



VR Performance Team

June 28, 2018

Pravin Kumar Rana and Robert Malmström

VR performance team



Robert
Malmström
(Algo Lead)



Pravin K Rana
(Scrum Master)



Pravin K Rana



Yimu Wang



Erik Ljungzell



Gilfredo-Remon
Salazar



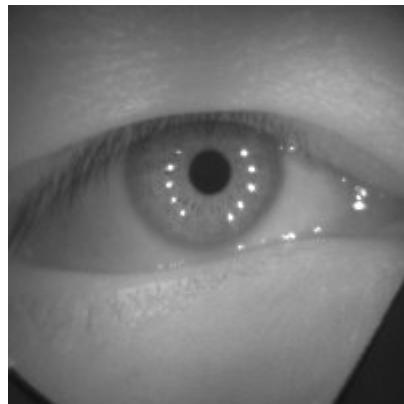
Torbjörn
Sundberg

Team

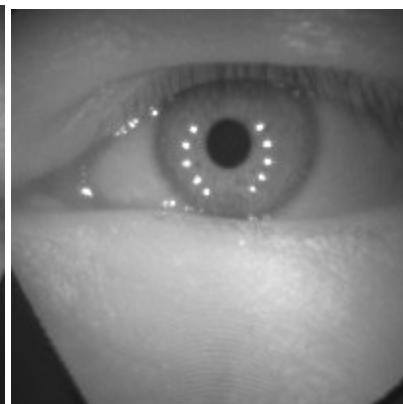
Each VR integration is different



Platform: Everything is wonderful

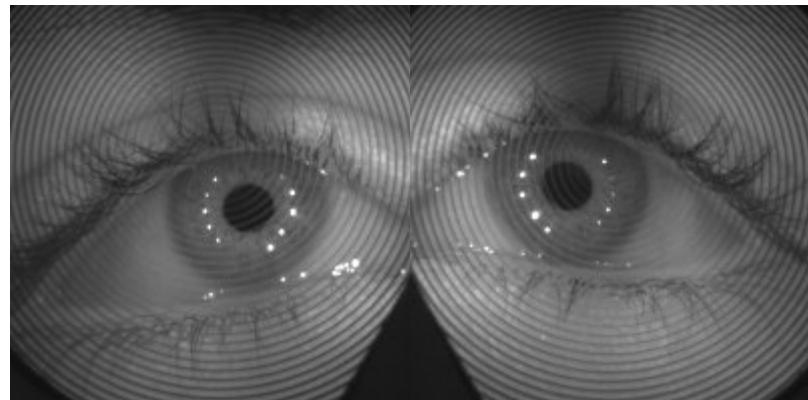


Cam Left

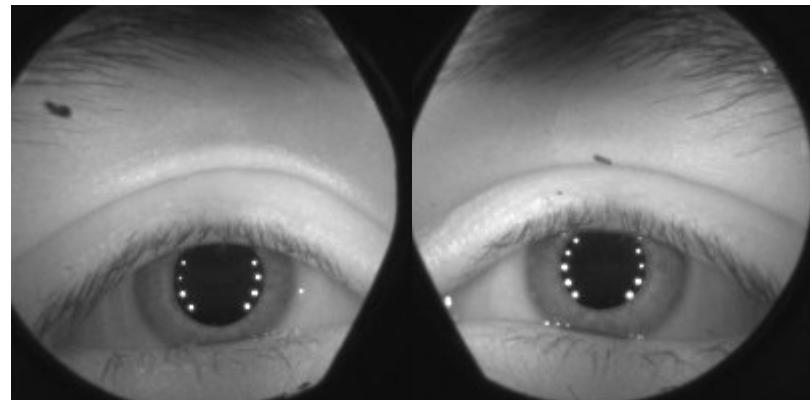


Cam Right

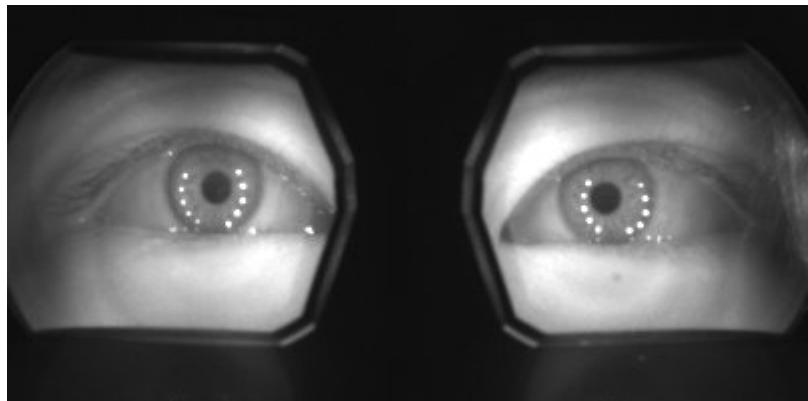
Each VR integration is different



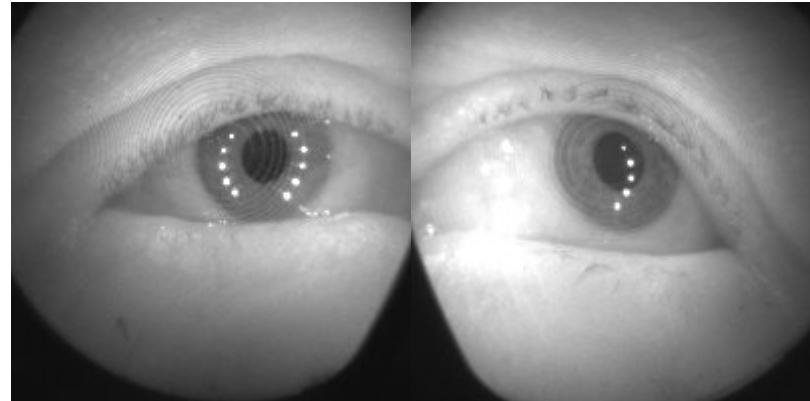
U2



Kite

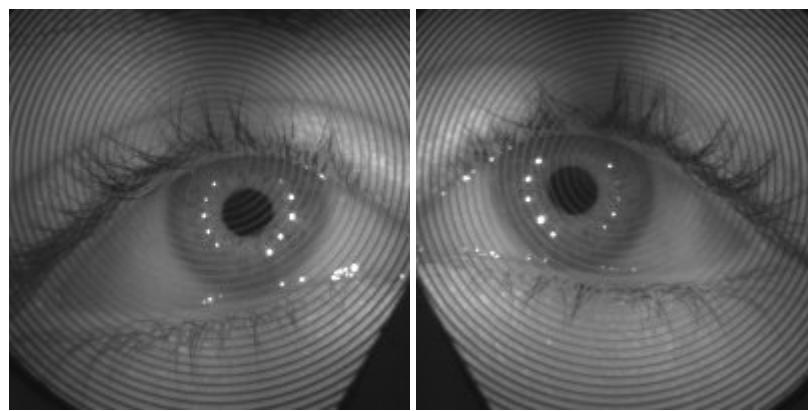


Love System A



Hiphop

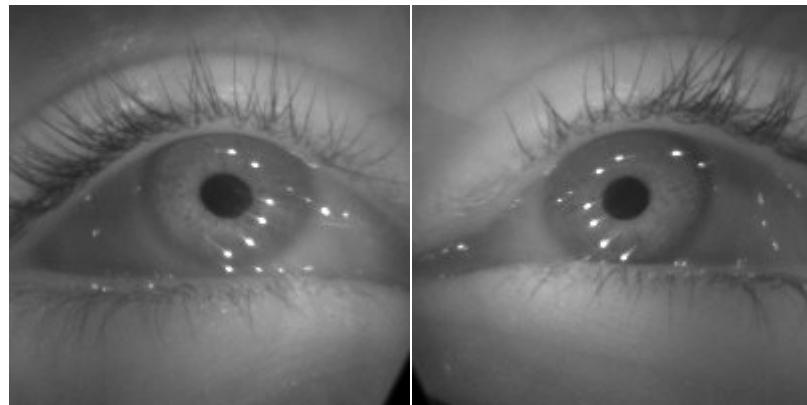
U2: Fresnel rings



Cam Left

Cam Right

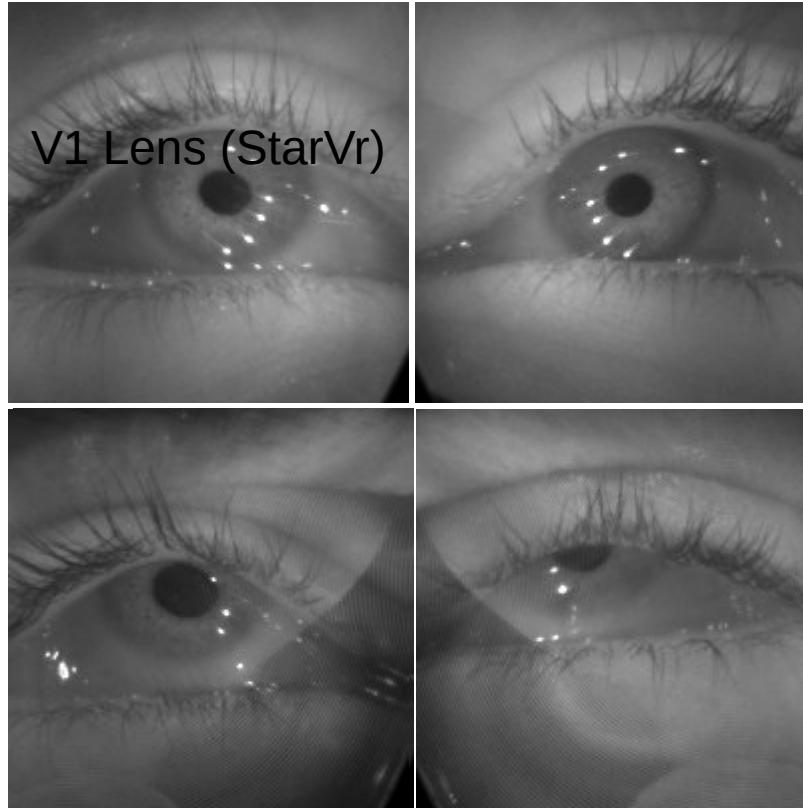
StarVr: FoV and wide gaze angles



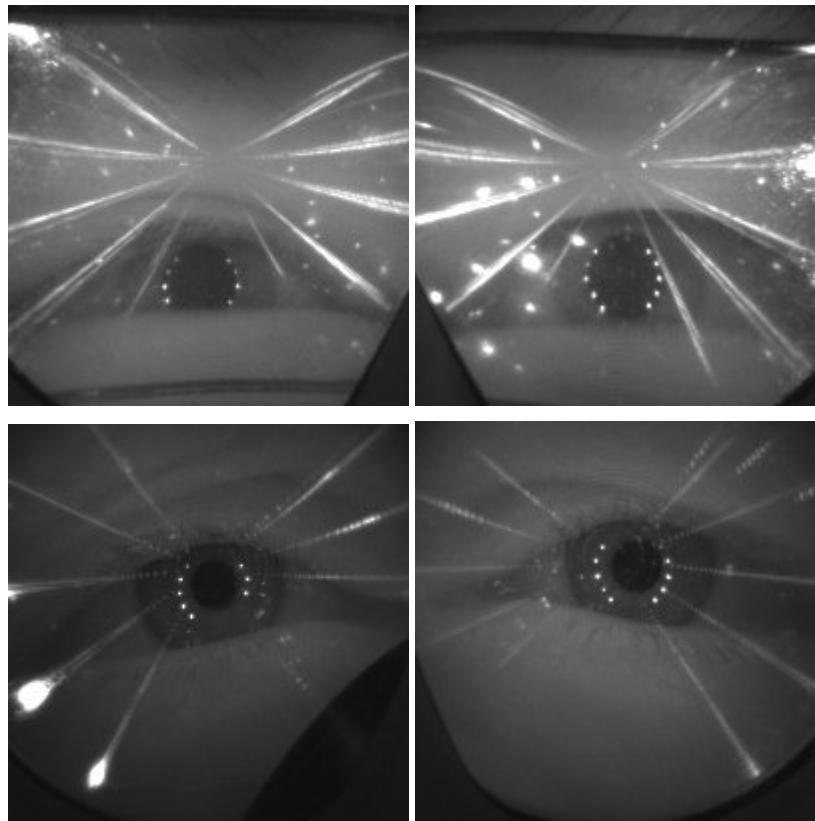
Cam Left

Cam Right

Yoda: IR reflections



Prescription glasses

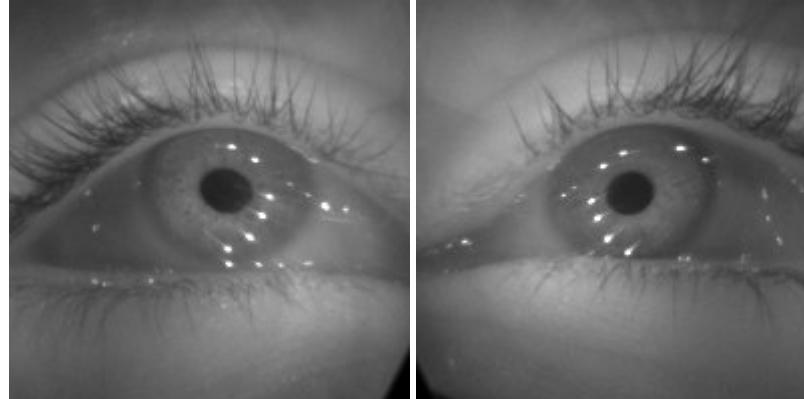


Cam Left

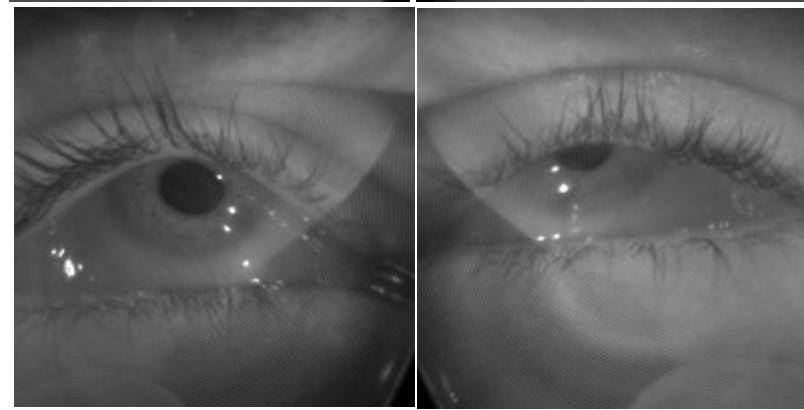
Cam Right

Yoda: IR reflections

V1 Lens



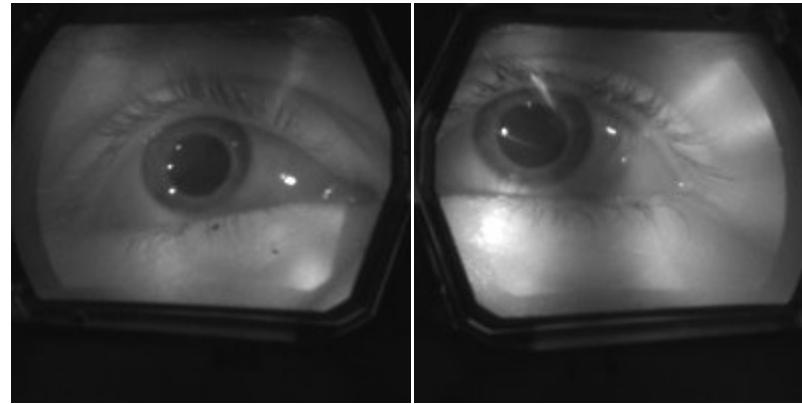
V2 Lens



Cam Left

Cam Right

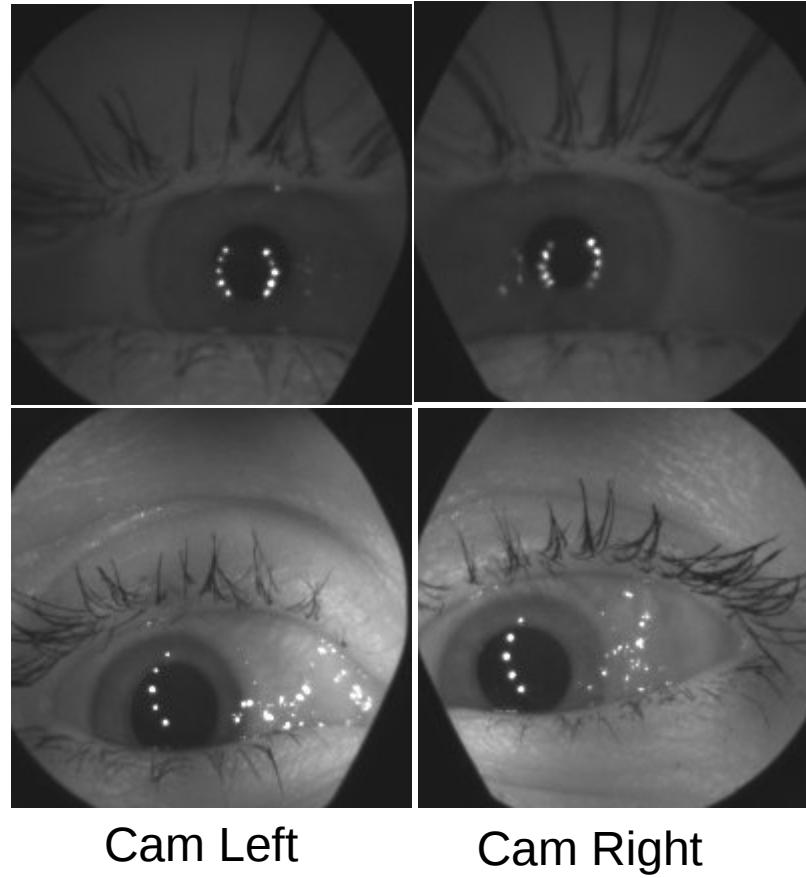
Love A-System: Glints availability



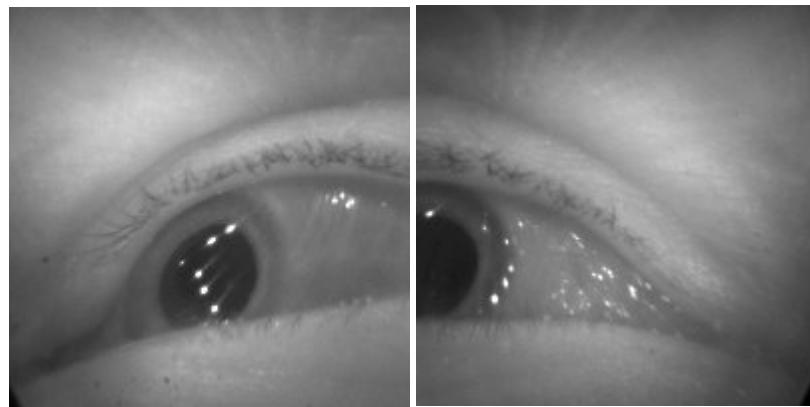
Cam Left

Cam Right

VR HMD positioning

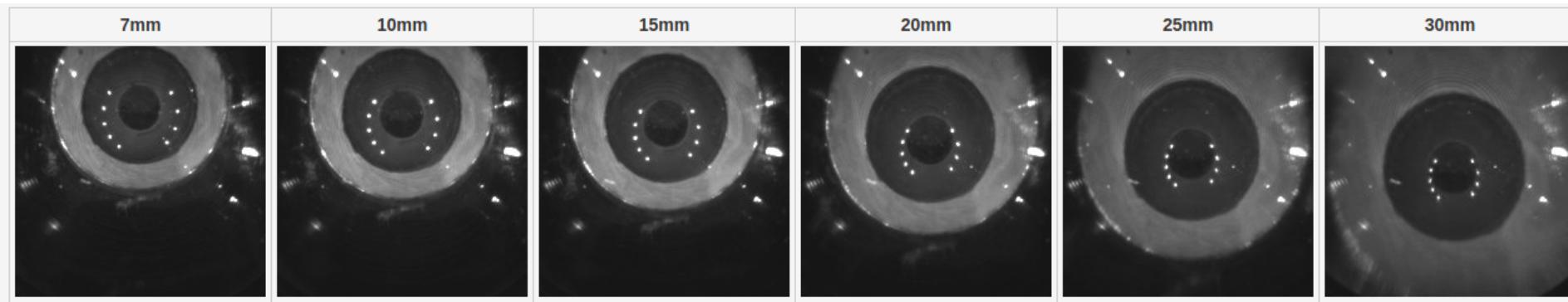
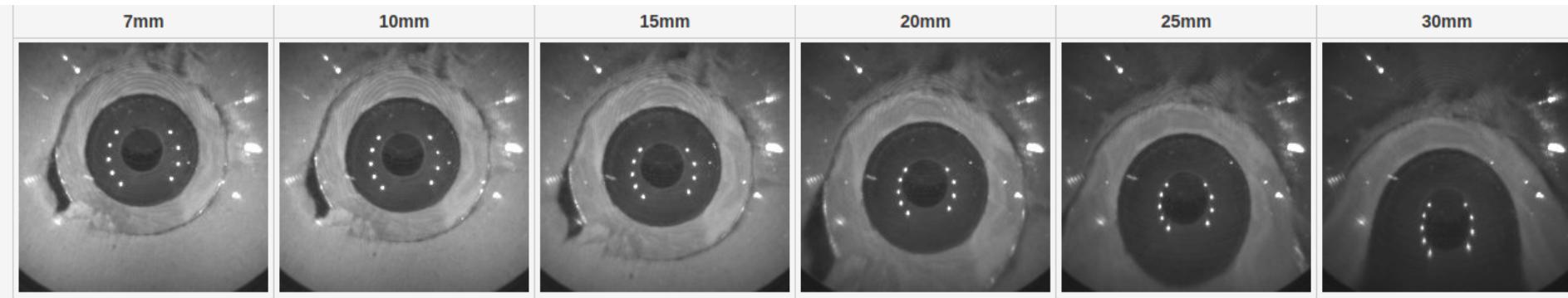


Large IPD/ Wide gaze angles

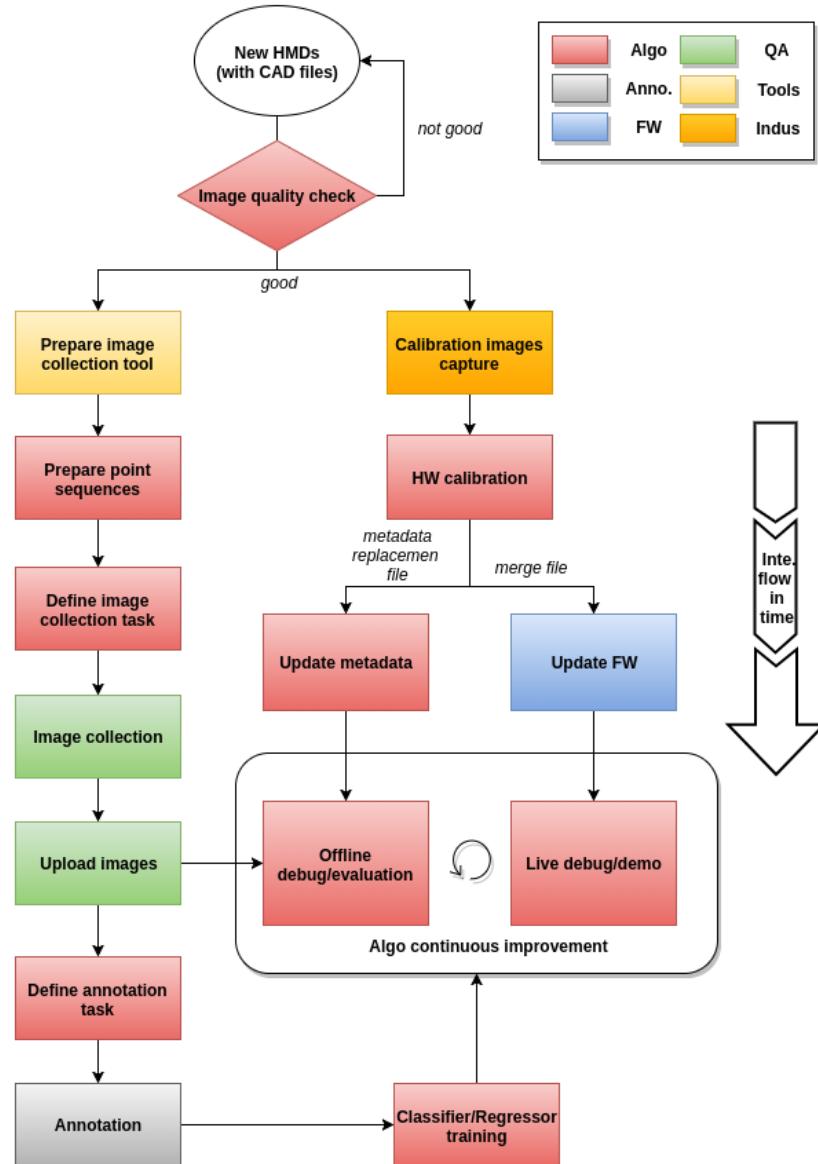


VR Lens + ET Camera Lens Distortion

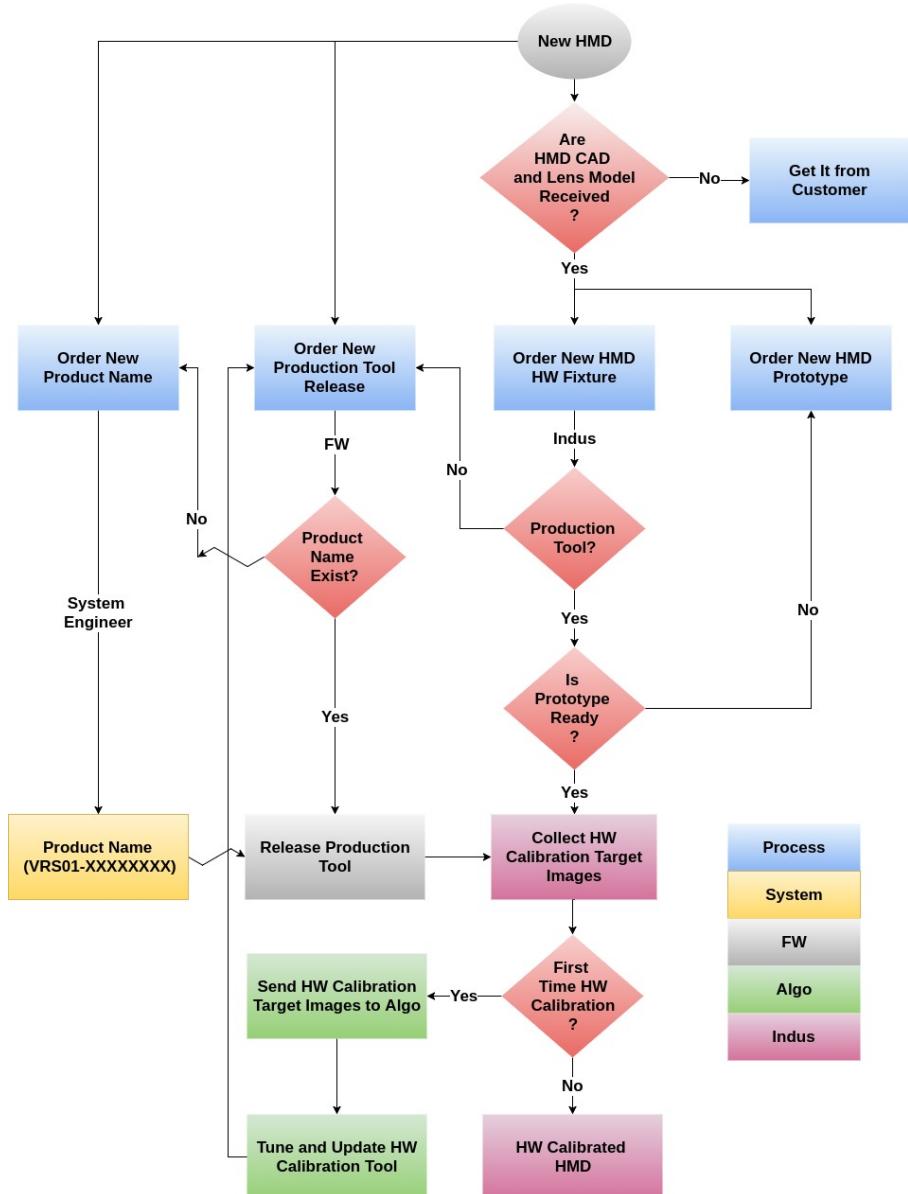
Artificial eye images through Corolla HMD



VR integration flow



VR HW calibration flow



VR HW calibration

TCC Tobii Camera Calibration

Main Page Related Pages Modules Namespaces Classes Files

Tobii Camera Calibration

Introduction

Tobii Camera Calibration (TCC) is a generic library for camera calibration.
It includes computer vision algorithms for feature and pattern detection as well as algorithms for computing a camera model based on a set of observations.

Overview

For more information on the repository overview, please refer to [Repository Overview](#)

Build Instruction

For more information on build instructions, please refer to [Build instructions](#)

IDE Integration

For more information on integrations with Clion, QtCreator, Eclipse etc. please refer to [IDE Integrations](#)

Applications

For more information on the TCC applications, please refer to [TCC Applications](#)

Data Architecture

For more information on the data architecture, please refer to [Data Architecture](#)

Calibration Pipeline

For more information on the calibration pipeline, please refer to [Calibration Pipeline](#)

Camera Model

For more information on the camera model, please refer to [Camera Model](#)

Coordinate Systems

For more information on frequently used coordinate systems, please refer to [Coordinate Systems](#) and <https://confluence.tobii.intra/display/OEMRND/Coordinate+systems>

Data Capture Procedure

For more information on the data capture procedure, please refer to [Data Capture Procedure](#)

New HMD Integration

For more information on hmd integration, please refer to [Procedure For New HMD Integration](#)

Test Data

For more information on adding test data, please refer to [Test Data](#).

Error tracking tips & tricks

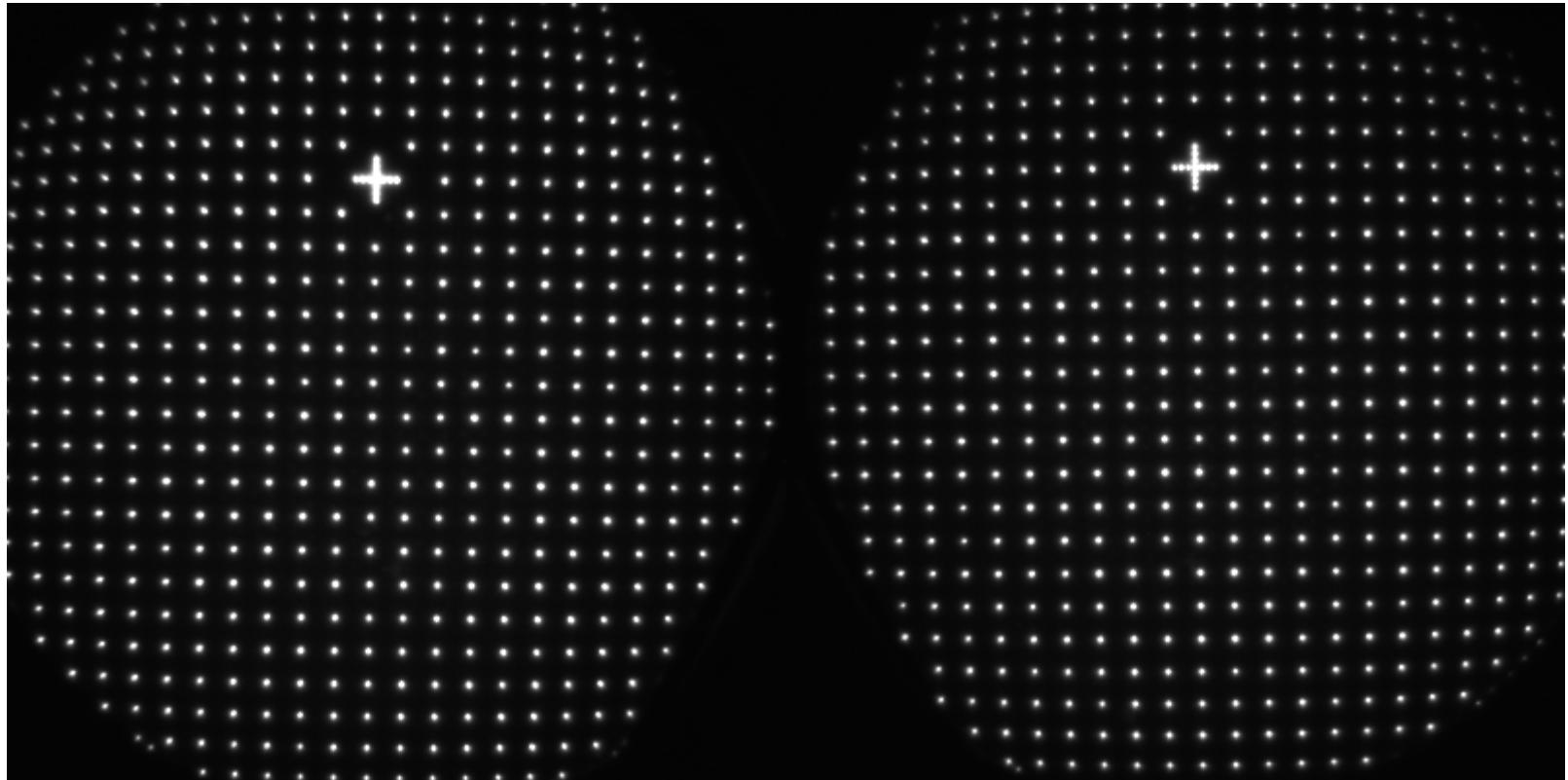
For more information on the error tracking tips and tricks, please refer to [Error Tracking Tips and Tricks](#)

Future Work

For more information on future work, please refer to the JIRA backlog <https://jira.tobii.intra/secure/Dashboard.jspa>

Tobii Camera Calibration

VR HW calibration



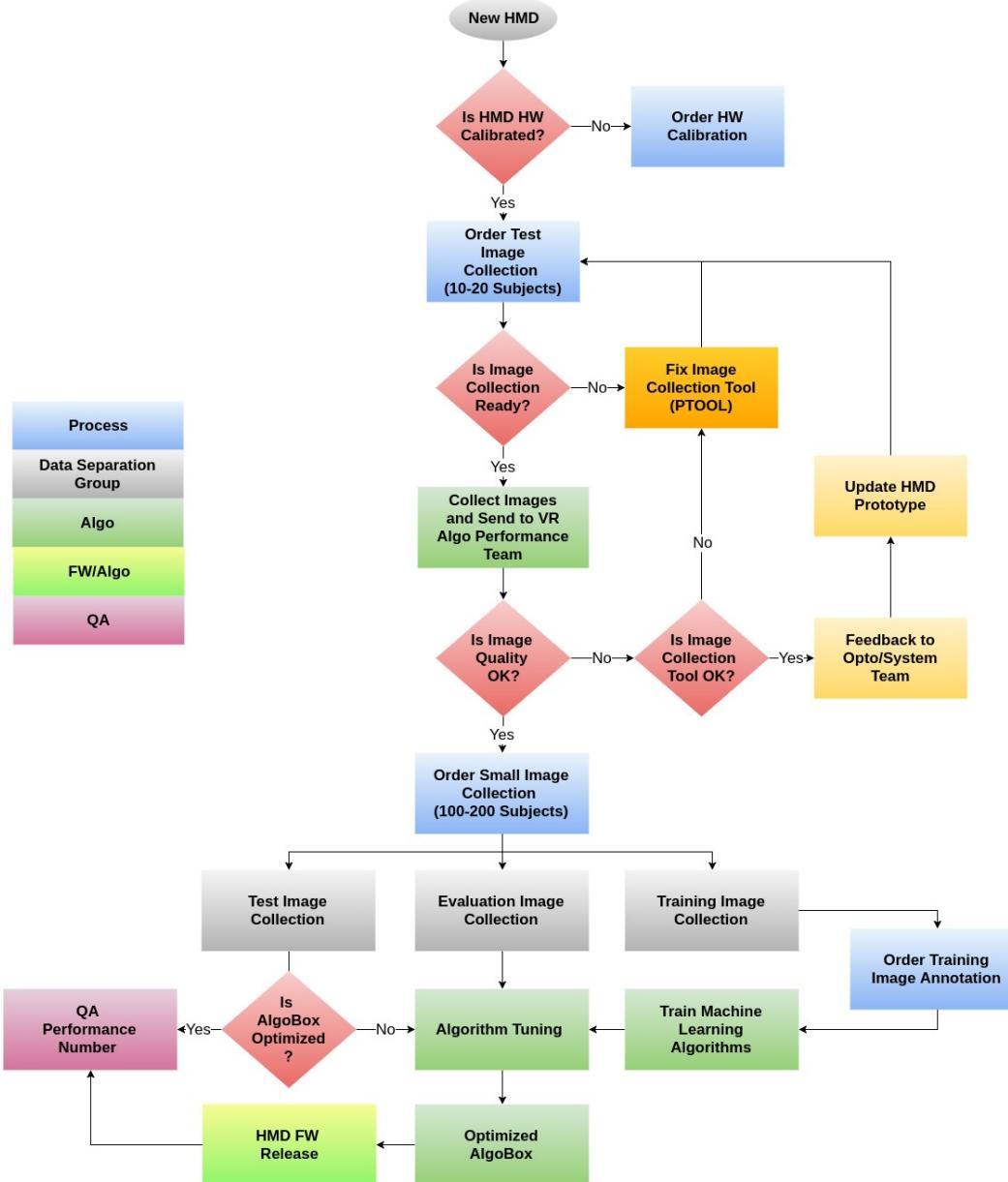
VR HW calibration



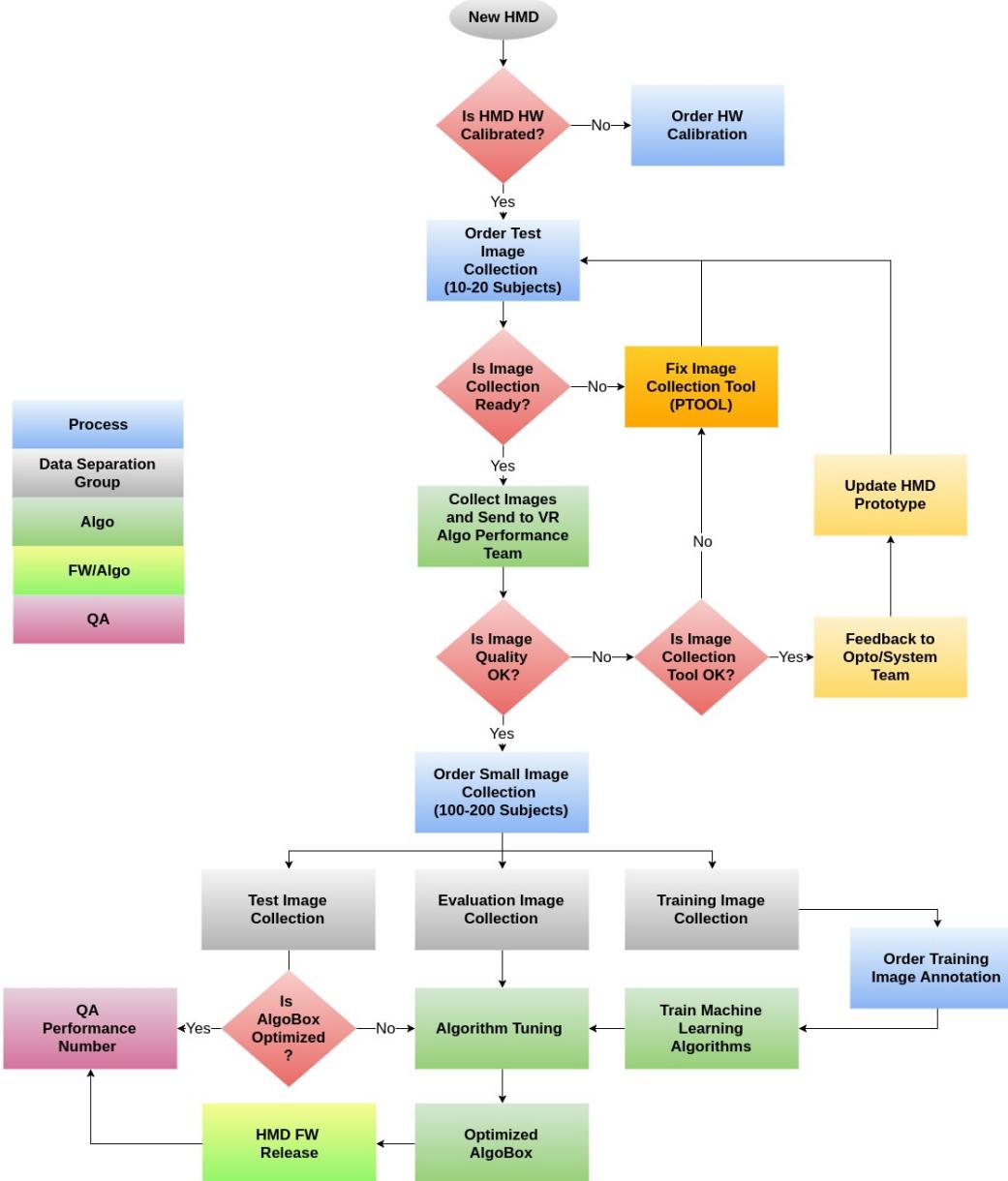
Target Image Left

Target Image Right

VR data collection flow



VR data collection flow



Sprint planning

- Algo Performance team recently moved from one week sprint to a **two week sprint**
- Sprint planning is done **every other Monday** and was done this week
- Before each sprint planning PO prioritizes the **Stories** in the backlog
- All new JIRA stories created **must have a DoD** to be started
- JIRA tasks are created by the team during and after sprint planning

Needed for Algo Performance to get Start working on a new project

- Project number for time reporting and JIRA-project
- Call for a Kick-off meeting with all teams to create a first initial time plan (from Algo Performance it should be Robert and Pravin)
- Make sure the customer delivers (SW, CAD, Lens model, prototype) in time for each step in the time plan
- Check with Algo Performance, Image collection and QA that all are synced for the planned image collections