

# Cloud balancing robot

- **Demo Description:** Robot is balanced and driven around on the table showing the effect of latency in mission critical applications. It consists of a cloud server running the control application and one LEGO Robot is used to show the effect of latency in mission critical applications - all controlled from the cloud real time.
- Demonstrated Functionalities:
  - Simulated 5G ultra-low latency connectivity between cloud control server and LEGO Robot.
  - Effect of varying latency 1-50 msec on the Robot stability and equilibrium, simulating importance of latency in the manipulation of industrial remote objects.
- **Applicability & Technology Value:** Industrial applications such as traffic safety and control of critical infrastructure demand for low end-to-end latency support in cellular networks. In addition to very low latency, 5G should also enable connectivity with ultra-high reliability and ultra-high availability.

The design of a 5G radio interface is capable of reduced transmission time intervals, new physical channel providing sub-millisecond radio transmission with a failure rate down to  $10^{-9}$ .

