



## BACHELOR THESIS

# Absolute Position Information from Incremental Encoder and Current Measurement

Are you looking for an opportunity to write your thesis in an industrial environment or obtain valuable industry experience, during or after your technical education? Here is one of many interesting topics we have on offer. We are also very open to your own ideas in order to create a matching opportunity for you at VAT.

Innovation has always been the driving force at VAT since the company was founded over 50 years ago. This has made us the world leader in vacuum valves and vacuum sealing technology. This pioneering spirit motivates us daily to meet our customers' requirements with enthusiasm. Together with our employees we stand for passion, innovation and quality. VAT is headquartered in Haag (Switzerland) and employs approximately 2 000 people worldwide. It has production centers in Haag (Switzerland), Penang (Malaysia) and Arad (Romania) as well as a production facility in Xinwu (Taiwan). With our customers mainly being situated in the United States and Asia, this provides a great opportunity to start an international career.

### *What you will explore:*

VAT has controller (pressure control and position control of multiple axis) family, which is used in several applications. This controller is capable to drive motors to a position according to an encoder signal. Since incremental encoders are used only, a reference movement (homing) always needs to be done to find a mechanical end position. Absolute position signal is necessary in any event. Goal of the work is a feasibility study for getting an absolute position value by taking advantage of current measurements without the use of absolute encoders. The work includes interpretation of measurements as well as trying different solutions. Testing and verification of the solutions is fundamental.

### *What you will need:*

- Experience in development of mechatronic systems such as drive technology, sensors, embedded software design.
- Knowledge of Stepper-, BLDC- and Servo Drives, motion controller
- Design of experiment
- Personally, you will fit well into our corporate culture and the international matrix organization if you have hands-on work style and like to accomplish tasks fast.

### Are You Ready for the Challenge?

Then we look forward to receiving your **electronic application sent to Thomas Christen**.

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