

## I. INTRODUCTION

The purpose of a motor ~~controls controller are is~~ to control the torque, speed, and position of a motor.

Because the torque ~~generated by of~~ the motor is proportional to the ~~amount of current flowing through it,~~ directly torque control ~~was is very rarely used.~~ In ~~almost every most~~ applications, cascade control structure is used, as shown in Fig. 1.

~~In other words, This means that~~ the drive-electronic ~~drives that supplies that controls the electrical energy supplied to~~ the motor ~~receives gets~~ the control signals from the current controller, ~~that which gets receives its set point its setpoint~~ from the speed controller ~~etc.~~ The current controller is called the drive-specific, ~~since because~~ its operation is ~~greatly considerably effected affected~~ by the type of the motor. The position and speed ~~controller controllers~~ are called task-specific because ~~it is they are more considerably~~ affected by the machine ~~being driven by the motor.~~

## II. FUNDAMENTALS OF MOTOR CONTROLLERS

It is not necessary to use all three ~~of the controls controllers~~ in all applications. In some ~~eases applications,~~ position or speed controller is not ~~needed required; however, but~~ current controller is used in ~~every all ease applications.~~ The reason of ~~this is because that~~ the current controller is not only ~~ensuring ensures~~ stable and controlled torque but ~~giving the possibility to limits~~ the current ~~of supplied to~~ the machine, ~~and with this function, thereby it is able to be protected protecting the motor~~ from overload [3-]. The three controllers ~~run operate~~ at different speeds. For example, the current controller is ~~considerably way~~ faster than the speed controller.

The ~~f~~Feedback values of the ~~controllers controllers~~ have to be measured. ~~Measuring the e~~Current can be ~~completed measured with using~~ a shunt resistor or a Hall ~~Effect effect~~ current transducer. For speed and position measurements, quadrature encoders can be used [7-][10-]. For position control, usually proportional (P) or rarely proportional  ~~differential (PD) controllers are used.~~ ~~The type of the speed controller is usually p~~Proportional  ~~integral (PI) controller is commonly used as a speed controller.~~ ~~We~~

**Comment [A1]:** Singular nouns take singular verbs. In this sentence, the noun is "purpose;" therefore, the correct verb is "is."

**Comment [A2]:** Writers use tense shifts to convey a desired meaning to the reader. These tense shifts must be a logical progression of ideas. It is common to see the present, present perfect, and past tenses in the same sentence or paragraph. However, unnecessary shifts in tense can confuse a reader and may not suit the context of the article.

**Comment [A3]:** In American English, "that" is used to introduce a restrictive clause and "which" a nonrestrictive clause.

**Comment [A4]:** Introductory phrases are separated from the main clause using a comma.

**Comment [A5]:** The en dash is used in place of a hyphen in cases where the paired elements carry equal weight or represent a parallel relationship such as Carbon–Magnesium bond or Bose–Einstein statistics.

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can get the current control with proportional-integral (PI) or hysteresis hysteresys controllers can be used for current control [8].

**Comment [A6]:** After spelling out the abbreviation of a term along with its abbreviation given in parentheses at the first instance, subsequent instances are to be abbreviated throughout the document.

SAMPLE