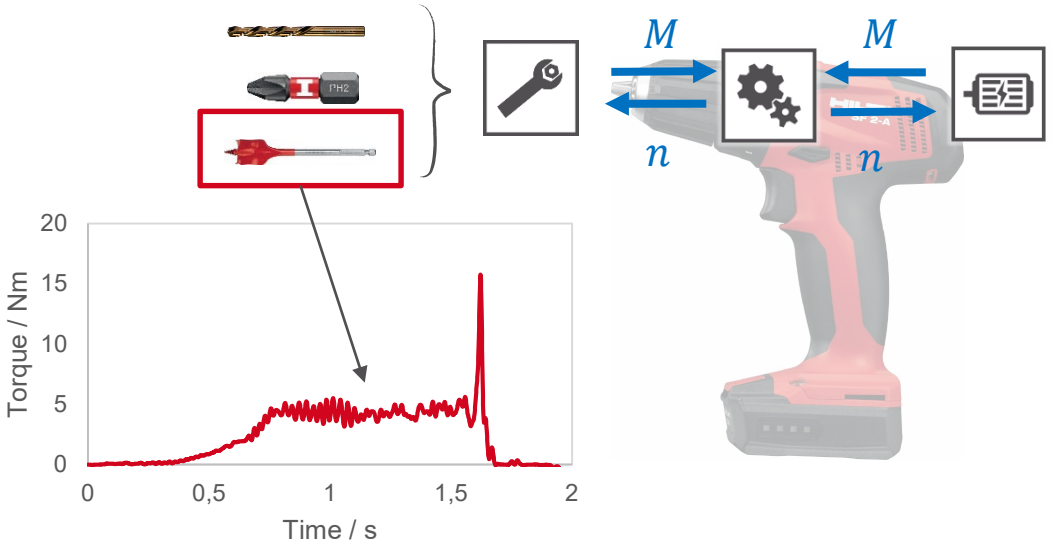
APPLICATION LOAD MODELS FOR SCREW FASTENING TOOLS

Problem Description

- Screw fastening tools are used for many applications. For some of them, we like to create simulation models.
- The models shall reproduce the time series of the load torque and shall fit for different diameters or speeds.



The Hilti SF tools are used for different types of drilling and screw setting applications, which differ regarding feedback torque

Objectives & Tasks

- Evaluate measurements of the application and determine the influence of application parameters like speed, diameter, processed material
- Create a Matlab/Simulink model for the application
- Identify procedure to predict the model parameters for new configurations based on existing measurements

Task 1
Create simulation model for application load
$M(t) = \bar{M} + \hat{M}\sin(2\pi f t) + \ldots$

Task 2
Create method for estimating parameters
$\bar{M} = f_1(n, \emptyset, \ldots)$