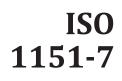
# INTERNATIONAL STANDARD



Second edition 2023-11

# Flight dynamics — Vocabulary —

## Part 7: Flight points and flight envelopes

Dynamique de vol – Vocabulaire — Partie 7: Points de vol et domaines de vol

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<u>ISO 1151-7:2023</u>

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### Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="https://www.iso.org/directives">www.iso.org/directives</a>).

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This document was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 8, *Aerospace terminology*.

This second edition cancels and replaces the first edition (ISO 1151-7:1985), which has been technically revised.

The main changes are as follows:

— new terms for subclause "Types of aircraft motion" have been supplemented.

A list of all parts in the ISO 1151 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <u>www.iso.org/members.html</u>.

## Flight dynamics — Vocabulary —

## Part 7: Flight points and flight envelopes

### 1 Scope

This document defines the concepts and terms used in flight dynamics studies to specify aircraft flight conditions and envelopes.

This document applies to the analysis of operational, experimental or simulated flights for the purposes of safety analyses and qualification, taking into account potential failures and likely environmental conditions.

### 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions Teh Standards

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

- ISO Online browsing platform: available at <a href="https://www.iso.org/obp">https://www.iso.org/obp</a>
- IEC Electropedia: available at <u>https://www.electropedia.org/</u>

### **3.1** Accomplishment of a mission

#### s://standa

### 3.1.1

mission

purpose of a flight achieved while respecting constraints, among others, of time and of space

Note 1 to entry: The objective and the constraints can be specified in a flight plan.

#### 3.1.2

#### flight program

preschedule of intermediate objectives required to fulfil the *mission* (3.1.1) within an *authorized flight envelope* (3.7.1)

Note 1 to entry: Provision can be made in the flight programme for some conditional changes of intermediate objectives according to circumstances arising during the flight (failure, meteorology, traffic, etc.).

#### **3.1.3 phase flight phase** portion of the flight characterized by an intermediate objective

Note 1 to entry: The intermediate objective is defined with some tolerance as to the accuracy with which the objective is considered to have been achieved, such that the following phase can be initiated under conditions that allow it to be executed.

Note 2 to entry: Examples of flight phases are: take-off, climb, cruise, descent, approach, landing.

#### **3.1.4 sub-phase flight sub-phase** portion of a *phase* (3.1.3) characterized by an elementary objective

EXAMPLE "Ground run" in the "take-off" phase, "flare" and "ground run" in the "landing" phase.

Note 1 to entry: The elementary objective is defined with some tolerance as to the accuracy with which the objective is considered to have been achieved, such that the following sub-phase can be initiated under conditions that allow it to be executed.

Note 2 to entry: Following the breakdown of a phase into sub-phases, certain parameters can often be considered as constants during the sub-phase [e.g. mass characteristics of the aircraft, *state of the atmosphere* (3.4.1)].

#### 3.2 Controls, geometric configuration and condition of systems

#### 3.2.1

#### control

element located in the cockpit and operated by the crew to fly the aircraft

EXAMPLE Stick; throttles; undercarriage and flap selection levers; switches to engage autopilot or dampers; pressurization and air conditioning controls.

Note 1 to entry: The same control can be a *piloting control* (3.2.1.1) during one *sub-phase* (3.1.4) and a *selector* (3.2.1.2) during another sub-phase; for example, the throttle is a selector during the "take-off" phase and a piloting control during the "approach" phase.

#### 3.2.1.1

#### piloting control

*control* (3.2.1) operated by the pilot, in a continuous or intermittent manner, during a *sub-phase* (3.1.4) in order to comply with the *piloting rules* (3.5.1) and to achieve the objective of that sub-phase

#### 3.2.1.2

#### selector

*control* (3.2.1) put into a position by the crew, as laid down in the flight manual, at the beginning of a *sub-phase* (3.1.4) and which remains in that position throughout that sub-phase

#### 3.2.2

### configuration

#### geometric configuration

set of quantities characterizing the relative positions of the various components of the aircraft, that can be controlled by *selectors* (3.2.1.2)

Note 1 to entry: See ISO 1151-6:1982, 6.0.2.

Note 2 to entry: The list of quantities is restricted to those involved in the problem under consideration.

Note 3 to entry: The geometric configuration shall not be confused with the geometric state (see ISO 1151-1-6:1982, 6.1.17) of which it forms only a part.

#### 3.2.3

#### situation of the systems

set of parameters defining the operating behaviour of the aircraft systems concerned with flight dynamics

Note 1 to entry: The list of parameters is restricted to those involved in the problem under consideration.