Kalibr Camera Calibration

Previously, I used ROS Calibration in order to calibrate the IDS camera with Fisheye lens. However, as I have learned when trying to undistort the image with the result of the calibration, ROS Calibration works only with normal lenses.

Therefore, I had to look for a calibration that works with fisheye lenses, and that's when I found Kalibr. In order to use Kalibr I have done the following steps:

- Installation:
  1) I have created a new ROS workspace.
  2) Then I cloned the following GitHub repository in to the src folder: https://github.com/ethz-asl/kalibr
  3) Then I performed "catkin_make" inside the workspace directory. I had to install some of the dependencies that I was missing (They are listed in their installation guide)
  4) I have made the following 2 files:
     - Checkboard.yaml:

```
target_type: 'checkerboard' #gridtype
targetCols: 8               #number of internal chessboard corners
targetRows: 6               #number of internal chessboard corners
rowSpacingMeters: 0.103     #size of one chessboard square [m]
colSpacingMeters: 0.103     #size of one chessboard square [m]
```

     - Calibration.bag: Which is a bag file, that contains a video of the checkboard from different angles.S
       I have made this file, using the:
       1) Capturing the video into images file Desktop/IDS Camera/Code/python/capturevideoUEye.py
       2) Making the bag file using: Desktop/DSO/catkin_was/src/BagFromImages

5) Then I performed the following commands:
   In source directory:
   “Source devel/setup.bash”
   “roscore”

   And in the following directory:
   src/kalibr/aslam_offline_calibration/kalibr/python

   “python kalibr_calibrate_cameras –target <path to yaml file> --bag <path to bag file> --models pinhole-equi --topics /camera/image_raw