Definition

by Austro Control GmbH of the equipment and system requirements to be fulfilled by the owner of an aviation obstacle for aircraft detection lighting systems. The definition was made in accordance with § 123a(1) of the Aviation Act (LFG), Federal Law Gazette No 253/1957, last amended by Federal Act published Federal Law Gazette I No 40/2024.

A.   Provisions of the LFG [Aviation Act]

Austro Control GmbH shall control the demand-oriented night-time markings of aviation obstacles as required in the interests of aviation safety.

This applies to aviation obstacles established on or after 19 April 2024 (entry into force of § 123a LFG), unless the demand-oriented control of the night-time marking of the aviation obstacle in question has been prohibited in the exemption approval pursuant to § 91 LFG.

For aviation obstacles erected prior to 19 April 2024, control shall only take place if, at the request of the owner of the aviation obstacle, the authority responsible for the aviation obstacle has determined by decision pursuant to § 91 LFG that the demand-oriented night-time marking of the aviation obstacle is permissible.

The information on the implementation of a demand-oriented night-time marking of aviation obstacles must be sent to Austro Control GmbH for the purposes of the aeronautical information service.

The demand-oriented control by Austro Control GmbH takes is done by processing existing data into signals and reading them out on an interface. A signal is part of the decision-making and switching process carried out by the owner of the obstacle, at the end of which the demand-oriented night-time marking of an aviation obstacle is deactivated/activated by the obstacle owner.

B.   Technical provisions

1. The detection and switching system developed by Austro Control GmbH in compliance with the statutory mandate integrates various separate data sources and technologies to ensure the highest level of safety, efficiency and flexibility. The aim is that the night-time marking installed on the aviation obstacle in question can only be deactivated at the end of the chain of responsibility if there is a high probability that there will be no conflict between the aviation obstacle and aircraft and therefore no danger to aviation safety.

    For this purpose, the aviation obstacle is either recorded individually in the database of the detection and switching system or assigned to a group of point obstacles defined by Austro Control GmbH, in which the group of obstacles that results is treated as a single aviation obstacle while the signal is being generated. Austro Control GmbH describes the obstacle generated this way as a polygon cylinder with a safety distance it defines. The upper end of the polygon cylinder consists of a horizontal area at the clearance height of the obstacle.

2. The detection and switching system checks whether the existing data sources provide data and uses the existing data to determine whether there is no conflict between the body of the polygonal cylinder and the aircraft. A signal is issued if there is no aircraft touching the outside of the polygon cylinder or its top surface or is located within it. This signal is generated every four (4) seconds, has a validity of ten (10) seconds and is provided as a JSON response on the interface of Austro-Control GmbH. If the signal does not arrive at the aviation obstacle or cannot be decoded, the owner of the obstacle shall ensure that the demand-oriented night-time marking is or remains activated.

The interface is hosted on the internet and can only be accessed by it. The sphere of responsibility and influence of Austro Control GmbH ends at this interface to the internet. Each owner of an aviation obstacle receives access data to the interface at which the signal is available when integrating its aviation obstacle(s) into the database of the BNK system.

3. The signals generated and provided by Austro Control GmbH may only be used to control the re-identification of the aviation obstacle within the spectral range visible to the human eye. The use of the signals for the demand-oriented control of lighting components by means of infrared light signals is expressly not part of the statutory mandate of Austro Control GmbH and must therefore be refrained from.

The demand-oriented night-time marking refers only to those obstacle and hazard lights that lie within the spectral range visible to the human eye. This results in the requirement for two independently installed circuits, one each for illumination in the visible range and one for illumination in the infrared range.

4. The date of entry into operation of the demand-oriented night-time marking must be reported to Austro Control GmbH by post with four calendar weeks in advance and by e-mail to bnk@austrocontrol.at with all the necessary supporting documents in a single message – this must be drawn up by a person authorised to do so and must include the completed Austro Control GmbH obstacle form based on the measurement log. The current obstacle form is available on Austro Control's website at Austro Control GmbH – obstacle data pursuant to §85 LFG.

If it is suspected that the access data are being misused, Austro Control GmbH may disable access to the interface for the owner affected until the circumstances have been clarified.

5. The signals can be retrieved by the owner of the aviation obstacle. If there is a signal indicating that there is no conflict at hand, the night-time marking may be deactivated. Austro Control GmbH provides a Rest API via internet. A VPN (virtual private network) is not necessary. A JSON response is returned when the interface is queried with the respective parameters such as the obstacle ID to be queried.

C. Reporting duties

6. Multiple co-owners of an aviation obstacle have to appoint a joint representative in Austria, who must be authorised solely to submit applications and to receive notifications. Obstacle owners residing or domiciled outside the federal territory must appoint an authorised recipient in Austria.

7. In the event of a change of ownership of an aviation obstacle (including only parts of the obstacle or a co-owner), the old and new owners must immediately provide the name, address and contact coordinates of the new owner as well as the name and address of the former owner.

8. The owner of an aviation obstacle must notify Austro Control GmbH of any suspected misuse of its access data without delay via bnk@austrocontrol.at.

9. Austro Control GmbH must be notified of the removal – even of only in part – of the aviation obstacle, stating the date of removal, and a NOTAM [Notice to Airmen] must be arranged with Austro Control GmbH in writing upon request.

D. Interface specification

10. Each obstacle owner receives access data to the interface from which the signals can be collected when integrating their aviation obstacle(s) into the BNK system. Authentication via user name and password has been set up. These login data are provided by Austro Control. This username and password can be used to retrieve a JWT token, with which get-requests are sent to a

REST API. A JSON response is then returned. Signals for the respective aviation obstacles are issued in this response. These signals are generated every 4 seconds and are valid for 10 seconds.

11. The signals can be retrieved by the obstacle owner by way of the server provided using the access data. The obstacle lighting may be deactivated when there is a valid signal indicating that no conflict is at hand. In the process, the ACG provides a REST API over the internet, which can be consulted with a wide variety of programming languages and libraries. A VPN (virtual private network) is not necessary. When the interface is queried with the respective parameters such as the obstacle ID to be queried, a JSON response with the following contents is returned.

12. The JSON response received via the interface contains the following parameters:

12.1 Approval (true/false):

If the parameter approval is set to true, the obstacle lighting may be switched off.

12.2 ref_time (ISO date):

The ref_time indicates the time when the message was created.

12.3 valid_until (ISO date):

The valid_until time indicates the validity period of the message.

12.4 Checksum (string):

The checksum can be used to check the parameters. It has been prepared as follows:

The checksum is a sha256 hash of the string consisting of approval+ref_time+valid_until.

If necessary, more detailed documentation for querying the interface will be provided as a web-based OpenAPI specification.

E. Entry into force

This Definition shall enter into force upon its publication in the Austrian Aviation Bulletin (ÖNfL – Österreichisches Nachrichtenblatt für Luftfahrer).

The definition published under N°410 in the ÖNfL issue dated 30.08.2024 shall cease to apply upon this Definition's entry into force.