
**Razvedrilna tehnologija - Stroji za odre in druge prireditvene prostore - 3. del:
Varnostne zahteve in pregledi za sisteme brez posadke (UAS/droni)**

Entertainment technology - Machinery for stages and other production areas - Part 3:
Safety requirements and inspections for unmanned aircraft systems (UAS/Drones)

Veranstaltungstechnik - Maschinen für Bühnen und andere Produktionsbereiche - Teil 3:
Sicherheitstechnische Anforderungen und Prüfungen für unbemannte Luftfahrtsysteme
(UAS/Drohnen)

Technologies du spectacle - Machinerie pour scènes et autres zones de production -
Partie 3 : Exigences et inspections relatives à la sécurité pour le systèmes d'aéronefs
sans pilote (UAS/Drones)

Ta slovenski standard je istoveten z: EN 17206-3:2026

ICS:

97.200.10	Gledališka, odrska in studijska oprema ter delovne postaje	Theatre, stage and studio equipment
-----------	--	--

SIST EN 17206-3:2026**en,fr,de**

Sample Document

get full document from standards.iteh.ai

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 17206-3

October 2026

ICS 97.200.10

English Version

**Entertainment technology - Machinery for stages and
other production areas - Part 3: Safety requirements and
inspections for unmanned aircraft systems (UAS/Drones)**

Technologies du spectacle - Machines pour scènes et
autres zones de production - Partie 3 : Exigences et
inspections relatives à la sécurité pour les aéronefs
autopilotés (UAS/drones)

Veranstaltungstechnik - Maschinen für Bühnen und
andere Produktionsbereiche - Teil 3:
Sicherheitstechnische Anforderungen und Prüfungen
für unbemannte Luftfahrtsysteme (UAS/Drohnen)

This European Standard was approved by CEN on 12 October 2026.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2026 CEN All rights of exploitation in any form and by any means reserved
worldwide for CEN national Members.

Ref. No. EN 17206-3:2026 E

Contents	Page
European foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Hazards	10
4.1 General.....	10
4.2 List of significant hazards	11
5 Design requirements	15
5.1 General.....	15
5.2 Load assumptions.....	16
5.3 UAS lighter than air	16
5.4 Performance and design requirements.....	16
5.4.1 Sharp edges.....	16
5.4.2 Crashworthiness	16
5.4.3 Tethering	16
5.5 Load bearing equipment	17
5.5.1 General.....	17
5.5.2 Terminal fittings	17
5.6 Load carrying devices.....	17
6 Safeguarding hazardous areas	17
6.1 General.....	17
6.2 Safeguarding at crushing, shearing and trapping points, and fall protection	17
7 Electrical equipment and control systems	18
7.1 General requirements	18
7.1.1 General.....	18
7.1.2 Electromagnetic compatibility (EMC)	19
7.1.3 Ambient air temperature and humidity	19
7.1.4 Protection against electric shock.....	19
7.2 Control circuits and control functions	20
7.2.1 General.....	20
7.2.2 Control devices	20
7.2.3 Enabling devices.....	20
7.2.4 Cableless control of UAS	20
7.2.5 Groups of UAS	20
7.2.6 Follow-me mode and UAS interacting with persons	20
7.3 Emergency Stop, loss of power and removal of power.....	21
7.4 Maximum load and overload protection	21
7.4.1 UAS not designed to lift loads	21
7.4.2 UAS designed to lift loads.....	21
7.5 Direct remote identification requirements.....	21
7.6 Geo-awareness requirements	22
7.7 Lighting requirements	22
8 User information	22
8.1 General.....	22

8.2	Instructions for use.....	22
8.2.1	General	22
8.2.2	Intended use	23
8.2.3	User information for safety functions.....	23
8.2.4	Outdoor use	23
8.2.5	Loss of synchronization/group operation.....	23
8.2.6	Coordinated move	23
8.2.7	Indoor use	23
8.3	Marking	24
8.4	Load-carrying device.....	24
9	Testing.....	24
Annex A (informative)	Examples of hazards and risk origin associated with UAS.....	25
Annex B (normative)	Use case definitions.....	34
Annex C (informative)	Designing safety functions for UAS.....	36
Bibliography		40

Sample Document

get full document from standards.iteh.ai

EN 17206-3:2026 (E)**European foreword**

This document (EN 17206-3:2026) has been prepared by Technical Committee CEN/TC 433 “Entertainment Technology – Machinery, equipment and installations”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2027, and conflicting national standards shall be withdrawn at the latest by April 2027.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document specifies safety requirements within the meaning of Directive 2006/42/EC, “Machinery Directive”.

This is the third part of the EN 17206 series. At present the parts of the document are:

- Part 1: *Safety requirements and inspections*¹
- Part 2: *Safety requirements for stands and truss lifts*
- Part 3: *Safety requirements and inspections for unmanned aircraft systems (UAS/Drones)* (this document)

The deviations from EN 17206-1 specified in this part are based on the particular operating conditions for unmanned aircraft systems (UAS) and cannot be applied to other machinery.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

¹ Under development. Will replace EN 17206:2020.

1 Scope

This document is applicable to UAS and groups of UAS used in staging and production facilities for events and theatrical productions (entertainment industry). Such facilities include: theatres, multi-purpose halls, exhibition halls; film, television and radio studios; concert halls, schools, bars, discotheques, open-air stages and other rooms for shows and events.

This document is applicable to all UAS used in the entertainment industry, indoors and outdoors. This document includes UAS that are excluded from the Commission Delegated Regulation (EU) 2020/1058 and (EU) 2019/945 specifically Article 2, 4 which excludes “UAS intended to be exclusively operated indoors”.

This document deals with all significant hazards, hazardous situations or hazardous events relevant to UAS, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer.

The document specifies the additional hazards and safety requirements for UAS categorized under the “open” category, the “specific” category, and the “certified” category, in particular, those that occur from the specific characteristics of the payload and the environment in the entertainment industry.

The principles in this document are also applicable to UAS based on new technologies or specially designed UAS which are not expressly mentioned here but which nevertheless operate in a similar manner or are meant for similar purposes to the equipment listed above.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 4709-001:2026, *Aerospace series — Unmanned Aircraft Systems — Part 001: Product requirements and verification*

EN 4709-002, *Aerospace series — Unmanned Aircraft Systems — Part 002: Direct Remote Identification*

EN 4709-003:2026, *Aerospace series — Unmanned Aircraft Systems — Part 003: Geo-awareness requirements*

EN 4709-004, *Aerospace series — Unmanned Aircraft Systems — Part 004: Lighting requirements*

EN 17206:2020, *Entertainment technology — Machinery for stages and other production areas — Safety requirements and inspections*

EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1)*

EN IEC 60204-32, *Safety of machinery — Electrical equipment of machines — Part 32: Requirements for hoisting machines (IEC 60204-32)*

EN IEC 61000-6-2, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments (IEC 61000-6-2)*

EN IEC 61000-6-4, *Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments (IEC 61000-6-4)*

EN 17206-3:2026 (E)

EN 61326-3-1, *Electrical equipment for measurement, control and laboratory use — EMC requirements — Part 3-1: Immunity requirements for safety-related systems and for equipment intended to perform safety-related functions (functional safety) — General industrial applications (IEC 61326-3-1)*

EN 61508-2, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 2: Requirements for electrical/electronic/programmable electronic safety-related systems (IEC 61508-2)*

EN 61508-3, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 3: Software requirements (IEC 61508-3)*

EN 61508-5:2010, *Functional safety of electrical/electronic/programmable electronic safety-related systems — Part 5: Examples of methods for the determination of safety integrity levels (IEC 61508-5:2010)*

EN 62745, *Safety of machinery — Requirements for cableless control systems of machinery (IEC 62745)*

EN ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100)*

EN ISO 13850, *Safety of machinery — Emergency stop function — Principles for design (ISO 13850)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17206-1 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp/>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1

open category

category of UAS operation that, considering the risks involved, does not require a prior authorisation by the competent authority nor a declaration by the UAS operator before the operation takes place

[SOURCE: EN 4709-001:2026]

3.2

specific category

category of UAS operation that, considering the risks involved, requires an authorization by the competent authority before the operation takes place and takes into account the mitigation measures identified in an operational risk assessment, except for certain standard scenarios where a declaration by the operator is sufficient

[SOURCE: EN 4709-001:2026]

3.3

certified category

category of UAS operation that, considering the risks involved, requires the certification of the UA, a licensed remote pilot and an operator approved by the competent authority, in order to ensure an appropriate level of safety

[SOURCE: EN 4709-001:2026]

3.4**competent authority**

authority responsible for the certification, authorization and oversight of UAS air operations where the UAS operator has its principal place of business or place of residence

[SOURCE: EN 4709-001:2026]

3.5**automatic control operational mode**

control operational mode where the UA altitude, speed and flight path are fully controlled by the flight control system

Note 1 to entry: No pilot input is needed to address flight control and vehicle steering, other than to load or modify the required flight plan or waypoint parameters. C2 link performance and latency are not an issue for control stability and guidance, besides situation awareness and collision avoidance issues. Examples of automatic modes are waypoint path navigation, waypoint holding (hovering/loitering), automatic take-off, automatic landing, follow-me mode, return to home, etc.

[SOURCE: EN 4709-001:2026]

3.6**semi-automatic control operational mode**

control operational mode where the remote pilot commands outer loop parameters such as altitude, heading and UA speed in given values specified by the UA manufacturer

Note 1 to entry: The flight control system operates the UA controls to achieve the commanded outer loop parameter value. Envelope flight protection and/or control decoupling functions should be in place in this control operational mode. The flight manual shall clearly specify, for any possible/available control mode that is classified as semi-automatic, for each degree of freedom, the level of involvement of the pilot to address control stability. For assisted modes a higher latency on C2 link may be adequate (e.g. < 5 s) but vehicle steering is always pilot direct responsibility. A wide range of flight control modes are semi-automatic, from low level attitude/rate control, autopilot heading/speed/altitude control, velocity control; position control may be considered semi-automatic if pilot input is transformed into position commands continuously (or an automatic mode if pilot inputs only modify waypoint coordinates in on-board autopilot).

[SOURCE: EN 4709-001:2026]

3.7**manual direct piloting control operational mode**

control operational mode where the remote pilot directly commands UA controls (e.g. aerodynamic surfaces through servo-actuators and engine through electronic speed control)

Note 1 to entry: This control mode does not benefit (as a general rule) of autopilot aiding action (e.g. stability/control augmentation systems SAS/CAS, flight envelope protection FEP) and the pilot is also directly responsible for vehicle stability (no hand-off control is allowed). Link performance and latency is critical (e.g. << 1 s).

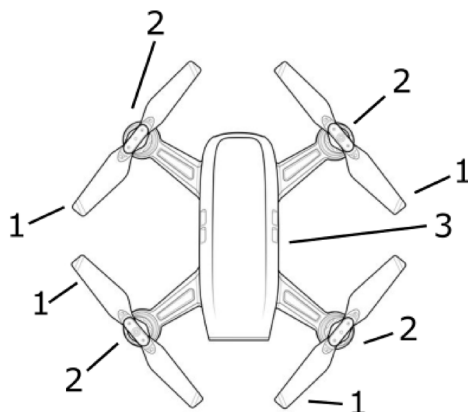
[SOURCE: EN 4709-001:2026]

3.8**maximum authorized mass****MAM**

sum of the self weight of the UAS plus the weight of any approved attachments plus the maximum declared ELL

EN 17206-3:2026 (E)

Note 1 to entry Figure 1 illustrates the terms and an example of a UAS.

**Key**

- 1 propeller
- 2 motor
- 3 electronics (battery, controller and transmitter)

Figure 1 — Example depiction of a UAS

3.9**load carrying device**

<UAS> part of the UAS which directly carries the intended load

3.10**load bearing equipment**

<UAS> assembly of load bearing elements

3.11**load bearing element**

<UAS> parts of the UAS between the load and the UAS anchor point

3.12**entertainment load limit****ELL**

maximum load that an item of lifting equipment is designed to raise, lower or sustain

[SOURCE: EN 17206:2020]

3.13**safety integrity level****SIL**

discrete level (one out of a possible four), corresponding to a range of safety integrity values, where safety integrity level 4 has the highest level of safety integrity and safety integrity level 1 has the lowest

[SOURCE: EN 61508-4:2010, 3.5.8]

3.14**maximum take-off mass****MTOM**

maximum take-off mass of the UA in the heaviest combination with accessories, payloads and batteries, as specified by the manufacturer when placing the product on the market, at which the UA can be safely operated

[SOURCE: EN 4709-001:2026]

3.15**return home****home**

fail safe function that upon loss of data link will direct the UA back to predefined home position

[SOURCE: EN 4709-001:2026]

3.16**unmanned aircraft****UA**

aircraft operating or designed to operate autonomously or to be piloted remotely without a pilot on board

[SOURCE: EN 4709-001:2026]

3.17**unmanned aircraft system****UAS**

unmanned aircraft and its associated elements which are operated with no pilot on board

Note 1 to entry: ISO 21384-2.

[SOURCE: EN 4709-001:2026]

3.18**tether**

mechanical device for the purpose of effectively restraining the UA within the range permitted by the length of the tether as its primary function

Note 1 to entry: A tether in the sense of this document is not any cable linking the UA to the ground e.g. an electric cable powering the UA, even if it was the only source of power and a loss of connection would inevitably lead to a loss of flight. However, the tether may be used to transmit electrical power to the UA as a secondary function.

[SOURCE: EN 4709-001:2026]

3.19**holding**

hovering for hovering capable aircraft, i.e., maintaining altitude and position; for fixed wing aircraft holding corresponds to loitering, i.e., flying a minimum distance orbit around current position, at low speed and holding altitude

[SOURCE: EN 4709-001:2026]

EN 17206-3:2026 (E)**3.20****automatic landing**

automatic mode where the UA attempts an automatic landing or an emergency landing at the current position

[SOURCE: EN 4709-001:2026]

3.21**geo-awareness**

function that, based on the data provided by Member States, detects a potential breach of airspace limitations and alerts the remote pilots so that they can take immediate and effective action to prevent that breach

[SOURCE: EN 4709-001:2026]

3.22**follow-me mode**

mode of operation of a UAS where the unmanned aircraft constantly follows the remote pilot within a predetermined radius

[SOURCE: EN 4709-001:2026]

4 Hazards**4.1 General**

When designing and using UAS as in this document, all foreseeable hazards shall be identified.

Only competent persons shall be responsible for:

- a) describing the intended use;
- b) risk assessment.

After risk assessment has been carried out, the appropriate measures to be taken shall be established for specific hazards. The risk assessment can be carried out on the basis of EN ISO 12100 or according to the example hazards listed in Annex A, Table A.1. Suitable facilities and provisions to enable the recovery of performers and other persons shall be provided in the event of any of the identified hazards occurring.

Hazards largely result from the respective design and mode of operation, in particular from:

- incorrect handling and operation;
- uncontrolled movements;
- concurrent motion of loads using more than one UAS, particularly involving differences in speed and uneven load distribution;
- environmental hazards (e.g. weather conditions);
- hazard zones;
- limited visibility.