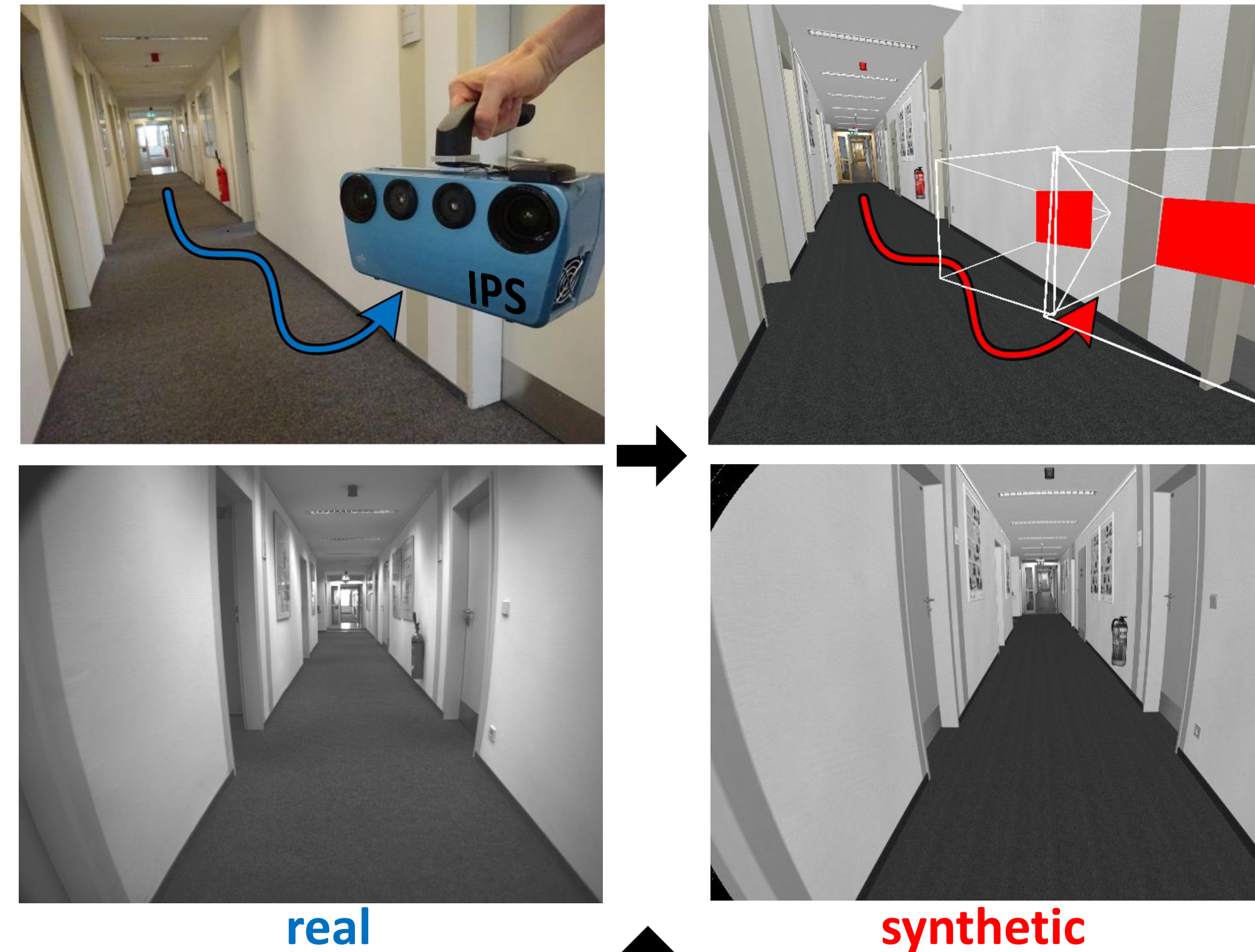


# SIMULATION FRAMEWORK FOR A VISUAL-INERTIAL NAVIGATION SYSTEM

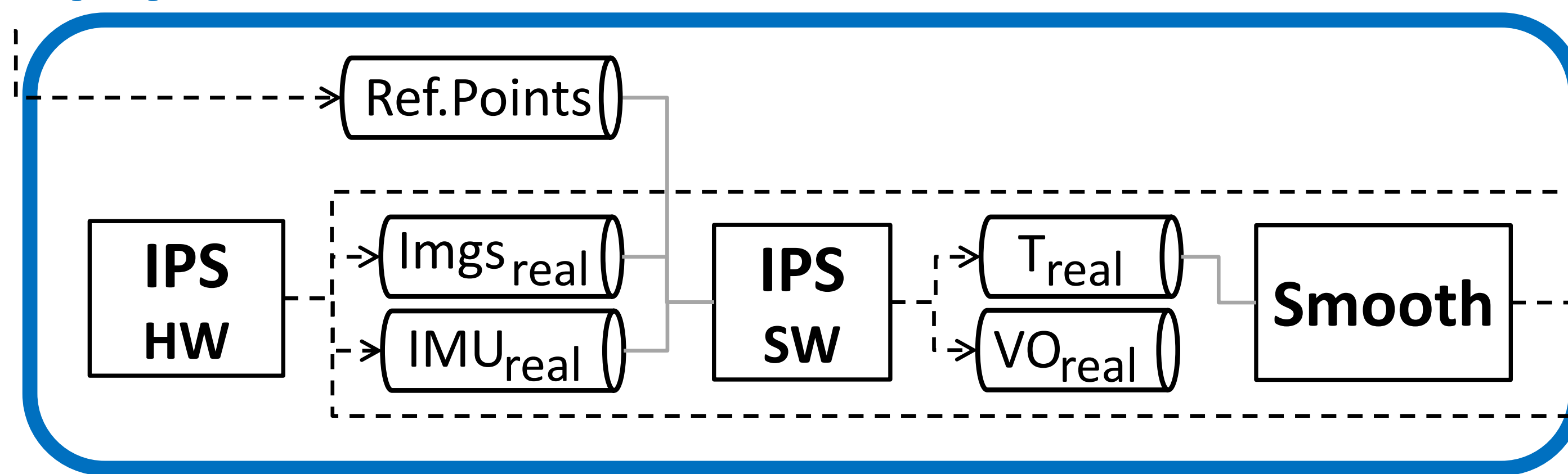
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**Introduction** – We present a method to generate and transfer movement profiles from real world into simulation using a hand-held device, and a simulation framework to develop VIO based on a synthetic clone. We show the usefulness of our approach by analyzing the influence of motion blur on IPS.

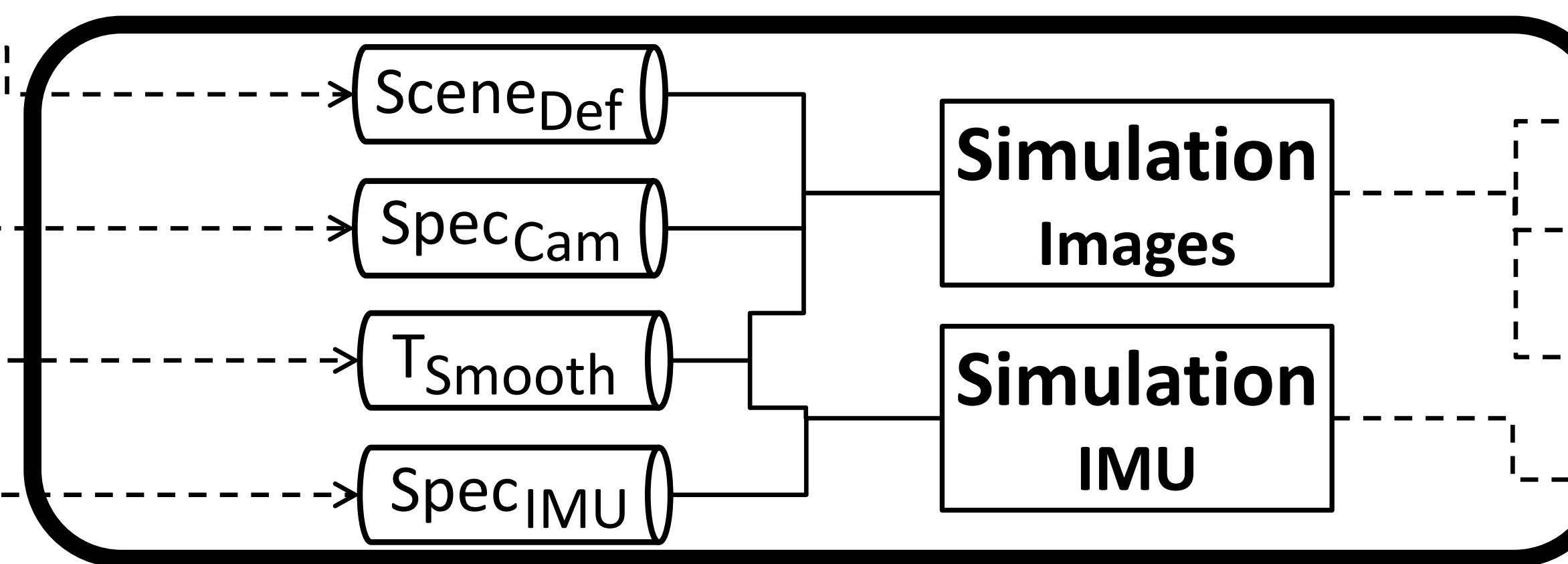


**Results** – Simulation allows a systematic evaluation of parameter influences, which would be infeasible in real world. Exemplary for IPS, we could show a strong influence of motion blur on the accuracy on the VO component (1), but a correct behavior of the estimated uncertainty from error propagation (2).

## (A) Movement Profile Generation



## (B) Transfer & Simulation



## (C) Application & Evaluation

