

**Mr. Yashwant S Bhave**  
**Chairperson**  
**Airports Economic Regulatory Authority of India (AERA)**  
**Safdarjung**  
**New Delhi - 110003**

Dear Sir,

**Sub: Submission regarding Multi-Year Tariff Proposal for Cochin International Airport (CIAL)**

Ref:

- 1 Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011
- 2 Airports Economic Regulatory Authority of India (Terms and Conditions for Services Provided for Cargo Facility, Ground Handling and Supply of Fuel to the Aircraft) Guidelines, 2011
- 3 AERA's letter dated 4 October 2013
- 4 Meeting at AERA's office on 22 April 2014 regarding MYTP of CIAL

At the outset, I would like to express my sincere thanks to the Authority for having given us an opportunity to present the Multi-Year Tariff Proposal (MYTP) and discuss our views on some of our specific concerns thereof.

Consequent to our discussions, we would like to place on record our submissions and key proposals for AERA's kind consideration while evaluating the MYTP for CIAL

#### **1. Background**

- a) Cochin International Airport Limited (CIAL) was the first airport in India to be built in the joint sector with public private participation. The airport users and other benefactors, mainly Non Resident Indians, the general public, Government of Kerala (GOK) and the airport service providers came together to build an airport of international standards. The new Cochin Airport project was an alternative to the existing civil enclave in the naval airport which was not capable of handling larger aircraft due to runway limitations. The involvement of airport users was a pioneering concept of this project,

which was conceived even while a definite policy on private participation in airport infrastructure was not in place.

- b) Cochin International Airport Limited (CIAL) with the undersigned as Managing Director was incorporated on 30 March 1994 as a public limited company, with Rs. 900 million authorised capital.
- c) The foundation stone for CIAL was laid on August 21, 1994. The airport was inaugurated by the President of India on May 25, 1999. CIAL operations started from June 1999 with Air India operating the first flight to the Gulf.
- d) Cochin International Airport Limited (CIAL) has come to be a model enterprise with the first International Airport in India outside the ambit of the Government of India, the first of its kind in the history of civil aviation in India.
- e) It was the success of this path-breaking venture, which triggered the privatisation and modernization of Civil Aviation Infrastructure in India. CIAL hailed for its low cost model construction to provide world-class passenger amenities, declared dividend to its shareholders in the 5<sup>th</sup> year of its operation.
- f) CIAL is widely recognized as a low-cost functionally efficient airport. The CIAL management has constantly endeavored in keeping airport services affordable by keeping a strict control on costs and enhancing non-aeronautical revenues to balance the interests of both investors and users of the airport. This has been made possible through:
  - Modular expansion philosophy
  - Award of multiple contracts competitively tendered as opposed to a single large turnkey contract
  - Simple and no-frills development model
  - Use of locally available materials
  - Prudent financial management.

The said modular approach has led to CIAL being the least cost airport among the major airports. CIAL is clearly ahead of its peers in controlling capital costs, and delivering a functional airport. the details of major expansion projects of CIAL since its operational commencement are given in the following table.

Year	Project Cost INR Cr	Project Name
1999-00	<b>196.46</b>	Commissioning of Airport
2000-01	<b>102.65</b>	
2005-06	<b>41.18</b>	Inauguration of International Arrival Terminal and Airlines Office Building
2007-08	<b>20.25</b>	Commissioning of Parallel Taxi Track
2008-09	<b>45.92</b>	Commissioning of Centre for Perishable Cargo
2009-10	<b>89.10</b>	Commissioning of New International Departure Terminal
2010-11	<b>33.77</b>	CIAL Golf and Country Club
2012-13	<b>14.36</b>	Commissioning of Trade fare Centre

- g) The philosophy of effective cost management can be seen in CIAL's operations as well. The operational expenditure per passenger at CIAL is one of the lowest in India, despite CIAL not having benefits of economies of scale vis-à-vis other private airports in the country. Notwithstanding the low operational expenditure, CIAL has ensured consistent standards of customer service and periodic development of infrastructure facilities to maintain service quality.
- h) Unlike other Airports in India, Operations and Management of Duty Free Business is directly undertaken by CIAL itself. Duty-free Business is the major contributor of Non Aeronautical revenues comprising about 52% of the total non aero revenues of FY 2013

## **2 Land Acquisition & Rehabilitation**

- a) An extent 1275 Acres of land was purchased by CIAL utilizing its own financial resources from about 3824 landowners which included 822 householders who were evicted and rehabilitated. Land and houses were valued at market price and that value was given as compensation Six Cents of land (240 Sq M) were given free of cost to each family ,whose house were acquired as part of the rehabilitation package. Evictees were allowed to dismantle and take all reusable building materials from their acquired houses and a sum of Rs.20000 was paid towards the dismantling and related expenses. Pre Paid Taxi service permits were provided to Land/House evictees as part of rehabilitation package. All Civic amenities like bituminous approach roads, Street lighting, water supply, storm water drainage, Primary Health Centre were provided in the

rehabilitation colony. As on date CIAL have provided the following benefits to Evictees. CIAL's unique Rehabilitation Model is a Case Study of World Bank.

Direct Employment in CIAL	193
Prepaid Taxi Permits	480
External Cargo Loaders	182
Air India Casual Workers	106
House Keeping Agencies	102
STD Booth/ Gardening work etc	17
Other agencies, shops etc in Airport	38
G4S Security Services	8
<b>Total Employment Given</b>	<b>1126</b>

### 3. Capital Structure

- a) The authorised equity share capital of the company is Rs. 400 Crore (Divided into 40 Crore equity shares of Rs.10/- each).The paid up share capital of CIAL as on 31<sup>st</sup> March, 2013 was Rs. 306.06 Crore. CIAL has a unique ownership structure involving equity contributions from Government of Kerala, financial institutions, and more than 15,000 individual investors who are mostly non-resident Keralites (NRKs). The shareholding pattern of equity investors are furnished below.

SHAREHOLDING PATTERN		
Name of the Shareholders	%	No: of
<b>Government of Kerala</b>	32.24	98680000
<b>State Public Sector Unit's</b>		
KSIDC,KTDFC,KAMCO, Plantation Corporation	1.76	5400000
<b>Central PSU's</b>		
BPCL, Air India, HUDCO	9.97	30500000
<b>Nationalized Banks</b>		
State Bank of Travancore, Indian Overseas Bank	3.59	11000000
<b>Other Banks- The Federal Bank Limited</b>	1.96	6000000
<b>Directors. Relatives &amp; Associates</b>		
M A Yusaffali, C V Jacob, N V George, E M Babu, Dr P Mohamed Ali	37.24	113961770
<b>Others</b>		
NRI	5	15315360
Domestic	8.24	25202669
<b>Total</b>	<b>100</b>	<b>306059799</b>

#### 4. Management

a) The Chief Minister of Kerala is the Chairman of CIAL and as per clause 125.(1) of the Memorandum and Articles of Association of the company ,so long as the Government of Kerala and /or its Public Sector Undertakings jointly or severally hold not less than 26% of the paid up Equity capital of the company ,the Government of Kerala shall have the right to appoint one among the Directors as Managing Director of the Company for such term not exceeding five years at a time and will also have the right to withdraw/ cancel the appointment so made at their discretion.The details of the board of directors of CIAL as on March 31, 2013 are furnished below

Name	Profile
Shri Oommen Chandy	Hon'ble Chief Minister of Kerala
Shri K. Babu	Hon'ble Minister for Excise and Ports
Shri P.K Kunhalikutty	Hon'ble Minister for Industries
Shri K. M. Mani	Hon'ble Minister for Finance and Law
Shri E.K. Bharat Bhushan IAS	Chief Secretary, Kerala State
Shri. N.V. George	MD, Geo Electricals Trading & Contracting
Shri. M.A Yousuf Ali	MD, M/S EMKE Group, Abudhabi
Dr. P. Mohammed Ali	MD,Gulfar Engineering & Contracting
Shri. C.V. Jacob	MD, M/S Synthite Industrial Chemicals Ltd,
Shri. E.M. Babu	M/S Majeed Bukatara Trading Esst, Dubai,
Shri. V J Kurian, IAS	<b>Managing Director,</b> <b>Cochin International Airport Ltd.</b>

#### 5 Present Capacities

a) Cochin International Airport, ranks 4th largest in India, in terms of international passenger traffic and now handles about 5.38 million passenger's per annum.CIAL is equipped with the state of the art terminal infrastructure facilities comprising of fully furnished and centrally air-conditioned Terminals with 6 lakh sq.ft area and has a domestic domestic peak hour handling capacity of 800 passengers(400 incoming +400

outgoing) and an International peak hour capacity of 2400 Passengers (1200 incoming +1200 outgoing) .

- b) CIAL’s cargo operations started in FY 2003 inside a single terminal. The terminal handled both domestic as well as international cargo upto FY 2006. A new domestic cargo terminal was commissioned in 2006. In FY 2009 a new Centre for Perishable Cargo (CPC) was commissioned solely to cater to the growing capacity needs of perishable exports

**6. New International Terminal Expansion Plans**

- a) Passenger traffic at CIAL has increased from 1.9 million in FY2006 to 5.4 million passengers in FY 2014. Passenger traffic at CIAL is estimated to increase to 10 million by 2021. The domestic terminal is presently handling 60% more peak hour passengers than its design capacity. After evaluating suitable alternatives for augmentation of airport capacity and taking into consideration the requirements of optimal asset utilization, technical feasibility and cost effectiveness, CIAL has opted for construction of a new international terminal with an area of 1,50,000 sq.m at an estimated capital expenditure of INR 875 cr.
- b) The cost of this new international terminal will be one of the lowest in country and highlights the management’s efforts in making CIAL an affordable and functionally efficient airport. We propose to convert the existing international terminal into a domestic terminal after commissioning the new international terminal.
- c) The cost Break up of New International Terminal is as follows. Further, the construction works of the new international Terminal has already being commenced w.e.f 01.02.2014 onwards.

Particulars	Total Cost (Rs. Cr.)
New International Terminal	650
Elevated Road	100
Parking Bays	100
Conversion of existing international terminal to domestic terminal	25
<b>Total Project Cost</b>	<b>875</b>

d) CIAL has conducted a formal consultation process with airport users as per the guidelines of AERA, briefing them on details of the proposed new international terminal. The copy of the AUCC report was submitted to AERA vide letter dated CIAL/FIN/AERA/NEW IT/107 dated 01.07.2013 is enclosed as **Annex-1** for reference.

## 7. Aeronautical Tariffs

- a) Aeronautical tariffs namely Landing & Parking charges at Cochin airport have not increased since 2001, despite significant increase in capital and operating expenses. We have consistently endeavored to provide the best services to users at reasonable tariffs.
- b) One of the reasons this has been possible is because of CIAL's focus on growing non-aeronautical revenues. CIAL's non-aeronautical revenue was INR 218 cr in FY13, contributing around 70% of the total revenues. We have implicitly subsidized aeronautical tariffs through earnings from non-aeronautical activities. The growth in non-aeronautical revenues at CIAL is shown below.

INR crore	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY10	FY11	FY12	FY13
Aeronautical Revenue	40	54	62	61	47	65	60	69	81	83	89
Non-aeronautical Revenue	21	32	39	49	64	84	113	143	165	193	218
Total	60	85	101	111	112	138	173	212	246	276	307
Non-aeronautical revenue as % of total revenue	35%	37%	38%	45%	58%	61%	66%	68%	67%	70%	71%

- c) User Development fee @500 from departing International passenger was charged at the Airport from 2001 onwards, which was voluntarily withdrawn in FY 2005-06, when CIAL started making reasonable profits.
- d) The copy of the current tariff card is shown in **Annex 2**

e) A comparison of above airport charges for international flights at major airports<sup>1</sup> shows that Cochin airport's tariffs are much lower than other major airports is given below.

S No.	Tariff head	CIAL	DIAL	MIAL	Kolkata	Chennai	Calicut	Trivandrum
1	Landing Fee # (above 100MT)	22,800 + 306 per MT	59,000 + 792 per MT	59,000 + 725 per MT	54,000 + 733 per MT	58,000 + 777 per MT	34,320+ 471.9 per MT	25,050 + 336.6 per MT
2	Parking / Housing Fee (per hr)	700 + 10 per MT	1,415 + 18.74 per MT	1,426 + 18.88 per MT	1,570 + 9.9 per MT	800 + 10.5 per MT	824 + 15.5 per MT	1,220 + 16.20 per MT
3	UDF	0	452 (dom)* 854 (intl)*	274 (dom) 548 (intl)	400 (dom) 1,000 (intl)	166(dom) 667 (intl)	0	0 (dom) 575 (intl)
4	Fuel Throughput Charge (per kl)	145	688	688	1,278	1,609	Not Available	Not Available

## 8. Submissions

CIAL does not intend to increase its aeronautical tariffs namely Landing & Parking charges and Cargo Charges in the current control period (FY12-FY16). These charges were based tariffs of Airports Authority of India (AAI) prevailing in 2001 and eventually AAI hiked their tariffs in 2009, whereas, CIAL has not raised its tariffs till date. Hence, the current tariffs were last revised in 2001, will continue till the end of this control period except for services such as ground handling, fuel supply and CUTE charges, where fees are collected based on separate user agreements. The prevailing item wise tariffs of Landing, Parking and Cargo charges are given in **Annex -2**. The rate details along with agreements pertaining to ground handling, fuel supply and CUTE charges are given as **Annex- 2**.

It is further submitted that, the capitalization of New Terminal Project amounting Rs.875 Crore will be done only during the next control period beginning from FY2017 to FY 2021.

<sup>1</sup> Comparison has been done with airports at metro cities. Comparison with Trivandrum and Calicut airports has been done for a regional perspective



In consideration of all the above factors, we would like to humbly submit to AERA that a light touch approach will be the most appropriate for us in this control period. The light touch approach would imply that:

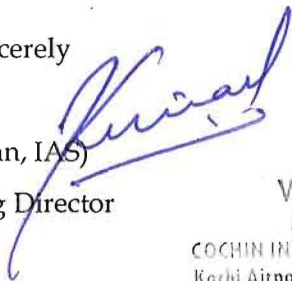
- a. CIAL will not increase aeronautical tariffs in the current control period other than those governed by existing user agreements with providers of aeronautical services such as fuel supply, ground handling and CUTE.
- b. Truing up of figures pertaining to first control period may be avoided.

We would also like to inform you that CIAL has contingent liabilities of around INR 222 crore as on date. These liabilities are on account of income tax and service tax claims from tax authorities. Such liabilities may be adjusted towards the revenue requirement in the next control period if and when CIAL is required to make such payments.

We look forward to a favourable decision in the matter.

Yours sincerely

(V J Kurian, IAS)  
Managing Director



V. J. KURIAN IAS  
Managing Director  
COCHIN INTERNATIONAL AIRPORT LTD.  
Kochi Airport P. O., Ernakulam-683 111

Enclosures:

1. Copy of AUCC report
2. Current tariff card



# COCHIN INTERNATIONAL AIRPORT LTD.

CIAL/FIN/AERA/New IT/107

01.07.2013

Capt Kapil Chaudhary  
Secretary  
Airports Economic Regulatory Authority of India  
AERA Building,  
Administrative Complex,  
Safdarjung Airport, New Delhi- 110 003

Dear Madam,

Subject: CIAL New International Terminal Project, Project Investment File Reg:

CIAL had conducted two AUCC meetings, as envisaged by AERA vide Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariff for Airport Operators) Guidelines, 2011 dated 28<sup>th</sup> February 2011, for a major capital expenditure proposal of construction of new International Terminal for Cochin Airport.

The document relating to the need identification and option development stage of the consultation process and the minutes of the meeting of 1<sup>st</sup> and 2<sup>nd</sup> stages of AUCC meeting was forwarded to AERA vide CIAL letter No CIAL/FIN/AERA/AUCC/01 dated 01.03.2013. Further, the project Investment file submitted for the consideration of third stage of AUCC meeting of Cochin International Airport along with the minutes of the AUCC meetings pertaining to 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> stages of consultation process held on 16<sup>th</sup> February 2013 and 18<sup>th</sup> May 2013 respectively is forwarded herewith for your kind perusal and record.

As such, no objections have been raised by AUCC members of Cochin international Airport on the proposed New International terminal project. Hence CIAL is planning to commence the construction activities of the proposed New International terminal within a month or two.

Thanking You,

Yours Faithfully

  
A C K Nair

ED (Operations) & Airport Director

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cutting through complexity™

Project Investment File for  
Terminal Development at Cochin  
International Airport

Final Report

Cochin International Airport

June 2013



## **A. Statement of confidentiality**

This report has been prepared by KPMG Advisory Services Private Limited, an Indian limited liability company and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity.

This report is provided to Cochin International Airport Limited (“CIAL”) pursuant to the agreement dated 26 November 2012 between KPMG Advisory Services Private Limited (“KPMG”) and CIAL. It is subject in all respects to the terms and conditions of the said agreement.

If this report is received by anyone other than CIAL, the recipient is placed on notice that the attached report has been prepared solely for our client CIAL for their own internal use. This report and its contents may not be shared with or disclosed to anyone by the recipient without the express written consent of KPMG. KPMG shall have no liability, and shall pursue all available legal and equitable remedies against recipient, for the unauthorized use or distribution of this report.

## **B. Disclaimer**

This document is being submitted to CIAL as the report on “Project Investment File for Terminal Development at Cochin International Airport”, for our engagement of providing advisory assistance to CIAL on regulatory matters.

The report contains KPMG’s analysis of information provided by CIAL on the proposed capital expenditure plan for developing a new international terminal, AERA’s guidelines on tariff regulation for major airports, industry databases and other secondary sources of published information. The information provided by CIAL for the purpose of this report has been accepted as authentic and reliable and has not been independently verified or validated by KPMG. While information obtained from the public domain has not been verified for authenticity, we have obtained information, as far as possible, from sources generally considered to be reliable.

Our analysis is based on the information obtained from CIAL and prevailing market conditions and regulatory environment and any change may impact the outcome of our review.

Wherever our report makes reference to “KPMG Analysis”, it indicates that we have (where specified) undertaken certain analytical activities on the underlying data to arrive at the information presented; we do not accept responsibility for the underlying data. Wherever information was not available in the public domain, suitable assumptions were made to extrapolate values for the same.

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## 1 Executive summary

Cochin International Airport (CIA) is the largest international airport in the state of Kerala. It is an important gateway for domestic as well as international passengers comprising a significant share of Non Resident Keralites (NRK) and tourists. In FY 2013, CIA handled 4.9 mn passengers including 2.9 mn international passengers. The total traffic in FY 2013 grew by 3.5% as compared to FY 2012 as compared to -1.9% growth in the total passenger traffic in India. The slowdown in the traffic growth has been attributed to the unfavourable economic conditions and the loss in airline seat capacity due to grounding of Kingfisher Airlines. However, the traffic growth is expected to remain strong in the medium to long term.

Traffic growth at CIA is projected to grow to 10.3 mn by 2021, growing at a CAGR of 9.8 per cent. International traffic has been growing at a CAGR of 14% since 2005 and is estimated to increase to 5.8 mn passengers.

CIAL presently operates two separate terminals for domestic and international traffic. The domestic terminal was constructed in 1999 and has a maximum peak hour handling capacity of 800 passenger movements. The international terminal has a maximum peak hour handling capacity of 2,400 passenger movements. In FY 2012, the airport handled 1,000 peak hour domestic passenger movements and 1,300 international peak hour passenger movements. The domestic terminal is thus already operating beyond its maximum passenger handling capacity.

In order to address the capacity constraint at the domestic terminal as well as to cater to future growth in passenger traffic, CIAL management has proposed development of a new international terminal at the airport. The existing international terminal would thereafter be converted to a domestic terminal, thus enhancing both the domestic and international passenger handling capacity at the airport. Post expansion, the peak hour passenger handling capacity of the airport is expected to increase to 4,000 passenger movements for domestic operations and 4,000 passenger movements for international operations. The increased capacity is expected to be able to cater to the projected traffic till 2028.

The new international terminal is expected to be operational by FY 2016 and is estimated to cost INR 875 crore. The project is expected to be financed through a combination of internal accruals and debt.

CIAL, being one of the major airports<sup>1</sup> in the country is regulated by Airports Economic Regulatory Authority (AERA) on tariffs and service quality. AERA has specified a user consultation process that has to be followed by the operators of major airports before undertaking any major development at the airport. The user consultation process has been specified in the AERA Guidelines<sup>2</sup> (“Guidelines”).

KPMG has been engaged by Cochin International Airport Limited (CIAL) for assisting in undertaking this user consultation process for the airport. This report has been prepared for CIAL as a basis for discussion with the airport users on the proposed investment plan for the new terminal and for submission to AERA as per requirement under the user consultation

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<sup>1</sup> Airports with traffic of more than 1.5 million passengers per annum (mppa)

<sup>2</sup> Airports Economic Regulatory Authority of India (Terms and Conditions for Determination of Tariffs for Airport Operators), 2011 dated February 28, 2011



process. CIAL has reviewed the inputs and suggestions received from the stakeholders, as part of the user consultation process, and has endeavored to incorporate the same after taking into consideration technical, design and commercial feasibility of the proposed terminal expansion project.

## 2 Need for capacity enhancement

There is an immediate need for enhancement of passenger handling capacity at CIA for reasons discussed below:

### 2.1 Congestion at existing domestic terminal

The domestic terminal at CIA was constructed in 1999 and has a design capacity of 800 peak hour passengers (400 embarking and 400 disembarking passengers). Currently the peak hour throughput at CIA is 1,000 passenger movements for domestic operations. Thus, the domestic terminal is handling 25% more passenger movements than its designed capacity which has resulted in congestion during peak hour operations. This is likely to affect quality of passenger services and non aeronautical revenues at the terminal. Some of the key areas where congestion has been observed include –

1. Long queues for check in counters and security checks due to inadequate space for adding additional counters
2. Insufficient seating for travelers in the security hold area
3. Congestion at baggage retrieval area in arrival lounge
4. Delay in baggage clearance due to inadequate conveyor belts
5. Lack of space for additional passenger amenities
6. Constraint in expansion of non aeronautical area resulting in inefficient non aeronautical revenues.

The domestic terminal at Cochin Airport is significantly congested in terms of available area per peak hour passenger when compared to other major airport terminals in India (please refer Table 1 below).

Table 1: Area/ PHP<sup>3</sup> metric for benchmarked airports

Airport Terminal	Area (sqm)	Peak hour pax	Area/ PHP
Delhi Terminal 3	553,887	9,450	59
Mumbai Terminal 2	439,000	9,900	44
Bengaluru Terminal 1	135,000	3,000	45
Hyderabad Terminal 1	105,000	3,200	33
Chennai new domestic terminal	72,614	3,300	22
Kolkata integrated terminal	233,000	7,450	31
Cochin Domestic Terminal <sup>4</sup>	9,561	1,000	10

Source: CIAL, Industry sources

<sup>3</sup> peak hour passenger

<sup>4</sup> Area/ PHP requirement of a domestic terminal may be lower than an international/ integrated terminal building by 20 – 25%. Area/ PHP metric for existing domestic terminal at Cochin is still lower than the benchmarked airports, even after discounting for lesser area requirement in domestic terminals.

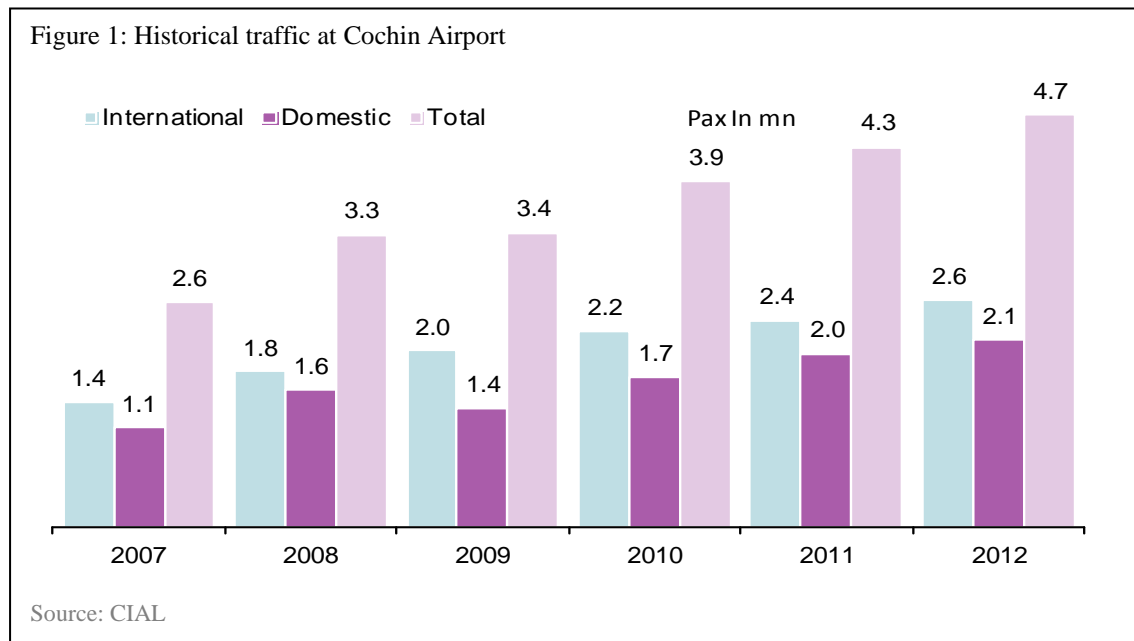
The domestic terminal therefore requires immediate capacity augmentation to handle the current and projected passenger traffic. CIA has considered various options for optimal utilization of available infrastructure to address the capacity constraint with the least burden to passengers and other users. The key considerations for the preferred option and projected capital expenditure have been discussed in the next section.

## 2.2 Consideration of future passenger traffic growth

Passenger traffic at CIA has shown consistent growth since FY2006 except for a decrease in FY2009, when international and domestic travel was impacted by the global financial crisis.

Growth in domestic traffic has been driven by sustained growth in per capita income, lower fares, tourism and increasing business travel given Kochi's importance as a business centre in Kerala.

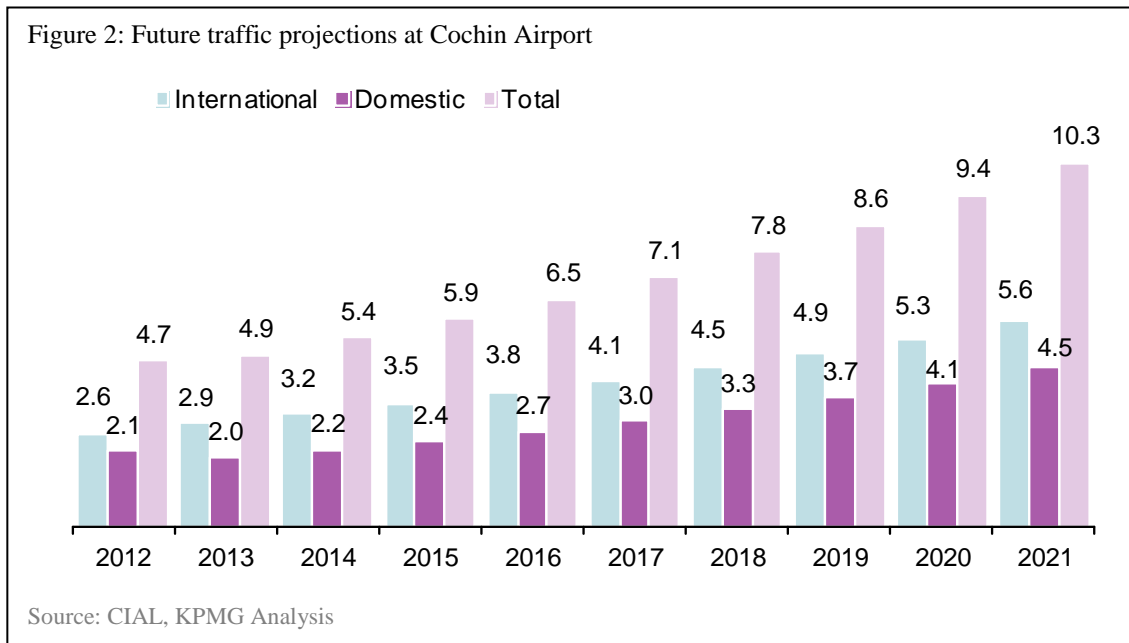
International traffic has been primarily driven by NRKs residing in Middle East and Europe. More fliers are also using Dubai, Abu Dhabi or Doha as hubs for onward travel to Europe and



the US given the excellent connectivity offered by large international carriers like Emirates, Etihad, Qatar airlines and other international carriers operating through these hubs. Kerala continues to attract a large number of international tourists which has also contributed to the air traffic growth.

Total traffic is estimated to exceed 10 mppa by 2021 and reach 15 mppa by 2028. This forecast is based on a conservative growth rate of 9.8% p.a. CIA has historically shown a growth rate (CAGR of 17% since 2005) which is higher than the national average.

India is one of the fastest growing aviation markets in the region and CIA’s predominance as an international gateway airport in the south is expected to drive growth in domestic and international traffic. The government’s recent initiatives in developing feeder airports at Idukki and Wayanad and the new impetus to development of tourism infrastructure is expected to contribute further to the growth of air traffic in the State.



The peak hour passenger movements are expected to increase to 2,600 domestic and 2,900 international passenger movements in FY 2021<sup>5</sup>.

Table 2: Peak hour traffic at Cochin Airport

	Design capacity	2012	2021	2028
Domestic Terminal	800	1,000	2,600	3,700
International Terminal	2,400	1,300	2,900	4,000

Source: CIAL, KPMG analysis

<sup>5</sup> Assuming no peak dispersal with the growth in traffic due to the limited bargaining power of CIA as a non hub airport and the availability of vacant slots at CIA. With peak dispersal, the peak hour numbers would be lower but would still necessitate the need for a new terminal.

## 2.3 Service quality

AERA's Guidelines require the airport operators to measure and report quality of service under objective and subjective performance measures.

The objective service quality parameters measure service quality for three key airport operations areas – airport core processes, airport facilities, and customer service. Parameters under airport's core processes are related to congestion at the airport and include the following measures.

Table 3: Airport core process service quality parameters

Service Parameters	Measures	Benchmarks
Security check	Waiting time in queue	95% < 5 minutes
Immigration	Checking time in queue	95% < 10 minutes
Check-In	Maximum queuing time	Economy: 20 minutes Business: 5 minutes
Baggage Delivery (Domestic)	Time taken for bag delivery from aircraft arrival	First bag: 10 minutes Last Bag: 30 minutes
Baggage Delivery (International)	Time taken for bag delivery from aircraft arrival	First bag: 15 minutes Last Bag: 40 minutes
Passenger Arrival (Domestic)	Time taken from aircraft arrival to kerbside	95% < 35 minutes
Passenger Arrival (International)	Time taken from aircraft arrival to kerbside	95% < 45 minutes
Source: AERA Guidelines		

Along with the objective service quality, AERA also reviews the subjective quality of service measured with 34 service quality measures. Out of the 34 service quality measures, the following parameters are related to congestion at the airport.

Table 4: Subjective service quality parameters related to airport congestion

Sr No.	Subjective service parameters
1.	Overall satisfaction with the airport
2.	Waiting time in check-in queue/line
3.	Waiting time at passport/personal ID inspection
4.	Waiting time at security inspection
5.	Restaurant/Eating facilities
6.	Availability of bank/ ATM facilities/ money changers
7.	Shopping facilities
8.	Business/Executive lounges
9.	Availability of washrooms/ toilets
10.	Comfort of waiting/ gate areas

Sr No.	Subjective service parameters
11.	Ambience of the airport
12.	Passport/ Personal ID Inspection
13.	Speed of baggage delivery service
14.	Customs inspection

Source: AERA Guidelines

In order to conform to the minimum service quality requirements for both domestic and international operations, CIA needs to augment its facilities considering projected growth in traffic.

### 3 Options for capacity enhancement

CIAL evaluated the following options for enhancing the passenger handling capacity at Cochin Airport:

1. Vertical expansion of existing airport terminals
2. Linear expansion of the existing airport terminal building
3. Development of new terminal building

#### 3.1 Vertical expansion of existing airport terminal

The airport terminals at CIA are single level terminal buildings. The engineering team at CIAL evaluated the option of vertical expansion of these buildings to augment the passenger handling capacity at the airport.

Vertical expansion of existing terminal building has two significant challenges:

1. Height restriction due to proximity to the runway
2. Difficulty in undertaking construction work in an already congested terminal

In view of the above challenges, specifically the height restriction due to proximity to the runway, the vertical expansion of the existing airport terminal was not deemed technically or operationally feasible.

#### 3.2 Linear expansion of the existing airport terminal building

The existing terminal building is a linear structure with vacant land adjoining the existing domestic terminal building towards the east. The engineering team at CIAL evaluated the option for linear expansion of the existing airport terminal.

While the linear expansion of the existing terminal building is a possible option for addressing the immediate requirements, it would create hurdles for future expansion of the airport. The linear expansion specifically limits the number of parking bays at the airport under the existing master plan.

At present, CIA has 16 parking bays which need to be augmented with the growth in passenger traffic to cater to additional aircraft movements. Linear expansion of the terminal building results in an inefficient use of available land and limits the maximum possible parking bays at Cochin Airport to 21, thus severely limiting the airside capacity of the airport. Under this option Cochin Airport would require immediate acquisition of additional land for future construction of parking bays resulting in a significantly higher capital expenditure for Cochin Airport.

The linear expansion of the existing terminal building has been shown in the figure below.



Figure 3: Option for linear expansion of existing terminal building



In view of the above, linear expansion of existing terminals was not considered an appropriate option.

### 3.3 Development of new terminal building

In the view of the physical challenges and cost implications for expansion of existing terminal building, the engineering team of Cochin Airport evaluated the option of development of a new terminal building. Under this development option, three probable designs were evaluated by the engineering team:

1. Development of a new domestic terminal building
2. Development of a new international terminal building
3. Development of a new integrated terminal building

The major consideration for the evaluation of the three probable development options was the estimated peak hour passenger traffic at the airport. As mentioned earlier, the peak hour passengers handled by the airport is expected to increase to 2,600 domestic passenger movements in FY2021 and to 2,900 international passenger movements in FY2021.

Table 5: Peak hour traffic at Cochin Airport

	Design Capacity (php)	2012	2017	2021
Domestic Terminal	800	1,000	1,700	2,600
International Terminal	2,400	1,300	2,100	2,900

Source: CIAL, KPMG analysis

The construction of the new terminal building is expected to take around three years. CIAL has proposed to undertake the airport expansion under the following phases:

1. Immediate development - Construction period from FY 2014 to FY 2016 to cater to projected traffic till FY 2021
2. Future expansion (tentative based on future traffic) - Augmentation of facilities (aerobridges, check-in counters, baggage carousels) and construction of additional parking bays to cater to traffic after 2021.

The three probable development options were evaluated considering the following desired outcomes:

1. Domestic terminal capacity in FY 2021 should be more than 2,600 peak hour passengers
2. International terminal capacity in FY 2021 should be more than 2,900 peak hour passengers
3. The selected option should optimally utilize the existing infrastructure at CIA in terms of limiting duplication of facilities and operations at the existing and new terminals

The evaluation of the development options under the above three parameters is shown below:

Table 6: Evaluation of options for development of new terminal building

Development option	Domestic terminal capacity	International terminal capacity	Optimal utilization of available infrastructure
Development of a new domestic terminal building	✓	X	✓
Development of a new international terminal building	✓	✓	✓
Development of a new integrated terminal building	✓	✓	X

Source: CIAL, KPMG analysis

Development of new domestic terminal building would result in insufficient capacity for the international terminal, while development of an integrated terminal would result in suboptimal utilization of existing infrastructure due to duplication of facilities and operations. As indicated in Table 6, development of a new international terminal building appears to be the most optimal design for airport expansion.

The new international terminal would be developed in accordance with IATA's level of service 'C'. A summary of the project design for the proposed international terminal is shown below.

Table 7: Design parameters for new international terminal building

Parameter	Facility design
Terminal type	Two level terminal with departure at first level and arrival at ground level
Design capacity	4,000 peak hour passenger movements per hour – 2,000 arrival and 2,000 departure movements
Terminal area	1,50,000 sqm

Parameter	Facility design
Estimated time for construction	Around 36 months
Estimated construction cost	Terminal cost – INR 650 crore Parking bays – INR 100 crore Elevated road – INR 100 crore Total – INR 850 cr
Check-in counters	56 check-in counters with provision for additional 56 check-in counters
Baggage carousels	3 baggage carousels expandable to 6; Baggage carousels to handle 9 flights simultaneously; provision for handling additional flights
Boarding gates	15 + 4 boarding gates
Aerobridges	15 aerobridges
Source: CIAL	

Post the development of the new international terminal, the existing international terminal would be converted to a domestic terminal with a design capacity of 4,000 passenger movements per hour.

Table 8: Design parameter for expanded domestic terminal building

Parameter	Facility design
Terminal type	Single level terminal building. Existing international terminal building to be converted to domestic terminal building.
Design capacity	4,000 peak hour passenger movements per hour – 2,000 arrival and 2,000 departure movements
Terminal area	46,359 sqm
Estimated construction cost	INR 25 crore
Check-in counters	37 check in counters
Baggage carousels	4 baggage carousels
Boarding gates	7 boarding gates
Aerobridges	5 aerobridges
Source: CIAL	

Post the conversion of existing international terminal to domestic terminal, the existing domestic terminal would be utilized for handling private executive jets.

## 4 Detailed project design for capacity enhancement

### 4.1 Project Brief

The new international terminal is planned to be a T shaped terminal (central processing area with central pier) with departure at first level and arrival at ground level. The terminal would have a central processing area (CPA) of 53,550 sqm, aligned in north-south direction. A 420 m long pier with a width ranging from 35 m – 75 m is proposed to be aligned east – west to the CPA. An artist's rendering of the planned terminal building has been shown below.

Figure 4: Artist's rendering of the planned international terminal building



Source: CIAL

The terminal building would consist of a RCC framed structure with an overall height of 24 m. Slabs would be provided at +5.55 m level, +10.6 m level, +14.5 m level and +18.1 m level in the building. The processing for departure of passengers would be handled at +10.6 m level while the arrival corridor would be at +5.55 m level where the baggage claim, duty free and custom areas would be provided.

Primary usage of the levels in the terminal building has been detailed as follows.

1. **+0.15 m level**
  - a. Duty free area
  - b. Baggage claim area
  - c. Customs area
  - d. Baggage breakup area
  - e. Passenger's exit lounge
  - f. Meeters and greeters area (arrival)
  - g. Vehicle pick up area (arrival)
  - h. Visitor's area

**Redacted**

2. **+5.55 m level**
  - a. Baggage handling area
  - b. Immigration area
  - c. Custom's office
  - d. CIAL office
  - e. Arrival pier
  
3. **+10.6 m level**
  - a. Check-in area
  - b. Emigration area
  - c. Duty free area
  - d. Departure kerb
  - e. Vehicle drop off area
  - f. Departure pier

A cross-section of major facilities at +10.6 m level in the central processing area has been shown in Figure 6.

4. **+14.5 m level**

The mezzanine floor at this level accommodates staff spaces and passenger amenities overlooking the +10.6 m level. This level is planned to contain a food court and other passenger amenities such as departure lounges. This level would also have space for airline offices and airport operations control.

5. **+18.1 m level**

This level of the roof slab acts as a gutter recipient of the roofing sheet area and accommodates mechanical ventilation ducts.

Details on the project design and drawings for the terminal building have been provided in Annexure as part of this report.

**Redacted**

## 4.2 Options for key project features

The key project features for the new international terminal are shown in the following table.

Parameter	Existing international terminal	Proposed international terminal
Design capacity	2,400 peak hour passenger movements	4,000 peak hour passenger movements
Area	46,359 sqm	150,000 sqm
Check-in counters	37 check-in counters	56 check in counters Provision for additional 56 check in counters (possible 112 check-in-counters at full capacity)
Baggage carousels	4 baggage carousels	3 baggage carousels <sup>6</sup> expandable to 6 Baggage carousels to handle 9 flights simultaneously; provision for handling additional flights
Boarding gates	7 boarding gates	15 + 4 boarding gates
Aerobridges	5 aerobridges	15 aerobridges
Source: CIAL		

The key project features have been selected to ensure the service quality levels under IATA's Level of Service 'C' and in order to meet AERA's service quality requirements.

## 4.3 Summary

Post the expansion project, the peak hour passenger handling capacity of the airport would increase to 4,000 peak hour passenger movements for domestic operations and 4,000 peak hour passenger movements for international operations. The increased capacity is expected to cater to the increased traffic at the airport till the year 2028.

The development would help in addressing all the three requirements for capacity enhancement:

1. Decongest existing domestic terminal

The conversion of existing international terminal to domestic terminal would help in decreasing the congestion by increasing the available terminal area for domestic airport operations.

2. Meet capacity requirements for future growth in traffic

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<sup>6</sup> Baggage conveyor belts in the proposed terminal will have a conveyor length of 90 mts each, and will also be wider than the present conveyor belts, thus, accommodating more baggage per turnaround. Each of the conveyor belts (90 mts) is expected to handle three flights at a time.



The enhanced capacity for both the domestic and international terminals would be 4,000 peak hour passenger movements per hour which would cater to the expected growth of traffic at the airport.

3. Address service quality requirements stipulated under AERA’s regulatory guidelines  
The augmented capacity would enhance the passenger service facilities including, terminal area, check-in counters, baggage belts, immigration and security counters etc. This would help Cochin Airport to conform to the service quality measures as defined by AERA.

#### 4.4 Capital expenditure and phasing

The construction of the new terminal is expected to start in FY 2014 with a construction period of around 36 months. The congestion at the existing domestic terminal has necessitated the need for a timely and immediate development of the new international terminal building. The technical team of CIAL is confident of commissioning the new international terminal building in FY 2016. The estimated capital expenditure on the project with the phasing of capital expenditure is shown in the following table.

Infrastructure	FY 2014	FY 2015	FY 2016	FY 2017	Total
New International Terminal	INR 100 cr	INR 250 cr	INR 300 cr		<b>INR 650 cr</b>
Elevated road		INR 50 cr	INR 50 cr		<b>INR 100 cr</b>
Parking bays		INR 50 cr	INR 50 cr		<b>INR 100 cr</b>
Conversion of existing international terminal to domestic terminal				INR 25 cr	<b>INR 25 cr</b>
<b>Total</b>	<b>INR 100 cr</b>	<b>INR 350 cr</b>	<b>INR 400 cr</b>	<b>INR 25 cr</b>	<b>INR 875 cr</b>

Source: CIAL

An additional contingency of 10% of the project cost (~INR 88 cr) is expected to cover any unexpected increases in material, equipment or construction costs.

#### 4.5 Impact on operational expenditure and revenue

The proposed development of the new terminal building is expected to have a marginal impact on the total operational expenditure on CIAL. The increased terminal area would result in increased utilities consumption such as power and water, and would require additional security, house-keeping and administrative staff.

The impact of the new international terminal building on key heads of operational expenditure from FY2016 to FY 2020 is shown below. The terminal is expected to be commissioned mid-year in FY 2016 and the full impact of the terminal building would be visible in FY2017.

Estimated Costs (INR cr)	FY 2016	FY 2017	FY 2018	FY 2019	FY2020
Repairs	11	14	15	15	17
Safety and Security	3	11	11	12	13
Duty Free Fees	5	7	8	9	10
Utilities	12	26	28	29	31
Housekeeping	6	14	15	17	19
Source: CIAL, KPMG analysis					

CIAL is expected to employ its existing employees for management of the new international terminal with minimal addition of new employees. Thus a significant incremental increase in personnel cost due to addition of new employees is not expected as a result of the development of the new terminal.

The new international terminal would present an opportunity for enhanced duty free revenues through the development of 2,800 sq m of duty free retail area. The estimated duty free revenue and other non aeronautical revenue with the commencement of operations in the new international terminal building are shown below –

Estimated Revenue (INR cr)	FY 2017	FY 2018	FY 2019	FY 2020	FY2021
Duty free revenue	155	194	215	238	264
Other non aero revenue	122	142	152	163	174
Total non aero revenue	277	336	367	401	438
Source: CIAL, KPMG analysis					

The increased duty free revenue would result in a corresponding increase in duty free management fee, which is paid as a percentage of duty free sales.

The new international terminal will also cater to larger area for other retail services with a potential to further enhance non-aeronautical revenues.

## 4.6 Procurement strategy

The development of the new international terminal would be undertaken by CIAL. All major contracts such as those for construction, purchase of equipment, finishing works etc. are proposed to be awarded on a competitive bidding process by CIAL.

## 4.7 Cost benchmarking

The estimated cost of developing the new international terminal at CIA has been benchmarked with similar airport projects undertaken in India in the last five years. The estimated cost for development at Cochin Airport is observed to be among the lowest as compared to other airport expansion/ development projects as shown in Table 10 below.

Table 9: Terminal development cost benchmarking

Terminal development	Area (sq.m)	Estimated Cost (INR cr)	Estimated Cost per sq.m
TRV New Terminal Building	32,000	289	90,500
CCU new terminal (initial estimate)	233,000	2,024	86,904
MAA (domestic and international terminals)	133,142	1,345	1,01,019
Cochin new international Terminal (Final capacity)	150,000	650	43,333

Source: Industry reports, CIAL

#### 4.8 Sources of funding

The total capital expenditure of Rs 875 cr would be funded through a combination of debt, reserves and internal accruals. Around 70% - 80% of the total capital expenditure, i.e. INR 600 - 700 crore would be funded through debt whereas the remaining INR 175 - 275 crore would be mobilized through internal reserves by CIAL.

#### 4.9 Estimated cost of debt

The interest rate on debt is dependent on the prevailing market conditions and is expected to range between 11% - 13% per annum based on enquiries made by CIAL.

#### 4.10 Impact on passenger tariffs

The capital expenditure for the airport expansion would increase the Regulatory Asset Base (RAB) for CIA which would impact passenger tariffs. However, the impact on passenger tariffs is expected to be lower than comparable airports. CIAL's prior experience in building the airport and the continued focus on keeping the capital and operational expenditures low will help keep the impact on tariffs low. The higher non-aeronautical revenue as a result of improved retail and duty free area as well as enhanced passenger facilities is also expected to reduce the impact on tariffs.

The incremental impact on the passenger charges during the first control period (FY 12 – FY16) of CIAL as a result of the new international terminal building is estimated to be around Rs 100 per passenger<sup>7</sup>.

<sup>7</sup> This is only as estimate. The decision on levy and quantum of UDF/ tariffs would be made by AERA based on the tariff Guidelines and AERA's review of CIAL's multi-year tariff proposal for the first control period. This incremental impact is independent of the review of tariff by AERA for the existing airport infrastructure. The incremental impact during the next control period would be higher due to inclusion of the asset in the RAB for the complete control period. The incremental impact in the next control period would be partly offset by the increase in passenger throughput at CIA.

## **4.11 Key risks**

The key risk affecting the viability of the proposed expansion is an unexpected slowdown in the growth of traffic. The important factors affecting traffic at CIA include:

1. Competition from neighboring airports
2. Reduced emigration of NRKs affecting the international traffic
3. Slow down in India's economy
4. Global economic growth trends

The key risks and their impact on traffic may affect the generation of internal reserves to be deployed for the project or may affect the servicing of debt raised for the development project. CIAL may need to utilize alternate sources of funding such as Airport Development Fee to meet the resultant shortfall in internal accruals and/or debt financing constraints.

## 5 Annexure

### 5.1 Traffic forecasting methodology

Conventionally air travel demand models use predictors (independent variables) such as GDP and GDP per capita of the country, GDP of outbound foreign destinations, GSDP, oil prices, revenues per passenger km, and tourism demand.

ICAO's guidelines prescribe using a log – linear multivariate model for long term traffic forecast. A typical log-linear multivariate model has the following functional form:

$$\log(y) = \alpha * \log(a) + \beta * \log(b) + c$$

Where,

a – independent variable 1

b – independent variable 2

c – constant

$\alpha$  – the elasticity associated with independent variable a

$\beta$  – the elasticity associated with independent variable b

A number of log linear models to forecast traffic for Cochin Airport for a 10 yr period using the following independent variables (*regressors*) were evaluated-

- a. India's GDP per capita
- b. India's GDP
- c. GDP of Middle East and African countries
- d. Kerala's Gross State Domestic Product (GSDP)
- e. Jet fuel prices

Of the different approaches used, the model using India's GDP per capita as a regressor appears to provide a reasonable statistically significant forecast of traffic growth considering long-term historical trends.

The forecasts derived from the model were adjusted taking into consideration the following factors -

1. Growth trends of immediate past (since FY2008)
2. Historical growth rates exhibited by airports of similar traffic profile (Ahmedabad, Pune, Goa)
3. Growth rates projected by AAI for an all India level
4. Stabilizing industrial environment of the state
5. Stable trends in emigration
6. Mature fare structure of the industry after the advent of initial low cost carriers
7. Gradual global economic recovery

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## 5.4 Project Plan

**KITCO LTD**  
**THE NEW INTERNATIONAL TERMINAL BUILDING AT COCHIN**  
**INTERNATIONAL AIRPORT LTD.**

### **Project Brief**

The new International terminal with a total area of 12,78,000 sq.ft. is in two level-departure and arrival floors. The building plan is a T shape with a 255 x 105 m processing area aligned north-south, and 420 m long pier of varying width from 75-35 m, aligned east west.

We have proposed a fly over approach to the departure at +10.6 m lvl. and the 50 m wide fly over area is covered by a canopy on the west side of the terminal. Departure pier has 13 aerobridge connections and people are transported to flights from +4.5m lvl. via separate ramps from the departure gate holds.

All the processing for departure is arranged in +10.6 m and +14.5m level. The aerobridge connectivity of pier is 13 in total; 5 on the south side and 8 on the north side. The south side aerobridges is designed to cater to large aircrafts including A-380.

The arrival corridor is at +5.55m level and it is connected to the ground floor where the baggage claim, duty-free and customs is arranged. The meet and greet area and the pick up for the arrival passengers is positioned below the fly over. The building is designed taking into consideration green building concepts. Maximum day light and minimum energy consumption has been worked out by the use of intelligent façade systems. Façade is mainly consisting of Double Glass units and honey comb panels. Different combinations of glass laminated with air gap is provided on the basis of energy modeling analysis for shaded and non-shaded areas.

The services such as HVAC, electrical, fire, other mechanical transport systems, communication, net working, water supply, sewage, CCTV, FIDS etc. has been carefully planned and routed through the terminal building. The baggage handling system is positioned in the +5.55m level and BMA and BBA is strategically located near the apron area for the easy maneuvering of the vehicles.

## **The Structure**

The Proposal includes construction of a RCC framed terminal building at CIAL with an overall height of 24.00m (+GL). Slabs are provided at +5.55 lvl, +10.6m lvl, +14.5m lvl & +18.1m lvl. Roofing is provided in the canopy area above the flyover using single skin roofing. Main roofing in the terminal area and pier is using double skin roofing sheet with insulation and the peripheral area is provided with roof slabs as per design for drainage/gutter purposes.

Pre stressed post tensioned beam and slab is considered for almost all portion of the building with concrete of mix M40, except for certain areas, service bays, where conventional RCC concreting is considered with mix M30. RCC columns are spaced at 12 to 25.00m interval for providing maximum column free space inside the building with concrete of mix M40. RCC lintel and RCC floor at +0.15m lvl are considered with concrete of mix M25 and M20 respectively.

Underground trenches have been provided in the BBA area for the movement of baggage into the baggage claim. There are 6 nos. of such 5 m wide corridors of 75 m length at -2.5m lvl, properly waterproofed and connected to ground level by means of fire escape stair.

Pre stressed post tensioned beam and slab system allows minimum beam depths in the lower floors for service routings and maximum column free spans in the upper floors for aesthetics.

The building is divided into 4 parts by providing an expansion gap of 25mm each i.e, flyover and meet & greet area, baggage and check-in area, food court and emigration area, gate and aerobridge area.

### **a) Site condition**

Site is considered to be a leveled surface. Red earth filling is considered for BBA, BMA and vehicular movement area.

### **b) Soil Profile**

As per soil report, Bore hole( BH) 1,2 and 3 are considered at flyover and meet & greet area where the top strata varies from ordinary soil to laterite followed by sandy clayey silt and then hard strata i.e., rock at 14 to 20m(max.)



BH 4, 5 and 6 are taken in the baggage area where same soil profile as above were observed with rock at 16 to 18m (max.). Similarly for BH 7, 8, 9 and 10, similar soil strata were observed with rock at 15 to 18m (max).

c) **Foundation**

DMC pile foundation with concrete of mix M35 is considered for the proposed building with 600mm and 750mm dia pile having capacity of 140T and 220T respectively at 20m depth maximum where N value is above 100.

Pilecap, stub column with isolated footing and grade beam are provided with concrete of mix M35. Stub columns were provided to minimize the depth of grade beam.

d) **Superstructure**

**Loading:**

Dead weight of entire structure is considered along with a live load of 70R vehicular loading as per IRC standards for the fly over portion, 5 kN/sqm for the entire area except electrical room, substation, AHU's where 7kN/sqm is considered. An additional 250mm sunken slab load is taken for the toilet and landscaped portion and partition load of 2kN/sqm is also considered in the floor.

**+0.15m lvl**

The major constraints for the spacing of the columns in the terminal area are the 5 bays of Carousel in BMA area & 8 belts in the BBA area. For optimum utilization of the building area, columns are spaced at 12m to 25m and here pre stressed post tensioned beam and slab is provided. GF consists of the following area.

1. Vehicle Pick-up Area (Arrival) – 68,600 sq. ft
2. Meet in Greet Area (Arrival) – 68,600 sq. ft
3. Passenger Exit Lounge – 17,450 sq. ft
4. Visitors Area – 5800 sq. ft
5. Customs Area – 13,100 sq. ft
6. Baggage claim – 84,750 sq. ft
7. BBA – 33,900 sq. ft
8. Duty free – 29,050 sq. ft

9. BMA – 91,600 sq. ft
10. Electrical Substation – 30,750 sq. ft
11. Remote Arrival – 12,400 sq. ft
12. Remote Departure – 19,200 sq. ft
13. Office of GH Agencies – 22,000 sq. ft

**+5.55m lvl**

This level is more or less like a mezzanine floor in the terminal area with big cutouts over the baggage claim and passenger exit lounge. Customs and CIAL offices are positioned in this level overlooking the ground level. Level 1-4 Screening of the baggage is also located in this level. And for conventional RCC beam and slab, the depth 800 to 1000mm and 125mm respectively. FF consists of the following area,

1. CIAL office – 13,100 sq. ft
2. Baggage Handling area – 57,750 sq. ft
3. Customs Office (+3.5 m & +7 m lvls) – 20,350 sq. ft
4. Immigration Area – 45,200 sq. ft
5. Arrival pier – 1,00,200 sq. ft

**+10.60m lvl**

This level is basically designed as a minimal column level as sheet roofing is considered in majority of the areas. SF consists of the following area,

1. Vehicle Drop-Off Area – 82,300 sq. ft
2. Departure Kerb – 38,750 sq. ft
3. Roof Top Garden – 67,800 sq. ft
4. Check-in Area – 2,04,200 sq. ft
5. Emigration Area – 40,350 sq. ft
6. Duty Free Area – 10,750 sq. ft
7. Departure Pier including 13 security gate holds – 94,150 sq. ft

**+14.50m lvl**

This level is again more or less a mezzanine floor accommodating staff spaces and passenger amenities overlooking the 10.6m lvl. It is proposed to provide food court with BAR and Spa, children play area and greenery in this level. TF consists of the following area,

1. Airline Offices & AoCC – 25,200 sq. ft
2. Departure lounges, Food Court & Other facilities – 36,350 sq. ft

**+18.10m lvl ( Roof top level)**

This level of the roof slab acts more or less like a gutter recipient of the roofing sheet area. This area also accommodates the mechanical ventilation ducts to and from AHU's and toilets.

**Finishing Schedule**

**Masonry works:** Solid block masonry is considered for constructing the walls.

**Flooring:** 150mm thick Vacuum dewatered reinforced concrete flooring in M-30 design mix is considered for Electrical room, substation and AHU's in ground floor. IPa flooring is considered for Electrical room, AHU's, baggage area, x-ray area in floors except ground floor.

**Roofing:** MP tile roofing is provided in the sloping slab area and 16mm thick double skin roofing sheet with insulation is provided for air conditional spaces and single skin roofing sheet over canopy.

**Facade:** West side - DGU 6mm high performance glass with 12mm air gap and 6mm clear glass is considered and on all other sides DGU 6mm high performance glass with 1.52 PVB, 16mm air gap and 6mm clear glass is considered. Internal glazing - SGU 6mm clear glass with 1.52 PVB and 6mm clear glass is provided and for sky lighting DGU 6mm high performance glass with 1.52 PVB, 6mm clear glass, 16mm air gap and 6mm clear glass is considered.

**Services**

A remote service yard is provided near the northern site boundary for the new terminal where DG yard and Main HT receiving panel has been proposed. This service yard also accommodates 6 lakh litre capacity over head water tank and the cooling tower for air-conditioning. STP and fire station are also located nearby. The main substation for the terminal building is located in the ground level of the pier and a service trench connecting service yard and substation has been proposed. A service corridor is provided along the length of the pier in ground floor and connectivity to the terminal is provided through the BMA area. From the BMA area, cables can be taken to the first floor ceiling level and from here it can be easily

accessed by the upper floors. Similarly, the AC plant and holding tank for STP are located in the ground floor area of pier. Fire stair cases are provided at every 90 m spacing as per NBC and fire ducts are located at 60 m spacing. Fresh air ducts, exhaust ducts and plumbing ducts are provided for toilets which are vertically stacked and strategically located for the exclusive users of passengers, staff and other users. A softener system for WTP and quality monitoring type STP is provided for the terminal. STP of 0.65 MLD capacity is proposed for the new terminal and the treated water from STP is proposed to be utilized for flushing, gardening, fire and HVAC makeup water. Overhead water tanks are provided above +18.1 m lvl. roof slab and are concealed below the roofing sheet. An underground sump tank of 60lakh litre capacity with pump house is also proposed. 16 lifts, 6 escalators and 4 walkalators are provided in various locations for varied purposes.

# **ANNEXURE - II**

# COCHIN INTERNATIONAL AIRPORT LTD

## Schedule of rates applicable at Cochin International Airport Ltd.

### LANDING AND PARKING CHARGES

Rates of landing and parking charges at Cochin International Airport with effect from the midnight of 1st April, 2001 as given below

#### LANDING CHARGES FOR SINGLE LANDING

All up weight	International Flight	Other than International Flight
Upto 100 MT	Rs. 228.00 per MT	Rs.171 per MT
Above 100 MT	Rs. 22800 + Rs 306 Per MT in excess of 100 MT	Rs 17100 + Rs 229 per MT in excess of 100 MT

1. The International charges will be applicable only to the flights (Scheduled and Non Scheduled) which are coming from International destination (immediate previous departing point should be International)
2. The flights (Scheduled and Non scheduled) which are arriving from the domestic destinations and departing to International or domestic destinations will be treated as domestic for the purpose of aeronautical billing.

#### Note:-

1. Charges shall be calculated on the basis of nearest MT (ie. 1000 Kgs. )
2. A minimum fee of Rs. 1000/- shall be charged per single landing.
3. Domestic aircrafts with an all up weight of 21000 Kg. and below will be charged @Rs. 103/- per 1000 Kgs.

#### HOUSING CHARGES FOR INTERNATIONAL AND DOMESTIC FLIGHTS

Total Weight	Rates per hours
Upto 100 MT	Rs.7.00 per hour per MT
Above 100 MT	Rs 700 + Rs 10.00 per MT in excess of 100 MT

#### PARKING CHARGES FOR INTERNATIONAL AND DOMESTIC FLIGHTS

When an aircraft is parked in the open, only half the housing charges specified above shall be levied, provided that no parking charges shall be levied for the first two hours.

1. While calculating free parking period , a standard time of 15 minutes shall be added on account of time taken between touchdown time and actual parking time on the parking stand. Another standard time of 15 minutes shall be added on account of taxing time of aircraft from parking stand to take off point. These periods shall be applicable for each aircraft irrespective of actual time taken in the movement of aircraft after landing and before take off.
2. For calculating chargeable parking time, part of an hour shall be rounded off to the next hour.
3. Charges shall be calculated on the basis of nearest MT.
4. Charges for each period of parking shall be rounded off to nearest Rupee.
5. At the in- contact stands, after free parking, for the next two hours normal parking charges shall be levied. After this period, the charges shall be double the normal parking charges

#### **Exemption in Landing and Parking Charges**

No landing charges will be levied in respect of Military Aircraft (Government of India) including para-military forces such as BSF, Coast Guard etc. Military aircrafts as mentioned above are also exempted from payment of parking charges.

#### **X-RAY BAGGAGE RENTAL CHARGES**

<b>Aircraft upto seating capacity</b>	<b>Amount in Rs.</b>
25	150
26 to 50	250
51 to 100	500
101 to 200	800
201 and above	900

### **PASSENGER SERVICE FEE**

Passenger Service fee of Rs. 200/- is payable to Cochin International Airport Ltd. Rs. 70 per embarking passenger towards PSF (facilitation) and Rs. 130 per embarking passenger towards PSF (security) shall be invoiced separately.

The applicable dollar rate is USD 5, 1.75\$ towards PSF (Facilitation) and 3.25\$ towards PSF (Security).

### **Exemption**

1. Exemption to Airlines from paying PSF for Sky Marshals.
2. Crew on duty exempted from paying PSF.

### **AEROBRIDGE CHARGES**

1. Aerobridge charges are payable by Airline Operators to Cochin International Airport Ltd.
2. The Aerobridge charges are payable based on the time of usage.

<b>Duration of Parking</b>	<b>Charges Applicable</b>
Upto 90 Minutes	US \$ 60
For every 30 Minutes beyond 90 Minutes	US \$ 20

- a. Usage charges will be billed on the basis of the data recorded by the Aerobridge operator.
- b. The conversion rate for US Dollar shall be the rate as on 1<sup>st</sup> of every month for the billing for the first fortnight and the rate applicable on 16<sup>th</sup> for the billing for second fortnight of every month.

### **INLINE XRAY BAGGAGE SCREEING CHARGES**

<b>Srl no.</b>	<b>SEATING CAPACITY (nos)</b>	<b>AMOUNT (In US Dollars)</b>
<b>1</b>	<b>1-100</b>	<b>150</b>
<b>2</b>	<b>101-150</b>	<b>180</b>
<b>3</b>	<b>151-180</b>	<b>220</b>
<b>4</b>	<b>181-300</b>	<b>250</b>
<b>5</b>	<b>Above 300</b>	<b>300</b>



## **TAXES**

All the airport charges and fee are subject to service tax (and cess thereon) as per the applicable rate.

## EXPORT CARGO

### (I) TERMINAL, STORAGE AND PROCESSING (TSP) CHARGES

SL.NO	TYPE OF CARGO	RATE PER KG	MINIMUM RATE PER CONSIGNMENT
1	General	Rs. 0.50	Rs. 100.00
2	Special	Rs. 1.00	Rs. 200.00
3	Perishables	Rs. 0.35	Rs. 100.00

\*Rs 1.00/Kg will be charged for exports through State of the Art facility.

### (II) DEMURRAGE CHARGES

SL.NO	TYPE OF CARGO	RATE PER KG PER DAY	MINIMUM RATE PER CONSIGNMENT
1	General	Rs. 0.50	Rs. 100.00
2	Special	Rs. 1.00	Rs. 200.00

### NOTES

(a) The fee period for export cargo shall be 48 hours for examination/processing by the shippers.

(b) TSP charges applicable to News papers (Daily) and TV reel consignments shall be 50% of the prescribed charges for General Cargo.

(c) Consignments of human remains coffin including unaccompanied baggage of deceased and human eyes are exempted from the purview of TSP & Demurrage Charges.

(d) Special cargo consists of live animals, hazardous goods and valuable cargo. This includes Ornamental fish, Chicks, etc.

(e) Charges will be levied on the 'gross weight' or the 'chargeable weight' of the, consignment, whichever is higher . Wherever the 'gross weight' and (or) 'volume weight' is wrongly indicated on the Airway bill and is found more, charges will be levied on the 'actual gross weight' or 'actual volumetric weight', whichever is higher.

(f) For mis-declaration of weight above 2% and up to 5% of declared weight penal charges @ Double the applicable TSP charges will be levied. For variation above 5%, the penal charges will be leviable @ five (5) times the applicable TSP charges of the differential weight.

**(III) X-RAY MACHINE USAGE CHARGES FOR EXPORT CARGO**

(Leviable from Shipper or Airline) – As per the gross weight

- (1) For general cargo - Rs. 1.50/- per Kg subject to a minimum of Rs.100.00 per consignment.
- (2) For perishable cargo - Rs. 1/- per Kg subject to a minimum of Rs. 100/- per consignment.
- (3) P O Mails - Rs 1.50/- per Kg subject to a minimum of Rs 100.00 per AV - 7

## IMPORT CARGO

### (I) a) DELIVERY ORDER CHARGES

MAWB General Cargo /Courier - Rs.1000.00 + Service Tax  
MAWB Baggage - Rs.500.00 + Service Tax  
MAWB Baggage – Consolidation - Rs.1000.00 + Service Tax

### b) BREAK BULK CHARGES

General Cargo &Baggage - Rs 500.00 for each HAWB + Service Tax

### (I) TERMINAL, STORAGE AND PROCESSING (TSP) CHARGES

SL.NO	TYPE OF CARGO	RATE PER KG	MINIMUM RATE PER CONSIGNMENT
1	General	Rs. 3.00	Rs. 100.00
2	# Special & @ Valuable cargo	Rs. 6.00	Rs. 200.00

### (II) STRAPPING CHARGES

Rs. 5.00 per each packet.

### (III) DEMURRAGE CHARGES ( For all types of cargo) -

Free storage period for import cargo shall be 3 *working days* including the date of arrival of flight. For the next two days, demurrage will be charged at "per kg; per day" non-cumulative basis, provided the consignment is cleared within five (5) days. If clearance is effected after 5 days (including the date of landing) demurrage will accrue for the entire period from the date of the arrival of the flight, for all types of cargo as follows:-

For 3 days : free

4<sup>th</sup> day : (Rs.1/- X weight)

5<sup>th</sup> day : (Rs.2/- X weight)

6<sup>th</sup> day : (Rs.1/- X 6 X weight)

7<sup>th</sup> day : (Rs.1/- X 7 X weight)

8<sup>th</sup> day : (Rs.1/- X 7 X weight) + (Rs.2/- X 1Xweight)

9<sup>th</sup> day : (Rs.1/- X 7 X weight) + (Rs.2/-X2 X weight)

30<sup>th</sup> day : (Rs.1/- X 7 X weight) + (Rs.2/- X (30-7) X weight)

Beyond 30 days : (Rs 1/- X 7 X weight) + (Rs 2/- X 23 X weight) + (Rs 3/- X (Total number of days - 30) X weight)

Subject to a minimum of Rs. 250/- per consignment.

#### NOTES

- a. Consignments of human remains coffin including baggage of deceased and human eyes will be exempted from the purview of TSP, demurrage and DO charge
- b. Charges will be levied on the 'gross weight' or the 'chargeable weight' of the consignment whichever is higher. Wherever the 'gross weight' and (or) volume weight is wrongly indicated on the Airway Bill and is actually found more, charges will be levied on the 'actual gross weight' or 'actual volumetric weight' or " 'chargeable weight' whichever is higher.
- c. Special import Cargo consists of Cargo stored in Cold Storage, Live Animals, Hazardous Goods, Valuables, Ornamental Fish, Live Chicks etc
- d. Valuable cargo consists of gold, bullion, currency notes, securities, shares, share coupons, traveler's cheques, diamonds(including diamonds for industrial use), diamond jewelry, jewelry and watches made of silver, gold, platinum, computer parts, mobile phones and items valued at USD 1000 per Kg. & above.

**OTHER RATES**

**(I) PALLETISATION/DEPALLETISATION &CONTAINERIZATION/  
DECONTAINERIZATION (Charges to Airlines)**

	STUFFING(Rs)	DESTUFFING(Rs)
Pallet-10 feet	2000/Each	1500/Each
Pallet - 10 ft Contour	2500/Each	1500/Each
Container	600/Each	500/Each
AMF	1700/Each	1500/Each
ALF	1200/Each	1000/Each
PLA/FLA	1300/Each	1000/Each
BULK	0.50/Kg	0.50/Kg(Min Rs.100/-)

**(II) COLD STORAGE CHARGES**

Rs. 1.00per kg subject to a minimum of Rs. 200.00 for each consignment (Chargeable weight)

**(III) STRONG ROOM CHARGES**

Charges will be levied as per schedule.

**(IV) TRANSHIPMENT CARGO HANDLING(Charges to the Airlines)**

**a) Air to Road**

Storage charges - Rs.2.00 per kg Subject to a Minimum of Rs.100.00 per IGM

Stuffing Charges - Rs.2.50 per Kg.(Demurrage charges :Rs.1.00/Kg per day after a period of 3 working days subject to minimum ofRs.250/- perconsignment.)

**b) Road to Air**

T.S.P - Rs.0.50 per kg \*  
X ray charges - Rs.1.50 per kg \*

\*Subject to Minimum of Rs.100.00 per Consignment.

**c) Air to Air**

Storage Charges - Rs. 2.00/Kg subject to minimum of  
Rs. 100.00 per IGM

ULD Transfer - Rs. 500.00 per ULD

**(V) FORKLIFT CHARGES (To the Exporters/Importers only)**

Rs.0.10/- per Kg subject to a minimum of Rs. 100.00 per consignment.

## The tariff for Domestic Cargo Operations

### Departure Cargo- Charges applicable to the Consignor

<b>Handling Charges</b> (Chargeable to the Consignor)	General Cargo / perishable Cargo / Vulnerable Cargo	Rs.0.50 per kg- minimum of Rs.50.00 per consignment.
	Valuables/Live Animals	Rs.2/- per kg- minimum of Rs.200/- per consignment.
<b>Demurrage Charges</b> (Chargeable to the Consignor)	The first day (24 hours) will be the free period. For each additional day after 24 hours, Rs.1/- per kg per day will be charged subject to a minimum of Rs.100/- consignment.	
<b>X-ray Charges</b>	Rs.1/- per kg with a minimum of Rs.50/- per consignment for perishables and general cargo. Rs.1.50/- per kg for with a minimum of Rs.100/- for valuables	
<b>Strong Room charges</b>	As per rate chart attached	

### Arrival Cargo- Charges applicable to the consignee

<b>Handling Charges</b> (Chargeable to the Consignee)	General Cargo / perishable Cargo / Vulnerable Cargo	Rs.0.50 per kg- minimum of Rs.50.00 per consignment.
	Valuables/Live Animals	Rs.2/- per kg – minimum of Rs.200/- per consignment.
<b>Demurrage Charges</b> (Chargeable to the Consignee)	For the first five days including holidays from the date of arrival will be free of cost. For each additional day after the 5 <sup>th</sup> day, Rs.1/- per kg per day will be charged subject to a minimum of Rs.100/- per consignment.	
<b>Strong Room charges</b>	As per rate chart attached	

### Charges applicable to the Airline

#### a) Stuffing/ Destuffing/ X-ray charges

<b>Stuffing/ Destuffing charges</b>	For all type of cargo	Rs.0.50 per kg minimum of Rs.50.00 per flight.
<b>X-ray Charges</b>	Departure Stores cargo	Rs.1/- per kg with a minimum of Rs.50/- per consignment.

#### b) Handling Charges on Company Cargo

<b>Stores Cargo / Airline Cargo</b>	Rs.0.50 per kg subject to a minimum of Rs.50/- per consignment
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c) **X-ray charges to Postal Dept.**

<b>X-ray Charges</b>	Rs.1/- per kg with a minimum of Rs.50/- per consignment (AV-7).
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d) **Valuable Handling**

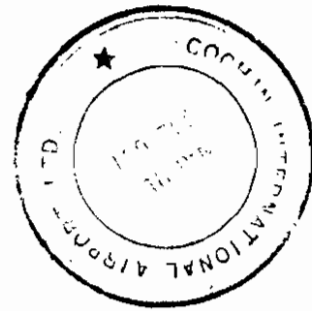
<b>Valuable Handling</b> (Usage of Vehicle)	Rs.750/- per trip.
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**Note: Service tax wherever applicable.**

**STRONG ROOM CHARGES ON RUPEES**

Period	WEIGHTS						
	0-50 Kg	51-100 Kg	101-150 Kg	151-200 Kg	201-250 Kg	251-300 Kg	301-350 Kg
1st Week	470	940	1410	1880	2350	2820	3290
2nd Week	1410	2820	4230	5640	7050	8460	9870
3rd Week	2350	4700	7050	9400	11750	14100	16450
4th Week	3290	6580	9870	13160	16450	19740	23030
5th Week	4230	8460	12690	16920	21150	25380	29610
6th Week	5170	10340	15510	20680	25850	31020	36190
7th Week	6110	12220	18330	24440	30550	36660	42770

*[Handwritten Signature]*



### **Royalty on Fuel Throughput**

The royalty on re-fuelling of aircraft was fixed at Rs.5/- per kilo litre 31-3-2008 based on a Memorandum of Understanding between CIAL and BPCL dated 19.05.1997. It was also agreed that upon cessation of administered pricing mechanism of ATF, the rate of payment of this royalty will be reviewed between parties thereto and refixed according to market conditions.

Accordingly the rates were revised with effect from 01.04.2009 at the rate of Rs.70 per Kilo liter for a period of one year with effect from 01.04.2009 to 31.03.2010 and thereafter the royalty payable to CIAL by BPCL will be escalated cumulatively by 20% every year for a further period of five years. It was also agreed that the rate of royalty with effect from 01.04.2015 will be discussed and finalized during the month of March 2015. The copy of the Memorandum of Understanding between CIAL and BPCL dated 19.05.1997 and Minutes of the Meeting held on 06.11.2009 between CIAL & BPCL are enclosed as Annex 2 A.

### **Royalty on Ground Handling**

CIAL is having two Ground Handling Agencies namely Air India and BWFS. CIAL had entered into an agreement with BWFS through an open competitive tendering process in 2009 and the third party ground handling royalty was fixed @ 35.2% with an annual escalation of 0.5%. The validity of the agreement is for seven years w.e.f 23.01.2009 and the applicable rate for each year is as under:

YEAR		RATE OF ROYALTY
1	23.01.2009 to 22.01.2010	35.2%
2	23.01.2010 to 22.01.2011	35.7%
3	23.01.2011 to 22.01.2012	36.2%
4	23.01.2012 to 22.01.2013	36.7%
5	23.01.2013 to 22.01.2014	37.2%

6	23.01.2014 to 22.01.2015	37.7%
7	23.01.2015 to 22.01.2016	38.2%

Consequent upon executing an agreement with BWFS, Air India also matched with the rates of BWFS without entering into a formal agreement. The copy of the agreement entered between BWFS and CIAL is enclosed as Annex 2 B.

### **Royalty on CUTE Charges**

An agreement with SITA was executed on 23-04-2009 and concession fee of 0.41US\$ per domestic/international passenger was fixed. An in-built escalation clause exists in the agreement executed between SITA and CIAL, wherein, 0.45 US\$ per departing passenger is chargeable for the period 01-12-2014 to 31-04-2015. The copy of the agreement entered between SITA and CIAL is enclosed as Annex 2 C.