



Airports Authority of India

Department of Aerodrome Safeguarding

Rajiv Gandhi Bhavan, New Delhi-110003

[File No. AAI/ATM/DoAS/ADSAC/72/2019]

AERODROME SAFEGUARDING CIRCULAR (ADSAC) 02 OF 2022 (AMENDED)

Subject: Processing of Airport Operators' Applications for CNS Simulation Study

1. Introduction

- 1.1 The Communication Navigation Surveillance (CNS) Simulation Study is a process of validated electromagnetic 3D computer modelling of obstacle environment including terrain, obstacles (existing or proposed/manmade or natural) interfering system, ground and airborne NAV-AID equipment characteristics in an airport scenario and to check the electromagnetic propagation signal-in-space, to find out any degradation or impact caused by the environment, as above, on the particular CNS (VOR, DME, ILS, RADAR, etc.) facility which may affect its continuity, integrity, coverage and Signal performance with reference to defined operational limits in ICAO Annex-10 Vol-I, DOC 8168 and DGCA CAR's.
- 1.2 As per GSR-751(E) Para 5.2 of Schedule II, *"in case any structure is required to be made within aerodrome premises (airside and city side) by the Aerodrome Operator which creates obstruction from CNS point of view, a simulation study could be carried out to study the impact of this structure on the performance of the relevant facility and in case the study confirms that the impact would not hamper the operability of the facility, such structure could be permitted within the aerodrome premises"*.
- 1.3 On the request of the concerned Airport Operator under the provision of GSR-751(E) as stated above, CNS Simulation Study (CSS) is done by the CNS-OM Directorate of AAI CHQ in coordination with the Department of Aerodrome Safeguarding at AAI CHQ.

26th April 2022



Page 1 of 14



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

2. Purpose

- 2.1 The purpose of this ADSAC is to standardize the procedure for applying CNS simulation study by the Airport Operators with the requisite information and documents.
- 2.2 This ADSAC will also detail the process to be followed by concerned AAI departments for evaluating the CNS simulation study applications for their resolution.

3. Scope

- 3.1. This ADSAC is applicable to all the CNS simulation studies being carried out by AAI under the provisions of GSR751(E).
- 3.2. This ADSAC applies to all Airports and Sites under operational and management control of AAI and the other public and private use licenced civil airports for which AAI is responsible for issuance of NOC for height clearance under GSR751(E) or any other notification issued by GOI for the purpose under the Aircraft Act 1934 Section 9A.
- 3.3. This ADSAC also applies to the proposed airports or sites which needs CNS Simulation Study.

4. Cancellation

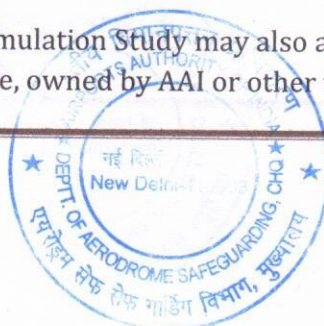
- 4.1 ADSAC 2 of 2022 (Processing of Airport Operators' Applications for Simulation Study)

5. Effective date

- 5.1. This ADSAC will be effective from the date of its issue.

6. Application for the Simulation Study

- 6.1 Need for CNS simulation study may arise if an airport project has received the NOC for restricted height from the Designated Officer of AAI and the restriction has been caused by one of the CNS facilities.
- 6.2 Need for a CNS Simulation Study may also arise for the siting of CNS Facilities at new Airport or site, owned by AAI or other than AAI.

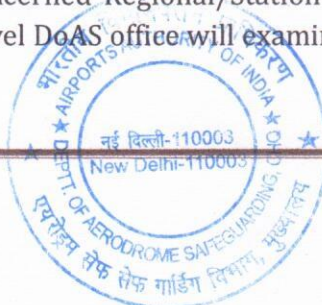


3/17/22



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

- 6.3 The CNS Simulation study shall not be done for the obstacles/matters which are out of scope of the present CNS Simulator EMACS.
- 6.4 Chief Executive Officer of a Private/JVC Airport or APD/CNS-In-Charge of an AAI airport site may make a request for CNS simulation study to Executive Director (ATM) AAI CHQ in the following manner:
- 6.4.1 AAI Airports: Airport Director of the concerned airport shall initiate an e-file in e-office.aai.aero mentioning the circumstances and need for the simulation study in the noting side and by putting following docs in the file:
- a) NOC issued by the Designated Officer of AAI;
 - b) Latest Survey data of existing obstacles, CNS facilities and Runway(s) etc. of concerned Airport. Further, any change/modification in the obstacle environment which have happened after latest survey shall also be provided. The RTE should clearly mentioned the level like: Roof level, Lighting arrester or Light level, Top antenna level etc.
 - c) Architectural Drawings of the proposed building or structure for which Assessment is required.
 - d) The coordinates (WGS-84), site elevation and top elevation of the proposed structure. If the RTE/Top Elevation of different points of structure is different, it should be mentioned accordingly.
 - e) Type of material of the proposed structure.
 - f) Approved master plan information, if any, of Airport/site.
 - g) Any plan of trans-installation/relocation of CNS facility or proposed new CNS facility.
 - h) Applicant may coordinate with CNS Simulation Cell on E-mail cnsimulation@aai.aero for any other information/query.
- 6.4.2 The applicant shall ensure the quality and accuracy of data to be supplied along with the request for CNS Simulation Study.
- 6.4.3 The applicant/NOC section who is creating/sending the e-file for the CSS, will check and ensure the availability of Data/Information as per **Checklist attached as Annexure-III**.
- 6.4.4 The e-file shall be sent to concerned Regional/Station level DoAS office. The concerned Regional/Station level DoAS office will examine the file and put their



3/10



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

observation for CNS simulation study and place the verified NOCAS calculation sheets in the e-file.

- 6.4.5 Joint Venture Company/Private Airports: CEO of the airport shall forward the soft-copies of the above docs to the concerned DoAS Office, who will create an e-file as given in 6.2.1. DoAS office should clearly mention the CNS facilities restricting the Requested Top Elevation.
- 6.4.6 The contact details of the Nodal Officer at the Airport should be clearly mentioned by the APD/CEO of the Airport. Nodal officer will be responsible for fulfilling any further airport specific requirements.
- 6.4.7 DoAS RHQ/Station level office shall forward the completed e-file as above to DoAS AAI CHQ for CNS simulation study.
- 6.4.8 AAI CHQ through CNS simulation study will assess the feasibility to overcome the restrictions caused by the CNS facilities. Such revised permitted top elevation in respect of CNS, will be communicated through e-file to respective DoAS office. AGA & PANS-OPS criteria will not be assessed by AAI CHQ. DoAS RHQ/Station level office will continue to examine the same even for the simulation study cases through NOCAS.

7. Simulation study fee

- 7.1 CNS Simulation Study fee will be charged from the Private & Joint Venture Airports (other than AAI airports) as per **CNS Circular 13 of 2021, copy enclosed as Annexure-I.**
- 7.2 After receiving the e-file for CNS simulation study, CNS-OM Directorate will directly coordinate with the concerned airport, through its Nodal Officer, for invoicing, collecting the simulation study fee. The fee will be deposited by CNS Directorate to AAI accounts in coordination with Finance Directorate. The applicant shall also submit an **Undertaking along with the Fees, as per attached Annexure-II.**
- 7.3 The CNS Simulation Study shall start only after submission of requisite fee and undertaking by the applicant.





Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

8. Processing of CNS Simulation Study by CNS-OM Directorate

- 8.1 The CNS Directorate will appoint a nodal officer at CHQ who will be responsible for all communication with DoAS, ASM Directorate and Airport Operator for fulfilling the requirement of CNS Simulation study and will also keep the records of all the CNS Simulation Studies.
- 8.2 The e-file received by CNS Directorate will be examined for the simulation study. If any further information is required, CNS Directorate will coordinate directly with the Airport Nodal Officer. Such additional information, received through e-mails etc., may also be included in e-file.
- 8.3 A site visit may be made by CNS executive(s) carrying out simulation study to collect detailed information about the obstacles around the CNS facilities. Airport Operator shall assist the visiting CNS team in collecting this information within and outside the Airport.
- 8.4 After the preparatory work of the simulation study is over, inputs from ASM Directorate should be taken as to at what levels/altitudes and range CNS simulation study should be conducted, based on existing and proposed instrument flight procedures and air routes.
- 8.5 The obstacles considered in the CNS simulation study should include updated NOC data and latest survey data. The list of obstacles so considered should be made a part of the simulation study report.
- 8.6 CNS simulation study for new CNS sites for proposed navigation aids should also take the updated NOC data and latest survey data into consideration. Since change in the navigation aid site alters the obstacles environment.
- 8.7 The CNS simulation study report should clearly state if the level of deterioration of signals in space observed, if any, is within the permissible limits as per Annex 10, or not.
- 8.8 After the simulation study is carried out, the e-file containing the simulation study report along with the observations of the CNS Directorate in respect of the adverse impact, if any, of the proposed structure on the propagation of the electromagnetic signals in the space in respect of the examined CNS facilities, may be forwarded to DoAS CHQ for further processing.





Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

9 Impact Analysis by the ASM Directorate

9.1 After the conduct of CNS Simulation study, the file may not be referred to ASM Directorate, if

- (a) The signal coverage meets the Annex 10 requirements as stated in the simulation study by the CNS directorate and;
- (b) No adverse impact on the signal propagation on the examined CNS facilities was reported by the CNS Directorate.

In case the above two conditions are not met, then the matter may be referred to ASM Directorate.

9.2 ASM Directorate will examine the impact of restricted coverage of CNS facility on the instrument flight procedures (IFP) and/or the air routes, before deciding on the acceptability or otherwise of the restricted coverage of CNS facility.

9.3 In case the restricted coverage of CNS facility does not adversely impact any IFP/route, the ASM Directorate, may accept the restricted coverage and forward the file to DoAS, CHQ for further processing.

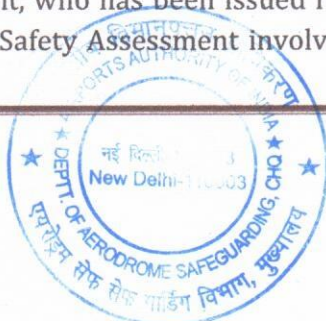
9.4 In case the CNS facility coverage restriction is significant and/or affects any IFP/route, ASM Directorate may not accept the restricted coverage, highlighting the specific aspects and forward the file to DoAS, CHQ so that appropriate decision may be taken by the Competent Authority.

10 Resolution of CNS Simulation Study applications by DoAS, CHQ and concerned DoAS office

10.1 Based on outcome of para 9.3, where the restricted coverage of CNS facility does not adversely impact any IFP/route and its acceptance by ASM Directorate, the removal of restriction on PTE, due to examined CNS facilities (i.e. facilities for which simulation study has been carried out), after approval of GM (ATM-DoAS), will be intimated by DoAS, CHQ to the concerned DoAS office through e-file.

10.2 Concerned DoAS office will issue revised NOC of height, based on its own assessment of AGA and PANS-OPS parameters through NOCAS and the communication of DoAS, CHQ in respect of CNS facilities as provided through CNS Simulation Study and its acceptance by ASM Directorate on e-file. The copy of revised NOC shall also be marked to CNS Simulation Study Cell for adding that structure details in CNS Simulator system database.

10.3 The Project Proponent, who has been issued revised NOC, as per para 10.1 and 10.2 above, shall conduct a Safety Assessment involving all concerned stakeholders in



3/10



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

accordance with the provisions of AAI C-SMS manual or as per the Airport SMS manual. Based on Safety assessment, suitable mitigation measures may be taken by the Project Proponent. A copy of the "Safety Assessment and the Proposed Mitigation Measures" should be sent to concerned Regional and Station level DoAS office, for records (to be kept in concerned e-file).

11. Based on the outcome of para 9.4, where the CNS facility coverage restriction is significant and/or affects any IFP/route and the ASM Directorate did not accept the restricted coverage, DoAS CHQ, with the approval of ED (ATM), will decline the removal of restriction on PTE, due to examined CNS facilities (i.e. facilities for which simulation study has been carried out). Concerned DoAS office may intimate the same to the concerned Airport Operator.

12. All such e-files are to be kept up to date by respective DoAS office and parked in e-office for further reference purpose including replying to RTI applications etc.

13. **Validity:** This ADSAC will remain valid till it is amended or withdrawn or incorporated in the proposed Aerodrome Safeguarding Manual.

14. **Document Control and feedback:** This ADSAC has been issued by the office of ED(ATM) with the concurrence of Directorate of ASM and Directorate of CNS-OM, AAI. Any feedback, suggestion or the error in this document may be brought into the notice of GM (ATM-DoAS) at AAI CHQ at gmdoaschq@aai.aero.

(ANIL KUMAR MEENA)
Executive Director (ATM)

Dated: 26th April'2022

Distribution:

1. All REDs/All APDs of AAI.
2. Chief Executive Officers of all Joint Venture Airports.
3. In-Charge of all licensed Private and State Govt. Airports including RCS Airports.
4. AAI website/nocas2.aai.aero/nocas
5. AIMS website.





Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

ANNEXURE - I

भारतीय विमानपत्तन प्राधिकरण



Charging of simulation study fees from
organizations other than AAI

CNS CIRCULAR 13/2021



भारतीय विमानपत्तन प्राधिकरण
Airports Authority of India

संचार, दिक्कालन एवम निगरानी - प्रचालन एवं अनुरक्षण निदेशालय

Directorate of CNS-OM
Rajiv Gandhi Bhavan
Safdarjung Airport New Delhi - 110003

Page 1 of 4

AAI/ED/CNS/2021/CNS/E-NM-18011/2/2015-CNS-O&M/CNSC/FEES
December, 2021

26th April 2022



Page 8 of 14



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

भारतीय विमानपत्तन प्राधिकरण



Charging of simulation study fees from organizations other than AAI

CNS Circular 13 of 2021

Subject: CNS Simulation Study Fees from organizations other than Airports Authority of India.

1.0 Introduction and Background: -

In India the airports are built, operationalized and maintained by different organizations including Government Undertakings, State owned, Defence, Private, PPP Based and Joint ventures etc. The Communication, Navigation and Surveillance facilities at most of the airports are maintained by Airports Authority of India. These facilities are protected as per Ministry of Civil Aviation, Government of India notification GSR-751(E) and its amendment time to time, which has the provision of simulation study, for the project of aerodrome operator.

2.0 Purpose: -

To charge fees for CNS simulation studies to be carried out for organizations other than AAI, to recover the expenditure incurred on simulator system, engagement of specialized manpower, travel & accommodation cost etc.

3.0 Scope: -

3.1 The circular intends to provide guidance for fees to be charged from stake holders, involved in the operationalization and maintenance of the aerodrome, and request CNS simulation study for their project.

3.2 The projects or works planned/proposed/being continued at AAI Airports for working of airport operations, and implemented by Non-AAI parties/Companies, shall not be charged for CSS fees

4.0 Implementation plan: -

4.1 The charges/fee for simulation study is being implemented with immediate effect.

4.2 The simulation Study fees shall be as follows:

S.No.	Category of Airport	First time study fee in Rupees	Second or subsequent time study in Rupees	Remarks
	(i)	(ii)	(iii)	(iv)
1	Cat-A	1440000	770000	Government Taxes (GST) shall be extra
2	Cat-B	1020000	550000	
3	Cat-C	750000	410000	
4	Cat-D	1.5 times of respective category from A to C.		

Page 2 of 4 AAI/ED/CNS/2021/CNS/E-NM-18011/2/2015-CNS-O&M/CNSC/FEEES
December, 2021

26th April 2022



Page 9 of 14

(Signature)



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

भारतीय विमानपत्तन प्राधिकरण



Charging of simulation study fees from organizations other than AAI

4.3 Categorization of Airports shall be as follows:

- Category A:** Airports code 4D and above, being served with multiple CNS facilities.
Category B: All IFR airports 4C and below
Category C: VFR airports being served by DVOR/DME and/or NDB only.
Category D: Green field airports

4.4 The fee of Cat-B and Cat-C airport is 70% & 50 % of Category-A airport respectively.

4.5 Consideration of obstacles as single or separate case:

(A) Consideration of single object: -

- (I) The chimneys, DG Stack, AFL (Apron Flood Light) Masts, Electrical poles etc. are similar as per their size. So, they may be considered as a single case from CNS Simulation Study (CSS) point of view subject to meeting certain conditions as given below: -
- All structures should be on same connected apron or area;
 - If DG Stacks are within 50 meters from periphery of same apron on which AFL masts are located or supposed to be located, can be clubbed with AFL Masts;
 - An apron size may be defined as 100m X 100m or 10000 sqm of area for location of such structures; and
 - The maximum number of all types of above masts/structures shall be upto 20 in a single study.
- (II) More than one LA (Lightning Arrester) Masts or any other such masts on a single building can be clubbed but should not be clubbed with any structure(s) on other nearby buildings.
- (III) In an apron, 1-20 Aircrafts parked/to be parked can be considered in a single case.

(B) Separate Case:

- The DG Stacks near CCR (DG Room) will be considered as a separate case and should not be clubbed.
- The HT Pylons, Piling rigs machine, Cranes (Tower cranes, Telescopic cranes, Truck mounted cranes, Loader cranes etc.) shall be considered one object/structure per CSS. No clubbing of such structures shall be allowed.
- Water tanks or Watch Towers should be considered as a separate case and should not be clubbed.
- The aircraft parked/to be parked on isolation bay should be considered a separate case and should not be clubbed with any other structure or aircraft.
- The same type of structures, if proposed or to be erected on the other side of runway shall be considered as a separate case and should not be clubbed.

5.0 Charging of Simulation Study fees from agencies working on behalf of AAI:-

The projects or works being or proposed to be carried out by any party/agency etc. on behalf of AAI at any airport shall not be charged for CNS Simulation study fees.

Page 3 of 4 AAI/ED/CNS/2021/CNS/E-NM-18011/2/2015-CNS-O&M/CNSC/FEES
 December, 2021

26th April 2022



Page 10 of 14

(Handwritten signature)



Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

भारतीय विमानपत्तन प्राधिकरण



Charging of simulation study fees from organizations other than AAI

6.0 Queries: -

Any queries or further guidance on the contents of this CNS Circular should be referred to: -
Executive Director [CNS-OM]
Airports Authority of India
Rajiv Gandhi Bhavan, Safdarjung Airport
New Delhi - 110003
Email: edcnsom@aai.aero, gmcnsqa@AAI.AERO

7.0 Validity: -

- 7.1 This CNS Circular shall remain in force till further notice.
 7.2 This CNS Circular supersedes CNS Circular 15/2019.

[G S Rao]

Executive Director [CNS-OM]





Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

ANNEXURE - II

UNDERTAKING

(To be filled and submitted on Rs. 100 stamp paper along with other relevant documents prior to conduct of CNS Simulation Study)

1. I/We.....(*applicant's name/short name, if any*)..... are desirous of getting an **CNS Simulation Study** by Airports Authority of India (AAI) for helping us to find out the Permissible Top Elevation (P.T.E) to a proposed structure at(*site address*).....I/We.....do hereby undertake :

- a) That, the construction work is yet to start/in progress/completed (Strike out whichever is not applicable).
- b) That, the said building has been constructed up to an elevation of.....M(AMSL) which ismeter above ground level(Not applicable in case construction work is yet to start).

2. I/We(*applicant's name/short name, if any*) understand that the Permissible Top Elevation (P.T.E) calculated and derived after the **CNS Simulation Study** is carried out may differ from the earlier/present NOC height obtained for the said Buildings/Structures, as such I/We will accept the revised Permissible Top Elevation, (P.T.E).

3. I/We understand that Airports Authority of India (AAI) will execute the said **CNS Simulation Study** as deposit work.

4. The deposit work shall be completed in Three Months by AAI. In case the completion of the works is delayed due to the Force Majure and/of any other reasons beyond the control of AAI, revised completion period shall be acceptable without any liability.

5. FEES, RELEASE OF FUND, FINAL RECONCILIATION OF ACCOUNTS

5.1 I/We are aware that the **CNS Simulation Study** fee payable to AAI shall be **INR****plus applicable GST** and I/We shall not claim to refund it.

5.2 The **CNS Simulation Study** Fee plus all applicable Taxes including GST is deposited vide Banker's Cheque /Demand Draft /Direct Bank online transfer through NEFT in favour of Airports Authority of India, payable at New Delhi or will be deposited within 15 days of this undertaking.

6. I/We understand that the funding for the **CNS Simulation Study** by the (*applicant's name/short name, if any*) shall be in the form of 100% deposit. Any increase in the cost arising out of increase in scope of work, deviation/extra substitute item/items of work, and contractual obligations like price escalation/litigation shall be borne and accepted by the (*applicant's name/short name, if any*)..... and such

26th April 2022

Page 12 of 14





Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

increase in cost shall also be undertaken on the basis of 100% deposit by the
 (applicant's name/short name, if any)

7. That, I/we will abide by my/our responsibility in implementing Risk Mitigation measures and all terms & conditions mentioned in NOC letter.

For on behalf of: (applicant's full name)

Signature :

Name :

Designation :

Date :

Witnesses:

1) Signature/Name/Address

2)) Signature/Name/Address





Airports Authority of India
Aerodrome Safeguarding Circular 02 of 2022 (Amended)
Processing of Airport Operators' Applications for Simulation Study

Annexure-III

Checklist Requirement of Data/Information i.r.o CSS (CNS Simulation Study) by the Simulation Study Cell, CHQ.

S.No.	CSS Requirement	If Applicable Yes/No	If Yes, then Document Attached
01.	Whether the structure/object/CNS Facility etc. for which CSS is required, is proposed or already constructed/installed.		
02.	If CSS is required for already constructed/installed, reason thereof and necessary approvals are attached?		
03.	Applicant is AAI or Non-AAI		
04.	In case of Non-AAI, is it a case of Multipath assessment or CSS Assessment?		
05.	In case of CSS Fees, whether Applicant submitted GST, PAN and correspondence details with application?		
06.	Whether latest NOCAS Height Sheet issued by the Designated Officer of AAI are attached?		
07.	Whether survey Certificate with Authorized Surveyor is attached?		
08.	Whether Latest Grid Map of the concern Station/Airport is attached?		
09.	Whether latest Survey data of existing obstacles, CNS facilities and Runway(s) etc. of concerned airport with their Site elevation and Top Elevation is provided?		
10.	Whether the coordinates (WGS-84), site elevation and top elevation of the proposed structure is attached?		
11.	Whether Architectural Drawings of the proposed building or structure for which Assessment is required, are attached?		
12.	Whether Material Type of the proposed structure provided in the file?		
13.	Whether Simulation is required for Temporary or Permanent Structure?		
14.	If the Structure is a Moving Object like Crane Whether (i) Radius of the Crane/Object Movement (ii) Angular/Elevation Movement of Crane/object Are provided in the file?		
15.	Correspondence Details of Nodal Officer i.e. Mobile No, email etc. are provided in the file?		
16.	Whether approved master plan of station is available?		

Note: For further information, regarding Data requirement procedure of CSS, refer latest circulars issued time to time on the subject.

26th April 2022



Page 14 of 14

3/10