECNA	Operational	SITA	Thales
Congo-Brazzaville	ASECNA	Operational	SITA	Thales
Niger	ASECNA	Operational	SITA	Thales
Ivory Coast	ASECNA	Operational	SITA	Thales
Madagascar	ASECNA	Operational	SITA	Thales
Portugal – Azores	NAV PT	Operational	SITA	Adacel
Spain - Canarias	AENA	Operational	SITA	SACCAN
Ghana	GCAA	Operational	SITA	SITA
Angola	ENANA	Pre-operational (TBC)	SITA	SITA
Uruguay	DINACIA	Implementation	SITA	INDRA
South Africa	ATNS	Operational	SITA	Thales
Trinidad and Tobago	TTCA	Pre-operational (TBC)	ARINC	Selex

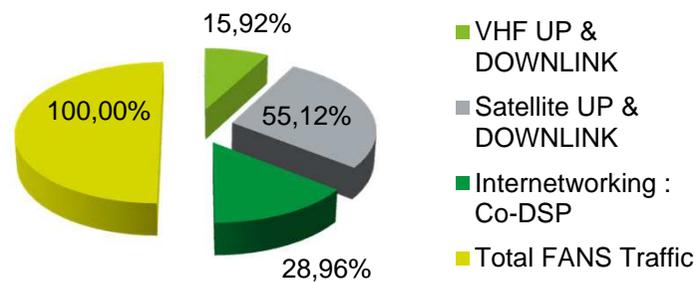
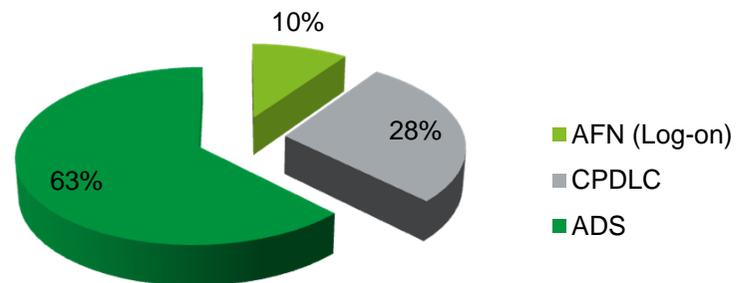
## Status of ADS/CPDLC implementation

Country	ANSP	Status	Service Provider	Ground System Provider
<b>Gabon</b>	ASECNA	Implementation	SITA	THALES
<b>Mauritania</b>	ASECNA	Implementation	SITA	THALES
<b>Burkina-Faso</b>	ASECNA	Implementation	SITA	THALES
<b>Cameroun</b>	ASECNA	Implementation	SITA	THALES
<b>Comores</b>	ASECNA	Implementation	SITA	THALES
<b>Benin</b>	ASECNA	Implementation	SITA	THALES
<b>Togo</b>	ASECNA	Implementation	SITA	THALES
<b>Equatorial Guinea</b>	ASECNA	Implementation	SITA	THALES
<b>Centrafrique</b>	ASECNA	Implementation	SITA	THALES
<b>Mali</b>	ASECNA	Implementation	SITA	THALES
<b>Bissau</b>	ASECNA	Implementation	SITA	THALES

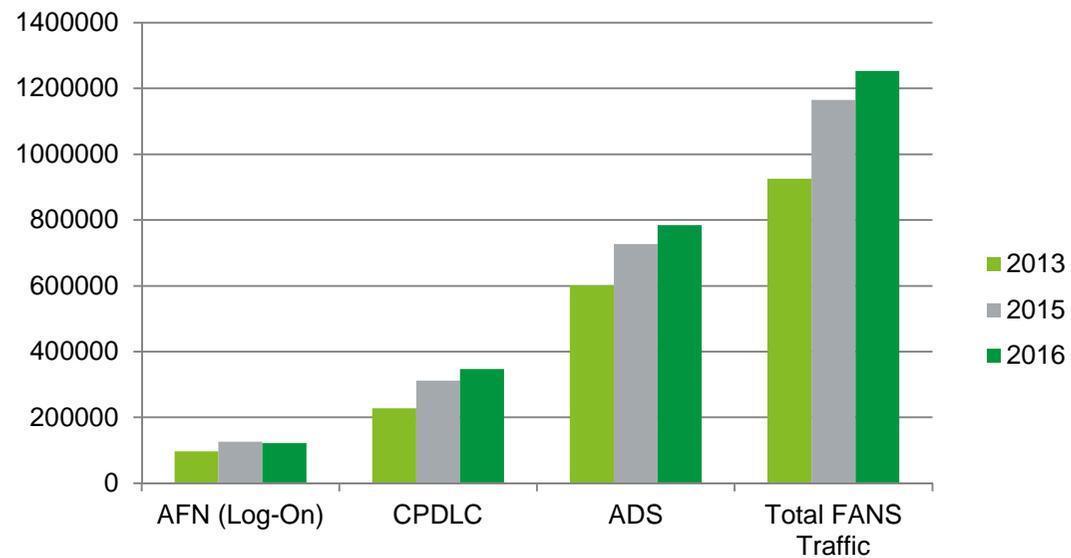
## 4. SOUTH ATLANTIC FANS TRAFFIC

## FANS traffic in SAT/FIT region

Customer	Ground Traffic (Uplink + Downlink)	Percentage Total
<b>ATS Provider</b>	1,253,455	100%
<b>FANS Services</b>		
AFN (Log-on)	122,403	9.77%
CPDLC	346,716	27.66%
ADS	784,336	62.57%



## FANS traffic in SAT/FIT region



### Major airlines :

UAE	SAA	AFR	TAP	DLH
DAL	ETH	CRL	BAW	KLM
IBE	QFA	RFR	ARG	TAM

## 5. AIRCOM DATALINK PERFORMANCE

## Performance monitoring and maintenance

- Performances
  - APQP report main indicators
  - SITA input useful by CFRA
- Access to customer support for problem identification and resolution

## Content - ATS-622 Traffic & Performance report

### 1. FANS Service Executive Summary

- 1.1 Global FANS Datalink Traffic
- 1.2 FANS Systems Performances
- 1.3 FANS Reliability Performance
- 1.4 FANS Service Performances

### 2. FANS Traffic Statistics

- 2.1 FANS Global Datalink Traffic
- 2.2 FANS Traffic by Media and Airlines

### 3. FANS Service Performance

- 3.1 AIRCOM FANS Service Availability
- 3.2 FANS RGS Availability
- 3.3 FANS GES Availability
- 3.4 Uplink Success Rate
- 3.5 Uplink Reject Rate per FANS Service
- 3.6 Uplink Reject Rate per Airline

# Example

## 1.1 GLOBAL FANS DATALINK TRAFFIC

Customer	Ground Traffic (Uplink + Downlink)	Percentage Total	Air-Ground Traffic (Uplink + Downlink)	Percentage Total
<b>ATS Provider</b>	49,055	100%	40,198	100%
<b>FANS Services</b>				
AFN (Log-on)	2,733	5.57%	2,165	5.39%
CPDLC	10,184	20.76%	8,483	21.10%
ADS	36,138	73.67%	29,550	73.51%

## 1.2 FANS SYSTEMS PERFORMANCE

Availability	Apr-16	Last 3 Months	Last 12 Months
VHF FANS AIRCOM Processor Availability	100.00%	100.00%	100.00%
Satellite FANS AIRCOM Processor Availability	100.00%	100.00%	100.00%
VHF Access Network Availability	99.38%	99.22%	98.21%
Satellite Access Network Availability	100.00%	100.00%	100.00%
<b>FANS Service Availability via VHF</b>	<b>99.38%</b>	<b>99.22%</b>	<b>98.21%</b>
<b>FANS Service Availability via Satellite</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

## 1.3 FANS RELIABILITY PERFORMANCE

FANS Services	AFN (Log-on)			CPDLC			ADS			TOTAL		
	Apr-16	Last 3 Months	Last 12 Months	Apr-16	Last 3 Months	Last 12 Months	Apr-16	Last 3 Months	Last 12 Months	Apr-16	Last 3 Months	Last 12 Months
Messages Delivered	99.61%	99.41%	99.43%	98.45%	98.54%	98.34%	99.00%	98.95%	98.53%	98.92%	98.88%	98.55%
No Ack + NAK	0.00%	0.02%	0.01%	0.02%	0.07%	0.05%	0.03%	0.03%	0.02%	0.02%	0.04%	0.03%
No Ack	0.00%	0.02%	0.01%	0.02%	0.07%	0.05%	0.03%	0.03%	0.02%	0.02%	0.04%	0.03%
NAK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
No Station To	0.23%	0.10%	0.15%	0.89%	0.66%	0.87%	0.71%	0.67%	0.98%	0.72%	0.63%	0.89%
Not Logged On	0.00%	0.02%	0.07%	0.38%	0.32%	0.42%	0.19%	0.17%	0.29%	0.22%	0.20%	0.31%
Message Too Old	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%
Other SITA Rejects	0.15%	0.45%	0.28%	0.27%	0.40%	0.22%	0.05%	0.16%	0.12%	0.10%	0.24%	0.16%
Internetworking Rejects	0.00%	0.00%	0.07%	0.00%	0.01%	0.08%	0.01%	0.02%	0.04%	0.01%	0.01%	0.06%

## 1.4 FANS SERVICE PERFORMANCE (VHF+SAT)

Uplink Message Delivery Time	10 s	20 s	30 s	40 s	60 s	120 s	180 s	360 s	>360 s
ATS Provider	63.71%	86.69%	91.77%	91.96%	95.27%	98.75%	99.69%	99.94%	100.00%
AFN (Log-on)	74.02%	90.10%	93.82%	93.92%	96.27%	99.71%	99.80%	99.90%	100.00%
CPDLC	72.16%	88.54%	92.61%	92.72%	95.00%	98.86%	99.63%	99.97%	100.00%
ADS	60.15%	85.81%	91.32%	91.55%	95.27%	98.63%	99.70%	99.93%	100.00%

Downlink Message Delivery Time	10 s	20 s	30 s	40 s	60 s	120 s	180 s	360 s	>360 s
ATS Provider	47.44%	77.69%	88.58%	91.96%	95.41%	97.96%	98.73%	99.56%	100.00%
AFN (Log-on)	58.48%	84.23%	91.38%	95.23%	97.80%	99.27%	99.54%	99.82%	100.00%
CPDLC	53.27%	85.93%	93.49%	95.91%	97.61%	98.92%	99.46%	99.76%	100.00%
ADS	42.42%	72.07%	85.41%	89.25%	93.81%	97.22%	98.20%	99.40%	100.00%

# Example

## 2.2 FANS TRAFFIC BY MEDIA AND AIRLINES

ATS Provider	FANS BY MEDIA		
	Apr-16	12-month average	Percentage Total
VHF UP & DOWNLINK	9,696	9,398	19.77%
Satellite UP & DOWNLINK	27,945	27,592	56.97%
Internetworking : Co-DSP	11,414	12,404	23.27%
<b>Total FANS Traffic</b>	<b>49,055</b>	<b>49,394</b>	<b>100.00%</b>

ATS Provider	FANS BY AIRLINES		
	Apr-16	12-month average	Percentage Total
AFR	8,129	8,875	16.57%
CRL	6,068	5,590	12.37%
SAA	5,810	6,352	11.84%
SIA	4,530	4,672	9.23%
MAU	4,426	3,524	9.02%
REU	3,949	5,470	8.05%
CPA	3,363	3,172	6.86%
THY	2,511	2,611	5.12%
BAW	1,681	1,628	3.43%
OTHERS	8,588	12,234	17.51%
<b>Total Airlines</b>	<b>49,055</b>	<b>49,394</b>	<b>100.00%</b>

## AIRCOM customer Support process

### 3 levels of support

- Level 1 : Aircom support, H24/7
- Level 2 : Regional aircom specialists
- Level 3 : Expert teams on ATS and airline applications

## Level 1 : AIRCOM Support - Helpdesk H24/7

### AIRCOM Service Desk 24/7

- Follow the sun operation
  - Staffed 12 hours from Montreal and then 12 hours from Singapore
  - Completely seamless transition for our customers
  
- First level support
  - System operation and service supervision
  - Centralized problem reporting (Trillium)
  - Routine problem investigation and resolution

SITATEX : HDQASXS

E-mail : [aircom.support@sita.aero](mailto:aircom.support@sita.aero)

Tel : +65 65 48 28 28 or +1 514 282 7899

Toll Free (NA): 1 866 AIRCOM1 (247-2661)

## Level 2: AIRCOM Customer Support

### AIRCOM Specialists

- Second level support
  - Problem analysis, investigation, testing
  - Provide assistance to AIRCOM Service Desk
  - Inform customer on new products and services that may be suitable
- Performance reports
  - Monthly or quarterly reports
  - Performances review meeting
- Adhoc Customer training
- Reachable globally [aircom.customer.support@sit.aero](mailto:aircom.customer.support@sit.aero)
  - Regionally at:
    - [aircom.customer.support.europe@sit.aero](mailto:aircom.customer.support.europe@sit.aero)
    - [aircom.customer.support.americas@sit.aero](mailto:aircom.customer.support.americas@sit.aero)
    - [aircom.customer.support.asiapacific@sit.aero](mailto:aircom.customer.support.asiapacific@sit.aero)

## Level 3 - AIRCOM ATS Applications Support

### AIRCOM ATS systems Technical Specialists

- Third level support
  - Engineers dedicated to the development, implementation, support, training of the FANS, Pre-FANS and ATN SITA ground applications
  - SW and HW Problem analysis, investigation, testing
  - Remote software correction/upgrade during warranty/maintenance period (tel/e-mail/remote access)
  
- Adhoc Customer training eg on configuration/maintenance in Paris in SITA ATS Lab or at customer premises
  
- Reachable globally [aircom.systems.support@sit.aero](mailto:aircom.systems.support@sit.aero)



# Thank you

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# Backup slides

## ATS-622 Traffic & Performance report - Acronyms

ADLT	Aircom Data Link Traffic Handler
AOR-E	Atlantic Ocean Region/East
AOR-W	Atlantic Ocean Region/West
CAA-S	CAA-Server
DHP	Direct Host Processor
GES	Ground Earth Station
GSP	Ground Service Processor
IOR	Indian Ocean Region
MTN	SITA Mega Transport Network
MSS	Message Storage and Switching System
POR	Pacific Ocean Region
RGS	Remote Ground Station
SASP	Satellite <i>AIRCOM</i> Service Processor
VASP	VHF <i>AIRCOM</i> Service Processor
VGS	VHF Ground Station
VMMS	VHF Multi-frequency Management System

Air-Ground Traffic	Blocks exchanged between the aircraft and the RGS/VGS (including the repeated and duplicated blocks).
Ground Traffic	Messages exchanged between the ATS Provider Host, the SITA <i>AIRCOM</i> systems and interworking partners systems
AFN (Log-On)	AEEC-622 compliant uplink and downlink message using the SMI AFU (uplink) and AFD (downlink)
CPDLC	AEEC-622 compliant uplink and downlink messages using the SMI ATC
ADS	AEEC-622 compliant uplink and downlink messages using the SMI RAR (uplink) and PAR (downlink)

## ATS-622 Traffic & Performance report - Definitions

**VHF FANS AIRCOM Processor Availability**

is defined as the ratio of monthly uptime during which the VHF FANS AIRCOM Processor is available to the total monthly period.

**Satellite FANS AIRCOM Processor Availability**

is defined as the ratio of monthly uptime during which the Satellite FANS AIRCOM Processor is available to the total monthly period.

**VHF Network Availability**

is the global availability of Critical Site/Frequency used by the ATS Provider.

**Satellite Network Availability**

is the availability of the Critical GESs used by the ATS Provider.

**FANS VHF or Satellite End-to-End Service Availability**

This is the SITA's service end-to-end availability (VHF or Satellite).

**UPLINK SUCCESS RATE**

is defined as the ratio, expressed as a percentage, of AEEC 622 Uplink messages which have not been rejected to the total number of AEEC 622 Uplink messages that have been received from the Customer Host.

The No Ack, NAK, No Station To and Message Too Old Rejection rates are the ratio, expressed as percentages, of the number of the uplink messages which have been rejected respectively due to "No Ack", "Aircraft NAK", "No Station To" and "Message To Old" to the total number of uplink messages.

**UPLINK DELIVERY TIME**

is defined as the cumulative distribution, expressed as a percentage, of the delay between the time the XASP transmits the first AEEC 618 Uplink block and the time it receives the technical acknowledgement of the last block of the message from the aircraft.