# Task 3. ADC conversion

AMM embedded course

# Analog-to-digital converter (ADC)

- The **12-bit** ADC is a successive approximation analog-to-digital converter. It has up to **19 multiplexed channels** allowing it to measure signals from 16 external sources, two internal sources, and the VBAT channel. The A/D conversion of the channels can be performed in **single, continuous, scan or discontinuous mode**. The result of the ADC is stored into a left- or right-aligned 16-bit data register.

# ADC key points

- 12-bit, 10-bit, 8-bit or 6-bit configurable resolution
- Single and continuous conversion modes
- Data alignment with in-built data coherency

- See Reference Manual for details

# Task 3: Displaying value measured on Variable resistor

- Resistor has 3 pins: Ground, Voltage and Regulator – set logical 1 on Voltage pin, measure the value from Regulator pin in Analog mode
- Initialize ADC with ADC_CommonInit(), ADC_Init(), ADC_RegularChannelConfig() and ADC_Cmd() functions, check and fill ADC_InitTypeDef and ADC_CommonInitTypeDef with appropriate values
- Use ADC_SoftwareStartConv() function and ADC_SR_EOC flag for measuring
- Indicate measured and digitally converted value with 8 leds somehow (for example, with simple scale or binary representation)