AIRPORTS AUTHORITY OF INDIA
Department of Aerodrome Safeguarding

Rajiv Gandhi Bhawan, New Delhi-110003

[File No. AAI/ATM/DoAS/72/2019-Part]

AERODROME SAFEGUARDING CIRCULAR (ADSAC) 02 OF 2021

Subject: Processing of NOC Applications for height clearance for Airports with ILS CAT-II/III operations – Additional Parameters Regarding

1. Introduction

1.1. Protection of Service Volume of various Communication, Navigation and Surveillance facilities is to be done as per guidelines given in Schedule-I and Schedule-II Para 2 of GSR 751 (E) and its amendments issued from time to time.

1.2. Schedule II, Para 2.3 of GSR 751(E) details the service volume of localizer signal propagation which is to be protected, which is reiterated as below:

> *"2.3* ***Localizer***
>
> *2.3.1* *Within ± 10 degrees' azimuth in front of LLZ antenna, an object (located beyond the area specified in Annexure I) should not subtend an angle of elevation more than 0.75 degrees at the centre of antenna array.*
>
> *2.3.2* *Within ±10 degrees to ± 35 degrees LLZ azimuth in front of antenna an object (located beyond the area specified in Annexure I) should not subtend an angle of elevation more than 1.1 degree.*
>
> *2.3.3* *Notwithstanding, anything in para 2.3.1 and 2.3.2, in all airports having/intended to have CAT-II and CAT-III ILS, all object in sector of ± 18 degree for medium aperture antenna localizer and ± 15 degree for wide aperture LLZ antenna, up to the distance of 1050M beyond threshold, to be analysed for their potential multipath effects on the performance of ILS."*

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1.3 As per above guidelines, Airports having/intended to have ILS CAT-II/III in operations, structures/objects are required to be additionally analysed for their potential multipath effects on the performance of ILS, as per provisions in Schedule-II Para 2.3.3 of GSR 751(E) up to the permitted height through NOCAS.

1.4 Currently, the above additional analysis requirement is not built into NOCAS system and many times cases are cleared by NOCC without ensuring the protection of para 2.3.3 of GSR-751(E). Therefore, there is a requirement to issue process and procedure for same to avoid possible ILS LLZ deterioration of signal in space due to multi path effect.

2 Purpose

2.1 At airports having Current / intended CAT-II/III ILS operations, Buildings / Structures that are located within 1050 M of the Runway Threshold and subtend an angle up to ± 18 Deg. from the LLZ antenna (in case of small or medium LLZ antenna) or up to ± 15 Deg. from the LLZ antenna (in case of wide aperture LLZ antenna), are required to be analysed through CNS simulation study at CNS-OM Directorate at AAI CHQ before the issue of NOC only for the height permitted through NOCAS. This ADSAC defines the process for such additional analysis.

3 Scope / Applicability

3.1 This ADSAC applies to all Airports for which AAI is responsible for Aerodrome Safeguarding, vide the provisos of GSR 751(E), as amended from time to time and having Current / intended CAT-II/III ILS Operations.

4 Cancellation

4.1 Nil

5 Effective date

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

6 Procedure and process for additional analysis: -

6.1 At airports having Current / intended CAT-II/III ILS operations, Proposed Buildings / Structures that are located within 1050 M of the Runway Threshold and subtend an angle up to ± 18 Degree from the LLZ antenna (in case of medium aperture LLZ antenna) or up to ± 15 Degree from the LLZ antenna (in case of wide aperture LLZ antenna), shall be examined as per the normal NOCAS process by concerned Designated Officer. Refer diagrams 1 & diagram 2 below:

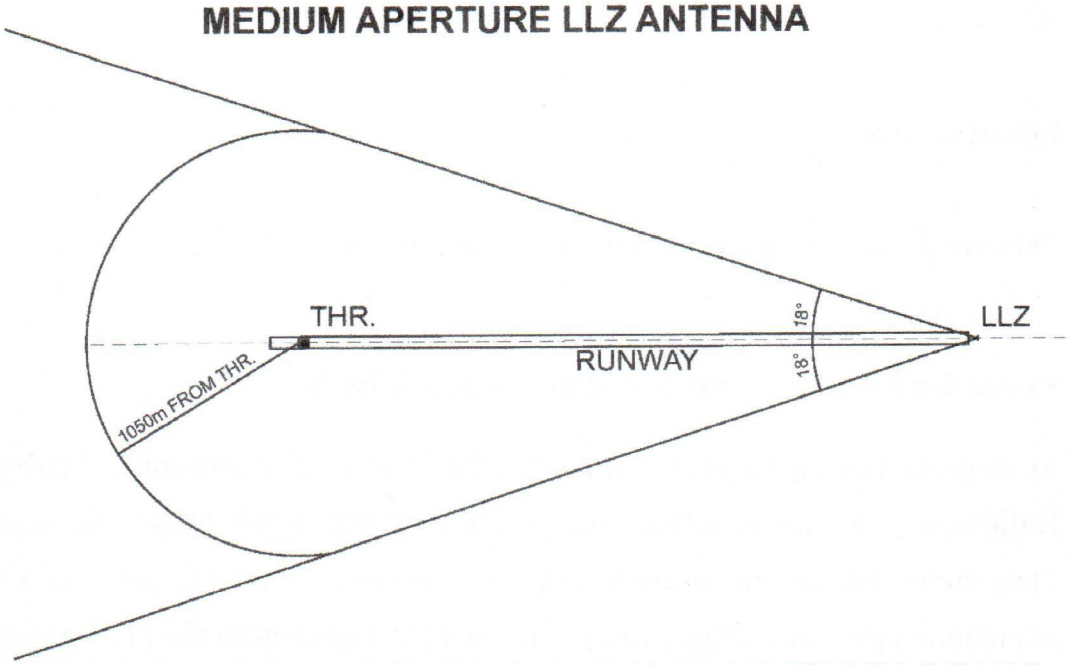

DIAGRAM 1. SPECIAL LLZ PROTECTION SERVICE VOLUME FOR CAT II /CAT III ILS (MEDIUM)

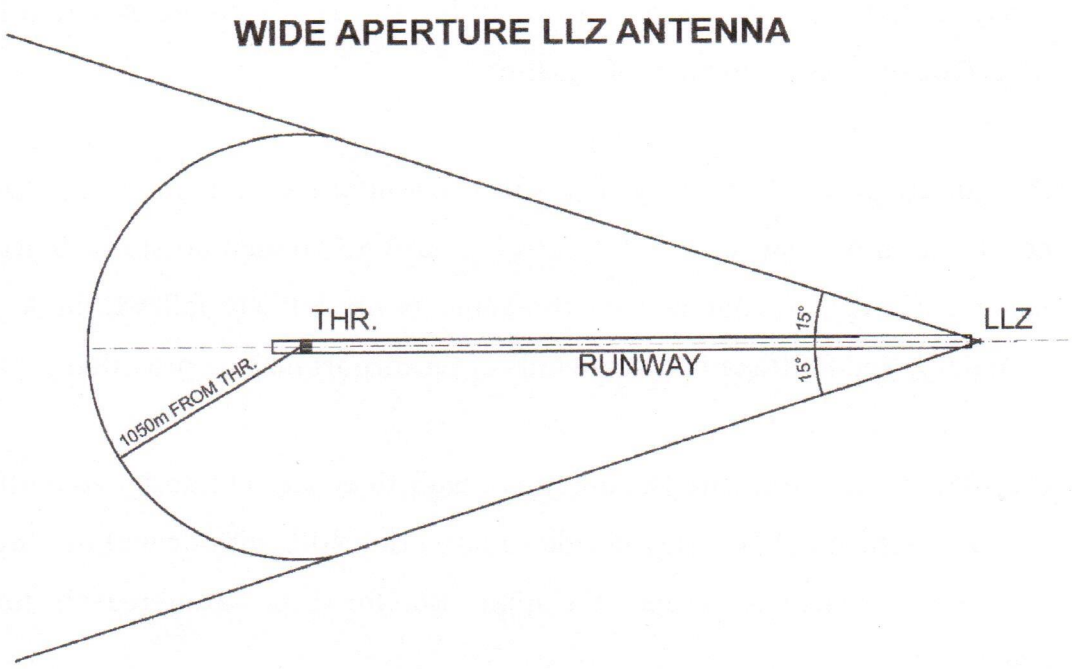

DIAGRAM 2. SPECIAL LLZ PROTECTION SERVICE VOLUME FOR CAT II /CAT III ILS (WIDE)

Note: ICAO Annex- 10 Volume-I Radio Navigational aids, Attachment C, defines the Aperture of Localizer antenna as follows:

(i) Small aperture – up to 11 elements
(ii) Medium aperture - 12-15 Elements
(iii) Large aperture – above 16 elements

6.2 Thereafter, NOCAS height calculation sheet, along with the details of proposed structure, such as orientation of the Building / Structure with respect to ILS LLZ antenna, distance from Runway Threshold, Runway Centre line, etc., shall be forwarded to ED [CNS-OM] by the concerned D.O. on the recommendation of CNS member of NOCC at CHQ for further examination as per provisions of GSR 751 Schedule -II para 2.3.3. An e-file

may be created and sent directly to ED (CNSOM) AAI CHQ for required analysis, including CNS simulation study, if so required. Refer para 6.4.1 of ADSAC 06 of 2020 for further information.

6.3 If required, CNS-OM Dte. may seek additional information regarding proposed construction or visit the site for carrying out CNS simulation study. Since the protection area of 1050m from threshold is most likely fall within Airport boundary, Nodal Officer contact details of the airport may be provided.

6.4 CNS-OM Dte will intimate the analysis result to concerned designated officer, based on which the D.O may decide to issue the NOC, with or without further restrictions, or decide to reject the application for NOC, stating reasons for the same.

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

8. Document Control, Queries and feedback

8.1 This ADSAC has been issued by the office of ED (ATM-DoAS) on the request of ED (CNS-OM) for ensuring protection of CNS facilities as per GSR-751(E) and GSR 770(E). Any query, feedback, suggestion or the error in this document may be brought into the notice of GM (DoAS) at AAI CHQ at gmdoaschq@aai.aero.

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(Kalyan Chaudhury)
Executive Director (ATM-DoAS)

Dated: 24/03/2021.

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2. Chief Executive Officers of all Joint Venture Airports.
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4. AAI website/nocas2.aai.aero/nocas
5. AIMS website.
6. File No. AAI/ATM/DoAS/72/2019

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