BEFORE THE NATIONAL GREEN TRIBUNAL

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 528/2025

IN THE MATTER OF:

SOCIETY FOR PROTECTION OF CULTURE, HERITAGE, ENVIRONMENT, TRADITIONS & PROMOTION OF NATIONAL AWARENESS (SP--CHETNA) ….APPLICANT

VERSUS

UNION OF INDIA & ORS. … RESPONDENTS

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ANNEXURE R-6

BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 612/2023

IN THE MATTER OF:

SOCIETY FOR PROTECTION OF CULTURE, HERITAGE, ENVIRONMENT, TRADITIONS & PROMOTION OF NATIONAL AWARENESS (SP-CHETNA) … APPLICANT

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TRILEGAL: ADVOCATES FOR THE RESPONDENT NO. 9

**BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI**

ORIGINAL APPLICATION NO. 612/2023

IN THE MATTER OF:

SOCIETY FOR PROTECTION OF CULTURE, HERITAGE, ENVIRONMENT, TRADITIONS & PROMOTION OF NATIONAL AWARENESS (SP-CHETNA) ... APPLICANT

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**BEFORE THE NATIONAL GREEN TRIBUNAL,
PRINCIPAL BENCH, NEW DELHI**

ORIGINAL APPLICATION NO. 612/2023

IN THE MATTER OF:

SOCIETY FOR PROTECTION OF CULTURE, HERITAGE, ENVIRONMENT, TRADITIONS & PROMOTION OF NATIONAL AWARENESS (SP-CHETNA) ... APPLICANT

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PRELIMINARY REPLY ON BEHALF OF RESPONDENT NO. 9, DELHI INTERNATIONAL AIRPORT LTD TO OPPOSE MAINTAINBILITY OF THE ORIGINAL APPLICATION FILED BY THE APPLICANT

1. The instant preliminary reply is being filed by Delhi International Airport Limited, ("**Respondent No. 9**") through Mr. Patrick Muller, Chief Operating Officer, who has been duly authorised by Respondent No. 9 vide Board Resolution dated 26.05.2023 to file the present reply to oppose the maintainability of the present Original Application filed by the Applicant invoking Section(s) 14 (Tribunal to settle dispute), 15 (Relief, compensation, and restitution) and 18 (Application or appeal to Tribunal) of the National Green Tribunal Act, 2010 ('**NGT**

Act'). Copy of the Board Resolution dated 26.05.2023 is annexed herewith as **Annexure R-1**.

2. The Applicant in the Original Application is *inter alia* seeking reliefs on prohibition of landing and taking off aircrafts on all the runways at Indira Gandhi International Airport ('**Delhi Airport**') and all other airports similarly located within city limits, except for International Flights during night-time and further seeks compliance of the Notification No. G.S.R.568 € dated 18.06.2018 issued by the Ministry of Environment, Forest, and Climate Change ('**MoEF Notification**').

3. This Hon'ble Tribunal vide its order dated 10.10.2023 while hearing the present Original Application was pleased to permit the Respondents to file their preliminary objections to the present Original Application. Accordingly, in terms of the order dated 10.10.2023, the Respondent No.9 by way of this Reply is only filing its preliminary objections to the present Original Application and craves leave of this Hon'ble Tribunal to also file a detailed reply on merits to the Original Application, in the event this Hon'ble Tribunal is pleased €o issue Notice.

4. At the outset, all allegations, averments, and submissions made by the Applicant concerning the Respondent No. 9 are denied, save and except those which are a matter of record and/ or specifically admitted in the present Reply, and shall not be deemed to be admitted for specific non transverse.

The Applicant is a serial litigant who habitually initiates frivolous litigations with no substance, and for its own self-serving purpose.

The present Original Application raises absolutely no questions of law relating to the environment and has been intentionally drafted in a confusing manner by deliberately and wilfully misstating and misinterpreting the notifications issued by statutory authorities regarding noise levels to be maintained at the airport and the compliance thereof, with the sole purpose of misleading this Hon'ble Tribunal. The Applicant is guilty of deceitfully and wilfully concealing material facts from this Hon'ble Tribunal by failing to disclose that the Applicant had already initiated proceedings before this Hon'ble Tribunal for the reliefs claimed in the present Original Application, and which stand decided by this Hon'ble Tribunal. The Applicant is not only guilty of concealing material facts but has also wilfully made false statements, which the answering Respondent will demonstrate in the succeeding paragraphs

BRIEF FACTS

5. The reliefs as prayed for by the Applicant are not maintainable for the reasons set out herein. However, before adverting to the preliminary objections, the answering Respondent craves leave to refer to a few brief facts:

i. Applicant had filed a Writ Petition before the Hon'ble Delhi High Court ('**High Court'**) being€P(C) No. 9337 of 2009 ('**writ petition'**) for quashing of the order dated 17.01.2007 by which Respondent No. 1 had granted Environmental Clearance for constructi^{on} of 3rd runway 11/29 at the Delhi Airport. Further, it was prayed that a prohibitory order be issued against the respondents to stop flying of aircrafts over the areas of Vasant

Kunj, Masudpur and Rangpuri with immediate effect. It was also prayed that the aircrafts should also be prohibited from landing at runway 11/29.

ii. The High Court vide its order dated 16.04.2013 transferred the writ petition to this Hon'ble Tribunal in accordance with the directions of the Hon'ble Supreme Court in ***Bhopal Gas Peedith Mahila Udyog Sangathan & Ors. vs. Union of India & Ors*** (2012) 8 SCC 326. The transferred writ petition was numbered as **Appeal No. 60/2013** by this Hon'ble Tribunal.

iii. After considering the replies filed by all the Respondents in Appeal No. 60/2013, this Hon'ble Tribunal vide its judgment dated 24.11.2017 held that *it is not established before us at this stage that the stakeholders particularly* the *official respondents are not taking adequate steps to mitigate the noise levels at the airport and its surrounding areas,* and further *inter alia* passed the following directions:

1. *We decline the prayer of the Appellant/Applicants in all these cases for imposition of night curfew on landing or taking off of aircrafts at the airport and more particularly on run way no. 11/29.*
2. *We also decline the prayers of the Appellant/Applicants for issuances of directions to the Central Government and other official respondents for providing sound proofing of the houses in the colonies, falling on the flight pathway of aircrafts while landing and taking off.*

3. *We direct all the official respondents to take all mitigating measures for reducing noise pollution in terms of the report submitted by MoEF and as even proposed by these very respondents themselves, expeditiously.*
4. *The official respondents shall act in furtherance to the report of IIT in relation to construction of sound barriers, which report of IIT is accepted by the Tribunal. However, if any, variations are suggested and the official respondents consider it proper to carry out such variations on the ground of safety, security and height of the sound barrier walls, the same may be implemented after discussion with the team of IIT. The sound barriers should be constructed at the earliest and in accordance with report.*
5. *The official respondents shall ensure providing of a green belt around the boundary wall of the airport, while keeping the safety and security both in mind. The plantations shall be of the species which would only grow to the permissible height or would be maintained at the permissible height only.*
6. *The official respondents may issue an advisory to all the airlines whose aircrafts land at the runway of the IGI and domestic Airport, New Delhi to ensure 'judgment based' use of reverse thrust keeping in view weather, length of run way, wind, and other attendant circumstances to reduce the noise level particularly at the time of landing of aircrafts.*
7. *All the coaches/buses and other vehicles plying at the airport should be CNG and must comply with the prescribed emission standards. Non-CNG buses/coaches or other vehicles plying*

at the airport, should be converted to CNG within six months from today.

Copy of the judgment dated 24.11.2017 passed by this Hon'ble Tribunal is annexed herewith as **Annexure R-2.**

iv. Thereafter, Civil Appeal Nos. 4958-4961 of 2018 were filed before the Hon'ble Supreme Court against the judgment dated 24.11.2017 by various affected parties. The Hon'ble Supreme Court vide its order dated 06.08.2018 was pleased to modify the judgment dated 24.11.2017 to the effect that only coaches and buses were required to be converted to CNG. The relevant extract of the judgment dated 06.08.2018 is as below:

"In our view, the grievance raised by the appellants seems to be justified. We, therefore, modify Direction No. 7 by removing the"words "other v"hicles" therefrom, meaning thereby, the direction shall be confined to coaches and buses."

Copy of the judgment dated 06.08.2018 passed by this Hon'ble Supreme Court is annexed herewith as **Annexure R-3.**

v. In the meantime, the Ministry of Environment, Forest, and Climate Change ('**MoEF&CC**') on 18.06.2018 issued the MoEF notification whereby the Environment (Protection) Amendment Rules, 2018 which provided the Ambient Air Quality Standards with respect to Noise in Airport Noise Zone was notified. Copy of the MoEF Notification dated 18.06.2018 is annexed herewith as **Annexure R-4.**

vi. Thereafter, the Applicant filed an execution application bearing number Execution Application No. 24‘2019 ('**Execution Application**') before this Hon’ble Tribunal seeking execution/compliance of the directions passed in the judgment dated 24.11.2017.

vii. This Hon’ble Tribunal vide its order dated 21.05.2019 directed the answering Respondent to file a factual and action taken report furnishing the steps taken in compliance with its judgment dated 24.11.2017. Copy of the order dated 21.05.2019 passed by this Hon’ble Tribunal is annexed herewith as **Annexure R-5.**

viii. In compliance with the order dated 21.05.2019, the answering Respondent filed its Action Taken Report vide Affidavit dated 20.06.2019 before this Hon’ble Tribunal setting out its compliance with the judgment dated 24.11.2017. In the Action Taken Report, the answering Respondent set out in detail the compliance of each of the Directions passed by this Hon’ble Tribunal in its judgment dated 24.11.2017. Copy of the Affidavit along with Action Taken Report dated 20.06.2019 filed by the Respondent No.9 is annexed herewith as **Annexure R-6**.

ix. This Hon’ble Tribunal after considering the Action Taken Report filed by the Respondent No.9, disposed of the Execution Application vide its judgment dated 18.09.2019. It is pertinent to note that this Hon’ble Tribunal in its judgment dated 18.09.2019 accepted the compliances carried out by the Respondent No.9 and suggested that the answering Respondent should “*not only measure and maintain the prescribed noise levels but also display the same*

in public domain." True typed copy of the judgment dated 18.09.2019 passed by this Hon'ble Tribunal is annexed herewith as **Annexure R-7**.

x. The answering Respondent in compliance with the directions passed by this Hon'ble Tribunal in its judgment dated 18.09.2019 in the Execution Application has been displaying the noise levels on its website. Copy of the noise levels recorded from January 2023 to September 2023 and published on the website of the Respondent No. 9 are annexed herewith as **Annexure R-8 (Colly)**.

PRELIMINARY OBJECTIONS TO THE ORIGINAL APPLICATION.

A. ORIGINAL APPLICATION BARRED BY RES JUDICATA

6. In light of the above, the answering Respondent objects to the present Original Application on the following grounds:

i. The Applicant has filed the present Original Application without disclosing that they had already approached this Hon'ble Tribunal in 2019 seeking execution of the judgment dated 24.11.2017. The Applicant has wilfully failed to plead/disclose that they have filed Execution Application No. 24/2019 and the passing of the judgment dated 18.09.2019 by this Hon'ble Tribunal in Execution Application No. 24/2019.

ii. The Applicant has also deliberately and wilfully failed to disclose that this Hon'ble Tribunal has already decided on the

issues and reliefs claimed by the Applicant in the present Original Application vide its judgment dated 24.11.2017 and 18.09.2019 with the objective to mislead this Hon'ble Tribunal and to avoid its case being dismissed on the grounds of res judicata. The reliefs claimed by the Applicant have already been decided by this Hon'ble Tribunal which is evident from table below:

Prayer sought in present Original Application	**Decision of this Hon'ble Tribunal**
Prayer 1: Prohibit/Ban landing and taking off aircrafts on all the runways at Indira Gandhi International Airport and all other airports similarly located within City limits during Night-time i.e., 10.00 PM to 6.00 AM except for international flights. **Prayer 2:** Grant stay on landing and taking off aircrafts on all the runways at Indira Gandhi International Airport and all other airports similarly located within City limits during Night-time i.e., 10.00 PM to 6.00 AM except for international flights.	A similar prayer was made by the Applicant in Appeal No. 60/2013 (*which was originally pending first before the Hon'ble Delhi High Court a€.P. (C). No. 9337 of 2009*, *after which the matter was transferred t' this Hon'ble Tribunal and renumbered as Appeal No. 60/2013*), which is recorded in Para 2 by this Hon'ble Tribunal in its judgment dated 24.11.2017: - ***"…Further, it was prayed that a prohibitory order be issued against the respondents to stop flying the aircrafts over the areas of Vasant Kunj, Masudpur and Rangpuri with immediate effect. The aircrafts should also be prohibited from landing at run way 11/29."*** In this regard, reference is made to certain paragraphs of the Affidavit filed by the Secretary, Ministry of Civil Aviation dated 23.05.2011 before the Hon'ble High Court of

Prayer sought in present Original Application	Decision of this Hon'ble Tribunal
	Delh€n W.P. (C). No. 9337 of 2009 in the matter of Society for Protection of Culture Heritage vs. Union of India & Ors. *"That the answering respondent has also examined the adverse effect of imposing night restriction on Indian economy. DGCA and all other concerned agencies are concerned about the noise generated by the operation of aircraft and are taking all necessary actions to mitigate the noise issue, Runway 29/11 has been operationalized to commensurate with the growth of aviation. Imposing night restrictions would not only affect aviation growth of civil aviation but would also affect the image of India at International platform. While the time slots to foreign airlines are based on bilateral agreements, the night restrictions at IGIA would force the international players to shift their business hubs from Delhi to nearby other countries leading to loss of connectivity to people, trade, commerce and tourism. It would also affect the sustainable growth in an aviation sector."* *"While all possible mitigation measures are being implemented by all concerned agencies, the need for having night curfew at IGI has no meaning at this juncture when the country is witnessing higher GDP*

Prayer sought in present Original Application	Decision of this Hon'ble Tribunal
	growth. Further, with the latest development in engine design, most of the modern aircrafts are substantially quieter than the earlier ones and keeping in view technological advancement in aircraft and engine design, having night restrictions at Delhi Airport has no meaning. Further, the noise problem is not predominant to Vasant Kunj area only. If the night restrictions are to be imposed, they have to be implemented for all three runways of IGIA covering nearby localities leading to complete closure of the airport during night between 2200 hrs to 0600 hrs. Moreover, the problem is also equally valid for other airports in India as it may not be the prerogative of the residents of Vansant Kunj only. Hence, imposition of night restrictions at all airports in India is not a viable solution to this problem." **Considering the above and after considering the other material on record, the prayer with regard to prohibition on landing and taking of at the Delhi Airport was rejected by this Hon'ble Tribunal vide its judgment dated 24.11.2017 in Appeal No. 60 of 2013. At Para 15(i) this Hon'ble Tribunal has held:**

Prayer sought in present Original Application	Decision of this Hon'ble Tribunal
	1. We decline the prayer of the Appellant/Applicants in all these cases for imposition of night curfew on landing or taking off of aircrafts at the airport and more particularly on run way no. 11/29. **The Applicant has not filed an Appeal challenging this rejection and consequently the Applicant cannot agitate the same prayer in the present Original Application.**
Prayer 3: Issue a command in the nature of order/direction, to respondent No. (s) 1,2,3,4,5,6,7,8 and 9 to comply with the noise limits prescribed under Notification No. G.S.R 568(E) dated 18th June 2018 prescribing the noise limits notified at IGI Airport and other airports similarly situated within city limits. **Prayer 4:** Issue a command in the nature of order/direction, to respondent No. (s) 1,2,3,4,5,6,7,8 and 9 to enforce and implement the notificationNo. G.S.R.568(E) dated 18th June 2018, prescribing noise limits prescribed at the IGI Airport and other airports.	**This issue has already been considered by this Hon'ble Tribunal in its judgment dated 18.09.2019 passed in the Execution Application No. 24/2019.** In this regard reference is made to the submissions filed by the Applicant in Execution Application No. 24/2018 titled '*Submissions in response to the Action Taken Report submitted by Respondent No.6/AAI'*, in which the Applicant refers to the compliance to be made to the MoEF Notification and also attached the MoEF Notification for the consideration of this Hon'ble Tribunal. Copy of the Submissions filed by the Applicant in Execution Application No. 24/2018 is annexed herewith as **Annexure R-9**

Prayer sought in present Original Application	Decision of this Hon'ble Tribunal
	Further, even the Answering Respondent vide its Affidavit dated 20.06.2019 (attaching its Action Taken Report) had referred to the compliance to be made in terms of the MoEF Notification. Considering the Action Taken Report filed by the answering Respondent, AAI, and the submissions in response to the Action Taken Report filed by the Applicant, this Hon'ble Tribunal disposed of the Execution Application. **The Applicant has deliberately failed to disclose that this issue has already been decided and accordingly cannot maintain another Original Application for a relief that has already been decided by this Hon'ble Tribunal.**
Prayer 5: Issue a command in the nature of /order/direction directing respondent No.2,4, 5,6,8 and 9 to publish details noise pollution generated by aircraft on its website live, which are recorded with each landing and take-off at such interval as this Hon'ble Tribunal may deem fit for the	**Similar issue has been considered by this Hon'ble Tribunal in its judgment dated 18.09.2019 passed in Execution Application No. 24/2019, which the Applicant has deliberately failed to disclose.** **At Para 7 of the judgment dated 18.09.2019 passed in Execution Application No. 24/2018, this Hon'ble Tribunal held:**

Prayer sought in present Original Application	Decision of this Hon'ble Tribunal
purpose of effective monitoring and control of degrading environment. It may be important to state here that such details are available from private web sites on payment of prohibitive costs so that any ordinary well-meaning citizen cannot obtain the same. **Prayer 6:** Issue a command in the nature of /order/direction directing respondent No.7 to publish and put in public domain the High Noise Impacted areas around airport and stop further development around airport.	*We suggest that DIAL should not only measure and maintain the prescribed noise levels but also display the same in public domain.* **The Answering Respondent is already recording and thereafter publishing the noise levels recorded at the Airport on its website which is annexed above as Annexure R-8.**

iii. In light of the above, it is clear that the reliefs claimed by the Applicant have already been decided by this Hon'ble Tribunal and that the Applicant has deliberately and wilfully concealed this material fact from this Hon'ble Tribunal while filing the present Original Application. No additional material grounds have been raised or prayers sought which have not been dealt with by this Hon'ble Tribunal.

B. COMPLIANCES BY RESPONDENT NO. 9 IN TERMS OF THE JUDGMENT DATED 24.11.2017.

7. `The answering Respondent reiterates that they are not only in compliance with the directions contained in the judgment dated 24.11.2017 but are taking all reasonable steps to ensure that the noise levels in the airport noise zone are maintained within the prescribed limits. The compliances carried out by the answering Respondent of the directions in the judgment dated 24.11.2017 and steps taken towards maintaining noise levels at the Delhi Airport are set out as under:

i. The **first direction** passed by this Hon'ble Tribunal in its judgment dated 24.11.2017 states: *"We direct all the official respondents to take all mitigating measures for reducing noise pollution in terms of the report submitted by MoEF and as even proposed by these very respondents themselves, expeditiously."*

It is re-submitted that the answering Respondent has undertaken many aircraft noise mitigation measures as per the directions of this Hon'ble Tribunal and in line with International Civil Aviation Organization ('**ICAO**') guidelines and report submitted by MoEF, which are given below:

a. **Continuous Descent Approach** ("**CDA**") – is an aircraft operating procedure in which an arriving aircraft descends with minimum thrust and avoids step down approach to the extent permitted by the safe operation of the aircraft and compliance with published procedures which results in reduced noise and fuel consumption as compared to other conventional descents. Respondent No.4, Airport Authority of India ('**AAI**') has adopted CDA for aircraft landing at the

Delhi Airport and has communicated the same through Aeronautical Information Publication ('**AIP**') dated 19.07.2018 which specifies CDA as part of the Noise Abatement Procedures. This is followed by pilots while landing at the Delhi Airport for smooth landing with comparatively less engine thrust. Relevant extracts of AIP dated 19.07.2018 is as follows:

> *"In order to mitigate the aircraft noise within the areas located below the flight path in the vicinity of IGI airport, the concept of continuous descent approach (CDA) is implemented".*

The CDA is restated in the latest AIP dated 11.08.2022 issued by AAI. Copy of the AIP issued by AAI effective from 11.08.2022 is annexed herewith as **Annexure R-10**.

It is submitted that the CDA is being implemented and ongoing at Delhi Airport.

b. **Mixed Mode Operations:** Mixed Mode Runway Use Plans is adopted at the Delhi Airport to ensure that the effect of noise is equitably distributed to all localities located below the flight path of the aircraft and consequently the impact of noise is not localized to a particular location. This helps in reducing the exposure of noise levels generated by aircrafts during landing and taking-off on particular location in the vicinity of the Delhi airport.

It is re-submitted that the mixed mode approach is implemented and ongoing at the Delhi Airport to ensure

rotation of aircraft movement for equitable distribution of aircraft noise over the locations below the flight path. The mixed mode approach is restated in the latest AIP dated 11.08.2022 which is annexed above as Annexure R-10.

c. **Operation of Chapter 2 Aircraft:** As a mitigation measure, Director General of Civil Aviation ('**DGCA**') had initially issued A Notice to Airmen ('**NOTAM'**) on operation of Chapter 2 Aircraft i.e., aircrafts with old noisy engines, restricting their landings during the period 2200 IST – 0600 IST at the Delhi Airport.

In this regard, it is submitted that all operators have been advised to make necessary actions to comply with this requirement which also finds mention in the AIP issued by AAI on 19.07.2018. However, it is clarified that Ministry of Defence aircrafts are allowed to operate during this period, since the Delhi Airport runways are also used by Air Force for National Defence purposes.

The operation of Chapter 2 Aircraft is restated in the latest AIP dated 11.08.2022 which is annexed above as Annexure R-10. Further, the answering Respondent has also issued circulars to Airlines to follow mitigation measures for noise abetment at the Delhi Airport. Copy of circulars sent to Airlines by Respondent No.9 are annexed herewith as **Annexure R-11**.

d. **Noise Standard for Airports:**

The Answering Respondent has complied with the norms of the MoEF Notification and the noise levels recorded at the Delhi

Airport are within the prescribed limits. Details of the noise levels recorded at the Delhi Airport are already annexed above as Annexure R-8.

e. **Aircraft Noise Monitoring:** Continuous Aircraft noise monitoring terminals (NMT's) have been installed under the approach and departure funnels of the Delhi Airport to measure and monitor the aircraft noise level. The NMT's are recording the sound levels on real time basis. In this regard it is submitted that NMTs are installed at all Approach and Departure funnels of Delhi Airport. Details of the five NMT's in all the funnel areas is annexed herewith as **Annexure R-12**.

The answering Respondent has procured the Noise Monitoring Terminal (NMT) from M/s Topsonic Systemhaus GmbH, an internationally recognized agency which is operating globally in 13 countries and at 32 airports with more than 300 NMT installations and operating under a wide range of climatic conditions. They are designed for unattended continuous outdoor use. Measurement of level, calculation of noise events and reporting are fulfilling ISO 20906 "*Unattended monitoring of aircraft sound in the vicinity of airports*" and DGCA Civil Aviation Requirements. In order to achieve accurate measurements, it is important that the NMT consists of high-quality components including Class 1 outdoor microphone which is an essential component for precise and accurate sound level measurement. It ensures accurate and standard-compliant recording of aircraft noise and ensures that the measurements are correct. The installed NMTs at Delhi Airport are highly

credible, accurate and world-wide recognised. The NMTs installed at the Delhi Airport by M/s Topsonic Systemhaus GmbH is used in 13 countries and at 32 airports. Details of the NMT's installed at the Delhi Airport are annexed herewith as **Annexure R-13.**

Further, the applicable aircraft noise limit has been prescribed in AIP dated 11.08.2022 issued by AAI as Lmax (maximum sound level for aircraft) in db(A) at the NMTs, which is to be complied by airlines. Copy of AIP dated 11.08.2022 is annexed above as Annexure R-10.

f. **Aircraft Noise Complaint Redressal System:** Aircraft Noise Complaint Redressal System has been established by the Answering Respondent to collect and address the community noise complaints due to aircraft operations with an active telephone number 011-47198600. Complaint communicating channels are published in website. It is submitted that the complaints received by the Aircraft Noise Complaint Redressal System whether it is from the Applicant or other complainants are duly responded and addressed by Respondent No. 9. The complaints received from the Applicant and responses thereto are annexed herewith as **Annexure R-14 (Colly).**

g. **Restricted usage of Ground Engine Run-ups:** Ground engine run-ups of aircraft engine are a source of noise at the airport and is a part of engine testing after mandatory maintenance procedure. At the Delhi Airport, designated locations have been earmarked to perform ground engine run-ups. These locations

are away from residential locality. In this regard, it is submitted that the Restricted usage of Ground Engine Run-ups is implemented with designated locations earmarked to perform ground engine run-ups.

h. **Restriction on use of GPU/APU**: The answering Respondent has provided Fixed Electrical Ground Power ('**FEGP**') at aerobridges and continuously monitors the FEGP usage. The FEGP units help in reducing ground noise at airport also reduces the carbon emission. Airlines are advised to switch off the Aircraft Axillary Power Unit ('**APU**') while parking at aerobridge where FEGP facility is available.

In this regard it is submitted that the continued provision of FEGP at the Delhi Airport is implemented and Airlines are encouraged to turning off the APU s while parking at the aerobridges in order to reduce ground noise.

ii. The **second direction** passed by this Hon'ble Tribunal in its judgment dated 24.11.2017 states: *"The official respondents shall act in furtherance to the report of IIT in relation to construction of sound barriers, which report of IIT is accepted by the Tribunal. However, if any, variations are suggested and the official respondents consider it proper to carry out such variations on the ground of safety, security and height of the sound barrier walls, the same may be implemented after discussion with the team of IIT. The sound barriers should be constructed at the earliest and in accordance with report."*

It is submitted that IIT recommended to develop the sound barrier of 1.05 Km length along the boundary wall in the south of runway 29-11. In compliance of the direction, DIAL has constructed sound barrier along the boundary wall in the south of runway 29-11, which helps in reducing the noise levels once the aircraft has touched down or is about to take off on the runway 29/11 (renamed as 29R/11L). Photographs of the Noise Barrier which was constructed as per the IIT recommended design is already annexed in the Action Taken Report of the Affidavit of the compliance dated 20.06.2019.

iii. The **third direction** passed by this Hon'ble Tribunal in its judgment dated 24.11.2017 states: *"The official respondents shall ensure providing of a green belt around the boundary wall of the airport, while keeping the* safety *and security both in mind. The plantations shall be of the species which would only grow to the permissible height or would be maintained at the permissible height only."*

The plantation is maintained keeping both the safety and security of the airport operation in mind and to reduce the ground noise of the aircraft.

iv. The **fourth direction** passed by this Hon'ble Tribunal in its judgment dated 24.11.2017 states "*The* official *respondents may issue an advisory to all the airlines whose aircrafts land at the runway of the IGI and domestic Airport, New Delhi to ensure 'judgment based' use of reverse thrust keeping in view weather, length of run way, wind, and other attendant circumstances to*

reduce the noise level particularly at the time of landing of aircrafts."

In this regard it is submitted that since May 2009, NOTAM is in place wherein airlines have been asked to avoid the use of thrust reversal while landing at the Delhi Airport unless it is deemed necessary for safety reasons. Since use of thrust reversal is pilot's decision and a safety issue, it cannot be insisted upon in all cases. Further, this instruction has also been added in the AIP issued on 19.07.2018 by AAI for pilot's to be "*consistent with safety of aircraft operations and in consideration of high intensity runway operations, pilots should minimize the use of, reverse thrust after landing to reduce disturbance in areas adjacent to the aerodrome."* This is restated in the latest AIP dated 11.08.2022 issued by AAI, which is annexed above as Annexure R-10.

In addition to the above, the answering Respondent states that this Hon'ble Tribunal in its judgment dated 24.11.2017 has noted the use of thrust reversal on "judgment based" application by the airlines and held:

"The official respondents may issue an advisory to all the airlines whose aircrafts land at the runway of the IGI and domestic Airport, New Delhi to ensure 'judgment based' use of reverse thrust keeping in view weather, length of runway, wind, and other attendant circumstances to reduce the noise level particularly at the time of landing of aircrafts."

The answering Respondent has also issued circulars to Airlines to follow mitigation measures by way of minimum use of reverse thrust at the Delhi Airport on a case-to-case basis (annexed above as Annexure R-11) under the final authority of the flight crew in compliance to the Civil Aviation Requirements ('**CAR**') as issued by DGCA in Section 10 – Aviation Environment Protection Series 'A' Part I Issue dated 18.12.2014. Copy of CAR dated 18.12.2014 issued by DGCA is annexed herewith as **Annexure R-15.**

v. The **fifth and last direction** issued by this Hon'ble Tribunal states "*All the coaches/buses and other vehicles plying at the airport should be CNG and must comply with the prescribed emission standards. Non-CNG buses/coaches or other vehicles plying at the airport, should be converted to CNG within six months from today.*"

In this regard it is submitted that Civil Appeal No. 4958-4961 of 2018 was filed before the Hon'ble Supreme Court against the judgment dated 24.11.2017 passed by this Hon'ble Tribunal. The Hon'ble Supreme court vide its order dated 06.08.2018, modified the fifth direction issued by this Hon'ble Tribunal and held:

"In our view, the grievance raised by the appellants seems to be justified. We, therefore, modify Direction No. 7 by removing the words "other vehicles" therefrom, meaning thereby, the direction shall be confined to coaches and buses."

In compliance of the order passed by the Hon'ble Supreme Court all coaches and buses at the Delhi Airport are CNG operated

vehicles and the direction is being followed *in toto*. The copy of the order dated 06.08.2018 of Hon'ble Supreme Court is already annexed as Annexure-3.

C. COMPLIANCE OF THE MoEF NOTIFICATION BY RESPONDENT NO. 9.

8. The answering Respondent submits that it is in full compliance of the permitted noise levels applicable to airport zone in terms of the MoEF Notification. Further, in terms of the MoEF Notification, the answering Respondent is compliant of the notification in the 'airport noise zone', which is also approved by the technical authority i.e., DGCA in terms of the MoEF Notification. The approval of the DGCA dated 07.04.2022 for the noise zone of Delhi Airport is annexed herewith as **Annexure R-16.**

9. Additionally, the answering Respondent has been recording the noise levels through noise monitoring terminals in the funnel area namely at IIT Delhi - Hauz Khas, R.K Puram, Vasant Kunj, Dwarka Sec- 19 and Dwarka Sec- 24. Further, all the monthly results are being regularly published on the Delhi Airport website as per the suggestion given by the Hon'ble Tribunal in its judgment dated 18.09.2019. Details of the noise levels recorded at the Delhi Airport is already annexed above as Annexure R-8.

10. The Applicant without considering the information available in the public domain is making a false allegation before this Hon'ble Tribunal with a view to mislead this Hon'ble Tribunal.

D. FALSE PLEADINGS TAKEN IN THE ORIGINAL APPLICATION.

11. In addition to the above, it is submitted that the Applicant's contentions lack veracity and rest upon baseless conjectures and deliberate falsehoods, a few such instances are set out as under:

i. It is submitted that **noise levels to be maintained at the airport noise zone** are governed by the MoEF Notification which states that the noise levels for busy airport are 70 dB(A) Leq for daytime (from 6 AM to 10 PM) and 65 dB(A) Leq for night time (10 PM to 6 AM), which levels are being complied with at the Delhi Airport.

Further, as per para 4 of the MoEF Notification, the Airport Noise Zone area for each Airport shall be defined by the respective Airport Operator on the basis of existing GSR 751 (E), issued by the Ministry of Civil Aviation (Height Restrictions for Safeguarding of Aircraft Operations) Rules, 2015 published on 30.09.2015 in consultation with airports Air Navigation Service Provider as per the Master Plan of the Airport. It further states that the same shall be approved by the DGCA and displayed on the website of respective Airport Operators which shall be completed within two years from the date of issuance of the final notification. In this regard, the answering Respondent has clarified in the paragraphs above, that they are in compliance with the MoEF Notification regarding the 'Airport Noise Zone' which has also

been approved by the DGCA. The approval of the DGCA is also attached above as Annexure R-16.

It is pertinent to clarify that the MoEF Notification pertains only to Airport Noise on Leq basis for daytime (6 AM to 10 PM) and the night-time (10 PM to 6 AM). The unit of Leq is well defined in the MoEF Notification as *"energy mean of the noise level over a specified period."*

Aircraft Noise on the other hand in terms of para iv of the Note read with para 1(1) of the MoEF Notification is governed by AIP dated 11.08.2022 issued by AAI (annexed above as Annexure R-10) which sets out the noise levels for aircrafts (as Lmax) as 105 dB(A) for daytime (6 AM to 10 PM) and 95 dB(A) for night-time (10 PM to 6 AM), which noise levels are approved by DGCA.

Lmax as defined in the MoEF Notification is *"unit for aircraft maximum noise level in units dB(A) which is maximum or peak noise value for aircrafts at the monitoring location in accordance with the noise standards notified by the Directorate General of Civil Aviation for respective airports."*

The Applicant has pleaded that it has recorded noise levels at the Delhi Airport and has filed a document (by way of its additional documents) purported to contain noise levels recorded by the Applicant. The veracity of the noise levels recorded by Applicant remain questionable on basis of several factors like location, timing, duration instrument of measurement, contribution of other noise source etc. The answering Respondent disputes this and

states that noise levels recorded by the Applicant has no veracity because it is unclear on the process and instrument used for the monitoring of the noise levels which have been recorded and is clearly a self-serving document. On the other hand, the answering Respondent who is a responsible organisation is recording the noise levels generated by the Aircrafts by installing NMT's under the approach and departure funnels of the Delhi Airport to measure and monitor the aircraft noise as required in terms of the MoEF Notification.

ii. The Applicant with regard to its first and second prayer seeking a ban on landing and taking off at the Delhi Airport during Night-time i.e. 10.00 PM to 6.00 AM except for international flights at Para 16 in the present Original Application states *"That, as per notification no. G.S.R.568 (E) dated 18 June 2018 a period of 2 years was allowed to put in place a suitable mechanism by the industry to control the noise pollution so that both the industry and the citizens should not suffer.* ***That may have been the reason why the prayer to impose night curfew and insulation of flats falling under landing funnel was rejected"****. [Emphasis supplied]*

This contention of the Applicant is completely false as this Hon'ble Tribunal in its judgment dated 24.11.2017 while **rejecting** a similar prayer of the Applicant at Para 15(i), gave its detailed reasoning for rejecting this prayer at Para 12 of the judgment dated 24.11.2017 wherein this Hon'ble Tribunal held "*To say that airport should be shut for the entire night would neither be in consonance with the Principle of Sustainable*

Development nor would it be an option open to the State in the peculiar circumstances prevailing internationally today. Rather every effort should be made by the State and other stakeholders and they must take all mitigation measures to ensure that the noise levels are brought to the possible minimum extent".

Despite the explicit reasoning provided by this Hon'ble Tribunal in its judgment dated 24.11.2017 refusing to prohibit landing and taking off at the Delhi Airport, the Applicant has deliberately misrepresented and made false assertions on Affidavit before this Hon'ble Tribunal.

iii. The Applicant at Para 26 of the present Original Application states that the Respondent No. 9 in its final Environmental Impact Assessment ("**EIA**") report had mentioned its noise levels to be beyond the levels stipulated under the MoEF Notification and conditions stipulated under the environmental clearance granted for expansion of airport dated 30.05.2018. The Applicant further states that the non-compliance to the MoEF Notification was also not discussed in the meeting and public hearing for grant of environment clearance.

This assertion of the Applicant is also false, and the Applicant has deliberately misrepresented the facts which is evident from the following:

a. The MoEF Notification allowed airports a period of two years for compliance to the noise levels prescribed therein.

The final report for EIA submitted by Respondent No.9, which forms the basis of allegation for non-compliance of the extant notification **was submitted before the issuance of the MoEF Notification**. The EIA at Annexure 3 to the present Original Application clearly states the date as July 2017, while the MoEF Notification is dated 18.06.2018. Presently as per the noise levels recorded at the Delhi Airport, the noise levels recorded are within the levels notified in the MoEF Notification, the details of which are annexed above as Annexure R-8.

b. Further, the noise levels mentioned at sub-para C3-45 of the EIA Report at Page no. 72 of the Original Application is a combination of noise levels emanating from different sources of noise such as vehicle, general traffic, aircraft and others. Most importantly, the noise levels mentioned at sub-para C3-45 at Page no. 72 (of the EIA Report) are within the limit of the MoEF Notification for Airport Noise Zone.

c. Similarly, the meeting and public hearing for grant of environmental clearance was also held before the MoEF Notification. However, the Minutes of the Meeting at Annexure 10 to the Original Application very clearly demonstrates that discussions took place on the noise levels generated at the Airport and the mitigation measures being taken by the answering Respondent.

d. However, the Applicant has once again deliberately misrepresented and misstated facts before this Hon'ble

Tribunal with the singular objective to mislead this Hon'ble Tribunal.

e. Additionally, it is submitted that in terms of the MoEF Notification dated 14.09.2006 ('**MoEF&CC Notification 2006**'), before Environmental Clearance is granted to any project, the process as set out in the MoEF&CC Notification 2006 must be complied with. In compliance of the same, a public hearing on 03.07.2017 was conducted by Delhi Pollution Control Committee ('**DPCC**') along with District Magistrate ('**DM**'). The executive summary, draft EIA report with Environment Management Plan were made available to all the related Government offices including the office of DM, New Delhi as stipulated in the MoEF Notification 2006. The data related to noise and air pollution was well addressed in draft EIA report and also in the presentation made to the public who participated in the hearing. The minutes were prepared and issued by Respondent No. 6 i.e., DPCC after their approval by Chairperson i.e., District Magistrate. Copy of minutes of meeting dated 03.07.2017 is annexed herewith as **Annexure R-17**.

The Applicant while making allegations that in the public hearing there was no discussion regarding noise pollution, has deliberately misrepresented to this Hon'ble Tribunal, as the minutes of the meeting of the public hearing clearly record discussions on noise levels and measures being

taken by the answering Respondent. Thus, it is clear that the Applicant has not been able to produce any evidence regarding concealment of vital information and of any statutory authorities committing serious breach of trust.

iv. The Applicant at Para 20 of its Original Application states that noise levels recorded at the time of landing at Runway 3- 29/11 are the same in the case of the 4th Runway which are purportedly higher than the prescribed limited, which as a mitigation measure is being distributed. The Applicant contends that the distribution of noise beyond the prescribed limits is prohibited in terms of the reply to letter dated 10.11.2022 issued by the CPCB. This allegation of the Applicant is also false for the following reasons:

a. **Firstly,** Mixed Mode Runway Use Plans is adopted at the Delhi Airport to ensure noise is equitably distributed to locations below the flight path of the aircraft and consequently the exposure of noise is not localised to a particular location settlement. **The usage of Mixed Mode Runway was mentioned by the answering Respondent in its EIA and also in the minutes of the public hearing (for grant of environmental Clearance) as a mitigation measure to manage noise levels at the airport, which measure was approved by all the statutory authorities while granting Environmental Clearance to the answering Respondent.**

b. **Secondly,** this Hon'ble Tribunal vide its judgment dated 24.11.2017 had issued five directions to all the respondents to ensure that mitigation measures are taken to manage noise levels at **the** Airport. In compliance with the same, the answering Respondent *inter alia* implemented usage of Mixed Mode Runway Use, and which was mentioned by the Applicant in its Action Taken Report before this Hon'ble Tribunal in the execution proceedings filed by the Applicant. This Hon'ble Tribunal after considering the measures taken by the answering Respondent as stated in its Action Taken Report disposed of the execution application vide its judgment dated 18.09.2019. **Considering that this Hon'ble Tribunal has accepted the usage of Mixed Mode Runway Use, the Applicant cannot reagitate the same issue by filing a new Original Application.**

c. **Thirdly,** in the AIP dated 11.08.2022 issued by AAI, AAI also adopts the use of Mixed Mode Runway Use in which the aircrafts are distributed to ensure that the effect of noise is not localised to a particular location.

d. **Fourthly,** as **stated** above, aircraft noise comes within the domain of the DGCA as per the MoEF Notification, therefore the reference made to the CPCB letter is not applicable in the present case.

e. Lastly, it is clarified that R-2 (CPCB) never admitted about the prohibition of noise levels in its letter given as

reference. The applicant is misleading the Hon'ble NGT by giving wrong references.

In light of the above it is clear that the Applicant has little or no understanding of the mitigation measures which have been taken by the answering Respondent in consultation with all the statutory authorities and has proceeded to make false and baseless allegations.

v. The Applicant at Para 42 of the present Original Application states that inadequate number of noise monitoring sensors have been installed at the runway of the airport by design so as to favour commercially beneficial operation of operators and conceal the level of noise generated.

The Applicant has not referred to a single document/proof in support of this assertion. On the other hand, the Respondent No.9 in the execution proceedings before this Hon'ble Tribunal had filed an Action Taken Report wherein it was stated that Continuous Aircraft noise monitoring terminals (NMT's) have been installed under all the approach and departure funnels of the Delhi airport to measure and monitor aircraft noise level. The NMT's are recording the sound levels on real time basis. Further, it was stated by the Respondent No.9 that noisy aircrafts are being identified and communicated to airlines for creating awareness. This Hon'ble Tribunal has also considered the submissions made by the Respondent No.9 in its Action Taken Report as recorded in its judgment dated 18.09.2019.

vi. In addition to the above, the Applicant also states that the erected partial noise barrier is of no help as purportedly there is tremendous noise pollution generated at the time of taking off which can be heard at 6 km from airport.

In this regard, it is submitted Noise barriers from the technical requirement point of view is installed as a mitigation measure to reduce the noise level as per recommendation of IIT, Delhi. This is yet another instance which demonstrates the absolute lack of understanding on the issues involved by the Applicant and that the present Application is completely devoid of any merit and is based on assumptions and conjecture.

12. Considering the above, the answering Respondent requests this Hon'ble Tribunal to consider the bonafides of the Applicant who has clearly come before this Hon'ble Tribunal with unclean hands. The answering Respondent also refers to the decision of the Hon'ble Supreme Court in the matter of ***State of Uttar Pradesh and Ors. v. Uday Education and Welfare Trust and Anr***., 2022 SCC Online SC 1469, wherein the Supreme Court observed that the Hon'ble National Green Tribunals should test the bonafides and credentials of applicants before permitting them to seek orders which have far reaching effects of affecting employment of persons, stopping investment, etc. In the present case, the Applicant has based its entire Original Application by deliberately failing to disclose material facts and has not placed a single document in support of its claim that noise levels are not being maintained at the Delhi Airport.

13. For the reasons stated in the present Reply, the answering Respondent requests this Hon'ble Tribunal to dismiss the present Original Application with substantial costs and to commence perjury proceedings against the Applicant.

RESPONDENT NO. 9

THROUGH

PLACE: NEW DELHI
DATED: 07.11.2023

TRILEGAL
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AD 2. AERODROMES

VIDP AD 2.1 AERODROME LOCATION INDICATOR AND NAME

VIDP - INDIRA GANDHI INTERNATIONAL AIRPORT,DELHI

VIDP AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	Aerodrome reference point coordinates and its site	283407N 0770644E 117 DEG /321M from intersection RWY 09/27 and TWY D3	
2	Direction and distance of aerodrome reference point from the center of the city or town which the aerodrome serves	BRG 228DEG /15Km from Delhi Railway Station.	
3	Aerodrome elevation and reference temperature	778 FT / 41.0 DEG C	
4	Magnetic variation, date of information and annual change	0.75 DEG E (2010) /0.033 DEG E	
5	Name of aerodrome operator, address, telephone, telefax, e-mail address, AFS address, website (if available)	Chief Operations Officer, Delhi International Airport Ltd, New Udaan Bhawan, Opp. Terminal-3 Indira Gandhi International Airport, New Delhi – 110037.,	
		Telephone:	+91-11-47197886 +91-11-47197589
		Fax:	+91-11-47197181
		AFS:	VIDPDIAL
		Email:	Dial.CMS@gmrgroup.in Dial.AOCC@gmrgroup.in
6	Types of traffic permitted (IFR/VFR)	IFR/VFR	
7	Remarks	website: www.newdelhiairport.in	

VIDP AD 2.3 OPERATIONAL HOURS

1	Aerodrome Operator	MON - FRI: 0400 - 1230 UTC (0930 - 1800 IST) SAT(EXC 2nd SAT): 0400 - 0800 UTC (0930 - 1330 IST) 2nd SAT OF A MONTH & SUN: NIL
2	Custom and immigration	H24
3	Health and sanitation	H24
4	AIS briefing office	H24
5	ATS reporting office (ARO)	H24
6	MET Briefing office	H24
7	Air Traffic Service	H24
8	Fuelling	H24
9	Handling	H24
10	Security	H24
11	De-icing	NIL

True Copy

12	Remarks	1. Non-Sked flights not permitted to OPR at IGI AP WO a valid Delhi AP ARR CLR NR (DACN) or Delhi AP DEP CLR NR (DDCN) as the case may be, issued by IGIA-AOCC. Non-sked FLT operators, shall apply for DACN/DDCN to IGIA-AOCC at email ids: flight.data@gmrgroup.in and dial.aocc@gmrgroup.in . The detailed procedure for obtaining CLR AVBL at http://www.newdelhiairport.in/general-aviation.aspx . 2.All international Non-Sked flights shall obtain night parking approval from flight data unit, DIAL (flight.data@gmrgroup.in) at least 5 days in advance and shall arrange Tow Bar themselves. 3. Only VVIP aircraft (President, Vice President, Prime Minister and SPG Protectees), all state aircraft, defence aircraft and SKED civil flight operated by SKED airlines are permitted to operate on RWY 09/27. 4.All Flights departing from uncontrolled airfield within Delhi control zone shall take ATC clearance on telephone no.011-25653454 before departure. 5.The approved hourly RWY traffic handling capacity is as follows: The peak traffic handling capacity is 86 air traffic movement per hour. a. Max DEP. Rate = 51 PER HR b. Max ARR Rate = 42 PER HR

VIDP AD 2.4 HANDLING SERVICES AND FACILITIES

1	Cargo-handling facilities	3 Cargo terminals equipped with advanced storage stacker, material and pallet container handling systems, computerized cargo information, data and documentation systems.
2	Fuel and Oil types	JET A1 All types

3	Fuelling facilities and capacity	IOC: Terminal - 1 Refuellers Capacity:11KL,16KL and 27KL Discharge rate: 400-700 Litres/Min IOST: Terminal - 3 and Terminal- 2 Total No. of hydrant dispensers-28 Discharge rate: 3800 Litres/Min. BPCL: Terminal - 1 Refuellers Capacity: 36KL, 25KL and 11KL Total Capacity: 133 Kilolitres (6- Refuellers). Discharge rate: 1000 Litres/Min. BSSPL: Terminal - 3 and Terminal- 2 Total No. of dispensers-16. Discharge rate:3500 litres/Min HPCL: Terminal - 1 Refuellers Capacity: 16KL and 6KL Total Capacity: 54Kilotitres (4 Refuellers). Discharge rate: 1300 and 500 Litres/Min respectively.
4	De-icing facilities	NIL
5	Hangar space for visiting aircraft	NIL
6	Repair facilities for visiting aircraft	NIL
7	Remarks	Fixed ground power supply and pre-conditioned air are available at every contact stand at Terminal-3.

VIDP AD 2.5 PASSENGER FACILITIES

1	Hotel(s) at or in the vicinity of aerodrome	93 Rooms hotel at Terminal-3 and in the city.
2	Restaurant(s) at or in the vicinity of aerodrome	At AD and in the city
3	Transportation possibilities	Buses,metro rail,taxis and car rental service from AD
4	Medical Facilities	First aid and ambulance at AD. Hospital in the city.
5	Bank and post office at or in the vicinity of aerodrome	Banks: At AD H-24 Post office: At AD H-24
6	Tourist office	At AD and in the city
7	Remarks	NIL

VIDP AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	Aerodrome category for fire fighting	Within ATS HR: CAT-10
2	Rescue equipment	Available as per category. Additional: 1) One portable lighting unit for night operations. 2) One Mobile Command Post (Bus) to deal with aircraft emergencies.

3	Capability for removal of disabled aircraft	1. Primary responsibility for removal of disabled aircraft rests with the concerned airline. 2. IGIA is equipped with disabled aircraft recovery kit for complete narrow body aircraft recovery and partial recovery of all wide body aircraft (except A 380). 3. The Disabled Aircraft Removal Plan (DARP) for IGIA includes other support to be provided for recovery of the aircraft 4. Contact Details of Aerodrome Coordinator for Disabled Aircraft Removal Operations: Aerodrome coordinator: Head ARFF Contact Details: 011-61235004 DRG Office HR APN Control: 011-61234750 (24x7) Dial.aproncontrol@gmrgroup.in Dial.AOCC@gmrgroup.in Dial.CMS@gmrgroup.in
4	Remarks	Nil

VIDP AD 2.7 SEASONAL AVAILABILITY CLEARING

1	Type(s) of clearing equipment	NIL
2	Clearance priorities	NIL
3	Remarks	NIL

VIDP AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	Designation, surface and strength of aprons	Refer Aircraft Parking/Docking Chart
2	Designation, width, surface and strength of taxiways	Refer VIDP AD 2.23
3	Location and elevation of altimeter checkpoints	Location: All Aprons Elevation: Apron I: 751 FT General Aviation Apron: 745 FT Apron II: 732 FT Cargo Apron: 737 FT Apron 31: 723 FT Apron 32: 723 FT Apron 33: 726 FT Apron 34: 729 FT Apron 35: 737 FT
4	Location of VOR checkpoints	ON TWYs: TWYs H6 for RWY 10; TWYs D1, D2 and D3 for RWY 27; TWYs D4, D7, D8 and D9 for RWY 09 TWY K and W for RWY 28 TWYs R7 and R6 for RWY 11L; TWY P7 and P8 for RWY 29R
5	Position of INS checkpoints	
6	Remarks	

VIDP AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stand identification signs, taxiway guidelines and visual docking/parking guidance system at aircraft stands	1. Continuous aircraft stand lead-in lines available at MARS (Multiple Aircraft Ramp System) Centre stands for use of wide body aircraft and in single aircraft stands. Broken aircraft stand lead-in lines available at left & right MARS stand for narrow-bodied aircraft. 2.Stand identification signs are provided at all contact stands in Terminal-3 Aprons and Terminal-2 Apron. On remote stands pole mounted stand identification sign has been provided in Apron I, Terminal- 2 Apron (except Stands 203 to 207 and 232), Cargo Apron & Terminal- 3 Aprons (except Stands R10, R10L, R10R, R11 & R12 in Apron 31). 3. Nose-wheel stop lines available at apron. Taxing guidance signs are provided on all TWY intersections, straight section and holding positions as per DGCA CAR. 4. Advanced Visual Docking Guidance System(AVDGS) are provided at T-3 except for: A06, A08, A10, A12, A14, A13, A11, A11L, A11R, A09, A09L, A09R, A07, A07L, A07R, A03, A01, B15, B15L, B15R, B17, B17L,B17R, B19, B19L, B19R, B21, B18, B20,B20L, B20R, B22, B22L, B22R, B24, B24L,B24R, B26, B26L, B26R, C28L, C28R,C30L, C30R, C32L, C32R, C34L, C34R,C33, C31L, C31R, C29L, C29R, C27L,C27R, D37, D37L, D37R, D39, D39L, D39R,D41, D43, D45, D47, D49, D51, D53, D55,D46, D48, D50, D52, D54, D56, D58, D60,D62, R02 & R03 5. Docking of aircraft is done with the help of marshaller at remote parking stands and other contact stands where AVDGS is not provided.
2	Runway and taxiway markings and lights	RWY: 1. Markings: Designation, THR, TDZ, Centreline, Aiming point,Runway side stripe. 2. Lights: THR, TDZ (RWY 11L, RWY 29R, RWY 11R, RWY 29L, RWY 28), Centreline, Edge, End, Wing Bars (RWY 11L, RWY 29R, RWY 11R, RWY29L, RWY 28, RWY 27), RETILs (TWY Y2, TWY Y4, TWY Y1, TWY Z2, TWY Z3, TWY H1, TWY K1, TWY K2, TWY G2, TWY D5. TWY D6, TWY R2, TWY R3, TWY P1, TWY P3), Stop way (RWY 11R, RWY 11L), Approach Lights. TWY: 1. Marking: Centreline,Side stripe, Intermediate Holding Position, Runway holding position, Enhanced taxiway centreline marking 2. Lights: Centre line lights, Intermediate Holding Position lights, Runway crossing lights, taxiway edge lights are on curves only. 3. Portion of TWY LINK 32 south of TWY C, Portion of TWY LINK 30 south of TWY M, TWY LINK 16 (Between TWY C up to GA Apron), TWY LINK 13 and Portion of Taxilane F6 inside apron are having reflective edge marker.

3	Stop bars (if any)	At RHPs: TWY A2, D1,D2, D3, D4,D7, D8, D9, G, H2, H3, H6, J7, W, K2, K3, K6, Y8, Y7, Y6, Y5, Z4, Z5, Z6, Z7, P8, P7, P6, P5, P4, P2, R1, R4, R5, R6, R7, T7, T6, T5, T4, S1, S2, S5, S6, S7 and S8. At TWYs Junctions: F5 (south of D/F5 intersection), F5 (north of G/F5 intersection), F4 (south of D/F4 intersection), F4 (north of G/F4 intersection), F3 (south of D/F3 intersection), F3 (north of G/F3 intersection), A (east of LINK 5/A intersection), R (west of A/R intersection), C (east of LINK 5/C intersection), C(south of N/C intersection), A (south of N/A intersection), A (north of A/ LINK 4 intersection), C (North of P6/P9 intersection), A (North of A/P9 intersection), C (South of M/C intersection), A (South of M/A intersection).

4	Remarks	1. RWY guard lights are provided at each RWY and TWY intersection. 2. An illuminated wind direction indicator in the form of truncated cone made of fabric of red and white colour in bands have been installed at under mentioned 14 locations: Location — Coordinates i. NORTH OF RWY 09, ABEAM RWY 09 PAPI — 283417.1N 0770532.9E ii. NORTH OF RWY 27 AND WEST OF TWY A2 — 283415.6N 0770628.2E iii. NORTH OF RWY 10 AND EAST OF TWY H3 — 283401.7N 0770529.8E iv. SOUTH OF RWY 28 AND EAST OF TWY W — 283329.3N 0770706.4E v. NORTH OF RWY 11R AND EAST OF TWY Z6 — 283252.8N 0770400.6E vi. NORTH OF RWY 11R AND EAST OF TWY Z3 — 283248.6N 0770420.7E vii NORTH OF RWY 29L AND WEST OF TWY Y2 — 283232.1N 0770537.9E viii. SOUTH OF RWY 29L, AND WEST OF TWY Y5 — 283217.2N 0770609.7E ix. SOUTH OF RWY 29L, ABEAM TWY Y6 — 283212.5N 0770629.5E x. NORTH OF RWY 11L AND EAST OF TWY R6 — 283303.7N 0770414.5E xi. NORTH OF RWY 11L AND EAST OF TWY R4 — 283258.5N0770437.1E xii. NORTH OF RWY 11L AND EAST OF TWY R1 — 283245.5N0770532.2E xiii. NORTH OF RWY 29R AND WEST OF TWY P4 — 283237.1N0770611.4E xiv. NORTH OF RWY 29R AND WEST OF TWY P6 — 283233.2N0770629.8E 3. No entry BAR lights provided on the following TWYs: a.RWY 10/28 : TWY V, TWY U, TWY K1, TWY H1, TWY G2 b. RWY 11R/29L : TWY Y1, TWY Y2,TWY Y4,TWY Z2, TWY Z3 c. RWY 09/27: TWY D5, TWY D6 d. RWY 11L/29R: TWY P1, TWY P3, TWY R2 and RWY R3 4. Runway crossing lights available between TWY K2 and H2, K6 and H6, D3 and A2, P8 and S8, P7 and S7, P6 and S6, P5 and S5, P2 and S2, R1 and S1, R4 and T4, R5 and T5, R6 and T6, R7 and T7 and vice versa.

VIDP AD 2.10 AERODROME OBSTACLES

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
27/APCH 09/TKOF	NAVAID	283411.0N 0770706.6E	763 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.1N 0770706.6E	763 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.2N 0770706.6E	763 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.3N 0770706.6E	763 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.9N 0770706.6E	763 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.5N 0770707.7E	766 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	ELECTRICAL SYSTEM	283402.0N 0770756.5E	855 FT	NIL	METRO ELECTRIC TRACTION OVERHEAD FRAME
27/APCH 09/TKOF	ELECTRICAL SYSTEM	283402.8N 0770756.7E	855 FT	NIL	METRO ELECTRIC TRACTION OVERHEAD FRAME
27/APCH 09/TKOF	ELECTRICAL SYSTEM	283401.2N 0770756.4E	854 FT	NIL	METRO ELECTRIC TRACTION OVERHEAD FRAME
27/APCH 09/TKOF	BUILDING	283419.8N 0770757.9E	857 FT	NIL	BUILDING
27/APCH 09/TKOF	OTHER	283403.7N 0770756.9E	855 FT	NIL	Metro Electric Traction Overhead Frame
27/APCH 09/TKOF	OTHER	283405.3N 0770757.5E	854 FT	NIL	Metro Electric Traction Overhead Frame
29L/APCH 11R/TKOF	POLE	283216.8N 0770655.9E	814 FT	NIL	LIGHT POLE
27/APCH 09/TKOF	TREE	283413.6N 0770717.7E	791 FT	NIL	TREE
27/APCH 09/TKOF	TREE	283404.4N 0770744.5E	862 FT	NIL	GROUP OF TREES
27/APCH 09/TKOF	TREE	283405.3N 0770747.4E	842 FT	NIL	GROUP OF TREES
27/APCH 09/TKOF	TREE	283404.3N 0770748.9E	846 FT	NIL	GROUP OF TREES
27/APCH 09/TKOF	TREE	283406.6N 0770749.9E	843 FT	NIL	GROUP OF TREES
27/APCH 09/TKOF	NAVAID	283411.6N 0770703.2E	759 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.6N 0770704.3E	760 FT	LGTD	APPROACH LIGHT

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
27/APCH 09/TKOF	NAVAID	283411.5N 0770705.4E	762 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	NAVAID	283411.5N 0770707.7E	766 FT	LGTD	APPROACH LIGHT
27/APCH 09/TKOF	OTHER	283412.8N 0770709.0E	773 FT	NIL	MOBILE ROAD TRAFFIC
27/APCH 09/TKOF	TREE	283413.0N 0770710.4E	774 FT	NIL	MOBILE ROAD TRAFFI
28/APCH 10/TKOF	POLE	283329.7N 0770758.7E	844 FT	NIL	LIGHT POLE
28/APCH 10/TKOF	POLE	283331.5N 0770759.3E	846 FT	NIL	LIGHT POLE
28/APCH 10/TKOF	POLE	283330.3N 0770758.9E	845 FT	NIL	LIGHT POLE
28/APCH 10/TKOF	POLE	283329.0N 0770758.5E	845 FT	NIL	LIGHT POLE
28/APCH 10/TKOF	POLE	283328.4N 0770758.4E	844 FT	NIL	LIGHT POLE
28/APCH 10/TKOF	POLE	283327.8N 0770758.2E	844 FT	NIL	LIGHT POLE
28/APCH 10/TKOF	POLE	283327.1N 0770758.0E	843 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	BUILDING	283218.2N 0770701.7E	837 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283217.3N 0770700.8E	847 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283216.9N 0770659.5E	848 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283216.7N 0770659.0E	831 FT	NIL	BUILDING (U/C)
29L/APCH 11R/TKOF	BUILDING	283215.6N 0770700.4E	848 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283213.7N 0770656.3E	838 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283213.3N 0770656.5E	840 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283211.1N 0770650.9E	815 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283211.4N 0770651.7E	818 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283209.6N 0770647.9E	824 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283215.1N 0770658.1E	826 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283214.6N 0770657.2E	824 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283213.0N 0770708.6E	847 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283215.2N 0770716.7E	851 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283214.2N 0770716.3E	861 FT	NIL	BUILDING

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
29L/APCH 11R/TKOF	BUILDING	283209.6N 0770713.9E	850 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283209.4N 0770713.0E	847 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283210.2N 0770711.9E	850 FT	NIL	BUILDING(U/C)
29L/APCH 11R/TKOF	BUILDING	283210.6N 0770712.0E	857 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283211.1N 0770710.7E	850 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283212.1N 0770710.7E	864 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283212.5N 0770708.7E	846 FT	NIL	BUILDING
29L/APCH 11R/TKOF	POLE	283218.2N 0770657.0E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283217.1N 0770656.1E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283216.6N 0770655.6E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283216.2N 0770655.1E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283215.7N 0770654.5E	813 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283215.4N 0770653.9E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283215.0N 0770653.3E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283214.6N 0770652.7E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283214.3N 0770652.1E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283214.0N 0770651.5E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283213.6N 0770650.8E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283213.3N 0770650.2E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283213.0N 0770649.6E	815 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283212.6N 0770648.9E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283213.7N 0770652.0E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283213.2N 0770650.9E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283212.6N 0770649.8E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283211.0N 0770646.6E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283211.7N 0770647.0E	814 FT	NIL	LIGHT POLE

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
29L/APCH 11R/TKOF	POLE	283212.0N 0770647.7E	813 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283212.3N 0770648.3E	814 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283208.8N 0770642.1E	811 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.1N 0770642.8E	812 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.5N 0770643.3E	812 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.8N 0770644.0E	813 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.1N 0770644.6E	812 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.4N 0770645.3E	812 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.8N 0770645.9E	812 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283211.1N 0770646.6E	813 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283208.5N 0770641.8E	804 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.3N 0770643.3E	806 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.8N 0770644.3E	806 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.3N 0770645.3E	806 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.8N 0770646.3E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283211.9N 0770649.7E	809 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283211.9N 0770651.0E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283211.3N 0770649.9E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.8N 0770648.9E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.5N 0770649.2E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.3N 0770648.8E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.8N 0770647.6E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.7N 0770647.5E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283210.1N 0770646.2E	808 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283209.2N 0770645.9E	806 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	POLE	283208.7N 0770641.3E	812 FT	NIL	LIGHT POLE

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
29L/APCH 11R/TKOF	TREE	283214.3N 0770656.9E	826 FT	NIL	TREE
29L/APCH 11R/TKOF	TREE	283214.2N 0770654.1E	822 FT	NIL	GROUP OF TREES
29L/APCH 11R/TKOF	BUILDING	283201.6N 0770909.2E	974 FT	NIL	BUILDING
29L/APCH 11R/TKOF	OTHER	283212.5N 0770648.6E	805 FT	NIL	MOBILE ROAD TRAFFIC
29L/APCH 11R/TKOF	NAVAID	283215.6N 0770646.3E	800 FT	LGTD	OBSTRUCTION LIGHT ON LOCALIZER HUT
29L/APCH 11R/TKOF	BUILDING	283136.9N 0770813.6E	947 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283136.8N 0770814.7E	949 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283136.7N 0770815.8E	950 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283215.0N 0770700.8E	844 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283213.3N 0770706.0E	850 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283216.4N 0770718.1E	859 FT	NIL	BUILDING
29L/APCH 11R/TKOF	POLE	283217.6N 0770656.6E	814 FT	NIL	LIGHT POLE
27/TKOF 09/APCH	BUILDING	283417.7N 0770448.4E	776 FT	NIL	Cellphone Mast on Building
29L/APCH 11R/TKOF	BUILDING	283146.0N 0770856.6E	931 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283136.4N 0770822.1E	951 FT	NIL	BUILDING
29L/APCH 11R/APCH	BUILDING	283135.5N 0770817.9E	950 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283136.1N 0770817.3E	949 FT	NIL	BUILDING(U/C)
29L/APCH 11R/TKOF	BUILDING	283134.9N 0770826.8E	991 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283151.4N 0770857.1E	935 FT	NIL	BUILDING
29L/APCH 11R/TKOF	POLE	283134.7N 0770846.5E	991 FT	NIL	PYLON
29L/APCH 11R/TKOF	POLE	283136.2N 0770839.4E	982 FT	NIL	PYLON
29L/APCH 11R/TKOF	POLE	283136.6N 0770836.7E	983 FT	NIL	PYLON
29L/APCH 11R/TKOF	POLE	283157.8N 0770858.6E	940 FT	NIL	PYLON
29L/APCH 11R/TKOF	BUILDING	283135.7N 0770830.2E	935 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283137.4N 0770830.2E	967 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283138.0N 0770830.8E	941 FT	NIL	BUILDING

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
29L/APCH 11R/TKOF	BUILDING	283139.4N 0770829.8E	932 FT	NIL	BUILDING
29L/APCH 11R/TKOF	TREE	283136.5N 0770848.3E	944 FT	NIL	TREE
29L/APCH 11R/TKOF	TREE	283138.2N 0770842.2E	943 FT	NIL	TREE
29L/APCH 11R/TKOF	POLE	283139.1N 0770842.5E	938 FT	NIL	FLOOD LIGHT
29L/APCH 11R/TKOF	POLE	283148.6N 0770855.5E	930 FT	NIL	PYLON
29L/APCH 11R/TKOF	POLE	283147.1N 0770854.4E	932 FT	NIL	PYLON
29L/APCH 11R/TKOF	POLE	283144.9N 0770852.0E	936 FT	NIL	PYLON
29L/APCH 11R/TKOF	POLE	283142.7N 0770856.4E	942 FT	NIL	PYLON
29L/APCH 11R/TKOF	BUILDING	283139.8N 0770809.9E	943 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283138.6N 0770810.2E	947 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283139.0N 0770811.1E	944 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283137.0N 0770812.1E	947 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283134.8N 0770814.5E	951 FT	NIL	BUILDING
29L/APCH 11R/TKOF	POLE	283130.6N 0770834.1E	988 FT	NIL	POLE
29L/APCH 11R/TKOF	BUILDING	283207.4N 0770908.5E	946 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283150.2N 0770856.3E	933 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283152.3N 0770857.5E	935 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283214.0N 0770717.7E	854 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283153.2N 0770858.1E	929 FT	NIL	BUILDING
29L/APCH 11R/TKOF	BUILDING	283151.4N 0770903.8E	945 FT	NIL	BUILDING
29L/APCH 11R/TKOF	POLE	283211.2N 0770647.1E	807 FT	NIL	LIGHT POLE
29L/APCH 11R/TKOF	BUILDING	283203.3N 0770909.3E	968 FT	NIL	BUILDING
29L/APCH 11R/TKOF	OTHER	283211.8N 0770647.3E	804 FT	NIL	MOBILE ROAD TRAFFIC
27/TKOF 09/APCH	BUILDING	283418.8N 0770449.5E	772 FT	NIL	BUILDING
27/TKOF 09/APCH	BUILDING	283418.5N 0770449.8E	767 FT	NIL	BUILDING
29L/TKOF 11R/APCH	OTHER	283247.9N 0770350.6E	735 FT	NIL	MOBILE ROAD TRAFFIC

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	NAVAID	283337.7N 0770708.9E	826 FT	LGTD	OBSTRUCTION LIGHT ON GP ANTENNABUILDING
In circling area and at AD	NAVAID	283330.2N 0770709.4E	776 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283330.6N 0770708.4E	777 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283400.9N 0770536.7E	754 FT	NIL	DVOR CENTER POINT
In circling area and at AD	NAVAID	283400.7N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.6E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.6E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.6E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.7E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.7E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.7E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.7N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.9N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.9N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.9N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.9E	754 FT	NIL	DVOR ANTENNA

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	NAVAID	283401.1N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.7E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.7E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.7E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.6E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.6E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.6E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.9N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.9N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.9N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770537.1E	761 FT	NIL	OBSTRUCTION LIGHT ON DME ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770537.1E	760 FT	NIL	DME ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.4E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283400.8N 0770536.5E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.9E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.0N 0770536.9E	754 FT	NIL	DVOR ANTENNA

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	NAVAID	283401.1N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283401.1N 0770536.8E	754 FT	NIL	DVOR ANTENNA
In circling area and at AD	NAVAID	283402.1N 0770530.5E	757 FT	LGTD	OBSTRUCTION LIGHT ON NF MONITOR ANTENNA
In circling area and at AD	NAVAID	283401.9N 0770529.8E	749 FT	LGTD	OBSTRUCTION LIGHT ON WIND SOCK
In circling area and at AD	NAVAID	283403.2N 0770518.0E	769 FT	LGTD	OBSTRUCTION LIGHT ON GP ANTENNA
In circling area and at AD	NAVAID	283403.3N 0770518.0E	769 FT	LGTD	OBSTRUCTION LIGHT ON GP ANTENNA
In circling area and at AD	NAVAID	283402.1N 0770518.4E	730 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283402.3N 0770517.3E	730 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283346.6N 0770629.4E	758 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283346.4N 0770629.4E	758 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283346.8N 0770628.3E	758 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283346.7N 0770628.3E	758 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283226.1N 0770527.8E	761 FT	NIL	DME ANTENNA, OBSTRUCTION LIGHT
In circling area and at AD	NAVAID	283226.1N 0770527.5E	753 FT	NIL	GP HUT TOP
In circling area and at AD	NAVAID	283225.3N 0770531.1E	765 FT	NIL	GP MONITORING ANTENNA, OBSTRUCTION LIGHT
In circling area and at AD	NAVAID	283226.3N 0770524.6E	758 FT	LGTD	WIND DIRECTION INDICATOR
In circling area and at AD	NAVAID	283226.1N 0770524.9E	765 FT	NIL	AWS ANTENNA
In circling area and at AD	NAVAID	283225.6N 0770508.8E	802 FT	LGTD	ASR 29 (ELDIS RADAR) TOP
In circling area and at AD	NAVAID	283231.6N 0770459.7E	752 FT	NIL	AWS ANTENNA
In circling area and at AD	ELECTRICAL EXIT LIGHT	283322.0N 0770532.5E	1097 FT	LGTD	LIGHTENING ARRESTOR TOP ON NEW ATC TOWER BUILDING
In circling area and at AD	NAVAID	283237.2N 0770434.1E	741 FT	LGTD	WIND DIRECTION INDICATOR

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	NAVAID	283237.0N 0770434.5E	748 FT	NIL	AWS ANTENNA
In circling area and at AD	NAVAID	283415.8N 0770628.3E	764 FT	LGTD	WIND SOCK
In circling area and at AD	NAVAID	283414.8N 0770532.5E	727 FT	NIL	PAPI
In circling area and at AD	NAVAID	283228.5N 0770523.9E	750 FT	NIL	PAPI
In circling area and at AD	NAVAID	283228.8N 0770524.0E	751 FT	NIL	PAPI
In circling area and at AD	NAVAID	283229.1N 0770524.0E	751 FT	NIL	PAPI
In circling area and at AD	NAVAID	283229.4N 0770524.1E	751 FT	NIL	PAPI
In circling area and at AD	NAVAID	283330.3N 0770709.5E	777 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283402.2N 0770517.3E	731 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283400.6N 0770522.6E	732 FT	NIL	DME ANTENNA
In circling area and at AD	NAVAID	283417.7N 0770528.8E	770 FT	LGTD	OBSTRUCTION LIGHT ON GP ANTENNA
In circling area and at AD	NAVAID	283417.1N 0770533.0E	745 FT	LGTD	OBSTRUCTION LIGHT ON WINDSOCK
In circling area and at AD	BUILDING	283407.0N 0770714.9E	783 FT	NIL	BUILDING
In circling area and at AD	NAVAID	283408.5N 0770706.8E	768 FT	LGTD	ANTENNA ON LOCALIZER HUT
In circling area and at AD	NAVAID	283408.5N 0770642.1E	799 FT	LGTD	GLIDE PATH ANTENNA
In circling area and at AD	NAVAID	283411.6N 0770702.0E	757 FT	LGTD	APPROACH LIGHT
In circling area and at AD	NAVAID	283403.2N 0770518.0E	768 FT	LGTD	GP ANTENNA
In circling area and at AD	NAVAID	283403.1N 0770518.2E	738 FT	LGTD	DME ANTENNA
In circling area and at AD	NAVAID	283403.2N 0770518.3E	732 FT	LGTD	GP HUT
In circling area and at AD	NAVAID	283403.3N 0770519.0E	740 FT	LGTD	WIND SPEED INDICATOR
In circling area and at AD	NAVAID	283403.9N 0770515.4E	739 FT	LGTD	OBSTRUCTION LIGHT ON GP MONITOR ANTENNA
In circling area and at AD	NAVAID	283402.0N 0770518.3E	731 FT	NIL	TRANSMISSOMETER
In circling area and at AD	BUILDING	283230.0N 0770931.6E	938 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283228.1N 0770930.9E	939 FT	NIL	BUILDING
In circling area and at AD	POLE	283313.1N 0770753.6E	852 FT	NIL	LIGHT POLE

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	POLE	283312.7N 0770754.9E	851 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283312.1N 0770756.6E	865 FT	NIL	FLOOD LIGHT
In circling area and at AD	NAVAID	283337.7N 0770708.9E	826 FT	LGTD	OBSTRUCTION LIGHT ON GP ANTENNA
In circling area and at AD	NAVAID	283337.7N 0770708.9E	824 FT	LGTD	GP ANTENNA
In circling area and at AD	NAVAID	283337.8N 0770708.7E	783 FT	LGTD	GP DME ANTENNA
In circling area and at AD	NAVAID	283337.7N 0770708.6E	778 FT	LGTD	GP HUT
In circling area and at AD	NAVAID	283329.7N 0770709.3E	788 FT	NIL	AWS ANTENNA
In circling area and at AD	NAVAID	283336.9N 0770712.5E	789 FT	LGTD	OBSTRUCTION LIGHT ON GP MONITOR ANTENNA
In circling area and at AD	NAVAID	283330.4N 0770708.3E	777 FT	NIL	TRANSMISSOMETER
In circling area and at AD	NAVAID	283329.4N 0770706.3E	789 FT	LGTD	OBSTRUCTION LIGHT ON WIND SOCK
In circling area and at AD	NAVAID	283329.4N 0770706.3E	788 FT	LGTD	WIND SOCK
In circling area and at AD	NAVAID	283330.9N 0770706.8E	775 FT	LGTD	DME ANTENNA
In circling area and at AD	NAVAID	283238.5N 0770429.4E	785 FT	LGTD	GP ANTENNA, LIGHTNING ARRESTER
In circling area and at AD	NAVAID	283238.4N 0770429.5E	742 FT	LGTD	DME ANTENNA
In circling area and at AD	NAVAID	283238.5N 0770429.7E	734 FT	LGTD	GP ANTENNA HUT TOP
In circling area and at AD	NAVAID	283253.0N 0770400.5E	744 FT	LGTD	WIND SOCK
In circling area and at AD	BUILDING	283218.8N 0770703.6E	845 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283218.7N 0770714.0E	885 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283127.8N 0770818.1E	954 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283126.3N 0770820.6E	957 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283126.3N 0770822.4E	940 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283130.2N 0770817.9E	956 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283130.7N 0770819.4E	953 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283127.9N 0770820.8E	955 FT	NIL	BUILDING

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	BUILDING	283129.4N 0770822.3E	946 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283129.7N 0770823.3E	954 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.4N 0770809.1E	958 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.1N 0770808.3E	952 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283132.2N 0770808.2E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.6N 0770807.6E	983 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283134.8N 0770807.5E	954 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283135.4N 0770809.6E	956 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283136.0N 0770810.8E	951 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283134.5N 0770811.8E	951 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.0N 0770812.0E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.3N 0770810.6E	938 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283132.0N 0770812.3E	954 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283131.4N 0770814.4E	966 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283130.0N 0770808.3E	951 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283130.1N 0770806.2E	957 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283131.2N 0770805.5E	947 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283130.4N 0770811.9E	958 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283129.5N 0770812.2E	943 FT	NIL	BUILDING (U/C)
In circling area and at AD	BUILDING	283131.3N 0770800.8E	949 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283127.7N 0770809.8E	957 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283127.8N 0770810.6E	946 FT	NIL	BUILDING
In circling area and at AD	POLE	283208.3N 0770640.6E	812 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283208.0N 0770639.9E	812 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283206.5N 0770640.5E	826 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283207.7N 0770639.3E	811 FT	NIL	LIGHT POLE

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	POLE	283124.4N 0770823.6E	953 FT	NIL	PYLON
In circling area and at AD	POLE	283124.4N 0770832.9E	986 FT	NIL	PYLON
In circling area and at AD	POLE	283124.9N 0770830.4E	952 FT	NIL	PYLON
In circling area and at AD	POLE	283205.9N 0770646.4E	865 FT	LGTD	OBSTRUCTION LIGHT TOP
In circling area and at AD	BUILDING	283133.3N 0770817.6E	952 FT	NIL	BUILDING
In circling area and at AD	POLE	283219.2N 0770658.3E	828 FT	NIL	LIGHT POLE
In circling area and at AD	NAVAID	283212.7N 0770629.4E	799 FT	LGTD	WIND SOCK
In circling area and at AD	BUILDING	283126.8N 0770810.3E	955 FT	NIL	BUILDING(U/C)
In circling area and at AD	BUILDING	283133.1N 0770759.0E	947 FT	NIL	BUILDING(U/C)
In circling area and at AD	BUILDING	283127.6N 0770801.0E	947 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283130.5N 0770759.9E	946 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283128.9N 0770801.7E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283128.2N 0770803.3E	946 FT	NIL	BUILDING(U/C)
In circling area and at AD	BUILDING	283128.7N 0770804.6E	949 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283128.0N 0770806.2E	951 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283127.6N 0770807.4E	953 FT	NIL	BUILDING(U/C)
In circling area and at AD	BUILDING	283132.9N 0770800.2E	948 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283132.4N 0770802.2E	943 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.2N 0770803.2E	944 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283134.4N 0770802.1E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283134.4N 0770800.3E	941 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283135.7N 0770801.4E	949 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283135.2N 0770800.6E	941 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283136.5N 0770759.2E	949 FT	NIL	BUILDING
In circling area and at AD	POLE	283133.7N 0770753.3E	934 FT	NIL	PYLON
In circling area and at AD	POLE	283132.9N 0770755.0E	937 FT	NIL	PYLON

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	POLE	283129.4N 0770755.5E	938 FT	NIL	PYLON
In circling area and at AD	POLE	283128.9N 0770754.7E	937 FT	NIL	PYLON
In circling area and at AD	BUILDING	283135.3N 0770812.2E	951 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283134.8N 0770812.7E	948 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283132.2N 0770813.4E	954 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283124.9N 0770801.0E	946 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283125.9N 0770801.3E	961 FT	NIL	BUILDING
In circling area and at AD	POLE	283126.2N 0770801.4E	956 FT	NIL	PYLON
In circling area and at AD	POLE	283127.0N 0770801.6E	952 FT	NIL	PYLON
In circling area and at AD	BUILDING	283135.5N 0770809.3E	956 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283135.5N 0770809.7E	957 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283129.3N 0770828.0E	954 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283218.6N 0770706.9E	858 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.3N 0770808.2E	949 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283130.9N 0770806.9E	942 FT	NIL	BUILDING(U/C)
In circling area and at AD	BUILDING	283131.9N 0770810.1E	952 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.0N 0770812.3E	950 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283132.1N 0770813.3E	952 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283132.2N 0770814.2E	950 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.4N 0770815.9E	961 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283133.2N 0770817.5E	952 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.7N 0770814.5E	950 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.8N 0770814.9E	951 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.0N 0770818.0E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283131.2N 0770817.3E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283128.4N 0770814.7E	957 FT	NIL	BUILDING

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	POLE	283207.1N 0770641.9E	827 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283207.4N 0770642.4E	806 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283207.6N 0770642.9E	806 FT	NIL	LIGHT POLE
In circling area and at AD	POLE	283124.3N 0770830.1E	948 FT	NIL	PYLON
In circling area and at AD	BUILDING	283208.2N 0770915.2E	936 FT	NIL	BUILDING
In circling area and at AD	POLE	283210.0N 0770911.6E	937 FT	NIL	PYLON
In circling area and at AD	POLE	283210.0N 0770909.2E	934 FT	NIL	PYLON
In circling area and at AD	POLE	283209.5N 0770908.9E	934 FT	NIL	PYLON
In circling area and at AD	BUILDING	282952.5N 0770524.9E	1075 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283035.3N 0770532.2E	932 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283019.5N 0770545.3E	953 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283007.7N 0770555.5E	989 FT	NIL	BUILDING
In circling area and at AD	BUILDING	283032.1N 0770414.8E	938 FT	NIL	BUILDING
In circling area and at AD	POLE	283010.1N 0770531.6E	958 FT	NIL	PYLON
In circling area and at AD	POLE	283005.6N 0770527.8E	995 FT	NIL	PYLON
In circling area and at AD	POLE	283012.7N 0770533.8E	993 FT	NIL	PYLON
In circling area and at AD	POLE	283044.2N 0770530.9E	978 FT	NIL	PYLON
In circling area and at AD	POLE	283044.2N 0770538.0E	983 FT	NIL	PYLON
In circling area and at AD	POLE	283041.1N 0770539.3E	946 FT	NIL	PYLON
In circling area and at AD	POLE	283037.5N 0770541.7E	931 FT	NIL	PYLON
In circling area and at AD	POLE	283032.6N 0770543.6E	934 FT	NIL	PYLON
In circling area and at AD	POLE	283026.4N 0770544.6E	954 FT	NIL	PYLON
In circling area and at AD	POLE	283013.7N 0770540.1E	988 FT	NIL	PYLON
In circling area and at AD	POLE	283018.4N 0770543.0E	968 FT	NIL	PYLON
In circling area and at AD	POLE	283041.0N 0770530.5E	950 FT	NIL	PYLON
In circling area and at AD	POLE	283041.5N 0770529.4E	940 FT	NIL	PYLON

In Approach/Take-off/Circling Area and at AD					
1	**2**	**3**	**4**	**5**	**6**
RWY/Area affected	Obstacle type	Coordinates	Elevation (EGM-08)	Marking/LGT	Remarks
In circling area and at AD	POLE	283044.2N 0770526.6E	930 FT	NIL	PYLON
In circling area and at AD	POLE	283047.5N 0770521.1E	935 FT	NIL	PYLON
In circling area and at AD	BUILDING	283131.7N 0770809.3E	962 FT	NIL	BUILDING
In circling area and at AD	POLE	283123.5N 0770822.8E	951 FT	NIL	PYLON
In circling area and at AD	POLE	283124.9N 0770817.4E	954 FT	NIL	PYLON
In circling area and at AD	POLE	283124.5N 0770815.4E	962 FT	NIL	PYLON
In circling area and at AD	POLE	283126.5N 0770804.9E	953 FT	NIL	PYLON
In circling area and at AD	POLE	283125.2N 0770809.2E	958 FT	NIL	PYLON
In circling area and at AD	POLE	283125.6N 0770811.5E	961 FT	NIL	PYLON

Remarks: Pitampura TV Tower Obstruction LGT Available.

VIDP AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Name of the associated meteorological office	Meteorological Watch Office (MWO), IGI Airport, New Delhi
2	Hours of service and, where applicable, the designation of the responsible meteorological office outside these hours	H24
3	Office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts	MWO Delhi 9 and 30 HR (3 & 6 hours interval)
4	Availability of the trend forecast for the aerodrome and interval of issuance	Trend 30 Min (valid for next 2 hours)
5	Information on how briefing and/or consultation is provided	Physical and/or through on-line mode.
6	Types of flight documentation supplied and language(s) used in flight documentation	Chart, Image, Text form and Tabular form. English
7	Charts and other information displayed or available for briefing or consultation	S,U85,U70,U50,U30,U25,U15,U10, P30, P25, P20 SW [UPTO FL460]
8	Supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;	Radar and Satellite display work Station
9	The air traffic services unit(s) provided with meteorological information	VIDP Delhi ATC AND ACS

10	Additional information, e.g. concerning any limitation of service.	**1.** Integrated Aviation METROLOGICAL System (DCWIS)*at RWY 27/09, 28/10, 29L/11R and 29R/11L AVBL. The System will provide following information on Digital Display: **PAGE 1:** I Wind Direction- Instantaneous, 2 Minute Average and 10 Minute Average II Wind Speed - Instantaneous, 2 Minute Average and 10 Minute Average **PAGE 2:** I Air Temperature: Actual Dry Bulb Temperature II Humidity: Actual Humidity in Percent III DEW Point Temperature: In Degree Celsius **PAGE 3:** I Air Pressure: in HPA II QNH: in HPA. *DCWIS is available at both side of touchdown zone. **2.** The RVR system at RWY 27/09, 28/10, 29L/11R and 29R/11L will provide RVR and MOR data displayed on PC monitor as follows: I.) RVR: Actual reading displayed from 50m to 2000m in following steps: • below 400M in step of 25M • 400M to 800M in step of 50M • above 800M in step of 100M A value of 2000M is displayed when RVR is equal to or above 2000M. A value of 25M is displayed when RVR is less than 50M. II.) RVR TREND: Displayed upward arrow for uptrend and downward arrow for down trend. ---U for up, D for down, N for no change. **3**. Ceilometers installed at RWY 10 TDZ with Data Updation Frequency 30 Sec. The Display Location is the Met Officer Position at ATC Tower.

VIDP AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations	TRUE Bearings	Dimensions of RWY (M)	Strength of pavement (PCN) and associated data) and surface of runway and associated stopways	Geographical coordinates for threshold and runway end
1	2	3	4	5
10	104.25 DEG	3813 x 45 M	99/F/B/W/T Asphalt	THR: 283402.03N 0770505.54E RWY END: 283330.73N 0770721.27E
28	284.25 DEG	3813 x 45 M	99/F/B/W/T Asphalt	THR: 283330.73N 0770721.27E RWY END: 283402.03N 0770505.54E
11L	103.65 DEG	x M	73/F/B/W/T Asphalt 86/R/B/W/T (Concrete at Ends)	THR: 283255.30N 0770429.38E RWY END: 283232.30N 0770616.62E
29R	283.65 DEG	x M	73/F/B/W/T Asphalt 86/R/B/W/T (Concrete at Ends)	THR: 283232.30N 0770616.62E RWY END: 283300.43N 0770405.43E
11R	103.25 DEG		93/F/C/W/T	THR: 283244.86N 0770418.85E RWY END: 283218.30N 0770622.74E
29L	283.25 DEG		93/F/C/W/T	THR: 283227.04N 0770541.97E RWY END: 283249.81N 0770355.80E
09	91.25 DEG	2816 x 45 M	90/F/C/W/T Asphalt	THR: 283413.98N 0770517.28E RWY END: 283411.62N 0770700.84E
27	271.25 DEG	2816 x 45 M	90/F/C/W/T Asphalt	THR: 283411.74N 0770655.30E RWY END: 283413.98N 0770517.28E

THR elevation and highest elevation of TDZ of precision APP RWY	Slope of runway and associated stopway	Dimensions of stopway (M)	Dimensions of clearway (M)	Dimensions of strips (M)
6	7	8	9	10
THR: 720.5FT TDZ: 725.0FT	0.46%	NIL	NIL	3933 x 280 M
THR: 778.3FT TDZ: 775.0FT	-0.46%	NIL	NIL	3933 x 280 M
THR: 726.0FT TDZ: 736.0FT	0.40%	730 x 45 M	NIL	4520 x 280 M
THR: 772.0FT TDZ: 772.0FT	-0.40%	NIL	NIL	4520 x 280 M
THR: 725.0FT TDZ: 727.0FT	0.39%	320 x 60 M	NIL	4550 x 280 M
THR: 752.2FT TDZ: 750.0FT	-0.38%	NIL	NIL	4550 x 280 M
THR: 718.8FT TDZ: 731.0FT	0.39%	NIL	NIL	2936 x 150 M
THR: 752.4FT TDZ: 752.0FT	-0.39%	NIL	NIL	2936 x 150 M

Dimensions of runway end safety areas	Location and description of arresting system (if any)	Existence of an obstacle-free zone	Remarks.
11	12	13	14
240M x 90M		AVBL	PCN: 75/R/A/W/T (0 TO 98M CONCRETE) 99/F/B/W/T (98M TO 3661M ASPHALT) 74/R/A/W/T (3661M TO 3813M CONCRETE) 1% (Transverse slope)
240M x 90M		AVBL	PCN: 74/R/A/W/T (0 TO 152M CONCRETE) 99/F/B/W/T (152M TO 3715M ASPHALT) 75/R/A/W/T (3715M TO 3813M CONCRETE) 1% (Transverse slope)
240M x 150M		NIL	1. Dimensions of RWY: 3670 M X 45 M 2. PCN: 0 to 300M - 86/R/B/W/T (Concrete) 300M to 4100M - 73/F/B/W/T (Asphalt) 4100M to 4400M - 86/R/B/W/T (Concrete)
240M x 150M		NIL	1. Dimensions of RWY: 4400 M X 45 M 2. PCN: 0 to 300M - 86/R/B/W/T (Concrete) 300M to 4100M - 73/F/B/W/T (Asphalt) 4100M to 4400M - 86/R/B/W/T (Concrete)
240M x 120M		AVBL	RWY Dimension: 4110 M X 60 M PCN: 0 to 438M: 110/R/C/W/T (Concrete) 438M to 4166M: 93/F/C/W/T (Flexible) 4166M to 4430M: 110/R/C/W/T (Concrete)
240M x 120M		AVBL	RWY Dimension:4430 M X 60 M PCN: 0 to 264M: 110/R/C/W/T (Concrete) 264M to 3992M: 93/F/C/W/T (Flexible) 3992M to 4430M: 110/R/C/W/T (Concrete)

Dimensions of runway end safety areas	Location and description of arresting system (if any)	Existence of an obstacle-free zone	Remarks.
11	12	13	14
240M x 90M		AVBL	PCN: 0 to 520M: 72/R/B/W/T (Concrete) 520M to 2816M: 90/F/C/W/T (Asphalt)
240M x 90M		AVBL	PCN: 0 to 2296M: 90/F/C/W/T (Asphalt) 2296M to 2816M: 72/R/B/W/T (Concrete)

VIDP AD 2.13 DECLARED DISTANCES

RWY Designator	Take-off run available TORA (M)	Take-off distance available TODA (M)	Accelerate distance available ASDA (M)	Landing distance available LDA (M)	Remarks (including runway entry or start point where alternative reduced declared distances have been declared)
1	2	3	4	5	6
10	3813	3813	3813	3813	
28	3813	3813	3813	3813	
11L	3670	3670	4400	3000	THR displaced by 670M.
29R	4400	4400	4400	3670	THR displaced by 730M.
11R	4110	4110	4430	3465	THR displaced by 645M
29L	4430	4430	4430	2970	THR displaced by 1460M
09	2816	2816	2816	2816	
27	2816	2816	2816	2665	THR displaced by 151M

VIDP AD 2.14 APPROACH AND RUNWAY LIGHTING

Runway Designator	Type, length and intensity of approach lighting system	Runway threshold lights, colour and wing bars	Type of visual slope indicator system	Length of runway touchdown zone lights
1	2	3	4	5
10	CAT I 600 M LIH	Green	PAPI LEFT/3.20 DEG MEHT (68.18FT)	
28	900 M CATIII LIH	Green	PAPI LEFT/3.20 DEG MEHT (76.48FT)	900 M
11L	CAT III 900 M LIH	Green	PAPI BOTH/3.00 DEG MEHT (64.19FT)	900 M
29R	CAT III 900 M LIH	Green	PAPI LEFT/3.00 DEG MEHT (64.19FT)	900 M
11R	900 M CATIII LIH	Green	PAPI BOTH/3.00 DEG MEHT (69.95FT)	900 M

Runway Designator	Type, length and intensity of approach lighting system	Runway threshold lights, colour and wing bars	Type of visual slope indicator system	Length of runway touchdown zone lights
1	2	3	4	5
29L	900 M CATIII LIH	Green	PAPI LEFT/3.00 DEG MEHT (69.19FT)	900 M
09	SALS 420 M LIH	Green	PAPI LEFT/3.00 DEG MEHT (73.93FT)	
27	CAT I 570 M LIH	Green	PAPI LEFT/3.00 DEG MEHT (73.93FT)	

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
3813 M 15 M LIH	3813 M 60 M LIH	Red		1. RWY Centreline lights from physical beginning upto 900M from RWY End - variable White; between 900M (from RWY END) and 300M from RWY END – alternate variable White and Red between 300M (from RWY END) and RWY END - Red 2. RWY Edge Lights from physical beginning upto 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow. 3. The portion of RWY 10 CAT I approach lights between 600m to 900m from RWY 10 THR beyond railway line unserviceable due to pilferage etc. However, approach lights upto 600m from RWY 10 THR having crossbars at 150, 300, 450 and 600m are serviceable. 4. Rapid Exit Twys Indicator Lights (RETILS) installed at RWY 10 for TWY G2

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
3813 M 15 M LIH	3813 M 60 M LIH	Red		1. RWY Centreline lights fro physical beginning upto 900M from RWY End - variable White; between 900M (from RWY END) and 300M from RWY END – alternate variable White and Red between 300M (from RWY END) and RWY END – Red. 2. The centreline lights are uniformly spaced at 30M in CAT I conditions and 15 M in CAT II/III conditions. 3. RWY Edge Lights from physical beginning upto 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow. 4.Rapid Exit Taxiways Indicator Lights (RETILS) installed at RWY 28 for TWY H1, K1and K2.

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
3670 M 15 M LIH	3670 M 60 M LIH	Red	Red 730 M	1. Due to displaced THR, the aeronautical ground LGT arrangement under mixed mode OPS on RWY11L in PRE THR area is a combination of single sourced RWY centreline LGT and Calvert Type APCH LGT. 2. Displaced threshold of runway 11L provided with flashing white RWY threshold identification lights at a distance of 670 M from physical extremity of RWY 11L. 3. RWY Centreline lights from physical beginning up to 900M from RWY End – variable White; between 900M (from RWY END) and 300M (from RWY END) – alternate variable White and Red between 300M (from RWY END) and RWY END – Red. 4. RWY Edge Lights from physical beginning up to 670M (Displaced threshold) – Red; between 670M (from physical beginning) and 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow; beyond RWY END for 730M long Stopway – Red. 5. Rapid Exit Taxiways Indicator Lights (RETILS) installed at RWY 11L for TWY P1, P3.

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
4400 M 15 M LIH	4400 M 60 M LIH	Red	NIL	1. Due to displaced THR, the aeronautical ground LGT arrangement under mixed mode OPS on RWY29R in PRE THR area is a combination of single sourced RWY centreline LGT and Calvert Type APCH LGT. 2. Displaced threshold of runway 29R provided with flashing white RWY threshold identification lights at a distance of 730 M from physical extremity of RWY 29R. 3. RWY Centreline lights from physical beginning up to 900M from RWY End – variable White; between 900M (from RWY END) and 300M (from RWY END) – alternate variable White and Red between 300M (from RWY END) and RWY END – Red. 4. RWY Edge Lights from physical beginning up to 730M (Displaced threshold) – Red; between 730M (from physical beginning) and 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow. 5. Rapid Exit Taxiways Indicator Lights (RETILS) installed at RWY 29R for TWY R2, R3.

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
4110 M 15 M LIH	4110 M 60 M LIH	Red	Red	1. RWY Centerline lights from physical beginning upto 900M from RWY End - variable White; between 900M (from RWY END) and 300M from RWY END – alternate variable White and Red between 300M (from RWY END) and RWY END – Red. 2. RWY Edge Lights from physical beginning upto 645M (Displaced threshold) – Red; between 645M (from physical beginning) and 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow. 3. Rapid Exit Taxiways Indicator Lights (RETILS) installed at RWY 11R for TWY Y1, Y2 and Y4. 4. 'Displaced threshold of RWY 11R provided with flashing white RWY threshold identification lights at a distance of 645 M from physical extremity of RWY 11R.

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
4430 M 15 M LIH	4430 M 60 M LIH	Red		1. Due to displaced THR, the aeronautical ground LGT arrangement under mixed mode OPS on RWY29L in PRE THR area is as follows: i. Physical beginning of RWY29L to 560M - single sourced RWY center line LGT. ii. FM 560M till THR RWY29L - Combination of single sourced RWY center line LGT and Calvert Type APCH LGT. 2. 'Displaced threshold of runway 29L provided with flashing white RWY threshold identification lights at a distance of 1460 M from physical extremity of RWY 29L. 3. RWY Centerline lights from physical beginning upto 900M from RWY End - variable White; between 900M (from RWY END) and 300M from RWY END – alternate variable White and Red between 300M (from RWY END) and RWY END – Red. 4. RWY Edge Lights from physical beginning upto 1460M (Displaced threshold) – Red; between 1460M (from physical beginning) and 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow. 5. Rapid Exit Taxiways Indicator Lights (RETILS) installed at RWY 29L for TWY Z2, Z3.

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
2816 M 15 M LIH	2816 M 60 M LIH	Red		1. RWY Centrelinelights from physical beginning upto 900M from RWY End - variable White; between 900M (from RWY END) and 300M from RWY END – alternate variable White and Red between 300M (from RWY END) and RWY END - Red 2. RWY Edge Lights from physical beginning upto 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow 3. RWY centre line LGT are uniformly offset to the North side of RWY centerline by not more than 60 cm.

Length, spacing, colour and intensity of runway centre line lights	Length, spacing, colour and intensity of runway edge lights	Colour of runway end lights and wing bars	Length and colour of stopway lights	Remarks
6	7	8	9	10
2816 M 15 M LIH	2816 M 60 M LIH	Red		1. RWY Centerline lights from physical beginning upto 151M (Displaced Threshold) – variable white; between 151M (from physical beginning) and 900M from RWY END – variable White between 900M (from RWY END) and 300M from RWY END – alternate variable White and Red between 300M (from RWY End) and RWY END – Red. 2. RWY Edge Lights from physical beginning upto 151M (Displaced threshold) – Red; between 151M (from physical beginning) and 600M (from RWY END) – variable White; between 600M (from RWY END) and RWY END – Yellow. 3. RWY centre line LGT are uniformly offset to the North side of RWY centerline by not more than 60 cm. 4. Displaced threshold of RWY 27 provided with flashing white RWY Threshold Identification Lights at a distance of 151M from physical extremity of RWY27. 5. Rapid Exit Taxiways Indicator Lights (RETILS) installed at RWY 27 for TWY D5, D6.

VIDP AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	Location, characteristics and hours of operation of aerodrome beacon/identification beacon (if any)	ABN	283337N 0770536E, Rotating green /white beacon on top of Apron Management service tower (Apron- II). FLG W AND G, 24FPM, 400,000 Cd, SUNSET TO SUNRISE
		IBN	NIL

2	Location and lighting (if any) of anemometer/ landing direction indicator;	LDI	NIL
		Anemometer	Sl. No. Location Coordinates i North of RWY 09, near GP 09 283417.5N 0770529.6E ii North of RWY 27 and East of TWY A2 283416.4N 0770647.3E iii North of RWY 10, near GP 10 283403.2N 0770518.9E iv South of RWY 28 between TWY W& J7 283329.7N 0770709.3E v South of RWY 11R near GP 11R 283237.1N 0770434.0E vi South of RWY 29L near GP 29L 283226.3N 0770524.5E vii South of RWY 29R, east of TWY S2 283232.9N 0770558.8E viii South of RWY 29R, between TWY S1 and TWY S2 283240.1N 0770525.2E ix South of RWY 11L, near GP RWY 11L 283249.2N 0770443.1E
3	Taxiway edge and taxiway centre line lights;	Edge	All TWY curves except TWY LINK 16 (Between TWY C up to GA Apron), TWY LINK 13 which have reflective edge markers.
		Centre Line	All Taxiways except portion of TWY LINK 32 south of TWY C, Portion of TWY LINK 30 south of TWY M, LINK 16 (Between LINK 14 and TWY C), LINK 14, LINK 15 and LINK 13.
4	Secondary power supply including switch-over time;	SECONDARY POWER SUPPLY TO ALL LIGHTING. SWITCH OVER TIME : CAT- III : 1 SEC CAT- II : 1 SEC CAT- I : 15 SEC ONLINE UPS AVBL FOR CRITICAL CIRCUITS.	
5	Remarks	CAT-III BSES supply through online UPS as primary source and DG supply as secondary source.	

VIDP AD 2.16 HELICOPTER LANDING AREA

1	Geographical coordinates of the geometric centre of touchdown and lift-off (TLOF) or of each threshold of final approach and take-off (FATO) area	Not Established
2	TLOF and/or FATO area elevation:	Not Established
3	TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;	Not Established
4	True bearings of FATO;	Not Established
5	Declared distances available	Not Established
6	Approach and FATO lighting;	Not Established
7	Remarks	Not Established

VIDP AD 2.17 AIR TRAFFIC SERVICE AIRSPACE

1	Airspace designation, geographical coordinates and lateral limits	CTR: Area bounded by 290200.0N 0771455.4E, then along counter clockwise arc of circle of radius 30NM centered at 283400.89N 0770536.66E to 283600.2N 0773855.2E to 283700.2N 0772955.3E to 283700.2N 0771555.4E, and then along river Yamuna to 285600.0N 0771155.4E to 290200.0N 0771455.4E.
2	Vertical limits	5000 FT AMSL
3	Airspace classification	D
4	Call sign and language(s) of the air traffic services unit providing service;	Delhi Tower, English
5	Transition altitude	5000 FT
6	Hours of applicability	H24
7	Remarks	Airspace above 4000 FT AMSL is Classified as Class ‘C’.

VIDP AD 2.18 AIR TRAFFIC SERVICES COMMUNICATION FACILITIES

Service Designation	Call sign	Channel(s)	SATVOICE Number(s), if available
1	2	3	4
OTHER	CLEARANCE DELIVERY	121.800 MHZ	
OTHER	CLEARANCE DELIVERY	121.850 MHZ	
OTHER	CLEARANCE DELIVERY	121.950 MHZ	
OTHER	DELHI APPROACH	121.350 MHZ	
OTHER	DELHI APPROACH	125.675 MHZ	
OTHER	DELHI APPROACH	126.350 MHZ	
OTHER	Delhi Arrival	124.200 MHZ	
OTHER	Delhi Arrival	124.250 MHZ	
OTHER	Delhi Departure	118.825 MHZ	
OTHER	Delhi Departure	124.600 MHZ	
ATFM	Delhi flow control	132.500 MHZ	
OTHER	ENROUTE	127.100 MHZ	
SAR	-	123.100 MHZ	
TWR	Delhi Tower	118.100 MHZ	
TWR	Delhi Tower	118.250 MHZ	
TWR	Delhi Tower	118.750 MHZ	
TWR	Delhi Tower	123.825 MHZ	
TWR	Delhi Tower	124.375 MHZ	
TWR	Delhi Tower	125.850 MHZ	
ATIS	Delhi Information	126.400 MHZ	
ACC	ACC CENTRAL	132.775 MHZ	
ACC	DELHI CONTROL	119.500 MHZ	
ACC	DELHI CONTROL	120.900 MHZ	
ACC	DELHI CONTROL	124.550 MHZ	
ACC	DELHI CONTROL	125.700 MHZ	
ACC	DELHI CONTROL	125.950 MHZ	
ACC	DELHI CONTROL	132.150 MHZ	
ACC	DELHI CONTROL	132.850 MHZ	
ACC	DELHI CONTROL	132.975 MHZ	
ACC	DELHI CONTROL	133.900 MHZ	
ACC	DELHI CONTROL	134.075 MHZ	
ACC	DELHI CONTROL	134.500 MHZ	
ALRS	Emergency Frequency	121.500 MHZ	
SMC	Delhi Ground	118.550 MHZ	
SMC	Delhi Ground	119.575 MHZ	
SMC	Delhi Ground	121.625 MHZ	
SMC	Delhi Ground	121.750 MHZ	
SMC	Delhi Ground	121.900 MHZ	

Logon address, as appropriate	Hours of operation	Remarks
5	6	7
	H24	Clearance Delivery SDBY
	H24	Clearance Delivery 2
	H24	Clearance Delivery 1
	H24	Delhi Approach SDBY
	H24	Delhi Approach
	H24	DELHI APPROACH
	H24	Delhi Arrival
	H24	Delhi Arrival SDBY
	H24	Delhi Departure
	H24	Delhi Departure
	H24	Delhi Flow Control
	H24	ENROUTE
	H24	SEARCH AND RESCUE
	H24	TWR MIDDLE
	H24	TWR NORTH SDBY
	H24	TWR NORTH
	H24	TWR SOUTH-2
	H24	TWR MIDDLE AND TWR SDBY
	H24	TWR SOUTH
	H24	ATIS
	H24	ACC CENTRAL
	H24	ACC NORTH EAST
	H24	ACC NORTH EAST
	H24	ACC NORTH WEST
	H24	ACC SOUTH EAST
	H24	ACC SOUTH EAST
	H24	ACC SOUTH WEST
	H24	ACC SOUTH WEST SDBY
	H24	ACC NORTH WEST
	H24	ACC SOUTH EAST SDBY
	H24	ACC NORTH WEST SDBY
	H24	NORTH EAST SDBY
	H24	Emergency
	H24	SMC SOUTH-2
	H24	SMC SDBY
	H24	SMC SOUTH
	H24	SMC NORTH
	H24	SMC MIDDLE

VIDP AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aids, magnetic variation and type of supported operation for ILS/ MLS, basic GNSS, SBAS and GBAS, and for VOR/ILS/MLS station used for technical lineup of the aid	Identification	Frequency(ies), Channel number(s), Service provider, and reference path identifier(s) (RPI), as appropriate	Hours of operation, as appropriate;
1	2	3	4
LOC 10 CAT I	IDEL	109.500 MHz	H24
LOC 11R CAT III	IDMR	111.300 MHz	H24
LOC 29L CAT III	IDGM	110.900 MHz	H24
LOC 28 CAT III	IPLM	110.300 MHz	H24
LOC 27 CAT I	IDLH	110.500 MHz	H24
LOC 09 CAT I	IDIA	108.500 MHz	H24
LOC 11L CAT I	IDLP	108.700 MHz	H24
GP 27		329.600 MHz	H24
GP 10	IDEL	332.600 MHz	H24
GP 29L	IDGM	330.800 MHz	
GP 11R	IDMR	332.300 MHz	H24
GP 28	IPLM	335.000 MHz	H24
GP 09	IDIA	329.900 MHz	H24
GP 11L	IDLP	330.500 MHz	H24
DME ILS 10	IDEL	CH32X	H24
DME ILS 28	IPLM	CH40X	H24
DME ILS 27	IDLH	CH42X	H24
DME ILS 09	IDIA	CH22X	H24
DME ILS 11R	IDMR	CH58X	H24
DME ILS 29L	IDGM	CH46X	H24
DME ILS 11L	IDLP	CH24X	H24
DVOR/DME	DPN	116.100 MHz CH108X	H24
DVOR/DME	DIG	114.600 MHz CH93X	H24
L	DH	202.000 kHz	H24

Geographical coordinates of the position of the transmitting antenna	Elevation of transmitting antenna of DME/ elevation of GBAS reference point	Service volume radius from the GBAS reference point	Remarks
5	6	7	8
283328.2N 0770732.3E			CAT-I
283213.4N 0770645.4E			
283252.4N 0770343.7E			i. Localiser restricted to 26 DEG on 150 Hz side due off-course clearance below limits. ii.Off-course clearance on 90 Hz side is within limit.
283405.3N 0770451.5E			i. ILS RWY 28 available as CAT III. Localiser Coverage as follows: a) 10 DEG on either side of RWY centre line upto 22NM b) From 10 DEG to 35 DEG on either side of RWY centreline upto 17NM.
283414.5N 0770456.2E			
283411.5N 0770706.3E			
283224.3N 0770654.2E			
283408.5N 0770642.1E			
283403.3N 0770518.0E			3 DEG
283226.0N 0770527.9E			3 DEG
283238.5N 0770429.4E			3 DEG
283337.7N 0770708.9E			i. Glide Angle: 3 DEG ii. GP COVERAGE IS AS FOLLOWS: A)GP COVERAGE RESTRICTED TO 6 DEG ON 90 SIDE AT 10 NM.
283417.7N 0770528.8E			
283249.0N 0770440.2E			
283403.1N 0770518.2E	737 FT		Colocated with GP 10
283337.8N 0770708.7E	783 FT		Colocated with GP 28
283408.5N 0770642.1E	760 FT		Collocated with GP27
283417.9N 0770528.9E	738 FT		Collocated with GP09
283238.4N 0770429.5E	742 FT		Collocated with GP11R

283226.1N 0770527.8E	760 FT		Collocated with GP29L
283248.9N 0770440.1E	748 FT		1. COLOCATED WITH GP. 2. GRAVITY MODEL: EGM-08.
283400.9N 0770536.7E	760 FT		
283231.9N 0770449.7E	760 FT		
283352.2N 0771208.4E			

VIDP AD 2.20 LOCAL AERODROME REGULATIONS

1. AIRPORT REGULATIONS

1.1 To reduce RT congestion, flight crew is encouraged not to request direct routings in Delhi TMA ATC will provide direct routings as and when feasible subject to traffic conditions

1.2 Engine power more than idle thrust is not permitted during taxiing in, pushback to/from ACFT stand 211-207 and 212-218.

1.3 For datalink, capable aircraft while operating in DELHI FIR the AFN logon address for Delhi FIR is VIDF.

1.4 Left turn towards stand 800 from TWY D4 not available while aircraft taxing on TWY D4 facing north. Similarly Right turn on TWY D4 from stand 800 not available while aircraft taxiing from stand 800 facing east.

1.5 The AFN logon address for Departure Clearance (DCL) connection for IGI Airport,New Delhi is VIDP.

1.6 TWY D1 is available for taxiing up to Code Letter C aircraft with OMGWS up to but not including 9.6m.

1.7 The usage of Taxiway T4 & T5 and S5 will be regulated during operations of GP 11L and GP 29R, respectively.

1.8 During Segregated Dependent Easterly Mode of operations, RWY 11R for Arrival and RWY 11L for Departure, for the application of Wake Turbulence Separation Minima with respect to heavier arrival on RWY 11R, RWY 11L intend departure from:

a. TWY R5 requiring a Take-Off Run less than 600m or

b. TWY R6 or R7 requiring a Take-Off Run less than 900m,

shall notify ATC at or before the issuance of taxi clearance.

1.9 During Segregated Dependent Westerly Mode of operations, RWY 29L for Arrival and RWY 29R for Departure:

a. TWY P2 will be preferred entry point for departure from RWY 29R with Wake Turbulence Category Light, ATC may

use TWY P2 as preferred entry point for other departure also as per the aircraft type and it's characteristics.

TWY P4 or TWY P5 will be the preferred entry point for departure from RWY 29R with Wake Turbulence Category Medium or Heavy, such departure requiring line up RWY 29R from any other entry point shall notify ATC at or before the issuance of taxi clearance.

b. For the application of Wake Turbulence Separation Minima with respect to heavier arrival on RWY 29L, RWY 29R intend departure from:

i. TWY P2 requiring Take-Off Run less than 600m OR

ii. TWY P4 or TWY P5 requiring Take-Off Run less than 1400m OR

iii. TWY P6 or TWY P7 or TWY P8 requiring Take-Off Run less than 2000m

shall notify ATC at or before issuance of taxi clearance.

2. TAXING PROCEDURES FOR DIFFERENT APRONS

2.1-A PROCEDURES FOR APRON I

Apron I (STAND 123 - 178)	
Aircraft Stands	**Arrival Procedure**
160R-165	The aircraft shall taxi in via taxilane F5 to respective stand.
170-178	The aircraft shall taxi in via taxilane F6 to respective stand.
150-159	The aircraft shall taxi in via taxilane F3 to respective stand.

140-149B	The aircraft shall taxi in via taxilane E9 to respective stand.
134L-137	The aircraft shall taxi in via taxilane E6 to respective stand.
123-132	The aircraft shall taxi in via taxilane E3 to respective stand.
Departure Procedure	
Aircraft Stands	**RWY in use 09/27/10/28/11R/29L/11L/29R**
160R-165	The aircraft shall pushback onto taxilane 'F5' facing North or South and to be towed abeam respective stand and follow further instructions from ATC.
170-178	The aircraft shall pushback onto taxilane 'F6' facing North or South and to be towed abeam respective stand and follow further instructions from ATC.
150-159	The aircraft shall pushback onto taxilane ‘F3’ facing North or South and to be towed abeam respective stand and follow further instructions from ATC.
140-149B	The aircraft shall pushback onto taxilane ‘E9’ facingNorth or South and to be towed abeam respective stand and follow further instructions from ATC.
134L	The aircraft shall pushback onto taxilane E6 facing west and to be pulled forward abeam stand 134R and follow further instructions from ATC.
134R-137	The aircraft shall pushback onto taxilane E6 facing west and to be towed abeam respective stand and follow further instructions from ATC.
123-125	The aircraft shall pushback onto taxilane E3 facing north or south and to be towed abeam respective stand and follow further instructions from ATC.
126-132	The aircraft shall pushback onto taxilane E3 facing east or west and to be towed abeam respective stand and follow further instructions from ATC.

Note:

i.Pushback clearance is to be separated by at least one stand.

ii. Two Code letter C aircraft can taxi simultaneously on Taxilane F3 and F5 between IHPs located short of TWY D and TWY G, respectively.

iii. Simultaneous pushback of two Code letter C aircraft on Taxilane F3 and F5 permitted till visibility up to or more than 100m.

iv. During pushback from stand 165 facing North, aircraft taxiing on TWY G towards west, shall hold short of taxilane F3 and aircraft taxiing on TWY G towards east, shall hold short of taxilane F5.

v. During pushback from stand 178 facing North, aircraft taxiing on TWY G shall hold short of taxilane F6.

vi. During pushback from stand 165 and 178 facing North onto respective taxilane, aircraft shall pull forward abeam stand 164L and 177 respectively.

vii. During pushback from stand 170 facing South, aircraft taxiing on TWY D shall hold short of taxilane F6.

viii. During pushback from stand 170 facing South onto taxilane F6, aircraft shall pull forward abeam stand 171.

ix. During pushback from stand 140 facing south, aircraft taxiing on TWY D shall hold short of taxilane E9.Similarly, during pushback from stand 149B facing north, aircraft taxiing on TWY G shall hold short of taxilane E9.

x. During pushback from stand 140 facing south and from stand 149B facing north, onto respective taxilane, aircraft shall pull forward abeam stands 141 and 149A respectively.

xi. During pushback from stand 159 facing North, aircraft taxiing on TWY G towards west, shall hold short of taxilane F3 and aircraft taxiing on TWY G towards east, shall hold short of taxilane F5.

xii. During pushback from stand 150 facing south, aircraft taxiing on TWY D towards west shall hold short of taxilane F3 and aircraft taxiing on TWY D towards east, shall hold short of taxilane F5.

xiii. During pushback from stand 159 facing North onto taxilane F3, aircraft shall pull forward abeam stand 158.

xiv. During pushback from stand 150 facing South onto taxilane F3, aircraft shall pull forward abeam stand 151.

xv. During aircraft taxiing from taxilane F5 to taxilane F3 via taxilane F2 and vice versa, pushback shall not be permitted from aircraft stands 161L, 162, 163R, 155 and 154.

xvi. Engine power more than idle thrust is not permitted during aircraft taxiing from taxilane F5 to taxilane F3 via taxilane F2 and vice versa.

xvii.Only one movement at a time is permitted on taxilane E6.

xviii. During pushback from stand 132 facing east, aircraft taxiing on taxilane E7 shall hold short of taxilane E3. Similarly, during pushback from stand 123 facing south, aircraft taxiing on TWY D shall hold short of taxilane E3.

xix. During pushback from stand 132 facing east and from stand 123 facing south, onto respective taxilane, aircraft shall pull forward abeam stands 131 and 124 respectively.

xx. Two Code letter C aircraft can taxi simultaneously on Taxilane E9 and E7 south of IHP located short of TWY D.

2.1- B. DUAL TAXILANE OPERATION PROCEDURES IN APRON I

Designation, Location and Compatibility	F5 - Yellow Centre line Marking; between TWY D and TWY G; Compatible for up to Code letter C aircraft F3 - Yellow Centre line Marking; between TWY D and TWY G; Compatible for up to Code letter C aircraft F4 - Blue Centre line Marking; between TWY D and TWY G; Compatible for up to Code letter E aircraft F2 - Yellow Centre line Marking; between taxilanes F3 and F5; Compatible for up to Code letter C aircraft
Marking and lighting	Markings: Centre line Markings, IHP Marking, Non load bearing Markings on curves, Information, Location and Direction Markings, Maximum Wingspan Markings Lightings: Centre line Lights, Taxiway Edge Lights on curves only, Stop Bars, IHP Lights.
Location of IHPs	• On TWY G and TWY D short of taxilane F3 and F5 • On taxilane F3, F4 and F5 short of TWY D and TWY G • On taxilane F3 and F5 short of taxilane F2

Location of Stop Bars	• F5 (south of D/F5 intersection), F5 (north of G/F5 intersection) • F4 (south of D/F4 intersection), F4 (north of G/F4 intersection) • F3 (south of D/F3 intersection), F3 (north of G/F3 intersection)

i. During Code letter D/E aircraft taxiing to/from TWY D and TWY G via Taxilane F4:

a) Stop Bars on Taxilane F4 will be switched off.

b) The taxilane centre line lights of Taxilane F4 from TWY D and TWY G will be switched on automatically.

c) Stop Bars on Taxilane F5 and F3 will be switched on automatically.

d) The taxilane centre line lights of Taxilane F5, F3 and F2 will be switched off automatically.

e) *The stand lead-in lights of Code C aircraft stands will be switched off automatically.

f) ATC to ensure switching off Stop Bar on Taxilane F4 before permitting Code D/E Aircraft to cross RWY 09/27 from TWY A2, as there is no IHP on TWY D3.

g) No aircraft shall taxi or pushback on Taxilane F3/F5.

ii. During up to Code letter C aircraft taxiing to/from TWY D and TWY G via Taxilane F3/F5:

a) Stop Bars on Taxilane F5 and F3 will be switched off.

b) The taxilane centre line lights of Taxilane F5 and F3 from TWY D and TWY G and Taxilane F2 will be switched on automatically.

c) Stop Bars on Taxilane F4 will be switched on automatically.

d) The taxilane centre line lights of Taxilane F4 will be switched off automatically.

e) *The stand lead-in lights of Code C aircraft stands will be switched on automatically.

f) ATC to ensure switching off Stop Bar on Taxilane F5/F3 before permitting Code C Aircraft to cross RWY 09/27 from TWY A2, as there is no IHP at TWY D3.

g) No aircraft shall taxi on Taxilane F4.

2.2 PROCEDURES FOR APRON II

APRON-II

Arrival Procedures

Aircraft Stands	Procedure
201-206	The aircraft will taxi in via taxiway N3/N4/N onto respective stand.
207-211 and 212-218	The aircraft will taxi in via taxi-lane N1 onto respective stand.
220-231	The aircraft will taxi in via taxi-lane N8 onto respective stand.
232-246	The aircraft will taxi in via taxiway N onto respective stand.

Departure Procedure

Aircraft Stands	RWY in use 09/27/10/28/11R/29L/11L/29R
209, 210, 211 and 212 to 215	The aircraft shall be pushed back onto TWY N1 facing north and to be towed abeam stand 210 and follow further instructions from ATC.
206, 207, 208 and 216 to 218	The aircraft shall be pushed back onto TWY N1 facing north and to be towed abeam stand 207 and follow further instructions from ATC. (Aircraft taxing towards east on TWY N shall hold at IHP on TWY N-N4 junction and aircraft taxing towards west on TWY N shall hold at IHP on TWY LINK 39/N1/ N junction while aircraft is pushing back from stands 206 Simultaneous pushback from stands 206 and 232, 233, 234 not allowed).

202, 203, 204 and 205	The aircraft shall be pushed back onto TWY N3 facing north-east and to be towed abeam stand 203 and follow further instructions from ATC. (Aircraft taxing towards east on TWY N shall hold at IHP on TWY N-N4 junction and aircraft taxing towards WEST on TWY N shall hold at IHP on TWY LINK 39/N1/N Junction while aircraft is pushing back from stands 205. Simultaneous pushbacks from stands 205 and 232 to 236 not allowed. Also simultaneous pushback from stands 204 and 235, 234 not allowed.)	
201	The aircraft shall be pushed back onto TWY N4 facing South-east and to be towed abeam stand 203 and follow further instructions from ATC.	
232 to 246	The aircraft shall be pushed back onto Taxiway N facing East or West as per the RWY in use and follow further instructions from ATC. Simultaneous pushback from stands A12, A12R, A14, A14L, A14R and 243 to 246 not allowed.	
	Departure via TWY LINK 39	**Departure via TWY LINK 34**
220 to 223 (Block 1)	The aircraft shall be pushed back onto taxi-lane N8 facing West and towed abeam stand 223 and follow further instructions from ATC	The aircraft shall be pushed back onto taxi-lane N8 facing East and towed abeam stand 220 and follow further instructions from ATC
224 to 227 (Block 2)	The aircraft shall be pushed back onto taxi-lane N8 facing West and towed abeam stand 227 and follow further instructions from ATC	The aircraft shall be pushed back onto taxi-lane N8 facing East and towed abeam stand 224 and follow further instructions from ATC
228 to 231 (Block 3)	The aircraft shall be pushed back onto taxi-lane N8 facing West and towed abeam stand 231 and follow further instructions from ATC	The aircraft shall be pushed back onto taxi-lane N8 facing East and towed abeam stand 228 and follow further instructions from ATC

Note:

i. On stands 209, 210, 211 and 212 to 215 (Block 1), only one pushback allowed at a time.

ii. On stands 206, 207, 208 and 216 to 218 (Block 2), only one pushback allowed at a time

iii. On stands 202, 203, 204, 205 and 201 (Block 3), only one pushback allowed at a time.

iv. On stands 211 to 206, 212 to 218 and 232 to 246, pushback clearance is to be separated by three stands.

v. On stands 220-223 (Block-1), 224-227 (Block-2) and 228-231 (Block-3), only one pushback allowed at a time.

vi. On stands 220-231, pushback clearance is to be separated by three stands.

vii. Aircraft taxiing on TWY LINK 34/LINK 39 on to TWY N, shall hold at Intermediate Holding Position on TWY LINK 34/ LINK 39 short of taxi lane 'N8', when an aircraft is pushing back from stands 220 and 231 respectively.

viii. Aircraft taxiing on TWY N on to TWY LINK 34/LINK 39, shall hold at Intermediate Holding Position on TWY N short of TWY LINK 34/LINK 39, during an aircraft is pushing back from stands 220 and 231, respectively.

ix. Aircraft taxiing on N8 shall hold at Intermediate Holding Position on taxi-lane N8, short of TWY LINK 39/LINK 34, when an aircraft is taxiing on TWY LINK 39/LINK 34.

x. Visual Docking Guidance System not available to Stands from 203-207 and 212-246.

xi. Aircraft Stand Maneuvering Guidance Lights available at all stands from 201-211 and 232-244.

xii. Refueling is facilitated with fuel browser at stands 203 to 207,211 to 231,233to 237 and 241 to 242.

xiii. Fuel hydrant facility is available at all stands 201,202,208 to 210,232,238,240,243 to 246.

xiv. *Aircraft stands 212 to 218 are restricted for aircraft with fuselage length up to 37.6m

xv. Engine power more than idle thrust is not permitted during taxiing in, pushback to/from aircraft stands 212-218

xvi. *Aircraft Stands 201 and 202 are suitable up to B747-300 type of Aircraft i.e. up to wingspan 59.64m and length up to 70.66m.

xvii. #Aircraft stand 203 to 206 are restricted for aircraft with fuselage length up to 42.11m

xviii. **Aircraft stand 207 to 211 are restricted for aircraft with fuselage length up to 37.6m

xix. Engine power more than idle thrust is not permitted during taxiing in, pushback to/from aircraft stands 207-211.

2.3 PROCEDURES FOR CARGO APRON

Cargo Apron		
Arrival Procedures		
Aircraft Stands	**Procedure**	
252-265	i.The aircraft up to Code E shall taxi in via TWYLINK 39/LINK 34/LINK 33,TWY N/ Taxilane N and onto respective stand. ii.Code F Aircraft (restricted up to max wingspan 73.30m) shall taxi in via TWY LINK 33 / Taxi lane N and onto respective stand. iii. Code F Aircraft (wingspan greater than 73.30m) shall taxi in via TWY LINK 33.	
Departure Procedures		
Aircraft Stands	**RWY in use 09/27/10/28/11R/29L/11L/29R**	
	Departure via TWY LINK 34	**Departure via TWY LINK 33**
Block-1 252, 253, 260, 261 and 262	The aircraft shall pushback onto taxilane N facing West, tow up to tug disconnect point CA3 and follow further ATC instructions. Only one pushback is allowed from these stands at a time.	The aircraft shall pushback onto taxilane N facing East, tow up to tug disconnect point CA1 and follow further ATC instructions. Only one pushback is allowed from these stands at a time.

Block-2 254, 255, 256, 257, 263, 264 and 265	The aircraft shall pushback onto taxilane N facing West and tow up to tug disconnect pointCA4, follow further ATC instructions.Only one pushback is allowed from these stands at a time	The aircraft shall pushback onto taxilane N facing East, tow up to tug disconnect point CA2 and follow further ATC instructions. Only one pushback is allowed from these stands at a time.

Note:

i. Code F Aircraft (restricted up to max wingspan 73.30m) shall taxi in/out to/from Cargo apron via TWY LINK 33 or TXL N only, whereas Code F Aircraft (wingspan greater than 73.30m) shall taxi.

ii. Simultaneous pushback from above mentioned block-1 and 2 of aircraft stands are allowed except that only one push back is permitted at a time from stands 253, 254, 262 and 263.

iii. During pushback from stand 257 facing east, the aircraft taxing on TWY N facing east and on TWY LINK 34 facing south shall hold short of TWY N and LINK 34 junction on respective IHP..

iv. Tug Disconnect Points (TDP):

a. CA1: Behind stands 252

b. CA2: Behind stands 264 and 255

c. CA3: Behind stands 253

d. CA4: Behind stands 256

v. CA1 and CA2 will be used for pushback facing east and CA3 and CA4 will be used for pushback facing west.

vi. All stands are power-in push back.

vii. *Aircraft stands 252-257 and 260 are suitable for aircraft with wingspan upto 68.4m.

viii. Fuel hydrant facility is planned at al stands in cargo apron for re-fuelling of aircraft.

ix. Fuel hydrant facility is available at stans 260 to 265.

x. Aircraft Stand Maneuvering Guidance Lights(ASMGL), CAT III lighting available at all stands.

xi. Visual Docking Guidance Systems are not available at all stands in Cargo apron.

xii. Engine power more than idle thrust is not permitted during pushback and taxiing in the Apron.

2.4 PROCEDURES FOR GENERAL AVIATION APRON

GENERAL AVIATION APRON

Arrival Procedures

Aircraft Stands	Procedure
901 - 911	The aircraft shall taxi in via TWY LINK 13 to respective stand.
912 - 920	The aircraft shall tow in via TWY LINK 13 to respective stand.
921 - 928	The aircraft shall tow in via taxi lane LINK 14, LINK 15 to respective stand.
929 - 937	The aircraft shall tow in via taxilane LINK 14, LINK 15 to respective stand.
938 - 947	The aircraft shall tow in via TWY LINK 16 to respective stand
948 - 956	The aircraft shall taxi in via TWY LINK 16 to respective stand.

Note:

AOCC will allocate only power- in stands (901-911 and 948-956) for all incoming aircraft. After the passenger and crew de-boarding, aircraft will be towed to central parking stands (912-947).

Departure Procedures

Aircraft Stands	RWY in use 09/27/10/28/11R/29L/11L/29R

901 - 911	The aircraft shall be pushed back onto taxiway LINK 13 facing South and follow further instructions from ATC
912 - 920	The aircraft shall be pushed back onto taxiway LINK 13 facing South and follow further instructions from ATC
921 - 928	The aircraft shall be pushed back onto taxilane LINK 15 facing North and follow further instructions from ATC
929 - 937	The aircraft shall be pushed back onto taxilane LINK 15 facing North and follow further instructions from ATC
938 - 947	The aircraft shall be pushed back onto taxiway LINK 16 facing South and follow further instructions from ATC
948 - 956	The aircraft shall be pushed back onto taxiway LINK 16 facing South and follow further instructions from ATC

Note:

i. Stands 901-911 and 948-956 are power-in-push-back.

ii. Stands 912-947 are tow in-push back.

iii. Re-fuelling of aircraft is done with fuel bowser.

iv. All arrival and departure procedure will be assisted by Marshaller and wing-walkers.

v. Aircraft Stand Maneuvering Guidance Lights (ASMGL) not available.

vi. Visual Docking Guidance System not available.

vii. High mast lights installed in the apron to provide lux level of 20 to enable night operations.

viii. Apron elevation is 745 feet.

ix. No Aeronautical Ground Lights are available on these taxiways/taxilanes(LINK 13, LINK 14, LINK 15 and Portion of LINK 16 between LINK 14 and TWY C).

x. Retro reflective edge markers available on Taxiways LINK 16 between TWY C and GA Apron and LINK 13 .

xi. Helicopter start-up and switch-off location provided as HELI-1 and HELI-2 on TWY LINK 13 and TWY LINK 16 respectively at north of IHP on respective taxiways.

xii. All arriving helicopters shall switch off their engines at HELI-1 or HELI-2 and further shall tow to allocated stand.

xiii. All departing helicopters shall pushback on respective taxi lanes and shall tow up to HELI-1 or HELI-2 and further follow ATC instructions.

xiv. ACFT pushing back from stands 912C, 911C, 909C and 907C shall be pulled forward abeam stand 907 for startup and then further follow atc instructions.

2.5 PROCEDURES FOR T3 APRON

2.5.1 PROCEDURES FOR APRON 31

APRON 31

Arrival Procedures

Aircraft Stands	Procedure
A06 TO A14 and R10 to R12	The aircraft will taxi in via Taxilane N5 onto respective stand.

Departure Procedures

Aircraft Stands	RWY in use 09/27/10/28/11R/29L/11L/29R
A08 TO A12 and R10 and R11	The aircraft shall be pushed back onto taxilane N5 facing North West and to be towed abeam respective stand, follow further instructions from ATC
A06 and R12	The aircaft shall be pushed back onto taxilane N5 facing North West and to be towed abeam stand A08, follow further instructions from ATC.
A14, A14R and A14 L	The aircaft shall be pushed back onto taxilane N5 facing North West and to be towed abeam stand A12, follow further instructions from ATC

Note:

i. Pushback clearance is to be separated by at least one stand.

ii. Simultaneous aircraft pushback from opposite stands is not permitted

iii.Only one aircraft is permitted to push back from stands A12, A12R, A14, A14L, A14R and stands from 243 to 246 at any time.

2.5.2 PROCEDURES FOR APRON 32:

APRON 32

Departure Procedures

Aircraft Stands	RWY in use 09/27/10/28/11R/29L/11L/29R
A07 TO A13	The aircraft shall be pushed back onto taxi lane facing North West and to be towed up to tug disconnecting point A2 , Taxi via LINK 1, follow further instructions from ATC.
A01 TO 03	The aircraft shall be pushed back onto taxilane facing North and to be towed up to tug disconnecting point A3, Taxi via LINK 1, follow further instructions from ATC.
B15 TO B21	The aircraft shall be pushed back onto taxilane, facing North East and to be towed up to tug disconnecting point A4, Taxi via LINK 1, follow further instructions from ATC.
R01 TO R02	The aircraft shall be pushed back onto taxilane facing North West and to be towed up to tug disconnecting point A2, Taxi via LINK 1, follow further instructions from ATC.
R03 TO R04	The aircraft shall be pushed back onto taxilane, facing North East and to be towed up to tug disconnecting point A4, Taxi via LINK 1, follow further instructions from ATC.

Note:

i. PCN Value of aprons 31 to 35 is revised to 110/R/C/W/T

ii. **Location of TDPs (Tug Disconnect Points)**

A2: BTN stands A09 and A1 B3: Behind stand B17R

A3: Behind stand A03 B4: Behind stand A01

A4: Behind stand B15 B5: Behind stand A07

iii. **Push-Back from B15:**

•To TDP A4, stand A01 shall not push-back (A03 to push-back to A3)

•To TDP B4, stand A01 and A03 shall not push-back.

iv. Push-back from A01:

•To TDP A: A03, B15 and B17 shall not push-back (B15 and 17 can push-back to TDP A4 once aircraft on A01 has completed pushed back and pulled to A3)

•To TDP B4: B15, A03 and A07 shall not push-back (A07 can push back to TDP B5 once A01 has completed pushed back and pulled to B4)

v. Push-back from A03:

•To TDP A3: A01, B15 may not push-back (B15 may push-back to A4 once aircraft from A03 has completed pushed back and pulled to A3)

•To TDP B4: B15, A01, A07 and A09 may not push-back (A07 and A09 may push-back to B5 once A03 has completed pushed back and pulled to B4)

vi. Push-back from A07:

•To TDP A2: A01, A03 and A09 shall not pushback (A01 and A03 can push-back to TDP A3 once aircraft on A07 has completed pushed back and pulled to A2)

•To TDP B: A03 and A09 shall not push-back

2.5.3 PROCEDURES FOR APRON 33:

APRON 33

Departure Procedures	
Aircraft Stands	**RWY in use 09/27/10/28/11R/29L/11L/29R**
B26 TO B22 and B20L	The aircraft shall be pushed back onto taxi lane facing South West and to be towed abeam respective stand, follow further instructions from ATC
B20	The aircraft shall be pushed back onto taxi lane facing South West and to be towed abeam stand B22, follow further instructions from ATC
B20R and B18	The aircraft shall be pushed back onto taxi lane facing Sout West and to be towed abeam stand B20, follow further instructions from ATC
C36 TO C32,C30R and C30L	The aircraft shall be pushed back onto taxi lane facing South West and to be towed abeam respective stand, follow further instructions from ATC
C30	The aircraft shall be pushed back onto taxi lane facing South West and to be towed abeam stand C32, follow further instructions from ATC
C28L and C28R	The aircraft shall be pushed back onto taxi lane facing Sout West and to be towed abeam stand C30, follow further instructions from ATC
C28	The aircraft shall be pushed back onto taxi lane facing South West and to be towed abeam stand C32, follow further instructions from ATC

Note:

i. Pushback clearance is to be separated by at least one stand.

ii. Simultaneous pushback of Code E aircraft from opposite stands in Apron 33A and Apron 33B is not permitted. However, two

narrow body aircraft from opposite stands can be pushed back simultaneously on Apron 33A and Apron 33B.

iii. Simultaneous push back from stands B18 and C28 or C28L is not permitted.

iv. For aircraft stand B18, pushback limit line is provided for an aircraft to pushback and further pull ahead abeam stand B20.

v. For aircraft stand C28R, pushback guidance line is provided for an aircraft to pushback back and further pull ahead abeam stand C30.

vi.Engine power more than idle thrust is not permitted during pushback and taxiing in the Apron.

2.5.4 PROCEDURES FOR APRON 34:

APRON 34		
Departure Procedures		
Aircraft Stands	**RWY in use 09/27/10/28/11R/29L/11L/29R**	
	RWY IN USE27/28/29L/29R	**RWY IN USE 09/10/11L/11R**
C27 to C33	The aircraft shall be pushed back onto taxilane facing North East and to be towed up to tug disconnecting point D5; Taxi via LINK 8, follow further instructions from ATC	The aircraft shall be pushed back onto taxilane facing South West and to be towed up to tug disconnecting point C3; Taxi via LINK 7, follow further instructions from ATC
D37 TO D41	The aircraft shall be pushed back onto taxilane facing East and to be towed up to tug disconnecting point D4, Taxi via LINK 8, follow further instructions from ATC	The aircraft shall be pushed back onto taxilane facing West and to be towed up to tug disconnecting point C4, Taxi via LINK 7, follow further instructions from ATC
D43 TO D55	The aircraft shall be pushed back onto taxilane facing South East and to be towed up to tug disconnecting point D3, Taxi via LINK 8, follow further instructions from ATC.	The aircraft shall be pushed back onto taxilane facing North West and to be towed up to tug disconnecting point C5, Taxi via LINK 7, follow further instructions from ATC.
R05 TO R06	The aircraft shall be pushed back onto taxilane facing North East and to be towed up to tug disconnecting point D5; Taxi via LINK 8, follow further instructions from ATC	The aircraft shall be pushed back onto taxilane facing South West and to be towed up to tug disconnecting point C3; Taxi via LINK 7, follow further instructions from ATC

R07 TO R08	The aircraft shall be pushed back onto taxilane facing East and to be towed up to tug disconnecting point D4, Taxi via LINK 8, follow further instructions from ATC	The aircraft shall be pushed back onto taxilane facing West and to be towed up to tug disconnecting point C4, Taxi via LINK 7, follow further instructions from ATC
R09	The aircraft shall be pushed back onto taxilane facing South East and to be towed up to tug disconnecting point D3, Taxi via LINK 8, follow further instructions from ATC	The aircraft shall be pushed back onto taxilane facing North West and to be towed up to tug disconnecting point C5, Taxi via LINK 7, follow further instructions from ATC

Note:

i.PCN Value of aprons 31 to 35 is revised to 110/R/C/W/T

ii.**Location of TDPs (Tug Disconnect Points)**

C3: BTN stands C29L D3: Behind stand D51
C4: Behind stand D37 D4: Behind stand D41
C5: Behind stand D45 D5: Behind stand C27L

iii.Push-back from C27:

- To TDP D5: C29 and D37 shall not pushback (D39 can push back to D4 once aircraft on C27 has completed pushed back and pulled to D5)
- To TDP C: D37, D39 shall not push-back (D37 or D39 can push-back to C4 once C27 has completed pushed back and pulled to C3)

iv.Push-back from D37:

- To TDP D: C27, C29 and D39 shall not pushback (D39 can push-back to D4 once aircraft on C27 has completed pushed back and pulled to D5)
- To TDP C3: D37, D39 shall not push back (D37 or D39 can push back to C4 once C27 has completed pushed back and pulled to C3).

v.Push-back from D39:

- To TDP D4: D41, D37 and C27 shall not pushback (C27 can push back to D5 once aircraft on D39 has completed pushed back and pulled to D4)
- To TDP C4: D43, D41, D37 and C27 shall not pushback (D41 and D43 can push back to C5 once D39 has completed pushed back and pulled to C4)

vi.Push-back from D41:

- To TDP D4: D43, D39 shall not push back (D37 can push back to D5 once aircraft on D41 has completed pushed back and pulled to D4)
- To TDP C4: D43, D45, D39 and D37 shall not pushback (D43/D45 can push back to C5 once D41 has completed pushed back and pulled to C4)

2.5.5 PROCEDURES FOR APRON 35:

APRON 35	
Departure Procedures	
Aircraft Stands	**RWY in use 09/27/10/28/11R/29L/11L/29R**
D46	The aircraft shall be pushed back onto taxilane facing south east and to be towed abeam stand D48, follow further instructions from ATC
D48 TO D52	The aircraft shall be pushed back onto taxilane facing South East and to be towed abeam respective stand, follow further instructions from ATC
D54 TO D62	The aircraft shall be pushed back onto taxilane facing South East and to be towed abeam respective stand, follow further instructions from ATC
E64 TO E70	The aircraft shall be pushed back onto taxilane facing south east and to be towed abeam stand E70,follow furthe instructions from ATC.
E72 TO E84	The aircraft shall be pushed back onto taxilane facing south east and to be towed abeam respective stand ,follow furthe instructions from ATC

Note:

i. Pushback clearance is to be separated by at least one stand.

ii. Only one aircraft at a time is permitted to pushback from stands D46 to D52.

iii. Only one aircraft at a time is permitted to pushback from stands E64 to E 70.

iv. Engine power more than idle thrust is not permitted during pushback and taxiing from aircraft stands D46 to D50 and E64 to E84 in the Apron.

v. When aircraft on stand D46 to D56 will push back, no push back is allowed from E64 to E68.

vi. The aircraft taxiing in/out to/from on stands D46 to D62 shall use taxilane LINK 9

vii. Aircraft taxiing in/out stands E68 to E84 shall use taxilane LINK 10

viii. Arriving aircraft to stands E64 to E66 shall use LINK 9.

ix. Departing aircraft from stand E64 to E66 shall use LINK 10

2.5.6 LIMITATIONS FOR T-3 APRON

2.5.6.1Push-back of both Wide-body and Narrow-body Aircraft from Bays A14, A12, A13, A11, B19, B21, C33, C31, D53 and D55 onto Aprons infringe the taxi clearance strip for **N** and C taxiways respectively with either Tail or Wingtip. Arriving aircraft will taxi on outside Taxiway A and these aircraft may be required to hold short of adjoining taxiways such as N5, LINK 1, LINK 2, LINK 7 and LINK 8 on A .

Departing aircraft taxiing N and C may be required to hold short of the adjoining taxiways such as N5, LINK 1, LINK 2, LINK 7 and LINK 8 on C respectively until tail / wing-tip of push back aircraft has cleared the intersections. Additional CCTV feeds to monitors in the tower will assist SMC in ensuring that affected taxiways are clear of obstructions prior to instructing holding aircraft to proceed.

2.5.6.2 For a Wide-body Code D/E/F aircraft pushing back from an aircraft bay in Apron 32 and Apron 34 , there should always be 2 Code E/F stands (respectively) separation from another aircraft pushing back from adjacent bays. AOCC will not allocate an adjacent aircraft bay to aircraft requiring push-back within 20 minutes of an another aircraft push-back within 2 parking stands.

2.5.6.3 In case of APU failure, aircraft may be permitted to start one/both starboard side engines on idle power, at the parking stand itself with the aerobridge attached.

Start-up of engines on idle power during push back is permitted. Airline /GHAs are responsible to take all ground precautions to ensure apron safety before starting the engine and push back manoeuvre.

2.5.6.4 In case of corner stands A06, A13, B21, B18, C28, C33, D55 and D46 in T3 apron, aircraft can start 01 engine at idle power only while being pulled forward to the respective stand. No engine start up permitted during push back.

2.5.6.5 No Cross-Bleed start by aircraft is permitted during push back. It is permissible only after the towing of the aircraft (push back and pull forward) is complete. In case pilot is required to give more than idle power due to cross bled start up requirement after pushack or for any other operational reasons,pilot is required to inform ATC before start-up. All precautions are to be taken by airline/GHAs.

2.5.6.6 During LVP, start up with idle power during push back is not permitted for visibility less than 100 mts.

2.5.6.7 With respect to Corner Parking Stands, the following limitations for push-back instructions are to be observed by ATCOs when Code E/F aircraft is pushing back from the following stands:

a. ACFT taxiing on TWY C shall hold at intermediate holding point:

i. Short of TWY LINK 8 when an ACFT is taxiing in to stand D53 and D55.

ii. Short of TWY LINK 7 when an ACFT is taxiing in to stand C31, C31L and C33.

b. ACFT taxiing on TWY C shall hold at intermediate holding point:

i. Short of TWY LINK 1 when an ACFT is taxiing in to stand A13.

ii. Short of TWY LINK 2 when an ACFT is taxiing in to stand B21.

3. START-UP PROCEDURE IN A-320 HANGER:

3.1 Aircraft/ Helicopter shall tow up to short of TWY C on TWY LINK 32, facing north then further follow ATC instruction.

4. DETAILS OF STANDS 801, 802, 803

4.1 STAND DETAILS:

S.no	Aircraft Stand No.	Co-ordinates	Surface	PCN	Elevation	Suitability Aircraft	Location

1	801	283417.55N 0770629.59E	Asphalt	38/F/B/W/T	740 FT	Up to Code Letter E	At TWY A2, facing North-West
2	802	283243.53N 0770610.68E	Asphalt	93/F/C/W/T	766 FT	Up to Code Letter F	At TWY C between TWY LINK 16 and TWY LINK 19, facing East
3	803	283311.12N 0770401.54E	Asphalt	73/F/B/W/T	714 FT	Up to Code Letter F	West of TWY R7 (between TWY Q and TWY R), facing West

Note:

I. All the stands are remote stands and power-in push back.

II. Re-fueling can be done with fuel bowser.

III. During Aircraft Parking on stand 802 under unlawful interference following taxiways not available for operations.

a. Portion of TWY C, east of TWY LINK 16 up to TWY P6.

b. TWY LINK 19

c. Portion of TWY A east of TWY LINK 16 up to TWY P6.

d. TWYs P3, P4, P5.

IV. During Aircraft parking on stand 803 under Bomb Threat following taxiways not available for operations.

a. TWY R7

b. Portion of TWY Q between TWY R6 and TWY R7

c. Portion of TWY R between TWY R6 and TWY R7

V. During Aircraft parking on stand 801 under unlawful interference following restrictions shall apply.

a. RWY 09/27 will not be available for arrivals/ departures.

b. Portion of RWY 09/27 from D9 to D4 will be available for taxiing of aircraft.

c. Crossings from TWY D1 or TWY D2 to the technical area and vice-aversa via RWY 27 dumbbell will be available.

5. DETAILS OF ENGINE RUN UP AT HIGH POWER

S.no	Aircraft Stand No.	Coordinates	Surface	PCN	Suitability Aircraft	Loaction
1	800	283405.55N 0770530.74E	Concrete	91/R/D/W/T	Up to Code Letter C	Parallel to and south of TWY D, at a distance of 77.5m from TWY D centre line, west of TWY D4, facing west

2	803	283310.74N 0770405.14E	Asphalt	73/F/B/W/T	Up to Code Letter F	West of TWY R7 (between TWY Q and TWY R), facing east

Note:

i. Aircraft from stand 800 shall Push Back on TWY D4 facing North or South.

ii. During RWY 09/27 in use for Arrival and Departure High Power Engine Run restricted on stand 800.

iii. Towing of Aircraft To/From stand 800 will be carried out under Follow Me supervision.

VIDP AD 2.21 NOISE ABATEMENT PROCEDURES

I.CONTINUOUS DESCENT ARRIVAL (CDA) PROCEDURES

1.In order to mitigate the aircraft noise within the areas located below the flight path in the vicinity of IGI airport, the concept of continuous descent approach (CDA) is implemented. All the turbojet aircraft landing at IGI Airport between 1630 UTC and 0030 UTC may participate in CDA subject to clearance from ATC.

2.CDA will be operated when radar and ILS facilities are available.

3.Operation of CDA should not impact the airport capacity adversely.

4.Aircraft shall normally be cleared via a STAR. Since, the STARs for IGI Airport are open ended, aircraft may expect radar vectors for turn on base leg and final approach. Profile/crossing restrictions are well depicted in the STARs. Aircraft shall be provided information regarding the distance to touchdown from the beginning of CDA and subsequently any revision thereafter.

5.For track shortening or lengthening for sequencing purposes, the aircraft may be radar vectored off the STAR and subsequently, be re-cleared to a point along the STAR or vectored to intercept the final approach track.

6.When radar vectors are issued, ATC shall provide an estimate of distance to touch down.

7.Pilots participating in CDA should request CDA within 10 minutes of top of descent (TOD) and provide the estimates of VOR (SSB), SAPLO, AKBAN and VOR (SAMPLA) as the case may be. ATC may issue clearance for CDA depending upon the traffic conditions.

8.When following STARs, ATC may add further altitude restrictions, in addition to the promulgated restrictions, if necessary for the purpose of traffic separation.

9.Radar controller will ensure that in case of STARs merging, adequate radar separation exists between the successive aircraft at the conflict point.

10.It is preferable if CDA is commenced from top of descent. If it is not feasible due to ATC constraints, it may be commenced from any intermediate level preferably before crossing FL100. Once CDA is commenced there will be continuous descent to 3600 feet AMSL before intercepting the glide path.

11.Once CDA is cleared by ATC, pilot should report the beginning of the descent to ATC.

12.Radar controller shall provide 20 NM distance to touch down (DTD) information when the speed shall be reduced to 210KT IAS maximum

13.Speed shall be reduced to 180 KT IAS maximum when 10NM from touchdown.

14.During CDA operations Glide path interception and commencement of final approach shall take place at 3600 feet.

15.ATC may suspend or cancel the CDA due to traffic conditions even after CDA is cleared. Alternate instructions will be issued when CDA is suspended or cancelled.

16.All aircraft have to follow the noise abatement procedure during the final approach.

17.Guidance material for CDA operations is available at DGCA website (dgca.nic.in) as Air Navigation Services (ANS) Circular NO.01/2010.

II.RUNWAY USE PLAN FOR NOISE ABATEMENT

1.The Runway use plan for noise abatement is as follows.

1.1	**Schedule for dates 1st ,8th ,17th and 23rd of each month.**			
Time Slot (IST)	**RWY For Westerly flow of traffic**		**RWY For Easterly flow of traffic**	
	Arrivals	**Departures**	**Arrivals**	**Departures**
0000-0100	RWY 27/28	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0101-0600	RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0601– 2359	RWY 27/28 and RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
1.2	**Schedule for dates 9th, 16th , 24th and 30th of each month**			
Time Slot (IST)	**RWY For Westerly flow of traffic**		**RWY For Easterly flow of traffic**	
	Arrivals	**Departures**	**Arrivals**	**Departures**
0000-0100	RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0101-0600	RWY 27/28	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L

0601– 2359	RWY 27/28 and RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
1.3	**Schedule for dates from 2nd to 7th and 18th to 22nd of each month**			
Time Slot (IST)	**RWY For Westerly flow of traffic**		**RWY For Easterly flow of traffic**	
	Arrivals	**Departures**	**Arrivals**	**Departures**
0000-0300	RWY 27/28	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0301-0600	RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0601– 2359	RWY 27/28 and RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
1.4	**Schedule for dates from 10th to 15th and 25th to 29th and 31st of each month**			
Time Slot (IST)	**RWY For Westerly flow of traffic**		**RWY For Easterly flow of traffic**	
	Arrivals	**Departures**	**Arrivals**	**Departures**
0000-0300	RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0301-0600	RWY 27/28	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L
0601– 2359	RWY 27/28 and RWY 29L/29R	RWY 27/28 and RWY 29L/29R	RWY 09/10 and RWY 11R/11L	RWY 09/10 and RWY 11R/11L

2. **Benefits:**

i. Distribution of aircraft noise to all the areas located below the flight path as far as possible without impacting the maintenance work.

ii. The noise level will be distributed to all the localities as the arrivals and departures are distributed to both the runways.

iii. During the night time (0000 to 0600 Hrs IST), the residents will have not have discomfort from the aircraft noise during the specified time when a particular runway is used only for departures on the rotation basis.

3.The plan will not be applicable when one of the runways is either under maintenance or not available for operations due to any other reasons. In such cases, ATC may plan the available runway in order to maintain safe and efficient flow of traffic.

4.Every effort will be made to follow the published runway use plan. However, ATC may implement the alternate plan, as and when, traffic situation warrants in the interest to safety, regularity and efficiency of the aircraft movements to reduce the congestion and delays.

5.This is applicable for use of two runways at a time. As and when traffic demands necessitate the use of all three runways at a time, separate procedures shall be formulated.

6.Consistent with safety of aircraft operations and in consideration of high intensity runway operations, pilots should minimize the use of, reverse thrust after landing to reduce disturbance in areas adjacent to the aerodrome.

III.OPERATIONS OF CHAPTER-2 AIRCRAFT

Between 1630-0030 UTC daily, operations of chapter-2 aircraft as contained in annex-16 vol-1 are not permitted to operate at IGI Airport Delhi for noise abatement. However, ministry of defense (Govt. of India) chapter-2 aircrafts is allowed to operate on Runway 27/09 only.

IV. AIRCRAFT NOISE LIMIT AS Lmax (MAXIMUM SOUND LEVEL) in dB(A)

Aircraft noise level limits in Lmax dB(A) for Delhi Airport is as follow:

Lmax	Limits in dB(A) at Noise Monitoring Terminals	
	Day time (0600 to 2200) (IST)	Night time (2200 to 0600) (IST)
	105	95
These Lmax values shall be adhered by airlines operating at Delhi Airport and to be monitored and communicated by Airport Operator to the Directorate General of Civil Aviation.		

VIDP AD 2.22 FLIGHT PROCEDURES

I.SURVEILLANCE RADAR APPROACH
1.Surveillance Radar Approach Procedures at IGI Airport, New Delhi

RWY	THR ELEV	Inbound Track	IF (Dist. From Touch Down)	Altitude over IF	FAF Dis. From touch down)	Altitude over FAF	MAPT Dist. From touch down	OCA (Straight - in)
	Ft	Deg	NM	Ft	NM	Ft	NM	Ft
28	777	284	11	2600	5.7	2600	2	1420
27	750	271	11	2600	5.8	2600	2	1390
10	719	104	11	2600	5.9	2600	2	1360
09	717	091	11	2600	5.9	2600	2	1360
29L	751	283	11	2600	5.7	2600	2	1400
11R	723	103	11	2600	5.8	2600	2	1370

2.Missed Approach procedure

i.**RWY 28**: Climb straight ahead to F070, crossing 5 DME DPN turn right on heading 345 DEG M to intercept R-316 (116.1 DPN) to join holding at SAMPLA VOR (117.0 SAM) at F070 or as instructed by ATC.

ii.**RWY 27**: Climb straight ahead to F070, crossing 5 DME DPN turn right on heading 345 DEG M to intercept R-316 (116.1 DPN) to join holding at SAMPLA VOR (117.0 SAM) at F070 or as instructed by ATC.

iii.**RWY 10:** Climb straight ahead to 2600 FT. Climbing turn right on heading 120 DEG(M) to intercept R-107 (116.1 DPN) to join holding at SSB VOR (112.4 SSB) at FL 70 or as instructed by ATC.

iv.**RWY29L**: Climb straight ahead to 2600Ft then turn left to establish R-265 (114.6 DIG. After crossing 10D (DIG) Climb to FL 70 and turn left to proceed to VOR (116.8 CHI) VIA R-045 (CHI) to join holding procedure or as instructed by ATC.

v.**RWY11R**: Climb straight ahead to 2600Ft then turn right to establish R-125 (114.6 DIG). After crossing 16D (DIG) Climb to FL 70 and turn left to proceed to VOR (112.4 SSB) VIA R-270 (SSB) to join holding procedure or as instructed by ATC.

vi. **RWY 09**: Climb straight ahead to 2600 FT. Climbing turn right on heading 130 DEG(M) to intercept R-107 (116.1 DPN) to join holding at SSB VOR (112.4 SSB) at FL 65 or as instructed by ATC.

3.Distance from touch down/altitude information

RWY	Distance/ Altitude Information						Descent Gradient
28	Dist.(NM)	5.7	5	4	3	2	5.27% (3 Deg)
	Altitude (Ft)	2600	2380	2060	1740	1420	
27	Dist.(NM)	5.8	5	4	3	2	5.26% (3 Deg)
	Altitude(Ft)	2600	2350	2030	1710	1390	
10	Dist.(NM)	5.9	5	4	3	2	5.25% (3 Deg)
	Altitude(Ft)	2600	2320	2000	1680	1360	
09	Dist.(NM)	5.9	5	4	3	2	5.25% (3 Deg)
	Altitude(Ft)	2600	2320	2000	1680	1360	
29L	Dist.(NM)	5.7	5	4	3	2	5.3% (3 Deg)
	Altitude(Ft)	2600	2400	2000	1700	1400	
11R	Dist.(NM)	5.8	5	4	3	2	5.3% (3 Deg)
	Altitude(Ft)	2600	2400	2000	1700	1370	

4. OCA for Visual Circling

CAT A/B:1470 FT
CAT C/D:1570 FT

5. Minimum Radar Vectoring Altitude:

2600 FT within 25 NM in all sectors.

6. Holding procedures:

a)SAMPLA VOR (117.0 SAM). One-minute left hand pattern in bound track 136º (M). Minimum holding level F70.

b)SAKRAS VOR (117.2 SKA) One-minute right hand pattern inbound track 006º (M). Minimum holding level F70.

c)SIKANDARABAD VOR (112.4 SSB) One-minute right hand pattern inbound track 288º (M). Minimum holding level F70. Maximum holding level F140.

d)CHHILERKI VOR (116.8 CHI) One-minute left hand pattern in bound track 060deg (M). Minimum holding level F70. (For SRA from RWY29L/11R)

7.Radio Communication Failure Procedure

i.In case communication failure takes place prior to establishing on final approach track, maintain the last assigned level or F70 whichever is higher and proceed to SKA VOR (117.2) via the shortest route to join holding procedure as specified at Para 6.

ii.In case radio communication failure takes place after establishing the final approach track, aircraft may continue the approach and land if visual or climb straight ahead to 2600 ft then climbing turn left/right to join SKA VOR (117.2) holding procedure at F70 as specified at para 6.

iii.After joining the holding procedure carry out the instrument approach procedure for the RWY for which SRA was being provided.

8.Aerodrome Operating Minima

The aerodrome operating minima of surveillance radar approach procedure (RWY 29L and RWY 11R) IGI Airport, Delhi is amended as given below:

NORMAL MINIMA								
	CAT A		CAT B		CAT C		CAT D	
	VISIBILITY/RVR		VISIBILITY/RVR		VISIBILITY/RVR		VISIBILITY/RVR	
PROCEDURE	WITH ALS	W/O ALS	WITH ALS	W/O ALS	WITH ALS	W/O ALS	WITH ALS	W/O ALS
SRA PROCE-DURE RWY11R	1800	2600	1800	2600	3200	4000	3600	4400
SRA PROCE-DURE RWY 29L	1800	2600	1800	2600	3200	4000	3600	4400
RESTRICTED MINIMA								
	CAT A		CAT B		CAT C		CAT D	
	VISIBILITY/RVR		VISIBILITY/RVR		VISIBILITY/RVR		VISIBILITY/RVR	
PROCEDURE	WITH ALS	W/O ALS	WITH ALS	W/O ALS	WITH ALS	W/O ALS	WITH ALS	W/O ALS
SRA PROCE-DURE RWY11R	2200	3000	2200	3000	4000	4800	4400	5000

SRA PROCE-DURE RWY 29L	2200	3000	2200	3000	4000	4800	4400	5000

NOTE: If required by ATC the length of intermediate segment may be reduced to less than 5 NM.

II.RADIO COMMUNICATION FAILURE PROCEDURE
1.INTRODUCTION:

Radio communication failure procedures are described in Para 15.3 of ICAO PANS ATM DOC 4444, 15th edition 2007. Based on these provisions, following radio communication failure procedures are established, to standardize the actions to be taken by the pilot of arriving and departing aircraft at IGI airport.

2.GENERAL:

2.1.All Transponder equipped aircraft experiencing Radio Communication failure shall set transponder to Mode A/C code 7600 as soon as practicable.

(Note: This Requirement of Setting transponder to Mode A/C code 7600 in no way imposes any restriction on the pilot's decision to set transponder to Mode A/C code 7500 or 7700, whenever required).

2.2.Pilot shall not overfly VIP 89 (Prohibited area) situated 5.8 NM North East of Delhi Airport under any circumstances.

3.ASSIGNED RUNWAY AND ITS AVAILABILITY FOR RCF AIRCRAFT:

3.1.In case of arriving aircraft, when Runway for landing has already been advised to the aircraft by ATC, such runway shall be considered as assigned runway, except as given in para 3.3 below. In case arriving aircraft has not been advised any runway, Runway 28 shall be considered as assigned runway for such arrival. During the notified periods of maintenance/closure of Runway 28, Runway 29L shall be considered as assigned Runway.

3.2.In case of departures from Delhi returning on account of RCF, the departure runway of such aircraft shall be considered as assigned runway for landing, except as given in para 3.3 and para 3.9 below.

3.3.Runway 09 or 27 is not to be used by RCF aircraft except as under para 3.4 and 3.5 below. Runway 28, therefore, shall be treated as assigned Runway for aircraft to which Runway 27 had been assigned previously as per para 3.1 and departure from Runway 27 as per para 3.2 above. Similarly, Runway 10 shall be treated as assigned Runway for aircraft to which Runway 09 had been assigned previously as per para 3.1 and departure from Runway 09 as per para 3.2 above.

3.4.Notwithstanding anything contained in para 3.3 above, if Radio communication failure occurs after the final/interception turn, the aircraft may continue its approach to land on such Runway.

3.5.It is reiterated for clarity, aircraft experiencing RCF shall not make an approach for Runway 27 or Runway 09 unless final turn/interception heading has already been given to aircraft for Runway 27 or Runway 09 (see para 3.4).

3.6.Runway lights and Approach lights in 'SWITCHED ON' position shall indicate the availability of such Runway for aircraft experiencing RCF.

3.7.Irrespective of visibility/weather conditions, Runway and Approach lights in 'SWITCHED OFF' position shall indicate non- availability of such Runway for aircraft experiencing RCF. In such cases, alternate runway shall be made available for such aircraft. Runway 29L shall be alternate to Runway 28 and Runway 11R shall be alternate to Runway 10. Accordingly, Runway 28 shall be alternate to Runway 29L and Runway 10 shall be alternate to Runway 11R. Runway 11R shall be alternate to Runway 11L and Runway 29L shall be alternate to Runway 29R.

3.8.Except in case of assigned Runway 11L,in strong tail wind conditions for assigned Runway, aircraft experiencing RCF will carry out a missed approach on assigned runway and after following complete missed approach for such approach, aircraft will carry out published ILS/VOR DME ARC approach procedure for the runway which is in opposite direction to the assigned Runway. Runway 10 in case of Runway 28 and Runway 11R in case of Runway 29L and vice versa. RWY 11L

in case of Runway 29R. In case of assigned Runway 11L, the aircraft experiencing RCF shall carry out an approach for RWY 29L and not RWY 29R.

3.9 In case of departure from Runway 29R returning on account of RCF, the assigned Runway for such aircraft shall be Runway 29L. In case of non-availability of Runway Runway 29L,the assigned Runway shall be RWY 28.

Note: Runway 29R has RNP approach only.

4.PROCEDURE FOR ARRIVALS:

4.1.ARRIVING AIRCRAFT – STAR-ASSIGNED

When STAR has been assigned to arrival:

4.1.1Except when descend clearance has already been received from ATC, pilot shall not commence descend before 100 NM from 'DPN VOR'. Aircraft shall continue on assigned STAR following all level and speed restrictions applicable to STAR, as far as practicable. This allows ATC to resolve any possible traffic conflict.

4.1.2At the end of the STAR, descend to 2600 ft and take a convenient turn to intercept localizer or final approach track of the published procedure for the assigned runway.

4.2.ARRIVING AIRCRAFT – STAR NOT ASSIGNED

Aircraft to which a STAR has not been assigned by ATC, on experiencing radio communication failure, shall

4.2.1.Continue on ATS route, (Re-join ATS route if given heading or flying offset), maintaining/descending to cleared flight level or FL 70 whichever is higher. At 40 miles to 'DPN VOR', take a turn (avoiding VIP 89) to proceed direct to 'SKA' VOR. If higher, descend to FL 70 in 'SKA' hold.

4.2.2.If RCF takes place within 40 NM of 'DPN VOR', continue to 'DPN VOR' and at 10 miles to 'DPN VOR' take a turn (avoiding VIP 89) to proceed direct to 'SKA' VOR maintaining last assigned level or FL 70 whichever is higher. If below FL 70, climb and reach FL 70 before crossing 25 NM outbound from 'DPN VOR'. If higher, descend to FL 70 in 'SKA' hold.

4.2.3.Leave 'SKA VOR' at FL 70 to carry out published ILS/VOR DME ARC approach procedure for assigned runway.

4.3.ARRIVING AIRCRAFT BEING RADAR VECTORED

Aircraft being radar vectored for approach, on experiencing RCF, shall maintain last assigned level and heading for 3 minutes after detecting RCF or selecting MODE A/C 7600, whichever is later, and then take a convenient turn (Avoiding VIP 89) to proceed direct to 'SKA' climbing/maintaining last assigned level, or FL 70 whichever is higher.

If below FL 70, climb and reach FL 70 before crossing 25 NM outbound from 'DPN VOR'. If higher, descend to FL 70 in 'SKA' hold

4.3.1.Leave 'SKA' VOR at FL70 to carry out published ILS/VOR DME ARC approach procedure for assigned runway. For RNP approach Runway 29R,leave 'SKA' hold at FL70 to FS711 and carry out RNP approach procedurefor Runway 29R.

5.PROCEDURE FOR DEPARTURES:

5.1.DEPARTURE INTENDING TO CONTINUE TO DESTINATION

Any departing aircraft experiencing RCF and intending to continue to its filed plan destination shall:

5.1.1.Continue on assigned SID or heading climbing to or maintaining cleared level or FL70, whichever is higher.

5.1.2.Three minutes after setting Mode A/C code 7600 or reaching FL 70 or cleared Flight level (if higher than FL70) whichever is later:

i.If following 'SID', continue on SID to join ATS route and climb to filed Flight level and continue as per the filed flight plan.

ii.If following Radar heading, turn (avoiding VIP 89) to join ATS route by shortest route maintaining cleared flight level/FL 70 as per para 5.1.1. After joining ATS route, climb to filed Flight level and Continue as per the filed flight plan

5.2DEPARTURE INTENDING TO LAND BACK AT DELHI:

Any departing aircraft experiencing RCF after departure and intending to land back at IGI Airport shall

5.2.1Continue on assigned SID or heading climbing to or maintaining cleared level or FL70, whichever is higher.

5.2.2Three minutes after setting Mode A/C code 7600 or reaching FL70 or cleared Flight level (if higher than FL70) whichever is later, take a turn (avoiding VIP 89) to proceed direct to 'SKA' VOR.

5.2.3If higher, descend to FL70 in 'SKA' hold.

5.2.4If required, Jettison fuel while in 'SKA' hold, taking all necessary precautions.

5.2.5Leave 'SKA' VOR at FL70 to carry out published ILS/VOR DME ARC approach procedure for assigned runway.

NOTE :-

1.In Case Of Non-availability Of SKA VOR aircraft required to hold at SKA VOR may hold at following FIX/WAY POINT:

A. R186/43 D (116.1 DPN)
B. 275054N 0770030E

III.ARRIVAL, DEPARTURE PROCEDURE AND RUNWAY CAPACITY ENHANCEMENT MEASURES

The traffic has been growing at Delhi Airport at a faster rate which necessitates the optimum use of resources to meet our requirement of safe, efficient and expeditious handling of air traffic. Runway Occupancy Time has been one of the important factors affecting such requirement. The following procedures and important Aerodrome data are published (TORA/LDA from different entry/exit TWYs) which will facilitate the Airlines/Pilots in achieving minimum Runway Occupancy Time for common goal of enhancing runway capacity utilizing the existing available resources.

1. DELHI DEPARTURE PROCEDURE

1.1 Speed Restrictions:

1.1.1 All aircraft following RNAVSIDs shall comply with level and speed limitations as published in the procedures unless explicitly cancelled by ATC.

1.2 **To reduce RT congestion, flight crew is encouraged:**

1.2.1 NOT to request direct routings in Delhi TMA. ATC will provide direct routings as and when feasible subject to traffic conditions.

1.2.2 NOT to enter into unnecessary arguments on R/T. Communication on R/T must be restricted to necessary transmissions only, using standard phraseology. Pilots must adhere to ATC instructions unless they feel that the, safety is being jeopardized or they are unable to comply with the same due aircraft performance limitation or operational reasons. In such cases the pilot may ask for revised / alternate clearance / instructions.

1.3. Pre Departure Procedures:

1.3.1 The aircraft should be in a position to commence its taxi in not more than five minutes after the issue of pushback and start-up clearance, failing which the start-up clearance will be cancelled.

1.3.2 Taxiing aircraft should maintain a minimum taxiing speed of not less than 15 KT on the straight portion of taxiways and between 8-12Kts during turning manoeuvres.

1.3.3 Based on the aircraft type and its performance characteristics, ATC will issue taxiing instructions so as to depart from the nearest runway intersection from where adequate take-off run is available for departure. Pilots unable to accept departure from intersection may request ATC for alternate take-off position. Pilots requiring departure from the beginning of runway should make such request at the time of Pushback/Startup.

1.3.4 Pilot shall complete all mandatory pre-departure checks before entering the active runway for departure so that the aircraft is in a position to take-off immediately upon receipt of take-off clearance in one continuous movement.

1.3.5 When the aircraft is issued with take-off clearance after lining up on the runway it shall commence take-off roll immediately.

2. DELHI ARRIVAL PROCEDURES

2.1 **Speed Restrictions:**

2.1.1 All aircraft following RNAV STARs shall comply with speed limitations as published in the procedures.

2.1.2 Arriving aircraft at or below F290 to maintain speed 270 KT and thereafter follow the speed restrictions as published in STAR, unless otherwise superseded by ATC instructions.

2.1.3 All aircraft entering Delhi TMA, except aircraft navigating under conditions of RNAV STARs, shall follow IAS as per the following, unless otherwise instructed by ATC:

2.1.3.1 250 KT – 230 KT: 60 NM from DPN;

2.1.3.2 210 KT: from downwind leg to base leg;

2.1.3.3 190 KT: on base leg and closing heading to final approach;

2.1.3.4 180 KT: 20 NM to 10 NM from touchdown on final approach;

2.1.3.5 160 KT: 10NM to 5 NM from touchdown.

2.1.4 These speeds are applied for ATC separation purposes and are mandatory.

2.1.5 All speed restrictions are to be flown as accurately as possible. Aircraft unable to comply with these speeds must inform ATC and state what speeds can be used. Pilots should also advise ATC if circumstances necessitate a change of speed due to aircraft performance limitation.

2.2. To reduce RT congestion, flight crew is encouraged:

2.2.1 NOT to request direct routings in Delhi TMA. ATC will provide direct routings as and when feasible subject to traffic conditions.

2.2.2 NOT to enter into unnecessary arguments on R/T. Communication on R/T must be restricted to necessary transmissions only, using standard phraseology. Pilots must adhere to ATC instructions unless they feel that the safety is being jeopardized or they are unable to comply with the same due to aircraft performance limitation or operational reasons. In such cases the pilot may ask for revised / alternate clearance / instructions.

2.3. Runway Occupancy Time:

2.3.1 To ensure maximum runway utilization, arriving flights, on completion of landing roll are expected to vacate expeditiously at first suitable taxiway exit, or as instructed by ATC. Aircraft should not slow down below normal taxi speed or stop on exit taxiway unless otherwise approved by ATC.

2.3.2 Pilots are reminded that rapid exit from the runway enables ATC to apply minimum spacing on final approach that will achieve maximum runway utilization and will minimize the occurrences of 'go around'.

2.3.3 Arriving aircraft to use preferred exit taxiway as per the table below. Aircraft that cannot comply with these requirements, shall notify ATC, as soon as, possible.

RWY	Aircraft Code	Preferred exit Taxiway	Distance from threshold (M)
09	A,B,C	D3	2099
	D,E	D2	2773
10	A,B,C,D	U(exiting towards South)	2436
	E	V(exiting towards South)	2961
	F	J7(exiting towards South)	3813
	A,B,C	G2(exiting towards North)	2436
	D,E	E(exiting towards North)	3178
11R	A,B,C	Y1	1898
	D, E	Y2	2247
	F	Y4	2648
27	A,B,C	D5	1862
	D,E	D6	2162

28	A,B,C,D	K1(exiting towards South)	2212
	E	K2(exiting towards South)	2839
	F	K6(exiting towards South)	3813
	A,B,C	H1(exiting towards North)	2312
	D,E	H2(exiting towards North)	2752
29L	A,B and all turbo prop aircraft	Z2	2067
	C	Z2	2067
	D,E	Z3	2316
	F	Z4	2700
29R	A,B	R1	1779
	C	R2	2010
	D,E	R3	2460
	F	R4	2950
11L	A,B,C	P1	1991
	D,E	P3	2441
	F	P4	2992

IV.DELHI AIRPORT COLLABORATIVE DECISION MAKING (DA-CDM)

1 BACKGROUND

1.1The Delhi Airport - Collaborative Decision Making (DA-CDM) undertaken at IGI Airport is a joint programme among all airport partners –

•Air Navigation Service Provider (ATC)

•Airline Operators (AO)

•Air Traffic Flow Management Unit (ATFMU)*

•Delhi International Airport Pvt. Limited (DIAL)

•Ground Handlers (GH)

•Support services (Police, Customs and Immigration, Air Force Movement Liaison Unit, etc.)

All the partners are required to work in close collaboration to ensure the successful operation of DA-CDM.

1.2The efficiency of the Air Transport System is highly dependent on traffic predictability. DA-CDM effectively enhances predictability (this reduces buffer times for resource planning and flight times), overall efficiency and punctuality by linking and sharing of accurate and timely information amongst Airlines, Airport Operator, ATC, etc.

1.3The primary objective of DA-CDM is to facilitate the sharing of operational data for a better informed, well planned and transparent decision making to ensure more precise overall operational processes. It leads to an optimized utilization of resources, an efficient turn round process and everyone has a common awareness of the situation.

1.4Through implementation of DA-CDM, long-lasting benefits can be reaped.

Benefits of DA-CDM are:

•Improved overall efficiency of the operation

•Reduced delays and increased punctuality

•Reduced ATFM slot wastage*

•Optimized en-route capacity

•Optimized use of the airport infrastructure

•Reduced apron and taxiway congestion

•Cost savings

•Reduction of carbon emission and noise pollution

•Enhanced predictability

•Optimized use of ground handling resources

•Optimized use of stands, gates and terminals

•Enables flexible pre-departure planning

2 TERMS AND ABBREVIATIONS

All Acronyms are time parameters which have a standard length of four characters and have been arranged as per aircraft movement sequence.

[While developing the DA-CDM procedures, the guidance material published by Euro control, ICAO and other Organizations has been used].

S. NO.	ACRONYMS	DEFINITION	EXPLANATION
2.1	ELDT	Estimated Landing Time	The estimated time that an aircraft will touchdown on the runway. (Equivalent to ATC ETA = Estimated Time of Arrival = landing).
2.2	TLDT	Target Landing Time	Targeted Time from the Arrival management process at the threshold, taking runway sequence and constraints into account. It is not a constraint but a progressively refined planning time used to coordinate between arrival and departure management processes. Each TLDT on one runway is separated from other TLDT or TTOT to represent vortex and/or SID separation between aircraft.
2.3	ALDT	Actual Landing Time	The time that an aircraft lands on a runway. (Equivalent to ATC ATA = Actual Time of Arrival = landing, ACARS = ON).
2.4	EXIT	Estimated Taxi-In Time	The estimated taxi time between landing and in-block.
2.5	AXIT	Actual Taxi-In Time	AXIT = AIBT – ALDT
2.6	SIBT	Scheduled In-Block Time	The time that an aircraft is scheduled to arrive at its first parking position.
2.7	EIBT	Estimated In-Block Time	The estimated time that an aircraft will arrive in-blocks. (Equivalent to Airline/Handler ETA = Estimated Time of Arrival).
2.8	AIBT	Actual In-Block Time	The time that an aircraft arrives in-blocks. (Equivalent to Airline/Handler ATA = Actual Time of Arrival, ACARS = IN).
2.9	ACGT	Actual Commence of Ground Handling Time	The time when ground handling on an aircraft starts, can be equal to AIBT *(to be determined locally)*
2.10	ASBT	Actual Start Boarding Time	Time passengers are entering the bridge or bus to the aircraft.
2.11	AEGT	Actual End of Ground handling Time	The time when ground handling on an aircraft ends, can be equal to ARDT *(to be determined locally)*
2.12	AGHT	Actual Ground Handling Time	The total duration of the ground handling of the aircraft. AGHT = ACGT – AEGT
2.13	STTT	Scheduled Turn-round Time	STTT = SOBT – SIBT
2.14	ETTT	Estimated Turn-round Time	The time estimated by the AO/GH on the day of operation to turn-round a flight taking into account the operational constraints.
2.15	MTTT	Minimum Turn-round Time	The minimum turn-round time agreed with an AO/GH for a specified flight or aircraft type.
2.16	ATTT	Actual Turn-round Time	ATTT = AOBT – AIBT
2.17	ASRT	Actual Start Up Request Time	Time the pilot requests start up clearance.
2.18	TSAT	Target Start Up Approval Time	The time provided by ATC taking into account TOBT, *CTOT** and/or the traffic situation that an aircraft can expect start-up / push back approval. Note: The actual start up approval (ASAT) can be given in advance of TSAT.
2.19	ASAT	Actual Start Up Approval Time	Time that an aircraft receives its start-up approval.
2.20	SOBT	Scheduled Off-Block Time	The time that an aircraft is scheduled to depart from its parking position.
2.21	EOBT	Estimated Off-Block Time	The estimated time at which the aircraft will start movement associated with departure (ICAO).

2.22	TOBT	Target Off-Block Time	The time that an Aircraft Operator or Ground Handler estimates that an aircraft will be ready, all doors closed, boarding bridge removed, push back vehicle available and ready to start up / push back immediately upon reception of clearance from the SMC (GROUND).
2.23	AOBT	Actual Off-Block Time	Time the aircraft pushes back / vacates the parking position. (Equivalent to Airline / Handlers ATD = Actual Time of Departure and ACARS = OUT)
2.24	ARDT	Actual Ready Time (for Movement)	When the aircraft is ready for start-up/push back or taxi immediately after clearance delivery, meeting the requirements set by the TOBT definition.
2.25	EXOT	Estimated Taxi-Out Time	The estimated taxi time between off-block and take off. This estimate includes any delay buffer time at the holding point prior to take off.
2.26	AXOT	Actual Taxi-Out Time	AXOT = ATOT – AOBT
2.27	ETOT	Estimated Take Off Time	The estimated take off time taking into account the EOBT plus EXOT.
2.28	CTOT*	Calculated Take Off Time*	A time calculated and issued by the appropriate Central Management unit, as a result of tactical slot allocation, at which a flight is expected to become airborne. (ICAO Doc 7030/4 – EUR, Table 7)*
2.29	TTOT	Target Take Off Time	The Target Take Off Time taking into account the TOBT/TSAT plus the EXOT. Each TTOT on one runway is separated from other TTOT or TLDT to represent vortex and/or SID separation between aircraft.
2.30	ATOT	Actual Take Off Time	The time that an aircraft takes off from the runway. (Equivalent to ATC ATD = Actual Time of Departure, ACARS = OFF).

3 TWO KEY PARAMETERS OF DA-CDM: TOBT and TSAT.

3.1TARGET OFF-BLOCK TIME (TOBT)

3.1.1Definition: The time that an Aircraft Operator or Ground Handler estimates that an aircraft will be ready, all doors closed, boarding bridge removed, push back vehicle available and ready to start up/push back immediately upon reception of clearance from the SMC (GROUND).

3.1.2Purpose: It is a fact that Air Traffic Management (ATM), based on FPL-data only, is insufficient to guarantee smooth and efficient operations on the ground and in the air. The main reason for this is the incorrect updating/no updating at all, of the Estimated Off-Block Time (EOBT) of the flight plan. The result is that airport partners have an incorrect idea about the actual status of that specific flight.

Target Off-Block Time (TOBT) is the dynamic target on the operational readiness of a flight thus, more accurate than the static departure time of a flight plan and is therefore, an ideal milestone to be used by all airport partners.

3.1.3When/How to calculate TOBT: In order to create an initial time reference, at EOBT - 45 minutes, TOBT will be calculated by adding Estimated In-block Time (EIBT) + Minimum Turn-round Time (MTTT) for distribution and to derive further updates.

When the aircraft arrives on stand at Actual In-Block Time (AIBT), TOBT is updated by AO/GH based on MTTT or the Scheduled Off-Block Time (SOBT). These MTTT's are regularly updated and Aircraft Operators are consulted for the most accurate times.

Refining of TOBT (Example)

TOBT based on EOBT [At EOBT - 45 minutes]

TOBT = EIBT (ELDT issued at ELDT-20 minutes + EXIT) + MTTT

TOBT = EIBT (ELDT at 10NM from touchdown + EXIT) + MTTT

TOBT = EIBT (ALDT + EXIT) + MTTT

TOBT = AIBT + MTTT

3.1.4Originator(s): Airlines Operator/Ground Handler.

3.1.5Communication of Target Off Block Time (TOBT):

(i)AO/GH shall update their TOBTs via DA-CDM portal.

(ii)If there is no input in DA-CDM portal, EOBT itself will be treated as TOBT.

3.1.6When to update: The aim of the Target Off-Block Time (TOBT) is to provide a timely, accurate and reliable estimate to the DA-CDM partners, of an aircraft's off block time. Accurate TOBTs enhance operations on the ground as they provide all airport partners with a clear picture of the intentions of aircraft on the ground.

TOBTs only need to be updated if the time that the aircraft will be ready to leave stand changes.

Once Target Start-up Approval Time (TSAT) is allocated by ATC at TOBT- 20 minutes, the TOBT may be updated thrice (equal to or less than TSAT).

3.1.7Accuracy: TOBTs must be updated to an accuracy of +/- 5 minutes.

3.2TARGET START UP APPROVAL TIME (TSAT)

3.2.1Definition: The time provided by ATC taking into account TOBT, CTOT* and/or the traffic situation that an aircraft can expect start-up/push back approval.

Note: The actual start up approval (ASAT) can be given in advance of TSAT.

3.2.2Purpose: TSATs provide an optimized start-up sequence, leading to Pre-Departure sequence. TSATs reduce queuing times at the runway holding points, while maintaining a high degree of runway utilization. ATC will continue to maximize departure rates and optimize the departure order for creating the right mix of traffic.

3.2.3How to calculate/generate TSAT: The TSAT is calculated by taking into account TOBT, Calculated Take-Off Time (CTOT)*, wake vortex, Standard Instrument Departure (SID) routing, variable taxi times, and any capacity constraints such as Low Visibility Procedures.

ELDT + EXIT = EIBT
EIBT + MTTT = TOBT
TOBT + EXOT + Constraints = TTOT
TTOT - EXOT = TSAT
ELDT: Estimated Landing Time
EXIT: Estimated Taxi-In Time
EIBT: Estimated In-Block Time
MTTT: Minimum Turn-round Time
TOBT: Target Off-Block Time
EXOT: Estimated Taxi-Out Time
TTOT : Target Take Off Time
TSAT: Target Start Up Approval Time

Note: A re-assessment of a flight on the network (re-calculation of CTOT) will be done if the TTOT is outside the Slot Tolerance Window (STW = CTOT-5 till CTOT+10 minutes). The Calculated Take-Off Time becomes tailor-made where possible.*

3.2.4 Originator(s): ATC.

3.2.5 When to issue TSAT: At TOBT - 20 minutes by ATC in DA-CDM portal.

3.2.6 Communication of Target Start-up Approval Time (TSAT): The Target Start-up Approval Time (TSAT) will be displayed in the DA-CDM portal. Pilots will be informed of their Target Start-up Approval Time (TSAT) through DA-CDM portal and any changes to it by ATC. The AO/GH shall advise flight crew of TSAT, displayed in the DA-CDM portal.

3.2.7When to update: The factors that may cause a revision of TSAT include but not limited to:

(i) Change of runway

(ii) Change in taxi time

(iii) Revised TOBT

(iv) Change of route (SID)

(v) Change of aircraft type

(vi) Application of ATFM regulation or ATC restriction resulting in new CTOT or start up delay*

(vii) Inclement Weather

(viii) Priority handling

(ix) Bird activity

(x) Unusual Occurrences, etc.

In case of TSAT revision, ATC will re-calculate a new TSAT and an alert in the DA-CDM portal will notify the AO/GH. The pilot will be informed by ATC of any revised TSAT if there is a delay to TSAT in excess of 5 minutes.

3.2.8Accuracy: TSAT +/- 5 minutes.

3.3 Co-ordination with the Air Traffic Flow Management Unit (ATFMU)*

3.3.1 A permanent and fully automatic data exchange with the ATFMU will be established. The data transfer will enable highly accurate early predictions of landing and departure times.*

3.3.2 Furthermore, it allows for more accurate and efficient CTOT calculations due to the use of more accurate local target take-off times.*

4 TOBT and TSAT based DA-CDM Start-up/Push-back procedures

4.1A Flight Plan Check shall be performed by DA-CDM Cell, to the extent possible, two hours prior to SOBT/EOBT to verify the consistency between SOBT and EOBT. The EOBT must correspond to the SOBT. If the EOBT deviates from the SOBT, the relevant contact person will be informed by DA-CDM Cell and advised to adjust the times accordingly. AO/GH shall be responsible to obtain ADC number from IAF-MLU.

4.2Estimated Landing Time (ELDT): ATC will input Estimated Landing Time (ELDT) at ELDT - 20 minutes on DA-CDM portal. At 10 NM to touchdown, report is generated automatically by ATC automation system [AutoTrac III (AT3)] and sent to DIAL through AODB link.

4.3Estimated In-block Time (EIBT): This estimate will be calculated by adding Variable Taxi Time (VTT) [Estimated Taxi-In Time (EXIT)] from the RWY to the Stand/Gate automatically by DA-CDM portal using VTT matrix.

4.4Pre-Departure Sequence: Pre-Departure sequence is the order, in which the ATC plans the aircraft to depart from their Gate/Stands (Push-off blocks). It should not be confused with the Pre-Take-off sequence where ATC decides on the order in which the aircraft at holding points of the runway will depart.

4.5. Data link clearance facility is operational at IGI airport,DELHI. In accordance with best equipped best served policy the flights receiving clearance through data link may contact relevant SMC/GROUND frequency directly as per the TSAT(TArget Start-up Approval Time) issued.

4.6 Start-Up and Push-Back Procedure

i.The pilot should contact Clearance Delivery (CLD) to request en-route clearance and SID between TOBT - 15 minutes to TOBT - 5 minutes.

ii.The aircraft must be ready to Start-up/Push-back at TOBT and request SMC (GROUND) for Start-up/Push-back at TOBT. (Note: TSAT can be preponed up to TOBT)

iii.If at TOBT +5 minutes, ATC has not received Start-up/Push-back request, the aircraft may lose its position in sequence.

a.ATC will advise the pilot that a new TOBT is required.

b.On receipt of new TOBT, the flight will be re-sequenced according to new TOBT and a new TSAT with a subsequent delay will be issued.

iv.ATC should normally be able to issue start-up/push-back at TSAT. Pilots will be informed by ATC of any revised TSAT if there is a delay to TSAT in excess of 5 minutes.

v.Taxi clearance must be requested within 5 minutes of Start-up/Push-back approval time.

(Note: If this has not occurred, SMC (GROUND) must be notified of the extent of delay. In such cases, aircraft may lose its departure slot and a new TOBT may be required in DA-CDM portal. AO/GH shall be responsible to obtain new ADC number from IAF-MLU).

vi.The Pre-Departure (Off- block) Sequence will be determined in accordance with Target Start up Approval Time (TSAT) and NOT in accordance with the Start-up Request. Pre-Departure Sequence will not have any bearing on Actual Departure sequence.

(Note: Actual Departure sequence may differ from pre-departure sequence in order to optimize the Runway and Airspace utilization.)

* [Future provision kept for incorporating with India – Central Air Traffic Flow Management]

V. INORMATION REGARDING INTERSECTION DEPARTURES

1. Details of TORA for intersection departure taxiways:

Runway	Taxiway	TORA from Taxiway given in Meters
28	W	3356
	E	3178
10	H3	3265
	K2	2839
	H2	2752
	K3	3235
27	D2	2773
	D3	2099
09	D8	2765
	D7	2683
	D4	1842
29L	Y5	3932
	Y6	4334
	Y7/Y8	4430
11R	Z5	3933
	Z4	3834

29R	P8	4382
	S8	4382
	P7	4257
	S7	4257
	P6	4159
	S6	4159
	P5	3753
	P4	3662
	P2	2955
	R1	1914
11L	R7	3670
	T7	3670
	R6	3572
	T6	3572
	R5	3307
	R4	2950
	R1	1779

2. Location of different Exit TWYs from THR:

Details of different exit taxiways for RWY11L/29R		
Runway	**Exit Taxiway**	**Distance of exit TWY from THR(M)**
29L	Z2(RET)	2067
	Z3(RET)	2316
	Z4	2700
	Z5	2800
	Z6	2970
11R	Y1(RET)	1898
	Y2(RET)	2247
	Y4(RET)	2648
	Y5	3294

28	K1 (RET)	2212
	H1 (RET)	2312
	K2 (RET)	2839
	H2	2752
	H3	3265
	H6	3813
	K3	3235
	K6	3813
10	G2(RET)	2436
	U (RET)	2436
	V(RET)	2961
	E	3178
	W	3356
	J7	3813
27	D4	1691
	D5(RET)	1862
	D6 (RET)	2162
	D7	2532
	D8	2614
	D9	2665
09	D3	2099
	D2	2773
	D1	2816
29R	R1	1779
	R2(RET)	2010
	R3(RET)	2460
	R4	2950
	R5	3307
	R6	3572
	R7	3670

11L	P1(RET)	1991
	P2	2285
	P3(RET)	2441
	P4	2992

3. Preferred Exit Taxiways

Refer table under sub para 2.3 Runway Occupancy Time

VI. Speed control Procedure

a)Speed control Procedure under non Radar environment shall be as specified in ENR1.1 para 2.5 of eAIP India.

b)Arriving ACFT passing F290, to maintain speed 270KTS and thereafter follow the speed restrictions as published in STAR,unless otherwise superceded by ATC instructions.

VII. IMPLEMENTATION OF TACTICAL AIR TRAFFIC FLOW PROCEDURES (T-ATFP)

1 Introduction

1.1 In order to reduce airspace congestion, arrival delays and holding in Delhi TMA, Tactical Air Traffic Flow Control Procedure (T-ATFP) is introduced. For this purpose, sequenced entry into airspaces is established and maintained.

1.2 T-ATFP is applied to aircraft landing at Delhi airport, classified as follows:

1.2.1 Arrivals from airports within Delhi FIR;

1.2.2 Arrivals from airports outside Delhi FIR but within 10 min flying time from Delhi FIR boundary;

1.2.3 Arrivals from airports other than those in 1.2.1 and 1.2.2

2 Acronyms used in the document and associated expansion

AAO	Airline and aircraft operators
CTO	Calculated Time Over
ETO	Estimated Time Over
RTO	Required Time Over
T-ATFP	Tactical Air Traffic Flow Procedures
TM	Traffic Manager (for the purpose of T-ATFP)

3 Terminology and their meaning

3.1 AAO (Airline and aircraft operators) – includes all aircraft operators including defence, State Govt., paramilitary etc.

3.2 Block Time – Time required for arriving over runway THR following a STAR flight path and adhering to STAR speed restrictions.

3.3 Calculated Time Over (CTO) – Time at which departure from airports at 1.2.1 and 1.2.2 should arrive over the arrival holding fix to fit into established arrival sequence. By back calculation, the time of takeoff can be computed.

3.4 Required Time Over (RTO) – Time at which arrivals in 1.2.3 should arrive over the arrival holding fix to avoid joining the holding.

4 Traffic Manager (TM)

4.1 The Traffic Manager (TM) position is established within Delhi ATC for the implementation of T-ATFP. TM will have access to flight plans and estimates and revisions to estimates of all arrivals landing at Delhi airport.

4.2 Functions of TM

4.2.1 Establishing a sequence of arrivals landing at Delhi airport based on touchdown time.

4.2.2 Assign landing runways to arrivals; whenever more than one runway is available for landing.

4.2.3 Advise CTO/RTO to ACC Sector controller.

4.2.4 Advise CTO/RTO, arrival sequence and assigned landing runway to Approach (Arrival) Controller.

4.3 For effective and efficient management of arrival sequence, TM shall:

4.3.1 Make available a CTO arrival holding fix for the departures from airports as in 1.2.1 and 1.2.2.

4.3.2 Provide information to arrivals as in 1.2.3, regarding RTO arrival holding fix.

4.4 Based on the ETO at arrival holding fix, sequence of arrivals will be determined by TM.

5 Essential requirements

5.1Arrivals landing at Delhi airport shall flight plan via arrival route (STAR) appropriate to the ATS route. To maintain arrival sequence, non-RNAV arrivals to expect routing/vectors along RNAV STAR.

5.2All flight-plans for landing at Delhi airport shall provide ETO arrival holding fix - AKBAN, SAM, SSB and SAPLO as appropriate, for determination of arrival sequence based on time required to reach runway touchdown point from the arrival holding fix.

5.3Departures from airports within Delhi FIR and within 10 min flying time from Delhi FIR shall coordinate with TM for CTO. Uncoordinated departure from such airports shall be refused entry into Delhi TMA or will be subject to extended delays.

6 Tactical Flow Management Process

6.1For ensuring efficient flow during T-ATFP, speed management of sequenced aircraft is a critical factor. Approach (Arrival) Controller shall enforce adherence to speed restrictions.

6.2Delhi ACC Sector controllers will clear all arrivals via STAR. Delhi Radar shall vector Non-RNAV arrivals along appropriate STAR route segment with speed control instructions consistent with STAR segment, so as to ensure that the arrival sequence computed by TM is maintained.

6.3The arrival sequence is calculated based on the Block Time plus separation at touchdown point between successive arrivals. During the initial phases of T-ATFP implementation; the separation over touchdown point will be 2 min.

6.3.1The separation over touchdown point is dependent on dynamic factors such as:

•Weather

•Equipment outage

•Runway closure

•Airspace closure

•Contingency such as RCF, Unlawful interference etc

6.4TM shall advise Delhi ACC sector controller and Approach (Arrival) controller information on RTO. Accordingly, arrivals will be advised of RTO thereby facilitating in gaining/losing time so as to arrive over arrival holding fix at RTO.

6.5For ensuring efficient flow based on the arrival sequence, speed management is critical. Approach (Arrival) controller may enforce speed control based on the STAR restrictions and on final approach.

6.6Safety being primary, minimal radar vectoring may be resorted thereby permitting aircraft to adhere to FMS managed flight profile/path of RNAV STAR.

6.7The arrival runway allocation and sequence established by TM, may not be altered by Delhi Approach; as far as practicable, except during emergency, RCF, unlawful interference or during events requiring priority handling.

6.8When adverse conditions such as weather, equipment outage, runway closure and/or airspace closure etc affect Delhi airport/Delhi TMA, the capacity of the airport and TMA could be severely degraded, resulting in unoptimised traffic flows. Therefore, in order to avoid excessive holding, airborne delay and congestion during such events; following T-ATFP measures will be implemented:

6.8.1Departure airport ATS units shall be advised of the restricted arrival capacity at Delhi and CTO to be provided for all departures before start-up based on flight-plan ETD. Any delay beyond flight-plan ETD will require revised CTO arrival holding fix to be obtained.

6.8.2During events enumerated in Para 6.8, departures from airports within Delhi FIR and within 10 min flying time from Delhi FIR do not have the option to take-off and absorb delay enroute or by holding within Delhi TMA.

7) AAO responsibility

7.1AAOs are to ensure they are fully informed on the following procedures:

7.1.1AAOs shall adhere to the speed control restrictions of the STAR or speed control instructions issued by Delhi ATC.

7.1.2AAOs shall arrange the departure of their flights to comply with the CTO issued.

7.1.3Non-adherence to CTO may result re-sequencing. TM will issue RTO which may result in disproportionate arrival delay.

8 ATS Unit responsibility

8.1ATS Units shall make every effort to enable departing flights to comply with CTO.

8.2ATC shall provide all possible assistance to AAOs to meet CTO/RTO.

9 Arrivals exempted from T-ATFP

9.1The following flights are exempted from T-ATFP:

9.1.1Arrival in a state of emergency, including flights subject to unlawful interference

9.1.2Arrival conducting search and rescue operations

9.1.3Arrival carrying notified VIP

9.1.4Arrival with medical emergencies

VIII. TRANSPONDER OPERATING PROCEDURES ON GROUND

1. Introduction:

Advanced Surface Movement Guidance and Control System (A-SMGCS) using Mode-S is commissioned at Indira Gandhi International Airport, Delhi. The Aircraft Transponder Operating Procedures applicable in movement area of the airport are as given below:

2. DEPARTURE

2.1.At the Gate/Stand:

•Select STBY

•Enter the discrete SSR code received from Clearance Delivery/Surface Movement Control. Enter the three letter ICAO designator followed by the flight identification number (e.g. AIC748) through the FMS or the Transponder control panel, depending on the avionics.

2.2On requesting Pushback/Taxi (whichever is earlier):

• Select Transponder or equivalent and AUTO if available

•This action will enable the aircraft ID, used as the Call sign by ATC, to be displayed on the surveillance display of ATC. ATC can verify the data and use it for necessary identification.

2.3 When Lining up:

•Select TCAS

•Select TCAS only after receiving the clearance to line up, to ensure that the performance of systems based on SSR frequencies (including airborne TCAS units, SSR and A-SMGCS) is not compromised.

3. ARRIVAL

3.1.When on the Runway:Keep TCAS selected

3.2.After vacating the Runway:

•Select Transponder or equivalent and AUTO if available

•There is a need that the Transponder remains able to exchange data with the A-SMGCS system. However, to ensure that the performance of systems based on SSR frequencies (including airborne TCAS Unit, SSR and A-SMGCS) is not compromised, TCAS shall be deselected when vacating the Runway.

3.3.Parked on Stand:

•Select STBY

•The Transponder will not reply to interrogation. The discrete SSR Code given to that particular flight can now be recycled for other flights.

4. SHIFTING (TOWING/TAXING) OF AIRCRAFT:

4.1 At the gate/stand: Call Surface Movement Control for shifting after getting approval for shifting from AOCC,

- select STBY,
- enter the SSR code 1400,
- enter the aircraft registration (e.g. VTABC) through the FMS or the transponder control panel, depending on the avionics.

4.2 On requesting Pushback/Startup/Tow or Taxi (whichever is earlier):

- Select transponder or equivalent and Auto if available
- This action will enable the aircraft ID, used as the call sign ATC to, to be displayed on the surveillance display of ATC for identification and verification of data.

4.3 When taxi, towing is completed and aircraft is parked of destination stand:

- Select STBY
- The transponder will not reply to interrogation.

Note: When on ground the aircraft must squawk Mode C, in order to provide the altitude information to the surveillance system, and thereby prevent

i)clutter on Terminal Approach Radar Display (and)

ii)false automatic detection of departure for aircraft still on ground.

IX. LOW VISIBILITY PROCEDURES (LVP)

Every year due to low visibility conditions during the period From 15 DEC to 15 FEB, aircraft operator are not permitted to file IGI airport as alternate airport, if the latest met forecasted general visibility is expected to be below 550 Meter, at estimated time of use.

1. DEFINITIONS and ABBREVIATIONS

1.1 Instrument Approach Operations. An approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations:

a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and
b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

Note. — Lateral and vertical navigation guidance refers to the guidance provided either by:

a) a ground-based radio navigation aid; or
b) computer-generated navigation data from ground-based, space-based, self-contained navigation aids or a combination of these.
Instrument approach operations shall be classified based on the designed lowest operating minima below which an approach operation shall only be continued with the required visual reference as follows:

a) Type A: a minimum descent height or decision height at or above 75 m (250 ft); and
b) Type B: a decision height below 75 m (250 ft).

Type B instrument approach operations are categorized as:
1) Category I (CAT I): a decision height not lower than 60 m (200 ft) and with either a visibility not less than 800 m or a runway visual range not less than 550 m;
2) Category II (CAT II): a decision height lower than 60 m (200 ft), but not lower than 30 m (100 ft) and a runway visual range not less than 300 m;
3) Category III (CAT III): a decision height(DH) lower than 30 m (100 ft), or no decision height and a runway visual range less than 300 m or no runway visual range limitations.

Note 1.— Where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with the requirements of the most demanding category
Note 2. — The required visual reference means that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach operation the required visual reference is the runway environment.
Note 3.— Guidance on approach classification as it relates to instrument approach operations, procedures, runways and navigation systems is contained in the All Weather Operations Manual (Doc 9365).

1.2 Decision Height: A specified altitude or height in a 3D instrument approach operation at which a missed approach must be initiated if the required visual reference to continue the approach has not been established.
Note. — Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.

1.3 ILS Critical Area: An area of defined dimensions about the localizer and glide path antennas where aircraft and vehicles are excluded during all ILS operations. The critical area is protected because the presence of vehicles / or aircraft inside its boundaries will cause unacceptable disturbance to the ILS signal-in-space.

1.4 ILS Sensitive Area: An area extending beyond the ILS critical area where the parking and/or movement of vehicles, including aircraft, are controlled to prevent the possibility of unacceptable interference to the ILS signal during ILS operations. The sensitive area is protected to provide protection against interferences cause by large moving objects outside the critical area but still normally within the airfield boundary.

1.5 Low Visibility Procedures: Specific procedures applied at an aerodrome for the purpose of ensuring safe operations during Categories II and III approaches and/or low visibility take-offs.

1.6 Low Visibility Take-Off (LVTO): A term used in relation to flight operations referring to a take-off on a runway where the RVR is less than 400m.

1.7 Obstacle Free Zone: The airspace above the inner approach surface, inner transitional surface and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than of low mass and frangible mounting, required for air navigation purposes.

1.8 Runway Visual Range: The range over which the pilot of an aircraft on the centerline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centerline.

1.9 Safeguarding Procedures: Safeguarding Procedures (SP) are instructions for relevant airport departments and airside operators to prepare ground services and facilities for low visibility operations, in order that when LVP are implemented all SP are complete and airport is configured for Low Visibility Procedures and Low Visibility Take-offs.

1.10 The abbreviations used in descriptions of Low Visibility Procedures have the following meanings:

ADC	Aerodrome Control
ARFF	Airport Rescue and Fire Fighting
AGL	Aeronautical Ground Light
ASMGCS	Advance Surface Movement Guidance Control System
AOCC	Airport Operations Control Centre
ATC	Air Traffic Control
ATIS	Aerodrome Terminal Information Service
GP	Glide Path
IHP	Intermediate Holding Position
ILS	Instrument Landing System
LOC	Localizer
LSA	Localizer Sensitive Area
LVP	Low Visibility Procedure
MET	Meteorology
MID	Mid Point
ODM	Operations Duty Manager
RVR	Runway Visual Range
SMC	Surface Movement Control
SP	Safeguarding Procedures
SSO	Shift Supervisory Officer
TDZ	Touch-down Zone
WSO	Watch Supervisory Officer

2. INTRODUCTION

2.1 General

2.1.1 Runway 28, Runway 29L and Runway 11R at IGI Airport are equipped for the CAT II/ CATIII operations.
2.1.2 The following equipment shall be serviceable to the required standard to support CAT II/CAT III operations: -

a) ILS localizer, Glide path and ILS DME or Outer Marker.
b) Aeronautical ground lighting (AGL) System
c) RVR system
d) Standby power for ILS and aeronautical ground lighting system
e) SMR for CAT II/CAT III operations/LVTO (for RVR below 350M).
(DGCA CAR Section 4 Series B Part 1, Para 9.8.7. — Surface movement radar for the maneuvering area shall be provided at an aerodrome intended for use in runway visual range conditions less than a value of 350 m.)
The pilot shall ensure that he is suitably qualified and certified to carry out the required category of ILS approach.

2.2 Safeguarding Procedures (SP)

2.2.1 Safeguarding Procedures are the necessary actions to prepare the airport for Low Visibility Procedures. They include:
a. inspection of aeronautical ground lighting system,
b. termination of all work in progress in the localizer and glide path sensitive area and the maneuvering area,
c. removal of all equipment/material from localizer and glide path sensitive area and the maneuvering area,
d. restrictions on the movement of vehicles on the maneuvering area and aprons.
2.2.2 Watch Supervisory Officer at IGI Airport will co-coordinate with all the concerned agencies for implementation of Low Visibility Procedures.
2.2.3 SP shall be initiated whenever ATC considers the introduction of Low Visibility Procedure is necessary.

2.3 Low Visibility Procedures (LVP)

2.3.1 Low Visibility Procedures are the actions to ensure the safe operation of aircraft during periods of reduced visibility or low cloud base.
2.3.2 LVP shall only be implemented when Safeguarding Procedures (SP) has been completed and the airport is configured for low visibility operations.

2.4 ILS Sensitive and Critical Areas

2.4.1 **Note:** Signage indicating the limits of localizer and glide paths sensitive areas are provided.
2.4.2 Diagram indicating the Critical and Sensitive area of ILS for all runways shall be available with apron control, control tower and WSO.
2.4.3 Refer VIDP AD 2.24 for ILS critical and sensitive areas of RWY 29L, RWY 11R and RWY 28

2.5 Reporting of RVR Values

2.5.1 Touch-down zone RVR needs to be reported for Cat I operations, touch-down and mid zone RVR for Cat II operations, touch-down, mid and roll-out zone RVR for Cat III operations. In all cases, touch-down zone will always be controlling, however if any other RVR is reported and is relevant (operator shall not define relevant depending on runway length/aircraft stopping distance unless approved by FSD, DGCA) it also becomes controlling. The mid zone and roll-out zone can be lower than the touch-down zone provided conditions enumerated in Note 1 below are met. The following table is to be used for reference;

Type of Operation	RVR		
	Touch-down Zone	Mid zone	Roll-out zone
CAT I	550 M	125 M	125 M
CAT II	300 M	125 M	125 M
CAT III	175 M	125 M	125 M

CAT III (with roll-out guidance)	75/50 M	75/50 M	75/50 M

Note 1: The use of minimum RVRs in the table above is subject to:
* operator authorization;
* aeroplane authorization;
* flight crew training and qualification; and
* aerodrome facilities.

Note 2: The use of minimum RVR of 75m or 50m depends on value approved for operators and aeroplanes with roll-out guidance system.
Note 3: The values in bold font are required for the type of operation.

2.5.2 When reporting RVR to pilots, the TDZ RVR shall always be passed for the concerned Landing RWY.
2.5.3 In addition to Para 2.5.2

a) For CAT II Operations - If TDZ RVR is below 550m then MID RVR shall also be passed.
b) For CAT III Operations - If TDZ RVR is below 300m, MID and END RVR reading shall also be passed. TDZ, MID and END RVR shall be available.

3. IMPLEMENTATION OF SAFEGUARDING PROCEDURES (SP) AND LOW VISIBILITY PROCEDRUES (LVP)

3.1 Safeguarding Procedures (SP)

3.1.1 Criteria for Safeguarding Procedures:
Safeguarding Procedures shall be initiated when at either of the runways in use:
3.1.1.1 The RVR is less than 1200 m or visibility is forecast to deteriorate to 800m or less;and/or
3.1.1.2 The cloud ceiling is 400 ft and forecast to fall to 200 ft or less.

3.1.2 Actions to be taken for initiation of Safeguarding Procedures by WSO:
3.1.2.1 When meteorological conditions meet the criteria for initiation of SP as stipulated in Para 3.1.1, the Watch Supervisory Officer will inform AOCC, the Communication/Technical Supervisor and the Aerodrome Tower Supervisor.

3.1.2.2 When all the concerned agencies have completed their necessary actions they shall report to WSO (ATC) that their Safeguarding Procedure (SP) is completed and the airport is safeguarded for LVP operations.

3.2 Low Visibility Procedures (LVP)
3.2.1 Criteria for implementation of Low Visibility Procedures:
Low Visibility Procedures shall be implemented when –
a) Either, TDZ, MID or END RVR is less than 800 m; and/or Cloud ceiling is less than200 ft; and
b) Safeguarding Procedures (SP) have been completed and the airport is safeguarded.

(Note: Though LVP is implemented when RVR is less than 800m, ILS CAT I operation will continue till TDZ RVR is not less than 550m)
3.2.2 Actions to be taken upon Implementation of Low Visibility Procedures
3.2.2.1 When meteorological conditions meet the criteria for LVP as stipulated in Para 3.2.1, WSO shall implement Low Visibility Procedure and inform:
a) Aerodrome Tower Supervisor.
b) Approach Radar Controller
c) Communication/Technical Shift Supervisory Officer (SSO)
d) Duty Met. Officer

WSO will also ensure that **"LOW VISIBILITY PROCEDURE IN FORCE"** is included in ATIS Broadcast.

3.2.2.2 Upon implementation of LVP, Tower Supervisor will inform:
a) Fire station
b) AOCC
c) include "LOW VISIBILITY PROCEDURE IN FORCE" in ATIS Broadcast.

3.3 Cancellation of Safeguarding Procedures (SP) and Low Visibility Procedures (LVP)

3.3.1 WSO may terminate LVP when –
a) Meteorological conditions improve and TDZ, MID and END RVR are 800 m or more and the cloud ceiling is 200 ft or higher, and trend is for improvement for both runways.
b) Facilities and equipment (listed in Para 2.1.2) necessary for CAT II/CAT III operations are degraded and/or the prevailing conditions are considered unsafe for such operations.
3.3.2 WSO should consult Meteorological Office for forecast before cancelling SP and LVP.
3.3.3 On cancelling LVP, Aerodrome Control shall include it in the subsequent two ATIS broadcasts that "LOW VISIBILITY PROCEDURES ARE CANCELLED". Aerodrome Tower Controller will inform all the concerned agencies.
3.3.4 If SP are completed and LVP are not subsequently implemented and meteorological conditions improve and the visibility/RVR is more than 1200 m and the cloud ceiling is 400 ft or higher and both are forecast to remain above the required SP criteria, WSO may cancel SP.

4. LOW VISIBILITY PROCEDURE OPERATIONS

4.1 Approach/ Radar Control Procedures
4.1.1 During LVP the Approach Radar Controller shall have the following information
a) Status of ILS
b) Serviceability of visual aids
c) RVR information of TDZ, MID and END.
4.1.2 In addition to the information normally transmitted by Approach Radar Controller, the information specified in 2.5.2 and 2.5.3 must be passed to the arriving aircraft on first contact or as soon as possible along-with the unserviceability, if any, of any component parts of CAT II/CAT III facilities not previously broadcast on ATIS.
4.1.3 Approach/Radar Controller should vector the arriving aircraft to intercept the localizer at a distance not less than 10NM from touchdown.
4.1.4 Suitable spacing between the arriving aircraft may be provided to ensure that the arriving aircraft can be given a landing clearance by 2 NM from touchdown. If there is a departure between the two arrivals, the spacing between the arriving aircraft may be suitably increased to ensure that the departing aircraft passes overhead the Localizer before the inbound aircraft reaches 2NM from touchdown.
4.1.5 Approach Radar Controller shall not subject an aircraft carrying out CAT II/CAT III approaches to any speed control when within 20NM from touchdown.

4.2 Aerodrome Control Procedures
4.2.1 Arriving aircraft shall be issued landing clearance not later than 2NM from touchdown. If landing clearance cannot be issued when the aircraft is 2NM from touchdown it shall be instructed to carry out a missed approach.
4.2.2 Arriving aircraft should be given unimpeded taxi route to allow it to clear the localizer sensitive area expeditiously.
4.2.3 Landing clearance shall not be issued until: -
A preceding landing aircraft has vacated Localizer Sensitive Area [LSA] AND confirmed by the pilot.
A preceding departing aircraft is airborne and has passed over the localizer antenna.
4.2.4 The LSA in front of an arriving aircraft shall not be infringed from the time it is 2NM from the touchdown until it has completed its landing roll.
4.2.5 ADC shall initiate emergency action if an aircraft is not seen on the CWP/Radar Display and is not in radio contact as expected.

4.3 Surface Movement Control Procedures

4.3.1 Pilots need additional guidance and information when taxiing during periods of reduced visibility. The view from the cockpit of the aircraft is very limited. Therefore, taxi instructions and essential traffic information should be passed in a clear and concise manner.
4.3.2 Taxiing aircraft should be routed in accordance with the prescribed Low Visibility Routes to ensure a simple one-way traffic flow is maintained, however it may be necessary for operational reasons to sometimes route aircraft via alternative taxiways.
4.3.3 AGL team / Follow Me vehicles shall monitor the status of taxiway lights and immediately advise ATC Tower of any unserviceability affecting the taxiways during LVP operations.

During the period of LVP, the lights on taxiways that are not being used may be switched off.

4.3.4 Surface Movement Controller should monitor the progress of arriving aircraft on ASMGCS Display as they vacate the runway after landing and ensure that they do not stop within the Localizer Sensitive Area [LSA] thereby degrading ILS integrity for subsequent landing aircraft. Pilots shall report runway vacated on RTF when the aircraft has reached the color coded part of the exit taxiway centerline light after making allowance for aircraft size to ensure that the entire aircraft is clear of the ILS sensitive area.

4.3.5 Vehicle movement, when RVR is less than 550m, should be restricted. Only operationally essential vehicle duly authorized by Apron Control should be permitted to operate on the maneuvering area. These vehicles shall remain outside the Localizer Sensitive Area [LSA].

Any movement of vehicle on the manoeuvring area shall be coordinated with ATC. During CAT II/ CAT III operations, vehicles fitted with transponders (vehicle locators) should only be permitted on the manoeuvring area. However, other vehicles crossing taxiways on service road and Terminal-3 taxiways shall be regulated by official of apron control deploying manpower.

4.4 Low Visibility Procedure Taxi Route

4.4.1 Once LVP is declared, AGL team will ensure that the lead-in lights of all CATII/III compatible stands are switched ON.

4.4.2 (a) During CAT III conditions “FOLLOW ME” service will be provided to arriving /departing aircraft on request. “FOLLOW ME” service can be put into use up to a minimum visibility of 50m.

(b) If any immediate portion of exit taxiway is not available, ATC will guide the aircraft to the nearest exit through ASMGCS.

4.4.3 Person providing “FOLLOW ME” service shall be trained and fully familiar with the taxi routes intersections and other maneuvering area/apron/parking stands.

4.4.4 During CAT II/CAT III ILS operations, the preferred taxi routing as per runway in use is provided below:

Table: 2

WESTERLY FLOW		
ARRIVAL		
RWY 29L	To Terminal 1	(Vacate via TWY Z2/Z3/ Z6/Z7 then taxi via Z) OR (Vacate via TWY Z4/Z5), Taxi via (T6, CROSS RWY 11L/29R, R6, (R/Q)) / (T7, CROSS RWY 11L/29R, R7, (R/Q)) then further taxi via A, N7, K6 CROSS RWY 10/28 taxi via H6, D and further taxi via i. F6 for stands 170 to 178 ii. F5 for stands 160R to 165 iii. F3 for stands 150 to 159 iv. E9 for stands 140 to 149B v. E9, E6 for stands 134L to 137 vi. E3 for stands 123-132 vii. D3, CROSS RWY 09/27 A2 to Technical Area for up to code E aircraft

RWY 29R	To Terminal 1	Vacate via TWY R2/R3/R4 then taxi via A OR Vacate via TWY R5/R6/ R7 then taxi via Q then turn left on TWY A, N7, K6, CROSS RWY 10/ 28 taxi via H6, D further taxi via i. F6 for stands 170 to 178 ii. F5 for stands 160R to 165 iii. F3 for stands 150 to 159 iv. E9 for stands 140 to 149B v. E9, E6 for stands 134L to 137 vi. E3 for stands 123-132 vii. D3, CROSS RWY 09/27 A2 to Technical Area for up to code E aircraft
RWY 29L	To Terminal 2 and Terminal 3	(Vacate via TWY Z2/Z3/ Z6/Z7 then taxi via Z) OR (Vacate via TWY Z4/Z5), Taxi via (T6, CROSS RWY 11L/29R, R6,(R/ Q))/(T7, CROSS RWY 11L/29R, R7, (R/Q)) and further taxi via : i. LINK 4, C, LINK 9/LINK10 for Apron 35 ii. LINK 4, C, LINK 7 for Apron 34 iii. LINK 4, C, LINK 6 for Apron 33B iv. A, LINK 3 for Apron 33A v. A, LINK 2 for Apron 32 vi. A, N, N5 for Apron 31 vii. A, N, N4/N3/N1 for stands 201-211 viii. A, N for 232-244 ix. A, N for Cargo Apron (upto code F aircraft restricted up to max wingspan 73.30m) x. A, N7, K, LINK 33, N for Cargo Apron (up to code F aircraft)

RWY 29R	To Terminal 2 and Terminal 3	For Apron 35: (Vacate via TWY R2 Taxi via TWY LINK 7) OR (Vacate via TWY R3, LINK 6) OR (Vacate via TWY R4 Taxi via A, LINK 4) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, LINK 4) then Taxi via TWY C, LINK 9/LINK10 For Apron 34: (Vacate via TWY R2 Taxi via TWY LINK 7) OR (Vacate via TWY R3 Taxi via, LINK 6) OR (Vacate via TWY R4 Taxi via A, LINK 4) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, LINK 4) then Taxi via TWY C, LINK 7 For Apron 33B: (Vacate via TWY R2 Taxi via TWY A) OR (Vacate via TWY R3 Taxi via LINK 6) OR (Vacate via TWY R4 Taxi via A, LINK 4) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, LINK 4, C) then further Taxi via TWY LINK 6 For Apron 33A: (Vacate via TWY R2/R3/R4 Taxi via TWY A) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, A) then further Taxi via TWY LINK 3 For Apron 32: (Vacate via TWY R2/R3/R4 Taxi via TWY A) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, A) then further Taxi via TWY LINK 2 For Apron 31: (Vacate via TWY R2/R3/R4 Taxi via TWY A) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, A) then further Taxi via TWY N/N5 For Apron II and Cargo Apron (Vacate via TWY R2/R3/R4 Taxi via TWY A) OR Vacate via (TWY R5/R6/R7 Taxi via TWY Q, A) then further Taxi via i. N, N4/N1/N3 for stands 201-211 ii. N for 232-244 iii. N for Cargo Apron (upto code F aircraft restricted up to max wingspan 73.30m) iv. N7, K, LINK 33, N for Cargo Apron (up to code F aircraft)

RWY 28	To Terminal 1	Vacate via TWY H1/H2, then taxi via TWY D4, D OR Vacate via TWY H3/H6, D i. F6 for stands 170 to 178 ii. F5 for stands 160R to 165 iii. F3 for stands 150 to 159 iv. E9 for stands 140 to 149B v. E9, E6 for stands 134L to 137 vi.E3 for stands 123-132 vii. D3 cross RWY 09/27 then A2 to Technical Area for up to Code-E aircraft
RWY 28	To Terminal 2 and Terminal 3	Vacate via TWY K1/ K2 then taxi via K, N6 or vacate via TWY K6 then taxi via N6 and further taxi via i. C, LINK 9/LINK 10 for Apron 35 ii. C, LINK 7 for Apron 34 iii. C, LINK 6 for Apron 33B iv. C, LINK 3 for Apron 33A v. C, LINK 2 for Apron 32 vi. N, N5 for Apron 31 vii. N, N4/N3/N1 for stands 201-211 viii. N for stands 232-244 ix. N for Cargo Apron (upto code F aircraft restricted up to max wingspan 73.30m) OR vacate via TWY K1 then taxi via LINK 34, N for Cargo Apron (up to Code E aircraft) x. Vacate via TWY K1/ K2/ K6 taxi via K, LINK 33, N for Cargo Apron (up to code F aircraft)
DEPARTURE		
RWY 29L	From Terminal 1	Taxi Via F3/F5/F6/E9/(E6, E9)/(E3, E9) OR (A2 cross RWY 09/27 TWY (D3, D, F6/F/E9)/(D3, F5/F3)), G, H2, CROSS RWY 10/28, K2, K, A, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/ 29R, S5, Z, Y6/Y7/Y8) OR Taxi via (TWY P6 CROSS RWY 11L/29R, S6, Y6)/(TWY P7 CROSS RWY 11L/29R, S7, Y7)/(TWY P8 CROSS RWY 11L/29R, S8, Y8). For Code D/E: A2 cross RWY 09/27 Taxi via TWY D3, F4/(D,F), G then folow above mentioned taxi route.
RWY 29R	From Terminal 1	Taxi Via F3/F5/F6/E9/(E6, E9)/(E3, E9) OR (A2 cross RWY 09/27 TWY (D3, D, F6/F/E9)/(D3, F5/F3)), G, H2, CROSS RWY 10/28, K2, K, A, P2/P4/P5/P6/P7/P8. For Code D/E: A2 cross RWY 09/27 Taxi via TWY D3, F4/(D,F), G then folow above mentioned taxi route.

RWY 29R	From Terminal 2 and Terminal 3	i. Apron 35: LINK 9/LINK 10, C, (LINK 16, P2)/(LINK 19, (P4/P5))/ (P6/P9, A, P7/P9, P8) ii. Apron 34: LINK 8, C, (LINK 16, P2)/(LINK 19, (P4/P5))/(P6/P9, A, P7/P9, P8) iii. Apron 33A: LINK 3, C, (LINK 16, P2)/(LINK 19, (P4/P5))/(P6/ P9, A, P7/P9, P8) iv. Apron 33B: LINK 6, C, (LINK 16, P2)/(LINK 19, (P4/P5))/(P6/ P9, A, P7/P9, P8) v. Apron 32: LINK 1, C, (LINK 16, P2)/(LINK 19, (P4/P5))/(P6/P9, A, P7/P9, P8) vi. Apron 31: N5, N, C, (LINK 16, P2)/(LINK 19, (P4/P5))/(P6/P9, A, P7/P9, P8) vii. Stands 201-211: (N3/N1), N, LINK 33, K, A, (P2/P4/P5/P6/P7/P8) viii. Stands 232-244: N, LINK 33, K, A, (P2/P4/P5/P6/P7/P8) ix. Stands 252-257, 260-265: N, LINK 33, K, A, (P2/P4/P5/P6/P7/P8)

RWY 29L	From Terminal 2 and Terminal 3	i. Apron 35: LINK 9/LINK 10, C, ((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8)) OR ((P6, CROSS RWY 11L/29R S6, Y6)/(P9, A, P7, CROSS RWY 11L/29R, S7, Y7)/(P9, P8, CROSS RWY 11L/29R , S8, Y8)) ii. Apron 34: LINK 8, C, ,((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8)) OR ((P6, CROSS RWY 11L/29R S6, Y6)/(P9, A, P7, CROSS RWY 11L/29R, S7, Y7)/(P9, P8, CROSS RWY 11L/29R , S8, Y8)) iii. Apron 33A: LINK 3, C, ((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8)) OR ((P6, CROSS RWY 11L/29R S6, Y6)/(P9, A, P7, CROSS RWY 11L/29R, S7, Y7)/(P9, P8, CROSS RWY 11L/29R , S8, Y8)) iv. Apron 33B: LINK 6, C, LINK 19, ((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8)) OR ((P6, CROSS RWY 11L/29R S6, Y6)/(P9, A, P7, CROSS RWY 11L/29R, S7, Y7)/(P9, P8, CROSS RWY 11L/29R , S8, Y8)) v. Apron 32: LINK 1, C, LINK 19, ((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8)) OR ((P6, CROSS RWY11L/29R S6, Y6)/(P9, A, P7, CROSS RWY 11L/29R, S7, Y7)/(P9, P8, CROSS RWY 11L/29R , S8, Y8)) vi. Apron 31: N5, N, C, LINK 19, ((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R,S5, Z, Y6/Y7/Y8)) OR ((P6, CROSS RWY 11L/29R S6, Y6)/(P9, A, P7, CROSS RWY 11L/29R, S7, Y7)/(P9, P8, CROSS RWY 11L/29R , S8, Y8)) vii. Stands 201-211: (N3/N1)/N, LINK 33, K, A, ((LINK 19, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8)) OR Taxi via (TWY P6 CROSS RWY 11L/29R, S6, Y6)/(TWY P7 CROSS RWY 11L/29R, S7, Y7)/(TWY P8 CROSS RWY 11L/29R, S8, Y8) viii. Stands 232-244: N, LINK 33, K, A, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8) OR Taxi via (TWY P6 CROSS RWY 11L/29R, S6, Y6)/(TWY P7 CROSS RWY 11L/29R, S7, Y7)/(TWY P8 CROSS RWY 11L/29R, S8, Y8) ix. Stands 252-257, 260-265: N, LINK 33, K, A, (P5, CROSS RWY 11L/29R, S5, Y5)/(P5, CROSS RWY 11L/29R, S5, Z, Y6/Y7/Y8) OR Taxi via (TWY P6 CROSS RWY 11L/29R, S6, Y6)/(TWY P7 CROSS RWY 11L/29R, S7, Y7)/(TWY P8 CROSS RWY 11L/29R, S8, Y8).
RWY 28	From Terminal 1	Taxi Via F3/F5/F6/E9/(E6, E9)/(E3, E9) OR (A2 cross RWY 09/27 TWY (D3, D, F6/F/E9)/(D3, F5/F3)), G, E OR For Code E: A2 cross RWY 09/27 Taxi via TWY D3, F4/(D,F), G,E.

RWY 28	From Terminal 2 and Terminal 3	For aircraft upto Code F: i. Apron 35: LINK 9/LINK 10, C, M1, K, W/J7 ii. Apron 34: LINK 8, C, M1, K,W/ J7 iii. Apron 33B: LINK 6, C, M1, K, W/ J7 iv. Cargo 252-257, 260-265:N, LINK 33, K, W/J7 For aircraft upto Code F(maximum wingspan 73.30 m) v. Apron 33A: LINK 3, A, N, LINK 33, K, W/ J7 vi. Apron 32: LINK 1, A, N, LINK 33, K, W/J7 vii. Apron 31: N5, N, LINK 33, K, W/J7 viii. Stands 201-211: N3/N1, N, LINK 33, K, W/J7 ix. Stands 232-244: N, LINK 33, K, W/ J7 **NOTE:** For aircraft upto Code F from APRON 32: LINK 1, C, M1, K, W/J7

Table: 3

EASTRERLY FLOW

ARRIVAL

RWY 11R	For Terminal 1	(Vacate via TWY Y1, Y2, Y4 then taxi via Z) OR (Vacate via TWY Y5), S5, CROSS RWY 11L/29R, P5, LINK 19 OR Vacate via TWY Y5, Z, S6/S7/S8, CROSS RWY 11L/29R then taxi via TWY P6/(P7, A, P9)/(P8, P9) then taxi via C, M1, K OR (Vacate via TWY Y1, Y2, Y4 then taxi via Z) OR (Vacate via TWY Y5), S5, CROSS RWY 11L/29R, P5 OR (Vacate via TWY Y5), Z, S6/S7/S8, CROSS RWY 11L/29R then taxi via TWY P6/P7/P8 further taxi via A, N7, K AND further taxi via K2 CROSS RWY 10/28 and then taxi via TWY H2, G and taxi via i. F6 for stands 170 to 178 ii. F5 for stands 160R to 165 iii. F3 for stands 150 to 159 iv. E9 for stands 140 to 149B v. (E9, E3) for stands 123-132 vi. E9, E6 for stands 134L to 137 vii. (F5/F3) OR (F6/F/E9, D), D3 to Technical Area. viii. F4/(F,D), D3 CROSS RWY 09/27 A2 to Technical Area for Code D/E aircraft.

RWY 11L	For Terminal 1	Vacate via (TWY P1/P2 taxi via LINK 16)/(P3, A, LINK 16)/(P4, LINK 19) then taxi via C, M1, K OR Vacate via TWY P1/P2/P3/P4 then taxi via A, N7, K, AND further taxi via K2 CROSS RWY 10/28 and then taxi via TWY H2, G and further taxi via i. F6 for stands 170 to 178 ii. F5 for stands 160R to 165 iii. F3 for stands 150 to 159 iv. E9 for stands 140 to 149B v. (E9, E3) for stands 123-132 vi. E9, E6 for stands 134L to 137 vii. (F5/F3) OR (F6/F/E9, D), D3 to Technical Area. viii. F4/(F,D), D3 CROSS RWY 09/27 A2 to Technical Area for Code D/E aircraft.
RWY 11R	For Terminal 2 and Terminal 3	For Terminal 3 (Vacate via TWY Y1, Y2, Y4 then taxi via Z) OR (Vacate via TWY Y5), S5, CROSS RWY 11L/29R, P5 OR (Vacate via TWY Y5), Z, S6/S7/S8, CROSS RWY 11L/29R then taxi via TWY P6/P7/P8, A further taxi via For Apron 35: LINK 9/(LINK 9, C, LINK 10). For Apron 34: LINK 8. For Apron 33A: LINK 3 For Apron 33B: LINK 6 For Apron 32: LINK 2 For Apron 31: N, N5 For Terminal 2 (Vacate via TWY Y1, Y2, Y4 then taxi via Z) OR (Vacate via TWY Y5), S5, CROSS RWY 11L/29R, P5, LINK 19 OR Vacate via TWY Y5, Z, S6/S7/S8, CROSS RWY 11L/29R then taxi via TWY (P6/(P7, A, P9)/(P8, P9) i. further taxi via C, M1, K, LINK 39, N1/ (N, N3) For stands 201-211 ii. further taxi via C, M1, K, LINK 39, N for stands 232- 244 iii.further taxi via C, M1, K, LINK 33, N For Cargo Apron

RWY 11L	For Terminal 2 and Terminal 3	For Terminal 3 Vacate via TWY P1/P2/P3/P4 then taxi via A then further taxi via i. For Apron 35: LINK 9 / (LINK 9, C, LINK 10) ii. For Apron 34: LINK 8 iii. For Apron 33B: LINK 6 iv. For Apron 33A: LINK 3 v. For Apron 32: LINK 2 vi. N, N5 For Apron 31: N, N5 For Terminal 2 Vacate via (TWY P1/P2 taxi via LINK 16)/(P3, A, LINK 16)/(P4, LINK 19) then taxi via C, M1, K then further taxi via: i. LINK 39, N1/ (N, N3) for stands 201-211 ii. LINK 39, N for stands 232- 244 iii. LINK 33, N for Cargo Apron
DEPARTURE		
RWY 11R	From Terminal 1	Taxi Via F3/F5/F6/E9/(E6, E9)/E3 OR (A2 cross RWY 09/27 TWY D3), D, H6, CROSS RWY 10/28, K6, N6, C and further taxi via LINK 4, Q OR LINK 5, A, R And further taxi via (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/(R6/ R7, CROSS RWY 11L/ 29R, T6/T7, Z, Z6/ Z7)
RWY 11L	From Terminal 1	Taxi Via F3/F5/F6/E9/(E6, E9)/E3 OR (A2 cross RWY 09/27 TWY D3), D, H6, CROSS RWY 10/28, K6, N6, C and further taxi via LINK 5, A, (R4)/(R, R5/R6/R7) OR LINK 4, Q, (R5/R6/R7)

RWY 11R	From Terminal 2 and Terminal 3	i. Apron 35: LINK 9/ (LINK 10, C, LINK 9), A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/ 29R, T6/T7, Z, Z6/ Z7) ii. Apron 34: LINK 7, A, R, (R6, CROSS RWY 11L/ 29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/R7, CROSS RWY 11L/29R, T6/T7, Z, Z6/ Z7) iii. Apron 33B: LINK 6, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/29R, T6/T7, Z, Z6/ Z7) iv. Apron 33A: LINK 3, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/29R, T6/T7, Z, Z6/ Z7) v. Apron 32: LINK 1, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/ 29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/29R, T6/ T7, Z, Z6/ Z7) vi. Apron 31: N5, N, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/ 29R, T7, Z5)/(R6/ R7, CROSS RWY 11L/29R, T6/ T7, Z, Z6/ Z7) vii. Stands 201-211: N1/ N3/N4, N, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/ 29R,T6/T7, Z, Z6/ Z7) viii. Stands 232-244: N, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/29R, T6/T7, Z, Z6/ Z7) ix. For upto code F aircraft (restricted up to max wingspan 73.30m) from stands 252-257, 260- 265: N, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/29R, T6/T7, Z, Z6/ Z7) x. For code F aircraft from stands 252-257, 260 and 265: LINK 33, K, N6, C, LINK 5, A, R, (R6, CROSS RWY 11L/29R, T6, Z4)/ (R7, CROSS RWY 11L/ 29R, T7, Z5)/ (R6/ R7, CROSS RWY 11L/29R, T6/ T7, Z, Z6/ Z7).

RWY 11L	From Terminal 2 and Terminal 3	i. Apron 35: LINK 9/ (LINK 10, C, LINK 9), A, R, R4/R5/R6/R7 ii. Apron 34: LINK 7, A, R, R4/R5/R6/R7 iii. Apron 33B: LINK 6, A, R, R4/R5/R6/R7 iv. Apron 33A: LINK 3, C, LINK 5, A, R, R4/R5/R6/R7 v. Apron 32: LINK 1, C, LINK 5, A, R, R4/R5/R6/R7 vi. Apron 31: N5, N, C, LINK 5, A, R, R4/R5/R6/R7 vii. Stands 201-211: N1/ N3/N4, N, C, LINK 5, A, R, R4/R5/R6/R7 viii. Stands 232-244: N, C, LINK 5, A, R, R4/R5/R6/R7 ix. For upto code F aircraft (restricted up to max wingspan 73.30m) from stands 252-257, 260- 265: N, C, LINK 5, A, R, R4/R5/R6/R7 x. For code F aircraft from stands 252-257, 260 and 265: LINK 33, K, N6, C, LINK 5, A, R, R4/R5/R6/R7
RWY 10	From Terminal 1	Taxi Via F3/F5/F6/E9/(E6, E9)/E3 OR (A2 cross RWY 09/27 TWY D3), D, H3/H6
RWY 10	From Terminal 2 and Terminal 3	i. Apron 35: LINK 9/(LINK 10, C, LINK 9), A, N7, K6 ii. Apron 34: LINK 7, A, N7, K6 iii. Apron 33B: LINK 6, A, N7, K6 iv. Apron 33A: LINK 3, A, N7, K6 v. Apron 32: LINK 1, A, N7, K6 vi. Apron 31: N5, N, N7, K6 vii. Stands 201-211: (N1/N3), N, N7, K6 viii. Stands 232-244: N, N7, K6 ix. For up to code F aircraft (restricted up to max wingspan 73.30m) from Cargo Apron: N, N7, K6 x. For up to code F aircraft from Cargo Apron: N, LINK 33, K,K6.

4.4.5.1 Follow Me services shall be provided, whenever a crossing is involved from K3 to H3 and vice-versa on Runway 28/10, as there is no crossing lights from K3 to H3 and vice-versa.

4.5 Lighting Inspection Procedures

4.5.1 The appropriate aeronautical ground lights must have been inspected during the hour preceding implementation of LVP. DIAL AGL team to carry out close monitoring of serviceability of AGL through monitoring system.
4.5.2 Operations Duty Manager is responsible for organizing lighting inspections. He shall arrange an inspection of the relevant aeronautical ground lighting. To ensure minimum delay in completing the inspection, separate teams may inspect the landing runway, associated taxiways and apron area and confirm that they are clear of runway/taxiway/apron to ATC.
4.5.3 For SP and LVP only the lighting for the active runway and associated taxiways are inspected.

5. DESCRIPTION OF EQUIPMENT AND SERVICES

5.1 Runway Visual Range (RVR)

5.1.1 There are three transmissometers for RWY 27/09 to record RVR values. One transmissometer is located each at touchdown zone, runway midpoint, and end of runway. RVR values always refer to Touchdown RVR (TDZ), Midpoint RVR (MID) and Stop End RVR (END).

5.1.2 There are three Main and three Standby transmissometers installed at touchdown zone, runway midpoint and end of runway for RWY 28/10 to record RVR values.

5.1.3 RWY 29L/11R has Five RVR (transmissometers) at following locations:

a) Physical beginning of RWY-29L, termed as 'A'

b) Near displaced threshold of RWY-29L, termed as 'B'
c) Mid of RWY 11R/29L, termed as 'C'
d) Near displaced threshold of RWY-11R, termed as 'D'
e) Physical beginning of RWY-11R, termed as 'E.

5.1.4 RWY 29R/11L has 5 RVR (Forward Scatter meter) at following locations:

a) Physical beginning of RWY-29R, termed as 'A'

b) One at near displaced threshold of RWY-29R, termed as 'B'

c) One at Mid of RWY 11L/29R, termed as 'C'

d) One at near displaced threshold of RWY-11L, termed as 'D'

e) Physical beginning of RWY-11L, termed as 'E'

5.1.5 The RVR information available for Rwy – 29L/11R and RWY 29R/11L should be used as following:

Table: 4

RWY	Dep/Arr	Beginning	TDZ	MID		END	
				Primary	Standby	Primary	Standby
29L	Dep	A	-	B	C	E	D
29L	Arr	-	B	C	-	D	E
11R	Dep	E	-	C	-	A	B
11R	Arr	-	D	C	-	B	A
29R	Dep	A	-	B	C	E	D
29R	Arr	-	B	C	-	D	E
11L	Dep	E	-	C	-	A	B
11L	Arr	-	D	C	-	B	A

5.1.6 RVR is reported in the following scales:
a) Above 800m till 2000m,increments of 100m
b) From 400m to 800m, increments of 50m
c) m Below 400m, increments of 25m.

5.1.7 Equipment serviceability for CAT II/CAT III operations:
a) For CAT II operations TDZ and MID RVR shall be available.
b) For CAT III operations TDZ, MID and END RVR shall be available.

5.2 Aeronautical Ground Lighting (AGL) System

5.2.1 The Precision Approach lighting system for CATII/CAT III operations are installed on RWY 28, RWY 29L, RWY11R, RWY 29R and RWY 11L at IGI Airport.
5.2.2 During LVP operation irrespective of the RVRs, the state electricity board (BSES) power supply will be the primary source through online UPS for the systems which require a maximum of one second switchover time and the DGs shall be in auto operation mode to meet the requirements in case of power failure. The power changeover for the other systems which are not covered with UPS backup shall be getting the power supply through DGs within 15 seconds from the time of power failure. For the systems covered with UPS back up, the changeover will be zero seconds. There is no specific requirement for keeping the DG source as primary source when BSES power source is available during the LVP operations.

5.2.3 All taxiways except following taxiways have CAT III standard taxiway lighting: TWYs LINK 32,LINK 30, Portion of LINK 16 between LINK 14 and TWY C, LINK 14, LINK 15 and LINK 13.

5.2.4 The following parking stands have been provided with the CAT III Aircraft Stand Manoeuvring Guidance Lighting system:

a) Parking stands 170 to 178, 160R to 165,150 to 159,140 to 149B,123-132 and 134L-137 in Apron I.

b) Parking stands 201 to 211, 232 to 244 in Apron II and 252 to 257 and 260 to 265 in Cargo Apron.

c) Following Table provides the details of parking stands in Apron 31 to Apron 35:

Table 5:

APRON	AIRCRAFT STAND NUMBER	TOTAL AIRCRAFT STANDS
APRON 31	A06, A08, A10, A12, A14	5
APRON 32	A01, A03, A07, A07L, A07R, A09, A09L, A09R,A11, A11L, A11R, A13 B15, B15L, B15R, B17, B17L, B17R, B19, B19L, B19R, B21R02, R03	24
APRON 33A	B18, B20, B20L, B20R, B22, B22L,B22R, B24, B24L, B24R, B26, B26L, B26R	13
APRON 33B	C28L, C28R, C30L, C30R, C32L, C32R, C34L, C34R, C36	9
APRON 34	C27L, C27R, C29L, C29R, C31L, C31R,C33, D37, D37L, D37R, D39, D39L, D39R , D41, D43, D45, D47, D49, D51, D53,D55	21
APRON 35	D46, D48, D50, D52, D54, D56, D58, D60, D62, E64, E66, E68, E70, E72, E74, E76, E78, E80, E82, E84	20
Note: Remote Stands in T3 apron (except R02, R03) do not have stand manoeuvring guidance lights.		

5.2.5 The alternate yellow and green lights have been provided on the under mentioned taxi tracks to denote their presence in ILS sensitiv area:

a) RWY 28/10: H2,H1, H3, H6,K6, K2, K3, K1, U, V, G2, E, W and J7

b) RWY 29L/11R: Y8, Y7, Y6, Y5, Y4, Y2, Y1, Z2, Z3, Z6, Z4, Z5 and Z7.

c) RWY 27/09: D1, D2, D3, D4,D5, D6,D7,D8, D9 and A2

(d) RWY 29R/11L: P1, P2, P3, P4, P5, P6, P7, P8, R1, R2, R3, R4, R5, R6, R7, S1, S2, S5, S6, S7, S8, T4, T5, T6 and T7

Table 6:

5.2.6 The preventive maintenance system for AGL have its objective that minimum level of serviceability as mentioned in below table is maintained during CAT II/ III operations:

AGL Facility	CAT II/CATIII	Restrictions
Approach Lights (Inner 450m)	95%	Suspend CAT II / CAT III operations
Approach Lights (Beyond 450m)	85%	
Runway Center-line lights	95% No Two adjacent lamps be unserviceable	Suspend CAT II / CATIII operations
Threshold lights	95% No Two adjacent lamps be unserviceable	Suspend CAT II / CATIII operations
Runway Edge lights	95% No Two adjacent lamps be unserviceable	Suspend CAT II / CATIII operations
Touchdown Zone lights	90% No Two lamp in Barrette be unserviceable.	Suspend CAT II / CATIII operations
Runway End lights	75% No Two adjacent lamps be unserviceable	Suspend CAT II / CATIII operations
Taxiway Centre-line lights	No Two adjacent lamps be unserviceable (Runway visual range conditions less than a value of 350 m)	Close affected taxiways, use alternate taxi route.
Standby Generators	Generators in any one substation.	Suspend CAT II / CATIII operations in the affected Runway.

NOTE 1:
Under CAT II/III operations, for stop bar:

a) Not more than two lights will remain unserviceable; and

b) Two adjacent lights will not remain unserviceable unless the light spacing is significantly less than that specified

NOTE 2:

Unserviceability of any of the following facilities does not affect CAT II/ CAT III Operations.

a) PAPI.

b) Taxiway Edge Lights on curves.

c) Taxiway clearance lights wherever provided.

5.3 Non-Visual Ground Surveillance System:

5.3.1 IGI Airport has been equipped with Surface Movement Radar. The system provides nonvisual electronics surveillance of manoeuvring area and facilitates the controllers to identify potential ground conflict and runway incursions.

5.3.2 For CAT III and CAT II operations below 350m availability of Non-Visual Surveillance System such as Surface Movement Radar is mandatory.

5.4 Navigational Aids

5.4.1 RWY 28, RWY 11R, and RWY 29L have been equipped with Instrument Landing System (ILS) for CATII/CATIII.

5.4.2 The ILS Category Monitor Panel at the Control Tower console indicates the ILS category availability by monitoring the following equipment:

a) Main and standby localizer transmitters

b) Main and standby glide path transmitters

5.4.3 The status of the following facilities is monitored and displayed by a separate nav-aid status indicator panel:

a) ILS DME

b) Outer Marker

5.4.4 ILS equipment serviceability required for CAT II/CAT III operations: -

a) Both main and standby localizer transmitters;

b) Both main and standby glide path transmitters;

c) One standby power generator in each unit.

d) Outer marker/ ILS DME

NOTE 1 - Unserviceable ILS DME will not change the status of ILS provided OM and Glide Path are serviceable for runway 28 only.

NOTE 2 - Unserviceable Outer Marker will not change the status of ILS provided ILS DME is operational for runway 28 only.

5.5 Airport Rescue and Fire Fighting Service (ARFF)

5.5.1 During LVP following predetermined positions will be taken by ARFF vehicles

a) One CFT south of RWY 09/27 east of TWY D4.

b) One CFT north of RWY28/10 near TWY H1

c) One CFT South of RWY 29L/11R abeam TWY S3.

d) One CFT between RWY 11L/29R & TWY A.

5.5.2 In the event of an incident when LVP are in force, ADC and SMC should provide the maximum assistance in directing ARFF to required location.

6. LOW VISIBILITY TAKE-OFF (LVTO)

6.1 LVTO pertains to take off when the RVR is below 400 m and is applicable whenever the reported RVR in any zone (touch-down/mid/roll-out RVR) is below 400 m. The facilities and conditions of the undermentioned Table 7 required will be as per the lowest RVR reported in any zone (e.g. if the RVR is 400/300/300 representing the three zones, then the 300 m will be the RVR for reckoning facilities and conditions of Table 7. If the RVR is 300/150/Not Reported, then 150 m will be the reckoning RVR and as the RVR is below 200 m all three RVRs are required).

Table: 7

Take-Off RVR/Visibility	
Facilities	RVR/Visibility* CAT A, B,C and D
Adequate visual reference** (Day only)	500 M
Runway Edge Lights or Runway Center Line Markings***	400 M
Runway Edge Lights and Center Line Marking	300 M
Runway Edge Lights and Runway Center Line Lights	200 M
Runway Edge Lights and Runway Center Line Lights and relevant RVR information****	150 M
High Intensity Runway Edge Lights and Runway Center Line Lights (Spacing 15 m or less) and relevant RVR information****	125 M
High Intensity Runway Edge Lights and Runway Center Line Lights (Spacing 15 m or less), approved lateral guidance system and relevant RVR information****	75 M

*The TDZ RVR/VIS may be assessed by the pilot

**Adequate Visual reference means, that a pilot is able to continuously identify the take-off surface and maintain directional control.

***For night operations at least runway edge lights or center line lights and runway end lights are available.

**** The required RVR must be achieved for all relevant RVR reporting points (touchdown, mid- point and stop-end/roll-out). The governing RVR shall be the lowest of the reported RVRs.

6.2 An operator shall not conduct low visibility take-offs in less than 400 m RVR unless approved by DGCA.

6.3 An operator shall not conduct take-off with visibility/RVR less than Category I conditions unless low visibility procedures are enforced.

7. SUMMARY OF THE LOW VISIBILITY PROCEDURES

7.1 Subject to completion of Safeguarding Procedures, LVP comes into operation:

a) When either TDZ, MID or END RVR below 800m, and/or

b) cloud ceiling below 200ft

7.2 Vehicular movement

a) Vehicles shall not be cleared to cross the runway, once an inbound aircraft is 8NM from touchdown.

b) Vehicular movement on the manoeuvring area shall be restricted to essential vehicles.

c) During CATII /CAT III operations only vehicles equipped with transponder (Vehicle Locator) shall operate in manoeuvring area. However, other vehicles crossing taxiways on service road shall be regulated by official of Apron Control by deploying man power.

d) Vehicles shall not be held at any point closer to the runway than the CAT II/ CATIII holding point/stop-bar.

7.3 Aircraft Movement

a) Aircraft shall not be cleared to cross the runway once an inbound aircraft is 8NM from touchdown.

b) Aircraft shall not be held at any point closer to the runway than the CAT II/CATIII holding point/stop-bar.

c) During CAT III operations aircraft shall not be permitted to exit the runway 28 via TWY H6.

d) If ‘K6’ is not available then CAT III operations from Rwy 28 will be suspended and downgraded to CAT II. For aircraft parking south of RWY 28 aircraft will back track and exit via ‘K2’.

e) In case H1, H2, H3 and H6 are not available the CAT III operations shall be suspended and downgraded to CAT II. For aircraft parking North of RWY 28 , aircraft will back track and taxi via TWY G2 or TWY E for respective parking positions.

f) Aircraft which have landed are not to be instructed to hold on a runway turnoff

8. ACTIONS TO BE TAKEN BY VARIOUS AGENCIES

8.1. Before commencement of winter season, a meeting will be held by Chief Operating Officer, Delhi International Airport Private Ltd. and Regional Executive Director (Northern Region)/ GM (ATM), IGI Airport, AAI in the month of November every year to inform all airlines and agencies operating at airport about their roles/ responsibilities and create awareness to ensure cooperation for safe airport operations during periods of low visibility.
8.2. All the agencies shall ensure that staff and drivers are suitably trained during CAT III operations.

8.3. Action by Watch Supervisory Officer (WSO), AAI

8.3.1 Implementing Safeguarding Procedures - When RVR is less than 1200m and visibility is forecast to deteriorate 800m or below and/or the cloud ceiling is 400ft and is forecast to fall to 200ft or less, WSO will inform -
a) AOCC,
b) Communication/ Technical supervisor (SSO), AAI
c) Tower Supervisor, AAI -for implementation of Safeguarding Procedures.

8.3.2 Implementing LVP

8.3.2.1 WSO shall implement Low Visibility Procedures when either
a) TDZ, MID or END RVR is less than 800m; and/or
Cloud ceiling is less than 200ft.
AND
c) Safeguarding Procedures (SP) have been completed and the airport is safeguarded.

8.3.2.2 WSO shall inform Aerodrome Tower Controller and Approach/Radar Controller,Duty Met. Officer and Communication/Technical Shift Supervisor Officer (SSO) and to ensure that "**LOW VISIBILITY PROCEDURE IN FORCE**" is included in ATIS broadcast.

8.3.3 WSO may terminate LVP when;

a) Meteorological conditions improve and TDZ, MID and END RVR are 800 m or more and the cloud ceiling is 200 ft or higher, and trend is for improvement for both runways.
b) Facilities, equipment and services necessary for CAT III operations are degraded and/or the prevailing conditions are considered unsafe for such operations.

8.3.3.1 WSO will intimate Aerodrome Tower Controller, Approach/Radar Controller and Communication Technical Shift Supervisory Officer (SSO) regarding the Termination of LVP operation.

8.4. Action by Tower Supervisor:

8.4.1 On being notified by WSO that ILS CAT II/CAT III Low Visibility Procedures are to commence, the Aerodrome Tower Controller will:

a) inform Aerodrome Rescue and Fire Fighting Services and AOCC,
b) check ILS status
c) check lighting is correctly selected and operating properly
d) check transmissometer displays
e) check ASMGCS (for operations below RVR 350 m)

8.4.2 After the commencement of ILS CAT II/CAT III operations, the Aerodrome Tower Controller shalla) Check ATIS broadcast and include the message that "ILS CAT II/CAT III Low Visibility Procedures in Force".
b) Give landing clearance to aircraft not later than 2NM from touchdown.
c) Inform changes in RVR readings to the landing aircraft.
d) Give an unimpeded taxi route to arriving aircraft to allow it to clear the Localizer Sensitive Area expeditiously.
e) Inform pilots of all failures of ILS, lighting system, transmissometers relevant to ILS CAT II/ CAT III Low Visibility Operations.
f) Initiate emergency action if aircraft on CAT II/CAT III ILS is not seen (on radar display or otherwise) or is not in radio contact, as expected.

8.4.2.1 Record of the above actions with time be maintained and signed by the officer taking action.

8.5. Action by Approach/Radar Controller

8.5.1 On being advised by WSO that ILS CAT II/CAT III Low Visibility Procedures are in force, the Approach/Radar Controller shall:-
a) Inform the arriving aircraft "ILS CAT II/CAT III "Low VisibilityProcedures in Force".
(**Note:** Ensure that Pilot acknowledges of being cleared for ILS CAT II/CAT III approach.)
b) Inform TDZ RVR to arriving aircraft and in addition:
(i) For CAT II operations - If TDZ RVR is below 550m then MID RVR shall also be passed.

(ii) For CAT III operations – If TDZ is below 300m, then MID and End RVR readings shall also be passed.

NOTE: After an aircraft is 8NM from Touch Down or has passed outer marker, RVR observations need not be passed unless there is changes in RVR values.
c) vector the aircraft to intercept the localizer not less than 10NM from touchdown.
d) Not subject an aircraft to any speed control when within 20NM from touchdown.
e) issue landing clearance to arriving aircraft not later than 2NM from touchdown.

8.6. Action by Surface Movement Controller

During the period the Low Visibility Procedures are effective the Surface Movement Controller shall:
a) Monitor all surface movement of aircraft and vehicles on the manoeuvring area.
b) Inform all taxiing aircraft of the preceding taxiing or holding aircraft.
c) Hand over only one aircraft at a time to Tower Controller.
d) Permit only the vehicles equipped with transponder in the manoeuvring area during Cat III operations. However, other vehicles crossing taxiway crossings on service road shall be regulated by official of Airside Operations, DIAL by deploying man power.

8.7. Action by Communication/Technical/Electronics Shift Supervisory Officer (SSO)

8.7.1 On receipt of "Outlook for LVP" from the WSO, the Communication/Technical/Shift Supervisory Officer [SSO] will inform the Duty Officer, Equipment Room and have the ILS equipment and its status indicators in ATC units checked up. He will inform WSO of any unserviceability in the equipment which is likely to affect ILS CAT II/CAT III operation.

8.7.2 On receipt of "Advisory Message" from WSO that LVP are to be made effective SSO will maintain continuous watch on the performance of ILS equipment and will inform WSO of any un-serviceability which may affect ILS CAT II/CAT III operation.

9. Action by AOCC and Airside Operations, DIAL:

9.1 Action by Shift Head, AOCC
9.1.1 On receipt of advice from WSO to implement Low Visibility Procedures, the Shift Head AOCC, will immediately inform the following:

a) Operations Duty Manager on company channel.
b) Shift Engineer (electrical) on company channel
c) Manager (Civil), Operational Area Maintenance to ensure that all civil works in progress in manoeuvring area, are stopped and that the work area is restored in complete serviceable condition and confirm to ODM/Apron Control accordingly. During ILS CAT II/CAT III Low Visibility Operations, no equipment, manpower or material shall be present in sensitive areas of localizer and glide path.
d) Central Industrial Security Force (CISF) Control Room Cargo at 25601051
e) Domestic and International airlines via e-mail/SITA network.

9.2 Action by Operations Duty Manager/Apron Control

9.2.1 During CAT II/CAT III operations, ODM/ Apron Control may authorize operations of vehicles, equipped with VELO, on manoeuvring area, including the crossing of taxiways, with the prior permission from ATC Tower. However, the vehicles, not equipped with VELO, crossing taxiway crossings on service road shall be regulated by official of Airside Operations, DIAL by deploying man power.

9.3 Follow-me vehicles:

9.3.1 Such vehicles shall ensure that
a) No vehicle/person enters or is present in the sensitive/critical areas of localizer and glide path.
b) All civil/electrical works in progress are to be stopped in the manoeuvring area immediately and men/material/equipment to be removed from the sensitive/critical areas of localizer and glide path.
9.3.2 After ensuring above, Follow-me vehicles will confirm the same to the ODM.
9.3.3 Subsequently, follow-me vehicle shall remain available in apron and will maintain listening watch on their respective frequencies, i.e., R/T 121.625 MHz, 121.90 Mhz and 121.75 MHz frequency.
9.3.4 On receipt of information about unserviceability of any of the runway visual aids or power supply system, ODM through AOCC will immediately inform ATC Tower accordingly.
9.3.5 No vehicles shall enter/cross in the vicinity of runway without permission from ATC Control Tower. Such vehicles shall be equipped with VELO and able to communicate with ATC. The vehicles of the ARFF services, civil, electrical division or of any other agency which are not equipped with VELO and/ or RT but has to enter the runway or taxi track for urgent operational requirement shall be escorted by the follow me jeep all the time.
9.3.6 None of the workers/vehicles of grass cutting contractor, garbage removal contractor, and electrical/civil contractor shall enter the manoeuvring area during the operations of ILS CAT II/CAT III Low Visibility Procedures.
9.3.7 All coordination with DIAL units and ATC shall be carried out by AOCC.
9.3.8 ODM would advise ATC Tower/Watch Supervisory Officer when all actions are completed for commencement of LVP.

9.4 Action by Shift Engineers (Electrical)

9.4.1 On receipt of advice to implement Low Visibility Procedures from AOCC, respective Shift Engineer of T1, T2 and T3 (Electrical) along with ODM, will check that following visual aids associated with RWY28/29L/11R are serviceable and can be operated at full intensity.

a) Approach lighting system
b) Approach supplementary lighting
c) Runway edge lights
d) Runway threshold and end lights
e) Runway centre line lights
f) Runway touchdown zone lights
g) Stop Bar Lights
h) Intermediate holding position lights
i) RWY guard lights
j) TWY C/L lights
k) Stand manoeuvring lights

(**NOTE -** No adjustment in light intensity shall be made without permission from ATC Tower during LVP)

9.4.2 They shall ensure that no electrical maintenance works is carried out during LVP either in power house or on any other electrical facilities used during CAT II/CAT III operations.
9.4.3 They will ensure that runway switch room is manned and position themselves at CCR halls for standby power supply requirements and will maintain a listening watch on company frequency. They will ensure availability of power supply to meet CAT III requirement.

9.4.4 They will inform the un-serviceability or any change in status of any facility/systems to OMD immediately.

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9.5 Action by Shift Head, AOCC

9.5.1 Shift Head, AOCC will be overall responsible for ensuring smooth coordination between all DIAL units and other concerned agencies. He shall inform regarding implementation of LVP to following officials through company channel:

a) Terminal Duty Manager, Terminal ID
b) Terminal Duty Manager, Terminal II
c) Terminal Duty Manager, Terminal III

9.6 Action by Terminal Duty Manager-III To inform:

• CISF Control Room
•Duty Officer Cargo
• PRO Customs
• AFRRO (Assistant Foreigners Regional Registration Officer)
• Inspector, Delhi Traffic Police

9.7 Action by Fire Station-3 and Fire Station-1

9.7.1 **Operations Commander** will ensure that ARFF (Airport Rescue and Fire Fighting) vehicles equipped with serviceable transponder take predetermined positions. Following predetermined positions will be taken by ARFF vehicles:-
a) One CFT North of RWY28/10 near TWY H1.
b) One CFT South of RWY 29L/11R abeam TWY S3.

10. Action by Airport Security Police (CISF)

10.1 Chief Airport Security Officer shall ensure by deploying adequate manpower that power house and other vital electrical installations are properly secured and protected against any unauthorized intrusion.

10.2 The Inspector in charge, Control Room on receipt of advice to implement Low Visibility Procedures, will immediately inform all access gates and CISF posts under their respective controls not to permit labour to enter manoeuvering area while LVP are in force unless cleared by apron control.

11. Action by Duty Officer (Meteorological Office)

11.1 Duty Meteorological Officer would issue an 'Outlook for Low Visibility Procedures' to the Watch Supervisory Officer [WSO] of air traffic services whenever he expects that the RVR and/or cloud ceiling will fall below 800 m and/or 200ft or less respectively.

11.2 Whenever Duty Meteorological Officer visualizes that RVR is likely to fall below 800 m and/or cloud ceiling to 200ft or less within next 2 hours, he will issue an 'Advisory Message' to WSO to this effect.
11.3 When the RVR and/or cloud ceiling are 800m and/or 200ft respectively and the trend is towards improvement in these elements of weather Conditions the Duty Met Officer may, when requested by WSO, advise him about such improving weather conditions for the purpose of termination of LVP.
11.4 The Duty Met Officer would ensure that the RVR displays in ATC units in the Control Tower and Approach Control are serviceable. He would also ensure that RVR/visibility recorders of Touch-down zone, Mid-point and end positions are serviceable.
NOTE: Due to high variability of meteorological elements in space and time and the limitations of forecasting techniques available, it may not be always possible to issue a precise forecast of RVR particularly in case of transient weather phenomenon within two hours.

12. Action by Other agencies at airport such as - Airlines, Re-fuelling Companies,Catering Agencies, Airport Police, Customs, Immigration, Health

12.1 All agencies operating in the operational area shall ensure that minimum number of their vehicles, as are absolutely essential for aircraft operations, operate in the operational area. The drivers of these vehicles should keep a look out for taxing aircraft and other vehicles to prevent incident/ accidents. During CAT III operations only vehicles equipped with serviceable transponder shall be permitted to operate in manoeuvring area.

12.2 All the vehicles must have their obstruction/ anti-collision lights “ON” during operation of low visibility procedures.

12.3 Follow all instructions/sign boards provided on vehicular movement area/ service roads.

12.4 No vehicle/equipment/personnel shall enter in and around the vicinity of the runways or taxi-tracks except with prior permission of ODM, who in turn shall coordinate with aerodrome control tower.

13. TERMINATION OF LOW VISIBILITY PROCEDURES

13.1 When met conditions improve and TDZ, MID and END RVR are 800m or moreand the cloud ceiling is 200ft or higher and trend shows improvement, the WSO would terminate operation of LVP. He may obtain advice from Duty Met Officer, as provided at Para 10.3, about the improving weather conditions for the purpose of termination of LVP operations.

13.2 The WSO will intimate the following regarding termination of LVP operations

a) Aerodrome Tower Supervisor
b) Approach/Radar Controller
c) Communication/Technical Shift Supervisory Officer (SSO)

13.3 Aerodrome Tower Supervisor will in turn inform AOCC, who will advise all thepreviously notified personnel to resume normal operations.

X. MODES OF OPERATION

1. INTRODUCTION:

IGI Airport, New Delhi has four runways i.e. 09/27, 10/28 ,11R/29L and 11L/29R. IGI Airport, New Delhi comprises of Two Runway Systems, viz Northern System and Southern System. Northern Runway System comprises of Runway 09/27 and Runway 10/28 whereas Southern Runway System comprises of Runway 11L/29R and Runway 11R/29L. Two Runways within the Runway system (Northern or Southern) are dependent on each other.
These runways are used in various modes for optimal use of available ground and air resources. Particular mode of operation to be implemented is decided by ATC considering various factors including the prevalent weather conditions, visibility/ RVR, serviceability of navigation and landing aids, ground infrastructure, traffic density and its composition, noise abatement requirements etc.
One/Two/ Three/Four runway modes of operations shall be tactically utilized during low/high density traffic situations so as to attain the optimal capacity at all times.

2. OPERATING PRINCIPLES

a. The runway assignment to a particular flight is primarily done based on the concept of Proximity to the arrival/departure terminal. However, ATC may deviate from this principle of near terminal arrival/departure due to ground infrastructure constraints and/or load balancing to meet the objective of least average delay.
b. Change of runway to arrivals if any, will be intimated before the aircraft is at least 20 NM from touchdown. Within 20 NM of touchdown, change of runway will be affected only with the consent of Pilot-in-Command.
c. Independent arrivals on any two runways are not permitted. The sequence of arrivals on any two runways is considered as one stream for the purpose of separation and sequencing.
d. In case of dependent modes, the operation on two runways will be in the form of in-trail operations wherein a movement on arrival runway is considered as movement on departure runway and vice-versa for the purpose of applying relevant separation.

e. In independent mode for departures, simultaneous departures are permitted from any Runway of Northern Runway System and another Runway of Southern Runway System, when the departures follow the published Runway SID or Non RNAV instructions.

f. Simultaneous departures are not permitted from RWY 27 and RWY 28. Similarly, simultaneous departures are not permitted from RWY 09 and RWY 10.

g. Simultaneous departures are not permitted from RWY 29R and RWY 29L. Similarly, simultaneous departures are not permitted from RWY 11L and RWY 11R.

3. PREFERRED MODES OF OPERATIONS

Four runways available at IGI airport are used in various modes. There are many modes of operations A particular mode of operation is employed depending upon various factors such as the prevalent weather conditions, visibility/RVR, serviceability of navigation and landing aids, ground infrastructure and airspace constraints, traffic density and its composition, noise abatement requirements, VVIP movements, etc.

The available Runways can be used in following combination.

a. **Westerly Flow**: Major modes of operations in westerly flow are as under.

Mode of operation	Remarks

Two RWY operations	27- DEP and ARR 29R- DEP and ARR	a. Departures from RWY 27/28 are independent of position of arrival/departure on RWY 29L/RWY 29R. b. Departures from RWY 29L/29R are independent of position of arrival/departure on RWY 27/28. c. Departures from RWY 28 are dependent upon position of arrival on RWY 27 d. Departures from RWY 29R are dependent upon position of arrival on RWY 29L.
	28- DEP and ARR 29L- DEP and ARR	
	28- DEP and ARR 29R- DEP and ARR	
	27- DEP and ARR 29L- DEP and ARR	
	27- ARR 28- DEP and ARR	
	29L ARR 29R DEP	
Three RWY operations	27 –ARR 28– DEP 29L- ARR and DEP	
	27- ARR 28- DEP 29R- ARR and DEP	
	27- ARR and DEP 29L- ARR 29R- DEP	
	28- ARR and DEP 29L- ARR 29R- DEP	
Four RWY operations	27- ARR 28- DEP 29L- ARR 29R- DEP	

b. Easterly Flow: Major modes of operations in Easterly flow are as under	
Mode of operation	Remarks

Two RWY operations	09- DEP and ARR 10- DEP	a. Departures from RWY 09/10 are independent of position of arrival/departure on RWY 11R/ RWY 11L. b. Departures from RWY 11R/ RWY 11L.are independent of position of arrival/departure on RWY 09/10. c. Departures from RWY 09 are dependent upon position of arrival on RWY 10. d. Departures from RWY 10 are dependent upon position of arrival on RWY 09. e. Departures from RWY 11L are dependent upon position of arrival on RWY 11R.
	09- DEP and ARR 10- ARR	
	09- DEP 10- DEP and ARR	
	09-ARR 10- DEP and ARR	
	09- DEP and ARR 11L- DEP and ARR	
	09-DEP and ARR 11R- DEP and ARR	
	10- DEP and ARR 11L- DEP and ARR	
	10- DEP and ARR 11R- DEP and ARR	
	11L- DEP 11R-ARR	
Three RWY operations	09 – Dep 10 – ARR 11R – ARR and DEP	
	09- DEP 10- ARR 11L- DEP and ARR	
	09- ARR 10- DEP 11R- ARR and DEP	
	09-ARR 10- DEP 11L- DEP and ARR	
	10- ARR and DEP 11L- DEP 11R- ARR	
	09- ARR and DEP 11L - DEP 11R- ARR	
Four RWY operations	09- DEP 10- ARR 11L- DEP 11R- ARR	
	09- ARR 10- DEP 11L- DEP 11R- ARR	

4. SEPARATION MINIMA:

a. 3 NM surveillance based separation at or below FL 140 within 60 NM of DPN subject to availability of ASR. In case ASR is not available, the separation minima shall be 5 NM.
b. 5 NM surveillance based separation above FL 140 within 60 NM of DPN.
c. 10 NM surveillance based separation beyond 60 NM of DPN.

5. SID and/or Radar Departure Instructions:
a. RNAV SIDs for IGI Airport as published in eAIP India/AIP Supplement are used as departure instructions to RNAV 1 compliant aircraft.
b. Departure instructions to NON-RNAV-1 departures are given as below.

RWY	Departure instructions
27	After departure RWY 27, turn right heading 295 climbing to FL 70, expect further instructions with radar.
28	After departure RWY 28 climb on track 284 DEG (M) to FL 70, expect further instructions with radar
29R	After departure RWY 29R, climb to 4000 FT, passing 1700 FT turn left heading 210, expect further instructions with radar.
29L	After departure RWY 29L, climb to 4000 FT, passing 1700 FT turn left heading 210, expect further instructions with radar.
09	After departure RWY 09, climb on track 091 DEG (M) to FL 70, expect further instructions with radar.
10	After departure RWY 10, climb on track 104 DEG (M) to FL 70, expect further instructions with radar.
11L	After departure RWY 11L, climb to 4000 FT, passing 1700 FT turn right heading 170, expect further instructions with radar.
11R	After departure RWY 11R, climb to 4000 FT, passing 1700 FT turn right heading 170, expect further instructions with radar.

6. LIMITATIONS, SUSPENSION AND TERMINATION:

ATC may suspend, terminate or implement any mode of operation in the interest of Flight safety and efficiency of operations considering various factors including weather/ VVIP movement/special conditions/equipment degradation/ emergency handling / aircraft accident /closure of any part of maneuvering area/manpower etc.

6.1 Holding procedure at VOR/DME fix are defined to facilitate management of air traffic flow within Delhi TMA. The holding procedure shall be available only under radar surveillance parameters common to all holding procedure.
Outbound time - 1.5 MIN
Holding speed - 265K IAS MAX
MIN/MAX Holding level - F220/F280
KALOL (280802.38N0782414.16E, SSB-R112/40D) Right Hand Pattern,
Inbound track 292 DEG M.
BAXID (270750.38N0770937.42E, DPN - R177/86D) Right Hand Pattern,
Inbound track 357 DEG M.
DIPAS (273815.4N0755151.0E, CHI -R224/60D) Left Hand Pattern,
Inbound track 044 DEG M.
VIKOT (292312.95N0760720.57E, SAM-R312/50D Left Hand Pattern,
Inbound track 132 DEG M.

VIDP AD 2.23 ADDITIONAL INFORMATION

I. SPECIAL RESTRICTIONS

1. Closure of Airspace in and around Delhi for Air Force Day fly past

Indian Air Force will carry out fly past rehearsal on 3rd, 4th, and 6th October, and final day fly past on 8th October every year on the occasion of Air Force Day.In view of the above, the airspace of following dimensions will remain closed between 0230-0430 UTC on 3rd, 4th, 6th and 8th October every year for all aircraft except those participating in the rehearsal/final day fly past:

i.Within a radius of 20NM from IGI Airport, New Delhi: Ground level to FL130.

ii.Within a circular area between 20NM and 40NM radius of IGI Airport, New Delhi: Ground Level to FL150.

2.Airspace Closure and flying restrictions in Delhi FIR during celebrations connected with Independence Day and Republic Day

i.The following flying restrictions shall be applied within Delhi FIR during the under mentioned dates and time every year in connection with the celebrations of Independence Day and Republic Day.

ii.Dates and Timings of Airspace Restrictions are as under:

Date	**Time**
22nd January	1400 - 1830 IST
26th January	0700 - 1230 IST, and 1400 - 1830 IST
29th January	1400 - 1900 IST
15th August	0600 - 1000 IST, and 1600 - 1900 IST

iii.No flight shall be permitted to take off / land / over fly at Delhi and other airports within 300 KMS zone around it except:

a.Routine Commercial flights,

b.IAF, BSF and ARC flights,

c.State owned aircraft/helicopters flying Governor or Chief Minister within the state.

iv.Flights of Micro light aircraft and hang gliders from flying clubs and other airports shall not be permitted in the above mentioned zone and period around Delhi.

v.Safdarjung airport shall remain closed during the above-mentioned dates and period except for IAF helicopters, which may be deployed on emergency duty or VVIP duty.

3.Surface Movement Radar-I and II available and ASMGCS EQUIPMENT available. Coverage of ASMGCS has been extended to cover the additional area TWYs C,Q,LINK 4, Y,R, Y5, LINK 19 ,P5,S5, S2,LINK 8,LINK 9,LINK 7,LINK 6,D, and TERMINAL-III aprons in operational Area.

4.RWY 11R/29L and associated taxiways are compatible for operations of code F aircraft.

5.MODE-S capability is operational with DELHI ATC. All the aircraft operators are advised to keep flight id and six digit hexadecimal ICAO 24-bit address updated in the aircraft avionics to avoid misleading information to ATC

II. DETAILS OF THE TAXIWAYS :

S. No.	Designation	Taxiway Width(M)	Length (M)	Surface	PCN	Remarks
1	D1	23	209	Asphalt	49/F/A/W/T	• BTN RWY 09/27 up to TWY D. • Suitable for up to Code letter C Aircraft.
2	D2	23	174.5	Asphalt	67/F/B/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter E Aircraft
3	D3	23	180	Asphalt	67/F/B/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter E Aircraft
4	D4	23	473	Asphalt	64/F/A/W/T	• BTN RWY 09/27 up to junction of TWY G and TWY H2 • Suitable for up to Code letter E Aircraft
5	D5	23	330	Asphalt	67/F/B/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter E Aircraft.
6	D6	23	320	Concrete	132/R/D/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter E Aircraft
7	D7	23	154	Concrete	140/R/D/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter C Aircraft
8	D8	23	150	Concrete	72/R/B/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter E Aircraft
9	D9	23	191	Concrete	132/R/D/W/T	•BTN RWY 09/27 up to TWY D. •Suitable for up to Code Letter F Aircraft.
10	D	23	3115	Asphalt	67/F/B/W/T	• Portion west of TWY D2 suitable for up to Code Letter E aircraft. • Portion east of TWY D2 suitable for up to Code Letter C aircraft.
11	F	23	640	Concrete	70/R/B/W/T	• BTN TWY G/G2 junction and TWY D. • Suitable for up to Code Letter E aircraft.
12	Taxilane F2	23	186.5	Concrete	60/R/B/W/T	•Connecting Taxilanes F5 and TWY F. •Suitable for up to Code letter C Aircraft

13	Taxilane F3	23	607	Concrete	60/R/B/W/T	•Connecting TWY D and TWY G •Suitable for up to Code letter C Aircraft
14	Taxilane F4	23	602	Concrete	72/R/B/W/T	•Connecting TWY D and TWY G •Suitable for up to Code letter E Aircraft
15	Taxilane F5	23	597	Concrete	72 R/B/W/T	•Connecting TWY D and TWY G •Suitable for up to Code letter C Aircraft
16	Taxilane F6	23	548	Concrete	60 R/B/W/T	•Connecting TWY D and TWY G •Suitable for up to Code letter C Aircraft
17	Taxilane E3	23	717.5	Concrete	60 R/B/W/T	•BTN TWY D and Taxilane E9. •Suitable for up to Code Letter C aircraft.
18	Taxilane E6	23	350	Concrete	60 R/B/W/T	•Connecting Taxilane E9 and terminating in Apron. •Suitable for up to Code Letter C aircraft.
19	Taxilane E7	23	152.5	Concrete	60 R/B/W/T	•BTN TWY D and Taxilane E3. •Suitable for up to Code Letter C aircraft.
20	Taxilane E9	23	675	Concrete	60 R/B/W/T	•Connecting TWY G and TWY D. •Suitable for up to Code letter C Aircraft
21	E	23	206	Asphalt	66/F/A/W/T	•BTN RWY 10/28 up to TWY G. •Suitable for up to Code Letter E Aircraft
22	G	23	1914	Asphalt	67 F/B/W/T	•North of RWY 10/28; Between TWY H2 and TWY E. •Suitable for up to Code letter E Aircraft
23	G2	23	330	Concrete	77/R/D/W/T	•BTN RWY 10/28 up to TWY G. •Suitable for up to Code Letter C Aircraft
24	H1	23	460	Concrete	48/R/D/W/T	•From RWY 10/28 up to 203M PCN 48 R/D/W/T •BTN 203M and 360M PCN 73 F/B/W/T. •From 360M up to TWY D4 PCN 48 R/D/W/T • Suitable for up to Code Letter C Aircraft
25	H2	23	152	Asphalt	64/F/A/W/T	•BTN RWY 10/28 up to junction of TWY G and TWY D4 •Suitable for up to Code letter E Aircraft.
26	H3	23	318	Concrete	140/R/D/W/T	•BTN RWY 10/28 up to TWY D. •Suitable for up to Code Letter E Aircraft
27	H6	23	249	Concrete	132/R/D/W/T	•BTN RWY 10/28 up to TWY D. •Suitable for up to Code Letter F Aircraft.
28	J7	25	204	Concrete	101/R/B/W/T	•Suitable for up to Code Letter F Aircraft
29	U	23	408	Concrete	132/R/D/W/T	•Suitable for up to Code Letter F Aircraft
30	V	25	408	Concrete	132/R/D/W/T	•Suitable for up to Code Letter F Aircraft
31	W	25	204	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
32	K1	23	410	Concrete	132/R/D/W/T	•Suitable for up to Code Letter F Aircraft
33	K2	23	421	Concrete	132/R/D/W/T	•Suitable for up to Code Letter F Aircraft
34	K3	23	230	Asphalt	80/F/A/W/T	•Suitable for up to Code Letter F Aircraft
35	K6	23	245	Concrete	140/R/D/W/T	• Between RWY 28/10 and TWY K. •Suitable for up to Code Letter F Aircraft
36	K	23	3950	Concrete	66/F/A/W/T	•Suitable for up to Code Letter F Aircraft

37	N7	23	440	Concrete	140/R/D/W/T	•Between TWY K and TWY N. •Suitable for up to Code Letter F Aircraft
38	N6	23	399	Asphalt	73/F/B/W/T	•Connecting TWYs N and K, east and parallel of TWY N7. •Suitable for up to Code Letter F Aircraft
39	LINK 34	23	298	Concrete	140/R/D/W/T	•Suitable for up to Code Letter E Aircraft
40	LINK 33	23	298	Concrete	120/R/C/W/T	•Suitable for up to Code Letter F Aircraft
41	LINK 39	23	298	Asphalt	80/F/A/W/T	•Suitable for up to Code Letter E Aircraft
42	LINK 32	23	91	Concrete	86/R/B/W/T	•Portion of TWY LINK 32 between TWY K and TWY M •Suitable for up to Code Letter F Aircraft, restricted up to max wingspan 68.40m
		23	207	Concrete	80/R/D/W/T	•Portion of TWY LINK 32 south of TWY M •Suitable for up to Code Letter C Aircraft
43	LINK 31	15	68	Asphalt	52/F/B/W/T	•Suitable for up to Code Letter C Aircraft
44	LINK 30	23	91	Concrete	132/R/D/W/T	•Portion of TWY LINK 30 between TWY K and TWY M. •Suitable for up to Code Letter F Aircraft, restricted up to max wingspan 68.40m
		23	65	Concrete	132/R/D/W/T	•Portion of TWY LINK 30 south of TWY M . •Suitable for up to Code letter D Aircraft.
45	M	23	504	Asphalt	72/F/B/W/T	•Portion of TWY M between TWYs M1 and TWY A suitable for up to code F Aircraft. •Portion of TWY M between TWYs A and LINK 30 suitable for up to Code Letter F Aircraft restricted up to max wingspan 68.40m
46	M1	23	91	Asphalt	72/F/B/W/T	•Connecting TWY M and TWY K. •Suitable for up to Code letter F Aircraft.
47	Taxilane N	23	97.5	Concrete	140/R/D/W/T	•Portion of Taxilane N between TWY C and TWY A •Suitable for up to Code Letter F Aircraft
48	Taxilane N	23	1590	Concrete	132/R/D/W/T	•Portion of Taxilane N between TWY C and TWY LINK 34 •Suitable for up to Code Letter F Aircraft restricted up to max wingspan 73.30m
49	Taxilane N	23	690	Concrete	132/R/D/W/T	•Portion of Taxilane N between TWY LINK 34 and TWY LINK 33. •Suitable for up to Code Letter F Aircraft .
50	Taxilane N1	15	450	Concrete	75/R/B/W/T	•Suitable for up to Code Letter C Aircraft
51	Taxilane N3	23	252	Concrete	140/R/D/W/T	•Suitable for up to Code Letter E Aircraft
52	N4	23	237	Concrete	132/R/D/W/T	•Suitable for up to Code Letter E Aircraft
53	Taxilane N8	15	626	Concrete	82/R/C/W/T	•Suitable for up to Code letter C Aircraft having OMGWS up to but not including 9m
54	N5	23	370	Concrete	110/R/C/W/T	•Suitable for up to Code Letter E Aircraft

55	C	25	1386	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft •Portion of TWY C between TWY N and TWY LINK 4
56	C	25	2912	Asphalt	93/F/C/W/T	•Portion of TWY C between TWY LINK 5 and LINK 19. •Suitable for up to Code Letter F Aircraft.
57	C	23	2371	Asphalt	73 F/B/W/T Link 19 to TWY P6 72 F/B/W/T TWY P6 to Link 32	• Portion of TWY C between LINK 19 and LINK 32. •Portion between LINK 19 and TWY M suitable for up to Code Letter F aircraft. •Portion between TWY M1 and LINK 32 suitable for up to Code Letter F aircraft with Max WS 68.4m.
58	A	25	1485	Asphalt	93/F/C/W/T	•Portion of TWY A between TWY N and TWY R. •Suitable for up to Code Letter F Aircraft.
59	A	25	3011	Asphalt	93/F/C/W/T	•Portion of TWY A between TWY R4 and TWY LINK 19. •Suitable for up to Code Letter F Aircraft
60	A	23	2289	Asphalt	73/F/B/W/T	•Portion of TWY A between LINK 19 and TWY K. •Suitable for up to Code Letter F Aircraft
61	LINK 1	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
62	LINK 2	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
63	LINK 3	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
64	LINK 4	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
65	Q	25	671	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
66	R	25	718	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
67	LINK 5	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
68	LINK 6	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
69	LINK 7	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
70	LINK 8	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
71	LINK 9	25	98	Asphalt	93/F/C/W/T	
72	LINK 10	18	80	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter C Aircraft
73	Taxi lane LINK 13	15	290	Concrete	32/R/B/W/T	•Suitable up to Code letter C aircraft •Connecting GA apron to TWY C
74	Taxi lane LINK 14	15	162	Concrete	32/R/B/W/T	•Suitable up to Code letter C •Inside GA apron parallel to TWY C
75	Taxi lane LINK 15	10.5	218	Concrete	32/R/B/W/T	•Suitable up to Code letter B aircraft. •Inside GA apron parallel to Taxilane LINK 16 and LINK 13.
76	Taxi lane LINK 16	10.5	279	Concrete	32/R/B/W/T	•Suitable up to Code letter B aircraft •Connecting GA apron to TWY C
77	TWY LINK 16	25	98	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft •Connecting to TWY C and TWY A

78	LINK 19	25	97.5	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
79	P1(RET)	23	560	Asphalt	51/F/B/W/T	•Suitable for up to Code Letter F Aircraft. •Vacation by cancelled or abandoned take-off aircraft is restricted.
80	P2	23	210	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
81	P3(RET)	23	545	Asphalt	51/F/B/W/T	•Suitable for up to Code Letter F Aircraft. •Vacation by cancelled or abandoned take-off aircraft is restricted.
82	P4	23	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		23	48	Asphalt	73/F/B/W/T	•Suitable for up to Code Letter F Aircraft.
83	P5	23	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		23	46	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft.
84	P6	23	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		23	136.5	Asphalt	73/F/B/W/T	•Suitable for up to Code Letter F Aircraft.
85	P7	23	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		23	37.5	Asphalt	73/F/B/W/T	•Suitable for up to Code Letter F Aircraft.
86	P8	23	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		23	159	Asphalt	73/F/B/W/T	•Suitable for up to Code Letter F Aircraft.
87	P9	23	316	Asphalt	73/F/B/W/T	•Between TWY C and TWY P8. •Suitable for up to Code Letter F Aircraft.
88	R1	25	228	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft.
89	R2(RET)	23	619	Asphalt	51/F/B/W/T	•Suitable for up to Code Letter F Aircraft. •Vacation by cancelled or abandoned take-off aircraft is restricted.
90	R3(RET)	23	635	Asphalt	51/F/B/W/T	•Suitable for up to Code Letter F Aircraft. •Vacation by cancelled or abandoned take-off aircraft is restricted.
91	R4	25	249	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft.
92	R5	25	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		25	203	Asphalt	73/F/B/W/T	•Suitable for up to Code Letter F Aircraft.
93	R6	25	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		25	207	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft.
94	R7	25	150	Concrete	86/R/B/W/T	•Concrete portionUp to 150M from RWY 29R centreline.
		25	209	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft.
95	S1	25	190	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
96	S2	25	190	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft

97	S5	25	50	Concrete	115/R/C/W/T	•Suitable for up to Code Letter F Aircraft.
			140	Asphalt	93/F/C/W/T	•Asphalt PortionUp to 140M from RWY 29R centreline
98	S6	23	190	Concrete	86/R/B/W/T	•Suitable for up to Code Letter F Aircraft
99	S7	23	190	Concrete	86/R/B/W/T	•Suitable for up to Code Letter F Aircraft
100	S8	23	190	Concrete	86/R/B/W/T	•Suitable for up to Code Letter F Aircraft
101	T4	25	207	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
102	T5	23	190	Asphalt	73/F/B/W/T	•Suitable for up to Code Letter F Aircraft
103	T6	25	92	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft.
		25	98	Concrete	110/R/C/W/T	•Asphalt portionFrom RWY 29R edge up to 70 M
104	T7	25	92	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft. •Asphalt portionFrom RWY 29R edge up to 70 M
105	Z (TWY Z7 up to TWY Z4))	25	385	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
106	Z (TWY Y5 up to TWY Y8)	25	366	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
107	Z(TWY Z4 up to TWY Y5)	25	3760	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
108	Y8	25	318	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
109	Y7	25	190	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
110	Y6	25	190	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
111	Y5	25	190	Asphalt	93/F/C/W/T	•Suitable for up to Code Letter F Aircraft
112	Y4	25	531	Asphalt	93/F/C/W/T	•Drain in TWY strip at distance of 33M west to TWY centerline •Suitable up to Code letter F Aircraft
113	Y2	25	531	Asphalt	93/F/C/W/T	
114	Y1	25	531	Asphalt	93/F/C/W/T	
115	Z2	25	531	Asphalt	93/F/C/W/T	
116	Z3	25	531	Asphalt	93/F/C/W/T	
117	Z4	25	190	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
118	Z5	25	190	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
119	Z6	25	218	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft
120	Z7	25	269	Concrete	110/R/C/W/T	•Suitable for up to Code Letter F Aircraft

III. OTHER DETAILS OF TWYS

i. Rapid exit TWY D6: available for RWY27, Angle of turn 30deg, Radius of turn off curve 550m, suitable for aircraft upto code letter E.

ii. Rapid exit TWY D5: available for RWY27, Angle of turn 30deg, Radius of turn off curve 550m, suitable for aircraft up to code letter E with OMGWS up to but not including 15m.

iii. Rapid exit TWY H1: available for RWY28, angle of turn 30deg, radius of turn off curve 550m, suitable for code letter A, B and C aircraft with OMGWS up to but not including 9.6m.

iv. TWY D: From TWY D9 up to abeam ARP is realigned parallel to RWY 09/27, at a distance of 172.5m south of RWY 09/27 centre line.

v. Extended portion of TWY D: From TWY D, abeam ARP, up to TWY D1 at a distance of 168m south of RWY 09/27 centre line.

vi. TWY G2: Connects RWY 10 to TWY G , suitable for code letter C, Angle of turn 30 deg, Radius of Turn off Curve 550m.

vii. Rapid exit TWY U: Angle of turn 30deg, Radius of turn off curve 550M, suitable for code letter F aircraft.

viii. Rapid exit TWY V: Angle of turn 30deg, Radius of turn off curve 550M, suitable for code letter F aircraft.

IV. **Exemption Granted by DGCA:**

DGCA India has granted exemption vide letter dated 18.07.2022 for non-compliant width of runway strip for RWY 09/27 against provisions in CAR Section 4, Series B, Part 1, Para 3.4.3 for the period up to 31.12.2023.

VIDP AD 2.24 CHARTS RELATED TO AN AERODROME

1	Aerodrome Chart
2	Aerodrome Chart Hot Spot
3	Aircraft Parking/Docking Chart Front Apron I
4	Aircraft Parking/Docking Chart Apron II
5	Aircraft Parking/Docking Chart Apron 31
6	Aircraft Parking/Docking Chart Apron 32
7	Aircraft Parking/Docking Chart Apron 33
8	Aircraft Parking/Docking Chart Apron 34
9	Aircraft Parking/Docking Chart Apron 35
10	Aircraft Parking/Docking Chart Cargo Apron
11	Aircraft Parking/Docking Chart Stand 801
12	Aircraft Parking/Docking Chart TWY T Dumbbell
13	Aircraft Parking/Docking Chart General Aviation Apron Stands: 901-911C
14	Aircraft Parking/Docking Chart General Aviation Apron Stands: 912-920
15	Aircraft Parking/Docking Chart General Aviation Apron Stands: 921-928
16	Aircraft Parking/Docking Chart General Aviation Apron Stands: 929-937B
17	Aircraft Parking/Docking Chart General Aviation Apron Stands: 938-947
18	Aircraft Parking/Docking Chart General Aviation Apron Stands: 948-956
19	Aircraft Parking/Docking Chart Stand 803
20	Aircraft Parking/Docking Chart Apron I Stand 148-178
21	Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 09
22	Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 10
23	Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 11L
24	Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 11R

25 Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 27
26 Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 28
27 Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 29L
28 Aerodrome Obstacle Chart Type – A (Operating limitations) RWY 29R
29 Take Off Run Available from Intersection RWY 09
30 Take Off Run Available from Intersection RWY 10
31 Take Off Run Available from Intersection RWY 11L
32 Take Off Run Available from Intersection RWY 11R
33 Take Off Run Available from Intersection RWY 27
34 Take Off Run Available from Intersection RWY 28
35 Take Off Run Available from Intersection RWY 29L
36 Take Off Run Available from Intersection RWY 29R
37 Location of Different Exit TWYs RWY 09
38 Location of Different Exit TWYs RWY 10
39 Location of Different Exit TWYs RWY 11R
40 Location of Different Exit TWYs RWY 27
41 Location of Different Exit TWYs RWY 28
42 Location of Different Exit TWYs RWY 29L
43 ILS CAT III Critical And Sensitive Areas- RWY 11R
44 ILS CAT III Critical And Sensitive Areas- RWY 28
45 ILS CAT III Critical And Sensitive Areas- RWY 29L
46 LVP Taxi Routing - Easterly Flow - RWY 11L, RWY 11R & RWY10
47 LVP Taxi Routing - Easterly Flow - RWY 11R & RWY10
48 LVP Taxi Routing - Westerly Flow - RWY 11L, RWY 11R & RWY10
49 LVP Taxi Routing - Westerly Flow - RWY 11R & RWY10
50 Taxiway Compatibility Chart
51 Precision Approach Terrain Chart RWY 09
52 Precision Approach Terrain Chart RWY 10
53 Precision Approach Terrain Chart RWY 11R
54 Precision Approach Terrain Chart RWY 27
55 Precision Approach Terrain Chart RWY 28
56 Precision Approach Terrain Chart RWY 29L
57 ILS Procedure RWY 09
58 ILS Procedure RWY 10
59 ILS Procedure RWY 11R
60 ILS Procedure (CAT-II/III) RWY 11R
61 ILS Procedure RWY 27
62 ILS Procedure (CAT-I) RWY 28
63 ILS Procedure (CAT-II/III) RWY 28
64 ILS Procedure (CAT-I) RWY 29L
65 ILS (CAT-II/III) Procedure RWY 29L
66 ILS CAT III Critical And Sensitive Areas- RWY 11L
67 ILS CAT III Critical And Sensitive Areas- RWY 29R
68 VOR Procedure RWY 09
69 VOR (Z) Procedure RWY 10
70 VOR Procedure RWY 11R

71 VOR (Z) Procedure RWY 28

72 VOR Procedure RWY 29L

73 NDB (Z) Procedure RWY 27

74 Tactical Air Traffic Flow Procedures (T-ATFP) in Delhi FIR – RNAV STAR RWY 09, 10, 11R and ATS Route Structure in Delhi TMA

75 Tactical Air Traffic Flow Procedures (T-ATFP) in Delhi FIR – RNAV STAR RWY 27, 28, 29L and ATS Route Structure in Delhi TMA

76 Tactical Air Traffic Flow Procedures (T-ATFP) in Delhi FIR – Establishing Arrival Sequence, CTO and RTO computation for RWY 27, 28 and 29L

VIDP AD 2.25 VISUAL SEGMENT SURFACE (VSS) PENETRATION

Procedure	Procedure Minima	VSS Penetration
1	2	3

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DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport Limited
(Formerly known as Delhi International Airport (P) Limited)

GMR

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24th August, 2021

ENVIRONMENT CIRCULAR ON AIRCRAFT NOISE: **TO ALL AIRLINES OPERATING AT IGI AIRPORT & ATC PALAM**

In continuation to the previous Environment Circulars on Aircraft Noise Management, we wish to bring your attention on the **Civil Aviation Requirements** issued by **Directorate General of Civil Aviation** and **Aeronautical Information Publication (AIP)** issued by **Airports Authority of India,** on various aircraft noise abatement measures required to be adhered at IGI Airport.

Managing aircraft noise is one of our important aspects of airport operation. At IGI Airport, various measures have been taken by DIAL, DGCA and ATC to mitigate aircraft noise in the vicinity of the Airport. The maximum permissible noise levels for aircrafts operation at the IGI airport runway funnel are Lmax, 105 dB (A) for Day time – from 0600 hrs. to 2200 hrs. and 95 dB (A) for Night time – from 2200 hrs. to 0600 hrs. The following are active noise mitigation measures jointly implemented at IGI Airport by all associated stakeholders and to be followed by Airlines operating at IGI Airport and Air Traffic Control (ATC), Palam in their day-to-day operations:

- ✓ **Adoption of CDA & Low Power, Low Drag procedure for quieter landings (CAR, Section 10-A-1)**
- ✓ **Restricted usage of ground engine run-ups (CAR, Section 10-A-1)**
- ✓ **Minimum use of thrust reversal (CAR, Section 10-A-1)**
- ✓ **Restricted use of APU at airport (CAR, Section 10-A-1)**
- ✓ **Mixed Mode Operation & Runway Use Plan for noise abatement (AIP, AD2 - VIDP-1)**
- ✓ **Noise infringements and grievance response by all stakeholders**
- ✓ **Restriction on operation of Chapter – 2 aircraft from 2200-0600 Hrs. IST (AIP, AD2 - VIDP-1)**
- ✓ ***Continuous Aircraft Noise Monitoring* (CAR, Section 10-A-1)**

Apart from the existing mitigation measures, it is imperative to adopt the latest new technologies and procedures to make aircraft operations quieter. We request all airlines to kindly explore the new standard of noise certification and support in reducing the noise footprint of Delhi Airport.

At Delhi Airport, we focus on sustainable development. We request all the stakeholders to follow the best practices on noise mitigation measures while ensuring a safe and efficient operational environment.

For further intimations/queries, please feel free to contact DIAL Environment Head: Muthukrishnan.m@gmrgroup.in

Douglas Webster
Chief Operating Officer

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DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

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28th April, 2022

ENVIRONMENT CIRCULAR ON AIRCRAFT NOISE: TO ALL AIRLINES OPERATING AT IGI AIRPORT & ATC PALAM

In continuation to the previous Environment Circulars on Aircraft Noise Management, we wish to bring your attention on the **Civil Aviation Requirements** issued by **Directorate General of Civil Aviation, Aeronautical Information Publication (AIP)** issued by **Airports Authority of India and GSR 568(E) issued by MoEF&CC** on various aircraft noise abatement measures required to be adhered at IGI Airport.

Managing aircraft noise is one of the important aspects of our airport operation. At IGI Airport, various measures have been taken by DIAL, DGCA and ATC to mitigate aircraft noise in the vicinity of the Airport. The maximum permissible noise levels (as unit Lmax) at Noise Monitoring Terminals for aircrafts operation is 105 dB (A) for Day time – from 0600 hrs. to 2200 hrs. and 95 dB (A) for Night time – from 2200 hrs. to 0600 hrs. The noise level in Lmax for aircrafts is monitored by DIAL and any infringement shall be communicated to airlines and DGCA for preventive actions. The following are the active noise mitigation measures jointly implemented at IGI Airport by all associated stakeholders and to be followed by Airlines operating at IGI Airport and Air Traffic Control (ATC), Palam in their day-to-day operations:

- ✓ **Adoption of Continuous Descent Approach (CDA) & Low Power, Low Drag procedure for quieter landings (CAR, Section 10-A-1)**
- ✓ **Minimum climb gradient for all SIDs as per AIP Supplement 53/2017**
- ✓ **SID/STAR published for Delhi Airport as per AIP Supplement 53/2017**
- ✓ **Restricted usage of ground engine run-ups (CAR, Section 10-A-1)**
- ✓ **Minimum use of thrust reversal (CAR, Section 10-A-1)**
- ✓ **Restricted use of APU at airport (CAR, Section 10-A-1)**
- ✓ **Mixed Mode Operation & Runway Use Plan for noise abatement (AIP, AD2 - VIDP-1)**
- ✓ **Noise infringements and grievance response by all stakeholders**
- ✓ **Restriction on operation of Chapter – 2 aircraft from 2200-0600 Hrs. IST (AIP, AD2 - VIDP-1)**
- ✓ **Continuous Aircraft Noise Monitoring (CAR, Section 10-A-1)**

Further, as per MoEF&CC notification G.S.R. 568 (E) Ambient Air Quality Standards with respect to Noise in Airport Noise Zone the noise limits in unit Leq is 70 dB (A) in day time and 65 dB (A) in night time. To ensure compliance to GSR 568(E), it is imperative to adopt the latest new fleets, technologies and procedures to make aircraft operations quieter apart from the existing mitigation measures. We request all airlines to kindly explore the new noise certification i.e. Chapter 14 having less noise and support in reducing the noise footprint of Delhi Airport.

At Delhi Airport, we focus on sustainable development. We request all the stakeholders to follow the best practices on noise mitigation measures while ensuring a safe and efficient operational environment.

For further intimations/queries, please feel free to contact DIAL Environment Head: Muthukrishnan.m@gmrgroup.in

Videh

Videh Kumar Jaipuriar
Chief Executive Officer

DELHI INDIRA GANDHI INTERNATIONAL AIRPORT

Delhi International Airport Limited
(Formerly known as Delhi International Airport (P) Limited)

Date: 29/05/2023

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ENVIRONMENT CIRCULAR ON AIRCRAFT NOISE: **TO ALL AIRLINES OPERATING AT IGI AIRPORT & ATC PALAM**

In continuation to the previous Environment Circulars on Aircraft Noise Management, we wish to bring your attention on the **Civil Aviation Requirements** issued by **Directorate General of Civil Aviation, Aeronautical Information Publication (AIP)** issued by **Airports Authority of India and GSR 568(E) issued by MoEF&CC** on various aircraft noise abatement measures required to be adhered at IGI Airport.

Managing aircraft noise is one of the important aspects of our airport operation. At IGI Airport, various measures have been taken by DIAL, DGCA and ATC to mitigate aircraft noise in the vicinity of the Airport. The **maximum permissible noise levels (as unit Lmax) at Noise Monitoring Terminals for aircrafts operation is 105 dB (A) for Day time – from 0600 hrs. to 2200 hrs. and 95 dB (A) for Night time – from 2200 hrs. to 0600 hrs.** Further, Ambient Air Quality Standards with respect to Noise in Airport Noise Zone for **busy airport in unit Leq is 70 dB (A) in day time and 65 dB (A) in night time.** The following are the active noise mitigation measures jointly implemented at IGI Airport by all associated stakeholders and to be followed by Airlines operating at IGI Airport and Air Traffic Control (ATC), Palam in their day-to-day operations:

- ✓ **Adoption of Continuous Descent Approach (CDA) & Low Power, Low Drag procedure for quieter landings (CAR, Section 10-A-1)**
- ✓ **Minimum climb gradient for all SIDs as per AIP Supplement 53/2017**
- ✓ **SID/STAR published for Delhi Airport as per AIP Supplement 53/2017**
- ✓ **Restricted usage of ground engine run-ups (CAR, Section 10-A-1)**
- ✓ **Minimum use of thrust reversal (CAR, Section 10-A-1)**
- ✓ **Restricted use of APU at airport (CAR, Section 10-A-1)**
- ✓ **Mixed Mode Operation & Runway Use Plan for noise abatement (AIP, AD2 - VIDP-1)**
- ✓ **Noise infringements and grievance response by all stakeholders**
- ✓ **Restriction on operation of Chapter – 2 aircraft from 2200-0600 Hrs. IST (AIP, AD2 - VIDP-1)**
- ✓ **Continuous Aircraft Noise Monitoring (CAR, Section 10-A-1)**

We are further exploring complete restriction of Chapter 2 aircraft (Chapter 2 which was applicable for type certificate submitted before 6 October 1977) at Delhi Airport. We request all the stakeholders to follow the best practices on noise mitigation measures and adopt latest new fleets, technologies and procedures to make aircraft operations are quieter while ensuring a safe and efficient operational environment.

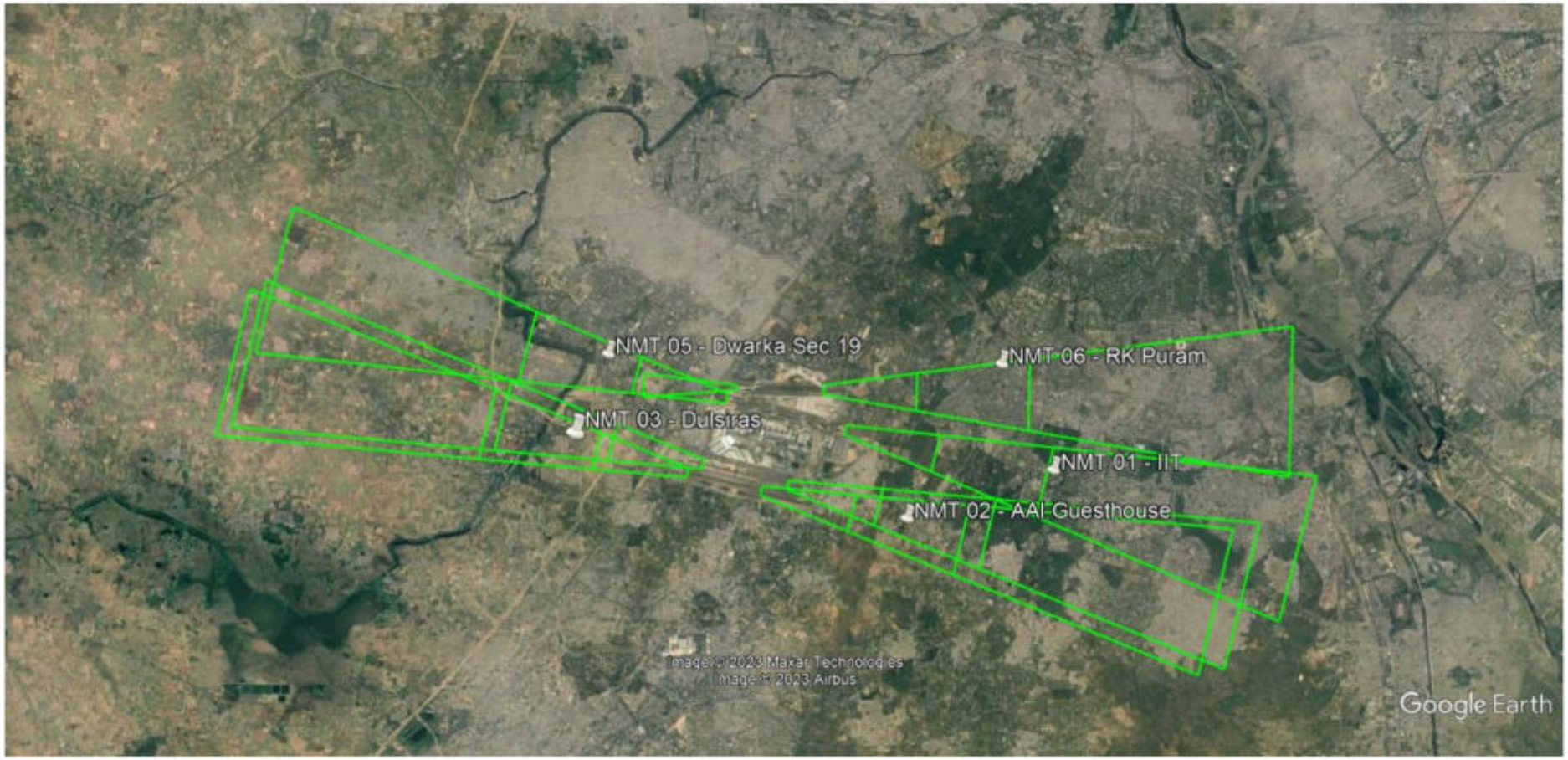
For further intimations/queries, please feel free to contact DIAL Environment Head - USenthil.Nathan@gmrgroup.in

Videh

Videh Kumar jaipuriar
Chief Executive Officer

Annexure R-12

Location Map of NMTs



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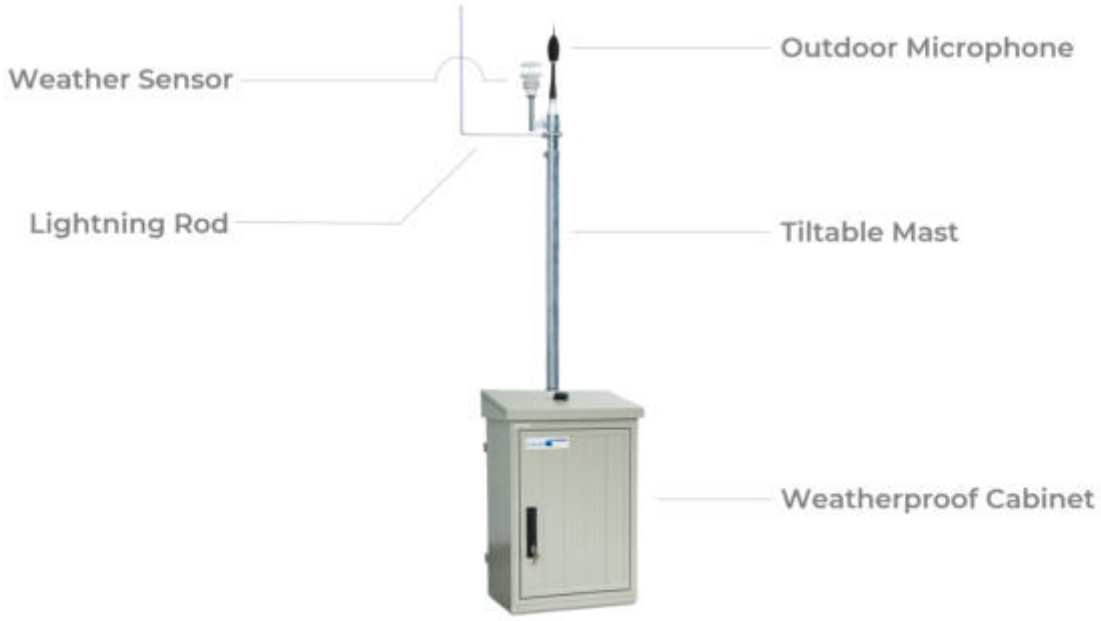
Topsonic Noise Monitoring Terminal

The Noise Monitoring Terminals (NMTs) are in operation at numerous international airports under a wide range of climatic conditions. They are designed for unattended continuous outdoor use.



International Standard:

Measurement od level, calculation of noise events and reporting are fulfilling ISO 20906 "Unattended monitoring of aircraft sound in the vicinity of airports"

Equipment

An NMT is an essential instrument for measuring noise pollution in the vicinity of an airport. In order to achieve accurate measurements, it is important that the NMT consists of high-quality components. The most important components of a noise measurement station are explained below:

- Double-walled weatherproof housing - A double-walled housing is crucial for a noise measurement station as it protects the sensitive electronic devices and measuring instruments from environmental influences such as moisture, dust, temperature fluctuations and vibrations. The housing protects the instruments from damage and ensures that they function reliably. The enclosure is designed to last for years without needing to be replaced or repaired. This reduces operating costs and ensures a reliable noise measurement station.

- Extendable and tiltable mast - A tiltable mast offers many advantages for a noise monitoring station. By tilting the mast, technicians can easily access the station's components and perform maintenance without the need for additional equipment or machinery. The tiltable mast also allows for flexible placement of the station in hard-to-reach locations.

- Class 1 outdoor microphone - A Class 1 outdoor microphone is an essential component for precise and accurate sound level measurement. It ensures accurate

and standard-compliant recording of aircraft noise and ensures that the measurements are correct.

The same components of a stationary NMT are used in the mobile NMT. It is housed in a Pelican case, which also serves as a transport case. This is easy to transport and stackable.

Number of Terminal (per airport):

M/s Topsonic, an internationally recognized agency which is operating globally in 13 countries and at 32 airports with more than 300 NMT installations and operating under a wide range of climatic conditions. Details of NMTs installed at by M/s Topsonic Systemhaus GmbH in 13 countries and at 32 airports is given below.

Measurement	City	Type	Country
Topsonic NMT	Munich	Airport	Germany
Topsonic NMT	Santiago de Chile	Airport	Chile
Topsonic NMT	Lima	Airport	Peru
Topsonic NMT	Hamburg	Airport	Germany
Topsonic NMT	Nurnberg	Airport	Germany
Topsonic NMT	Berlin	Airport	Germany
Topsonic NMT	Stuttgart	Airport	Germany
Topsonic NMT	Brussels	Airport	Belgium
Topsonic NMT	Vienna	Airport	Austria
Topsonic NMT	Airbus Hamurg	Airport	Germany
Topsonic NMT	Saarbrucken	Airport	Germany
Topsonic NMT	Oslo	Airport	Norway
Topsonic NMT	Stavanger	Airport	Norway
Topsonic NMT	Trondheim	Airport	Norway
Topsonic NMT	Bergen	Airport	Norway
Topsonic NMT	Ørland	Airport	Norway
Topsonic NMT	Kassel	Airport	Germany
Topsonic NMT	Cologne Bonn	Airport	Germany
Topsonic NMT	Dusseldorf	Airport	Germany
Topsonic NMT	Leipzig	Airport	Germany
Topsonic NMT	Dresden	Airport	Germany
Topsonic NMT	Belfast	Airport	UK
Topsonic NMT	Euroairport	Airport	Switzerland
Topsonic NMT	London City	Airport	UK
Topsonic NMT	London Luton	Airport	UK
Topsonic NMT	Delhi	Airport	India
Topsonic NMT	Goa	Airport	India
Topsonic NMT	Tel Aviv	Airport	Israel
Topsonic NMT	Hannover	Airport	Germany
Topsonic NMT	Burgas	Airport	Bulgaria
Topsonic NMT	Varna	Airport	Bulgaria
Topsonic NMT	Prague	Airport	Czech Republic