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## Flight dynamics — Vocabulary—

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### Part 11: Control system

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## Contents

Foreword .....	iv
1 Scope .....	1
2 Normative references.....	1
3 Terms and definitions.....	1
3.1 Basic concepts .....	1
3.2 Basic elements.....	3
3.3 Control system classification .....	7
Index.....	10

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## Foreword

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

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# Flight dynamics — Vocabulary

## Part 11: Control system

### 1 Scope

This document establishes the terms and definitions of the basic concepts applied in science, engineering and manufacturing in the field of flight control systems of aircraft (airplane and helicopter).

### 2 Normative references

There are no normative references in this document.

### 3 Terms and definitions

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 Basic concepts

##### 3.1.1 system

combination of components, parts, and elements that are interconnected to perform one or more specific functions

##### 3.1.2

##### control system

set of mechanical or electronic devices that manages, commands, directs or regulates the behaviour of other devices or *systems* (3.1.1(3.1.1)) by controlling the output

##### 3.1.3

##### flight control system

complex of mechanical and electronic devices of aircraft (airplane and helicopter) providing its stability and controllability to allow the pilot to control the movement and attitude of aircraft at all stages and the modes of flight by changing the external forces or moments acting on aircraft

##### 3.1.4

##### automatic flight control system

##### AFCS

*type of flight control system* (3.1.3(3.1.3)) which ~~provide~~*provides* aircraft control by measuring controlled variables and comparing them with reference input to reach the goal defined over measured values in terms of quality

Note 1 to entry: The AFCS is composed of several sub-systems that work together to provide automatic flight control. The main components of the AFCS are the *autothrottle system* (3.3.9(3.3.9)), *flight director system* (3.3.10(3.3.10)), *autopilot system* (3.3.11(3.3.11)), *flight management system (FMS)* (3.3.12(3.3.12)).

Note 2 to entry: The crew can select whether to put the aircraft under *autopilot* (3.3.9(3.3.9)) or manual control mode. Under the autopilot mode, the aircraft *flight control surfaces* (3.1.7(3.1.7)) move automatically; under the

manual control mode, the pilot follows the displayed *flight director* (3.3.10(3.3.10)) commands to achieve the desired status.

### **3.1.5**

#### **effector**

##### **control effector**

external device that directly changes forces and/or moments acting on aircraft to control aircraft position and attitude

### **3.1.6**

#### **inceptor**

##### **control inceptor**

##### **cockpit controller**

cockpit device for enabling pilot input through direct linkage or a *flight control system* (3.1.3(3.1.3)) or computer to *control effectors* (3.1.5(3.1.5))

### **3.1.7**

#### **control surface**

##### **flight control surface**

##### **aerodynamic control surface**

movable airfoil that provides reactive force when in motion relative to the surrounding air for guiding or controlling an aircraft in flight

### **3.1.8**

#### **primary flight control surface**

##### **primary control**

*control surface* (3.1.7(3.1.7)) used as *effector* (3.1.5(3.1.5)) providing force or moment for aircraft stability or manoeuvring control

### **3.1.9**

#### **secondary flight control surface**

##### **secondary control**

*control surface* (3.1.7(3.1.7)) used to modify an aerodynamic characteristic of aircraft

### **3.1.10**

#### **actuator**

device for producing motion of *effector* (3.1.5(3.1.5)) and/or force acting on effector

### **3.1.11**

#### **sensor**

physical device for detection of *inceptor* (3.1.6(3.1.6)) positions, feedback measurements or scheduling information

### **3.1.12**

#### **longitudinal control**

control of airplane's pitching about the lateral axis

### **3.1.13**

#### **lateral control**

control of airplane's rolling about the longitudinal axis

### **3.1.14**

#### **directional control**

control of airplane's yawing about the normal or vertical axis