# Exercise 6 – Mensch-Maschine-Interaktion 2

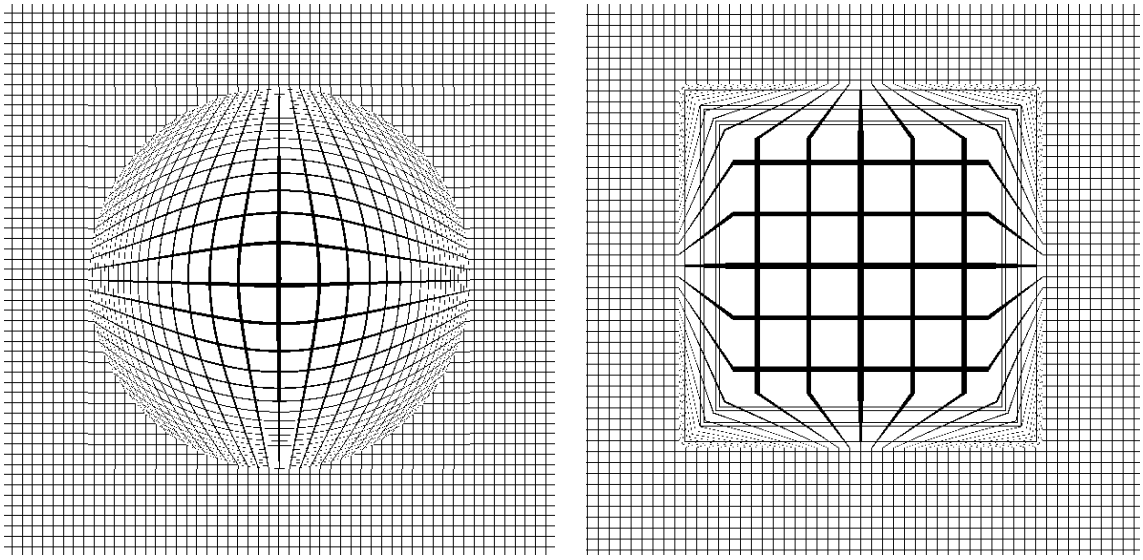
## Fisheye Visualization

(Per-group homework, 2 weeks)

Implement two different fisheye views based on the given prototype `ImageFrame.java`:

- Radial fisheye using the transfer function $T(x) = (d + 1) \cdot x / (d \cdot x + 1)$. The distortion factor $d$ relates to the magnification factor m by $d = m - 1$.
- Rectangular, faceted fisheye.

The pictures below show the expected results for the two different fisheyes with the example grid file `Grid1_4000x3000.tif`.



**Hints:**
Compile and run the prototype which is available on the MMI2 web page:
http://www.medien.ifi.lmu.de/fileadmin/mimuc/mmi2_ss06/uebung/exercise6.zip
Example pictures are included. (You may need to invoke java with the `-Xmx256m` switch to avoid out of memory errors.)
To implement the fisheye view, use normalized coordinates. This means that the source and the destination rectangle have coordinates values in the range [-1, 1]. For the radial fisheye, convert the normalized coordinates into polar coordinates and apply the inverse transfer function to the radial component.

**Submission:**

- Submission is by email to mmi2@hcilab.org
  Please use a ZIP attachment named `exercise6-groupN.zip` (N is the number of your group). The archive must include both source code and the corresponding `.jar` file. Your solution must compile and run in the computer lab (Amalienstr. 17). Try to keep the attachment size below 4 MB.
- Each group must hand in one solution. Please state if anyone has left your group.
- Deadline for submission: **Wednesday, July 12th 2006, 9 a.m.**