Embedded Systems
The Challenge of Real-Time Operations

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Outline

- Real-Time Operations
- Embedded systems
- Solutions to Real-Time Problem
- Sample Challenge
- Presented Solution
Real-time concept

- Real-time computing (RTC)
- Real-time operating system (RTOS)
• Operating systems
• Jitter time
1. Interface
   - Serial, I2C, ISP, ...
   - USB, Ethernet, Wi-Fi, Bluetooth

2. Co-hardware

3. Driver
Example 1: Servo motor control with Raspberry Pi

What you need:

- Raspberry Pi 3
- Servo Motor SG92R
• Servo Motor

Diagram showing the components of a servo motor, including D.C. Motor, Gearbox for Speed Reduction, Position Cog, Rotation, Output Shaft, Position Sensor, Feedback Loop, Error Detection Amplifier, Error signal, Positional Input Signal.
Example 2: Solution for Example 1

- Using a free hardware such as Arduino Due
let’s work
Ready for the next step.