

Subject: **Re-entry into Earth's Atmosphere of Space Debris of Rocket Long March 5B (CZ-5B)**

Ref. Publications:

European Union (EU) Space Surveillance and Tracking (SST) Re-entry Analysis Report 4RE-22143B-003, creation date 03 November 2022 at 10:53:00 UTC.

Applicability:

EASA Member State (MS) National Aviation Authorities (NAAs), Air Traffic Management (ATM) / Air Navigation Service (ANS) providers and aircraft operators.

Description:

This SIB is issued to raise awareness on the expected re-entry into Earth's atmosphere of the large space object Rocket Long March 5B (CZ-5B), launched on 31 October 2022.

Object CZ-5B has an estimated mass ranging between 17 and 23 tons, which makes it one of the largest pieces of debris re-entering the atmosphere in recent years. For this reason, it deserves careful monitoring. The EU SST experts have estimated that the debris generated by the aforementioned object will likely re-enter Earth's atmosphere in an uncontrolled manner on 04 November 2022.

As this is an uncontrolled re-entry, it is difficult at this point in time to exactly predict the trajectory of the debris and where the parts will fall. A detailed prediction could be available only a few hours before the impact.

The current EU SST forecast for impact is within the following time window:

- Window Start (UTC): 04.11.2022 08:03:02.433000Z UTC
- Window End (UTC): 04.11.2022 18:37:02.433000Z UTC

The EU SST has estimated a variety of possible re-entry trajectories (see Appendix 1 of this SIB). At the time of publication of this SIB it appears that some of those trajectories could affect the southern European airspace (see Figure 1 of this SIB). Areas / airspace potentially affected, in particular Flight Information Regions (FIR), could be:

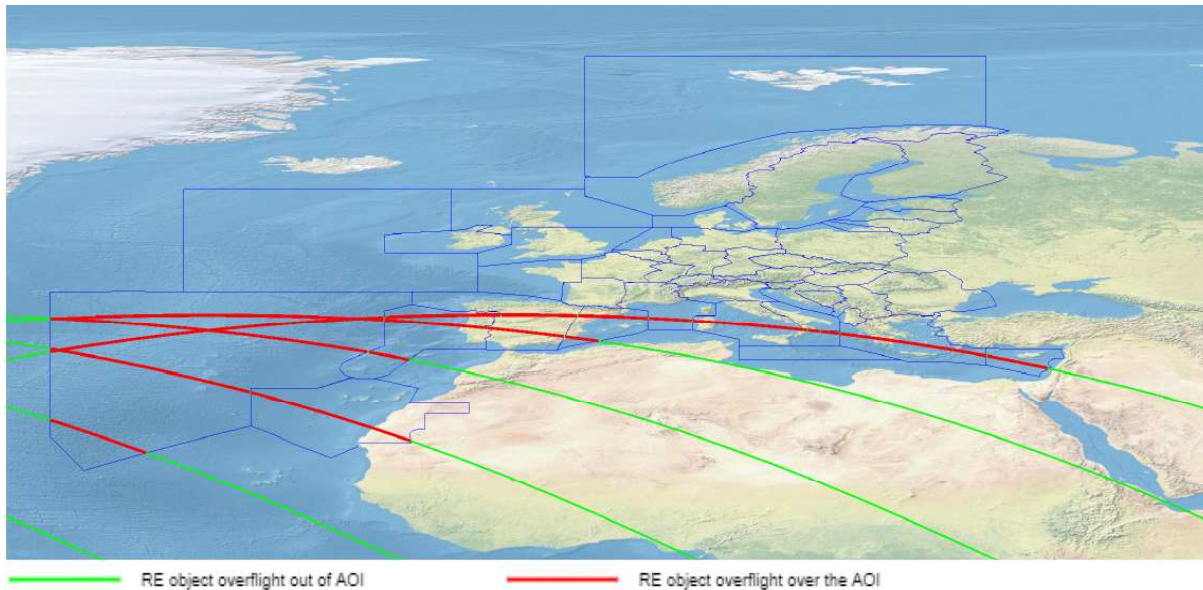
- Canarias (Spain)
- Santa Maria (Portugal)
- Lisboa (Portugal)
- Madrid (Spain)
- Barcelona (Spain)
- Marseille (France)

This is information only. Recommendations are not mandatory.



- Roma (Italy)
- Brindisi (Italy)
- Athinai (Greece)
- Nicosia (Cyprus)

Figure 1 – Map of the Ground Track on Custom Area of Interest (AOI)



EU SST Disclaimer: The re-entry analysis report has been prepared with due care. Because of various underlying input data, the results distributed within this report contain uncertainties, which cannot be controlled. Therefore no liability for completeness and correctness of the provided information and data can be given.

Source: EU SST

EU SST issues continuous updates on the status of the re-entry of this large space object, including the potential predicted trajectories, the time window for the re-entry and the classification of the risk, which are published on the [EU SST Service Provision Portal](#) (registration required).

At this time, the safety concern described in this SIB does not warrant the issuance of an operational directive under Regulation (EU) [965/2012](#), Annex II, ARO.GEN.135(c).

Recommendation(s):

EASA recommends the concerned MS NAAs, ATM / ANS providers and aircraft operators to:

- Regularly monitor and take into consideration the latest predictions regarding the uncontrolled re-entry into Earth's atmosphere of the large space object CZ-5B available at the [EU SST Service Provision Portal](#);
- Adapt their risk assessments according to the evolving situation and information available.

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Additionally, EASA recommends the respective authorities of the affected Member States to consider implementing and notifying airspace restrictions on a path of minimum 70 km and up to 120 km on each side of the estimated re-entry trajectory, a few minutes before and after the time window as indicated by EU SST via their Service Provision Portal.

MS NAAs are also reminded that, in line with International Civil Aviation Organization Annex 15 Standard 6.3.2.3, a Notice to Airmen (NOTAM) should be considered to be issued in line with the following provision:

*“m) presence of hazards not otherwise promulgated, which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, fireworks, sky lanterns, **rocket debris**, races and major parachuting events)”*

Contact(s):

For further information, contact the EASA Safety Information Section, Certification Directorate, E-mail: ADs@easa.europa.eu.

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Table 3: Area of Interest Information

AOI	Entry epoch	Entry Lat	Entry Lon	Exit Epoch	Exit Lat	Exit Lon
SANTA MARIA FIR	2022-11-04T08:52:29	35.5726	-39.9776	2022-11-04T08:57:40	41.0355	-15.0844
LISBOA FIR	2022-11-04T08:57:42	41.0498	-14.9213	2022-11-04T08:59:21	41.4424	-6.3486
MADRID FIR	2022-11-04T08:59:22	41.4428	-6.2616	2022-11-04T09:00:27	41.3129	-0.6121
BARCELONA FIR	2022-11-04T09:00:28	41.3085	-0.5254	2022-11-04T09:01:28	40.916	4.6469
MARSEILLE FIR	2022-11-04T09:01:29	40.9074	4.7325	2022-11-04T09:02:07	40.5257	7.9672
ROMA FIR	2022-11-04T09:02:08	40.5144	8.0518	2022-11-04T09:03:51	38.9873	16.5794
BRINDISI FIR	2022-11-04T09:03:52	38.9691	16.6601	2022-11-04T09:04:03	38.7653	17.5457
ROMA FIR	2022-11-04T09:04:04	38.7464	17.6259	2022-11-04T09:04:21	38.416	18.9831
ATHINAI FIR	2022-11-04T09:04:22	38.396	19.0625	2022-11-04T09:06:46	34.9349	29.994
NICOSIA FIR	2022-11-04T09:06:46	34.911	30.0563	2022-11-04T09:07:50	33.0459	34.5506
SANTA MARIA FIR	2022-11-04T10:24:38	40.7773	-39.9676	2022-11-04T10:29:26	40.6171	-15.0855
LISBOA FIR	2022-11-04T10:29:27	40.6063	-15.0006	2022-11-04T10:30:59	39.3244	-7.331
MADRID FIR	2022-11-04T10:30:59	39.3144	-7.2826	2022-11-04T10:32:10	37.9606	-1.6195
BARCELONA FIR	2022-11-04T10:32:11	37.9302	-1.5077	2022-11-04T10:32:43	37.222	0.9634
SANTA MARIA FIR	2022-11-04T11:56:19	40.9082	-39.942	2022-11-04T12:01:14	35.5433	-16.2998
LISBOA FIR	2022-11-04T12:01:16	35.4941	-16.1647	2022-11-04T12:01:57	34.3536	-13.1968
SANTA MARIA FIR	2022-11-04T13:28:14	36.0172	-39.9367	2022-11-04T13:31:50	29.3827	-25.0544
CANARIAS FIR	2022-11-04T13:31:51	29.3336	-24.9654	2022-11-04T13:35:12	21.6907	-13.0676
SANTA MARIA	2022-11-04T15:01:04	24.9199	-39.9749	2022-11-04T15:03:11	19.7983	-32.8286
FIR	2022-11-04T15:01:04	24.9199	-39.9749	2022-11-04T15:03:11	19.7983	-32.8286

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